

Leiodidae (Insecta: Coleoptera) of the environs of Radom

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ABSTRACT: New faunistic data on the occurrence of 34 Leiodidae species in the environs of Radom (E Poland) is presented. The occurrence of *Agathidium nudum* in Poland is confirmed with new data. Several other rarely encountered species are reported, including *Catops nigriclavis*, *Choleva sturmii*, *Agathidium mandibulare*, *Liodopria serricornis*, *Leiodes bicolor*, *L. oblonga*, *L. rubiginosa*, and *Platypsyllus castoris*. Difficulties with identification of Central European Leiodidae are briefly discussed. To facilitate identification of *Ptomaphagus* species known from Poland, figures of aedeagi and spermathecae are provided.

KEY WORDS. Coleoptera, Leiodidae, E Poland, new records, identification.

Introduction

Leiodidae comprises over 140 species in the national fauna, many of which are rarely encountered. The knowledge about the occurrence of this family in Poland is very fragmentary, which to a large extent results from the diversified biology of its representatives and distinctive and at the same time poorly recognised habitat selections of some of the species. In recent years, a number of studies devoted solely to the family have been published (SZOLTYS 1997, KILIAN & BOROWIEC 1998, JAŁOSZYŃSKI & KONWERSKI 2002, RUTA 2003, KONWERSKI and SIENKIEWICZ 2005, BUCHHOLZ & all. 2008, JAŁOSZYŃSKI & all. 2008, MAĐRA & all. 2010, JAŁOSZYŃSKI and SIENKIEWICZ 2011, JAŁOSZYŃSKI & all. 2013), yet there is still no modern studies with conclusions and revisions, which hinders the research on the family (cf. Discussion).

The following paper constitutes a recapitulation of the knowledge on Leiodidae from the environs of Radom, with its significant emphasis put on the data derived from the Koziennicka Forest, which belongs to the network of Natura 2000 (PLH140035). According to the tentative division, established by the Catalogue of Polish Fauna, the discussed

environs of Radom belong to the Mazovian Lowland and the Małopolska Upland.

The degree to which the coleopterofauna of the environs of Radom has been studied is still unsatisfactory. So far to the relatively well-recognised beetle families, the following can be included: longhorn beetles, (Cerambycidae) (MILKOWSKI 2004, MILKOWSKI & all. 2008), jewel beetles (Buprestidae) (GUTOWSKI & MILKOWSKI 2008) and pill beetles (Byrrhidae) (PRZEWOŻNY & MILKOWSKI 2010). A little less-known are Scarabaeoidea, Histeridae, Dermestidae, Malachiinae, Mycetophagidae, and Anthribidae (BIDAS & MILKOWSKI 2005, MILKOWSKI & RUTA 2005, MILKOWSKI & RUTA 2008, RUTA & all. 2011, RUTA & all. 2012, WANAT & all. 2011). Beetles from other families are poorly studied, and the data on their localities are fragmentary and dispersed. The only data on the localities of Leiodidae in the environs of Radom can be found in the studies by GUTOWSKI & all. (2006). They were collected during the research conducted in pine forests in the northeastern part of the Kozienicka Forest (Dobieszyn and Kozienice Forest Inspectorates). The authors identify the following species: *Anisotoma axillaris* GYLLENHAL, 1810, *A. castanea* (HERBST, 1792), *A. glabra* (FABRICIUS, 1787), *A. humeralis* (FABRICIUS, 1792), *Agathidium seminulum* (LINNAEUS, 1758) and *Sciodreporoides watsoni* (SPENCE, 1815).

If not stated otherwise, the data used in the following paper were collected by Marek MILKOWSKI and marked by Rafał RUTA. The evidence specimens belong to the authors' private collections.

Species overview

Nemadus colonoides (KRAATZ, 1851)

- The Mazovian Lowland, the Kozienicka Forest: EC10 Dąbrowa Kozłowska: 28 X 2005 (1 ex.), 13 X 2006 (2 exx.), in a decayed wood at the base of an oak, leg. MM; EC20 Huta, 6 XI 2005, 1 ex., in litterfall at the base of a pendunculate oak, leg. MM; EC30 Zagożdżon Res., 16 XII 2007, 3 exx., in litterfall at the base of an old oak, leg. MM; EC40 Garbatka-Letnisko, 19 X 2013, 1 ex., in the ground-level hollow of an oak, leg. MM.
- The Małopolska Upland: EB09 Radom-Las Kapturski, 14 XI 2004, 1 ex., in the tree hollow of a black locust, leg. MM; EB09 Radom-Borki, 8 VIII 2011, 1 ex., in the ground-level hollow of an oak, leg. MM; The Kozienicka Forest, EC10 Wola Owadowska, 17 X 2006, 2 exx., an old mill in Wolica, in the decayed log of a chestnut tree, leg. MM; EB19

Radom-Rajec Szlachecki, 25 XI 2012, 2 exx., „Czarna Miedza”, an alder forest, in the ground-level hollow of a black alder, leg. MM.

The species is known from dispersed localities in Poland (BURAKOWSKI & all. 1978); however, it is more frequent than the literature data suggest.

Catops fuliginosus ERICHSON, 1837

- The Mazovian Lowland, the Kozienicka Forest: EC20 Kieszek, 25 V 2009, 1 ex., in understory, leg. MM; EC20 Jaśce, 4 X 2014, 1 ex., on the leaf of a blackberry in a mixed coniferous forest, leg. MM.
- The Małopolska Upland: EB19 Radom-Gołębiów: 18 X 2007 (1 ex.), 8 X 2008 (1 ex.), 20 XI 2009 (1 ex.), 25 IX 2014 (1 ex.), 2 X 2014 (1 ex.), 21 X 2014 (1 ex.), 16 I 2015 (1 ex.), the area of a thermal power station, apx. 8°C leg. MM.

The species is considered as frequent in Poland (SZYMCZAKOWSKI 1961); new for the Małopolska Upland (BURAKOWSKI & all. 1978).

Catops morio (FABRICIUS, 1787)

- The Małopolska Upland: EC10 Radom-Nowa Wola Gołębiowska, 17 III 2005, 1 ex., behind a sewage plant, on a dead willow branch, leg. MM; EB09 Janiszew ad Radom, 13 VII 2004, 2 exx., at the entrance to a fox burrow, leg. MM; EB08 Trablice ad Radom, 30 IV 2011, 1 ex., by the side of a road, dead, leg. MM; EB08 Radom-Potkanów, 22 XI 2014, 1 ex., in the decayed log of a willow, thicket by a railway track, leg. MM.

Not uncommon in Poland (SZYMCZAKOWSKI 1961), new for the Małopolska Upland (BURAKOWSKI & all. 1978).

Catops nigricans (SPENCE, 1815)

- The Mazovian Lowland, the Kozienicka Forest: EC10 Wojciechów, 6 X 1999, 1 ex., in a Barber trap filled with glycol, leg. MM.
- The Małopolska Upland: EC10 Radom-Krzewień, 30 X 2004, 1 ex., on a field road, leg. MM; EB19 Radom-Gołębiów, 24 XI 2011, 1 ex., the area of a thermal plant station, leg. MM.

The species often recorded from Poland (SZYMCZAKOWSKI 1961, JAŁOSZYŃSKI & all. 2008).

Catops nigriclavus GERHARDT, 1900

- The Małopolska Upland: EB19 Radom-Gołębiów, 25 X 2010, 1 ex., on a rotting fungus in thicket, leg. MM.

The species rarely recorded from Poland (BURAKOWSKI i in. 1978); its last known occurrence was confirmed from the Wielkopolsko-Kujawska Lowland (JAŁOSZYŃSKI & all. 2008). New for the Małopolska Upland.

Catops picipes (FABRICIUS, 1787)

- The Mazovian Lowland, the Kozienicka Forest: EC30 Januszno, 2 X 2004, 1 ex., in litterfall by an old oak, leg. MM; EC20 Ponty Dęby Res., 4 X 2014, 1 ex., in litterfall in the root neck of an old fir, leg. MM.

The species generally rarely collected (MAĐRA & all. 2010), though it is known from localities all over Poland. New for the Mazovian Lowland (BURAKOWSKI & all. 1978).

Dreposcia umbrina (ERICHSON, 1837)

- The Mazovian Lowland, the Kozienicka Forest: EC20 env. Poborskie Łąki, 1 XII 2007, 1 ex., in the ground-level hollow of an old oak, leg. MM; EC10 Dąbrowa Kozłowska, 15 VII 2009, 1 ex., under the bark of the trunk of an old oak, leg. MM.

The beetle is related to heart rots in deciduous trees (RŮŽIČKA & VÁVRA 2009). Its last known locality was found at the Pomeranian Lakeland (JAŁOSZYŃSKI & SIENKIEWICZ 2011).

Sciodrepoides fumatus (SPENCE, 1815)

- The Mazovian Lowland, the Kozienicka Forest: EC10 Dąbrowa Kozłowska, 17 VIII 1998, 1 ex., in a pheromone trap set for bark beetles, among decaying insects, leg. MM; EB29 Jedlnia-Letnisko, 4 VIII 2012, 1 ex., under the carcass of a domesticated cat on the bank of the Gzówka River, leg. MM.
- The Małopolska Upland: EB09 Radom-Las Kapturski, 17 IX 1997, 1 ex., in a Barber trap with rotting meat, leg. MM.

The species present all over the country; recently recorded from the Małopolska Upland (MOKRZYCKI & all. 2013).

Sciodrepoides watsoni (SPENCE, 1815)

- The Mazovian Lowland, the Kozienicka Forest: EC30 Zagożdżon Res., 8 VIII 2004, 3 exx., under the carcasses of beetles on a lying tree trunk, leg. MM; EC20 Przejazd, 10 IX 2006, 5 exx., in a trap set for bark beetles with decaying organic matter, leg. MM.
- The Małopolska Upland: EB09 Radom-Las Kapturski, 19 X 1997, 1 ex., in a Barber trap with rotting meat, 17 X 2003, 1 ex., on a rotten

fungus, leg. MM; EB09 Janiszew ad Radom, 11 VII 2004, 1 ex., in a fox burrow, leg. MM; EB09 Podlesie Mleczkowskie ad Radom, 5 X 2006, 1 ex., on a rotten toadstool, leg. MM; EB19 Radom-Gołębiów: 29 X 2008 (1 ex.), 20 XI 2012 (1 ex.), 27 XI 2012 (1 ex.), 29 XI 2012 (1 ex.), 4 XI 2014 (1 ex.) – the area of a thermal plant station, leg. MM; EB09 Radom-Wośniki, 23 V – 17 VI 2011, 3 exx., OCHK Dolina Kosówki, in a Barber trap, leg. MM; the Kozienicka Forest, EC10 Owadów, 18 IX 2012, 1 ex., in fungi on the stump of a birch, leg. MM; EB19 Sadków ad Radom, 1 V 2013, 1 ex., at a wet meadow on the verge of willow undergrowths, leg. MM.

The most common representative of Cholevinae in Poland (KONWERSKI & SIENKIEWICZ 2005).

Choleva angustata (FABRICIUS, 1781)

- The Małopolska Upland: EB19 Radom-Gołębiów: 20 V 2014 (1 ex.), 26 V 2014 (1 ex.), within the area of a thermal plant station, leg. MM; EB19 Radom-Firlej, 7 XI 2010, 1♂, Warszawska Street, on a sidewalk, leg. MM; EB19 Radom-Stara Wola Gołębiowska, 28 IV 2010, 1♀, in a sandy hole, a pine forest, leg. MM.

The species quite rarely recorded from Poland, new for the Małopolska Upland (BURAKOWSKI & all. 1978).

Choleva oblonga LATREILLE, 1807

- The Małopolska Upland: EB19 Radom-Nowa Wola Gołębiowska, 4 X 2004, 1 ex., leg. MM; EB19 Radom-Kaptur, 17 X 1995, 1 ex., on a path across a field near the forest, leg. MM; EB19 Radom, 16 X 2004, 1 ex., B. Chrobry Street, in flight, leg. B. MIŁKOWSKA; EB19 Radom-Gołębiów: 17 XII 2008 (1 ex.), the area of a thermal plant station, temp. apx. 5°C, 21 V 2009 (1 ex.), 26 X 2011 (1 ex.), 20 V 2014 (1 ex.), leg. MM.

The species known from dispersed localities from all over the country (BURAKOWSKI & all. 1978).

Choleva sturmii BRISOUT DE BARNEVILLE, 1863

- The Małopolska Upland: EB09 Radom-Wośniki, 23 V – 17 VI 2011, 1 ex., OCHK Dolina Kosówki, in a Barber trap, leg. MM; EB19 Antoniówka, 27 XI 2011, 1 ex., on a meadow path near railway tracks, leg. MM.

The species is rare, recently recorded from the areas of Biedrusko in the Wielkopolsko-Kujawska Lowland (KONWERSKI & SIENKIEWICZ 2005), new for the Małopolska Upland (BURAKOWSKI & all. 1978).

Ptomaphagus sericatus CHAUDOIR, 1845

= *Ptomaphagus medius* (REY, 1889)

- The Mazovian Lowland: EC51 Zajezerze ad Dęblin, 13 XII 2014, 1 ex., a riparian forest, in the ground-level hollow of a poplar, leg. MM.
- The Małopolska Upland: EB09 Radom-Las Kapturski, 24 X 2004, 2 exx., under the bark of a decayed stump, leg. MM; EB09 Radom-Borki, 16 XI 2014, 1 ex., by a lagoon, in the ground-level hollow of an old *Quercus robur*, leg. MM; EB19 Radom-Sadków, the airport, 3-17 IX 2011, 1 ex., in the forest, in a Barber trap, leg. MM; EB19 Radom, 20 XII 2014, 4 exx., the T. Kościuszko Park, in the ground-level hollow of an old ash, leg. MM; EB19 Radom, 13 X 2010, 1 ex., 25th-Anniversary housing estate, on the wall of a building, leg. MM; EB09 Radom-Wacyn, 29 X 2011, 1 ex., the area of a radio station, in the root neck of an old willow, leg. MM.

The species regularly collected in the whole country (BURAKOWSKI & all. 1978, KONWERSKI & SIENKIEWICZ 2005).

Ptomaphagus varicornis (ROSENHAUER, 1847)

- The Mazovian Lowland, the Kozienska Forest: EC30 Zagożdżon Res., 16 XII 2007, 2 exx., in litterfall at the trunk base of an old oak; idem, 20 IX 2009, 1 ex., in the hollow of a hornbeam, leg. MM; EC21 Brzóza, 18 XII 2004, 1 ex., the palace park, in the decayed wood of a white poplar, leg. MM; EC20 Załamanek Res., 25 XI 2005, 1 ex., in a decayed wood at the base of an alder, leg. MM; EC20 Pionki, 6 XI 2011, 1 ex., in litterfall, in the root neck of an old oak, leg. MM; EB29 Jedlnia-Letnisko, 17 XII 2011, 2 exx., in the root neck of a decayed linden, leg. MM; EC20 env. Poborskie Łąki, 9 IV 2011, 1 ex., an oak-hornbeam forest, in the ground-level hollow of an ash, leg. MM.
- The Małopolska Upland: EB09 Radom-Las Kapturski, 20 X 2007, 1 ex., in litterfall at the base of an oak; idem, 4 IV 2011, 1 ex., in the root neck of an old oak, leg. MM; EB19 Radom-Rajec Szlachecki, 25 XI 2012, 5 exx., „Czarna Miedza”, an alder forest, at the ground-level hollow of a black alder, leg. MM; EB09 Radom-Wacyn, 29 X 2011, 4 exx., the area of a radio station, in the root neck of a willow, leg. MM; EB19 Radom-Młynek Janiszewski, 28 X 2012, 4 exx., in the decayed trunk wood of a willow on the bank of the Mleczna River, leg. MM; EB09 Radom-Piotrówka, 2 XII 2012, 4 exx., in the substrate at the

base of an old willow, leg. MM; EB09 Radom-Wośniki, 23 V – 17 VI 2011, 1 ex., OCHK Dolina Kosówki, in a Barber trap, leg. MM; EB19 Radom, 20 XII 2014, 1 ex., the T. Kościuszko Park, in the ground-level hollow of an old, leg. MM; EB48 Zwoleń, 29 XI 2014, 1 ex., the Zwoleńka Valley, in the ground at the base of an old willow, the verge of a riparian forest, leg. MM.

The species regularly collected in Poland, the most common representative of the species (BURAKOWSKI & all. 1978).

Colon brunneum (LATREILLE, 1807)

- The Małopolska Upland: EB19 Radom-Gołębiów, 3 XI 2014, 1 ex., in the area of a thermal plant station, leg. MM.

The most common representative of the subfamily in Poland, known from all over the country (SZYMCZAKOWSKI 1969, BURAKOWSKI & all. 1978).

Amphicyllis globus (FABRICIUS, 1792)

- The Mazovian Lowland, the Kozienicka Forest: EC10 Dąbrowa Kozłowska, 22 VI 1998, 1 ex., on a hornbeam woodpile, leg. MM; EC20 Ciszek Res., 29 V 2010, 1 ex., on a mouldy stump, leg. MM; EC30 Januszno, 27 VI 2010, 1 ex., on the road, by the stream, leg. MM; EC20 Kieszek: 13 VII 2011 (1 ex.), on a lying, decaying oak trunk, 16 VI 2012 (1 ex.), 20 VI 2012 (1 ex.), 3 VII 2012 (1 ex.), 7 VII 2012 (1 ex.), 15 VII 2012 (1 ex.), on the decaying trunk of an aspen, 3 VII 2012 (1 ex.), 19 V 2014 (2 exx.), 20 V 2014 (1 ex.), leg. MM.

The species known from dispersed localities all over Poland, new for the Mazovian Lowland (BURAKOWSKI & all. 1978).

Anisotoma castanea (HERBST, 1792)

- The Mazovian Lowland, the Kozienicka Forest: EC20 Ciszek Res., 29 V 2010, 2 exx., on a mouldy stump, leg. MM; EB29 Jedlnia Res., 21 VII 2011, 1 ex., on the decaying trunk of a fir, leg. MM; idem, 29 VII 2008, ex., on a mouldy log, leg. MM; EC30 Januszno, 23 VI 2011, 1 ex., on the trunk of an old, uprooted oak, leg. MM; EC20 Kieszek, 12 VII 2011, 1 ex., on a mouldy wood, leg. MM; EC20 Pionki Res., 2 VIII 2007, 2 exx., in the decayed trunk of an oak, leg. MM; EC30 Krasna Dąbrowa, 13 X 2001, 1 ex., under the trunk bark of a pine, leg. MM; EC20 Załamanek Res., 21 VII 2012, 2 exx., on a dead wood, leg. MM.

- The Małopolska Upland: the Kozienicka Forest, EC10 Wólka Lesiowska, X 1993, 1 ex., under the bark of an old pine, leg. MM; EB09 Radom-Las Kapturski, 30 V 1991, 1 ex., on an oak stump, leg. MM.

The species often encountered in the whole Poland (BURAKOWSKI & all. 1978).

Anisotoma glabra (FABRICIUS, 1787)

- The Mazovian Lowland, the Kozienicka Forest: EC20 Kieszek, 27 VIII 2005, 2 exx., under the bark of a dead pine, leg. MM; EC40 Krępiec Res., 19 V 2013, 1 ex., under the bark of a dead pine, leg. MM.

The species known from localities from different regions of the country (BURAKOWSKI & all. 1978).

Anisotoma humeralis (FABRICIUS, 1792)

- The Mazovian Lowland, the Kozienicka Forest: EB29 Jedlnia Res., 2VI 2011, ex., at the base of a dead, old oak, leg. MM; idem, 3VIII 2011, 1 ex., on the trunk of a dead oak, leg. MM; EC20 Kieszek, 25 VI 2002, 1 ex., on a pine woodpile, leg. MM; idem, 27 IV 2012, 1 ex., on a bracket fungus, the decayed trunk of an aspen, leg. MM; EC30 Januszno, 23 VI 2011, 2 exx., on the trunk of an old, uprooted oak, leg. MM; idem, 14 V 2003, 2 exx., on a fungus, the trunk of an alder, leg. MM; EC20 env. Załamanek Res., 30 IV 2011, 1 ex., in a pheromone trap set for bark beetles, leg. MM; EC20 Załamanek Res., 21 VII 2012, 2 exx., on a dead wood, leg. MM; EC20 env. Ciszek Res., 12 V 2011, 1 ex., on a bracket fungus, the lying trunk of a dead birch, leg. MM; EC21 Brzóza, 16 VIII 1997, 1 ex., the palace park, under the bark of the decayed trunk of an ash, leg. MM.
- The Małopolska Upland, the Kozienicka Forest, EC10 Wsola, 29 IV 2011, ex., on a dead, mouldy pine, leg. MM; the Kozienicka Forest, EB39 Miodne Res., 28 V 1998, 2 exx., on the mycelium-covered trunk of an alder, leg. MM; EB09 Radom-Las Kapturski, 29 V 1991, 1 ex., under the bark of a dead oak trunk, leg. MM; idem, 28 IV 1992, 5 exx., in a bracket fungus on an oak trunk, leg. MM; idem, 28 V 1998, 1 ex., on the mouldy trunk of an alder, leg. MM; EB58 Borowiec, 6 VIII 2011, 1 ex., the Zwoleńki Valley, under the bark of a cut-down oak trunk, leg. MM; DC92 Białobrzegi, 4 V 2012, 2 exx., the Dolna Pilica Valley, a decayed log, on a fungus, leg. MM.

One of the most common representatives of the family, common in the whole Poland (JAŁOSZYŃSKI & KONWERSKI 2002).

Anisotoma orbicularis (HERBST, 1792)

- The Mazovian Lowland, the Kozienicka Forest: EC20 Ciszek Res., 29 V 2010, 2 exx., on a mouldy stump, leg. MM; EC20 Kieszek, 12 VII 2011, 3 exx., on a decayed wood; idem, 11 VII 2011 (2 exx.), 13 VII 2011 (1 ex.), on the lying, decayed trunk of an oak; idem, 13 VII 2012 (1 ex.), 14 VII 2011 (1 ex.), on the lying, decayed trunk of an aspen, leg. MM; EB29 Jedlnia Res.: 22 VI 2011 (1 ex.), 30 V 2011 (1 ex.), 14 VII 2011 (3 exx.), on the trunk of a dead, old oak; idem, 21 VII 2011 (2 exx.), on the decayed trunk of a fir, 29 VII 2011 (2 exx.), on the trunks of a dead oak and a dead pine, leg. MM; EC20 env. Leniwa Res., 22 V 2011, 1 ex., a stump, on a slime mould, leg. MM; EC30 Brzeźniczka Res., 3 VII 2004, 1 ex., under the bark of a birch, leg. MM; EC20 Załamanek Res., 21 VII 2012, 2 exx., on a dead wood, leg. MM; EC40 Krępiec Res., 25 V 2014, 2 exx., on the trunk of a dead pine, leg. MM.
- The Małopolska Upland: the Kozienicka Forest, EB39 Miodne Res., 28 V 1998, 1 ex., on the mycelium-covered stump of an alder; idem, 24 VII 2011, 2 exx., on a decayed beech wood, leg. MM; EB09 Radom-Las Kapturski, 9 VII 1997, 3 exx., on the decayed stump of an oak, leg. MM.

The species often collected in the whole Poland, new for the Mazovian Lowland (BURAKOWSKI & all. 1978).

Agathidium confusum BRISOUT DE BARNEVILLE, 1863

- The Mazovian Lowland, the Kozienicka Forest: EC20 Kieszek, 10 VI 2013, 1 ex., on the trunk of a cut-down oak, leg. MM.
- The Małopolska Upland: EB09 Radom-Las Kapturski, 16 VII 2000, 1 ex., on the trunk of a beech, leg. MM.

The species belongs to rarely collected representatives of the genus. Related with well-preserved forests (KILIAN & BOROWIEC 1998), its last occurrence was recorded from the Wielkopolsko-Kujawska Lowland (JAŁOSZYŃSKI & KONWERSKI 2002). New for the Mazovian Lowland and the Małopolska Upland.

Agathidium mandibulare STURM, 1807

- The Mazovian Lowland, the Kozienicka Forest: EC30 Augustów, 14 X 2007, 2 exx., in a fungus on a dead fir, leg. MM.

The species rarely collected, related with backwoods, new for the Mazovian Lowland.

Agathidium nigripenne (FABRICIUS, 1792)

- The Małopolska Upland: EB09 Radom-Las Kapturski, 17 IV 1999, 1 ex., under the bark of a pine trunk; idem, 12 III 2008, 1 ex., under the bark of a dead pine, leg. MM; EB19 Radom, 9 IV 2008, 1 ex., in flight, leg. MM; EB19 Radom, 22 V 2015, 3 exx., the T. Kościuszki Park, on the trunk of a cut-down Norway maple (a former natural monument), leg. MM.

The species quite often observed in the whole Poland.

Agathidium nudum HAMPE, 1870

- The Mazovian Lowland, The Kozienicka Forest: EC20 Przejazd, 8 X 2011, ex., leg. G. STĘPIEŃ.

The species hitherto known from Poland merely from the series of specimens collected in the environs of Przemyśl by TRELLA (KILIAN and BOROWIEC 1998). The above locality confirms the modern occurrence of the species in Poland and constitutes the first locality for the Mazovian Lowland. Males possess mandibular teeth similar to *A. mandibulare* (Fig.1), with which it is often mistaken (KILIAN & BOROWIEC 1998).



Fig. 1. *Agathidium nudum*, a specimen from Przejazd; on the right: a close-up of head with a well visible mandibular tooth.

Agathidium rotundatum (GYLLENHAL, 1827)

- The Mazovian Lowland, The Kozienicka Forest: EC20 Kieszek, 17 IV 2011, 1 ex., in a decayed log, leg. MM; EC30 Augustów, 26 IV 2013, 1 ex., in the leaking sap from a hornbeam stump, leg. MM; EC20 the T. Zieliński Ponty Reserve Park, 11 XI 2014, 2 exx., under the bark of a dead fir, leg. MM.

A quite easily collected species not recorded hitherto from the Mazovian Lowland (BURAKOWSKI & all. 1978, KILIAN & BOROWIEC 1998).

Agathidium seminulum (LINNAEUS, 1758)

- The Mazovian Lowland, the Kozienska Forest: EC10 Dąbrowa Kozłowska, 7 X 2009, 1 ex., in litterfall at the base of a pine, leg. MM; EC30 Zagożdżon Res., 16 XII 2007, 1 ex., in litterfall at the base of an old oak, 26 IV 2013, 1 ex., under the bark of a dead fir, leg. MM; EB29 Siczki, 13 VI 2008, 1 ex., from sweep netting of herbaceous plants at the seepage spring area in the Pacynki Valley, idem, 23 V 2012, 1 ex., at the base of the trunk of an old oak, leg. MM; EB29 Jedlnia Res., 30 V 2011, 1 ex., on the trunk of an old, dead oak, idem, 22 V 2010, 1 ex., leg. MM; EC20 Kieszek, 12 VII 2011, 1 ex., on a decayed wood, leg. MM; EC10 Kozłów, 14 VII 2012, 1 ex., in the decayed trunk of a spruce, leg. MM.
- The Małopolska Upland: EB09 Radom-Las Kapturski, 13 V 2007, 1 ex., on a beech woodpile, leg. MM.

One of the most common representatives of the genus in Poland (JAŁOSZYŃSKI & KONWERSKI 2002).

Agathidium varians (BECK, 1817)

- The Mazovian Lowland, the Kozienska Forest: EB29 Jedlnia Res., 27 XI 2011, 1 ex., in a ground-level hollow in the trunk of an oak, leg. MM.
- The Małopolska Upland: EB19 Radom-Rajec Letnisko, 17 X 1999, 2 exx., under a decayed cardboard, leg. MM.

A frequent species, recently recorded from the Małopolska Upland (MAZUR & PERLIŃSKI 2013).

Liodopria serricornis (GYLLENHAL, 1813)

- The Mazovian Lowland, the Kozienska Lowland: EC20 Załamanek Res., 21 VII 2012, 1 ex., on a dead wood, leg. MM; EC30 Brzeźniczka Res., 6 V 2012, 1 ex., in the decayed trunk of a fir, leg. MM; EC30

Zagożdżon Res., 20 IX 2009, 1 ex., on the mossy trunk of a dead fir, leg. MM, 8 IX 2012, 1 ex., leg. B. PACUK.

The species rarely collected, related to backwoods. The last recorded occurrence from the Spalsko-Rogowskie Forests in the Małopolska Upland (MAZUR & PERLIŃSKI 2013, MOKRZYCKI & all. 2013).

Leiodes bicolor (W.L.E. SCHMIDT, 1841)

- The Mazovian Lowland, the Kozienicka Forest: EC20 Kieszek, 29 V 2013, 1 ex., in flight, leg. MM; EC32 Świerże Górne, 30 VII 2005, 1 ex., lured by the source of light, leg. W. PIĄTEK.
- The Małopolska Upland: EB19 Radom-Nowa Wola Gołębiowska, 10 VIII 1997, 2 exx., lured by the source of light, the area of a thermal plant station, leg. MM.

The species recorded from Poland from Pomerania, Lower Silesia (BURAKOWSKI & all. 2000) and the Wielkopolsko-Kujawska Lowland (KONWERSKI & SIENKIEWICZ 2005). New for the Mazovian Lowland and the Małopolska Upland.

Leiodes oblonga (ERICHSON, 1845)

- The Mazovian Lowland, the Kozienicka Forest: EC20 Kieszek, 7 IX 2002, 1 ex. (dead), a pine forest, in a sandy hole, leg. MM; idem, 16 VIII 2003, 1 ex., among wet leaves in litterfall, leg. MM.

In Poland, the species recorded from very few localities (BURAKOWSKI & all. 1978), new to the Mazovian Lowland.

Leiodes polita (MARSHAM, 1802)

- The Małopolska Upland, the Kozienicka Forest: EB49 Okólny Ług Res. ad Antoniówka, 15 VI 2007, 1 ex., lured by the source of light, leg. MM.

The species known from dispersed localities from all over Poland, its last recorded occurrence comes from the Małopolska Upland over 100 years ago (BURAKOWSKI & all. 1978).

Leiodes rubiginosa (W.L. SCHMIDT, 1841)

- The Małopolska Upland: EB19 Radom-Nowa Wola Gołębiowska, 19 VIII 1998, 1 ex., at 6.00 a.m., in flight, leg. MM.

The species rarely collected in Poland, new for the Małopolska Upland (BURAKOWSKI & all. 1978).

Leiodes rugosa STEPHENS, 1829

- The Małopolska Upland: EB19 Radom-Gołębiów, 10 X 2014, 1 ex., in the area of a thermal plant station, leg. MM.

The beetle known from dispersed localities in different regions of the country (BURAKOWSKI & all. 1978).

Platypsyllus castoris RITSEMA, 1869

- The Mazovian Lowland, the Kozienicka Forest: EC21 Brzóza, 11 X 2013, 3 exx., the bridge on the Radomka River, on a few-hour dead beaver killed by a car, leg. MM.

Possibly, with the increase in the population of the beaver in Poland, *P. castoris* also became numerous in the country; however, the difficulties in collecting of the beetle contribute to its being rarely reported in literature. The last new data on the occurrence were recapitulated by BUCHHOLZ & all. (2008). The species new for the Mazovian Lowland.

Conclusion

The list comprised of 34 Leiodidae species (apx. 24% of the national fauna) known from the environs of Radom may surely be updated during future research. The most interesting species recorded so far include: *Agathidium nudum*, *Catops nigriclavis*, *Choleva sturmii*, *Leiodes bicolor*, *L. oblonga*, *L. rubiginosa*, and *Platypsyllus castoris*, as well as the species distinctive for well-preserved forests, such as *Dreposcia umbrina*, *Agathidium confusum*, *A. mandibulare* i *Liodopria serricornis*.

Comments

Currently, there is no key that could allow for a correct identification of all Leiodidae present in the country; therefore, apart from the commonly available and eagerly used studies from the series on identification keys for Polish insects (SZYMCZAKOWSKI 1961, SZYMCZAKOWSKI 1969, NUNBERG 1987), one needs to employ other studies. In the case of the

genus *Agathidium* PANZER, the study by KILIAN & BOROWIEC (1998) should be used, and in the case of the tribe Leiodidae – the study by DAFFNER (1983). The very detailed figures of genitals, containing the interior armature of the aedeagus in the monograph of Chloeviane from the series Fauna Iberica (COSTAS & all. 2008), can sometimes be helpful, yet it has to be kept in mind that this paper does not include the Central European representatives of the subfamily.

During the development of the material for the following paper, it transpired that there are difficulties in the identification of the beetles from the genus *Ptomaphagus* HELLWIG on the basis of the characteristics presented in a popular identification key (SZYMCZAKOWSKI 1961). The figures with aedaegi and spermathecas of the two species – *P. subvillosus* i *P. sericatus* – were published by ZWICK (1989). In order to facilitate a study on this genus, the pictures of aedaegi are presented, featuring the structures of the interior armature and spermathecas (Fig. 3) of all three national representatives of the genus. They allow for a correct identification of the beetles. All three beetles are relatively frequent in the Czech Republic and Slovakia, with *P. sericatus* being the most common, and *P. subvillosus* the rarest (VYSOKY 2007, RŮŽIČKA non-public information).



Fig. 2. Aedeagi of *Ptomaphagus* beetles, dorsal and lateral views: A – *P. sericatus*, B – *P. subvillosus*, C – *P. varicornis*.



Fig. 3. Terminal segments of female abdomen and spermatheca of *Ptomaphagus* beetles: A – *P. sericatus*, B – *P. subvillosus*, C – *P. varicornis*.

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SUMMARY

The occurrence of 34 species of Leiodidae in the environs of Radom (E Poland) is reported. The occurrence of *Agathidium nudum* in Poland is confirmed after ca. 100 years. Among the most interesting, rarely collected species, the following should be listed: *Agathidium nudum*, *Catops nigriclavis*, *Choleva sturmii*, *Leiodes bicolor*, *L. oblonga*, *L. rubiginosa* and *Platypsyllus castoris*. Moreover, four species associated with well preserved forests were recorded in the Kozienicka Forest: *Dreposcia umbrina*, *Agathidium confusum*, *A. mandibulare* and *Liadopria serricornis*.

Numerous species have been reported for the first time from the Mazovian Lowland (*Catops picipes*, *Amphicyllis globus*, *Anisotoma orbicularis*, *Agathidium confusum*, *A. mandibulare*, *A. nudum*, *A. rotundatum*, *Leiodes bicolor*, *L. oblonga*, *Platypsyllus castoris*), and Małopolska Upland (*Catops fuliginosus*, *C. morio*, *C. nigriclavis*, *Choleva angustata*, *Ch. sturmii*, *Agathidium confusum*, *Leiodes bicolor*, *L. rubiginosa*).

To facilitate identification of Central European *Ptomaphagus* species, figures of male and female genitalia are included in the paper.

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