Wiad. entomol.	**19** (2): 85-92	Poznań 2000

Contributions to the knowledge *Scarabaeoidea* (*Coleoptera*) of Bulgaria. Part I. Results of the Expeditions 1996 and 1998

Materiały do poznania *Scarabaeoidea* (*Coleoptera*) Bułgarii. Część I. Rezultaty wypraw z lat 1996 i 1998

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ABSTRACT: During the Polish-Bulgarian entomological expeditions to Bulgaria in 1996 and 1998 ninety two species from superfamily *Scarabaeoidea* were recorded. 12 species – *Trox perrisi*, *T. scaber*, *Glaresis rufa*, *Ochodaeus chrysomeloides*, *O. integriceps*, *Aphodius kraatzi*, *A. maculatus*, *A. satyrus*, *A. sturmi*, *Psammodius pierotti*, *Rhysemus berytensis*, *Triodontella* sp. were recorded from Bulgaria for the first time.

KEY WORDS: *Coleoptera*, *Scarabaeoidea*, Bulgaria, faunistic, zoogeography, new records.

Research of *Scarabaeoidea* of Balkan Peninsula has been very popular for last decades. The results are works on *Scarabaeoidea* of Greece and former Yugoslavia. Comparing to this, knowledge of Albanian and Bulgarian *Scarabaeoidea* is very poor.

Thanks to cooperation between the Institute of Zoology Bulgarian Academy of Sciences and Department of Entomology Agriculture University of Poznań, two entomological expeditions were organized. The first stated in August 1996 and the second in June 1998. Their aim was exploration of localities (Fig.) suitable for selected taxa of *Coleoptera* and *Lepidoptera*.

Coleoptera were collected in various habitats using several methods (see table). 91 species of *Scarabaeoidea* were found in the collected material (Tab.). 12 of them were recorded from Bulgaria for the first time. All the materials are deposed in author collection.

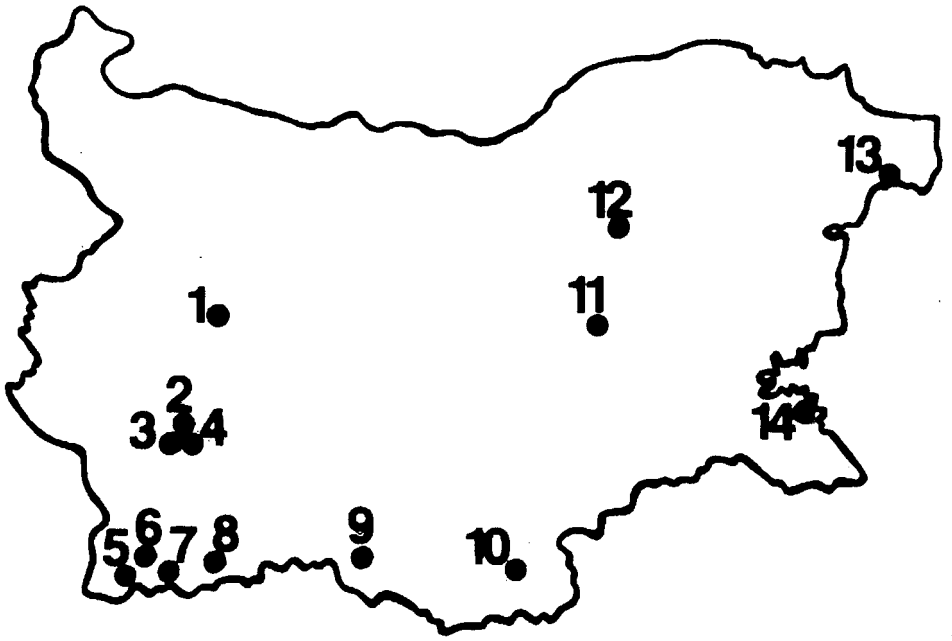

Fig. (Ryc.). Collecting localities (Stanowiska, na których zbierany był materiał): 1 – Sofia distr., Saranci,700 m; 2 – Boris Hadžisatirov, 2000–2400 m; 3 – Rilski Manastir, 1200 m; 4 – Trešenik near Jakoruda, 1800 m; 5 – Petrič distr., „Kožuh", 300–400 m; 6 – near Roženski Manastir, 700 m; 7 – Lubovišča near Melnik, 700–900 m; 8a – Orelek Mt., 1800–2000 m; 8b – near Popovi Livadi, 900 m; 9 – Smoljan distr., „Smoljanskie Ozera", 1400 m; 10 – Arda riv. vall., near Dolni Cerkovište, 300–350 m; 11 – Bjala near Sliven, 450–650 m; 12 – Razgrad distr., Targovište, 800 m; 13 – Tuzlata near Balčik; 14 – Arkutino near Primorsko.

Trox perrisi FAIRMAIRE, 1868 (*Trogidae*)

Distribution: Spain, France, Italy, W. Germany (BARAUD 1992; BUNALSKI 1999).

Bulgaria: Sandanski-Petrič valley: Lubovišča near Melnik, 3 VI 1998, 1 ex. (BUNALSKI 1999 [photo]).

Only one specimen was collected at light. The locality was placed on the southern slope of a hill overgrown with oak forest. This is the easternmost locality of this species in Europe.

Trox scaber (LINNAEUS, 1767) (*Trogidae*)

Distribution: Siberia, Europe, N. Africa, N. America, Chile, Australia (BARAUD 1992; BUNALSKI 1999).

Tab. List of collected species. Abbreviations: al – at light; pl – on plants; ag – on the ground; eB – in cows excrements; eE – in horses excrements; eC/O – in goats or sheep excrements.

Wykaz zebranych gatunków. Użyte skróty: al – przy świetle, pl – na roślinach; ag – na ziemii; eB – w odchodach bydła; eE – w odchodach koni; eC/O – w odchodach kóz lub owiec.

* First record from Bulgaria (wykazany z Bułgarii po raz pierwszy)

** See map (Fig.) (patrz mapa (Ryc.))

Species Gatunki	Localities** Stanowiska**	Methods Metody
1	2	3
Lucanidae		
Lucanus cervus turcicus STURM	5, 14	al
Dorcus parallelipipedus (L.)	14	al
Trogidae		
Trox perrisi FAIRM. *	7	al
Trox scaber (L.) *	10, 14	al
Trox sordidatus BALTH.	10	al
Glaresidae		
Glaresis rufa ER. *	14	al
Geotrupidae		
Anoplotrupes stercorosus (SCR.)	2, 8a	eB
Geotrupes stercorarius (L.)	8a	eE
Trypocopris (Pseudotrypocopris) amedei (FAIRM.)	10	al
Thorectes punctulatus JEK.	8a	ag
Lethrus (Lethrus) apterus LAXM.	5	ag
Ochodaeidae		
Ochodaeus chrysomeloides (SCHR.) *	10	al
Ochodaeus integriceps SEM. *	5, 10, 11	al
Aphodiidae		
Aphodius (Acanthobodilus) immundus CR.	5, 10	al, eB
Aphodius (Acrossus) luridus (FABR.)	8a	eE
Aphodius (Acrossus) rufipes (L.)	4, 9	al, eB
Aphodius (Agoliinus) satyrus REITT. *	2	eB
Aphodius (Agrilinus) rufus (MOLL)	1, 2, 4	al, eB
Aphodius (Amidorus) obscurus (FABR.)	2, 8a	eB, eE
Aphodius (Aphodius) fimetarius (L.)	1, 2, 8a, 12	eB, eE

1	2	3
Aphodius (Bodilus) ictericus (LAICH.)	10	eB
Aphodius (Bodilus) lugens CR.	5, 10, 11	al, eB
Aphodius (Colobopterus) erraticus (L.)	7, 11	eB, eE
Aphodius (Esymus) merdarius (FABR.)	5	al,
Aphodius (Limarus) maculatus STURM *	1, 4, 11	al, eB
Aphodius (Liothorax) kraatzi HAR. *	6	al
Aphodius (Nialus) varians DUFT.	5, 10, 11, 14	al, eB
Aphodius (Otophorus) haemorrhoidalis (L.)	2, 10, 11	eB
Aphodius (Subrinus) sturmi HAR. *	6, 10, 14	al
Aphodius (Teuchestes) fossor (L.)	2	eB
Euheptaulacus carinatus (GERM.)	2, 6, 8a	al, eB, eE
Psammodius laevipennis COSTA *	5, 14	al
Rhysemus berytensis MARS. *	5	al
Pleurophorus caesus (CR.)	5, 14	al
Scarabaeidae		
Gymnopleurus geoffroyi (FUESL.)	7, 8b, 10	eB, eE
Scarabaeus (Scarabaeus) pius ILL.	5	eE
Scarabaeus (Scarabaeus) typhon FISCH.	5, 14	al, eE
Sisyphus schaefferi (L.)	5, 10, 14	eB, eC/O
Cheironitis ungaricus (HERBST)	10	eB
Copris lunaris (L.)	5, 11, 14	al, eB
Euoniticellus fulvus (GOEZE)	5, 8b, 10, 11	eB, eE
Euoniticellus pallipes (FABR.)	10	eB
Caccobius schreberi (L.)	5, 10	eB
Euonthophagus gibbosus (SCR.)	2, 8a	eB, eE
Onthophagus (Furconthophagus) furcatus (FABR.)	1, 6, 8, 10, 12	eB, eE, eC/O
Onthophagus (Onthophagus) illyricus (SCOP.)	5, 6, 7	eE
Onthophagus (Onthophagus) taurus (SCHR.)	10	eB
Onthophagus (Palaeonthophagus) coenobita (HERBST)	8a	eE
Onthophagus (Palaeonthophagus) fracticornis (PREYS.)	4, 8, 11	eB, eE
Onthophagus (Palaeonthophagus) joannae GOLJ.	7	eE
Onthophagus (Palaeonthophagus) lemur (FABR.)	7, 8	eE
Onthophagus (Palaeonthophagus) nuchicornis (L.)	8a	eE
Onthophagus (Palaeonthophagus) ruficapillus **Autor!**	6, 8b, 12	eB, eE, eC/O
Onthophagus (Palaeonthophagus) similis (SCR.)	2, 6, 11	eB, eE
Onthophagus (Palaeonthophagus) vacca (L.)	8a, 11	eB, eE
Onthophagus (Palaeonthophagus) verticicornis (LAICH.)	7	eE

1	2	3
Melolonthidae		
Anoxia (Anoxia) scutellaris rumelica APF.	14	pl
Anoxia (Anoxia) villosa villosa (FABR.)	7, 8a	al
Anoxia (Protanoxia) orientalis (KRYN.)	14	pl
Polyphylla (Polyphylla) boryi boryi BRUL.	6, 9, 10	al
Polyphylla (Polyphylla) fullo (L.)	4	al
Amphimallon (Amphimallon) majale (RAZOUM.)	4, 9	al
Amphimallon (Amphimallon) solstitiale (L.)	4, 9	al
Aplidia transversa transversa (FABR.)	5, 7, 10	al
Miltotrogus vernus (GERM.)	7,14	al
Omaloplia (Acarina) spiraeae spiraeae (PALL.)	10, 13, 14	pl
Omaloplia (Omaloplia) erythroptera (FRIV.)	5	pl
Omaloplia (Omaloplia) iris REITT.	2, 7	pl
Serica (Serica) brunnea (L.)	9	al
Triodontella sp. *	14	al
Hoplia (Hoplia) argentea (PODA)	8b	pl
Rutelidae		
Anisoplia (Anisoplia) agricola (PODA)	5	pl
Anisoplia (Anisoplia) bureschi ZAHAR.	5	pl
Anomala (Anisoplia) solida ER.	5	al
Chaetopteroplia segetum balcanicola MACHATSCH.	5, 10, 14	pl
Blitopertha lineolata (FISCH.)	5, 10, 14	pl
Mimela aurata (FABR.)	3	pl
Dynastidae		
Pentodon bidens sulcifrons (KUST.)	5	al
Pentodon idiota (HERBST)	13	mg
Cetoniidae		
Valgus haemipterus (L.)	14	pl
Trichius fasciatus (L.)	3	pl
Cetonia aurata (L.)	1, 3, 5, 8b, 13, 14	pl
Protaetia (Cetonischema) aeruginosa (DRURY)	1	pl
Protaetia (Potosia) angustata (GERM.)	5	pl
Protaetia (Potosia) cuprea metallica (HERBST)	5, 9	pl
Protaetia (Potosia) cuprea obscura (AND.)	1, 5, 10, 13, 14	pl
Protaetia (Netocia) ungarica ungarica (HERBST)	5	pl

1	2	3
Protaetia (Netocia) vidua GORY	13	pl
Tropinota (Epicometis) hirta (PODA)	7, 14	pl
Oxythyrea cinctella (SCHAUM)	5, 14	pl
Oxythyrea funesta (PODA)	13, 14	pl

Bulgaria: E. Rhodope Mts.: Arda riv. val., near Dolni Cerkovište, 6 VI 1998, 1 ex.; S. Black Sea coast: Ropotamo National Park, „Arkutino" near Primorsko, 7 VI 1998, 1 ex.

All specimens were collected at light.

Glaresis rufa ERICHSON, 1848 (*Glaresidae*)

Distribution: Lebanon, Caucasus, Russia, Ukraine, Romania, Hungary and Slovakia (BARAUD 1992; BUNALSKI 1999).

Bulgaria: S. Black Sea coast: Ropotamo N. P., „Arkutino" near Primorsko, 7 VI 1998, 10 ex. (BUNALSKI 1999 [photo]).

All specimens were collected at light. The locality was placed on a dune with small patches of grasses and herbs.

Ochodaeus chrysomeloides (SCHRANK, 1781) (*Ochodaeidae*)

Distribution: France, Italy, Austria, Germany, Czech, Slovakia, Poland, Ukraine, Russia, Armenia, Romania, Greece, Yugoslavia (BARAUD 1992; BUNALSKI 1999; MIKŠIĆ 1956).

Bulgaria: E. Rhodope: Arda riv. val., near Dolni Cerkovište, 6 VI 1998, 1 ex.

A single specimen was collected at light.

Ochodaeus integriceps SEMENOV, 1891 (*Ochodaeidae*)

Distribution: Caucasus, Armenia (loc. typ.), Moravia (BUNALSKI 1999).

Bulgaria: Sandanski-Petrič val.: „Kožuh" near Petrič, 5 VI 1998, 1 ex.; E. Rhodope: Arda riv. val., near Dolni Cerkovište, 6 VI 1998, 2 ex.

All specimens were collected at light on limestone slopes overgrown with forest-steppe or open oak forest.

Aphodius (Agoliinus) satyrus REITTER, 1892 (*Aphodiidae*)

= *A. constans* DUFT. (sensu: BUNALSKI 1999 [photo])

Distribution: France, Germany, Austria, Switzerland, Italy (BARAUD 1992).

Bulgaria: Rila Mts.: „Boris Hadžisatirov", 2100–2400 m, 3 VIII 1996, 3 ex.; Rila Mts.: Treštenik ad Jakoruda, 1800 m, 4 VIII 1986, 14 ex.

All specimens were collected in a small clearing in mountain forest in cattle faeces.

Aphodius (Limarus) maculatus STURM, 1800 (*Aphodiidae*)

Distribution: E. France, C. Europe, N. Yugoslavia, Greece, Caucasus (BARAUD 1992; BUNALSKI 1999).

Bulgaria: W. Bulgaria: Sofia distr., Saranci, 12 VIII 1996, 2 ex.; Rila Mts.: Treštenik ad Jakoruda, 1800 m, 4 VIII 1986, 2 ex.; E. Balkan Mts.: Bjala near Sliven, 11 VIII 1996, 2 ex.

All specimens were collected at light or in cattle faeces.

Aphodius (Liothorax) kraatzi HAROLD, 1868 (*Aphodiidae*)

Distribution: Greece (loc. typ.), Slovenia, Hungary, Romania, Czech, Slovakia, Ukraina, Caukasus (BARAUD 1992; BUNALSKI 1999; MIKŠIĆ 1956).

Bulgaria: Sandanski-Petrič val.: near Roženski Manastir, 5 VIII 1996, 2 ex. (BUNALSKI 1999 [photo])

Both specimens were collected at light.

Aphodius (Subrinus) sturmi HAROLD, 1870 (*Aphodiidae*)

Distribution: Northwestern Africa, S. and C. Europe, Asia minor and Iran - Turkestan (BARAUD 1992; BUNALSKI 1999).

Bulgaria: Sandanski-Petrič val.: near Roženski Manastir, 5 VIII 1996, 1 ex. (BUNALSKI 1999 [photo]); E. Rhodope: Arda riv. val., near Dolni Cerkovište, 6 VIII 1996, 1 ex.; idem, 6 VI 1998, 2 ex.; S. Black Sea coast: Ropotamo N. P., „Arkutino" near Primorsko, 8 VI 1998, 2 ex.

All specimens were collected at light.

Psammodius laevipennis COSTA, 1844 (*Aphodiidae*)

Distribution: N. Afrika, S. Europa, Hungary, S. Slovakia, Asia minor, Transcaucasus, Iran (BARAUD 1992; BUNALSKI 1999).

Bulgaria: Sandanski-Petrič val.: „Kožuh" near Petrič, 5 VI 1998, 3 ex.; S. Black Sea coast: Ropotamo N. P., „Arkutino" near Primorsko, 7 VI 1998, 1 ex.

Three specimens were collected at light on the eastern slope of the hill overgrown with steppe plant communities with single trees and shrubs, one on a dune.

Rhysemus berytensis MARSEUL, 1878 (*Aphodiidae*)

Distribution: Lebanon, Turkey, Greece (BARAUD 1992).
Bulgaria: Sandanski-Petrich val.: „Kožuh" near Petrič, 5 VI 1998, 1 ex.

Only one specimen was collected at light together with the previous species.

Triodontella sp. (*Melolonthidae*)

Bulgaria: S. Black Sea coast: Ropotamo National Park, „Arkutino" near Primorsko, 8 VI 1998, 3 ex.

All specimens were collected at light on the road going through the warm and moist deciduous forest in the vicinity of the lake Ropotamo.

The collected specimens are very similar to *T. dalmatica* BAR., known from Serbia, Bosnia-Herzegovina, Croatia, and Greece, but the body is broader and the shape of paramera somewhat different.

STRESZCZENIE

Dzięki współpracy Instytutu Zoologii Bułgarskiej Akademii Nauk oraz Katedry Entomologii Akademii Rolniczej w Poznaniu odbyły się w 1996 i 1998 roku dwie wyprawy entomologiczne do Bułgarii. Na kilkunastu stanowiskach (Ryc.) reprezentujących różnorodne biotopy stwierdzono 91 gatunków chrząszczy z nadrodziny żuków – *Scarabaeoidea* (Tab.). Dwanaście spośród nich nie było do tej pory podawanych z Bułgarii.

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