

On the occurrence of *Odeles marginata* (FABRICIUS, 1798) (Coleoptera: Scirtidae) in the Polish lowlands

O występowaniu *Odeles marginata* (FABRICIUS, 1798) (Coleoptera: Scirtidae) na nizinach Polski

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ABSTRACT: Data on the occurrence of *Odeles marginata* in the Polish lowlands is summarized. A new finding of the species in the Pomeranian Lake District is reported. Notes on the biology and identification of the species are provided.

KEY WORDS: Scirtoidea, marsh beetles, new records.

Introduction

Odeles marginata is a marsh beetle widely distributed in Europe, ranging from Great Britain to Ukraine and from Scandinavia to Italy (KLAUSNITZER 2016). In central European countries it has been recorded mostly in mountainous areas. Larvae develop in running waters, adults can be found on vegetation along streams.

The species is relatively common in southern Poland (Fig. 1), with numerous records from the Sudety and Carpathian Mts. (BURAKOWSKI et al. 1983). It has recently been recorded in the Świętokrzyskie Mts. (BUCHHOLZ et al. 2021). In contrast, records in the lowlands are scarce. The present paper summarizes existing records of this species in the Polish lowlands and reports a new finding, confirming its occurrence in that part of the country.

Methods

Major institutional entomological collections in Poland, including the Museum and Institute of Zoology PAS in Warsaw (acronym: MIZ), the Institute of Systematics and Evolution of Animals PAS in Kraków, the Upper Silesian Museum in Bytom, and the Museum of Natural History, University of Wrocław, were examined in order to verify identifications of Scirtidae from Poland.

Field studies were conducted in various parts of the Pomeranian Lake District in the last two decades. Larvae were searched for throughout the year, and adults from May to July.

The division of Poland into faunistic regions is adopted after BURAKOWSKI et al. (1973), the meso-regions after SOLON et al. (2018). The map in Fig. 1 was generated with Gnomon software.

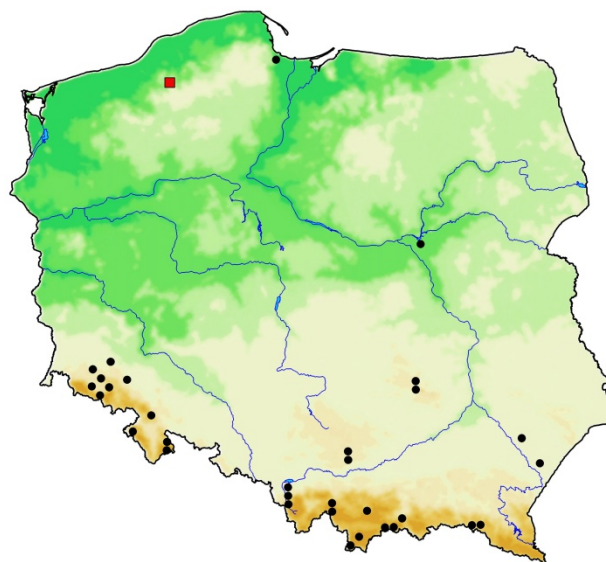


Fig. 1. Distribution of *Odeles marginata* in Poland, based on entomological collections examined by the author and his own records; the red square indicates the localities in the vicinity of Polanów.

Ryc. 1. Rozmieszczenie *Odeles marginata* w Polsce, na podstawie kolekcji entomologicznych zbadanych przez autora oraz własnych danych; stanowiska w okolicach Polanowa oznaczono czerwonym kwadratem.

Results

Historical records

Baltic Coast: Gdańsk (Danzig) (UTM: CF42), date and collector's name not given, coll. MIZ;

Mazovian Lowland: Czarna Struga (ED00), 15 V 1920, 1 ex., leg. Sz. Tenenbaum, coll. MIZ.

New records

Pomeranian Lake District: the Polanów area, nature reserve on the River Grabowa (XV19, 54.0882°N, 16.7412°E, Fig. 2), the River Grabowa and adjacent spring, 24 IX 2023, 1 larva, 29 III 2023, ca. 10 larvae, 12 V 2024, 2 adults, leg. & coll. R. Ruta; the Polanów area, the Kamienny Potok stream (XV19, 54.0933°N, 16.7293°E, Fig. 2), 12 V 2024, 1 adult, leg. & coll. R. Ruta.

Discussion

The occurrence of *Odeles marginata* in the Polish lowlands is confirmed with new findings in the Polanów area (faunistic region – Pomeranian Lake District, mesoregion – Bytów Lakeland). The two newly recorded localities are situated ca. 1 km from each other. Verification of voucher specimens in institutional entomological collections confirmed published records from the Baltic Coast and Mazovian Lowland. It is not known whether the specimen from Gdańsk (coll. MIZ) is the one collected by DOMMER on which the record published by LENTZ (1879) was based. TENENBAUM'S collection contained a specimen from Czarna Woda – a locality near Warsaw; it is most likely the one that TENENBAUM (1923) referred to. WAGNER (1941) published a record from Groß Särchen (i.e., Żarki Wielkie near Zielona Góra). The occurrence of *Odeles marginata* in the Polish lowlands is not surprising, as the species is known to occur in northern Germany. In contrast, there are no records from Lithuania, Latvia and Estonia. Although the species occurs in northern Poland, it is rather rare and has not been recorded in seemingly suitable habitats examined during the last two decades by the author.

The life cycle of *Odeles marginata* is semivoltine, and the adult emergence is short, synchronous and strictly unimodal (RASMUSSEN 1978, ZWICK & HECHT 2008). Larvae can be found on the surface of dead wood and stones submerged in streams. Pupation takes place in soil close to the water. In Poland, the adult flight period begins in May and ends in late July, peaking in the last 10 days of May (R. RUTA, unpubl. obs.). In the vicinity of Bonn (Germany), adults were recorded from the middle of May until the end of August, with a peak in June (CASPER 1980), and in Belgium from the end of April to the end of July (COULON 1987). Adults can be found on vegetation along streams or on stones,



Fig. 2. Habitat of *Odeles marginata*: the nature reserve on the River Grabowa (upper), and the Kamienny Potok stream (lower); photo R. RUTA, 12 V 2024.

Ryc. 2. Środowisko występowania *Odeles marginata*: Rezerwat na rzece Grabowej (górna fotografia) i Kamienny Potok, fot. R. RUTA, 12 V 2024.

where they tend to rest and fly from one stone to another (Fig. 3). Beetles were observed to feed on flowers of Apiaceae in Lower Silesia, Poland (R. RUTA, unpubl. obs.). *Odeles marginata* usually co-occurs with *Elodes minuta* (LINNAEUS, 1767).

The identification of adults of *Odeles marginata* is straightforward, despite the relatively broad variability of body coloration in this species. In comparison with *Elodes* spp., *Odeles marginata* has a more transverse pronotum (width/length > 1.7, in *Elodes* spp. < 1.5), shorter legs, smaller eyes, and the most common colour form is black with orange pronotal margins. The following characters make it easy to distinguish *Odeles marginata* larvae from larvae of *Elodes* and other species of *Odeles* (not occurring in Poland): anterior margin of 1st thoracic segment emarginate in *Odeles* but straight in *Elodes*, lateral portions of 2nd and 3rd thoracic segments posteriorly hooked in *Odeles* (Fig. 4, indicated by arrows).



Fig. 3. *Odeles marginata*, River Grabowa near Polanów. A beetle resting on a stone (upper left), a disturbed beetle (upper right); the same beetle preparing to take off (lower); photos R. RUTA, 12 V 2024.

Ryc. 3. *Odeles marginata*, rz. Grabowa k. Polanowa.

Osobnik w spoczynku na kamieniu (u góry po lewej), zaniepokojony (u góry po prawej) i szykujący się do odlotu (dolne fotografie), fot. R. RUTA, 12 V 2024.

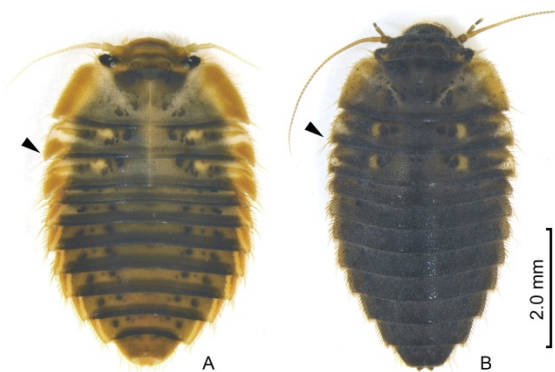


Fig. 4. Larvae of *Odeles marginata* (A) and *Elodes minuta* (B) from the River Grabowa near Polanów, photos R. RUTA.

Ryc. 4. Larwy *Odeles marginata* (A) i *Elodes minuta* (B) z rz. Grabowej k. Polanowa, fot. R. RUTA.

STRESZCZENIE

Odeles marginata jest przedstawicielem Scirtidae szeroko rozsiadłym w Europie. W środkowej części kontynentu występuje głównie w regionach górzystych. Larwy rozwijają się w wodach płynących, mają dwuletni cykl rozwojowy. Imagines pojawiają się między końcem kwietnia a lipcem, z największą liczebnością w późnym maju lub w czerwcu. Przebywają na roślinności przy brzegach strumieni bądź na wystających z wody kamieniach. W Polsce gatunek znany jest z wielu stanowisk

w południowej części kraju, głównie w Sudetach i Karpatach, ale także w Górach Świętokrzyskich. Stanowiska na niżu Polski są rzadkie. W zweryfikowanych przez autora kolekcjach znaleziono jedynie okazy dowodowe z Gdańska i Czarnej Strugi w okolicach Warszawy. W literaturze znane jest jeszcze stanowisko na Ziemi Lubuskiej, w miejscowości Żarki Wielkie, jednak nie udało się znaleźć okazów dowodowych z tej lokalizacji. W czasie badań terenowych prowadzonych na Pomorzu odnaleziono dwa stanowiska *O. marginata* położone ok. 1 km od siebie, w okolicach Polanowa (UTM: XV19), jedno na rzece Grabowej, a drugie na jej dopływie – strumieniu Kamienny Potok. Stanowiska te potwierdzają współczesne występowanie omawianego gatunku w niżowej Polsce.

REFERENCES

- BUCHHOLZ L., KOMOSIŃSKI K., MELKE A., SIKORA-MARZEC P. 2021. Beetles (Coleoptera) of the Świętokrzyski National Park. *Wiadomości Entomologiczne*, **40** (Suppl.): 1-274. [in Polish]
- BURAKOWSKI B., MROCKOWSKI M., STEFAŃSKA J. 1973. Beetles – Coleoptera, Biegaczowate – Carabidae, część 1. *Katalog fauny Polski*, **23** (2): 1-184.
- BURAKOWSKI B., MROCKOWSKI M., STEFAŃSKA J. 1983. Chrzęszcze Coleoptera. Scarabaeoidea, Dascilloidea, Byrrhoidea i Parnoidea. *Katalog fauny Polski*, **23** (9): 1-294.
- CASPERS N. 1980. Die Emergenz eines kleinen Waldbaches bei Bonn. *Decheniana-Beihefte*, **23**: 1-175.
- COULON G. 1987. Le genre *Elodes* Latreille, 1796 en Belgique (Coleoptera Scirtidae). *Bulletin et annales de la Société royale belge d'Entomologie*, **123**: 69-86.
- KLAUSNITZER B. 2016. Scirtidae. (pp. 412-425) [In:] LÖBL I., LÖBL D.: *Catalogue of Palaearctic Coleoptera. Volume 3, Scarabaeoidea, Scirtoidea, Dascilloidea, Buprestioidea, Byrrhoidea*. Leiden, Boston. Brill.
- LENTZ F.L. 1879. *Catalog der Preussischen Käfer neu bearbeitet. Beiträge zur Naturkunde Preussens*, **4**: 1-64.
- SOLON J., BORZYSZKOWSKI J., BIDLASIK M., RICHLING A., BADORA K., BALON J., BRZEZIŃSKA-WÓJCIK T., CHABUDZIŃSKI Ł., DOBROWOLSKI R., GRZEGORCZYK I., JODŁOWSKI M., KISTOWSKI M., KOT R., KRAŻ P., LECHNIO J., MACIAS A., MAJCHROWSKA A., MALINOWSKA E., MIGOŃ P., MYGA-PIĄTEK U., NITA J., PAPIŃSKA E., RODZIK J., STRZYŻ M., TERPIŁOWSKI S., ZIAJA W. 2018. Physico-geographical mesoregions of Poland: verification and adjustment of boundaries on the basis of contemporary spatial data. *Geographia Polonica*, **91** (2): 143-170.
- RASMUSSEN A.K. 1978. Livscyklus og habitat præference hos *Helodes marginata* Fabr. og *Helodes minuta* L. (Coleoptera), og de to arters udbredelse i Jylland. *Flora og Fauna*, **84**: 80-84.
- TENENBAUM Sz. 1923. Przybytki do fauny chrząszczyw Polski od roku 1913. *Rozprawy i Wiadomości Muzeum Dzieduszyckich*, **7-8**: 136-186.
- WAGNER H. 1941. I. Beitrag zur Kenntnis der Coleopteren-Fauna der Nieder-Lausitz. (Zugleich ein Reisebericht über die 2 ersten Exkursionen). *Märkische Tierwelt*, **4**: 233-277.
- ZWICK P., HECHT M. 2008. Life history and instar number of *Elodes minuta*, with notes on additional species (Coleoptera: Scirtidae). *Lauterbornia*, **62**: 79-88.

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