

Prostomidae (Coleoptera: Tenebrionoidea) – a New Family to the Fauna of Bulgaria

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Abstract: Family Prostomidae, genus *Prostomis*, and species *P. mandibularis* are recorded for first time from Bulgaria. *P. mandibularis*, characteristic of decaying heartwood of rotting wood lying undisturbed on forest floors, is a species of conservation importance and indicator of use for assessment of natural old and well-preserved broad-leaved woodlands.

Key words: Coleoptera, *Prostomis mandibularis*, Bulgaria, first record.

Introduction

The number of families from order Coleoptera which occur in Bulgaria is well-known. Following the classification of FAUNA EUROPAEA WEB SERVICE 2004 (ALONSO-ZARAZAGA 2004, AUDISIO 2004)¹, we know data for representatives from 117 families there; this account includes only taxa native to the fauna of Europe. Up to now, we had no records only for species from Rhipiceridae (Dascilloidea), Endecatomidae (Bostrichoidea), Phloiophilidae (Cleroidea), Phloeostichidae (Cucujoidea), Prostomidae, Boridae (Tenebrionoidea), and Raymondionymidae (Curculionoidea) (GUÉORGUIEV *et al.* 2008)².

Recent pitfall collecting in old, predominantly *Castanea sativa* Miller forests revealed a further new family to the fauna of Bulgaria. The purpose of the present report is to announce this finding.

Prostomidae C.G. THOMSON, 1859

***Prostomis* LATREILLE, 1825**

***Prostomis mandibularis* FABRICIUS, 1801**

(Fig. 1)

Material studied

Belasitsa Mountain: N41.371754 E23.185813, below Belasitsa Chalet, 700 m, 14.IX-30.X.2009, 1 specimen, pitfall traps, leg. B. Guéorguiev & P. Mitov; N41.352124 E23.204887, 2.7 km SE Belasitsa Chalet, 800 m, 26.III-18.V.2010, 1 specimen / 18.V-4.VII.2010, 1 specimen, pitfall traps, leg. B. Guéorguiev & Ch. Deltshv; N41.363556 E23.210198, ca. 4 km S of Petrich Town, 800 m, 29.III-19.V.2010, 1 specimen, pitfall traps, leg. B. Guéorguiev & Ch. Deltshv; N41.354371 E23.204756, ca. 4 km S of Petrich Town, 750 m, 18.V-4.VII.2010, 1 specimen, leg. B. Guéorguiev &

¹ The discrepancy in the family number in the present report and GUÉORGUIEV *et al.* (2008) is due to the use of differing classifications.

² Cerophytidae has been also included among the family group-taxa unknown to Bulgaria, but in fact it was noted for the country the year before (BOČÁK 2007).



Fig. 1. Habitus of *Prostomis mandibularis* Fabricius, Belasitsa Mt., Bulgaria. Scale 1 mm.

Ch. Deltshev. The material is preserved in the collection of the National Museum of Natural History, Sofia. Data for the forest communities and tree age are shown in Table 1.

Faunistic notes and biology

The family Prostomidae (jugular-horned beetles) comprises 28 species arranged in one extinct (*Vetuprostomis* ENGEL & GRIMALDI, 2008) and two extant genera (*Prostomis* LATREILLE, 1825 and *Dryocora* PASCOE, 1868) (SCHAWALLER 2003, PARK, AHN 2005, ENGEL, GRIMALDI 2008). The species from the extant genera are distributed worldwide,

excluding only the Neotropic Region and most part of Africa (SCHAWALLER 2003). Adult members of this group are readily recognized by combination of the following characters (Fig. 1): body elongated, parallel-sided and strongly flattened; colour red to reddish-brown; prognathic head having large, robust and strongly projecting mandibles (dorsal view) as well as large and projecting forward jugular processes (ventral view); antennae relatively short, not exceeding posterior margin of pronotum with last three articles slightly clubbed; pronotum as wide as head; elytra as wide as pronotum; tarsal formulae 4-4-4.

In this work, we report *P. mandibularis* for first time for the fauna of Bulgaria; the species range includes Europe, the Caucasus, North Turkey, and North Iran (SCHAWALLER 2003). This curiously flattened (in both stages larva and imago) beetle is xylophagous and characteristic of decaying heartwood of rotting wood lying undisturbed on forest floors. Like other members of the family (GROVE 2007), the species is supposedly feeding ‘mudguts’³ and tunnelling within and between the ‘mudguts’ and surrounding more solid wood.

P. mandibularis is presumably entirely dependent upon veteran trees⁴ as it inhabits decaying heartwood, a very specific habitat type which is already highly fragmented and subject to continuing significant decline in Europe. According to the recent European Red List of Saproxylic Beetle, it is listed as ‘Near Threatened’ (NIETO, ALEXANDER 2010). Therefore, we have an indicator species on European scale of use for assessment of natural old and well-preserved broad-leaved woodland communities.

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³ According to some rotten wood type classification, the ‘mudguts’ is advanced stage of decay of the inner heartwood (YEE *et al.* 2001, YEE *et al.* 2006, GROVE 2007).

⁴ In Tasmania, another species from *Prostomis* was found only in mature trees more than 150 years old (HOPKINS *et al.* 2005).

Table 1. Localities and data for forest community and tree age.

Locality	Predominant tree species (tree age)
N41.371754 E23.185813	One generation <i>C. sativa</i> (100-150 years old); second generation of predominant <i>Quercus petraea</i> Liebl. (50-60 years old)
N41.352124 E23.204887	Predominant <i>C. sativa</i> (60-140 years old)
N41.363556 E23.210198	One generation <i>C. sativa</i> (100-150 years old); second generation of predominant <i>Fagus sylvatica</i> L. (50-60 years old)
N41.354371 E23.204756	Mixed forest <i>C. sativa</i> , <i>F. sylvatica</i> and <i>Quercus</i> spp. (60-140 years old)

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In memoriam

Assoc. Prof. Dr. Stefan Donchev (09.05.1931–12.12.2010)

Assoc. Prof. Stefan Ivanov Donchev was born on 09.05. 1931 in Kazanlak (Central Bulgaria). He graduated the former Biological-Geological-Geographical Faculty of St. Kliment Ohridski Sofia University in 1956.

In 1960 he defended his PhD Thesis 'Birds of Vitosha Mountain'. In 1970 he obtained the 'Senior Researcher' scientific degree at the Institute of Zoology of Bulgarian Academy of Sciences. During the next 16 years he was the Head of the Bulgarian Ringing Centre of the same Institute, where he retired in 1995.

Assoc. Prof. S. Donchev was the author of 90 scientific publications, 160 popular-science papers, and 3 ornithological books. He published his first scientific paper at age of 23. After Pavel Patev (1889-1951) and Nikolay Boev (1922-1985) he continued the exploration of Bulgarian bird fauna. Since the appearance of his study 'Materials on the systematics, ecology and biology of corvids in Bulgaria' (1958), S. Donchev left his name under a series of publications in dozens of countries through Europe, among them: 'Birds of Vitosha Mountain' (1961), 'Birds in Thrace Plain' (1964, in coauthor.), 'Birds of the Western Stara Planina Mountain' (1970), 'Birds of Central and Eastern Stara Planina Mountain' (1974), 'Birds in the Rose Valley' (1977), 'Birds of the Red Data Book of Shumen Region' (1994). All they were considerable contribution to the erasure one after other of the 'white spots' on our ornitho-geographical map.

Bonelli's Eagle, Spur-winged Lapwing, Caspian Tern, Red Phalarope, River Warbler, Paddyfield Warbler, Subalpine Warbler, Blue Rock-thrush, and Masked Shrike are only some of the birds species, recorded for first time in Bulgaria by S. Donchev. The record of Paddyfield Warbler is first one on the Balkan Peninsula. The breeding in Bulgaria of Sardinian Warbler, Masked Shrike, Blue Rock-thrush, Subalpine Warbler and Semi-collared Flycatcher have been proved for first time by Dr. Donchev too.

His studies however dealt not only with Bulgarian avifauna. He published two articles on bird fauna of Vietnam and North Korea and both of them contain faunistic contributions. Two species, Hen Harrier and Relict Gull have been recorded for first time in Vietnam.

An attestation of his scientific merits is Dr. Donchev's membership in some prestigious international scientific organizations as the International Waterfowl Working Group, the International Union of Game-biologists, the former International Council for Protection of Birds, etc.

During four decades Assoc. Prof. S. Donchev represented Bulgaria in many European international ornithological forums. Many times he attended and read his reports and contributions in Great Britain, Finland, France, Iran, Italy, Poland, Romania, the Netherlands, Germany, Russia, etc.

The last years of Assoc. Prof. S. Donchev's life passed in illnesses and loneliness. By his last days, although heavily stooping, he used to visit his younger colleagues and was interested in their scientific achievements. His name remains in the history of Bulgarian ornithology.

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