

New weevil species (Coleoptera: Anthribidae, Apionidae, Curculionidae) in the fauna of the Świętokrzyskie Mountains

Marek WANAT¹, Lech BUCHHOLZ², Jerzy SZYPUŁA¹

¹ Muzeum Przyrodnicze Uniwersytetu Wrocławskiego, ul. Sienkiewicza 21,
50-335 Wrocław; e-mail: marek.wanat@uwr.edu.pl, jerzy.szypula@uwr.edu.pl

² Świętokrzyski Park Narodowy,
ul. Suchedniowska 4, 26-010 Bodzentyn; ampedus@poczta.onet.pl

ABSTRACT: Thirty-nine weevil species are listed from the Świętokrzyskie Mountains for the first time, raising the total number of Curculionoidea (except Scolytinae) known to occur in this region of Poland to 438. New records concern species from the families Anthribidae (1), Apionidae (4) and Curculionidae (34). Several species are commented upon, providing also a critical discussion on host associations of invasive *Lignyodes bischoffi* in Poland, apparently restricted to American ash species and not extended to native *Fraxinus excelsior*.

KEY WORDS: Coleoptera, Curculionoidea, Anthribidae, Apionidae, Curculionidae, new records, Poland, Świętokrzyskie Mts

Introduction

The coleopterofauna of the Świętokrzyskie Mountains, a land within the boundaries adopted here after the authors of the part Coleoptera of the Catalogue of the Polish Fauna – CPF (BURAKOWSKI & al. 1973), is studied very irregularly. Alongside the well-studied Łysogóry range or the Chełmowa Mountain situated within the boundaries of the Świętokrzyskie National Park, there are many smaller ranges or regions of this land that

have been far less appreciated by entomologists and that are poorly studied. To these, the Jeleniowskie range can be included, as well as the area of the Cisowsko-Orłowiński National Park, whose enotomofauna only recently underwent more intensified exploration that brought about the discovery of many relic and rare beetle species (BOROWSKI & MAZUR 2007).

As one of the largest Coleoptera groups and phytophages with very diverse biology, weevils – excluding bark beetles (Curculionidae: Scolytinae) that are omitted in this study – belong to poorly studied beetles of the Świętokrzyskie National Park. They were granted more attention only by GOTWALD (1968), CMOLUCH (1980) and KUŚKA (1989), who after his field research that lasted a few years and after the analysis of the historical data summed up a then-contemporary knowledge on the fauna of this land, providing a list of 358 species from the families Attelabidae, Apionidae, and Curculionidae. This author, however, treated the Świętokrzyskie Mountains more broadly than it was assumed with the KNP, including, among others, the environs of Chęciny or the Suchedniowskie Forests (the Świnia Góra reserve), which according to the KNP belongs to the Małopolska Upland. It concerns 9 out of 36 localities researched by KUŚKA (*l.c.*), and the species recorded by this author solely from them were not included to the fauna of the Świętokrzyskie Mountains by the authors of the CPF (BURAKOWSKI & al. 1992, 1993, 1995, 1997). Later sparse contributions, devoted to all Coleoptera and rather biocenotic studies (among others BIDAS & BUCHHOLZ 2007, RUTKIEWICZ 2007, BYK 2007, MOKRZYCKI 2007, WANAT & SZYPUŁA 2008), expanded the list of the weevil species of the Świętokrzyskie Mountains to 389 species. This number still seems to be largely underestimated, for the reason that, for example, the list lacks many common species occurring technically from the whole country except for high mountains. The part-time and irregular collections of the weevil conducted in the years 2007-2015 in different areas of the Świętokrzyskie Mountains confirm this assertion by providing the discovery of yet another 39 species, whose list with possible commentaries is presented below. Any commentaries on the distribution of common species known from the majority of the regions from the CPF has been dispensed with. In the analysis of the distribution of particular species in Poland, implicitly and with no multiplied citations, we base on the data gathered in the four volumes of the CPF devoted to Curculionoidea (BURAKOWSKI & al. *l.c.*), supplemented with later publications (usually also not cited if in the commentary only a number of regions appears and not their names).

The authors who collected the specimens that are presented in the following paper are referred to with their name initials: JS – Jerzy Szypuła, LB – Lech Buchholz, MW – Marek Wanat). The remaining abbreviations: f.d. – a forest division, o.o. – a protection district, NP – a national park, res. – a reserve, vic. – environs. Evidence specimens are stored in the collections of MW and/or JS.

List of species

Family: Anthribidae

Pseudeuparius sepicola (FABRICIUS, 1792)

- The Świętokrzyski NP, EB03 Chełmowa Góra (NE hillside), 15 VIII 2014, 1 ex., leg. LB & MW.

A very rare Anthribidae species known hitherto from 9 regions of the CPF, mainly western ones (BURAKOWSKI & al. 1992, MARCZAK & MASIAZ 2013, SZOLTYS & GRZYWOCZ 2015, WANAT & al. 2016). Apart from the pre-war record near Przemyśl (TRELLA 1930), it has never been recorded from the area of Poland situated south off the Vistula.

Family: Apionidae

Diplapion stolidum (GERMAR, 1817)

- The Świętokrzyski NP, DB94 Bodzentyn, Stawy Biskupie, o.l. 8A, 4 V 2009, 2 exx., leg. MW.

Protopirapion atratum (GERMAR, 1817)

- DB94 Celiny ad Bodzentyn, Miejska Góra (E hilside), 21 VI 2009, 3 exx., leg. MW.

In Poland, a very locally occurring species, recorded hitherto only from single localities from 10 regions; its range, however, covers technically the whole lowland-upland strip.

Cyanapion gyllenhalii (KIRBY, 1808)

- EB04 Śniadka-Trzcianka ad Bodzentyn, 26 VIII 2008, 1 ex., leg. LB & MW; DB94 Bodzentyn, Stawy Biskupie, 4 V 2009, 5 exx., leg. MW.

The Świętokrzyskie Mountains are the last region of the CPF, from which this common species has never been recorded before.

Oxystoma subulatum (KIRBY, 1808)

- Świętokrzyski PN, DB94 Grabowa ad Święta Katarzyna o.l. 20P and adjacent hay meadows, 19 VI 2007, 1 ex., leg. LB & MW

Family: Curculionidae*Hypera contaminata* (HERBST, 1795)

- DB83 Przełom Lubrzanki ad Mąchocice Kapitulne, 5 V 2009, 1 ex., leg. MW.

A xerothermophilic weevil often also inhabiting warmer localities with ruderal vegetation, rarely captured but known already from 15 regions. Encountered more frequently in the south and in the east of the country.

Larinus turbinatus GYLLENHAL, 1835

- The Świętokrzyski NP, DB94 Grabowa ad Święta Katarzyna o.l. 20P and adjacent hay meadows, 19 VI 2007, 3 exx., leg. LB & MW; Celiny ad Bodzentyn, Miejska Góra (E hillside), 21 VI 2009, 1 ex., leg. MW.

One of the south species that expanded their range in Poland in the last 20 years, inhabiting mainly ruderal habitats. Currently, it is known from 15 regions and almost the whole lowland-upland part of the country .

Lixus bardanae (FABRICIUS, 1787)

- The Świętokrzyski PN, DB94 Grabowa ad Święta Katarzyna o.l. 20P and adjacent hay meadows, 19 VI 2007, 1 ex., leg. LB & MW.

One of the more frequently encountered lixus beetles in the whole country; a characteristically lowland species; in the mountains, it is recorded only in the Bieszczady Mountains (PETRYSZAK & al. 2002).

Lixus iridis OLIVIER, 1807

- DB92 Daleszyce-Zagórze vic., Świnia Góra, 8 VII 2007, 1 ex., leg. MW.

Lixus tibialis BOHEMAN, 1842

- EB13 Zagaje Grzegorzowskie ad Czajęcice, a slope and a quarry, 11 VII 2007, 2 exx., leg. MW.

A rare species of the lixus beetle up until recently known merely from the Lublin Upland and the Sandomierz Basin (BURAKOWSKI & al. 1993), later collected also from Podlachia in the valley of the Bug River (WANAT

& GOSIK 2003) above the Lower Vistula (MAZUR & KUBISZ 2013), and the Małopolska Upland (WANAT & al. 2016). The localities of the Małopolska and Świętokrzyskie are the first ones situated West off the Vistula valley.

Lixus albomarginatus BOHEMAN, 1842

- EB04 Śniadka-Trzcianka ad Bodzentyn, 26 VIII 2008, 1 ex., leg. MW.
A weevil species inhabiting many species of Brassicaceae plants in dry and sunlit places; similarly to lixus species, they are rarely captured. Recorded hitherto from 12 regions.

Adexius scrobipennis GYLLENHAL, 1834

- The Świętokrzyski NP, EB03 Święty Krzyż, the verge of the Bielnik meadow, 17 VIII 2009, 1 ex., from dust, leg. MW.
- Świętokrzyski NP, DB94 Strict Protection Area "Czarny Las", 6 VIII 2016, 4 exx., from dust, leg. LB & MW.

A weevil species with its range limited in Poland to foothills and lower parts of the Carpathian Mountains, as well as to isolated populations in Roztocze and in the Ojcowski National Park (BURAKOWSKI & al. 1995). The Łysogóry Range appears to be the next isolated area of its occurrence in the country. *A. scrobipennis* is a litter species, inhabiting warm deciduous and mixed forests of mainly limestone ground. Though from the Polish point of view it might appear to be a Carpathian species, its relatively wide range in Western and Southern Europe (among others Belgium, France, Spain, Northern Italy, Switzerland, Croatia, Bosnia and Herzegovina), reaching Romania and Ukraine from the East and the Southern Russia up to the Western Caucasus, does not confirm it (ALONSO-ZARAZAGA 2013).

Magdalis violacea (LINNAEUS, 1758)

- DB92 the Daleszyce Forest Inspectorate, the Cisów Forestry, o.l. 144, 8 VII 2007, 1 ex., leg. JS.

Bagous tempestivus (HERBST, 1795)

- Świętokrzyski NP, DB94 Bodzentyn, Stawy Biskupie, o.l. 8A, 4 V 2009, 1 ex., leg. MW.

The majority of the species from the genus *Bagous* develop on different plants growing in standing waters, and the Świętokrzyskie Mountains are the region that is especially poor a kind of habitat

conducive for them. *B. tempestivus* is only the fourth species recorded from here, inhabiting humid meadows and water banks on different species of *Ranunculus* spp. In Poland, it belongs to the most frequently encountered; known from 15 regions.

Hexarthrum exiguum (BOHEMAN, 1838)

- DB94 Bodzentyn, 29 VIII 2008, 1 ex., collected from a small hollow in a maple at the ground level, leg. MW.

A rarely encountered weevil characterized with a hidden way of existence, developing in humid, dead wood, as well as in buildings and different wooden technical constructions. Hitherto, recorded from 14 regions, but occurs probably in the whole country.

Cossonus cylindricus C.R. SAHLBERG, 1835

- DB94 Bodzentyn, a hollow in a poplar, 29 VIII 2008, 1 ex. (elytre), leg. MW.

Pseudostyphlus pillumus (GYLLENHAL, 1835)

- The Świętokrzyski NP, DB94 Bodzentyn, Stawy Biskupie, o.l. 8A, 5 V 2009, 1 ex., leg. MW; Celiny ad Bodzentyn, Miejska Góra (E hillside), 21 VI 2009, 1 ex., leg. MW; EB03 Cząstków ad Nowa Słupia, Skarpa Zapusty, 20 VI 2007, 1 ex., leg LB & MW.

Acalyptus carpini (FABRICIUS, 1792)

- The Świętokrzyski NP, DB94 Wzorki ad Św. Katarzyna, 5 V 2009, 5 exx., leg. MW; Dolina Wilkowska ad Św. Katarzyna, 28 XI 2009, 1 ex., from dust, leg. MW.

Dorytomus nordenskioldi FAUST, 1883

- DB94 Celiny ad Bodzentyn, Miejska Góra (SE hillside), 21 VI 2009, 1 ex., leg. MW; the Świętokrzyski NP, Psarska Góra, 11 VII 2007, 1 ex., leg. MW; DB84 o.o. Klonów, o.l. 266, 16 VIII 2007, 10 exx., collected from litter under aspens, leg. MW.

In Poland, the rarest from the five species of *Dorytomus*, inhabiting on the poplar *Populus tremula* L.; recorded hitherto from 12 regions.

Dorytomus ictor (HERBST, 1795)

- DB94 Bodzentyn, 29 VIII 2008, 10 exx., under the bark of a poplar *Populus nigra* L., leg. MW.

Dorytomus schoenherri FAUST, 1883

- DB94 Bodzentyn, 29 VIII 2008, 1 ex., under the bar of a poplar *Populus nigra* L., leg. MW.

The rarest from the few species of *Dorytomus*, encountered on the black poplar; known from 11 regions.

Dorytomus salicis WALTON, 1851

- The Świętokrzyski NP, DB94 Wzorki ad Św. Katarzyna vic., o.l. 62a, a peated meadow near defunct narrow-gauge railway tracks, 20 VI 2007, 1 ex., leg. LB & MW.

A weevil distinctly associated with peatbogs; in Poland, it occurs very locally; so far, recorded from 11 regions, and from half of them over a half of century ago; only recently discovered from the Małopolska Upland (WANAT & al. 2016).

Lignyodes bischoffi (BLATCHLEY, 1916)

- DB94 Bodzentyn, 29 VIII 2008, 3 exx., from roadside *Fraxinus pennsylvanica* H. MARSH., leg. MW.
- The Świętokrzyski PN, DB94 "Gajówka Kąty", 5 VIII 2016, 18 exx., lured to a source of light, leg. LB & MW.

Since it was discovered in Poland for the first time in 1998 (GOSIK & al. 2001), this weevil has inhabited the majority of the area of Poland, and is known from 9 regions, also in the west (WANAT 2003, WANAT & MOCARSKI 2008).

It is one of three weevils considered in Poland as invasive species (KAŁMUK and PAWŁOWSKI 2011), even though its potential harmfulness for the local *Fraxinus excelsior* L seems to be rather illusory, and the limitation of the self-proliferation of foreign species from this genus in our environment is hardly to be considered as harmful.

In Poland, this weevil develops in artificially sown seeds of the white ash (mainly *F. pennsylvanica*), and according to one of the authors' observations (MW), it does not inhabit generative parts of ashkeys of the native *F. excelsior*, the former having an explicitly different shape and proportions. In fact, it was mentioned by DIECKMANNA (1988) alongside with *F. americana* L. as a host plant for *L. bischoffi*, without however providing any specific data confirming the development of larvae in the seeds of this European ash species. On the contrary, all the mentioned cases of collecting larvae or the aggregation of beetles by DIECKMANN (*l.c.*) concerned the white ash. POIRAS (1991, 1998, 2006) when reporting

on observations of the development of *L. bischoffi* on different European ash species such as *F. excelsior*, *F. lanceolata* BORKH., *F. ormus* L. and *F. oxyacarpa* WILLD, at least in case of the first one of them, he probably mistakes it with one of the white ash, as in one section of his study he claims that this weevil was transported from North America to Europe (sic!) (POIRAS 2006, pp. 123) together with the *F. Excelsior*. Perhaps, in certain circumstances, for example an overpopulation as a result of limited presence of proper trees, there might locally occur attempts of laying eggs in ashkeys of the *F. excelsior* and other European species, even though it does not need to lead necessarily to the successful development of the larva. It is more probable that during this weevil's frequent mass appearances, there might only appear attempts of foraging of this species on leaves and ashkeys of different ash species and characteristic discolored traces (WANAT and MOCARSKI 2008: pp. 181, fig. 2, 3). This issue requires an in-depth examination, as the consideration of *F. Excelsior* as a proper host plant of *L. bischoffi* has been not sufficiently proved.

Tychius squamulatus GYLLENHAL, 1835

- EB13 Zagaje Grzegorzowskie ad Czajęcice, a slope and a quarry, 11 VII 2007, 1 ex., leg. MW.

Anthonomus ulmi (DE GEER, 1775)

- The Świętokrzyski PN, DB84 o.o. Klonów, o.l. 233, 27 VIII 2008, 1 ex., collected from litter from the verge of a forest, leg. MW.

Anthonomus humeralis (PANZER, 1795)

- Świętokrzyski PN, DB94 Św. Katarzyna vic., Dolina Wilkowska, 28 XI 2009, 1 ex., from dust, leg. MW.

Curculio pellitus (BOHEMAN, 1843)

- The Świętokrzyski PN, DB94 Psary Kąty vic., 11 VII 2007, 2 exx., leg. MW & JS.

A rarely encountered Curculio, according to SŁMRECZYŃSKI (1972), it is known from not many localities only to the south off the country. Based on the current state of knowledge. It has been recorded from 16 regions, from the Baltic Coast to the Tatra Mountains (BURAKOWSKI et al. 1995).

Rhinusa neta (GERMAR, 1821)

- DB92 Daleszyce-Zagórze vic., Świnia Góra, 8 VII 2007, 1 ex., leg. MW; EB13 Zagaje Grzegorzowskie ad Czajęcice, a slope and a quarry, 11 VII 2007, 8 exx., leg. MW.

Cionus clairvillei BOHEMAN, 1838

- EB13 Zagaje Grzegorzowskie ad Czajęcice, a slope and a quarry, 11 VII 2007, 1 ex., leg. MW; EB04 Śniadka-Trzcianka ad Bodzentyn, 26 VIII 2008, 4 exx., leg. MW; DB94 Świętokrzyski PN, Rudki ad Nowa Słupia vic., 20 VI 2009, 3 exx., leg. LB & MW.

A representative of the genus; one of the more frequently encountered from the lowland of Poland, where it has been recorded from 11 regions. Surprisingly absent in all the mountain regions, as well as in the whole south-western part of the country.

Orchestes pilosus (FABRICIUS, 1781)

- The Świętokrzyski NP, DB94 Psary Kąty vic., 7 V 2009, 1 ex., leg. MW & JS.

Aulacobaris lepidii (GERMAR, 1824)

- DB94 Śniadka Druga ad Bodzentyn, 11 IX 2009, 1 ex., leg. MW.

Ceutorhynchus constrictus (MARSHAM, 1802)

- The Świętokrzyski NP, DB94 Bodzentyn, Stawy Biskupie, o.l. 8A, 4 V 2009, 10 exx., leg. MW.

Ceutorhynchus rapae GYLLENHAL, 1837

- DB83 Przełom Lubrzanki ad Mąchocice Kapitulne, 5 V 2009, 2 exx., leg. MW.

Parethelcus pollinarius (FORSTER, 1771)

- The Świętokrzyski NP, DB94 Bodzentyn, Stawy Biskupie, o.l. 8A, 4 V 2009, 1 ex., leg. MW.

Glocianus distinctus (CH. BRISOUT, 1870)

- EB13 Zagaje Grzegorzowskie ad Czajęcice, a slope and a quarry, 11 VII 2007, 2 exx., leg. MW.

Glocianus moelleri (THOMSON, 1868)

- EB13 Zagaje Grzegorzowskie ad Czajęcice, a slope and a quarry, 11 VII 2007, 5 exx., leg. MW & JS.

Ranunculiphilus faeculentus (GYLLENHAL, 1837)

- DB93 Góra Łysica ad Św. Katarzyna, near the peak, 600 AMSL, 15 VIII 2007, 1 ex., collected from litter and undergrowth consisted of *Vaccinium myrtillus* L. in a fir forest, leg. MW.

A completely accidental discovery of a specimen undergoing diapauses of a species associated with open grasslands and vegetal communities, here it lives monophagically on the *Consolida regalis* S.F. GRAY. The place of its collection is separated from the nearest habitats of this type by over 1.5 km of a dense forest. The species considered in Poland as xerothermophilic and south-related (MAZUR 2001), however, its records from meadows and fallow lands by the Biebrza River, as well as the Suwałki Region (WANAT 2005, 2009) demands one to assume that it inhabits the whole Poland, where it reaches its northern frontier of the European range. It is hitherto known from 8 regions, mainly the eastern ones, but the rarity of its collection can have a relation to a short period of the appearance of imagines on a host plant.

Datonychus arquata (HERBST, 1795)

- DB92 Cisów (Ługi), 17 VIII 2007, 1 ex., MW.

Datonychus angulosus (BOHEMAN, 1845)

- DB92 Cisów (Ługi), 17 VIII 2007, 1 ex., leg. MW.

Conclusion

In the study, 39 weevil species new to the Świętokrzyskie Mountains were provided, belonging to three families Anthribidae (1), Apionidae (4) and Curculionidae (34). After taking into account the above records, the list of weevils from this region amounts now to 438 species (to compare, an analogous list for the whole Małopolska Upland comprises presently 630 species). Among those added, alongside common, eurytopic, or invasive species (*Lignyodes bischoffi*), rare species or those with a limited range in Poland (*Lixus tibialis*, *Adexius scrobipennis*) can be found. New discoveries have been made also at historical and better-studied localities in the Świętokrzyski National Park. Therefore, an inventory of this group in the Park, and thus

especially in the whole Świętokrzyskie Mountains, seems to be far from being completed and requires further and more intensified field researches.

SUMMARY

After the occasional and irregular field research conducted by the authors in years 2007–2015, thirty-nine weevil species were recorded from the Świętokrzyskie Mountains for the first time, raising the total number of Curculionoidea (except Scolytinae) known to occur in this region of Poland to 438. New records concern species from the families Anthribidae (1), Apionidae (4) and Curculionidae (34). The Świętokrzyskie Mountains are here considered in a narrow sense, following the Catalogus faunae Poloniae (BURAKOWSKI et al. 1973) and not including the hill ranges surrounding Chęciny and the Suchedniów Forest. Most of the recorded species are widely distributed in Poland, and they are included here to complete the weevil inventory of the Świętokrzyskie Mountains. The exceptions may be e.g. *Adexius scrobipennis* GYLL. or *Lixus tibialis* BOH., having a narrowly restricted range in Poland or being known from just a few localities. Another addition is *Lignyodes bischoffi* (BLATCH.), treated by KAŁMUK & PAWŁOWSKI (2011) as invasive weevil species in Poland, though we consider its development in seeds of native *Fraxinus excelsior* L. unconfirmed. After the critical discussion of the records by DIECKMANN (1988) and POIRAS (1991, 1998, 2006), we rather think that the weevil in Poland is limited in its larval development on the introduced *F. pennsylvanica* H. MARSH. and *F. americana* L. Some of the species newly recorded from the Świętokrzyskie Mountains, even the common ones, were collected from well-explored historical sites within the national park. This may indicate that the inventory list of weevils inhabiting the Świętokrzyskie Mountains is still fairly incomplete and further field studies are necessary to fill this gap.

REFERENCES

- ALONSO-ZARAZAGA M. A. 2013: Subfamily Molytinae (ss. 475-497). [In:] LÖBL I., SMETANA A. (ed.): Curculionoidea II. Catalogue of Palaearctic Coleoptera, Vol. 8. Brill, Leiden, 700 pp.
- BIDAS M., BUCHHOLZ L. 2007: Interesujące chrząszcze (Coleoptera) stwierdzone w Górnach Świętokrzyskich. Wiadomości Entomologiczne, **26**: 289-291.
- BOROWSKI J., MAZUR S. (ed.) 2007: Waloryzacja ekosystemów leśnych Górn Świętokrzyskich metodą zooindykacyjną. Wydawnictwo SGGW, Warszawa. 236 pp.
- BURAKOWSKI B., MROCKOWSKI M., STEFAŃSKA J. 1973: Chrząszcze – Coleoptera. Biegaczowate – Carabidae. Katalog Fauny Polski, XXIII, **2**: 1-233.
- BURAKOWSKI B., MROCKOWSKI M., STEFAŃSKA J. 1992: Chrząszcze Coleoptera. Ryjkowcowate prócz ryjkowców – Curculionoidea prócz Curculionidae. Katalog Fauny Polski, XXIII, **18**: 1-324.
- BURAKOWSKI B., MROCKOWSKI M., STEFAŃSKA J. 1993: Chrząszcze (Coleoptera) – Ryjkowce – Curculionidae, część 1. Katalog Fauny Polski, XXIII, **19**: 1-304.

- BURAKOWSKI B., MROCKOWSKI M., STEFAŃSKA J. 1995: Chrząszcze (Coleoptera) – Ryjkowce – Curculionidae, część 2. Katalog Fauny Polski, XXIII, **20**: 1-310.
- BURAKOWSKI B., MROCKOWSKI M., STEFAŃSKA J. 1997: Chrząszcze (Coleoptera) – Ryjkowce – Curculionidae, część 3. Katalog Fauny Polski, XXIII, **21**: 1-307.
- BYK A., 2007: Waloryzacja lasów Górz Świętokrzyskich na podstawie struktury zgrupowań chrząszczy saproksylicznych. [In:] BOROWSKI J., MAZUR S. (ed.). Waloryzacja ekosystemów leśnych Górz Świętokrzyskich metodą zooindykacyjną. Wydawnictwo SGGW, Warszawa: 57-118.
- CMOLUCH Z. 1980: Ryjkowce (Curculionidae, Coleoptera) Świętokrzyskiego Parku Narodowego. Annales UMCS, C, 1979, **34**: 209-218.
- GOSIK R., ŁĘTOWSKI J., MOKRZYCKI T., WANAT M., 2001: *Lignyodes bischoffi* (BLATCHLEY, 1916) (Coleoptera, Curculionidae) – nowy gatunek w faunie Polski. Wiadomości Entomologiczne, **20**: 43-48.
- GOTWALD A. 1968: Fauna ryjkowcowatych (Curculionidae, Col.) niektórych parków narodowych i rezerwatów. Prace Instytutu Badawczego Leśnictwa, **363**: 3-72.
- KAŁMUK J., PAWŁOWSKI J. 2011: *Lignyodes bischoffi* (BLATCHLEY, 1916). [In:] GŁOWACIŃSKI Z., OKARMA H., PAWŁOWSKI J., SOLARZ W. (ed.). Gatunki obce w faunie Polski. I. Przegląd i ocena stanu. Instytut Ochrony Przyrody PAN, Kraków: 314-316.
- KUŚKA A. 1989: Ryjkowce (Coleoptera: Attelabidae, Apionidae, Curculionidae) Górz Świętokrzyskich. Fragmenta Faunistica, **32**: 319-355.
- MARCZAK D., MASIARZ J. 2013: Rzadkie gatunki chrząszczy saproksylicznych (Insecta: Coleoptera) Kampinoskiego Parku Narodowego. Parki Narodowe i Rezerwaty Przyrody, **32** (2): 73-84.
- MAZUR M. 2001: Ryjkowce kserotermiczne Polski (Coleoptera: Nemonychidae, Attelabidae, Apionidae, Curculionidae) – studium zoogeograficzne. Monografie Fauny Polski, **22**: 1-378.
- MAZUR M., KUBISZ D. 2013: Rozmieszczenie i migracje kserotermicznych chrząszczy (Coleoptera) w dolinie Wisły. Monografie Faunistyczne, **26**: 1-250.
- MOKRZYCKI T. 2007: Waloryzacja ekosystemów leśnych Górz Świętokrzyskich na podstawie struktury zgrupowań chrząszczy związanych z pniakami. [In:] BOROWSKI J., MAZUR S. (ed.): Waloryzacja ekosystemów leśnych Górz Świętokrzyskich metodą zooindykacyjną. Wydawnictwo SGGW, Warszawa: 148-193.
- POIRAS A.A. 1991: Osobennosti biologii *Lignyodes bischoffi* (Bl.) (Coleoptera, Curculionidae) v usloviyah Moldavii. [In:] Uspechi entomologii w SSSR: Lesnaya entomologiya. Materialy X S'ezda Vsesojuznogo Entomologicheskogo Obszczestva, 11-15 sentyabrya 1989. Leningrad, 1990, pp. 103-105.
- POIRAS A.A. 1998: Catalogue of the weevils and their host plants in the Republic of Moldova. Pensoft, Sofia – Moscow, 156 pp.
- POIRAS A.A. 2006: Zhestkokrylye nadsemejstva Curculionoidea (Insecta, Coleoptera) Respubliki Moldova, ich bioraznoobrazziye i znacheniye. Dissertatsiya na soiskaniye uchenoj stepeni doktora habilitat biologicheskikh nauk. Kishinev, 290 pp.

- RUTKIEWICZ A. 2007: Waloryzacja lasów Góra Świętokrzyskich na podstawie struktury zgrupowań chrząszczy saproksylicznych powierzchni pni drzew. [In:] BOROWSKI J., MAZUR S. (ed.): Waloryzacja ekosystemów leśnych Góra Świętokrzyskich metodą zooindykacyjną. Wydawnictwo SGGW, Warszawa: 20-56.
- SMRECZYŃSKI S. 1972: Ryjkowce – Curculionidae: Podrodzina Curculioninae. Klucze do Oznaczania Owadów Polski, **77**, (XIX, 98d), 195 ss.
- PETRYSZAK B., POCHEĆ P., HOLECOVÁ M., HOLLY M. 2002: Uwagi o interesujących ryjkowcach (Coleoptera: Curculionidae) Bieszczadów. Wiadomości Entomologiczne, **21**: 115-119.
- SZOŁTYS H., GRZYWOCZ J., SZCZEPAŃSKI W. T., GREŃ C., KRÓLIK R., MAZUR M.A. 2015: Chrząszcze (Coleoptera) Śląska Dolnego i Górnego – dotychczasowy stan poznania oraz nowe dane faunistyczne: kobielatkowate (Anthribidae). Acta Entomologica Silesiana, **23**: 1-10.
- TRELLA T. 1930: Wykaz chrząszczów okolic Przemyśla. Uzupełnienia do dotychczasowych wykazów oraz rodzin: Lariidae, Anthribidae, Nemonychidae, Ipidae. Polskie Pismo Entomologiczne, **9**: 33-39.
- WANAT M. 2003: Kolejne stanowiska *Lignyodes bischoffi* (BLATCHLEY, 1916) (Coleoptera; Curculionidae) w Polsce. Wiadomości Entomologiczne, **22**: 246-247.
- WANAT M. 2005: Ryjkowce (Coleoptera: Curculionoidea bez Scolytinae) Biebrzańskiego Parku Narodowego i jego otuliny.[In:] DYRCZ A., WERPACHOWSKI C. (ed.): Przyroda Biebrzańskiego Parku Narodowego, ss. 301-324.
- WANAT M. 2009: Nowe dane o rozmieszczeniu kilkunastu rzadkich gatunków ryjkowców (Coleoptera: Curculionoidea) w Polsce. Wiadomości Entomologiczne, **28**: 132-134.
- WANAT M., GOSIK R. 2003: Materiały do znajomości ryjkowców (Insecta: Coleoptera: Curculionoidea) doliny Bugu. Nowy Pamiętnik Fizjograficzny, **2**: 31-52.
- WANAT M., MAZUR M. A., CELADYN R., JAŁOSZYŃSKI P., RUTA R., KAŻMIERCZAK M., MOCARSKI Z., SZYPUŁA J., SIENKIEWICZ P. 2016: Nowe dane o rozmieszczeniu 50 gatunków ryjkowców (Coleoptera: Curculionoidea) w Polsce. Acta Entomologica Silesiana, **24** (online 016): 1-20.
- WANAT M., MOCARSKI Z. 2008: Current range of the ash seed weevil *Lignyodes bischoffi* BLATCHLEY, 1916 (Coleoptera: Curculionidae) in Poland. Polish Journal of Entomology, **77**: 177-182.
- WANAT M., SZYPUŁA J. 2008: *Nanophyes brevis* BOHEMAN, 1845 (Coleoptera: Curculionoidea: Nanophyidae) in Poland. Polish Journal of Entomology, **77**: 183-189.