

## Review of Anthicidae (Coleoptera) from Bulgaria

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### Introduction

Until recently coleopterous insects from the family Anthicidae resident in Bulgaria were not part of special studies. The first written records were from the beginning of 20<sup>th</sup> century - IOAKIMOV (1904) - 5 species, ANONYMOUS (1907) - 5 species, MARKOVICH (1909) - 3 species, NEDELKOV (1909) - 7 species, PIC (1911) - 1 species and RAMBOUSEK (1912) - 2 species. A single specimen collected near Kavarna was published as *Anthicus* sp. (MÜLLER, 1929: 176). Later, in the middle of the century, Anthicidae data were reported in the following works: ROUBAL (1931-1933) - 8, PANIN (1941) - 3, KARNOSCHITZKI (1950) - 5, KARNOSCHITZKI (1954) - 3, ANGELOV (1964) - 1 and PALM (1966) - 3 species. In more recent times faunistic data concerning these beetles can be found in the publications of UHMANN (1985; 1989) where 12 and respectively 17 species from Bulgaria were reported.

### Material and methods

Important information concerning the bibliography and distribution of Anthicidae in Bulgaria was discovered by the second author among the notes of the deceased Bulgarian coleopterologist Vassil Guéorguiev. The most important data were included in a list titled - "Coleoptera, Anthicidae aus Bulgarien" sent to V. Guéorguiev by Dr. F. Hieke on 8.II.1984. The list comprises faunistic data for 23 species, collected by the German zoologists Dr. F. Hieke, Dr. M. Uhlig, Dr. H. Wendt, Dr. U. Göllner, Dr. B. Schülke and Dr. W. Braasch (all from Berlin) in the course of their visits to Bulgaria in the period of 1973-1983. Throughout 1983-1984 all that material was determined by the first author, an Anthicidae specialist since 1972. Two single records, concerning the collections of *Notoxus monoceros* L. (leg. Hoberland) in the East Rhodope Mts. and *Cyclodinus fatuus* (leg. Palm) from Zlatni Pyasatsi, were also added there, but not among the mentioned above list. Until now the whole amount of material preserved in the Museum für

Naturkunde (Berlin), excluding the only one specimen of *Cyclodinus fatuus* keeps in the Museum of Lund, have not been published. An important part of the archive notes was an attempt of V. Guéorguiev for faunistic and nomenclatural assignment on the basis of the literature published on the group from Bulgaria. Due to the joint efforts of both authors it was possible to build a complete illustration of Anthicidae in Bulgaria.

### List of the species

*Notoxus appendicinus* Desbrochers - UHMANN, 1985: 177; UHMANN, 1989: 378; new data: Kozhuh, Hieke (8 ex.); likely xerophil; Spain, Majorca, South France, Italy, Corsica, Sardinia, Slovakia, Hungary, Russia, Balkan Peninsula, Crete, Romania, Turkey, Syria, Iran, Central Asia, Tunisia.

*Notoxus brachycerus* (Faldermann) - ANONYMOUS, 1907: 321; new data: Kozhuh, Hieke (9 ex.); xerophil; Central and South Europe, Turkey, Kazakhstan.

*Notoxus miles* Schmidt - ROUBAL, 1933: 144; new data: Predela Pass, Pirin Mt., 1100 m, Uhlig (8 ex.); 2 km N Kresna, Hieke (1 ex.); 10 km W Zemen, Hieke (3 ex.); xerophil, ripicol; Hungary, Romania, Bosna and Hercegovina, Albania, Bulgaria, Turkey.

*Notoxus monoceros* (Linne) - MARKOVICH, 1909: 20; NEDELKOV, 1909: 7; ROUBAL, 1931: 453; UHMANN, 1989: 378; new data: 10 km W Zemen, Hieke (1 ex.); coomb Vibitsa, Momchilovgrad, East Rhodope Mts., 22.VI.1961, Hoberland (1 ex.); V-VIII; xerophil, dry meadow land, psammophil; Northern and Central Europe, Russia, Northern Spain, Roumania, Bulgaria, Central Asia.

*Notoxus trifasciatus* Rossi (= *N. cornutus* F.) - ANONYMOUS, 1907: 321 (sub *N. cornutus* F.); NEDELKOV, 1909: 7; ROUBAL, 1931: 453 (sub *N. cornutus* F.); ANGELOV, 1964: 312 (sub *N. cornutus* F.); UHMANN, 1985: 179; UHMANN, 1989: 379; new data: 2 km S Tsarevo, Uhlig (1 ex.); Sozopol, Uhlig (1 ex.); Kozhuh, Hieke (4 ex.); river Blagoevgradska Bistritsa, 800 m, Hieke (1 ex.); 2 km N Kresna, Hieke (2 ex.); 10 km W Zemen, Hieke (1 ex.); V-VI; xerophil, dry sand and grit; Central and Southern Europe, Turkey.

*Mecynotarsus fausti* Seidlitz - ROUBAL, 1932: 129; KARNOSCHITZKI, 1954: 25-26; UHMANN, 1989: 379; new data: Kozhuh, Hieke (16 ex.); Tsarevo, Hieke & Uhlig (5 ex.); psammophil; Corsica, Sardinia, Sicily, Romania, Balkan Peninsula, Russia.

*Mecynotarsus serricornis* (Panzer) (= *M. rhinoceros* F.) - ANONYMOUS, 1907: 321 (sub *M. rhinoceros* F.); stenotop, psammophil, nebricol; Central and South Europe.

*Pseudotomoderus compressicollis* Motschulsky - new data: Primorsko, Hieke & Uhlig (1 ex.); ecological remarks: unknown; Mediterranean (incl. Balkan Peninsula and Georgia) to Mozambique and Namibia. **New genus and species for Bulgaria.**

*Formicomus pedestris* (Rossi) - IOAKIMOV, 1904: 42; NEDELKOV, 1909: 7; ROUBAL, 1931: 453; PANIN, 1941: 552; UHMANN, 1985: 183; UHMANN, 1985: 183 (sub *F. p. var. atratulus* Reitter); UHMANN, 1989: 382; new data: 2 km S Tsarevo, Uhlig (7 ex.); Melnik, Wendt & Göllner (8 ex.); camp Kavatsite, Göllner (1 ex.); Kozhuh, Hieke (1 ex.); 4 km NW Kresna, Hieke (1 ex.); Kazanlak, Hieke & Uhlig (4 ex.); river Ropotamo, 5 km W Yasna Polyana, Hieke & Uhlig (5 ex.); Tsarevo, Hieke & Uhlig (17 ex.); IV-VII; thermophil, phytodetriticol; Central and Southern Europe, Russia, Turkey, Syria, Azerbaidzhan.

*Leptaleus chaudoiri* (Kolenati) - RAMBOUSEK, 1912: 57 (sub *Anthicus c.* Kol.); ecological remarks: unknown; Balkan Peninsula, Cyprus, Turkey, Iran, Turkmenistan.

*Cyclodinus coniceps* (Marseul) - KARNOSCHITZKI, 1954: 26-27 (sub *Anthicus c.* Marseul, det. Roubal); halobiont; Eastern Austria, Southern Europe (incl. Balkan Peninsula).

*Cyclodinus constrictus* (Curtis) - UHMANN, 1985: 185 (sub *C. c. var. lameyi* Marseul); UHMANN, 1989: 384 (sub *C. c. var. lameyi* Marseul); halobiont; France, Spain, Majorca, Sardinia, Balkan Peninsula, Crete, Turkey, North Africa.

*Cyclodinus fatuus* (Truqui) - UHMANN, 1989: 384; new data: Zlatni Pyasatsi, 1-21.VIII.1970, leg. Palm, in coll. Museum Lund (one beetle examined genitaliter by the first author); VIII; ecological remarks: unknown; Balkan Peninsula, South Russia, Cyprus, Syria, Israel, Jordan, Iran, Turkmenistan, Afghanistan.

*Cyclodinus humilis* (Germar) - NEDELKOV, 1909: 7 (sub *Anthicus h.* Germ.); KARNOSCHITZKI, 1950: 52-53 (sub *Anthicus h.* Germ.); IV-VI; halobiont; Central, Eastern and Southeastern Europe, Caucasus.

*Cyclodinus minutus* (Laferte) - KARNOSCHITZKI, 1950: 52 (sub *Anthicus m.* Laf.); IX; halobiont; Mediterranean.

*Omonadus bifasciatus* (Rossi) - UHMANN, 1989: 385; new data: Tsarevo, Hieke & Uhlig (1 ex.); phytodetriticol and stercoricol; Europe, Turkey, Georgia, Iran, Afghanistan, North Africa.

*Omonadus floralis* (Linne) - IOAKIMOV, 1904: 42; ANONYMOUS, 1907: 321 (sub *Anthicus f.* L.); NEDELKOV, 1907: 7 (sub *Anthicus f.* L.); UHMANN, 1985: 188; UHMANN, 1989: 385; new data: Kozhuh, Hieke (4 ex.); 10 km W Zemen, Hieke (1 ex.); IV; VII-X; phytodetriticol; Cosmopolit.

*Omonadus formicarius* (Goeze) (= *Anthicus quisquilius* Thoms.) - ANONYMOUS, 1907: 321 (sub *A. quisquilius* Thoms.); UHMANN, 1985: 188; new data: Samokov, Rila Mt., Uhlig (1 ex.); phytodetriticol and stercoricol; Cosmopolit.

*Cordicomus instabilis* (Schmidt) - PALM, 1966: 21; ripicol, phytodetriticol; Southern Europe, Northern Africa.

*Cordicomus sellatus* (Panzer) - PANIN, 1941: 552 ((sub *Anthicus (Eonius) sellatus* Panz.)); UHMANN, 1989: 385; new data: Kozhuh, Hieke (4 ex.); ripicol, psammophil, phytodetriticol; Europe.

*Stricticomus longicollis* (Schmidt) - new data: the coast near river Dvojnitsa by Obzor, Braasch (1 ex.); likely phytodetriticol; southern parts of Central Europe, South Europe, Russia, Israel, Iraq. **New species for Bulgaria.**

*Stricticomus transversalis* (Villa) - KARNOSCHITZKI, 1954: 26 (sub *Anthicus t.* Villa); new data: Kozhuh, Hieke (1 ex.); V-VIII; stenotop; Spain, France, Czech Rep., Eastern Mediterranean.

*Hirticomus hispidus* (Rossi) - IOAKIMOV, 1904: 42; MARKOVICH, 1909: 20; NEDELKOV, 1909: 7 (sub *Anthicus h.* Rossi); PALM, 1966: 21; UHMANN, 1985: 192; UHMANN, 1989: 386; new data: the coast by Arkutino, Braasch (1 ex.); the coast by Kamchiya, Schulke (1 ex.); Tsarevo, Hieke & Uhlig (5 ex.); 2 km S Tsarevo, Uhlig (1 ex.); Melnik, Wendt (1 ex.); Kozhuh, Hieke (5 ex.); river Ropotamo, 5 km W Yasna Polyana, Hieke & Uhlig (2 ex.); Kazanlak, Hieke & Uhlig (4 ex.); IV-V; psammophil, phytodetriticol; Europe, Caucasus, West and Central Asia, Egypt.

*Anthicus antherinus* (Linne) - IOAKIMOV, 1904: 42; NEDELKOV, 1909: 7; ROUBAL, 1932: 129 (sub *A. a.* var. *sophiae*); PALM, 1966: 21; UHMANN, 1985: 193; UHMANN, 1985: 193 (sub *A. a.* var. *syriae* Pic); UHMANN, 1989: 386; new data: the coast by Arkutino, Braasch (4 ex.); chalet Raj, Central Stara Planina Mts., Uhlig (1 ex.); 2 km S Tsarevo, Uhlig (54 ex.); Kozhuh, Hieke (16 ex.); 10 km W Zemen, Hieke, (1 ex.); camp Ahelaj, Göllner (1 ex.); IV-VI; psammophil, phytodetriticol; Europe, Turkey, Israel, Iran, Turkmenistan, Uzbekistan.

*Anthicus ater* (Panzer) - MARKOVICH, 1909: 20; X; psammophil, ripicol, phytodetriticol; Northern Europe, Russia, Bulgaria.

*Anthicus axillaris* Schmidt - UHMANN, 1985: 194; new data: Kozhuh, Hieke (1 ex.); 10 km W Zemen, Hieke (1 ex.); Kazanlak, Hieke & Uhlig (1 ex.); psammophil, ripicol, phytodetriticol; Europe.

*Anthicus fenestratus* Schmidt - UHMANN, 1989: 387; new data: camp Kavatsite, Göllner (1 ex.); xerophil; Mediterranean.

*Anthicus flavipes* (Panzer) - PANIN, 1941: 552; new data: Kozhuh, Hieke (11 ex.); psammophil, ripicol; Northern and Central Europe, France, Bulgaria, Turkey.

*Anthicus fuscicornis* Laferte - IOAKIMOV, 1904: 42; VIII-IX; ripicol; Spain, France, Italy, Bulgaria, Turkey.

*Anthicus luteicornis* Schmidt - PIC, 1911: 59; ripicol, psammophil; Southern Germany, France, Italy, Bulgaria.

*Anthicus niger* Olivier - UHMANN, 1989: 387; new data: Melnik, Wendt (2 ex.); the coast by Sveti Vlas, Schülke (1 ex.); Kozhuh, Hieke (30 ex.); Tsarevo, Hieke & Uhlig (1 ex.); xerophil; Mediterranean, Caucasus.

*Anthicus proximus* Marseul - RAMBOUSEK, 1912: 57; UHMANN, 1989: 387; ecological remarks: unknown; South Italy, Balkan Peninsula, Crete, Turkey, Israel, Oman.

*Anthicus schmidti* Rosenhauer - new data: Kozhuh, Hieke (15 ex.); psammophil, ripicol, phytodetriticol; France, Switzerland, Austria, Poland, Hungary, Slovakia, Spain, Italy, Croatia, Bulgaria. **New species for Bulgaria.**

*Anthicus tristis* Schmidt - UHMANN, 1989: 387; new data: Kozhuh, Hieke (1 ex.), det as *A. t.* var. *tristiculus* Reitter; xerophil; Canary Islands, Mediterranean, Iraq, Iran, Turkmenistan, Afghanistan.

*Microhoria oertzeni* (Pic) - UHMANN, 1985: 201; ecological remarks: unknown; Balkan Peninsula, Turkey.

*Microhoria raveli* (Pic) - ROUBAL, 1932: 129 (sub *Anthicus nectarinus* Panzer var. *raveli* sic!); thermophil, phytodetriticol, as *M. nectarina* (Panzer); Italy, Balkan Peninsula, Crete, Rhodes, Turkey. **Note:** Describing *Anthicus raveli*, Pic confused some species. It described this taxon as a variety of *M. terminata* Schmidt but *M. terminata* and *M. nectarina* are coloured species, while *M. raveli* is black. KOCH (1933) found the right status of *raveli* Pic by examination of the male genitalia.

*Endomia tenuicollis* (Rossi) - UHMANN, 1985: 203; UHMANN, 1989: 387; new data: the coast by Arkutino, Braasch (1 ex.); Ropotamo, 5 km W Yasna Polyana, Hieke & Uhlig (1 ex.); thermophil, ripicol; Mediterranean to Southern Africa.

Another species has probably been recorded in Bulgaria by mistake:

*Cyclodinus desbrochersi* (Pic) - ROUBAL, 1932: 129 (sub *Anthicus desbrochersi* sic!). Despite of the material of Roubal does not study, and judging from the distribution of the species, we consider it does not exist in Bulgaria. It occurs in Spain and North Africa. Unless new evidence becomes available, it is better to be excluded from the list of Bulgarian fauna for the time being.

## Conclusion

It is for the first time that a detailed bibliographical, nomenclatural and chorological description of the family Anthicidae in Bulgaria has been made. Thirty-seven species from the nearly 320 species known in the European fauna until now have been established in this country (listed above in systematic order). Genus *Pseudotomoderus* Pic and the species *Pseudotomoderus compressicollis* Motschulsky, *Stricticomus longicollis* (Schmidt) and *Anthicus schmidti* Rosenhauer have been found as new for the Bulgarian fauna. New faunistic data have been presented for 21 other species. It can be stated that *Cyclodinus desbrochersi* (Pic), published by ROUBAL (1932), does not exist in Bulgaria. For the majority of species some ecological categories (on the basis of their landscape preferences) have also been marked. For 12 species phenological data have been summarized.

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## Преглед на семейство Anthicidae (Coleoptera) от България

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(Резюме)

Настоящата работа се основава на бележки, намерени в архива на починалия български колеоптеролог Васил Георгиев. В резултат на обработката им за първи път е направен литературно-номенклатурен и ареалографски преглед на Anthicidae от България. Род *Pseudotomoderus* Pic и видове *Pseudotomoderus compressicollis* Motschulsky, *Stricticomus longicollis* (Schmidt) и *Anthicus schmidti* Rosenhauer са нови за българската фауна. За групи 21 вида антициги (от всичко 37, установени у нас) са представени нови фаунистични данни. Видът *Cyclodinus desbrochersi* (Pic), съобщен от ROUBAL (1932), най-вероятно не се среща в страната. За повечето от представителите са отбелязани и екологичните категории на базата на предпочитанията им към типа на ландшафта, а за 12 вида са обобщени данните за сезонната им активност.