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# Contribution to the knowledge of the genus *Triplax* Herbst, 1793 (Coleoptera: Erotylidae) in Bulgaria

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**Abstract.** New distribution data about nine species of the genus *Triplax* Herbst, 1793 in Bulgaria are reported. The species *Triplax scutellaris* Charpentier, 1825 is new for the fauna of the country. The biology, distribution and conservation status of several species are discussed. For the first time, a complete list of all nine *Triplax* species present in Bulgaria is given.

**Key words:** *Triplax*, Erotylidae, Bulgaria, faunistics, nature protection.

## Introduction

*Triplax* species are not well studied in Bulgaria, much as in the rest of Europe. For Bulgaria all available information is limited to five publications. Firstly the genus is reported by Ioakimov (1904), who gives 4 species, then Roubal (1931), Delkeskamp & Friese (1971) and Dajoz (1985) completed the data for the species diversity and distribution of the genus. The most recent distribution data are from Guéorguiev & Ljubomirov (2009). As a result of these 5 studies, 6 species, each reported from one or two localities, were known for the fauna of Bulgaria. In Fauna Europea, Wegrzynowicz (2004) gives only two species *T. elongata* and *T. melanocephala.* The palaearctic catalogue of Erotylidae (Wegrzynowicz, 2007) cites 2 more species for Bulgaria: *T. collaris* and *T. lepida*.

According to Franc (2001), *Triplax* species tend to be indicative of well-preserved forest ecosystems with a high biodiversity.

## Material and Methods

During our sampling trip in August 2009, we especially visited well-preserved forests. In the following, we will illustrate how even a short sampling trip can yield interesting results, if attention is paid to these beetles' habitat (bracket fungi on dead trees): our collecting during 7 days (21-27.08.2009) resulted in 15 specimens and 6 species from 5 suitable localities.

The collection of the National Museum of Natural History-Sofia (NMNHS) was also checked for *Triplax* specimens.

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**List of the species**

***Triplax aenea* (Schaller, 1783)**

Gorubliane (Ioakimov 1904), Petrohan (Dajoz 1985).

New localities: Stara Planina Mts., Eleno-Tvardiska Planina, Bukite Hut, N 42° 47' 20.62" E 25° 53' 14.26", 1000 m, *Fagus sylvatica* forest, in *Pleurotus* sp and/or under bark dead *Fagus*, 27.08. 2009, 3 ex., leg. Koen Smets (NMNHS, Koen Smets and Luc Crevecoeur collections).

***Triplax collaris* (Schaller, 1783)**

Gorubliane (Ioakimov 1904), Maleshevska Mts., Breznitsa (Roubal 1931); Bulgaria (Wegrzynowicz 2007).

New localities: Strandzha Mts., S of Fazanovo, Popovi skali locality, N 42 09.764 E 27 44.259, 30 m, *Fagus-Carpinus* forest, in *Pleurotus* sp., on dead *Fagus*, 25.08.2009, 2 ex., leg. Koen Smets (in NMNHS and Luc Crevecoeur collection).

***Triplax elongata* Lacordaire, 1842**

Bulgaria (Wegrzynowicz 2004).

New locality: Rila Mts., Rilski Monastery, 12.07.1957, 3 ex., leg. N. Karnoshitzki (NMNHS).

***Triplax lacordairii* Crotch, 1870**

Petrohan (Dajoz 1985).

New localities: Rila Mts., Rilski Monastery, 12.07.1957, 2 ex., leg. N. Karnoshitzki (NMNHS); Strandzha Mts., S of Fazanovo, Popovi skali locality , river valley, *Fagus-Carpinus* forest, in *Pleurotus* sp., on dead *Fagus*, 25.08.2009, 3 ex., leg. Koen Smets (NMNHS and Koen Smets collection).

***Triplax lepida* (Faldermann, 1837)**

Rila Mts., Chamkoria=Borovets (Delkeskamp & Friese 1971); Bulgaria (Wegrzynowicz 2007).

***Triplax melanocephala* (Latreille, 1804)**

Bulgaria (Wegrzynowicz 2004).

New locality: Varna env., bank of Kamchia River, Longoz forest, 22.05.1949, 6 ex., leg. N. Karnoshitzki (NMNHS).

***Triplax rufipes* Fabricius, 1787**

Maleshevska Mts., Breznitsa (Roubal 1931), Kamchia (Dajoz 1985).

New localities: Strandzha Mts., Brashlian vill., N 42 02.647 E 27 25.571, 316 m, *Fagus* forest, in *Pleurotus* sp., on dead *Fagus*, 22.08.2009, 1 ex., leg. Koen Smets (in Koen Smets collection); Sinemorets Town env., Veleka Valley near bridge, N 42 03.660 E 27 57.920, 5 m, *Quercus* sp. forest, in dry *Pleurotus* sp., on dead *Quercus* sp., 25.08.2009, 1 ex., leg. Koen Smets (NMNHS); S of Fazanovo, Popovi skali locality, river valley, *Fagus-Carpinus* forest, in *Pleurotus* sp., on dead Fagus, 25.08.2009, 1 ex., leg. Koen Smets (NMNHS).

***Triplax russica* Linneaus, 1758**

Gorubliane (Ioakimov 1904), Maleshevska Mts., Breznitsa (Roubal 1931; Guéorguiev & Ljubomirov 2009).

New locality: Strandzha, Mladezhko vill., N42 09.075 E27 21.436, 230 m, forest valley, in fungus on *Acer* sp., 21.08.2009, 2 ex., leg. Koen Smets (in NMNHS and Koen Smets collection).

***Triplax scutellaris* Charpentier, 1825**

(Fig. 1)

Localities: Stara Planina Mts., Eleno-Tvardiska Planina, Bukite Hut, 1000 m, *Fagus sylvatica* forest, in *Pleurotus* sp and/or under bark dead *Fagus*, 27.08. 2009, 2 ex., leg. Koen Smets (NMNHS and Koen Smets collection); Bulgaria, Osogovska Planina Mt., above "St. Ana" Monastery at Smolichano Village, 660-700 m, 10.10.2009, meadow, on mushroom, 4 ex, leg. B. Guéorguiev (NMNHS).

**Fig. 1**. Habitus of *T. scutellaris* – Osogovo Mts. (scale – 5.0 mm).

## Discussion

### General and sampling

All *Triplax* species inhabit a variety of wood fungi, mainly *Pleurotus* spp, ranging from very young and fresh to old and completely dry fungi, as well as under bark of dead trees with *Pleurotus* on some other part of the tree. We found the species of this genus, in Bulgaria and elsewhere, to be present mostly in *Pleurotus* fungi on dead wood. This is consistent with findings by Dajoz (1985).

The best method to catch *Triplax* is looking on wood fungi on dead trees like *Pleurotus* spp. or *Oudemansiella mucida* in spring or after a wet period in the summer. The highest numbers in Europe were caught with windowtraps (Crevecoeur, unpublished data).

### Distribution and nature protection status

As a result of our study nine *Triplax* species are now known from Bulgaria. This fact makes Bulgaria one of the richest countries in the Balkan Peninsula for this genus.

*T. scutellaris* was found for the first time in Bulgaria. The discovery of a new species for the Bulgarian fauna almost simultaneously in two different locations can probably be attributed to the lack of knowledge about the Bulgarian Erotylidae fauna, and possibly also to the abundance of *Triplax* specimens under the right conditions (end of the summer with high abundance of *Pleurotus*) in the right locations (forest reserves with *Fagus*). Franc (2001) marks it as a species of older deciduous, especially *Fagus*, forests. On the recent European Red List (IUCN) it has the status Least Concern (Nieto & Alexander 2010).

*T. aenea* was found on the same tree as *T. scutellaris* in the Stara Planina. It seems to occur only in mountains in the interior of Bulgaria (Stara Planina): probably the species has more montane preferences (Dajoz, 1985), although in Slovakia it is absent from cold mountain conifer forests (Franc 2001). It has the IUCN-Red List status Least Concern (Nieto & Alexander, 2010).

*T. rufipes* was found only in the south and near the coast. In Strandzha Mts we found it to be present in all 3 sampled sites with *Pleurotus*. IUCN-Red List: Least Concern (Nieto & Alexander 2010).

Although on the German Red List as endangered (Geiser, 1998), it seems the most widespread species in Bulgaria.

*T. collaris* and *T. russica*: both species have a relatively large distribution in Bulgaria (South west, Central and South east parts of the country). IUCN-Red List: Least Concern (Nieto & Alexander 2010).

*T. elongata, T. lepida* and *T. melanocephala* are all treated as Least Concern in the IUCN-Red List (Nieto & Alexander 2010).

*T. lacordairii*: This species is known from three localities in Bulgaria. It is the only species of the genus in Bulgaria that is listed by IUCN-Red List as Endangered on the recent European Red List of Saproxylic Beetles (Nieto & Alexander 2010). It seems to inhabit a large but apparently discontinuous Atlanto-Mediterranean range, and is rare throughout Europe (Franc 2001).

The Popovi skali locality (Fig. 2), south of Fazanovo in the Strandzha mountains, seems remarkable, since the sampling of just one dead beech tree with dried *Pleurotus* fungi during 2 hours, yielded 3 species of *Triplax* (as well as many other mycetophilous beetles): *T. collaris*, *T. lacordairii* and *T. rufipes*. The presence of *T. lacordairii* is noteworthy, because it has the IUCN-Red List status Endangered in Europe (Nieto & Alexander 2010).

**Fig. 2**. Old *Fagus* tree with many *Pleurotus* fungi in Popovi skali locality (Strandzha Mts.), habitat of *Triplax lacordairii, T. collaris* and *T. rufipes*, 25.8.2009.

Even Dajoz (1985), who collected thousands of *Triplax* specimens in 27 locations across Europe, never found more than 3 species together in one location. The maximum of *Triplax* species he found in one locality (with sampling at several dates), was 5 and 6 for two well-studied French forests that he could sample for several years.

The discovery of 3 species at a time (of which 1 endangered on a European level) seems to indicate that Popovi skali is a forest with a high level of biodiversity and conservation value, and that later visits to Popovi skali might lead to the discovery of other *Triplax* species at the site.

According to Dajoz (1985) *T. rufipes* and *T. russica* are the most common species of the genus in Europe. This is confirmed by our personal observations.

Four species were recorded from the Strandzha Mountains, which makes it the most rich area for *Triplax* in Bulgaria. However, most other regions have not been well studied, and focused sampling on *Pleurotus* habitat would probably yield many more interesting results (as the discovery of *T. scutellaris* proves).

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