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A contribution to the knowledge of the fauna of the
Kampinos National Park: Scarabaeidae.
Part 1. Subfamilies: Melolonthinae, Sericinae, Rutelinae,
Dynastinae i Cetoninae

Dawid MARCZAK¹, Radosław MROCZYŃSKI²

¹ Kampinoski Park Narodowy, ul. Tetmajera 38, 05-080 Izabelin, Wyższa Szkoła
Ekologii i Zarządzania w Warszawie, Wydział Ekologii,
ul. Olszewska 12, 00-792 Warszawa; dawid.marczak@gmail.com

² Uniwersytet Warmińsko-Mazurski w Olsztynie, Wydział Biologii i Biotechnologii,
Katedra Ekologii i Ochrony Środowiska,
Plac Łódzki 3, 10-727 Olsztyn; radzio.fm@gmail.com

ABSTRACT: The paper presents new localities of 23 species of the subfamilies Melolonthinae, Sericinae, Rutelinae, Dynastinae, and Cetoninae in the Kampinos National Park. Among the presented species, two are protected: *Osmoderma barnabita* MOTSCHULSKY, 1845 and *Protaetia (Cetonischema) speciosissima* (SCOPOLI, 1786).

KEY WORDS: Scarabaeidae, Kampinos National Park, faunistics, new records, Masovian Lowland.

The family Scarabaeidae has been undergoing many nomenclature and taxonomic changes recently (BUNALSKI & al. 2015a). However, among the beetles that represent it, two quasi-systematic groups stand out—Scarabaeidae laparosticti, comprising the representatives of the subfamilies Aegialiinae, Aphodiinae, and Scarabaeinae, as well as Scarabaeidae pleurosticti, comprising the representatives of the subfamilies Cetoniinae, Dynastinae, Melolonthinae, Sericinae, and Rutelinae.

In the Polish fauna, the group Scarabaeidae pleurosticti is represented by 39 species (BURAKOWSKI & al. 1983, LÖBL & SMETANA 2006, BUNALSKI 2004), including Melolonthinae – 15 species, Sericinae – 3, Rutelinae – 4, Dynastinae – 1, Cetoniinae – 16.

From the area of the Kampinos National Park, 10 confirmed species from this group have been recorded (ZIMKA 1974; PLEWKA 1981, 2003; KUBICKA 1991; BYK 1999; KUBISZ & al. 2000, OLSZEWSKI & al. 2010, MARCZAK 2010, MARCZAK & all. 2010, 2012; SKŁODOWSKI & GRYZ 2012). Moreover, PLEWKA (1981, 2003) reported incorrectly the *Omaloplia* (*Omaloplia*) *ruricola* (FABRICIUS 175) from the area of the park; however, the species was expelled from the Polish fauna (BUNALSKI 1994), and any data on its occurrence should be ascribed to *Omaloplia* (*Omaloplia*) *nigromarginata* (HERBST, 1786). The aim of the following study is to supplement the data concerning the occurrence of the representatives of the subfamilies discussed from the area of the Kampinos National Park. The data come from the authors' observations and field researches, which have intensified in recent years. The evidence specimens are stored in the authors' collections and naturalistic collections of the Kampinos National Park.

In the study, the following abbreviations have been used: SPA – Strict Protection Area, KNP – the Kampinos National Park, IBL-2 – a screen trap, IBL-5 – a barrier trap. Each locality has been supplemented with a code of the corresponding UTM grid net. The taxa nomenclature has been adopted after LÖBL and SMETANA (2006).

Melolonthinae SAMOUELLE, 1819

Amphimallon solstitiale solstitiale (LINNAEUS, 1758)

Within the area of the Kampinos National Park, the species encountered and collected numerously across the whole area in open, half-open, and ecotonal habitats, as well as on over-growing meadows and grasses; recorded in the UTM square grids: DC59, DC69, DC79, DC89, DC99, DD70 and DD80.

The most common and the most widely distributed species of *Amphimallon* in Poland (BUNALSKI & al. 2015c). The species new to the Kampinos National Park.

Hoplia (*Hoplia*) *graminicola* (FABRICIUS, 1792)

– DC59 Famułki Królewskie, 28 VI 2010, 1 ex., on a sandy road; DC69 Granica, 28 V 2010, 2 exx., on sand; DC69 Korfowe, 26 V 2011, 1 ex.,

on the ground; DC79 Brzozówka, 17 VI 2010, 1 ex., on the ground; DC89 Izabelin, 30 V 2010, 1 ex., by the building of the directorate of the KNP; DC89 Niepust, 19 VI 2014, 1 ex., on the ground; DC89 Pociecha, 10 V 2015, 1 ex., in flight; DC89 Truskaw, 5 V 2015, 1 ex., on the ground; 7 VI 2015, 2 exx., on the ground.

It is the most common species of the genus in Poland (BUNALSKI & al. 2015b). It certainly inhabits the whole area of the park, though it has not been reported yet in all UTM square grids that superimpose on the area of the park.

The species already recorded earlier from the area of the park, though with no precise locality, by KUBICKA (1981).

Hoplia (Decamera) philanthus philanthus (FÜSSLIN, 1775)

- DC89 SPA Sieraków, 10 VI 2009, 1 ex., into a butterfly net from the side of a road in the habitat of a subcontinental deciduous forest, near a small hay meadow.

The species not common, preferring humid areas (BUNALSKI & al. 2015b). From the area of the park, it has been collected only once.

The species new to the Kampinos National Park.

Melolontha (Melolontha) hippocastani hippocastani FABRICIUS, 1801

- DC89 Pociecha: 8 VI 2009, 2 exx., to a light source; 18 V 2010, 1 ex., to a light source; 22 V 2012, 12 exx., to a light source; 1 VI 2015, 3 exx., to a light source.

A species of the forest cockchafer considered as rare and encountered locally (BUNALSKI & all. 2015c). Within the area of the KNP, it is encountered more numerously in the eastern part of the park; captured mainly during its night activity near light sources. The species new to the Kampinos National Park.

Melolontha (Melolontha) melolontha (LINNAEUS, 1758)

From the area of the Kampinos National Park, the species encountered and captured numerously within the whole park in different habitats; recorded from the UTM squares: DC59, DC69, DC79, DC89, DC99, DD70 and DD80.

The most common cockchafer species in Poland (BUNALSKI & al. 2015c). The species recorded earlier from the area of the park, with no precise locality; recorded in pellets of a tawny owl (*Strix aluco*) (SKŁODOWSKI & GRYZ 2012).

Polyphylla (Polyphylla) fullo fullo (LINNAEUS, 1758)

- DC89 Niepust: 16 VI 2010, 1 ex., 23 VII 2012, 1 ex., 1 VIII 2014, 1 ex., at a moorland;
- DD70 Grochalskie Piachy, 7 VII 2014, 3 exx., 28 VI 2015, 1 ex., on an inland dune.

A rarely encountered species with a twilight-night activity (BUNALSKI & al. 2015c). From the area of the KNP, it has encountered mainly at two localities in the habitats of open sands on dunes and grasses. The species earlier recorded from the area of the park with no precise locality; observed in pellets of a tawny owl (*Strix aluco*) (SKŁODOWSKI & GRYZ 2012).

Sericinae KIRBY, 1837*Maladera (Maladera) holosericea* (SCOPOLI, 1772)

- DC59 Bromierzyk, 2 VI 2012, 1 ex., on the ground; DC69 Cisowe, 28 VI 2010, 1 ex., on the ground in the habitat of *Corynephorus* grass; DC79 Stara Dąbrowa, 28 VI 2010, 2 exx., on the ground; DC79 Wólka, 18 VI 2014, 2 exx., on the ground; DC89 Niepust, 6 VI 2010, 1 ex., into a butterfly net at a moorland; DC89 Pociecha: 14 V 20019, 2 exx., in flight; 21 VI 2015, 1 ex., on the ground.

A common species and locally often encountered (BUNALSKI & al. 2015c). In the KNP, it is relatively common within its whole area. The species new to the Kampinos National Park.

Omaloptia (Omaloptia) nigromarginata (HERBST, 1786)

- DC79 Ławy, 1 VII 2015, 2 exx., into a butterfly net in the habitat of *Corynephorus* grass; DC89 Niepust, 11 VII 2015, 2 exx., into a butterfly net in the habitat of *Corynephorus* grass; DD70 Grochalskie Piachy, 29 VI 2014, 1 ex., into a butterfly net on an inland dune.

A thermophilic species, relatively rarely encountered in grass habitats (BUNALSKI & all.2015c). Within the KNP, there are only three localities known in the habitats of open parts of dunes overgrown with *Corynephorus* grasses.

The species recorded earlier from the area of the park from Łużowa Góra (DC99) by BYK (1999). An incorrect record of *O. ruricola* (PLEWKA 1981, 2003) reported from the eastern part of the park should be ascribed in favour of this species.

Serica (Serica) brunnea (LINNAEUS, 1758)

From the area of the KNP, the species is encountered and captured very numerously across the whole park from forest and ecotonal habitats; recorded in the UTM squares: DC59, DC69, DC79, DC89, DC99, DD50, DD60, DD70 i DD80.

The species very common and widely distributed (BUNALSKI & al. 2015c). Earlier recorded from the area of the park from the SPA Czerwińskie Góry (DC59) (KUBISZ & all. 2000). ZIMKA (1966) also recorded this species when examining food of the moor frog (*Rana arvalis*), however, with no exact locality.

Rutelinae MACLEAY, 1819*Anomala dubia* (SCOPOLI, 1763)

– DC59 Bromierzyk, 2 VI 2012, 1 ex., on a willow; DC59 Famułki Królewskie, 28 VI 2010, 1 ex., on a lilac; DC69 Cisowe, 28 VI 2010, 3 exx., on a willow; DC79 Stara Dąbrowa, 28 VI 2010, 1 ex., on plants; DC89 Truskaw, 5 V 2015, 3 exx., on a young oak.

The species common in the whole Poland, associated mainly with inland dunes (BUNALSKI & al. 2015b). The KNP offers it good living conditions because of its landform – dune strips are the main element of the physiography of the park. The species new to the Kampinos National Park.

Chaetopteropia segetum segetum (HERBST, 1783)

– DC79 Ławy, 21 V 2015, 1 ex., into a butterfly net; DC89 Niepust, 23 V 2015, 5 exx., in vegetation of a moorland habitat; DD70 Grochalskie Piachy, 18 V 2012, 16 exx., into a butterfly net on an inland dune.

Even though the species is included in the red list (PAWŁOWSKI & al. 2002), the species is often captured within the area of the park in particular habitats – psammophilous grasslands and open parts of inland dunes, and similarly in other regions of the country (BUNALSKI & al. 2015b). The species was earlier recorded from the area of the park from two localities: Roztoka (DC79) and Grochalskie Piachy (DD70) (MARCZAK & al. 2012).

Phyllopertha horticola (LINNAEUS, 1758)

From the area of the KNP, the species is often encountered and collected very numerously cross the whole area in different habitats;

recorded in the UTM squares: DC59, DC69, DC79, DC89, DC99, DD50, DD60, DD70 and DD80.

It is a widely distributed species in the whole Poland (BUNALSKI & al. 2015b). The species earlier recorded from the area of the park from the SPA Czerwińskie Góry Góry (DC59) (KUBISZ & al. 2000).

Dynastinae MACLEAY, 1819

Oryctes (Oryctes) nasicornis polonicus MINCK, 1918

– DC79 Leszno, 18 VII 2014, 1 ex., on a road, near the forest nursery of the KNP; DC89 Izabelin, 12 VI 2012, 2 exx., on a parking lot in front of the Directorate of the KNP.

The species widely distributed in Poland, considered as a synanthrope (BUNALSKI 2005, BUNALSKI & al. 2015b). In the KNP, it has been captured only twice in quite large towns. It is worth stating that in the past it was numerously observed on composting heaps in the forest nursery of the park (M. KUSZTAL, a verbal information).

The species new to the Kampinos National Park.

Cetoniinae LEACH, 1815

Cetonia (Cetonia) aurata aurata (LINNAEUS, 1758)

Within the area of the KNP, the species encountered and collected numerously across the whole area in open, half-open, and ecotonal habitats; recorded in the UTM squares: DC59, DC69, DC79, DC89, DD70.

The species is one of the most common and the most widely distributed rose chafers in Poland (BUNALSKI & al. 2015a). The species new to the Kampinos National Park.

Gnorimus variabilis (LINNAEUS, 1758)

Within the area of the park, it forms numerous populations in old-growth forests with large presence of oaks, mainly situated in the strict protection areas: Sieraków (DC89), Zaborów Leśny (DC89), Cyganka (DC89), Debły (DC79), Zamczysko (DC69), Granica (DC69) oraz Rybitew (DD70). Specimens are usually observed near dead trees filled with mould and tree hollows in the periods VI–VII.

A typically forest species associated with rotting wood of older deciduous trees; in the country, it is considered as a rare species

(BUNALSKI & al. 2015a). It is very probable that within the KNP, it forms one of the most numerous populations in Poland

The species recorded earlier from a few localities from the area of the park (MARCZAK 2010).

Osmoderma barnabita MOTSCHULSKY, 1845

Upon the cataloguing of this species from the area of the park conducted in the years 2011–2015, over 160 trees were recorded as being inhabited by the *Osmoderma barnabita*. They were mainly oaks, as well as individual lime trees, and one black locust. The most numerous *Osmoderma barnabita* populations can be found within the boundaries of the SPA Sieraków (DC89), Zaborów Leśny (DC89), Roztoka (DC79), Zamczysko (DC69), Debły (DC79) i Rybitew (DD70). Apart from this, *Osmoderma barnabita* inhabits eagerly non-forest areas: well-sunlit trees growing on the verges of roads, field buffer strips, or loosely dispersed individually on meadows.

As a result of the intensified research on this species in Poland, it turned out that it is far more widely distributed than the data in older literature provided (BUNALSKI & al. 2015a), including the Red Book (SZWAŁKO 2004). The species recorded earlier from a few localities form the area of the park (OLSZEWSKI et al. 2007, MARCZAK 2010).

Oxythyrea funesta (PODA VON NEUHAUS, 1761)

- DC79 Brzozówka, 10 VI 2015, 2 exx., on flowers; DC79 Wiersze, 28 VI 2012, 3 exx., on flowers; DC89 Pociecha, 1 VII 2014, 1 ex., on flowers.

The species more widely distributed in the eastern and central part of the country (BUNALSKI et al. 2015a). Within the KNP, it is encountered sporadically, on open areas. The species new to the Kampinos National Park.

Protaetia (Liocola) marmorata marmorata (FABRICIUS, 1792)

- DC69 SPA Zamczysko, 7 VI 2011, 2 exx., by a hollow in an oak; DC79 the SPA Debły, 8 VI 2011, 1 ex., on the trunk of an oak; DC89 Pociecha, 8 VI 2009, 2 exx., in flight.

The species relatively common and widely distributed, associated with rotting wood in deciduous trees (BUNALSKI & al. 2015a). Within the KNP, it is quite a common species occurring in forest habitats. The species new to the KNP.

Protaetia (Cetonischema) speciosissima (SCOPOLI, 1786)

- DC79 SPA Roztoka, 22 IX 2010, remains of a specimen in a hollow in an oak; DC89 SPA Sieraków, 10 VIII 2014, 1 ex., dead on a forest road; DC89 SPA Zaborów Leśny, 1-15 VII 2015, 4 exx., 16-31 VII 2015, 2 exx., into a Moericke trap hanged in crowns of over 200-year-old oaks; DD70 SPA Rybitew, 27 VIII 2011, 1 ex., dead on a forest road

The species rarely encountered, associated with tree hollows located at higher parts of trees (BUNALSKI et al. 2015a). It most frequently inhabits thinned and well-sunlit sections of deciduous forests (BYK and CIEŚLAK 2011). From the area of the KNP, it is found mainly at strict protection areas with presence of old, over 200-year-old oaks. In majority of cases, dead remains of specimens are only found on forest roads and in litter – living specimens can be only collected by hanging Moericke yellow bowls at tree crowns, similarly as it was the case in the research of PLEWA & all. (2014).

The species earlier recorded from a few localities from the area of the park (MARCZAK & al. 2010, 2012).

Protaetia (Potosia) metallica metallica (HERBST, 1782)

- DC59 Famułki Królewskie, 28 VI 2010, 1 ex., on *Apiacea* flowers; DC79 Brzozówka, 10 VII 2015, 2 exx., in flight; DC79 OOS Roztoka, 2 VI 2010, 1 ex., on the trunk of an oak; DC79 Stara Dąbrowa, 28 VI 2010, 1 ex., in flight; DC89 SPA Sieraków, 10 VII 2014, 1 ex., in flight.

This myrmecophile species (BUNALSKI & al. 2015a) appears to be the second most common native representative of *Cetonia* beetles right after *Cetonia aurata*. Within the area of the KNP, it seems to be a common species. The species new to the KNP.

Trichius fasciatus (LINNAEUS, 1758)

- DC79 Ławy, 11 VII 2014, 1 ex., on *Apiaceae* flowers.

This forest species is relatively rarely recorded (BUNALSKI et al. 2015a). From the area of the KNP, it has been recorded only once. The species new to the KNP.

Tropinota (Epicometis) hirta hirta (PODA VON NEUHAUS, 1761)

- DC59 Karolinów, 23 IV 2011, 5 exx., on flowers of *Caltha palustris*;
- DC69 Korfowe, 26 IV 2013, 8 exx., on flowers of *Caltha palustris*;
- DC69 Zamość, 4 V 2015, 2 exx., on flowers of *Taraxacum*; DC79 Brzozówka, V 2014, 3 exx., into a butterfly net on a humid meadow;
- DC89 Niepust, 20 IV 2011, 1 ex., on flowers of *Caltha palustris*;
- DC89 Truskaw, 14 IV 2009, 2 exx., on flowers of *Caltha palustris*.

This common spring species is observed mainly on flowers of yellow-blooming plants (BUNALSKI & al. 2015a). In the KNP during the early spring period, it is numerously encountered on flowers at meadow habitats. The species new to the KNP.

Valgus hemipterus (LINNAEUS, 1758)

- DC59 Bromierzyk, 2 VI 2012, 3 exx., on flowers of *Anthriscus sylvestris*;
- DC59 Famułki Brochowskie, 2 VI 2012, 1 ex., on flowers of *Anthriscus sylvestris*;
- DC69 Bieliny, 29 V 2014, 1 ex., on flowers of *Aegopodium podagraria*;
- DC79 Brzozówka, 10 VI 2015, 2 exx., on *Apiaceae* flowers;
- DC89 Pociecha, 14 V 2009, 1 exx., on flowers at a backyard garden;
- DC89 SPA Sieraków, 8 VI 2011, 1 exx., on flowers of *Anthriscus sylvestris*

A relatively common species occurring during the spring period, most frequently collected from *Apiaceae* flowers (BUNALSKI & al. 2015a). From the area of the KNP, it is encountered relatively numerously.

The species new to the KNP.

Based on the literature and the data gathered in recent years from the area of the Kampinos National Park, 23 representatives of the discussed subfamilies from the group *Scarabaeidae pleurosticti* were recorded. It constitutes 60% of the national fauna of *Scarabaeidae*. A particular attention deserves a considerable group of species included in the red list of saproxylic beetles (NIETO & ALEXANDER 2010): *G. variabilis*, *O. barnabita*, *P. marmorata*, *P. speciosissima*, *T. fasciatus* and *V. hemipterus*. They indicate a special role of the Kampinos National Park in preserving the biodiversity of the discussed group in Mazovia.

SUMMARY

The paper presents new data on 23 species of the subfamilies Melolonthinae, Sericinae, Rutelinae, Dynastinae and Cetoninae (Coleoptera: Scarabaeidae). Among the presented species, two are protected: *Osmoderma barnabita* and *Protaetia (Cetonischema) speciosissima* (*O. barnabita* protected under the Habitats Directive), and six listed on the

European Red List of Saproxyllic Beetles: *G. variabilis*, *O. barnabita*, *P. marmorata*, *P. speciosissima*, *T. fasciatus* and *V. hemipterus*.

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