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TO THE KNOWLEDGE OF FLEA BEETLES (COLEOPTERA: CHRYSOMELIDAE: ALTICINAE) IN THE FAUNA OF LATVIA. 1. GENUS *CHAETOCNEMA* STEPHENS, 1831

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Abstract. New faunal and ecological data on nine species of the genus *Chaetocnema* Stephens, 1831 of the Latvian fauna are presented. Bibliographical information is summarised. Faunal data on *Chaetocnema picipes* Stephens, 1831 in Latvia are reported for the first time. One species, *Chaetocnema compressa* (Letzner, 1847), is deleted from the list of Latvian Coleoptera. The list of Latvian *Chaetocnema* is given, including 13 species. A total of 139 specimens of this genus, which are stored in the collection of Daugavpils University Institute of Systematic Biology, were processed.
Key words: Coleoptera, Chrysomelidae, Alticinae, *Chaetocnema*, fauna, Latvia

Introduction

The genus *Chaetocnema* Stephens, 1831 is a cosmopolitan taxon with more than 300 species. There are more than 80 species known in the Palaearctic region (Gruev & Döberl 1997). Fifteen species are reported in northern Europe (Slifverberg 2004). Two subgenera and 13 species of *Chaetocnema* are known in Latvia: the subgenus *Tlanoma* Motschulsky, 1854 (with four species) and *Chaetocnema* s. str. (with nine species). In adjacent territories, the number of registered species of this genus slightly differs: Belarus – 15 species (Lopatin & Nesterova 2005), Estonia – eight species, Lithuania – nine species (Silfverberg 2004), St. Petersburg and the Leningrad province – nine species (Romantsov 2007).
One species, which occurs in Latvia, in northern Europe is known only from Latvia – *Ch. obesa* (Boield.) (Silfverberg 2004).
The first data on the species of the genus *Chaetocnema* in the Latvian fauna were published in the beginning of the 19th century (Fleischer 1829). Subsequently, more than 25 works have been published. V. Pūtele (1970b, c) provided data on 12 species of *Chaetocnema* in Latvia. Faunal data can also be found in the following articles: Tomsons 1940; Pūtele 1958a, 1970b, c, 1974, 1981; Prieditīs and Pūtele 1976; Barševskis 1993; Telnov 1997; Bukejs and Telnov 2007. The list of Latvian *Chaetocnema* can be found in the published list of Latvian beetles (Telnov *et al*. 1997; Telnov 2004).
Some species of the genus *Chaetocnema* are pests of cultivated plants (Kryzhanovskij 1974). In Latvia, *Ch. hortensis* (Geoffr.), *Ch. mannerheimi* (Gyll.) and *Ch. aridula* (Gyll.) are reported as the pests of cereals, and *Ch. concinna* (Marsh.) as the pest of beet, buckwheat, sorrel and strawberry (Tomsons 1939–1940; Smarods & Liepa 1956; Palij 1958; Ozols 1963; Pūtele 1970b, c).
Larvae occur on roots or within the stems of herbaceous plants (Bieńkowski 2004).
The aim of this work is to summarise information about the genus *Chaetocnema* in Latvia. Faunal data on nine species are presented. One species, *Chaetocnema compressa* (Letzner, 1847), is deleted from the list of Latvian Coleoptera. Altogether, 13 *Chaetocnema* species are reported in Latvia and their annotated list is presented below.

Material and methods

A total of 139 specimens of flea beetles, representing nine species of the genus *Chaetocnema*, were reviewed in this investigation. The reviewed material is stored in the collection of beetles of Daugavpils University Institute of Systematic Biology (DUBC).
The following works were used for species identification: Bieńkowski (2004); Lopatin and Nesterova (2005); Mohr (1966); Warchałowski (2003). We follow the nomenclature suggested by Silfverberg (2004). Subgenera and species are listed taxonomically.
Host plants are presented following the monograph (Lopatin & Nesterova 2005). The general distribution of species is in accordance with Gruev and Döberl (1997), Warchałowski (2003), Bieńkowski (2004); Lopatin and Nesterova (2005).
Classification of chorotypes is made as suggested by

Figure 1. *Chaetocnema concinna* (Marsham, 1802): 9th–11th antennomeres (A), aedeagus in lateral (B), dorsal (C) and ventral (D) aspects, spermatheca (E).

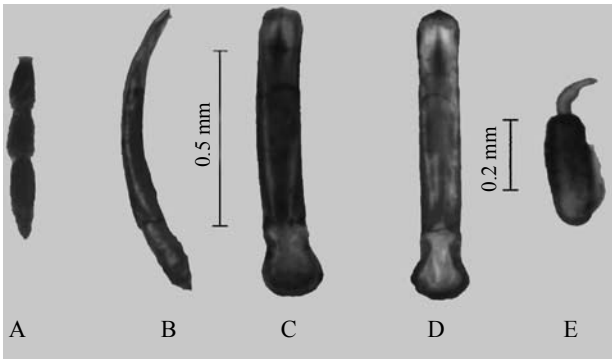

Figure 2. *Chaetocnema picipes* Stephens, 1831: 9th–11th antennomeres (A), aedeagus in lateral (B), dorsal (C) and ventral (D) aspects, spermatheca (E).

Vigna *et al*. (1999). The transcript of chorotype codes: PAL – Palaearctic, ASE – Asiatic-European, SIE – Sibero-European, CEM – Central Asiatic-European-Mediterranean, TEM – Turano-European-Mediterranean, TUE – Turano-European, EUR – European.
The list of species includes the following information: the species name, bibliographic sources published in Latvia, new faunal data (locality and the collection date of the specimens, number of the collected specimens indicated in brackets, habitat and the collector's name), host plants, general distribution of the species and the code of the chorotype. Two species are marked with a dash (-) in the list. These species are mentioned with regard to the Latvian fauna, but they do not appear to belong to it, and it is doubtful whether they ever occurred in Latvia. These species are deleted from the list of Latvian Coleoptera
Abbreviations: d. – district, env. – environs, Isl. – island, NP – Nature Park, NR – Nature Reserve, S – South, N – North, E – East, W – West.
The pictures were made with a stereomicroscope Zeiss Stereo Lumar V12 and an Axiocam digital camera.

Results and discussion

During the research, 139 specimens belonging to nine species of genus *Chaetocnema* Stephens, 1831 were reviewed. Overall, the list of *Chaetocnema* species of the Latvian fauna includes 13 species.
Faunal data on *Chaetocnema picipes* Stephens, 1831 in Latvia are reported for the first time. This species has been reported only in the check lists (Gruev & Döberl 1997; Telnov 2004) so far, but specific data on it in the Latvian fauna were absent. *Ch*. *picipes* Stephens, 1831 is very similar to *Ch*. *concinna* (Marsham, 1802), but differs from it by the shape of the last antennomere (Figs 1A, 2A) and the features of the genitalia. We investigated the structure of the aedeagus (Figs 1B, C, D; 2B, C, D) and spermatheca (Figs 1E, 2E) of these species. In our material, these species were the most frequent (more than 10 findings).
Analysis of the distribution of the species of the genus *Chaetocnema* in the fauna of Latvia reveals that the range of chorotypes is rather wide: Palaearctic – four species, Sibero-European – three species, Central Asiatic-European-Mediterranean – two species, Turano-European-Mediterranean – one species, Turano-European – two species, European – one species.
The research on the fauna of this genus in Latvia must be continued.

List of species of the Latvian fauna

Family Chrysomelidae

Subfamily Alticinae Newman, 1834
***Genus Chaetocnema* Stephens, 1831**
=*Plectroscelis* Chevrolat, 1836
Subgenus *Tlanoma* Motschulsky, 1854

1. *Ch*. (*T*.) *semicoerulea semicoerulea* (Koch, 1803)
References: Seidlitz 1887–1891; Rathlef 1905; Palij 1958; Pūtele 1970a, b, c, 1971, 1974; Priedītis and Pūtele 1976; Telnov *et al*. 1997; Telnov 2004; Bukejs and Telnov 2007.
Examined material: 4 specimens: Cēsis d., Liepas parish, Rauguļi, 3 July 2006 (1, leg. A. Barševskis, U. Valainis, A. Pankjāns); Daugavpils d., Butiški, 6 August 2001 (1, leg. G. Lociks); Daugavpils d., Daugavpils, 6 May 2007 (1, leg. A. Barščevskis); Rēzekne d., Nagļi, bank of Lake Lubāns near the Rēzekne River, 8 September 2007 (1, leg. A. Bukejs, M. Balalaikins).
Host plants: *Salicaceae* (*Salix*).
General distribution: S, C and E Europe, Caucasus, Kazakhstan, Siberia, Far East of Russia (SIE).

2. *Ch.* (*T.*) *concinna* (Marsham, 1802)
=*dentipes* (Koch, 1803)
References: Fleischer 1829 (*Altica dentipes* Sch.); Ulanowski 1883; Seidlitz 1887–1891; Heyden 1903; Rathlef 1905; Tomsons 1939–1940, 1940; Ozols 1963; Smarods and Liepa (1956); Trauberga 1957; Palij 1958; Pūtele 1958a, b, 1970b, c, 1974, 1981, 1981a, 1984; Spuris 1974; Priedītis and Pūtele (1976); Barševskis 1993; Telnov *et al*. 1997; Petrova *et al*. 2000; Barševskis *et al*. 2002; Telnov 2004; Petrova *et al*. 2006.
Examined material: 22 specimens: Daugavpils d., Bebrene, 7 May 2006 (2, leg. E. Rudans); Daugavpils d., Daugavpils, 2 May 1993 (1, leg. A. Barševskis), 9 May 1998 (1, meadow, leg. A. Barševskis); Daugavpils d., Dviete, 22 August 2006 (1, leg. A. Barševskis); Daugavpils d., Silene NP, Ilgas, 30 July 1992 (1, leg. A. Barševskis), 15 June 2001 (1, leg. G. Lociks); Jēkabpils d., Dunava, April 2002 (1, leg. A. Barševskis); Jēkabpils d., Rubene parish, Rubeņi, 18 May 1997 (1, leg. I. Leiskina), 23 July 1997 (1, leg. I. Leiskina), 3 May 1998 (1, leg. I. Leiskina); Jūrmala, Kauguri, 1 May 1992 (1, leg. A. Barševskis); Krāslava d., Izvalta, Murāni house, 1990 (1, leg. A. Barševskis); Preiļi d., Jersika, Kurpnieki house, 7 June 2006 (1, leg. A. Barševskis), 14 July 2007 (1, leg. A. Barševskis); Valmiera d., Mazsalaca, 27 August 2006 (1, leg. A. Barševskis); Valmiera d., Sprosti, 57°34'58"N 25°20'15"E, 21 August 2006 (1, leg. A. Pankjāns); Ventspils d., Moricsala NR, Moricsala Isl., 14 May 2004 (1, leg. A. Barševskis, U. Valainis), 4–5 May 2008 (1, leg. A. Pankjāns,U. Valainis); Rudzāti, 1994 (1, leg. V. Pastats).
Host plants: *Polygonaceae* (*Rumex*, *Rheum*, *Polygonum*), *Chenopodiaceae* (*Chenopodium*). Known pest of beet, buckwheat, sorrel and strawberry.
General distribution: Europe, N Africa, Caucasus, Kazakhstan, Siberia, Mongolia, Far East of Russia, China, Korea, Japan; introduced also to Canada (PAL).

3. *Ch.* (*T.*) *picipes* Stephens, 1831
= *heikertingeri* Ljubitschev, 1963
= *laevicollis* (Thomson, 1866)
References: Telnov 2004.
Examined material: 30 specimens: Daugavpils d., Daugavpils, 1 August 2007 (1, leg. K. Aksjuta, M. Murd), 8 August 2007 (2, leg. K. Aksjuta, M. Murd); Daugavpils d., Līksna parish, 3 km N Daugavpils, 24 April 2008 (10, edge of pine forest, leg. A. Bukejs); Daugavpils d., Šēdere, Straumēni house, 29 July 2007 (1, leg. M. Murd), 12 August 2007 (1, leg. M. Murd); Daugavpils d., Silene NP, Ilgas, 9 July 1993 (1, leg. A. Barševskis); Jēkabpils d., Dunava, 17 August 1992 (1, bank of the Daugava River, leg. A. Barševskis), 7–8 October 2006 (1, leg. A. Barševskis); Jēkabpils d., Rubene parish, Rubeņi, 11 April 1998 (1, leg. I. Leiskina), 23 August 2001 (1, leg. I. Leiskina); Jēkabpils d., Zasa, 15 August 2000 (1, leg. I. Leiskina); Krāslava d., Šķeltova, 26 August 1992 (1, leg. A. Barševskis), 27 August 1992 (3, leg. A. Barševskis), 28 August 1992 (1, leg. A. Barševskis), 4 April 1993 (1, leg. A. Barševskis); Preiļi d., Jersika, 18 August 2006 (1, leg. A. Barševskis); Ventspils d., Moricsala NR, Moricsala Isl., 14 May 2004 (1, leg. A. Barševskis), 25 June 2004 (1, leg. A. Barševskis, U.Valainis).
Host plants: *Chenopodiaceae*, *Polygonaceae* (mostly on *Polygonum*).
General distribution: Europe, N Africa (Algeria), Caucasus, Kazakhstan, Kyrgyzstan, Siberia, Mongolia, China, Far East of Russia, Korea (PAL).

4. *Ch.* (*T.*) *tibialis* (Illiger, 1807)
References: Pūtele 1968, 1970a, b, c, 1971, 1974; Telnov *et al*. 1997; Telnov 2004.
Examined material: Not confirmed by the author.
Host plants: Chenopodiaceae (*Beta*, *Atriplex*, *Chenopodium*, *Salsola*, *Salicornia*).
General distribution: Europe (northwards to Germany, Poland, Belarus, Finland), N Africa, Asia Minor, Caucasus, Syria, Iran, Afghanistan, Central Asia, W Siberia, Mongolia (CEM).
Note: Insufficiently known species. Record needs confirmation.

(-) *Ch.* (*T.*) *breviuscula* (Faldermann, 1837)
References: Pūtele 1968, 1970a, b, c, 1971, 1974, 1981, 1981a; Telnov *et al*. 1997; Telnov 2004 (deleted from the list).
Host plants: *Chenopodiaceae* (*Atriplex*, *Beta*, *Chenopodium*, *Salsola*).
General distribution: S-E Europe (Bulgaria, Greece, Hungary, Moldavia, Rumania, Russia, Turkey, Ukraine), Asia Minor, Syria, Caucasus, Kazakhstan, Central Asia (mts.), Siberia, Mongolia, N China, Korea (ASE).
Note: Known also from Belarus (Lopatin & Nesterova 2005) and Lithuania (Silferberg 2004).

Subgenus *Chaetocnema* s. str.
5. *Ch.* (*Ch.*) *obesa* (Boieldieu, 1859)
References: Pūtele 1968, 1970a, b, c, 1971, 1975; Telnov *et al*. 1997; Telnov 2004.
Examined material: Not confirmed by the author.
Host plants: *Cyperaceae* (*Carex*, *Eleocharis*), *Juncaceae* (*Juncus*).
General distribution: S and C Europe, N Africa, Asia Minor, Near East, Caucasus, Kazakhstan, Siberia, Mongolia, NW China (Tibet) (CEM).
Note: Insufficiently known species. Record needs

confirmation. In the Baltic states and Fennoscandia, it is known only from Latvia (Silfverberg 2004). Known also from Belarus (Lopatin & Nesterova 2005).

6. *Ch.* (*Ch.*) *aerosa* (Letzner, 1846)
References: Palij 1958; Pūtele 1970a, b, c, 1974, 1975, 1981a; Telnov *et al*. 1997; Telnov 2004.
Examined material: 1 specimen: Daugavpils d., Silene NP, Ilgas, 28 June 1994 (1, leg. A. Barševskis).
Host plants: *Cyperaceae* (*Scirpus*, *Eleocharis*).
General distribution: Europe, Caucasus, Israel, southern part of Siberia (TUE).
Note: Very rare and insufficiently known species.

7. *Ch.* (*Ch.*) *aridula* (Gyllenhal, 1827)
References: Fleischer 1829; Seidlitz 1887–1891; Rathlef 1905; Trauberga 1957; Palij 1958; Pūtele 1958a, 1970a, b, c, 1971, 1974, 1975, 1981, 1981a; Ozols 1963; Barševskis 1993; Telnov *et al*. 1997; Barševskis *et al*. 2002; Telnov 2004.
Examined material: 4 specimens: Daugavpils d., Višķi, 24 September 1990 (3, leg. A. Barševskis); Krāslava d., Šķeltova, 26 July 1990 (1, leg. A. Barševskis).
Host plants: *Gramineae*.
General distribution: Europe, N Africa, Caucasus, Asia Minor, Central Asia, Siberia (PAL).
Note: Rare species.

8. *Ch.* (*Ch.*) *confusa* (Boheman, 1851)
References: Pūtele 1968, 1970a, b, c, 1971, 1975; Telnov *et al*. 1997; Telnov 2004.
Examined material: Not confirmed by the author.
Host plants: *Cyperaceae* (*Carex*), *Juncaceae* (*Juncus*).
General distribution: Europe, Caucasus, Asia Minor, N Iran (TUE).
Note: Insufficiently known species. Record needs confirmation.

9. *Ch.* (*Ch.*) *mannerheimi* (Gyllenhal, 1827)
References: Seidlitz 1887–1891; Rathlef 1905; Tomsons 1940; Palij 1958; Ozols 1963; Pūtele 1970a, b, c, 1971, 1974, 1975; Telnov *et al*. 1997; Telnov 2004.
Examined material: 63 specimens: Balvi d., Viļaka, 27 July 1992 (1, leg. A. Barševskis); Bauska d., Mežotne, 56°44'18"N 24°04'86"E, 3 May 2008 (1, bank of the Lielupe River, leg. U. Valainis, A. Pankjāns); Daugavpils d., Dviete, 22 August 2006 (9, leg. A. Barševskis); Daugavpils d., Līksna parish, Rīga-Krāslava beltway, Mežciems env., 11 May 2008 (1, cutting area, leg. A. Barševskis); Daugavpils d., Šēdere, Straumēni house, 29 July 2007 (1, leg. M. Murd); Daugavpils d., Subate, 11 August 2001 (1, leg. I. Leiskina); Jēkabpils d., Dunava, 25 July 1994 (1, leg. A. Barševskis), 24 June 1995 (1, leg. A. Barševskis), 18 July 1995 (2, leg. A. Barševskis), 11–12 August 1998 (2, leg. A. Barševskis), 25 July 1999 (1, leg. A. Barševskis), 20 August 2000 (1, leg. I. Leiskina), 20 August 2006 (4, leg. A. Barševskis), 2–5 June 2007 (1, leg. K. Barševska); Jēkabpils d., Leimaņi, 14 August 2001 (1, leg. I. Leiskina); Jēkabpils d., Rubene parish, Rubeņi, 2 September 1998 (1, leg. I. Leiskina), 16 May 2001 (1, leg. I. Leiskina), 18 August 2001 (1, leg. I. Leiskina), 23 August 2001 (1, leg. I. Leiskina); Gulbene d., Lejasciems, June 2004 (1, cutting area, leg. A. Barševskis); Rēzekne d., Nagļi, 8 September 2007 (2, bank of Lake Lubāns, leg. A. Bukejs, M. Balalaikins); Rēzekne d., Gaigalava, 8 September 2007 (2, bank of Lake Lubāns, leg. A. Bukejs, M. Balalaikins); Talsi d., Mundigciems, Vīseži, 11 August 2006 (1, leg. E. Rudans); Valmiera d., Mazsalaca, 27 August 2006 (2, leg. A. Barševskis); Valmiera d., Mazsalaca env., 57°34'58''N 25°20'15" E, 27 August 2006 (14, leg. A. Barševskis); Valmiera d., Sprosti house, 57°34'58"N 25°20'15"E, 21 August 2006 (5, leg. A. Pankjāns); Valmiera d., Talava, 21 August 2006 (4, leg. A. Barševskis).
Host plants: *Cyperaceae*, *Juncaceae*.
General distribution: Europe, Caucasus, Kazakhstan, Central Asia, Siberia, Mongolia (SIE).

10. *Ch.* (*Ch.*) *arida* Foudras, 1860
References: Pūtele 1968, 1970a, b, c, 1971, 1974, 1975, 1981a; Barševskis 1993; Telnov *et al*. 1997; Barševskis *et al*. 2002; Telnov 2004.
Examined material: 1 specimen: Krāslava d., Šķeltova, 13 March 1993 (1, leg. A. Barševskis).
Host plants: *Cyperaceae* (*Carex*), *Gramineae*.
General distribution: Europe (except N), N Africa, Caucasus (TEM).
Note: Very rare species. In the Baltic states and Fennoscandia, it is known from Latvia and Lithuania (Silfverberg 2004).

11. *Ch.* (*Ch.*) *subcoerulea* (Kutschera, 1864)
References: Pūtele 1974; Telnov 1997; Telnov 2004.
Examined material: Not confirmed by the author.
Host plants: *Cyperaceae* (*Carex*, *Eleocharis*), *Juncaceae* (*Juncus*).
General distribution: Europe, Caucasus (EUR).
Note: Very rare and insufficiently known species with only a single record from Jūrmala (central Latvia) over the last 35 years.

12. *Ch.* (*Ch.*) *hortensis* (Geoffroy, 1785)
=*aridella* (Paykull, 1799)
References: Fleischer 1829 (*Altica aridella* Payk.); Ulanowski 1883; Seidlitz 1887–1891; Heyden 1903; Rathlef 1905; Trauberga 1957; Palij 1958; Pūtele 1958a (*Ch. aridella* Payk.), 1970a, b, c, 1971, 1974, 1975,

1981, 1981a; Ozols 1963; Spuris 1974; Telnov *et al*. 1997; Telnov 2004; Bukejs and Telnov (2007).
Examined material: 12 specimens: Daugavpils d., Krauja, 29 May 2007 (1, old cutting area, leg. A. Bukejs); Daugavpils d., Līksna parish, 3 km N Daugavpils, 24 April 2008 (1, edge of pine forest, leg. A. Bukejs); Daugavpils d., Šēdere, Straumēni house, 29 July 2007 (1, leg. M. Murd); Daugavpils d., Silene NP, Ilgas, 6 June 1996 (1, leg. A. Barševskis), 18 May 2005 (1, leg. A. Barševskis); Daugavpils d., Stropi, 27 April 2008 (1, bank of Lake Lielais Stropu, leg. A. Bukejs); Madona d., Aiviekste, 22 August 2006 (1, leg. A. Pankjāns); Preiļi d., Aglona, near Aglona's Basilica, 27 April 2007 (1, leg. M. Murd, A. Barševskis); Preiļi d., Jersika, Kurpnieki house, 2 September 2006 (1, leg. A. Barševskis), 1 October 2006 (1, leg. A. Barševskis), 22–25 June 2007 (1, leg. A. Barševskis).
Host plants: *Gramineae*. Known pests of cereals.
General distribution: from the Azores and England to Far East of Russia (PAL).

13. *Ch*. (*Ch*.) *sahlbergi* (Gyllenhal, 1827)
References: Fleischer 1829; Seidlitz 1887–1891; Rathlef 1905; Palij 1958; Pūtele 1970a, b, c, 1971, 1974, 1975; Telnov *et al*. 1997; Telnov 2004.
Examined material: 3 specimens: Balvi d., Kuprava, 26 August 1994 (1, leg. A. Barševskis); Jēkabpils d., Dunava, 24 July 1994 (1, leg. A. Barševskis), April 2002 (1, leg. A. Barševskis).
Host plants: *Cyperaceae*, *Gramineae*.
General distribution: Europe, Caucasus, Asia Minor, Siberia, Mongolia, Far East of Russia, Japan (SIE).

(-) *Ch*. (*Ch*.) *compressa* (Letzner, 1847)
=*tarda* Bach, 1859
References: Telnov *et al*. 1997; Telnov 2004.
Host plants: *Compositae* (*Carduus*).
General distribution: C and E Europe (Austria, Bulgaria, Belarus, Czechia, Germany, Greece, Hungary, Poland, Rumania, Russia, Serbia, Slovakia, Switzerland, Ukraine), Caucasus, Kazakhstan (TUE).
Note: The occurrence of the species in Latvia is not proved and is doubted. There is no information on the findings of this species in Latvia. This species is to be deleted from the species list of Latvia beetle fauna. The nearest locality of this species is in southern Belarus (Lopatin & Nesterova 2005).

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A. Bukejs

Santrauka

Straipsnyje pateikiami naujausi ekologiniai ir faunistiniai duomenys apie Latvijoje aptinkamas 9 *Chaetocnema* Stephens, 1831 genties rūšis. Apibendrinta bibliografinė medžiaga. Duomenys apie *Chaetocnema picipes* Stephens, 1831 Latvijos faunoje pateikiami pirmą kartą. Viena rūšis, *Chaetocnema compressa* (Letzner, 1847), iš Latvijos Coleoptera rūšių sąrašo išbraukta. Taip pat pateikiamas Latvijos *Chaetocnema* rūšių sąrašas, į kurį įeina 13 rūšių. Ištirti 139 *Chaetocnema* genties individai iš Daugpilio universiteto Sistematinės Biologijos instituto kolekcijos.

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