

**First record of *Oligoplectrum maculatum* (Fourcroy, 1785)
in Hungary (Trichoptera: Brachycentridae)**

K. MÁLNÁS, P. JUHÁSZ, Z. MÜLLER & B. KISS

BioAqua Pro Ltd., H-4032 Debrecen, Soó Rezső u. 21., Hungary.

*E-mail: malnask@gmail.com, juhaszp@bioaquapro.hu, mullerz@bioaquapro.hu,
bkiss@bioaquapro.hu*

Abstract – A larval specimen of *Oligoplectrum maculatum* (FOURCROY, 1785) was found in the Mura river (southern Hungary), which represents a species new to the Hungarian caddisfly fauna. Short description of the species and the sampling conditions are given. With 3 figures.

Key words – Trichoptera, Brachycentridae, *Oligoplectrum maculatum*, new record, Hungary.

INTRODUCTION

Previously two species of the family Brachycentridae were known from Hungary (NÓGRÁDI & UHERKOVICH 2002). In the course of a quantitative macrozoobenthos survey within the frame of the Hungarian National Biodiversity Monitoring System, one larval specimen of the caddisfly *Oligoplectrum maculatum* (FOURCROY, 1785) was found, and proved to be the first record of the species from Hungary.

MATERIALS AND METHODS

We found this species on the Mura river in the administrative area of Murakeresztúr (Zala county, in Hungary; WGS84 coordinates: N 46.35158, E 16.86736), on the 26th April, 2010. This collecting was carried out with quantitative, multi-habitat sampling method, which followed the Hungarian National Biodiversity Monitoring Sampling Protocol (JUHÁSZ *et al.* 2008). We followed the nomenclature of GRAF *et al.* (2008).

RESULTS

One larval specimen of *Oligopteryx maculatum* (FOURCROY, 1785) was collected from the river Mura. The investigated section of the river has a braided channel form. At the time of the sampling, the river was about 60 m wide, the mean current velocity was about 0,6m/s. The larva was found on the microlithal (80%) dominated sediment, with some akal and psammal. The rate of biotic habitats was low on the section, only some xylal and CPOM was observed.



Figs 1–3. *Oligopteryx maculatum* (FOURCROY, 1785): 1 = larva and case; 2 = thorax and head of larva from dorsal view; 3 = legs of the larva

DISCUSSION

Oligopteryx maculatum (FOURCROY, 1785) – known also in the combination of *Brachycentrus maculatus* (FOURCROY, 1785) – is distributed throughout Europe. It is a rheophilic caddisfly, characteristic to the meta-rithral-hyporithral sections of submontane, collinal rivers, but it occurs in fast flowing lowland rivers as well (GRAF *et al.* 2008, LEPNEVA 1966, NIELSEN 1936, 1943). It usually occurs in oligo- or mesosaprobic flowing waters (GRAF *et al.* 2002). The larvae demand sediment consisting of microlithal or macrolithal, but occasionally they are also found on wooden underlay.

The larvae attach their case to the solid substrate set against the current (LEPNEVA 1966, NIELSEN 1936, 1943). They are regarded as both passive filters and predators like the other *Brachycentrus* species (GRAF *et al.* 2002, 2008). The anatomy, biology and larval development of the species have been exhaustively studied (LEPNEVA 1966, NIELSEN 1936, 1943).

Oligoplectrum maculatum was mentioned by STEINMANN (1970) with unproved presence and as an unlikely occurring caddisfly species. Only NÓGRÁDI & UHERKOVICH (2002) cited this statement again, and no other mention was made of the species since then. *Brachycentrus maculatus* has data from Serbia (ŽIVIĆ *et al.* 2002, PAUNOVIĆ *et al.* 2006) and the neighbouring Slovenia (URBANIĆ 2008), so its appearance in Hungary was probable.

The larva of *Oligoplectrum maculatum* is easily distinguishable from the other two Hungarian species of Brachycentridae using the keys of WARINGER & GRAF (1997). Unlike *Micrasema setiferum* (PICTET, 1834), its second and third femora are clearly twice as long as the tibiae (Fig. 3.). Its case, circular in cross-section, is made of sand (Fig. 1), and the posterior margin of its head is angled (Fig. 2), unlike the larva of *Brachycentrus subnubilus* CURTIS, 1834. The main diagnostic trait that separates the larva from all other species of Brachycentridae in the area is a proximo-ventral process both on the tibia and tarsus of the second and third legs (Fig. 3) (ULMER 1909). For particular keys see DÉCHAMPS (1970), LEPNEVA (1966) and ULMER (1909).

*

Acknowledgements – We are grateful to the Ministry of Rural Development (Department of Nature Conservation) for supporting the survey within the frame of the Hungarian National Biodiversity Monitoring Programme. We would like to express our special thanks to ARNOLD MÓRA (Balaton Limnological Institute, Tihany) for making the bibliography available, and NOÉMI SOÓS (BioAqua Pro Ltd., Debrecen) for linguistic correction.

REFERENCES

- DÉCHAMPS H. 1970: Les larves de Brachycentridae (Trichoptera) de la faune de France. Taxonomie et écologie. – *Annales de Limnologie* 6: 51–73.

- GRAF W., GRASSER U. & WARINGER J. 2002: Trichoptera. Part III. – In: MOOG O. (ed.): *Fauna Aquatica Austriaca*. Wasserwirtschaftskataster, Bundesministerium für Land- und Forstwirtschaft, Umwelt und Wasserwirtschaft, Wien, 42 pp.
- GRAF W., MURPHY J., DAHL J., ZAMORA-MUÑOZ C. & LÓPEZ-RODRÍGUEZ M. J. 2008: Trichoptera. – In: SCHMIDT-KLOIBER A. & HERING D. (eds): *Distribution and Ecological Preferences of European Freshwater Organisms. Vol. 1*. Pensoft Publishers, Sofia-Moscow, 388 pp.
- JUHÁSZ P., KISS B. & MÜLLER Z. 2008: II. projekt: Vizes élőhelyek és közösségeik monitorozása (ÁNÉR besorolás U8, U9). Vízi makroszkopikus gerinctelenek mintavételi protokollja. [Project II: Monitoring wetlands and their communities. Sampling protocol of aquatic macro-invertebrates.] – http://www.termeszetvedelem.hu/_user/downloads/mintavetel/makrozoo_protokoll_uj_080218.pdf [Accessed: 17 July 2012.]
- LEPNEVA S. G. 1966: *Rucheyniki. Fauna SSSR. Tom II, vyp. 2. Lichinki i kukolki podotryada tshel'noshchupikovykh (Integripalpia)*. – Nauka, Moskva, Leningrad, 560 pp. [English translation: LEPNEVA S. G. 1971: *Trichoptera II – Larvae and Pupae of Integripalpia*. Smithsonian Institution and the National Science Foundation, by the Israel Program for Scientific Translations, Washington, D.C. 700 pp.]
- NIELSEN A. 1936: Das Eierlegen, der Laich und die Larven des 1. Stadiums von *Oligoplectrum maculatum* Fourcroy. – *Zoologischer Anzeiger* **113**: 255–266.
- NIELSEN A. 1943: Postembryonale Entwicklung und Biologie der rheophilen Köcherfliege *Oligoplectrum maculatum* Fourcroy. – *Kongelige Danske Videnskabernes Selskab, Biologiske Meddelelser* **19**(2): 1–87 pp.
- NÓGRÁDI S. & UHERKOVICH Á. 2002: Magyarország tegzesei (Trichoptera). (The caddisflies of Hungary (Trichoptera).) – In: *Dunántúli Dolgozatok (A) Természettudományi Sorozat* (Pécs) **11**: 1–386.
- PAUNOVIĆ M., JAKOVČEV-TODOROVIĆ D., SIMIĆ V., STOJANOVIĆ B. & PETROVIĆ A. 2006: Trophic relations between macroinvertebrates in the Vlasina river (Serbia). – *Archives of Biological Science* **58**(2): 105–114.
- STEINMANN H. 1970: Tegzesek – Trichoptera. – In: *Magyarország állatvilága (Fauna Hungariae)* **15, 19**. Akadémiai Kiadó, Budapest, 351 pp.
- ULMER G. 1909: Trichoptera. – In: BRAUER A.: *Die Süßwasserfauna Deutschlands. Vol. 5*. G. Fischer, Jena, 326 pp.
- URBANIČ G. 2008: Redelineation of European inland water ecoregions in Slovenia. – *Review of Hydrobiology* **1**: 17–25.
- WARINGER J. & GRAF W. 1997: Atlas der österreichischen Köcherfliegenlarven: unter Einschluss der angrenzenden Gebiete. – Facultas Universitätsverlag, Wien, 287pp.
- ŽIVIĆ I., MARKOVIĆ Z. & BRAJKOVIĆ M. M. 2002: First checklist of Serbian Trichoptera. – *Folia historico-naturalia Musei matraensis* **26**: 269–277.