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## A new parasitoid species record for Turkish fauna *Spathius (Spathius) brevicaudis* Ratzeburg, 1844 (Hymenoptera: Braconidae: Doryctinae)

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**Abstract:** In order to determine Braconidae fauna of Turkey, adult specimens of Doryctinae (Hymenoptera: Braconidae) were collected from various habitats of the Turkish Marmara region using Malaise and light traps and sweeping nets. *Spathius (Spathius) brevicaudis* Ratzeburg, 1844 is recorded from Bursa, Cumalıkızık. It is new to the fauna of Turkey.

**Keywords:** Braconidae, Doryctinae, *Spathius*, Fauna, Bursa, Cumalıkızık.

### Introduction

The Doryctinae wasps represent a diversified and worldwide distributed group mainly comprises idiobiont, ectoparasitoid of xylophagous and bark-boring coleopteran larvae (Belokobylskij and Maeto, 2006). Although many doryctines attack beetle larvae in seeds, a few species are now known to be phytophagous in seeds or gall inducers in various tropical plants (Wharton and Hanson, 2005). More than 1300 doryctinae species have been described in 187 recognized genera belonging to 16 tribes, most of which are restricted to tropical and subtropical regions (Belokobylskij, 1992; Yu et al., 2016). Typical of wasps with this biology, their venom induces permanent flaccid host paralysis. They are important population regulatory factors of species of Coleoptera (Shaw and Huddleston, 1991). A relatively few species are involved in biological control, either through release or serendipitous utilisation of available harmful hosts (Quicke, 2015).

The Doryctinae fauna of Turkey is still rather poorly studied and only 61 species were recorded so far from 62 Turkish provinces (Schimitschek, 1939, 1941, 1944; Hedqvist, 1976; Belokobylskij, 2001; Beyarslan and Aydogdu, 2013; Beyarslan, 2015).

### Materials and Methods

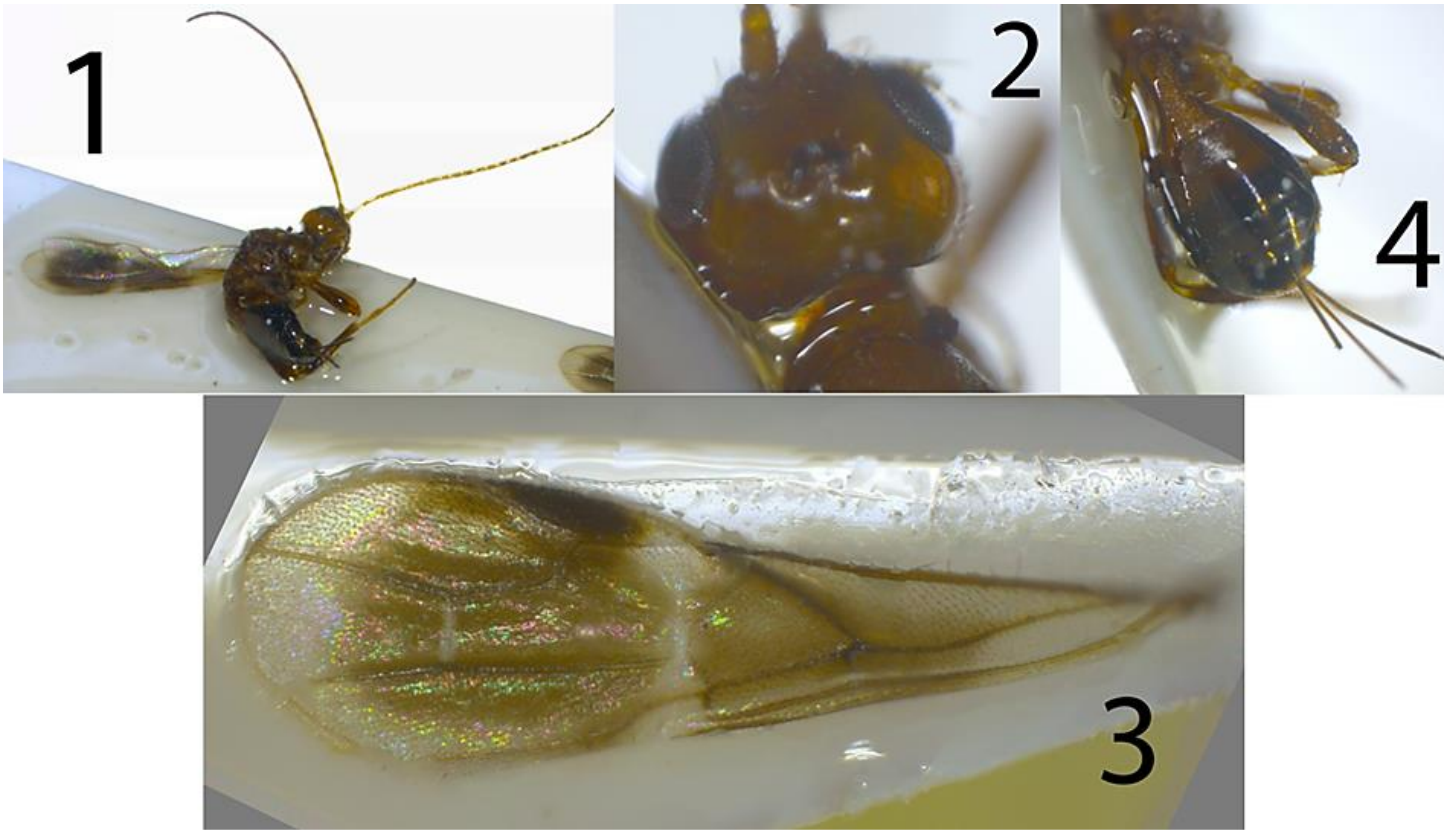
Adult specimens of Doryctinae were collected from vegetation under beech forest in Bursa-Cumalıkızık, Turkey. Sweeping nets were used to obtain samples on

grasstype plants. Collected samples were then pinned and labelled according to taxonomic rules and regulations. The specimens are deposited in the collection of the Zoological Museum of Department of Biology, Bitlis Eren University. The specimens were identified using the definitions or keys in Belokobylskij (1992, 2001), Belokobylskij et al. (2004), Beyarslan (2014), Hedqvist (1976), Marsh (1997), and Tobias (1986). For the terminology, van Achterberg (1993) was followed. Illustrations of the new record species were taken using a camera "Leica S8APO" attached to a stereomicroscope "Leica S8APO". The hosts of species are given according to Yu et al. (2016).

### Results

Doryctinae samples were collected from Bursa-Cumalıkızık village. Some of the samples were previously diagnosed and published (Beyarslan, 2015). Some of them were identified in this study and *Spathius (Spathius) brevicaudis* Ratzeburg, 1844 were described that is new record for the fauna of Turkey.

**Diagnosis:** Head cubical or transverse with roundish oral cavity, occipital ridge usually fully developed, vertex and temples smooth (Figs. 1, 2). Mesosoma not depressed, mesonotum with granulose sculpture, sides of mesosoma smooth in middle, length of mesosoma not more than 2 times as long as high. Prepectal ridge and sternauli usually developed. Legs short, hind femora 3 to 4 times as long as wide (Fig. 4). Wings developed, the fore wing is dark



Figures 1-4. *Spathius (Spathius) brevicaudis* Ratzeburg, 1844. (1) Habitus, (2) head (dorsal view), (3) fore wing, and (4) metasoma (dorsal view).

coloured and with two light coloured bands (Fig. 3). First metasomal tergite petiolate 2 times or more as long as wide at apex. Recurrent vein meets 2nd radiomedial cell, first radiomedial vein as long as 2nd section of radial vein or only slightly longer. Ovipositor not longer than metasoma (Fig. 4).

**Material:** Bursa, Cumalıkızık village, garden with *Tilia* sp., *Alnus* sp., *Carpinus* sp., *Castanea* sp., *Olea* sp., *Malus* sp., *Prunus* sp. and weeds. (40°10'37"N, 29°10'17"E), 253 m., 18.09.1992, 2♀♀, 1♂, leg. Ö. Çetin.

**Hosts: Coleoptera. Buprestidae:** *Agrilus viridis* Linnaeus, 1758. **Cerambycidae:** *Acanthocinus griseus* (Fabricius, 1792); *Anthaxia quadripunctata* (Linnaeus, 1758); *A. (A.) manca* (Linnaeus, 1767) [*Pinus sylvestris*]; *Arhopalus coreanus* (Sharp, 1905); *Exocentrus lusitanus* (Linnaeus, 1767). **Curculionidae:** *Blastophagus minör* (Hartig, 1834) [*Pinus maritima*]. *Carphoborus minimus* (Fabricius, 1798); *Ceutorhynchus pallidactylus* (Marsham, 1802); *Dryocoetes autographus* (Ratzeburg, 1837); *Hylesinus fraxini* (Panzer, 1779); *Ips acuminatus* (Gyllenhal, 1827); *I. typographus* (Linnaeus, 1758) [*Picea excelsa*]; *Lixus (Eulixus) bidens* Capiomont, 1874; *Magdalis (Magdalis) frontalis* (Gyllenhal, 1827); *M. (Magdalis) violacea*

(Linnaeus, 1758); *Niphades variegatus* (Faust, 1890); *Orthotomicus angulatus* (Eichhoff, 1876); *Phloeotribus rhododactylus* (Marsham, 1802); *Pissodes (Pissodes) castaneus* (De Geer 1775); *P. notatus* (Fabricius, 1775); *Pityogenes bidentatus* (Herbst; 1784) (Syn. *Bostrichus bidens*); *P. chalcographus* (Linnaeus, 1761) [*Picea excelsa*]; *Pityophthorus micrographus* (Linnaeus, 1758); *Polygraphus subopacus* Thomson, 1871; *Rhynchaenus quercus* (Linnaeus, 1758); *R. salicis* (Linnaeus, 1758); *R. testaceus* (Mueller, 1776); *R. fagi* (Linnaeus, 1758); *R. pilosus* (Fabricius, 1781); *Scolytus intricatus* (Ratzeburg, 1837); *S. koenigi* Scheyvrew, 1890 [*Acer platanoides*]; *S. laevis* Chapuis, 1869; *S. mali* (Bechstein, 1805); *S. multistriatus* (Marsham, 1802); *S. rugulosus* (Müller, 1818); *Shirahoshizo insidiosus* (Roelofs, 1875); *S. pini* Morimoto, 1962; *S. rufescens* (Roelofs, 1875); *Tomicus piniperda* (Linnaeus, 1758) [(Syn. *Blastophagus piniperda* (Linnaeus, 1758)]. **Hymenoptera. Xiphydriidae:** *Xiphydria longicollis* (Geoffroy, Turkey between 1979 and 2013).

#### Discussions

Adult specimens of Braconidae were collected from

various habitats of 62 provinces of Turkey between 1979 and 2013. However *Spathius (Spathius) brevicaudis* is recorded only from Bursa-Cumalıkızık. It can therefore be considered as rare species in Turkey. *S. (S.) brevicaudis* is an important population regulatory factors on species of forest pests. *S. (S.) brevicaudis* is known to have many host species. It includes 40 species belonging to Coleoptera (Buprestidae 1, Cerambycidae 5 and Curculionidae 35 species) an one species of Hymenoptera (Xiphydriidae) (Shaw and Huddleston, 1991). It is especially used for pest control of *Pinus maritima*, *P. sylvestris*, *Picea excelsa* and *Acer platanoides* in Turkey. The zoogeographical distributions of *S. (S.) brevicaudis* is 25 countries of Palearctic region (Yu et al. 2016). Therefore, the total number of Turkish Doryctinae species has reached from 61 to 62 (Beyarslan, 2015).

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