Contribution to the knowledge of Corylophidae (Coleoptera: Cucujoidea) of Poland

RAFAŁ RUTA *, ROBERT GAWRÓŃSKI **, PAWEŁ JALOSZYŃSKI ***, MAREK MIŁKOWSKI ****

* Department of Biodiversity and Evolutionary Taxonomy, Zoological Institute, Wrocław University, Przybyszewskiego 63/77, 51-148 Wrocław, Poland, e-mail: scirtes@biol.uni.wroc.pl
** Kasprowicza 8/4, 14-300 Morąg; e-mail: robgaw@poczta.fm
*** Wichrowe Wzg. 22/13, 61-678 Poznań, Poland, e-mail: scydmaenus@yahoo.com
**** Królowej Jadwigi 19/21, 26-600 Radom; e-mail: milkowski63@wp.pl

ABSTRACT. As a result of a faunistic survey of the family Corylophidae (Coleoptera: Cucujoidea) in Poland, distributions of 16 species are reviewed and new findings are reported. Clypastraea reitteri BOWESTEAD found in the Kozienice Forest (Małopolska Upland) and Orthoperus nikitskyi BOWESTEAD from Bystre ad Baligród (Bieszczady Mts.) are reported for the first time to occur in Poland. The latter species has been known from the holotype female only, collected in environs of Moscow, and the Polish specimen is the first known male of O. nikitskyi. Arthrolips nana (MULSANT & REY) is recorded for the first time from the Pomeranian Lake District, Masurian Lake District, Wielkopolska-Kujawy Lowland, and Mazovian Lowland; A. obscura (SAHLBERG) from the Trzebnickie Hills; A. picea (COMOLLI) from the Masurian Lake District, Wielkopolska-Kujawy Lowland, Małopolska Upland and Roztocze; Sericoderus lateralis (GYLLENHAL) from the Pomeranian Lake District and Trzebnickie Hills; Orthoperus atomus (GYLLENHAL) from the Wielkopolska-Kujawy Lowland and Świętokrzyskie Mts.; O. nigrescens STEPHENS from the Małopolska Upland, Lower Silesia and Świętokrzyskie Mts.; and O. rogeri KRAATZ from the Masurian Lake District and Sandomierska Lowland. The occurrence of O. atomarius (HEER) in Poland requires verification. An updated checklist of Central European species of Corylophidae is provided, supplemented with taxa possible to find in Poland, including expansive species and those frequently introduced to neighboring countries.

KEY WORDS: Coleoptera, Cucujoidea, Corylophidae, Poland, faunistics.
INTRODUCTION

Distributions of Polish species belonging to the beetle family Corylophidae are exceptionally poorly known. Certain identifications of European species were made possible only recently, when a comprehensive revision by BoweStead (1999) was published. This publication became a basis for review of Polish records, initiated in the present paper. Hitherto published distributional data concerning Polish Corylophidae are scarce, and a majority of previous reports requires verification.

As a result of a survey of museum collections, it was found out that even such a common and remarkable species as Corylophus cassidoides (MARSH.) has been frequently misidentified. Moreover, all data referring to the genus Orthoperus STEPH. reported before 1971, when the third volume of “Die Käfer Mitteleuropas” (Freude et al. 1971) was issued, must be carefully reviewed and verified. Corylophidae are typically very small beetles, and the tiny body size greatly facilitates accidental introductions and a capability of broadening geographic ranges of some species. Such a phenomenon has been recently noticed in Western Europe for Sericoderus brevicornis MATTHEWS and Arthrolips fasciata (ERICHSON, 1842) (BoweStead, pers. comm.). During our survey, an extremely rare species has been found, known so far only from the holotype specimen collected near Moscow; this case clearly shows how poorly known are the Corylophidae of Central Europe.

Corylophidae includes mycophagous beetles associated with molds, but little is known about feeding preferences of individual species. However, microhabitat preferences are fairly well known, and BoweStead (1999) recognized several ecological groups: Sericoderus lateralis, Orthoperus atomus and O. nigrescens can be found in grass heaps; O. corticalis under bark in deciduous and coniferous forests; O. corticalis, O. rogeri and Arthrolips obscura on fungi in deciduous forests; Clypastraea brunnea, C. reitteri, A. nana, A. obscura and O. corticalis around old deciduous trees, in litter and on twigs infested by fungi; O. atomus and O. punctatus in litter and nests made from the needles of spruce or pine; C. pusilla under bark of spruce and pine, especially trees damaged by fire; A. picea in hay in barns or fields; O. intersitus in the roots of plants on river banks; O. brunniipes and Corylophus cassidoides in litter in fens and wet fields; and O. atomarius on the internal walls of houses and in cellars. The most efficient collecting technique is sifting substrates in the microhabitats listed above, and picking beetles from epicortical and epixylic fungi or under fungoid bark of dying trees.

Determination of corylophids is difficult and as a rule is based on the microsculpture possible to correctly evaluate under magnification 90x and higher. Dissections and examination of the aedeagus or spermatheca is often necessary, which requires some experience with such small beetles.

The current paper presents data gathered within a few recent years of our collecting efforts, as well as several records from museum collections. Our review of available materials
resulted in recording from Poland 16 species of Corylophidae, and an occurrence of several others seems plausible (see the checklist below).

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Abbreviations: MM – M. MIŁKOWSKI; PJ – P. JAŁOSZYŃSKI; RG – R. GAWROŃSKI; RR – R. RUTA; MIZ – Museum and Institute of Zoology, Polish Academy of Sciences, Warsaw; MNHW – Museum of Natural History, Wroclaw University, Wroclaw. German versions of some Polish geographic names are additionally cited in brackets, in the form that appears on original labels.

CHECKLIST OF CORYLOPHIDAE OF CENTRAL EUROPE

The current knowledge of the Corylophidae occurring in Poland is very fragmentary and can be best described as initial. Several more taxa are nearly certainly possible to find, and some expansive species may in near future broaden their ranges and reach Central Europe. Therefore, the checklist presented below comprises Corylophidae not only reported to occur, but also those highly plausible to be found in Central Europe. Species recorded from Poland are typed in bold; * – occurrence in Poland possible; ! – newly recorded in Poland.

Corylophinae LECONTE, 1852

Parmulini POEY, 1854

_Clypastraea_ HALDEMAN, 1842

= _Sacium_ LECONTE, 1852

_Clypastraea brunnea_ (BRISOUL, 1863)

_Clypastraea orientalis_ (REITTER, 1877) (1)

_Clypastraea pusilla_ (GYLLENHAL, 1810)

!_Clypastraea reitteri_ BOWEAST, 1999

Arthrolips WOLLASTON, 1854

*Arthrolips convexiuscula_ (MOTSCHULSKY, 1849) (2)

= _Arthrolips aequale_ WOLLASTON, 1857

*Arthrolips hetschkoi_ (REITTER, 1913) (3)

_Arthrolips nana_ (MULSANT & REY, 1861)

_Arthrolips obscura_ (SAHLBERG C. R. 1833)

_Arthrolips picea_ (COMOLLI, 1837)

Sericoderini MATTHEWS, 1888

_Aposericoderus_ PAULIAN, 1950

_Aposericoderus revelieri_ (REITTER, 1878) (4)
Sericoderus Stephens, 1829  
_Sericoderus brevicornis_ Matthews, 1890 (5)  
_Sericoderus lateralis_ (Gyllenhal, 1827)  
Corylophini LeConte, 1852  
_Corylophus_ Stephens, 1833  
*Corylophus cassidoides_ (Marsham, 1802)  
*Teplinus sublabilis* Jacquelin du Val, 1859 (6)  
Teplini PAKALUK, ŚLIPINSKI & LAWRENCE, 1994  
*Teplinus velatus* (Mulsant & Rey, 1861) (7)  
Orthoperinae Jacquelin du Val, 1857  
_Orthoperus_ Stephens, 1829  
*Orthoperus aequalis* Sharp, 1885 (8)  
*Orthoperus atomarius* (Heer, 1841)  
*Orthoperus atomus* (Gyllenhal, 1808)  
*Orthoperus brunnipes* (Gyllenhal, 1808)  
*Orthoperus corticalis* (Redtenbacher, 1849)  
= mundus s. auct.; _Orthoperus punctatus_ Matthews, 1885; _Orthoperus improvisus_  
Bruce, 1946  
*Orthoperus intersitus* Bruce, 1951 (9)  
*Orthoperus nigrescens* Stephens, 1829  
= _Orthoperus mundus_ Matthews, 1885  
Orthoperus nikitskyi Bowestead, 2000  
(Orthoperus pilosiusculus Jacquelin du Val, 1859) (10)  
*Orthoperus punctatus* Wankowicz, 1865  
*Orthoperus rogeri* Kraatz, 1874  
= _Orthoperus punctatus_ Reitter, 1876  
Rypobiinae Paulian, 1950  
Rypobini Paulian, 1950  
_Rypobius_ LeConte, 1852  
_Rypobius praetermissus_ Bowestead, 1999 (11)  

1) Known from S Europe, introduced in Germany.  
2) Erroneously reported from the Pomeranian Lake District, but occurrence in Poland plausible.  
3) Northernmost in Hungary, Romania and Ukraine.  
4) Northernmost in Hungary and Romania.  
5) Spreading quickly in England.  
6) Reported from UK, Switzerland, France and Germany.  
7) Northernmost in Hungary and Ukraine.  
8) Expansive, reported from UK, Switzerland and France.
9) Known from Hungary and Germany; records from Poland were probably based on erroneous identifications.
10) Mediterranean, reported from S Poland.
11) Reported from UK, Austria, Bulgaria, Hungary.

REVIEW OF SPECIES

*Clypastraea brunnea* (BRISOUT, 1863)

**Lower Silesia:** Zimna Woda [Kaltw.] (WS78), 2 exx., ex coll. KOŁBE, coll. MNHW. In Poland reported only from Lower and Upper Silesia (BURAKOWSKI et al. 1986). KOŁBE (1908) recorded *C. brunnea* from „Wasserwald bei Kaltwasser”; it is not entirely clear whether the specimens listed above come from that locality or not. Ninety years have passed since this rare species had been reported to occur in Poland.

*Clypastraea pusilla* (GYLLENHAL, 1810)


*Clypastraea reitteri* BOWESTEAD, 1999

**Małopolska Upland:** Kozienice Forest, Dąbrowa Kozłowska (EC10), 17 IV 2007, 1 ex. taken in sweeping net from *Cytisus scoparius* (L.) on a forest edge, leg. MM.

Species new in Poland, previously known from Austria, Czech Rep., Slovakia, Hungary, Italy, the Balkans and Turkey (BOWESTEAD 2007). The new finding is the northernmost locality within the known range of this species.

*Arthrolips nana* (MULSANT & REY, 1861)

**Pomeranian Lake District:** Pila-Koszyce (XU19), at Koszyce Reservoir, spring complex, *Cardamino-Alnetum glutinosae* (MEIER-DREES 1936) PASSARGE 1968, 3 VII 2001, 1 ex. in sweeping net, leg. RR. Tuczno vic. (WU79), spring complex at the Liptowskie Lake, 28 V 2006, 2 exx. in sweeping net, leg. RR. **Masurian Lake District:** Jawty Wielkie (CE85), 20 V 2005, 1 ex., leg. RG. **Wielkopolska-Kujawy Lowland:** Głębowice (XT20), palace park, 31 III 2007, 3 exx. from dead *Viscum* sp. on a pine, leg. et cult. RR. **Mazovian Lowland:** Kozienice Forest, Przejazd (EC20), 25 IV 2004, 2 exx. from *Viscum* sp. on a fir, leg. et cult. MM.
Previously recorded from Lower and Upper Silesia (BURAKOWSKI et al. 1986). Recently reported to occur in the Łęczczak Nat. Res. within Upper Silesia (SZAFRANIEC, SZOLTYS 1997) and the forest district Cisów in the Świętokrzyskie Mts. (BYK 2007). New for the all above-listed regions.

**Arthrolips obscura (SAHLBERG C. R, 1833)**

**Lower Silesia:** Małczyce [Malsch] (XS07), 1 ex., ex coll. KOLBE, coll. MNHW; Dunino [Dohnau] (WS76), 1 ex., ex coll. KOLBE, coll. MNHW. **Trzebnickie Hills:** Siemianice [Schimmemlwie] (XS38) ad Oborniki Śląskie, 4 exx., ex coll. KOLBE.

For a long time this species has been known only from Lower Silesia and the Western Beskidy Mts. (BURAKOWSKI et al. 1986); recently found also in the Czerkies Nat. Res. in Roztocze (BOROWIEC & IWAN 1989) and Koło in the Wielkopolska-Kujawy Lowland (MAJEWSKI 1994). Herein recorded for the first time from the Trzebnickie Hills.

**Arthrolips picea (COMOLLI, 1837)**


In the catalogue by BURAKOWSKI et al. (1986) this species was reported only from Ustroń in the Western Baskidy Mts. However, this record is questionable due to lack of specimens in the LETZNER Collection (cf. BURAKOWSKI et al. 1986). Recently found in the Białowieża Primeval Forest (BOROWIEC et al. 1992). Herein newly recorded from the Masurian Lake District, Wielkopolska-Kujawy Lowland, Małopolska Upland and Roztocze.

**Sericoderus lateralis (GYLLENHAL, 1827)**

**Pomeranian Lake District:** Złotów (XV31), Góra Żydowska hill 31 VIII 2002, 1 ex., leg. RR. **Masurian Lake District:** Maldyty (DE17), 2 XI 2003, 1 ex., 10 XII 2003, 1 ex., 23 III 2005, 2 exx., leg. RG; Florczaki (DE36), 17 XII 2006, 1 ex. in rotten wood of Quercus sp. with a colony of *L. fuliginosus* (LATR.), leg. RG; Ruś (DE36), 11 X 2006, 6 exx., leg. RG. **Wielkopolska-Kujawy Lowland:** Rogalin (XT38), 30 IX 2006, 3 exx. sifted from leaf litter, leg. M. PRZEWÓŻNY; Prawomyśl vic. (XU28), 31 III 2002, 1 ex. in decaying plant debris, 23 VII 2003, 4 exx., leg. RR; Buczyna Skoroszowska ad Skoroszów (XS59), 16 VIII 2006, 3 exx. in a beech forest, leg. K. ŻUK. **Lower Silesia:** Wrocław-Wojnów (XS56), 20 VIII 1989, 2 exx., 16 V 1993, 1 ex., 1 V 2005, 1 ex., leg. L. BOROWIEC; Wrocław-Świniary (XS37), 29 IX 1992, 1 ex., leg. L. BOROWIEC. **Trzebnickie Hills:** Trzebnica, city center (XS48), 15 III 2008, 2 exx. in a dead poplar, leg. K. ŻUK & RR.
Świętokrzyskie Mts.: Klonów Range, forest compartment 124 (DB84), 7 VII 2007, 3 exx. sifted at a wildlife feeder, leg. RR & M. Wanan. Roztocze: Florjanka (FB30), 10 V 1913, leg. F. Feifer, coll. MIZ.

Burakowski et al. (1986) reported this species from the Baltic Coast, Mazovian Lowland, Lower and Upper Silesia, Roztocze, the Western Sudety Mts. and the Eastern Beskidy Mts. Recently found in the Białowieska Primeval Forest (Borowiec et al. 1992), Lidzbark Warmiński in the Masurian Lake District (Majewski 1994), Bielinek nad Odrą Nat. Res. (Kubisz 1994), the forest district Cisów in the Świętokrzyskie Mts. (Byk 2007) and the Byszewickie Hills in the Noteć Riv. valley within Wielkopolska-Kujawy Lowland (Ruta 2007). Herein newly recorded from the Pomeranian Lake District and the Trzebnickie Hills.

**Corylophus cassidoides** (Marsham, 1802)

**Baltic Coast:** Pogorzela vic. ad Niechorze (WV09), 8-9 VII 2001, 2 exx. in a flood debris, leg. RR. **Pomeranian Lake District:** Piła (XU19), Bagno Dolaszewo, fen, 3 V 2001, 1 ex., leg. RR. **Masurian Lake District:** Maldyty (DE17), 14 X 2003, 1 ex. in rotten wood and fungi on a dead, standing maple tree, 31 III 2004, 2 exx., leg. RG; Prośno (DE36), 25 III 2007, 1 ex., leg. RG; Morag-military range (DE37), 2 XII 2006, 2 exx., leg. RG. **Wielkopolska-Kujawy Lowland:** Dzembówko vic. (XU28), spring 2002, a few dozens exx. in an abandoned bird nest in a bush, leg. RR; Dzembówko (XU28), meadows and banks of the Noteć Riv., 29 IV 2006, 1 ex., leg. RR; Piła-Kalinia (XU18), near the Gwda Riv., 16 III 2002, 3 exx. sifted, leg. RR; Promno ad Poznań (XU51), 14 III 1999, 1 ex., leaf litter, leg. PJ; 27 III 1999, 1 ex., leaf litter, leg. PJ. **Mazovian Lowland:** Morzynek ad Warszawa (EC07), 1 I 1960, 5 exx. sifted from a dried matt of grass and leaves, leg. B. Burakowski, coll. MIZ. **Kraków-Wieluń Upland:** Będkowska Valley (DA15), near “Dupa Słonia” rock, 21 V 2006, 1 ex., leg. RR. **Lower Silesia:** Wrocław-Wojnów (XS56), VI 1990, 2 exx., leg. L. Borowiec, 22 IV 2006, 1 ex., leg. K. Żuk, 31 V 2008, 1 ex., leg. RR; Wrocław-Mokry Dwór (XS45), 17 IV 1994, 2 exx., leg. J. Kania; Wrocław-Rędzin (XS37), 22 IV 1993, 1 ex., leg. L. Borowiec. **Eastern Beskidy Mts.:** Słonne Mts., Góra Sobień (EV98), 25 VI 2008, 1 ex., leg. RR.

Burakowski et al. (1986) reported this species to occur in the Baltic Coast, Pomeranian Lake District, Wielkopolska-Kujawy Lowland, Lower and Upper Silesia, Kraków-Wieluń Upland, Sandomierska Lowland, and Eastern Beskidy Mts. Bercio & Folwaczny (1979) reported this species from Masurian Lake District. Recently found in the Mazovian Lowland and Wielkopolska-Kujawy Lowland (Majewski 1994).

**Orthoperus atomarius** (Heer, 1841)

This species has been recorded from the Masurian Lake District, Białowieża Primeval Forest and Lower Silesia in the XIXth century (Burakowski et al. 1986, Kubisz 2001). According to Bercio & Folwaczny (1979), the record from Masurian Lake District (Kętrzyn) was based on misidentified specimen of Clambus punctulum Beck. In the Natu-
ral History Museum, Wrocław University two specimens of *O. atomarius* are preserved, labeled „Breslau POLENTZ”. However, „Breslau” (a German name of Wrocław) may refer not to the locality where the specimens have been found, but to the place where the collection has been deposited (WANAT, pers. comm.). Therefore, the occurrence of this species in Poland requires verification.

**Orthoperus atomus** *(GYLLENHAL, 1808)*


BURAKOWSKI et al. (1986) reported this species from the Baltic Coast, Pomeranian Lake District, Lower and Upper Silesia, Kraków-Wieluń Upland, Lublin Upland, Western Sudety Mts., as well as from the Western and Eastern Beskidy Mts. Records from Masurian Lake District were reported by BERCIO & FOLWACZNY (1979). More recently, *O. atomus* has been found in the Białowieża Primeval Forest (BOROWIEC et al.1992; BOROWIEC & KANIA 1993), Mazovian Lowland (MAJEWSKI 1994), Kraków-Wieluń Upland (KUBISZ 1994), Bieszczady Mts. (BOROWIEC & KANIA 1995), Upper Silesia (SZAFRINGEJ & SZOLTYŚ 1997, SZAFRINGEJ et al. 1999, GUTOWSKI et al. 2006) and Biebrzański N.P. (GUTOWSKI et al. 2006). Newly recorded from Wielkopolska-Kujawy Lowland and Świętokrzyskie Mts.

**Orthoperus brunnipes** *(GYLLENHAL, 1808)*

**Masurian Lake District:** Maldyty (DE17), 10 III 2007, 1 ex., leg. RG. **Wielkopolska-Kujawy Lowland:** Burakow (DE17), 13 March 2007, 5 exs., leg. RG. **Świętokrzyskie Mts.:** Klonów Range, forest compartment 124 (DB84), sifted at a wildlife feeder, 7 VII 2007, 7 exx., leg. RR.

BURAKOWSKI et al. (1986) reported *O. brunnipes* from the Pomeranian Lake District, Upper and Lower Silesia, Małopolska Upland and the Western Sudety Mts. Recently found in the Świętokrzyski N.P. (BOROWSKI 2007). Recorded from two localities in the Masurian Lake District by BERCIO & FOLWACZNY (1979).
**Orthoperus corticalis (REDTENBACHER, 1849)**


This species can be found in former publications under the name *Orthoperus mundus* Matth. In the Catalogue of Fauna of Poland (Burakowski et al. 2000) *O. corticalis* was listed from the Wielkopolska-Kujawy Lowland, Mazovian Lowland, Białowieża Primeval Forest, Lower Silesia, Małopolska Upland, Roztocze and Western Sudety Mts. Bercio & Folwaczny (1979) reported (*as improvisus* Bruce) the locality in Masurian Lake District. Recently reported to occur in Mt. Złota Góra in the Ojcowski N.P. (Kubisz, Pawłowski 1998), Bieszczady Mts. (Kubisz et al. 1998), Białowieża N.P. and the Koziennicka Forest (Gutowski et al. 2006), as well as from the Świętokrzyski N.P. and the forest department Cisów (Świętokrzyskie Mts.) (Borowski 2007). Newly recorded from Pomeranian Lake District, Trzebnickie Hills and Lubelska Upland.
**Orthoperus nigrescens STEPHENS, 1829**


So far reported to occur in the Masurian Lake District, Wielkopolska-Kujawy Lowland and Białowieża Primeval Forest (BURAKOWSKI et al. 2000). Most recently recorded from the Malta Lake in Poznań (PRZEWÓZNY 2007). Herein newly found in the Małopolska Upland, Lower Silesia and Świętokrzyskie Mts.

**Orthoperus nikitskyi BOWESTEAD, 2000**

Bieszczady Mts: Bystre ad Baligród (EV96), near a stream, 26-28 VI 2008, 1 ex. in a plant debris under stones, leg. RR, det. et coll. S. BOWESTEAD.

This species has been described from the environs of Moscow on the basis of a single female. The specimen from the Bieszczady Mts. is the first known male of *O. nikitskyi*. Biology remains unknown; the holotype has been collected in a flight intercept trap. Orthoperus nikitskyi is most similar to *O. acariformis* REITTER, which is the only other globose Palaearctic *Orthoperus* with smooth and shining elytral interspaces. These two species can be separated by the following characters:

- **Body length 0.85-0.95 mm, fully winged.......** *O. nikitskyi*
- **Body length <0.70mm, micropterous..........** *O. acariformis*
**Orthoperus punctatus** WANKOWICZ, 1865

Species reported from Lower and Upper Silesia, Kraków-Wieluń Upland and Eastern Beskidy Mts. by BURAKOWSKI et al. (1986), and recently found in the Białoświe Primeval Forest (BOROWSKI 2001), Biebrzański N.P. (GUTOWSKI et al. 2006) and Świętokrzyski N.P. (BOROWSKI 2007).

**Orthoperus rogeri** KRAATZ, 1874

*Masurian Lake District*: Niedźwiedzie Wielkie Nat. Res. (DE17), 6 XI 2004, 1 ex. sifted from a hollow beech tree, leg. RG.


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