

## NOTES ON THE DISTRIBUTION OF *COLON* (COLEOPTERA, LEIODIDAE, COLONINAE) FROM THE BALKAN PENINSULA

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**SUMMARY.** The first concrete distributional records of 15 species of *Colon* Herbst, 1797 from the Balkan Peninsula are presented, based mostly on material accumulated by the junior author. The following species of *Colon* are reported for the first time from the countries given in brackets: *C. (Colon) viennense viennense* (Herbst, 1797) (Montenegro and Slovenia), *C. (Eurycolon) latum* Kraatz, 1850 (Bulgaria, Croatia, Montenegro, Serbia and Slovenia), *C. (Myloechus) affine* Sturm, 1839 (Bosnia, Bulgaria, Croatia, Herzegovina, Macedonia, Montenegro, Serbia and Slovenia), *C. (M.) angulare* Erichson, 1837 (Bulgaria, Macedonia and Montenegro), *C. (M.) appendiculatum* C. R. Sahlberg, 1822 (Croatia and Montenegro), *C. (M.) armipes* Kraatz, 1854 (Montenegro and Serbia), *C. (M.) barnevillei* Kraatz, 1858 (Bosnia and Montenegro), *C. (M.) brunneum* (Latreille, 1807) (Bosnia, Croatia, Serbia and Slovenia), *C. (M.) calcaratum* Erichson, 1837 (Bosnia), *C. (M.) clavigerum* (Herbst, 1797) (Bosnia, Herzegovina and Slovenia), *C. (M.) dentipes* (C. R. Sahlberg, 1822) (Bosnia, Croatia, Montenegro, Serbia and Slovenia), *C. (M.) fuscicorne* Kraatz, 1852 (Bulgaria and Serbia), *C. (M.) griseum* Czwalina, 1881 (Bosnia and Montenegro), *C. (M.) murinum murinum* Kraatz, 1850 (Montenegro and Slovenia), *C. (M.) zebei* Kraatz, 1854 (Croatia and Slovenia).

**KEY WORDS.** *Colon*, Leiodidae, distribution, the Balkan Peninsula, Bosnia, Bulgaria, Croatia, Herzegovina, Macedonia, Montenegro, Romania, Serbia, Slovenia, Europe, Palaearctic region

### 1 – INTRODUCTION

The subfamily Coloninae of the species-diverse family Leiodidae consists of two genera: the Oriental *Colonellus* Szymczakowski, 1964 (with two subgenera and four species) and *Colon* Herbst, 1797, with about 140 described species distributed worldwide (PECK & STEPHAN, 1996). Nine subgenera have been proposed for *Colon* (PECK & STEPHAN, 1996). Throughout Europe (including Caucasus), 43 species of *Colon* are known, representing the subgenera *Colon* s. str. (with six species), *Eurycolon* Ganglbauer, 1899 (with six species) and *Myloechus* Latreille, 1807 (with 31 species) (PECK & STEPHAN, 1996; PERREAU, 2004).

Specimens of *Colon* are only rarely collected, usually at random. Their ecology as well as larval morphology is not known. Adults are probably associated with subterranean fungi (PECK & STEPHAN, 1996). The use of a flight interception trap and a car net has

been recently recommended as suitable methods for collecting large samples of *Colon* (PECK & STEPHAN, 1996).

Published records of the occurrence of *Colon* species from the Balkan Peninsula are very sparse. Reitter (1885) mentioned the occurrence of *C. griseum* in Croatia (Dalmatia). Depoli (1915) described *C. beszedesi* from Istria, Roubal (1917) described *C. stolzi* from Dalmatia and Obenberger (1917) described *C. robustum* from Albania. Novak (1952) reported *C. murinum* from Croatia (Hvar Is.).

In this paper we present the first detailed information on the distribution of *Colon* throughout the Balkan Peninsula.

## 2 – MATERIAL AND METHODS

The material was mostly collected with Barber traps (the content was a 9 % solution of vinegar), and rarely by sifting the soil.

The material of 142 specimens was determined or revised by J. Růžička, using keys from Szymczakowski (1969a, 1969b). Additional 23 specimens were determined by J. Vávra (Ostrava).

The following abbreviations are used for institutions and private collections, where examined material of *Colon* is deposited: CEHO: E. Holzer, Anger, Austria; CJRU: J. Růžička, Praha; CJVA: J. Vávra, Ostrava, Czech Republic; CKBU: K. Burgarth, Winsen/Luhe, Germany; CPKR: P. Krásenský, Chomutov, Czech Republic; CWZI: W. Ziegler, Rondeshagen, Germany; HNHM: Természettudományi Múzeum, Budapest (O. Merkl); INCS: Institute for Nature Conservation of Serbia, Novi Beograd (D. Pavićević); NHMB: Naturhistorisches Museum, Basel; collection of Josef Gottwald (D. Burckhardt); NMPC: Národní muzeum, Praha; collection of Josef Hlisnikovský (J. Jelínek, J. Hájek); CPMO: P. Moravec, Litoměřice, Czech Republic; PMSL: Prirodoslovni muzej Slovenije, Ljubljana (S. Brelih); ZMHB: Zoologisches Museum der Humboldt-Universität, Berlin (J. Frisch).

## 3 – RESULTS

The first concrete distributional records on the following 15 species of *Colon* from the Balkan Peninsula are presented.

Genus *Colon* Herbst, 1797

1. Subgenus *Colon* Herbst, 1797

### 1. *Colon (Colon) viennense viennense* (Herbst, 1797)

MATERIAL EXAMINED. **Montenegro:** Durmitor Mt., Žabljak, 1450 m, 29.VI.1958, Stojković leg., 1 ♀ (INCS); **Slovenia:** Dobrovlje Mts., Mozirje env., Sveti Urban hermitage, 18-19.V.1996, J. Vávra leg. et det., 1 ♀ (CJVA).

DISTRIBUTION. Widely distributed European species (PERREAU, 2004). First records from Montenegro and Slovenia.

2. Subgenus *Eurycolon* Ganglbauer, 1899

### 2. *Colon (Eurycolon) latum* Kraatz, 1850

MATERIAL EXAMINED. **Bulgaria:** Rodopes, Pamborovo, 3.VII.1966, K. Dorn leg., 1 ♂ (ZMHB); **Croatia:** Istria peninsula, Mune, IV.1911, Krekich leg., 1 ♀ (NMPC); **Montenegro:** Durmitor Mt., Sedlo, 1950 m, 24.VI.1986, D. Pavićević leg., 1 ♀ (INCS); **Romania:** Baile Herculane env., Domogled mt., 200-800 m, 27.VI.1996, P. Bulirsch leg.,

1 ♀ (CJRU); **Serbia**: Goč Mt., Dobre Vode, 940 m, 21.VI.-22.VII.1990, D. Pavićević leg., 1 ♂ (INCS); Murtenica Mt., 1000 m, 8.VI.-30.VI.1996, D. Pavićević leg., 1 ♂, 4 ♀ (INCS, CJRU); ditto, 1200 m, 3 ♂, 6 ♀ (INCS); Murtenica Mt., Brijač, 1480 m, 5.VII.1996, Z. Bosiljčić leg., 1 ♀ (INCS); Suva Mt., Škrveno, 1550 m, 17.VI.2001, M. Stevanović leg., 1 ♀ (INCS); Suva planina, Škrveno, 18.VI.2001, D. Pavićević leg., 1 ♂ (INCS); **Slovenia**: Jelovica, Ladina, 2.VIII.1978, B. Drovenik leg., 1 ♂ (PMSL).

DISTRIBUTION. Widely distributed Palaearctic species (PERREAU, 2004). First records from Bulgaria, Croatia, Montenegro, Serbia and Slovenia.

### 3. Subgenus *Myloechus* Latreille, 1807

#### 3. *Colan* (*Myloechus*) *affine* Sturm, 1839

MATERIAL EXAMINED. **Bosnia**: Treskavica Mt., 8.VII.1930, J. Fodor leg., ex coll. J. Fodor, 1 ♀ (HNHM); Breza, VIII.1930, J. Hlisnikowski leg., 1 ♂ (NHMB); Banja Luka, VII.1968, J. Gottwald leg., 1 ♀ (NHMB); **Bulgaria**: Sofia, Vitoša Mt., 8.VII.1927, J. Fodor leg., 1 ♂ (HNHM); **Croatia**: Istria peninsula, Mte Maggiore [= Cerovlje], without date, Winkler leg., 1 ♀ (NMPC); Plitvice env., 4.VIII.1910, without collector's name, 1 ♀ (NMPC); **Herzegovina**: Jablanica, without date, Grabowski leg., 3 ♂ (HNHM); Nevesinje, without date, Matzenauer leg., 1 ♀ (NMPC); **Macedonia**: Perister (Baba Mt.), 25.VIII.1955, G. Nonveiller leg., 1 ♀ (INCS); Strumica, Belasica Mt., Bansko, 650 m, 17.V.-13.VI.1998, N. Ilić leg., 1 ♂, 1 ♀ (INCS); **Montenegro**: Morača Canyon, Monastery "Morača" env., 5.V.-15.VII.1997, D. Pavićević leg., 8 ♂, 10 ♀ (INCS, CJRU); Krivošije Mt., Knezlaz, 600 m, 2.VII.1997, D. Pavićević leg., 7 ♂, 7 ♀ (INCS, CJRU); **Romania**: Mt. Aninei, Nermed near Resita, 350-400 m, 24.VI.1996, P. Moravec leg., 1 ♀ (CPMO); Baile Herculane env., Mt. Cernei, 200-800 m, 28.VI.1996, P. Bulirsch leg., 1 ♂, 1 ♀ (CJRU); **Serbia**: Zemun, Bežanijska Kosa, 3.V.1986, M. Popović leg., 1 ♀ (INCS); Murtenica Mt., 1200 m, 30.VI.-31.VII.1996, Z. Bosiljčić leg., 1 ♀ (INCS); Kosovo, Šara Mt., Prevalac, 1550 m, 11.VI.-16.VII.1997, N. Ilić leg., 1 ♂ (INCS); Valley of Resava, Lisine, Suvaja Gorge, 11.VIII.1997, D. Pavićević leg., 1 ♀ (INCS); Užice, Zabučje, 800 m, 31.VIII.1996, N. Ilić leg., 1 ♂ (INCS); Ovčar-Kablar Gorge, Ovčar Banja, Debela Gora, 600 m, 16.IV.-19.V.1995, D. Pavićević leg., 2 ♀ (INCS, CJRU); ditto, 2.V.-29.V.1998, 1 ♂ (INCS); **Slovenia**: Turjak, 9.VII.1980, S. Brelih leg., 1 ♀ (PMSL); same locality, 16.VII.1980, S. Brelih leg., 1 ♂, 1 ♀ (PMSL); Nova Gorica, Trnovski Gozd, Lokve env., 27.VI.1998, E. Holzer leg., 1 ♀ (CEHO); Logarska dolina valley, Luče ob Savinji env., Pečonik hermitage, 3-4.VII.1999, J. Vávra leg. et det., 1 ♂, 1 ♀ (CJVA); ditto, 27.IV.2000, 1 ♀ (CJVA); ditto, 10.VII.2000, 1 ♀ (CJVA); ditto, 5.V.2001, 1 ♂ (CJVA); Sevnica, Trebnje env., 4.V.2000, sifting, P. Krásenský & M. Švarc leg., 1 ♀ (CPKR). Kozina env., Ocizla, 7.V.2001, J. Vávra leg. et det., 1 ♂, 4 ♀ (CJVA); Litija env., Dole pri Litiji, 4-5.VII.2004, J. Vávra leg. et det., 1 ♂, 3 ♀ (CJVA).

DISTRIBUTION. Widely distributed European species (PERREAU, 2004). First records from Bosnia, Bulgaria, Croatia, Herzegovina, Macedonia, Montenegro, Serbia and Slovenia.

#### 4. *Colan* (*Myloechus*) *angulare* Erichson, 1837

MATERIAL EXAMINED. **Bulgaria**: Rhodopes Mts, Smoljan region, Gorno Fatovo env., 31.V.2005, P. Hlaváč leg., 2 ♀ (CJRU); **Macedonia**: Šara Mt., Popova Šapka, 23.VII.1935, J. Fodor leg., 1 ♂ (HNHM); **Montenegro**: Durmitor Mt., Savin Kuk, 2000 m, 15.VII.1954, Mrkić leg., 1 ♀ (INCS).

DISTRIBUTION. Widely distributed European species (PERREAU, 2004). First records from Bulgaria, Macedonia and Montenegro.

5. *Colon (Myloechus) appendiculatum* C. R. Sahlberg, 1822

MATERIAL EXAMINED. **Croatia:** Dalmatia, Split, 15.IV.1928, G. Nonveiller leg., 1 ♂ (INCS); **Montenegro:** Durmitor planina, Žabljak, 1450 m, 29.VI.1958, Stojković leg., 1 ♂ (INCS).

DISTRIBUTION. Widely distributed Palaearctic species (PERREAU, 2004). First records from Croatia and Montenegro.

6. *Colon (Myloechus) armipes* Kraatz, 1854

MATERIAL EXAMINED. **Montenegro:** Morača Canyon, Monastery "Morača" env., 5.V.-15.VII.1997, D. Pavićević leg., 1 ♀ (INCS); Krivošije, Knezlaz, 600 m, 2.VII.1997, D. Pavićević leg., 1 ♂, 1 ♀ (INCS, CJRU); **Serbia:** Ovčar-Kablar Gorge, Ovčar Banja, Monastery "Preobraženje", 500 m, 29.VI.1996, N. Ilić leg., 1 ♀ (INCS); ditto, 29.VI.1996, 1 ♀ (INCS).

DISTRIBUTION. Species known from central and southern Europe (PERREAU, 2004). First records from Montenegro and Serbia.

7. *Colon (Myloechus) barnevillei* Kraatz, 1858

MATERIAL EXAMINED. **Bosnia:** Banja Luka, VI.1968, J. Gottwald leg., 1 ♂ (NHMB); **Montenegro:** Durmitor Mt., Sedlo, 1950 m, 10.VIII.1985, D. Pavićević leg., 1 ♂ (INCS); Durmitor Mt., Tara Canyon, Đurđevića Tara, 700 m, 22.VIII.1985, D. Pavićević leg., 1 ♀ (INCS).

DISTRIBUTION. Widely distributed European species (PERREAU, 2004). First records from Bosnia and Montenegro.

8. *Colon (Myloechus) brunneum* (Latreille, 1807)

MATERIAL EXAMINED. **Bosnia:** Sarajevo, Pale, VI.1916, Apfelbeck leg., 1 ♂ (HNHM); **Croatia:** Zagreb env., Pankovac, without date, Hochetlinger leg., 1 ♀ (NMPC); **Serbia:** Svrlijske Mts., Ribarska Korita, 800 m, 14.V.-15.VI.2001, D. Pavićević leg., 1 ♂, 1 ♀ (INCS, CJRU); Ljubovija, Trešnjica Gorge, Grčić, 13.IV.-3.VI.1998, A. Mladenović leg., 1 ♀ (INCS); **Slovenia:** Dobrovlje Mts., Mozirje env., Sveti Urban hermitage, 18-19.V.1996, J. Vávra leg. et det., 1 ♂, 2 ♀ (CJVA); Predgrad env., Poljanska Gora, 20.V.2001, W. Ziegler leg., 1 ♂ (CWZI); Kočevske Podstenice, 25.V.2001, K. Burgarth leg., 1 ♀ (CKBU); Kočevje, Kočevski Rog Mt., 25.V.2001, W. Ziegler leg., 1 ♀ (CWZI); Kozina env., Ocizla, 7.V.2001, J. Vávra leg. et det., 1 ♂ (CJVA).

DISTRIBUTION. Widely distributed European species (PERREAU, 2004). First records from Bosnia, Croatia, Serbia and Slovenia.

9. *Colon (Myloechus) calcaratum* Erichson, 1837

MATERIAL EXAMINED. **Bosnia:** Maklen, 1902, ex coll. Reitter, 1 ♂ (HNHM).

DISTRIBUTION. Species known from central and southern Europe (PERREAU, 2004). First record from Bosnia.

10. *Colon (Myloechus) clavigerum* (Herbst, 1797)

MATERIAL EXAMINED. **Bosnia:** Bjelasnica, 1900, Diener leg., ex coll. J. Fodor, 1 ♂ (HNHM); **Herzegovina:** Vran Mt., without date and collector's name, 1 ♂ (NMPC);

**Slovenia:** Karawanken mts, Kranjska Gora, 18. VI. 1927, J. Hlisnikowski leg., 1 ♂ (NMPC).

DISTRIBUTION. Species known from central and southern Europe (PERREAU, 2004). First record from Bosnia, Herzegovina and Slovenia.

11. *Colon (Myloechus) dentipes* (C. R. Sahlberg, 1822)

MATERIAL EXAMINED. **Bosnia:** Bjelasnica, 700 m, IV-V.1912, C. Setnik leg., 1 ♂ (ZMHB); same locality, 700-1000 m, IV-V.1912, C. Setnik leg., 1 ♂ (ZMHB); Banja Luka, VI.1968, J. Gottwald leg., 1 ♂ (NHMB); **Croatia:** Zagreb, Banks of Sava river, 27.IV.1943, S. Svirčev leg., 1 ♀ (INCS); **Montenegro:** Morača Canyon, Monastery "Morača" env., 5.V.-15.VII.1997, D. Pavićević leg., 1 ♀ (INCS); **Serbia:** Svrljiške Mts., Ribarska Korita, 800 m, 14.V.-15.VI.2001, D. Pavićević leg., 2 males, 8 females (INCS, CJRU); Srem, Morović, Jamena, Radjenovci, 14.V.-28.V.1997, D. Pavićević leg., 1 ♀ (INCS); **Slovenia:** Kozina env., Ocizla, 7.V.2001, J. Vávra leg. et det., 1 ♂ (CJVA); Kočevske Podstenice, 25.V.2001, K. Burgarth leg., 1 ♂ (CKBU).

DISTRIBUTION. Widely distributed European species (PERREAU, 2004). First records from Bosnia, Croatia, Montenegro, Serbia and Slovenia.

12. *Colon (Myloechus) fuscicorne* Kraatz, 1852

MATERIAL EXAMINED. **Bulgaria:** Rila Mts, Ribarnika, 3-16.V.1983, Z. Mészáros leg., 1 ♂ (HNHM); **Serbia:** Zlatibor planina, Tornik, 1300 m, VI.1996, N. Ilić leg., 1 ♀ (INCS).

DISTRIBUTION. Species known from central and southern Europe (PERREAU, 2004). First record from Bulgaria and Serbia.

13. *Colon (Myloechus) griseum* Czwalina, 1881

MATERIAL EXAMINED. **Bosnia:** Breza [near Sarajevo], VIII.1930, J. Hlisnikowski leg., 3 ♂, 6 ♀ (NMPC); Banja Luka, VII.1968, J. Gottwald leg., 1 ♀ (NHMB); **Croatia:** Istria peninsula, Pola [= Pula], 16.VI.1930, J. Hlisnikowski leg., 2 ♂, 5 ♀ (NMPC); same locality, VI.1968, J. Gottwald leg., 1 ♂ (CJRU); **Montenegro:** Durmitor Mts., Dobri Do, 1800 m, 11.VIII.1981, G. Nonveiller leg., 1 ♂ (INCS).

DISTRIBUTION. Species known from central and southern Europe (PERREAU, 2004). Recorded from Croatia by Reitter (1885). First records from Bosnia and Montenegro.

14. *Colon (Myloechus) murinum murinum* Kraatz, 1850

MATERIAL EXAMINED. **Montenegro:** Krivošije Mts, Knezlaz, 600 m, 2.VII.1997, D. Pavićević leg., 1 ♀ (INCS); **Slovenia:** Ig, Kremenica, Hrib, 20.VIII.1984, S. Brelih leg., 1 ♂ (PMSL); Dobrovlje Mts., Mozirje env., Sveti Urban hermitage, 18-19.V.1996, J. Vávra leg. et det., 2 ♀ (CJVA).

DISTRIBUTION. Species known from central and southern Europe (PERREAU, 2004). From Croatia recorded by Novak (1952). First records from Montenegro and Slovenia.

15. *Colon (Myloechus) zebei* Kraatz, 1854

MATERIAL EXAMINED. **Croatia:** Zagreb env., Dubrava, without date, Hochetlinger leg., 1 ♀ (NMPC); **Slovenia:** Kočevske Podstenice, 25.V.2001, K. Burgarth leg., 1 ♀ (CKBU); Kozina env., Kras hill, Kastelec, 21.IV.2004, J. Vávra leg. et det., 1 ♂ (CJVA).

DISTRIBUTION. Species known from central and southern Europe (PERREAU, 2004). First record from Croatia and Slovenia.

#### 4 – DISCUSSION

Distribution of individual species of *Colon* throughout the Balkan Peninsula is very poorly known. This paper contribute only with few records, however, presents concrete distributional records for 15 species. Only a single record of the nominotypical subgenus is available. When comparing 18 species known from the whole Balkan Peninsula with adjacent regions which are reasonably investigated, 25 species of *Colon* are reported from Italy and 16 species from Hungary (PERREAU, 2004). In the future, collecting of further material is necessary to improve our knowledge of distribution of *Colon* species throughout the Balkan Peninsula.

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