

**NEW RECORD OF *TRECHUS RIVULARIS*
(GYLLENHAL, 1810) (COLEOPTERA, CARABIDAE)
FROM WEST POLISH POMERANIA (NW POLAND)**

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Abstract

New data on the occurrence of a very rare, critical endangered (category CR) species *Trechus rivularis* (Gyllenhal, 1810) (Carabidae) on the island Karsiborska Kępa in the delta of Świna. One specimen was collected in the reserve on the flood plain, covered with compact reed growth.

Key words: Coleoptera, Carabidae, new record, Baltic Sea coast, NW Poland

INTRODUCTION

Genus *Trechus* Clairville, 1806 is one of the richest carabid's taxon: more than 1000 species are described in Middle Europe (Lompe 2004). Currently taxon *Epaphius* Leach, 1819 is a part of the genus *Trechus* as a subgenus (Moravec et al. 2003). In subgenus *Epaphius* are known 30 species and 8 subspecies (Lorenz 2005). In Middle Europe it represented by *T. (Epaphius) secalis secalis* (Paykull, 1790) and *T. (Epaphius) rivularis* (Lompe 2004).

According to Pawłowski (1974) the Polish fauna contains 16 species: 14 in subgenus *Trechus* s.str. and 2 in subgenus *Epaphius*.

Actual distribution of *T. rivularis* in Poland is not well known (baza.biomap.pl/pl/taxon/species-trechus_rivularis/mapb). The records are old, after of 2000 it was registered in NE Poland mainly.

MATERIAL EXAMINED

One ♀ with fully developed wings; 28.07.2005, Poland, VV56, N53.85°, E14.37°, Karsiborska Kępa Reserve, flooded terrain, covered with compact reed growth, barber's trap, A. Zawal and P. Śmietana leg.

The collected specimen has been deposited in the collection of the Zoology Chair of the Pomeranian University in Słupsk.

RESULTS AND DISCUSSION

Trechus rivularis is an Euro-Siberian boreal-mountain species, postglacial relict (Pawłowski 2004). After Koch (1989) *T. rivularis* is stenotopical turfophilous sphagnicolous species. It is found seldom and sporadically, usually collected in low frequencies and low densities from wet habitats. The beetle lives in dense vegetation on peatlands, wet acid grasslands, half-bog riverside, moor-forest.

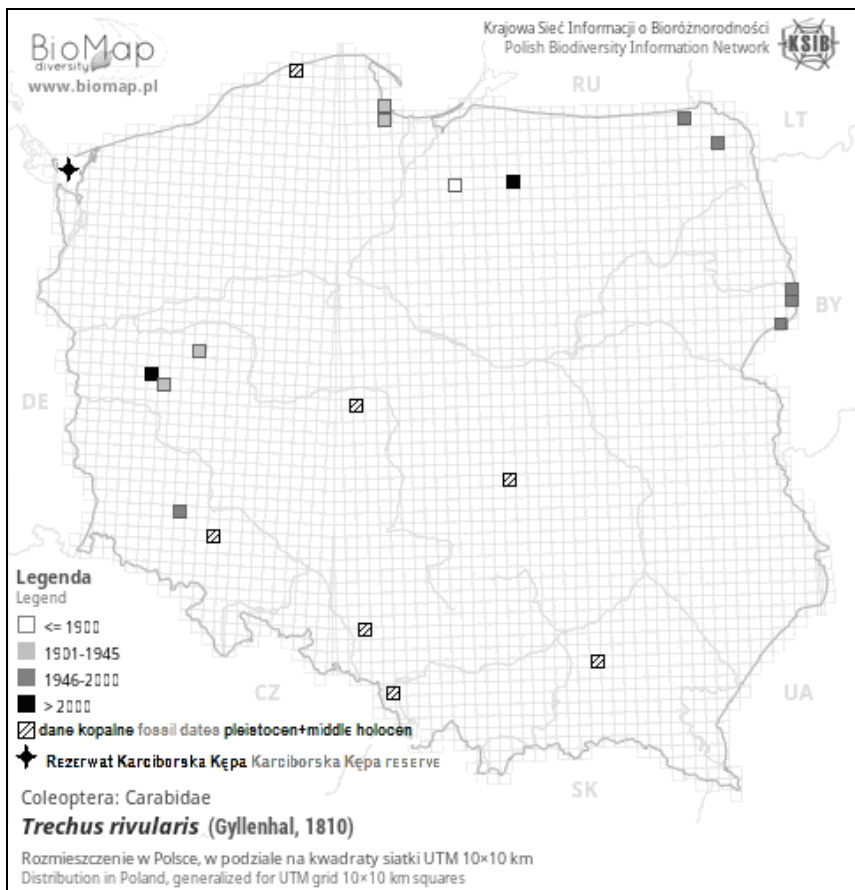


Fig. 1. Actual distribution of *T. rivularis* in Poland according to original and literature records

According Moravec et al. (2003) it is known in West Europe (Ireland, Great Britain, France, Belgian), Middle Europe (Germany, Czech Republic, Poland, Belarus, Lithuania, Latvia), North (Denmark, Sweden, Norway, Finland) and North-East Europe (Estonia, North-East and Central Russia). It is distributed to the east up to Middle Siberia.

In Poland it is known mainly from NE part (Fig. 1). The last findings from western Poland were derived from the vicinity of Legnica and Pątnowka, where the species caught until 1938 (Pawłowski 1975). Existing data allow supposing that *T. rivularis* survived exclusively on positions at the northeastern part of Poland, while others were destroyed as a result of drainage and cutting moor-forests (Pawłowski 2004). It is one of the reasons to add *T. rivularis* to Red Book of Poland with category CR – critically endangered (Pawłowski 2004).

At the same time one specimen *T. rivularis* was collected in sedge moor in Lower Silesia this year (Ruta et al. 2016). In West Poland it is the first record after 90 years.

In the Middle and West Europe it is very rare. *T. rivularis* included in the Red Lists of Germany as a very rare and endangered species (Trautner et al. 1997).

T. rivularis is more common in the east range in Europe. It is widespread and common in Belarus, especially in central and south parts, in different sedge moors and birch-sedge peat forests (Aleksandrowicz 2014).

Most numerous populations of *T. rivularis* are observed in the sedge marshes and swampy alder and birch forests in Belarus and Poland. Much less *T. rivularis* occurs in raised-bogs (Aleksandrowicz 2014).

In the west range *T. rivularis* specified mainly for the raised bogs, where it is really very rare. Perhaps this is due to the massive drainage of lowland sedge bogs in Western and Central Europe.

REFERENCES

- Aleksandrowicz O., 2014. Zhuzhelitsy (Coleoptera, Carabidae) zapada lesnoj zony Russkoj ravniny. Fauna, zoogeografija, ekologija, faunogenez. (Ground beetles Coleoptera, Carabidae west of the forest zone of the Russian Plain. Fauna, zoogeography, ecology, faunogenesis). Lambert Academic Publishing, Saarbrücken, (in Russian).
- Koch K., 1989. Die Käfer Mitteleuropas. Ökologie. (The Beetles of Middle Europe. Ecology). Goecke & Evers Verlag, Krefeld, (in German).
- Lompe A., 2004. Tribus: *Trechini*. In: Die Käfer Mitteleuropas. Band 2. Adepaga 1. Carabidae (Laufkäfer). (Tribe: *Trechini*. In: The Beetles of Middle Europe. Vol. 2. Adepaga 1. Carabidae Ground beetles). (Ed.) G. Müller-Motzfeld. Spektrum Akademischer Verlag, München, 108-149, (in German).
- Lorenz W., 2005. A systematic list of extant ground beetles of the world (Coleoptera “Geadephaga”: Trachypachidae and Carabidae incl. Paussinae, Cicindelinae, Rhysodinae). Published by the author, Tutzing.
- Moravec P., Uéno S.-I., Belousov I.A., 2003. Tribe Trechini Bonelli, 1810. In: Catalogue of Palaearctic Coleoptera. (Eds) I. Löbl, A. Smetana: Vol. 1, Apollo Books, Stenstrup, 288-346.
- Pawłowski J., 1974. Biegaczowate – *Carabidae*. Podrodziny *Bembidiinae*, *Trechinae*. Klucze do oznaczania owadów Polski. Część XIX: Chrząszcze – *Coleoptera*. Zeszyt 3b. (Ground

- Beetle – Carabidae. Subfamily *Bembidion*, *Trechinae*. The keys to the determination of Polish insects. Part 19: Beetles – Coleoptera. Notebook 3b). PWN, Warszawa, (in Polish).
- Pawłowski J., 1975. *Trechinae* (Coleoptera, Carabidae) Polski. Monografie Fauny Polski 4. (*Trechinae* Coleoptera, Carabidae of Poland. Monographs of Polish Fauna 4). PWN, Warszawa, (in Polish).
- Pawłowski J., 2004. *Epaphius rivularis* (Gyllenhal, 1810). In: Polska czerwona księga zwierząt. Bezkręgowce. (Polish red book of animals. Invertebrates). (Eds.) Z. Głowaciński, J. Nowacki. IOP PAN, Kraków, AR im. A. Cieszkowskiego, Poznań, 95-96, (in Polish).
- Ruta R., Orzechowski R., Aleksandrowicz O., Borowski J., Buchholz L., Komosiński K., Lubecki K., Przewoźny M., 2016. Chrząszcze (Insecta: Coleoptera) of Gryżyńskiego Parku Krajobrazowego. (Beetles (Insecta: Coleoptera) of Gryżyński Landscape Park). *Przegl. Przyr.*, 27, 2, 28-62, (in Polish).
- Trautner J., Müller-Motzfeld G., Bräunicke M., 1997. Rote Liste der Sandlaufkäfer und Laufkäfer Deutschlands (Coleoptera: Cicindelidae et Carabidae). (Red List of tiger beetles and ground beetles of Germany (Coleoptera: Cicindelidae et Carabidae)). *Naturschutz und Landschaftsplanung*, 29(9), 261-273, (in German).
- baza.biomap.pl/pl/taxon/species-trechus_rivularis/mapb

NOWE DANE O WYSTĘPOWANIU *TRECHUS RIVULARIS*
(GYLLENHAL, 1810) (COLEOPTERA, CARABIDAE)
NA POMORZU ZACHODNIM

Streszczenie

Przedstawiono nowe dane o występowaniu bardzo rzadkiego, skrajnie zagrożonego (kategoria CR) gatunku *Trechus rivularis* (Gyllenhal, 1810) z rodziny biegaczowatych (Carabidae) na wyspie Karsiborska Kępa w delcie Świny. Stwierdzono występowanie jednego okazu w rezerwacie na terenie zalewowym, pokrytym zwartą trzcinią.