Short Communication

ACTA ZOOLOGICA BULGARICA
Acta zool. bulg., 71 (1), 2019: 145-147

Diopsidae (Schizophora: Acalyptrata) – a New Family for the Bulgarian Recent Dipterous Fauna

***Yordan Kutsarov*[1] *& Zdravko Hubenov*[2]**

[1] Kalimok-Brashlen Ltd., Tutrakan, Bulgaria; E-mail: kalimok@gmail.com
[2] National Museum of Natural History – Sofia, Bulgarian Academy of Sciences, 1 Tsar Osvoboditel Blvd., 1000 Sofia, Bulgaria; E-mail: zhubenov@nmnhs.com, zkhubenov@abv.bg

Abstract: The family Diopsidae is reported for the first time in Bulgaria: *Sphyracephala europaea* Papp & Földvári, 1997 has been found on the bank of the Danube River east of the town of Nikopol. Thus, the total number of the dipterous families occurring in Bulgaria reaches 107.

Key words: Diptera, *Sphyracephala europaea*, Diopsidae, Bulgaria, first record.

Introduction

The flies of the family Diopsidae are distributed in the tropics of the Old World. They have not been found in the Neotropical and Australian Regions. Most species (about 112) are known from the Afrotropical Region (Hennig 1973, Cogan & Shillito 1980). The world fauna includes 15 genera and c. 160 species (Nartshuk 2003, Ziegler 2003). Six recent species of the genus *Sphyracephala* Say, 1828 have been recorded in the Holarctic, five of them being common in the Palaearctic: *Sphyracephala europaea* Papp & Földvári, 1997 (described from Hungary); *S. babadjanidesi* Zaitzev, 1919 (described from Armenia); *S. nigrimana* Loew, 1873 (found in the Amur River Region of the Far East); S. *detrahens* (Walker, 1860) (found in Japan) and *S. beccarii* Rondani, 1873 (Afrotropical species that has penetrated into Algeria, thus having Afrotropical-Mediterranean distribution) (Ohara 1993, Papp et al. 1997, Simova-Tošić & Stojanović 1999). *Sphyracephala brevicornis* (Say, 1817) is known from the Nearctic (Peterson 1987) and *S. munroi* Curran, 1928 has an Afrotropical distribution (Cogan & Shillito 1980). Some authors accept the Holarctic distribution of the family Diopsidae as relict (Hennig 1941). In Europe, only *S. europaea* has been recorded.

Materials and Methods

Individuals of *Sphyracephala europaea* were observed and photographed during field trips in April and May 2015 east of the town of Nikopol, next to the rocky monastery St. Stefan (43°42'36.13"N; 24°54'50.86"E) on the limestone rocks along the Danube River (594 river km).

Sphyracephala europaea was found on the 20-25th of April 2015, at air temperature 10^{o}C and strong wind. There was a dark stain-like formation on the white rocks. From a short distance, this was identified as heaps of hundreds of flies around clefts in the rock (Figs. 1–3). Initially, thousands of specimens formed 4–5 large groups and much smaller groups in separate clefts in the rocks were observed. The swarms were in niches protected from the sun and the wind.

On the 2nd of May 2015, the locality was visited for the second time. The weather was sunny, with temperature over 15^{o}C. There were no big swarms on the rocks but small dispersed groups with a total number of 200–300 specimens. The groups were not dense as those observed during the first visit.

Results

The finding of *Sphyracephala europaea* in Bulgaria is of zoogeographical interest. This is the third find-

Fig. 1. Habitat of *Sphyracephala europaea* Papp & Földvári, 1997: rocks along the Danube River in the area of 594 river km. Photo: Y. Kutsarov.

Fig. 2. Swarm of *Sphyracephala europaea* in the clefts on the rocks. Photo Y. Kutsarov.

ing of the tropical family Diopsidae in Europe. Its representatives have specific morphology and differ distinctly from the other families. The distribution of *S. europaea* can be considered as South-Eastern-European. The species is known from Hungary and Serbia (Papp et al. 1997, Simova-Tošić & Stojanović 1999, Bystrowski et al. 2017). The finding of *S. europaea* in Bulgaria expands its range to the southeast. Thus, the total number of the dipterous families known from Bulgaria reaches 107.

Discussion

Sphyracephala europaea are small-sized flies with brown colour. Body is about 4 mm long. Dorsolateral head parts are extended out laterally in eyestalks. Head width is almost twice width of thorax. Frons narrowed dorso-ventrally and laterally restricted by the eyestalks. External vertical chaetae are near the eyes. Face is long, wide, almost triangular, moderately convex. Clypeus is short, vibrissae missing. Antennae are small, scapus and pedicellus short, rounded. Antennae and eyes are in distal part of the eyestalks. Antero-medial facets increased. Proboscis is short and thick. Thorax is relatively short and convex. Scutum is entering among the postpronotaula. Scutellum is convex with two apical-lateral processes. Wings are with dense microchaetae and two spots – centrally and distally. Costa without any break, extending slightly over M_{1+2}. Sc running close to R_1. R_{2+3}, R_{4+5} and M_{1+2} reach wing apex. Fore femur is swollen.

Fig. 3. Specimens of *Sphyracephala europaea* on the rocks. Photo Y. Kutsarov.

The larvae of this genus are saprophages, consuming dead organic matter. The stalk-eyed flies are found in wet places, along river banks, among herbaceous vegetation or shady rocks. They consume liquefied vegetable and animal remains. Sometimes, they can reach great numbers and form large groups of tightly nestled individuals.

The stalk-eyed flies avoid sunshine and retire in the shade. They appear to fly about but when approaching, they only crawled on the rock. The findings of hundreds of specimens in Hungary (Papp et al. 1997), Serbia (Simova-Tošić & Stojanović 1999) and Bulgaria in April to May and in October to November (spring-autumn activity) show that there could be mass developments of the species under certain conditions. In the three countries, the biotopes are similar, i.e. high banks near rivers. Unfortunately, the biology of this rare, described only 20 years ago species, is unknown.

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Received: 10.01.2018
Accepted: 13.08.2018