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New records of some insects from the Strandzha Mts and adjacent Black Sea coast

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Abstract. In this contribution, data to 76 species and one subspecies are given: 29 species of Coleoptera (Buprestidae: 2, Carabidae: 9, Cerambycidae: 3, Chrysomelidae: 1, Coccinellidae: 1, Curculionidae: 2, Dytiscidae: 1, Geotrupidae: 1, Lucanidae: 1, Meloidae: 1, Scarabaeidae: 7), one species of Dermaptera (Forficulidae), 35 species of Diptera (Acroceridae: 1, Dryomyzidae: 1, Heleomyzidae: 1, Hippoboscidae: 1, Lauxaniidae: 7, Opomyzidae: 1, Sciomyzidae: 5, Stratiomyidae: 1, Tabanidae: 15 spp. and 1 ssp., Therevidae: 1), four species of Hemiptera (Cicadidae), six species of Hymenoptera (Apidae: 1, Megachilidae: 1, Scoliidae: 3, Vespidae: 1), one species of Mecoptera (Panorpidae), and one species of Neuroptera (Chrysopidae). Four species are reported as new for Bulgaria: *Ogcodes guttatus* A. Costa, 1854 (Diptera: Acroceridae), *Calliopum simillimum* (Collin, 1933), *Meiosimyza rorida* (Fallén, 1820) (all Diptera: Lauxaniidae), and *Tetanocera hyalipennis* von Roser, 1840 (Diptera: Sciomyzidae). Three species are reported with the first precisely located records for Bulgaria: *Homoneura limnea* (Becker, 1895), *Minettia longipennis* (Fabricius, 1794) (both Diptera: Lauxaniidae) and *Tetanocera arrogans* Meigen, 1830 (Diptera: Sciomyzidae). Other recorded species interesting from faunistic point of view are *Dixus eremita* (Dejean, 1825), *Ophonus gabrieleae* Wrase, 1987 (both Coleoptera: Carabidae), *Thereva aurata* Loew, 1854 (Diptera: Therevidae), and *Megachile sculpturalis* Smith, 1853 (Hymenoptera: Megachilidae).

Key words: Insecta, Coleoptera, Diptera, Hemiptera, Hymenoptera, Mecoptera, Neuroptera, Bulgaria, new records.

Introduction

The entomofauna of the Strandzha Mts and adjacent Black sea coast is rather underinvestigated. Interesting data on some groups has been published, for example ground beetles (Coleptera: Carabidae) (Teofilova et al. 2012, Kostova & Guéorguiev 2016), several flies families (Diptera) (Hubenov 2021) or scorpionflies (Mecoptera) (Dvořák 2014, 2016, Dvořák & Georgiev 2017). Many data are included in various scientific paper, we cite some of them in comments to interesting records.

In the present contribution, we are submitting the data of the scattered investigation of some insect groups.

Material and Methods

The material was collected by the first author and the members of his family.

The groups were identified by following people: Coleptera: Buprestidae – Jiří Prokop; Coleoptera: Carabidae – Jiří Hejkal; Coleptera: Curculionidae, Meloidae – Stanislav Benedikt; Coleptera: Cerambycidae – Matěj Čermák; Coleptera: Chrysomelidae – Michal Ouda; Coleptera: Dytiscidae – Josef Krošlák; Coleptera: Scarabaeidae, Geotrupidae, Lucanidae – Václav Týr; Hymenoptera: Apidae – Peter Šima; Hymenoptera: Megachilidae – Petr Bogusch; Diptera: Dryomyzidae, Heleomyzidae, Lauxaniidae, Sciomyzidae – Kateřina Dvořáková; Diptera: Hippoboscidae – Jozef Oboňa; Hemiptera: Cicadidae – Igor Malenovský; the rest of groups – Libor Dvořák.

Localities

The localities are arranged geographically from north and west to south and east.

1: Atiya, SE, by stream in oak forest, 42°24'49.9"N, 27°36'11.7"E, 130 m a.s.l., 19.7.2023

2: Rosen, S periphery of a village, 42°22'42.5"N, 27°34'2.9"E, 80 m a.s.l., 20.7.2023

Fig. 1. Locality No. 4: Forest-steppe northwest of Veselie, 20.7.2023. Locality of *Calliopum simillimum* (Collin, 1933) (Diptera: Lauxaniidae – the first record for Bulgaria). Photo: Kateřina Dvořáková.

Fig. 2. Locality No. 13: Field patch southwest of Tsarevo, 23.7.2023. Locality *Dixus eremita* (Dejean, 1825) (Coleoptera: Carabidae). Photo: Kateřina Dvořáková.

Fig. 3. Locality No. 20: Bank of dried stream in a humid broadleaf forest southwest of Varvara, 29.7.2023. Locality of *Meiosimyza rorida* (Fallén, 1820) (new for Bulgaria) and *Minettia longipennis* (Fabricius, 1794) (the first precisely located record for Bulgaria) (both Diptera: Lauxaniidae). Photo: Kateřina Dvořáková.

3: Rosen, NE, dry oak forest, 42°24'16.4"N, 27°36'3.1"E, 190 m a.s.l., 20.7.2023

4: Veselie, NW, forest-steppe, 42°20'49.6"N, 27°35'59.5"E, 90 m a.s.l., 20.7.2023 (Fig. 1)

5: Veselie, SW periphery of the village, 42°19'24.7"N, 27°37'8.3"E, 50 m a.s.l., 21.7.2023

6: Yasna Polyana, E, ruderal site by the road, 42°16'27.8"N, 27°37'54.6"E, 30 m a.s.l., 21.7.2023

7: Yasna Polyana, E, field, 42°16'24.7"N, 27°38'49.7"E, 20 m a.s.l., 21.7.2023

8: Yasna Polyana, E, field, 42°16'12.5"N, 27°38'49.7"E, 20 m a.s.l., 21.7.2023

9: Yasna Polyana, E, pool by Diavolska reka River, 42°16'4.8"N, 27°38'49.8"E, 20 m a.s.l., 21.7.2023

10: Yasna Polyana, E, riverbed of Diavolska reka River, 42°16'4.8"N, 27°38'49.8"E, 20 m a.s.l., 21.7.2023

11: Primorsko, W periphery, 42°16'4.0"N, 27°44'46.5"E, 10 m a.s.l., 21.7.2023

12: Primorsko, W, on the road, 42°15'38.9"N, 27°42'46.6"E, 10 m a.s.l., 21.7.2023

13: Tsarevo, field patch SW, 42°9'35.4"N, 27°49'13.3"E, 110 m a.s.l., 23.7.2023 (Fig. 2)

14: Tsarevo, SW, semihumid ash-oak forest, 42°9'32.7"N, 27°47'21.0"E, 300 m a.s.l., 23.7.2023

15: Tsarevo, dry oak forest SW, 42°9'31.1"N, 27°49'3.6"E, 130 m a.s.l., 23.7.2023

Fig. 4. Locality No. 22: Riparian vegetation by Veleka River south of Brodilovo, 24.7.2023. Locality of hygrophilous and mesophilous species, like *Minettia bulgarica* (Papp, 1981) (Diptera: Lauxaniidae), *Tetanocera arrogans* Meigen, 1830 (Diptera: Sciomyzidae – the first precisely located record for Bulgaria) or *T. hyalipennis* von Roser, 1840 (the first record for Bulgaria). Photo: Kateřina Dvořáková.

16: Tsarevo, SW, oak-hornbeam forest, 42°9'17.6"N, 27°48'51.7"E, 210 m a.s.l., 23.7.2023

17: Izgrev, NW, dry oak forest, 42°8'58.2"N, 27°47'28.9"E, 210 m a.s.l., 23.7.2023

18: Izgrev, dry oak forest S, 42°6'50.1"N, 27°48'9.6"E, 230 m a.s.l., 24.7.2023

19: Varvara, SW, dry oak forest, 42°6'37.7"N, 27°53'26.0"E, 60 m a.s.l., 29.7.2023

20: Varvara, SW, humid broadleaf forest, bank of dried stream, 42°6'21.3"N, 27°52'19.7"E, 120 m a.s.l., 29.7.2023 (Fig. 3)

21: Brodilovo, E, dry oak forest, 42°5'1.9"N, 27°52'45.6"E, 120 m a.s.l., 25.7.2023

22: Brodilovo, S, Veleka River riparian vegetation, 42°4'52.7"N, 27°51'38.0"E, 10 m a.s.l., 24.7.2023 (Fig 4)

23: Brodilovo, E, dry oak forest, 42°4'33.2"N, 27°53'53.4"E, 120 m a.s.l., 25.7.2023

24: Ahtopol, S, oak grove by the chapel, 42°4'57.0"N, 27°55'31.4"E, 70 m a.s.l., 25.7.2023

25: Ahtopol, S, bushes by the spring, 42°4'52.1"N, 27°55'26.3"E, 70 m a.s.l., 25.7.2023 (Fig. 5)

26: Sinemorets, W, humid broadleaf forest by Veleka River, track between 42°3'49.7"N, 27°58'14.4"E and 42°2'52.2"N, 27°54'27.8"E, 0–20 m a.s.l., 27.7.2023 (Fig. 6)

27: Sinemorets, steppe NW, 42°3'53.5"N, 27°58'25.5"E, 10 m a.s.l., 28.7.2023

Fig. 5. Locality No. 25: Bushes by the spring south of Ahtopol, 25.7.2023. Hunting of attacking Tabanidae (Diptera). Eight species were recorded including *Tabanus exclusus* Pandellé, 1883, e. g. Photo: Kateřina Dvořáková.

Fig. 6. Locality No. 26: Humid broadleaf forest by Veleka River west of Sinemorets, 27.7.2023. Locality of hygrophilous and mesophilous species, like *Homoneura limnea* (Becker, 1895) (Diptera: Lauxaniidae – the first precisely located record for Bulgaria), *Minettia longipennis* (Fabricius, 1794) (Diptera: Lauxaniidae – the first precisely located record for Bulgaria), *Haematopota pandazisi* (Kröber, 1936) (Diptera: Tabanidae) or *Panorpa vulgaris* Imhoff & Labram, 1845 (Mecoptera: Panorpidae). Photo: Libor Dvořák.

28: Sinemorets, city park, 42°3'38"N, 27°58'34.6"E, 40 m a.s.l., 29.7.2023
29: Sinemorets, dry oak forest S, 42°3'28.3"N, 27°58'32.5"E, 40 m a.s.l., 26.7.2023
30: Sinemorets, beach S, 42°3'2.0"N, 27°59'23.5"E, 0 m a.s.l., 28.7.2023
31: Sinemorets, dry oak forest S, 42°2'41.5"N, 27°59'21.2"E, 50 m a.s.l., 28.7.2023
32: Sinemorets, rocky steppe S, 42°2'39.9"N, 27°59'54.6"E, 10 m a.s.l., 28.7.2023
33: Sinemorets, beach S, 42°2'10.7"N, 28°0'9.0"E, 0 m a.s.l., 28.7.2023

Results and Discussion

Coleoptera: Buprestidae

***Capnodis tenebrionis* (Linnaeus, 1761)**
Localities: **12:** 1 ex., **25:** 1 ex.

***Coraebus rubi* (Linnaeus, 1767)**
Localities: **18:** 3 ex.

Coleoptera: Carabidae

***Acinopus ammophilus* Dejean, 1829**
Localities: **27:** 1 ex.

***Acinopus megacephalus* (P. Rossi, 1794)**
Localities: **2:** 1 ♂, 1 ♀, **19:** 1 ♀, **29:** 1 ♂

***Dixus eremita* (Dejean, 1825)**
Localities: **13:** 1 ex.

***Dixus obscurus* (Dejean, 1825)**
Localities: **32:** 1 ex.

***Harpalus dimidiatus* (P. Rossi, 1790)**
Localities: **14:** 1 ♀

***Laemostenus terricola punctatus* (Dejean, 1828)**
Localities: **24:** 1 ♀
Notes: This taxon is missing in the list of ground beetles of the Strandzha mountain massif and adjacent coastal territories (Kostova & Guéorguiev 2016). However, it is reported by Teofilova et al. (2012) from the southern Bulgarian Black Sea coast (as *Laemostenus terricola* (Herbst, 1784)).

***Ophonus gabrieleae* Wrase, 1987** (Fig. 7)
Localities: **29:** 1 ♂
Notes: Known from Bulgaria, Greece, Syria and Turkey (Kataev & Wrase 2017). *Ophonus gabrieleae* was reported by Hieke & Wrase (1988) from

Tsarevo (= Michurin). Kostova & Guéorguiev (2016) state from the Strandzha mountain massif and adjacent coastal territories only original literature data (Tsarevo).

Fig. 7. *Ophonus gabrielae* from locality No. 29. Photo: Pavel Krásenský.

***Poecilus cupreus cupreus* (Linnaeus, 1758)**
Localities: **22:** 1 ♂, **26:** 1 ♂

***Pterostichus melas* (Creutzer, 1799) s. lat.**
Localities: **26:** 2 ♀♀

Coleoptera: Cerambycidae
***Chlorophorus varius varius* (O.F. Müller, 1766)**
Localities: **3:** 1 ex.

***Purpuricenus kaehleri kaehleri* (Linnaeus, 1758)**
Localities: **11:** 1 ex.

***Stictoleptura cordigera cordigera* (Füssli, 1775)**
Localities: **3:** 1 ex.

Coleoptera: Chrysomelidae
***Chrysolina polita polita* (Linnaeus, 1758)**
Localities: **26:** 1 ex.

Coleoptera: Coccinellidae
***Coccinella septempunctata* Linnaeus, 1758**
Localities: **10:** 1 ex.

Coleoptera: Curculionidae
***Otiorhynchus ropotamus* Angelov, 1974**
Localities: **10:** 1 ex.

***Larinus turbinatus* Gyllenhal, 1835**
Localities: **20:** 1 ex.

Coleoptera: Dytiscidae
***Agabus bipustulatus* (Linnaeus, 1767)**
Localities: **9:** 2 ex.

Coleoptera: Geotrupidae
***Trypocopris fulgidus* (Motschulsky, 1845)**
Localities:**16:** 1 ex.

Coleoptera: Lucanidae
***Dorcus parallelipipedus* (Linnaeus, 1758)**
Localities:**10:** 1 ex.

Coleoptera: Meloidae
***Oenas crassicornis* (Illiger, 1800)**
Localities: **8:** 1 ex.

Coleoptera: Scarabaeidae
***Cetonia aurata* (Linnaeus, 1758)**
Localities: **1:** 1 ex., **3:** 1 ex., **19:** 1 ex.

***Nialus varians* (Duftschmid, 1805)**
Localities:**22:** 1 ex.

***Onthophagus illyricus* (Scopoli, 1763)**
Localities: **19:** 2 ex.

***Oryctes nasicornis kuntzeni* Minck, 1914**
Localities: **19:** 1 ex.

***Oxythyrea funesta* (Poda, 1761)**
Localities: **5:** 2 ex.

***Pentodon idiota* (Herbst, 1789)**
Localities: **7:** 1 ex.

***Sisyphus schaefferi* (Linnaeus, 1758)**
Localities: **6:** 1 ex.

Dermaptera: Forficulidae
***Forficula smyrnensis* Audinet-Serville, 1839**
Localities: **1:** 1 ♀, **29:** 1 ♂
Notes: Known from several localities in Bulgaria, including Kosti and Gramatikovo in the Stradzha Mts (see Dvořák et al. 2020 for the review).

Diptera: Acroceridae
***Ogcodes guttatus* A. Costa, 1854** (Fig. 8)
Localities: **15:** 1 ♂

Notes: Known to occur in the Ethiopian, and Oriental regions as well but is apparently only rarely encountered. Its distribution from Italy through Greece to Turkey and Persia to southeast India is fairly continuous (Schlinger 1960, Nartshuk 1988). **The first record for Bulgaria.**

Fig. 8. *Ogcodes guttatus* from locality No. 15. Photo: Zbyněk Kejval.

Diptera: Dryomyzidae
***Dryomyza anilis* (Fallén, 1820)**
Localities: **26:** 1 ♀

Diptera: Heleomyzidae
***Suillia laevifrons* (Loew, 1862)**
Localities: **20:** 11 ♂♂, 7 ♀♀, **22:** 1 ♀

Diptera: Hippoboscidae
***Hippobosca equina* Linnaeus, 1758**
Localities: **26:** 1 ♀

Diptera: Lauxaniidae
***Calliopum simillimum* (Collin, 1933)**
Localities: **4:** 1 ♂
Notes: A common Europaean species occurring in meadows and light forests. **The first record for Bulgaria.**

***Homoneura limnea* (Becker, 1895)** (Fig. 9)
Localities: **26:** 1 ♂

Notes: European species of humid shaded habitats. Known from Bulgaria, but without published locality (see Hubenov 2021). **The first precisely located record for Bulgaria.**

Fig. 9. *Homoneura limnea* from locality No. 26. Photo: Zbyněk Kejval.

***Meiosimyza rorida* (Fallén, 1820)**
Localities: **20:** 1 ♀
Notes: One of the commonest species of the family with Holarctic distribution. Hygrophilous forest species. **The first record for Bulgaria.**

***Minettia bulgarica* (Papp, 1981)** (Fig. 10)
Localities: **22:** 1 ♂, **26:** 1 ♂, 2 ♀♀

***Minettia fasciata* (Fallén, 1826)**
Localities: **16:** 1 ♂

***Minettia longipennis* (Fabricius, 1794)** (Fig. 11)
Localities: **20:** 1 ♀, **26:** 2 ♂♂, 1 ♀
Notes: A very common Holarctic forest species. **The first precisely located record for Bulgaria.**

***Sapromyzosoma quadricincta* (Becker, 1895)**
Localities: **4:** 1 ♀, **17:** 1 ♂, **23:** 1 ♂

Fig. 10. *Minettia bulgarica* from locality No. 26. Photo: Zbyněk Kejval.

Fig. 11. *Minettia longipennis* from locality No. 26. Photo: Zbyněk Kejval.

Diptera: Opomyzidae

***Opomyza petrei* Mesnil, 1934**

Localities: **22:** 1 ♂

Notes: Known from the most of Europe. The distribution in eastern and southern Europe is insufficiently known due to lack of investigation. Published for the first time from Bulgaria by Beschovski & Minkova (1991).

Diptera: Sciomyzidae

***Pherbellia scutellaris* (von Roser, 1840)**

Localities: **26:** 1 ♂

***Sepedon spinipes* (Scopoli, 1763)**

Localities: **22:** 1 ♀

***Tetanocera arrogans* Meigen, 1830** (Fig. 12)

Localities: **22:** 2 ♂♂

Notes: Palaearctic hygrophilous and mesophilous species. Known from Bulgaria, but without published locality (see Hubenov 2021). **The first precisely located record for Bulgaria.**

Fig. 12. *Tetanocera arrogans* from locality No. 22. Photo: Zbyněk Kejval.

***Tetanocera ferruginea* Fallén, 1820**
Localities: **10:** 2 ♂♂, 4 ♀♀

***Tetanocera hyalipennis* von Roser, 1840** (Fig. 13)
Localities: **22:** 3 ♂♂
Notes: A common Eurasian hygrophilous and mesophilous species. **The first record for Bulgaria.**

Fig. 13. *Tetanocera hyalipennis* from locality No. 22. Photo: Zbyněk Kejval.

Diptera: Stratiomyidae
***Chloromyia speciosa* (Macquart, 1834)**
Localities: **26:** 2 ♀♀

Diptera: Tabanidae
***Atylotus loewianus* (Villeneuve, 1920)**
Localities: **12:** 2 ♀♀, **21:** 1 ♀, **25:** 10 ♀♀

***Chrysops caecutiens* (Linnaeus, 1758)**
Localities: **4:** 1 ♀, **25:** 2 ♀♀, **26:** 1 ♀

***Chrysops viduatus* (Fabricius, 1794)**
Localities: **1:** 1 ♀

***Haematopota pandazisi* (Kröber, 1936)**
Localities: **26:** 3 ♀♀, **31:** 1 ♀

***Hybomitra distinguenda* (Verrall, 1909)**

Localities: **18:** 1 ♀

***Philipomyia graeca* (Fabricius, 1794)**
Localities: **14:** 1 ♀, **18:** 1 ♀, **25:** 1 ♀

***Tabanus autumnalis* Linnaeus, 1761**
Localities: **33:** 1 ♀

***Tabanus bromius* Linnaeus, 1758**
Localities: **25:** 4 ♀♀, **31:** 1 ♀

***Tabanus exclusus* Pandellé, 1883**
Localities: **19:** 3 ♀♀, **25:** 3 ♀♀, **31:** 1 ♀

***Tabanus glaucopis* Meigen, 1820**
Localities: **1:** 2 ♀♀, **18:** 3 ♀♀, **19:** 3 ♀♀, **23:** 3 ♀♀, **26:** 13 ♀♀, **31:** 3 ♀♀, **32:** 1 ♀

***Tabanus miki* Brauer in Brauer & Bergenstamm, 1880**
Localities: **19:** 1 ♀

***Tabanus spodopterus ponticus* Olsufjev, Moucha & Chvala, 1967**
Localities: **1:** 1 ♂

***Tabanus spodopterus spodopterus* Meigen, 1820**
Localities: **25:** 1 ♀

***Tabanus sudeticus* Zeller, 1842**
Localities: **1:** 2 ♂♂, **26:** 1 ♀

***Tabanus tergestinus* Egger, 1859**
Localities: **14:** 1 ♀, **23:** 1 ♀, **25:** 3 ♀♀

***Tabanus tinctus* Walker, 1850**
Localities: **1:** 1 ♀, **19:** 1 ♀, **25:** 3 ♀♀, **32:** 1 ♀

Diptera: Therevidae
***Thereva aurata* Loew, 1854** (Fig. 14)
Localities: **1:** 1 ♂
Notes: Xerothermic lowland species known from central and SE Europe. The second record from Bulgaria, the first was published from the Vinarovo village in the Vidin province by Tsvetanov (2021).

Fig. 14. *Thereva aurata* from locality No. 1. Photo: Zbyněk Kejval.

Hemiptera: Cicadidae
***Lyristes plebejus* (Scopoli, 1763)**
Localities: **15:** 1 ex.

***Cicada orni* Linnaeus, 1758**
Localities: **30:** 1 ex.

***Dimissalna dimissa* (Hagen 1856)**
Localities: **15:** 1 ex.

***Pagiphora annulata* (Brullé, 1832)**
Localities: **4:** 1 ex., **18:** 1 ex.

Hymenoptera: Apidae
***Bombus pascuorum olympicus* Vogt, 1909**
Localities: **18:** 4 ♂♂

Hymenoptera: Megachilidae
***Megachile sculpturalis* Smith, 1853** (Fig. 15)
Localities: **28:** 1 ♂
Notes: This bee is native to East Asia. In Europe, it was first found near Marseille (France) in 2008 and during the next year it was spreading rapidly; at present it is known from practically whole south Europe from Hungary towards SW, S, and SE (Ruzzier et al. 2020, Bila Dubaić et al. 2022, for more

information). The records from Bulgaria were published by Bila Dubaić et al. (2022) and Gradinarov et al. (2023).

Fig. 15. *Megachile sculpturalis* from locality No. 28. Photo: Petr Bogusch.

Hymenoptera: Scoliidae
***Megascolia maculata maculata* (Drury, 1773)**
Localities: **15:** 1 ♀

***Scolia fuciformis* Scopoli, 1786**
Localities: **6:** 1 ♀, **10:** 1 ♀

***Scolia hirta* (Schrank, 1781)**
Localities: **2:** 1 ♀

Hymenoptera: Vespidae
***Delta unguiculatum unguiculatum* (Villers, 1789)**
Localities: **1:** 1 ♀, **30:** 1 ♂

Mecoptera: Panorpidae
***Panorpa vulgaris* Imhoff & Labram, 1845**
Localities: **26:** 2 ♀♀
Notes: Published from the study region from Tsarevo by Dvořák & Georgiev (2017).

Neuroptera: Chrysopidae
***Italochrysa italica* (Rossi, 1790)**
Localities: **15:** 1 ex.

Conclusions

The records of four species new for Bulgaria and three species with the first precisely located records for Bulgaria (some of them are more or less common and widespread in Europe) clearly shows some gaps in knowledge on distribution of some insect groups in Bulgaria.

On the other hands some families are well studied in south-east Bulgaria: from those included in our contribution we can note Carabidae, Tabanidae or Cicadidae, for example.

Based on published papers as well as on our data, we can suppose that the insect species richness of the Strandzha Mts and south Black Sea coast can increase by some species known from European Turkey (Yıldız Dağları Mts).

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