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New records of *Trox* Fabricius, 1775 species (Scarabaeoidea: Trogidae) from Bulgaria

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Abstract. New data on the distribution of four species of genus *Trox* Fabricius, 1775 (Scarabaeoidea: Trogidae): *Trox niger* P. Rossi, 1792, *T. perrisii* Fairmaire, 1868, *T. sabulosus sabulosus* (Linnaeus, 1758) and *T. scaber* (Linnaeus, 1767) are reported from Bulgaria.

Key words: Trogidae, *Trox*, Bulgaria.

Introduction

Five species of genus *Trox* Fabricius, 1775 are known for Bulgaria: *Trox niger* P. Rossi, 1792, *T. perrisii* Fairmaire, 1868, *T. sabulosus sabulosus* (Linnaeus, 1758), *T. scaber* (Linnaeus, 1767) and *T. sordidatus* Balthasar, 1936 (Guéorguiev & Bunalski 2004). The species *T. eversmannii* Krynicki, 1832 is reported from Sofia (Joakimov 1904), but according to Guéorguiev & Bunalski (2004) this record is doubtful and needs further confirmation. Findings of *Trox* species in Bulgaria are scarce (Guéorguiev & Bunalski 2004) and rarely published. In the present work, we provide new data on the distribution of four species of the genus in the country. The material was collected in the period 2004 – 2019 in different regions of Bulgaria, mainly by light trapping. The examined specimens are preserved in the Zoological Collection of Sofia University, Faculty of Biology (BFUS) and in the collection of the first author (YP). Abbreviations for collectors names: BZ: B. Zlatkov; DC: Dragan Chobanov; DG: D. Gradinarov; DK: D. Kaynarov; EC: E. Chehlarov; GH: G. Hristov; OK: O. Karsholt; OS: O. Sivilov; PM: P. Mitov; RK: R. Kostova; SB: S. Beshkov; YP: Y. Petrova.

Results and Discussion

***Trox niger* P. Rossi, 1792** (Figs. 1, 2)

Material examined: Strandzha Mts.: SW Slivarovo Vill., 41°57.63'N 27°39.58'E, 220 m, riverine forest, near rocks, 09.vi.-02.vii.2009, 1 ♀, pitfall traps, PM, RK & OS leg. (YP); Pirin Mts.: NE Kalimantsi Vill., 41°27.974'N 23°29.942'E, 340 m, 24.v.2010, 1 ♀, at light, OS, BZ & GH leg. (BFUS); the same data, but 41°27.904'N 23°29.476'E, 327 m, 31.vii.2016, 2 ♂♂, 1 ♀, at light, YP & BZ leg. (BFUS); the same data, but 41°27.995'N 23°30.643'E, 396 m, 03.ix.2016, 1 ♂, at light, YP & DG leg. (BFUS); the same data, but 41°27.902'N 23°29.325'E, 315 m, 28.vi.2019, 1 ♂, at light, OS & BZ leg. (BFUS); E Ilindentsi Vill., 41°39.009'N 23°15.039'E, 455 m, 13.vi.2012, 1 ♂, at night, OS & BZ leg. (BFUS); NE Ilindentsi Vill., 41°39.317'N 23°14.717'E, 500 m, 02.v.2014, 1 ♀, at night, DG leg. (BFUS); NE Kalimantsi Vill., bank of Kalimanska Reka Riv., 41°27.994'N 23°30.964'E, 382 m, 01.viii.2016, 1 ♀, at light, YP & BZ leg. (BFUS); SW Lilyanovo Vill., 41°36.748'N 23°18.715'E,

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470 m, 27.vi.2019, 1 ♀, at light, OS & BZ leg. (BFUS); Black Sea Coast: NE Shkorpilovtsi Vill., 42°59.522'N 27°53.383'E, 1 m, 26.vii.2011, 1 ♂, at light, OS & BZ leg. (YP); Maleshevska Planina Mts.: NW Lebnitsa Vill., 41°31.685'N 23°12.684'E, 185 m, 15.vi.2012, 1 ♂, at light, OS & BZ leg. (BFUS); the same data, but 41°31.634'N 23°12.701'E, 160 m, 02.v.2013, 1 ♂, 1 ♀, at light, OS & BZ leg. (BFUS); NW Mikrevo Vill., 41°38.423'N 23°10.351'E, 163 m, 19.vi.2015, 1 ♀, at light, YP & EC leg. (BFUS); SE Kamenitsa Vill., 41°38.5'N 23°10.0'E, 230 m, 30.vii.2016, 2 ♂♂, 3 ♀♀, at light, YP & BZ leg. (BFUS); the same data, but 14.iv.2018, 2 ♂♂, 1 ♀ at light, BZ & DC leg. (YP); Eastern Rhodopes Mts.: N Trigrad Vill., 41°36.372'N 24°22.800'E, 1300 m, 04.viii.2013, 1 ♂, at light, BZ & OK leg. (YP); Slavyanka Mts.: SE Petrovo Vill., near Izvora Chalet, 41°24.677'N 23°33.582'E, 735 m, 14.vi.2014, 1 ♀, at light, OS & BZ leg. (BFUS); Zemen Gorge: SW Zemen town, 42°28.263'N 22°43.881'E, 593 m, rocky slope, 05.vii.2015, 1 ♀, at light, YP & DG leg. (BFUS); Sveti Iliyski Vazvishenia Hills: SW Boyadzhik Vill., 42°22.738'N 26°15.620'E, 240 m, 17.iv.2016, 8 ♂♂, 4 ♀♀, at light, OS & BZ leg. (YP); E Stara Planina Mts.: Grebenets, SW Sedlarovo Vill., 42°40.617'N 26°33.350'E, 570 m, 31.v.2017, 2 ♂♂, at light, BZ & DK leg. (YP); Aytoska Planina, NW Aytos, 42°43.217'N 27°14.283'E, 265 m, 01.vi.2017, 1 ♂, at light, BZ & DK leg. (YP).

Reported from Sofia (Nedelkov 1905, Guéorguiev & Bunalski 2004), Black Sea Coast (Pittino 1991, Guéorguiev & Bunalski 2004), Eastern Stara Planina Mts. and Pirin Mts. (Pittino 1991), Kraishte Region, Lozenska Planina Mts., Maleshevska Planina Mts., Sandanski-Petrich Valley, Vrachanska Planina Mts. and Western Rhodopes (Guéorguiev & Bunalski 2004). According to Guéorguiev & Bunalski (2004), *T. niger* is the most common species of the genus in Bulgaria, which is also consistent with our data.

***Trox perrisii* Fairmaire, 1868** (Figs. 3, 4)

Material examined: Vlahina Mts.: NW Zheleznitsa Vill., 41°55.750'N 23°05.350'E, 530 m, 11.vi.2012, 1 ♀, at light, OS & BZ leg. (BFUS); Pirin Mts.: E Ilindentsi Vill., 41°39.174'N 23°14.738'E, 540 m, 13.vi.2012, 1 ♀, at light, OS & BZ leg. (BFUS); Maleshevska Planina Mts.: NW Lebnitsa Vill., 41°31.634'N 23°12.701'E, 160 m, 02.v.2013, 1 ♂, at light, OS & BZ leg. (BFUS); Slavyanka Mts.: SE Paril Vill., 41°25.960'N 23°42.007'E, 755 m, 17.vi.2013, 1 ♂, at light, OS, BZ & SB leg. (BFUS); Sandanski-Petrich Valley: Rupite Place, SE Ribnik Vill., right bank of Struma Riv., 41°28.039'N 23°16.153'E, 95 m, forest with *Populus* sp., riverine sands, 11.viii.2015, 1 ♂, at light, YP & BZ leg. (BFUS); E Novo Hodzhovo Vill., 41°24.432'N 23°24.460'E, 115 m, near marshes, 30.vi.2019, 1 ♀, at light, OS & BZ leg. (YP).

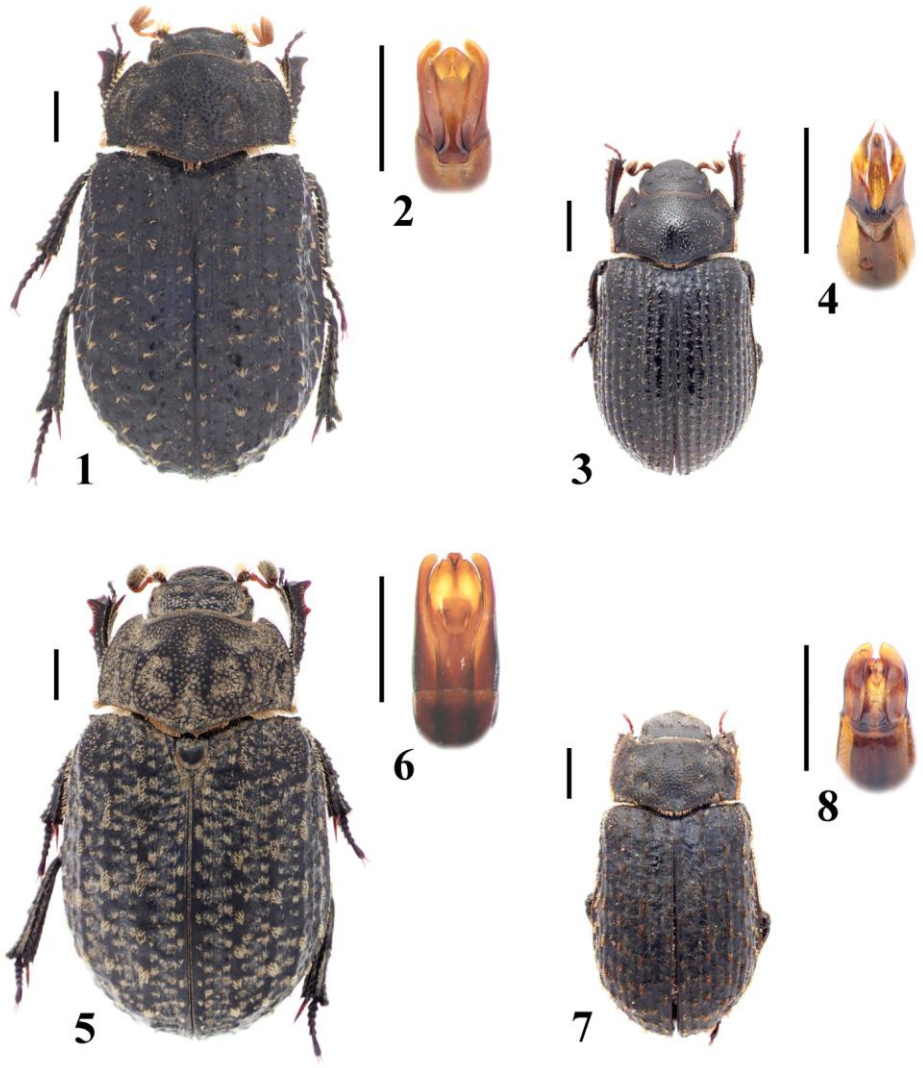
In Bulgaria, the species is reported only from Pirin Mts., Melnik Region (Bunalski 2000) and from Eastern Stara Planina Mts., Natura Site "Ecokoridor Kamchiya-Emine" (Chehlarov *et al.* 2016). The species should not be considered rare as it appears to be widely distributed at least in the SW part of the country.

***Trox sabulosus sabulosus* (Linnaeus, 1758)** (Figs. 5, 6)

Material examined: Strandzha Mts.: SW Slivarovo Vill., 41°57.630'N 27°39.580'E, 220 m, riverine forest, near rocks, 15.iv.-08.v.2009, 1 ♂, pitfall traps, PM, RK & OS leg. (YP). Reported from Plovdiv (Angelov 1960), Sofia, Rila Mts. and Strandzha Mts. (Guéorguiev & Bunalski 2004). This species has rather limited distribution in Bulgaria.

***Trox scaber* (Linnaeus, 1767)** (Figs. 7, 8)

Material examined: Sofia-city, Lyulin district, 42°43.578'N 23°14.964'E, 565 m, 11.vi.2004, 1 ♀, YP leg. (BFUS); Strandzha Mts.: W Malko Tarnovo, Propada Place, 41°58.827'N 27°29.428'E, 400 m, beech forest, 01.-27.v.2010, 1 ♀, pitfall traps, PM, RK & OS leg. (YP); Pirin Mts.: E Ilindentsi Vill., 41°39.174'N 23°14.738'E, 540 m, 13.vi.2012, 1 ♂,



Figs. 1–8. 1 – *Trox niger*, Sveti Iliyski Vazvishenia Hills, 17.iv.2016, male; 2 – aedeagus of the same specimen; 3 – *T. perrisii*, Lebnitsa Vill., 02.v.2013, male; 4 – aedeagus of the same specimen; 5 – *T. sabulosus sabulosus*, Strandzha Mts., 15.iv. – 08.v.2009, male; 6 – aedeagus of the same specimen; 7 – *T. scaber*, Lebnitsa Vill., 02.v.2013, male; 8 – aedeagus of the same specimen. Scale bars: 1 mm.

at light, OS & BZ leg. (BFUS); NE Kalimantsi Vill., 41°27.917'N 23°29.519'E, 323 m, 31.vii.2016, 1 ♀, at light, YP & BZ leg. (BFUS); the same data, but 41°27.902'N 23°29.325'E, 315 m, 28.vi.2019, 1 ♂, at light, OS & BZ leg. (BFUS); Kresna Gorge, 41°45.635'N 23°09.275'E, 205 m, 01.vii.2019, 1 ♂, at light, OS & BZ leg. (YP); Maleshevska Planina Mts.: NW Lebnitsa Vill., 41°31.634'N 23°12.701'E, 160 m, 02.v.2013, 1 ♂, at light, OS & BZ leg. (BFUS); Slavyanka Mts.: SE Paril Vill., 41°25.960'N 23°42.007'E, 755 m, 17.vi.2013, 1 ♀, at light, OS, BZ & SB leg. (BFUS); Sandanski-Petrich Valley: Kozhuh Hill., 41°27.75'N 23°15.67'E, 108 m, 20.vi.2013, 1 ♀, at light, OS & BZ leg. (BFUS); S Dolna Gradeshnitsa Vill., 41°39.91'N 23°11.49'E, 185 m, 11.vi.2014, 1 ♀, at light, OS & BZ leg. (BFUS); Sveti Iliyski Vazvishenia Hills: SW Boyadzhik Vill., 42°22.738'N 26°15.620'E, 240 m, 17.iv.2016, 2 ♂♂, at light, OS & BZ leg. (YP); E Stara Planina Mts., Grebenets, SW Sedlarovo Vill., 42°40.617'N 26°33.350'E, 570 m, 31.v.2017, 1 ♂, at light, BZ & DK leg. (YP).

Reported from Black Sea Coast (Muche 1964, Bunalski 2000), Eastern Rhodopes Mts. (Bunalski 2000), Sofia and Central Predbalkan (Guéorguiev & Bunalski 2004).

Cosmopolite species (Pittino & Bezděk 2016), in Bulgaria not recorded only from the north parts of the country.

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