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New findings of rare and interesting beetles (Coleoptera) in the Babia Góra National Park

Nowe stwierdzenia rzadkich i interesujących chrząszczy (Coleoptera) w Babiogórskim Parku Narodowym

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ABSTRACT: A survey of beetles associated with macromycetes was conducted in 2018-2019 in the Babia Góra National Park (S Poland). Almost 300 species were collected on fungi and in flight interception traps. Among them, 18 species were recorded from the Western Beskid Mts. for the first time, 41 were new records for the Babia Góra NP, and 16 were from various categories on the Polish Red List of Animals. The first certain record of *Bolitochara tecta* ASSING, 2014 in Poland is reported.

KEY WORDS: beetles, macromycetes, ecology, trophic interactions, Polish Carpathians, UNESCO Biosphere Reserve

Introduction

Beetles of the Babia Góra massif have been studied for over 150 years. The first study of the Coleoptera of Babia Góra was by ROTTENBERG (1868), which included data on 102 species. During the 19th century,

several other papers including data on beetles from Babia Góra were published: 37 species were recorded from the area by KIESENWETTER (1869), a single species by NOWICKI (1870) and 47 by KOTULA (1873). The first major contribution was the paper by STOBIECKI (1883). During studies conducted in 1879-1880, he recorded 724 species of beetles. In 1967 a monograph of the beetles of Babia Góra was published by PAWŁOWSKI (1967), in which the first century of studies was summarised. The monograph listed 1373 species, and was based on the author's own data, studies of museum collections, and earlier publications. The paper by KUBISZ & SZAFRANIEC (2003) included original distributional data, and papers published after PAWŁOWSKI'S monograph of 1967 raised the total number of beetle species known from Babia Góra to 1555. After 2003, more papers including new records of beetles from Babia Góra were published (GRODZKI 2002; RUTA 2003; PRZYBYŁA & al. 2004; SIENKIEWICZ 2004; MAZUR & STACHOWIAK 2009; IWAN & al. 2010; KUBISZ & al. 2010; PRZEWOŹNY, RUTA 2010; MELKE & SZAFRANIEC 2013; GREŃ 2017; MAZUR, SZAFRANIEC 2018), resulting in an increase in the number of beetle species recorded from the area to 1624.

Beetles associated with fungi have never been studied thoroughly in the Babia Góra National Park. The aim of a survey carried out in 2018 and 2019 was to fill this gap in the knowledge of the beetles of Babia Góra.

The present paper includes a list of beetle species that are either new records for the Babia Góra National Park and/or the Western Beskid Mts. (as delimited in the Catalogue of Polish Fauna, see: BURAKOWSKI & al. 1973), or are rarely collected and poorly known in Poland. All the beetles were collected during the project "Beetles (Coleoptera) inhabiting the fruiting bodies of Macromycetes in the Babia Góra National Park". Detailed data on the interactions between beetles and macromycetes on Babia Góra will be published in a separate paper.

Material and methods

The survey was conducted in the Babia Góra National Park in 2018 and 2019 (research permit No. DOP-WPN.286.202.2018.DW). Beetles were collected either on fungi or in IBL-2 barrier traps. Specimens were either dry stored after killing in ethyl acetate vapour or were conserved in simplified SCHEERPELTZ fluid (a 1:1 mixture of 96% ethanol and 10% aq. acetic acid, according to A. MELKE (CHACHUŁA & al. 2019). Ethylene glycol was used as the conservation agent in the barrier traps. Fungi were

identified with the aid of the keys by HANSEN & al. (1997) and KNUDSEN & VESTERHOLT (2008).

The taxonomy and systematics of the fungi are in accordance with Index Fungorum (2019) and MycoBank (ROBERT & al. 2019), and the systematics of the beetles follow BOUCHARD & al. (2011), with amendments by ROBERTSON & al. (2015) and GIMMEL & al. (2019). The taxonomy of beetles follows the Catalogue of Palaearctic Coleoptera.

Symbols and abbreviations used in the text: * – new record for the BGNP; # – new record for Babia Góra and the Western Beskid Mts.; BGNP – Babia Góra National Park; comp. (comps.) – forest compartment(s) ("oddział leśny"); ex. (exx.) – specimen (specimens); WB – Western Beskid Mts.; Polish Red List of Animals – PRLA. Localities are separated by a semicolon, records within the same locality are separated with a comma.

Study area

The Babia Góra National Park (BGNP) is included in the UNESCO World Network of Biosphere Reserves. It is situated in southern Poland, in the province of Małopolska, close to the border with Slovakia. It is the culmination of the Żywiec Beskid Mts., which lie in the Western Beskid Mts. macroregion, and the Outer Western Carpathians subprovince (SOLON & al. 2018). The Babia Góra NP includes a major part of the Babia Góra massif stretching from west to east, with elevations ranging from 700 m to 1725 m a.s.l. at the highest point – the Diablak (ZIĘTARA 2004). The BGNP covers an area of 3391.55 ha.

Results

Overview of species

POLYPHAGA
Superfamily: Scirtoidea

Eucinetidae

Nycteus hopffgarteni (REITTER, 1885)

New locality: BGNP, comp. 79c, 29 VIII-28 IX 2019, 1 ex., IBL-2 barrier trap.

A rare species in Poland, known from scattered localities in the Carpathians, recorded from Babia Góra by KUBISZ & SZAFRANIEC (2001). PRLA category: LC – least concern (PAWŁOWSKI & al. 2002).

Clambidae

Calyptomerus alpestris REDTENBACHER, 1849

New localities: BGNP, comp. 47a, 2-18 VIII 2018, 1 ex., IBL-2 barrier trap; comp. 96g, 5-27 VII 2019, 2 exx., IBL-2 barrier trap.

A poorly known species, recorded in Poland from Mt. Śnieżnik and Babia Góra (BURAKOWSKI & al. 1976), and the Tatra Mts. (TYKARSKI 2000).

Superfamily: Derodontoidea

Derodontidae

Derodontus macularis (FUSS, 1850)#

New localities: BGNP, comp. 16a (Knieja Czatożańska), 850 m a.s.l., 13 X 2018, 1 ex., on *Ischnoderma resinosum*; comp. 16a, 900 m a.s.l., 30 X 2018, 3 exx., on *I. benzoinum.*

A rare species associated with natural forests, where it develops on *Ischnoderma* spp. Quite recently recorded in the Tatra Mts. by KLEJDYSZ & SKOCZYLAS (2008) and in the Pieniny Mts. (CHACHUŁA & al. 2019). PRLA category: DD – data deficient (PAWŁOWSKI & al. 2002).

Superfamily: Staphylinoidea

Ptiliidae – feather-winged beetles

Baeocrara variolosa (MULSANT et REY, 1861)#

New localities: BGNP, comp. 62a, 5-27 VII 2019, 1 ex., IBL-2 barrier trap; comp. 96g, 5-27 VII 2019, 2 exx., IBL-2 barrier trap.

Very rarely collected in Poland, the species is known from a few localities in the north-western part of the country (BURAKOWSKI & al. 1978).

Ptiliolum schwarzi (FLACH, 1887)*

New locality: BGNP, comp. 62a, 5-27 VII 2019, 2 exx., IBL-2 barrier trap.

This is a very rare species, known from historical records in south-western Poland (BURAKOWSKI & al. 1978) and the Cieszyn area in the Western Beskid Mts. (WANKA 1927).

Ptinella limbata (HEER, 1841)*

New localities: BGNP, comp. 62a, 5-27 VII 2019, 1 ex., IBL-2 barrier trap; comp. 72a, 5-27 VII 2019, 2 exx., IBL-2 barrier trap.

The species is known from a few localities scattered throughout Poland (BURAKOWSKI & al. 1978; SAWONIEWICZ 2015). Historically recorded from the Cieszyn area in the Western Beskid Mts. (LETZNER 1887).

Leiodidae

Agaricophagus cephalotes SCHMIDT, 1841*

New locality: BGNP, comp. 62a, 27 VII-29 VIII 2019, 3 exx., IBL-2 barrier trap.

This is a rare species associated with hypogeous fungi. Most localities in Poland were reported from the south of the country in the 19th century. In the Western Beskid Mts. recorded from the environs of Cieszyn and Mt. Czantoria (WANKA 1920, 1927).

Agathidium bescidicum REITTER, 1885

New localities: BGNP, comp. 62a, 5-27 VII 2019, 1 ex., IBL-2 barrier trap; comp. 46a, 780 m a.s.l., 18 VI 2018, 1 ex., on *Trametes hirsuta.*

Known from numerous localities in the Polish Carpathians (KILIAN & BOROWIEC 1998), including Babia Góra. PRLA category: CR – critically endangered (PAWŁOWSKI & al. 2002).

Agathidium confusum BRISOUT de BARNEVILLE, 1863

New locality: BGNP, comp. 79c, 19 VII-2 VIII 2018, 1 ex., IBL-2 barrier trap.

The species has been recorded in Poland from the Białowieża Primeval Forest and several localities in the southern part of the country. PRLA category: VU – vulnerable (PAWŁOWSKI & al. 2002).

Agathidium discoideum ERICHSON, 1845

New locality: BGNP, comp. 79c, 29 VIII-28 IX 2019, 1 ex., IBL-2 barrier trap.

A rare species recorded in Poland in the Białowieża Primeval Forest and scattered localities in the Carpathians, including Babia Góra (BURAKOWSKI & al. 1978; KILIAN & BOROWIEC 1998; RUTA 2003).

Catops grandicollis ERICHSON, 1837*

New locality: BGNP, comp. 97, 820 m a.s.l., 5 VII 2018, 1 ex., on *Inocybe* sp.

Recorded mostly from SW Poland. PRLA category: NT – near threatened (PAWŁOWSKI & al. 2002).

Catops neglectus KRAATZ, 1852#

New locality: BGNP, comp. 47a, 820 m a.s.l., 9 VIII 2018, 1 ex., on *Russula foetens.*

A rare species in Poland, more often collected only in Silesia (SZYMCZAKOWSKI 1961; JAŁOSZYŃSKI & al. 2008).

Colenis immunda (STURM, 1807)*

New locality: BGNP, comp. 101, 940 m a.s.l., 1 ex.

Distributed mainly in southern Poland; recently recorded in the Świętokrzyskie Mts. (MOKRZYCKI 2007) and the Kampinos National Park (MARCZAK & KOMOSIŃSKI 2015).

Hydnobius multistriatus (GYLLENHAL, 1813)*

New locality: BGNP, comp. 47a, 27 VII-29 VIII 2019, 1 ex., IBL-2 barrier trap.

A very rare species in Poland, known mostly from old records. In the Western Beskid Mts. recorded only from the Cieszyn area (WANKA 1920).

Leiodes brandisi HOLDHAUS, 1902

New locality: BGNP, comp. 72a, 29 IX-16 X 2018, 2 exx., IBL-2 barrier trap.

There are only two published records of this rare species in Poland: one from Wrocław-Zakrzów (BOROWIEC & COOTER 1999), and the other from the BGNP (KUBISZ & SZAFRANIEC 2001). Its occurrence in the BGNP was confirmed during this survey.

Leiodes gyllenhalii (STEPHENS, 1829)*

New locality: BGNP, comp. 62a, 5-27 VII 2019, 1 ex., IBL-2 barrier trap.

This species has been reported from a few scattered localities in Poland, mostly in the southern part of the country (BURAKOWSKI & al. 1978).

Leiodes lucens (FAIRMAIRE, 1855)#

New locality: BGNP, comp. 96g, 27 VII-29 VIII 2019, 3 exx., IBL-2 barrier trap.

This is a rare species in Poland, known from old findings in the Sudeten Mts. and Lower Silesia (BURAKOWSKI & al. 1978).

Leiodes obesa (SCHMIDT, 1841)*

New localities: BGNP, comp. 72a, 27 VII-29 VIII 2019, 1 ex., IBL-2 barrier trap; comp. 96g, 5-27 VII 2019, 1 ex., 27 VII-29 VIII 2019, 1 ex., IBL-2 barrier trap.

The species is rare in Poland, known from a few localities scattered throughout the country; recorded from the Lublin Upland and Pieniny Mts. by BOROWIEC & COOTER (1999). PRLA category: CR – critically endangered (PAWŁOWSKI & al. 2002).

Leiodes oblonga (ERICHSON, 1845)*

New localities: BGNP, comp. 62a, 19 VII-2 VIII 2018, 1 ex., 27 VII-29 VIII 2019, 1 ex.; comp. 72a, 19 VII-2 VIII 2018, 1 ex., 1-15 IX 2018, 2 exx., 15-29 IX 2018, 1 ex., 27 VII-29 VIII 2019, 1 ex.; comp. 79c, 19 VII-2 VIII 2018, 2 exx., 2-17 VIII 2018, 1 ex., 27 VII-29 VIII 2019, 1 ex., 27 VII-29 VIII 2019, 2 exx.; comp. 96g, 29 IX-16 X 2018, 1 ex., 27 VII-29 VIII 2019, 1 ex., all specimens in IBL-2 barrier traps.

The species is rarely collected in Poland (BURAKOWSKI & al. 1978; BOROWIEC & COOTER 1999); known from various parts of the country.

Liodopria serricornis (GYLLENHAL, 1813)

New localities: BGNP, comp. 72a, 19 VII-2 VIII 2018, 2 exx., IBL-2 barrier trap; 5-27 VII 2019, 1 ex., IBL-2 barrier trap; comp. 79c, 2-17 VIII 2018, 1 ex., IBL-2 barrier trap.

This is a rare species, associated with natural forests in Poland (BURAKOWSKI & al. 1978). PRLA category: EN – endangered (PAWŁOWSKI & al. 2002).

Nargus (*Demochrus*) *wilkini* (SPENCE, 1813)*

New localities: BGNP, comp. 62a, 2-17 VIII 2018, 2 exx., 19 VII-2 VIII 2018, 1 ex., IBL-2 barrier trap; comp. 72a, 17 VIII-1 IX 2018, 1 ex., IBL-2 barrier trap.

This rare species is known from southern and western Poland (BURAKOWSKI & al. 1978).

Sciodrepoides alpestris JEANNEL, 1934*

New localities: BGNP, comp. 46a, 778 m a.s.l., 12 VII 2018, 1 ex., on *Boletus edulis*; comp. 79c, 27 VII-29 VIII 2019, 2 exx., IBL-2 barrier trap.

This is a rare species, known from southern Poland and the Białowieża Primeval Forest (BURAKOWSKI & al. 1978; BYK 2007). PRLA category: NT – near threatened (PAWŁOWSKI & al. 2002).

Staphylinidae – rove beetles

Atheta (*Traumoecia*) *taxiceroides* MÜNSTER, 1932#

New localities: BGNP, comp. 3a, 860 m a.s.l., 3 XI 2018, 2 exx., on *Armillaria lutea*; comp. 14c, 960-980 m a.s.l., 17 X 2018, 4 exx., on *Bondarzewia mesenterica*; comp. 41a, 790 m a.s.l., 17 X 2018, 7 exx., on *B. mesenterica*.

A boreo-alpine species recorded in Poland from the Białowieża Primeval Forest (on the basis of a single specimen only, see BOROWIEC 1991) and from a doubtful, general record from the Beskidy Mts. (HORION 1951). A large number of specimens were recently collected on a fruiting body of *Meripilus giganteus* in the Pieniny NP (CHACHUŁA & al. 2019).

Atheta (*Dimetrota*) *hansseni* STRAND, 1943

New locality: BGNP, comp. 7a, 945 m a.s.l., 22 IX 2018, 1 ex., on *Sparassis brevipes*.

This is a very rare species, usually collected singly. It was recorded on Babia Góra by MELKE & SZAFRANIEC (1998); since then the only Polish record is from the Tatra Mts. (TYKARSKI 2006).

Bolitochara tecta ASSING, 2014#
= *Bolitochara lucida* auctt. nec GRAVENHORST, 1802

New locality: BGNP, comp. 14a, 950 m a.s.l., 29 IX 2018, 2 exx., on *Trametes hirsuta*.

The species was recently described in a revision of the Western Palaearctic species of *Bolitochara* MANNERHEIM, 1830 (ASSING 2014).

In the same paper, *Bolitochara lucida* (GRAVENHORST 1802) was synonymised with *Bolitochara reyi* SHARP, 1875, which was known from three localities in Poland. As a result, the locality of *B. tecta* on Babia Góra is the first confirmed locality of this species in Poland. Older records of members of the *B. lucida* group should be verified.

Gyrophaena congrua ERICHSON, 1837*

New localities: BGNP, comp. 47a, 815 m a.s.l., 8 VIII 2018, 3 exx., on *Megacollybia platyphylla*; comp. 7a, 1020 m a.s.l., 30 IX 2018, 75 exx., on *Mycena* sp.

A rare member of the genus *Gyrophaena* MANNERHEIM, 1830. Usually just a few are trapped at any one time, although in one locality in the BGNP as many as 75 specimens were obtained!

Ischnoglossa elegantula MANNERHEIM, 1830

New locality: BGNP, comp. 18f, 1245 m a.s.l., 30 IX 2018, 1 ex., on *Fomitopsis pinicola*.

A boreo-alpine species, known from Scandinavia, Latvia, the northern part of European Russia and the Italian Alps (LÖBL & SMETANA 2004). Even though it was described a long time ago, it has not been distinguished from a closely related species – *Ischnoglossa prolixa* (GRAVENHORST, 1802) – for many years. Only WUNDERLE (1990) published a revision that made it possible to identify members of this genus. The species was recorded earlier on Babia Góra but was erroneously identified as *Stichoglossa semirufa* (MELKE & SZAFRANIEC 1997). The occurrence of the species in the BGNP was confirmed during our studies. The species was recently recorded in the Przemyśl Foothills (Pogórze Przemyskie) (BUCHHOLZ & MELKE 2018).

Lypoglossa lateralis (MANNERHEIM, 1830)

New locality: BGNP, comp. 47a, 15-29 IX 2018, 1 ex., IBL-2 barrier trap.

An extremely rare boreo-alpine species. It was recorded earlier in the BGNP (MELKE & SZAFRANIEC 2003), but since then only in the Pisz Forest (GUTOWSKI & al. 2010).

Omalium septentrionis THOMSON, 1857*

New localities: BGNP, comp. 96g, 840 m a.s.l., 9 VIII 2018, 1 ex., on *Gomphus clavatus*; comp. 3a, 860 m a.s.l., 3 XI 2018, 4 exx., on *Armillaria lutea*.

This is a rare species, feeding on diverse substrates – carrion and various rotting materials, including fungi. PRLA category: EN – endangered (PAWŁOWSKI & al. 2002).

Phymatura brevicollis (KRAATZ, 1856)

New localities: BGNP, comp. 47a, 815 m a.s.l., 8 VIII 2018, 1 ex., on *Fomitopsis pinicola*; comp. 5a, 870 m a.s.l., 9 VIII 2018, 7 exx., on *F. pinicola*; comp. 11d, 1180 m a.s.l., 6 X 2018, 1 ex., on *Boletus edulis*; comp. 16a, 870 m a.s.l., 23 VIII 2018, 1 ex., on *Sparassis brevipes*.

An indicator of natural forests according to SZUJECKI (2017). Recently recorded in forests of the Przemyśl Foothills (BUCHHOLZ & MELKE 2018) and in the Pieniny NP (CHACHUŁA & al. 2019).

Scaphisoma boreale LUNDBLAD, 1952#

New localities: BGNP, comp. 101c, 920 m a.s.l., 24 VIII 2018, 1 ex., on *Tylopilus felleus*; comp. 101c, 920 m a.s.l, 24 VIII 2018, 1 ex., on *Lactarius piperatus.*

Recently recorded in natural forests of the Carpathian Forest (BUCHHOLZ & MELKE 2018). Unpublished data suggest that this species is more common in Poland. PRLA category: VU – vulnerable (PAWŁOWSKI & al. 2002).

Xylostiba monilicornis (GYLLENHAL, 1810)

New localities: BGNP, comp. 16a, 890 m a.s.l., 13 X 2018, 1 ex., on *Mucidula mucida*; comp. 2a, 960 m a.s.l., 14 X 2018, 1 ex., on *Ganoderma applanatum*.

This is a relict of natural forests (SZUJECKI 2017), which has become increasingly rare in recent years. Recent records only from the Karkonosze Mts. (MAZUR & al. 2016) and the Pieniny NP (CHACHUŁA & al. 2019).

Superfamily: Scarabaeoidea

Scarabaeidae

Limarus maculatus (STURM, 1800)*

New localities: BGNP, comp. 47a, 27 VII-29 VIII 2019, 2 exx.; comp. 62a, 27 VII-29 VIII 2019, 1 ex.; comp. 72a, 19 VII-2 VIII 2018, 4 exx., 1-15 IX 2018, 1 ex., 27 VII-29 VIII 2019, 1 ex.; comp. 79c, 2-17 VIII 2018, 1 ex., 27 VII-29 VIII 2019, 1 ex.; comp. 79c, 17 VIII-1 IX 2018, 1 ex.; comp. 96g, 19 VII-2 VIII 2018, 1 ex., 27 VII-29 VIII 2019, 1 ex., all specimens in IBL-2 barrier traps.

Restricted to forest habitats, this species is known from relatively few localities in Poland, where it occurs only in the mountains. GÓRZ (2019) states that it is a relatively common, montane species, although according to older literature (BURAKOWSKI & al. 1983) it appears to have been rare, and was even placed on the Polish Red List of Animals in the category NT – near threatened (PAWŁOWSKI & al. 2002).

Superfamily: Elateroidea

Lycidae

Benibotarus taygetanus (PIC, 1905)*

New locality: BGNP, comp. 79c, 5-27 VII 2019, 1 ex., IBL-2 barrier trap.

A rare species, known from a few localities in southern Poland, and the Romincka Forest (BURAKOWSKI & al. 1985). In the Western Beskid Mts. it was recorded in Roztoka Wielka near Rytro (BURAKOWSKI & al. 1985) and the Cieszyn area (KOLBE 1913).

Nitidulidae

Stelidota geminata (SAY, 1825)#

New locality: BGNP, comp. 79c, 27 VII-29 VIII 2019, 1 ex., IBL-2 barrier trap.

The species was recently recorded in Poland for the first time (KRÓLIK 2019). Native to the southern USA, it has been spreading across Europe since the 1980s.

Thalycra fervida (OLIVIER, 1790)*

New locality: BGNP, comp. 47a, 800 m a.s.l., 8 VIII 2018, 2 exx.

A rare species associated with hypogeous fungi, known from scattered localities in Poland (BURAKOWSKI & al. 1986b). In the Western Beskid Mts., recorded from the Cieszyn area (WANKA 1927).

Cryptophagidae

Cryptophagus croaticus REITTER, 1879

New locality: BGNP, comp. 47a, 820 m a.s.l., 9 VIII 2018, 1 ex., on *Boletus calopus.*

A very rare species, recorded in Poland from Babia Góra and the Pieniny Mts. PRLA category: DD – data deficient (PAWŁOWSKI & al. 2002).

Silvanidae

Dendrophagus crenatus (PAYKULL, 1799)

New locality: BGNP, comp. 16a, 905 m a.s.l., 23 VIII 2018, 2 exx., on *Gloeophyllum sepiarium.*

A boreo-alpine species known from southern Poland and the Białowieża Primeval Forest; recently recorded in north-western Poland (MIŁKOWSKI & al. 2019).

Laemophloeidae

Leptophloeus alternans (ERICHSON, 1846)#

New locality: BGNP, comp. 79c, 19 VII-2 VIII 2018, 1 ex., IBL-2 barrier trap.

A rather rarely collected species, known from scattered localities in Poland (BURAKOWSKI & al. 1986b).

Superfamily: Coccinelloidea

Latridiidae

Corticarina lambiana (SHARP, 1910)#

New locality: BGNP, comp. 47a, 2-18 VIII 2018, 1 ex., IBL-2 barrier trap.

The distribution of this species in Poland is poorly known. It has been recorded in only three regions, with most of the records coming from the Białowieża Primeval Forest (BURAKOWSKI & al. 2000). This is the first record from southern Poland.

Coccinellidae

Scymnus impexus MULSANT, 1850*

New locality: BGNP, comp. 47a, 2-18 VIII 2018, 1 ex., IBL-2 barrier trap.

A rare species associated with coniferous trees, known from a few localities elsewhere in Poland (BURAKOWSKI & al. 1986c).

Superfamily: Tenebrionoidea

Tetratomidae

Mycetoma suturale (PANZER, 1797)

New localities: BGNP, comp. 16a (Knieja Czatożańska), 850 m a.s.l., 13 X 2018, 21 exx., on *Ischnoderma resinosum*; comp. 16a, 900 m a.s.l., 30 X 2018, 3 exx., on *I. benzoinum.*

A rare species restricted to well preserved, natural forests (KUBISZ & al. 2010). PRLA category: NT – near threatened (PAWŁOWSKI & al. 2002).

More common species newly recorded in the BGNP(*) and in WB and BGNP(#):

Carabidae: *Microlestes minutulus* (GOEZE, 1777)* [comp. 72a]; **Scirtidae:** *Prionocyphon serricornis* (MÜLLER, 1821)# [comp. 79c]; **Ptiliidae:** *Acrotrichis silvatica* ROSSKOTHEN, 1935# [comps. 47a, 62a]; *Acrotrichis sitkaensis* (MOTSCHULSKY, 1845)# [comps. 62a, 72a]; *Acrotrichis dispar* (MATTHEWS, 1865)* [comp. 62a]; *Nephanes titan* (NEWMAN, 1834)* [comp. 79c]; **Leiodidae:** *Anisotoma orbicularis* (HERBST, 1792)* [comp. 96g]; **Staphylinidae:** *Acrolocha amabilis** (HEER, 1838) [comp. 72a]; *Atheta gagatina* (BAUDI DI SELVE, 1848)# [comps. 97, 99a, 101c]; *Atheta nigritula* (GRAVENHORST, 1802)* [comps. 43, 97, 99a]; *Bryaxis ullrichii* (MOTSCHULSKY, 1851)* [comp. 47a]; *Dexiogyia corticina* (ERICHSON, 1837)* [comp. 7a]; *Gyrophaena pulchella* HEER, 1839* [comps. 7a, 16a, 45a, 46a, 47a, 48a, 62a, 96g, 99a,

101c]; *Lordithon bimaculatus* (SCHRANK, 1798)# [comps. 11d, 14c, 16a, 20g, 28b, 28i, 29a, 45a, 46a, 47a, 51, 52a, 62a, 82a, 96g, 99a, 101c]; *Megarthrus hemipterus* (ILLIGER, 1774)# [comps. 43d, 46a, 47a, 62a, 72a, 101c]; *Oxypoda arborea* ZERCHE 1994* [comps. 2a, 7a, 16a, 44, 46a, 47a, 79c, 82a, 99a]; *Oxyporus maxillosus* FABRICIUS, 1793* [comp. 47a]; *Proteinus ovalis* STEPHENS, 1834* [comp. 16a]; **Ptinidae:** *Dorcatoma dresdensis* HERBST, 1792* [comp. 79c]; *Dorcatoma punctulata* MULSANT et REY, 1864* [comps. 72a, 79c]; **Monotomidae:** *Rhizophagus fenestralis* (LINNAEUS, 1758)* [comp. 6b]; *Rhizophagus cribratus* (GYLLENHAL, 1827)* [comp. 79c]; **Nitidulidae:** *Pocadius adustus* REITTER, 1888* [comps. 44, 82, 96g]; **Latridiidae:** *Enicmus rugosus* (HERBST, 1793)* [comps. 47a, 62a, 72a, 79c, 96g]; **Corylophidae:** *Orthoperus atomus* (GYLLENHAL, 1808)* [comps. 47a, 96g]; **Mycetophagidae:** *Litargus connexus* (GEOFFROY in FOURCROY, 1785)* [comp. 96g]; *Mycetophagus multipunctatus* FABRICIUS, 1792* [comps. 72d, 79c]; **Ciidae:** *Cis comptus* GYLLENHAL, 1827# **[**comp. 46f]; *Cis rugulosus* MELLIÉ, 1848# [comps. 14, 16a, 41a, 74a, 96g]; **Tetratomidae:** *Hallomenus axillaris* (ILLIGER, 1807)* [comps. 90, 96g]; *Hallomenus binotatus* (QUENSEL, 1790)* [comps. 47a, 72a, 79c]; **Curculionidae:** *Hylobius pinastri* (GYLLENHAL, 1813)* [comp. 96g].

Summary and discussion

During the survey of beetles performed in 2018 and 2019, about 300 species were collected, including 73 interesting species – rare, endangered, or recorded from the BGNP and Western Beskid Mountains for the first time. Among these 73 species, the majority were members of Staphylinidae (21 species). The other abundant families were Leiodidae (17), Ptiliidae (7), Nitidulidae (3), and Tetratomidae (3). 16 species from various categories of the Polish Red List of Animals were collected: 3 critically endangered (CR): *Agathidium bescidicum*, *Ptiliolum schwarzi*, and *Leiodes obesa*; 3 endangered (EN): *Liodopria serricornis*, *Nephanes titan*, and *Omalium septentrionis*; 2 vulnerable (VU): *Agathidium confusum* and *Scaphisoma boreale*; 4 near threatened (NT): *Catops grandicollis*, *Sciodrepoides alpestris*, *Limarus maculatus*, and *Mycetoma suturale*; 1 least concern (LC): *Nycteus hopffgarteni*; and 3 data deficient (DD): *Cryptophagus croaticus*, *Derodontus macularis*, and *Benibotarus taygetanus*.

59 species were recorded in the BGNP for the first time, resulting in an increase in the number of beetle species recorded from the area since

1683. When compared with other national parks in Poland, the BGNP is relatively well-studied. There are only four national parks with higher number of recorded beetles: the Białowieża NP – 2400 species (BANASZAK & al. 2004), Bieszczady NP – 2065 species (KNUTELSKI & KNUTELSKA 2014), Pieniny NP – 1738 species (CHACHUŁA & al. 2019), and Ojców NP – 1712 species (BANASZAK & al. 2004). In comparison with adjoining national parks, the beetles of the BGNP are relatively well known. In Tatra NP, 1224 beetle species were recorded (KNUTELSKI & KNUTELSKA 2014), and in Gorce NP – 572 species (BANASZAK & al. 2004). In numerous national parks in Poland, beetles have never been studied or are only poorly known.

Our studies have shown that macromycetes were an important and poorly studied microhabitat of beetles in the BGNP.

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STRESZCZENIE

W latach 2018 i 2019 na terenie Babiogórskiego Parku Narodowego (BgPN) z owocników grzybów wielkoowocnikowych oraz przy pomocy pułapek ekranowych IBL-2 prowadzono odłowy chrząszczy. Badania te wykazały łącznie około 300 gatunków Coleoptera, wśród nich 73 interesujące – zagrożone wymarciem, rzadkie i nowe dla BgPN oraz dla Beskidu Zachodniego. Na szczególną uwagę zasługują taksony zamieszczone na Polskiej Czerwonej Liście Zwierząt, których stwierdzono 16, w tym krytycznie zagrożonych (CR) – 3, zagrożonych (EN) – 3, narażonych (VU) – 2, bliskich zagrożenia (NT) – 4, najmniejszej troski (LC) – 1, a także 3 o nieokreślonym zagrożeniu (DD). Interesujące chrząszcze należały do 24 rodzin. Najliczniejsze w gatunki rodziny, to Staphylinidae (21), Leiodidae (17), Ptiliidae (7), Nitidulidae (3) i Tetratomidae (3). W pozostałych rodzinach, spośród taksonów interesujących stwierdzono występowanie 1-2 gatunków.

Do najbardziej interesujących stwierdzonych gatunków chrząszczy można zaliczyć: *Agathidium bescidicum*, *A. confusum*, *Bolitochara tecta*, *Leiodes obesa*, *Catops grandicollis*, *Cryptophagus croaticus*, *Derodontus macularis*, *Scaphisoma boreale*, *Sciodrepoides alpestris* i *Mycetoma suturale*.

Przeprowadzone badania dostarczyły danych o 59 gatunkach nie wykazywanych dotąd z BgPN, dzięki czemu lista znanych z BgPN wzrosła do 1683. W rankingu stopnia zbadania polskich parków narodowych pod względem koleopterofauny, Babiogórski

Park Narodowy plasuje się na piątym miejscu. Więcej wykazanych gatunków chrząszczy jest w Białowieskim PN – 2400 gatunków (BANASZAK et al. 2004) następnie w Bieszczadzkim PN – 2065 gatunków (KNUTELSKI i KNUTELSKA 2014), Pienińskim PN – 1738 gatunków (CHACHUŁA et al. 2019) i Ojcowskim PN, gdzie stwierdzono obecność 1712 gatunków chrząszczy (BANASZAK et al. 2004). Podkreślić należy jednak, że BgPN, w porównaniu z sąsiadującymi parkami narodowym tj. z Tatrzańskim i Gorczańskim PN jest znacznie lepiej zbadany pod względem tej grupy systematycznej. Na terenie TPN stwierdzono 1224 gatunki chrząszczy (KNUTELSKI i KNUTELSKA 2014), zaś z GPN wykazano 572 gatunki (BANASZAK et al. 2004).

Powyższe badania wykazały, że grzyby stanowią ważne i dotąd słabo rozpoznane mikrosiedlisko chrząszczy w Babiogórskim Parku Narodowym.

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