

<http://zoobank.org/urn:lsid:zoobank.org:pub:70C8723F-3695-43B6-A7D2-2777803B90C1>

A new species of the genus *Orsodacne* Latreille, 1802 (Coleoptera: Orsodacnidae) from China

ANDREI A. LEGALOV^{1,2,3*}

¹ Institute of Systematics and Ecology of Animals, SB RAS, Frunze street 11, Novosibirsk, 630091, Russia

² Altai State University, Lenina 61, Barnaul, 656049, Russia

³ Tomsk State University, Lenina Prospekt 36, 634050 Tomsk, Russia

* Corresponding author. E-mail: fossilweevils@gmail.com

Received 15 October 2021 | Accepted by V. Pešić: 1 November 2021 | Published online 2 November 2021.

Abstract

A new species, *Orsodacne yunnanicus* Legalov, sp. nov. from Yunnan Province (China) is described and illustrated. The new species is similar to *Orsodacne cerasi* (Linnaeus, 1758) but differs from it in the coarse punctate pronotum, densely punctate head covered with appressed setae, and the endophalus sac with many minute sclerites. A distribution map for *Orsodacne*-species from Asia is given.

Key words: Biodiversity, Chrysomeloidea, Orsodacninae, Yunnan.

Introduction

The family Orsodacnidae is the most primitive and relict group of the superfamily Chrysomeloidea. It is represented by two subfamilies, Orsodacninae and Aulacoscelidinae, in the Recent fauna. The earliest record of this family is from Middle-Upper Jurassic of Asia (Legalov 2021). Aulacoscelidinae was known since the early Cretaceous (Legalov 2021). Recent Aulacoscelidinae is represented by two genera with 28 species distributed in the Neotropical region and develop on Zamiaceae, Cycadales (Lawrence and Ślipiński 2014). Holarctic Orsodacninae forms a separate subfamily. Five species, *Orsodacne cerasi* (Linnaeus, 1758) from Europe, Caucasus, Asia minor, Siberia (Silfverberg 2010) and Kazakhstan (Heyden 1880–1881; Lopatin 2010), *O. humeralis* Latreille, 1804 from Europe, Caucasus and Asia minor (Özdikmen and Turgut 2008; Silfverberg 2010; Medvedev 2010), *O. arakii* Chujo, 1942 from Japan (Silfverberg 2010), *O. atra* (Ahrens, 1810) from Canada and USA (Clark and Riley 2002), and a new species from China, concern to this subfamily.

In this paper, the new species of the genus *Orsodacne* from Yunnan is described and illustrated.

Material and methods

Type specimen is kept in the ISEA – Institute of Systematics and Ecology of Animals (Russia: Novosibirsk). Descriptions, photographs and body measuring of the new species were performed using a Zeiss Stemi 2000-C dissecting stereomicroscope.

The location of species is shown on map (fig. 3) which given sensu references (Heyden 1880–1881; Pic 1895; Kiseleva 1928; Guselnikov and Medvedev 1984; Lopatin 1985, 2010; Mirzoeva 2001; Özdikmen and Turgut 2008; Knopf 2009; Gus'kova 2010; Medvedev 2015; Moseyko et al. 2018; Dedyukhin 2019; etc.), original data from collections and in the following websites (https://www.zin.ru/animalia/coleoptera/rus/cr_sykey.htm; <http://www.oleg-brechov.narod.ru/insect/chrysomelidae.htm>; <https://www.gbif.org/>; etc.).

The terminology of weevil body is according to Lawrence et al. (2010). The systematics of studied taxa are based on Reid (2014).

Systematics

Insecta: Coleoptera: Chrysomeloidea: Orsodacnidae: Orsodacninae
Genus: *Orsodacne* Latreille, 1802

Species: *Orsodacne yunnanicus* Legalov, sp. nov.

<http://zoobank.org/urn:lsid:zoobank.org:act:C141421E-B28E-485A-A4F1-5A0F59912A5F>

(Figs. 1, 2a)

Type material: Holotype, male (ISEA), CHINA, Yunnan, Yingjiang County, Xima, VI.2021, local collector.

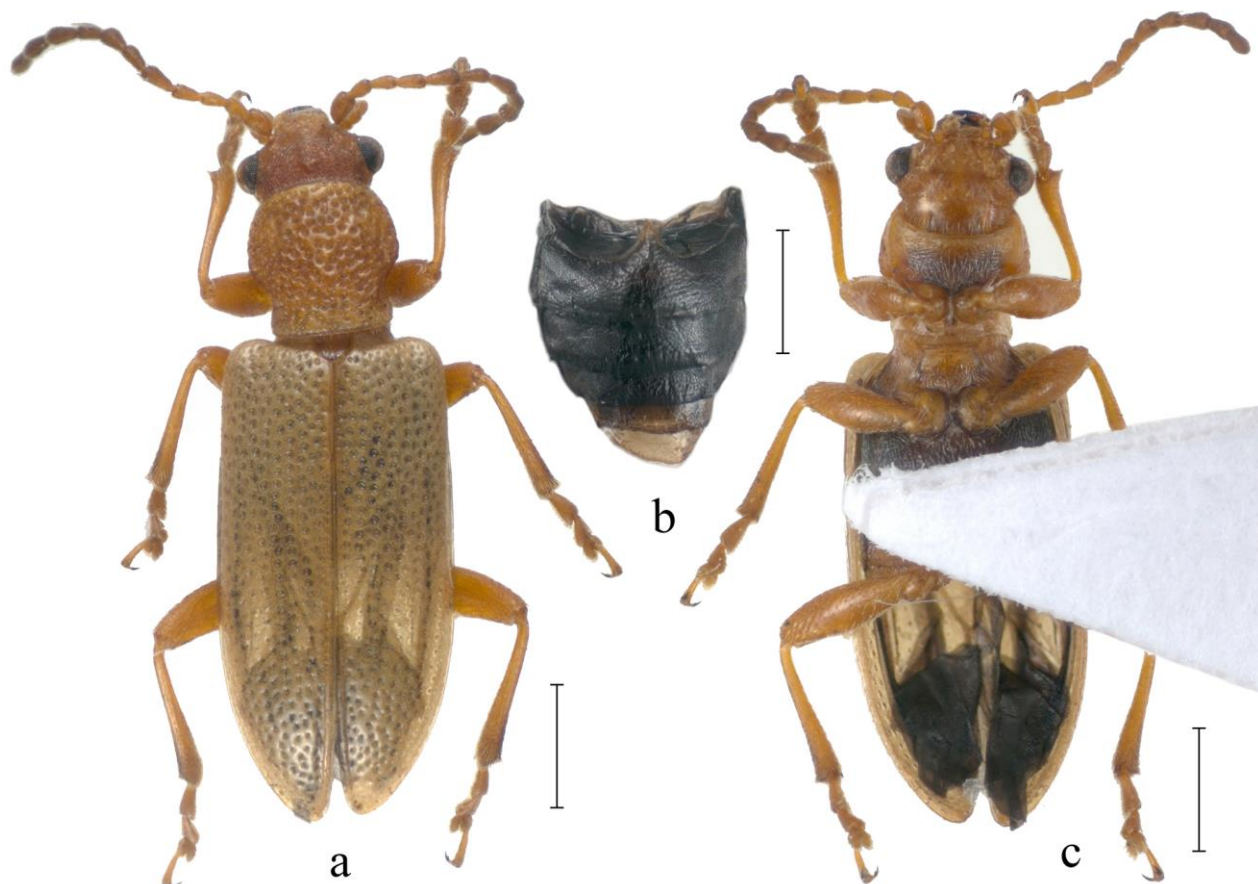


Figure 1. *Orsodacne yunnanicus* sp. nov., holotype: a – body, dorsal view, b – abdomen, a – body, ventral view. Scale bar for a = 1.0 mm.

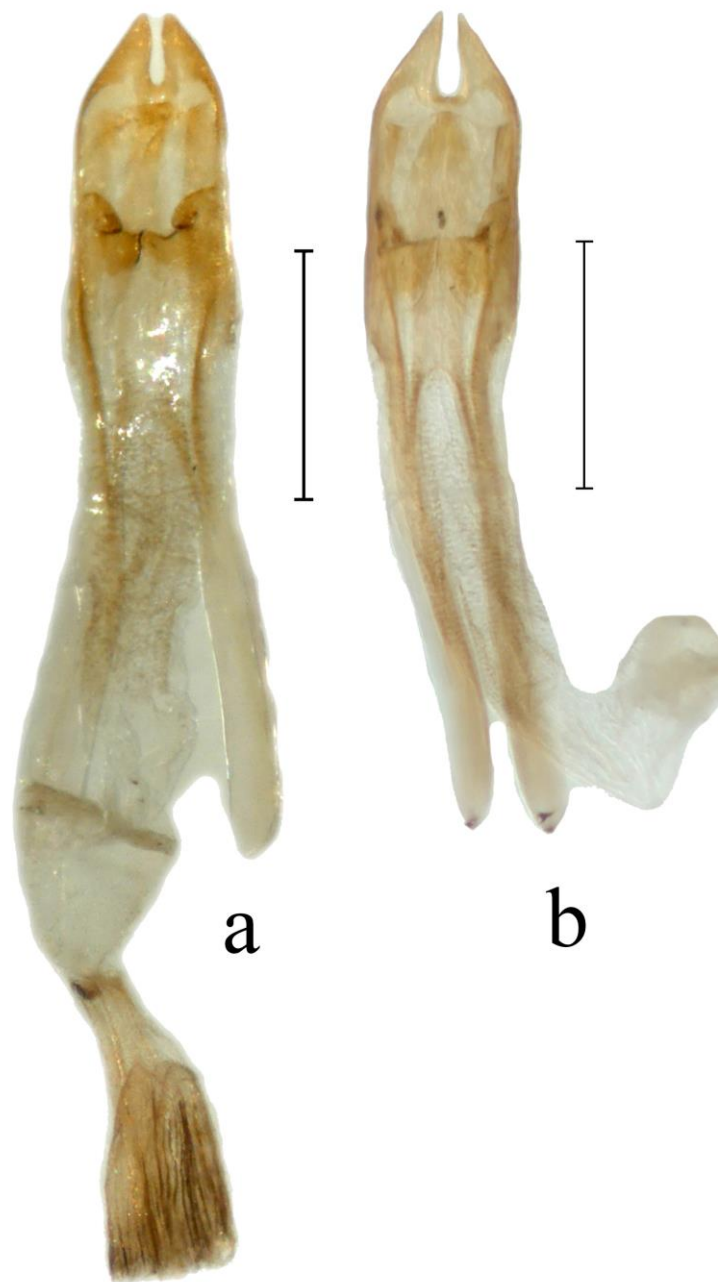


Figure 2. *Orsodacne* spp., aedeagus, dorsal view: a – *O. yunnanicus* sp. nov., holotype, b – *O. cerasi*. Scale bar = 0.5 mm.

Description. Male: Body yellowish-brown, covered with very sparse semierect setae. Bottom covered with quite dense appressed setae. Head red-brown, covered with appressed setae. Elytra yellow. Precoxal portion of prosternum, metaventricle, metanepisterna and ventrite 4 black-brown. Abdominal ventrites 1-3 black. Head capsule hypognathous, short, constricted behind eyes. Labrum free, 2.2 times wider than long, finely punctate. Mandibles medium, curved. Eyes rounded, convex. Forehead 1.7 times as wide as width of head before eyes, impressed, coarsely punctuate, without grooves. Temples very short. Gular suture double. Maxillary palpi 4-segmented. Mentum transverse. Labial palpi 3-segmented. Antennae inserted before eyes, filiform and long, reaching humeri. Antennomere 1 suboval, 1.4 times as long as wide. Antennomeres 2-10 long-conical. Antennomeres 2-4 equal in width. Antennomere 2 1.8 times as long as wide, 0.7 times as long as and 0.6 times as narrow as antennomere 1. Antennomere 3 2.0 times as long as wide, 1.1 times as long as antennomere 2. Antennomere 4 equal to antennomere 3. Antennomeres 5-7 equal in length. Antennomere 5

2.0 times as long as wide, 1.3 times as long as and 1.3 times as wide as antennomere 4. Antennomere 6 2.2 times as long as wide, 0.9 times as narrow as antennomere 5. Antennomere 7 2.0 times as long as wide, 1.1 times as wide as antennomere 6. Antennomere 8 1.8 times as long as wide, 0.9 times as long as and equal in width to antennomere 7. Antennomeres 9–10 equal in length. Antennomere 9 1.7 times as long as wide, 1.2 times as long as and 1.3 times as wide as antennomere 8. Antennomere 10 1.6 times as long as wide, 1.1 times as wide as antennomere 9. Antennomere 11 2.0 times as long as wide, 1.2 times as long as and 0.9 times as narrow as antennomere 10, weakly pointed at apex. Pronotum with weakly arcuate sides in apical and middle thirds, concave before middle, 1.3 times as long as wide at apex, 1.1 times as long as wide in middle, 1.4 times as long as wide at base, coarsely punctate. Distances between punctures smaller than their diameters. Disc of pronotum moderately convex. Lateral margin of pronotum not carinate. Base 0.5 times as narrow as elytral base. Scutellum distinct, semi-oval. Elytra subparallel-sided, with weak humeri and distinct epipleuron, without striate, 2.2 times as long as wide at base, 2.1 times as long as wide in middle, 3.0 times as long as wide at apical fourth, 2.9 times as long as pronotum. Distances between punctures larger than their diameters. Scutellar striae present. Procoxal cavities narrowly separated. Precoxal portion of prosternum 1.2 times as long as length of procoxal cavity. Postcoxal portion about 0.4 times as long as length of procoxal cavity. Metaventrite 3.0 times as long as metacoxal length, flattened, densely punctate. Metanepisterna narrow. Wings developed. Abdomen with free ventrites. Ventrite 1 1.1 times as long as metacoxal cavity length. Ventrite 2 equal to ventrite 1. Ventrite 3 0.6 times as long as ventrite 2. Ventrite 4 0.7 times as long as ventrite 3. Ventrite 5 1.3 times as long as ventrite 4. Legs long. Femora thickened. Tibiae quite almost straight, with two spurs, without mucros. Tarsi pseudoquadrisegmented. Tarsomere 1 wide-conical. Tarsomere 2 conical. Tarsomere 3 bilobed. Tarsomeres 1–3 with weak pulvilli on lower surface. Tarsomere 5 long. Trasal claws free and bifid. Length of body: 5.6 mm.

Differential diagnosis. The new species is similar to *O. cerasi* but differs from it in the coarse punctate pronotum, densely punctate head covered with appressed setae, and the endophalus sac with many minute sclerites (fig. 2).

Etymology. From Yunnan.

Remarks. The record of *O. cersi* from China (Li and Liang 2018) probably belongs to this new species.

Four species of this genus are found in Asia (fig. 3). They are not known from Middle Asia, Mongolia, the Russian Far East, Korea and most of China (Silfverberg 2010).

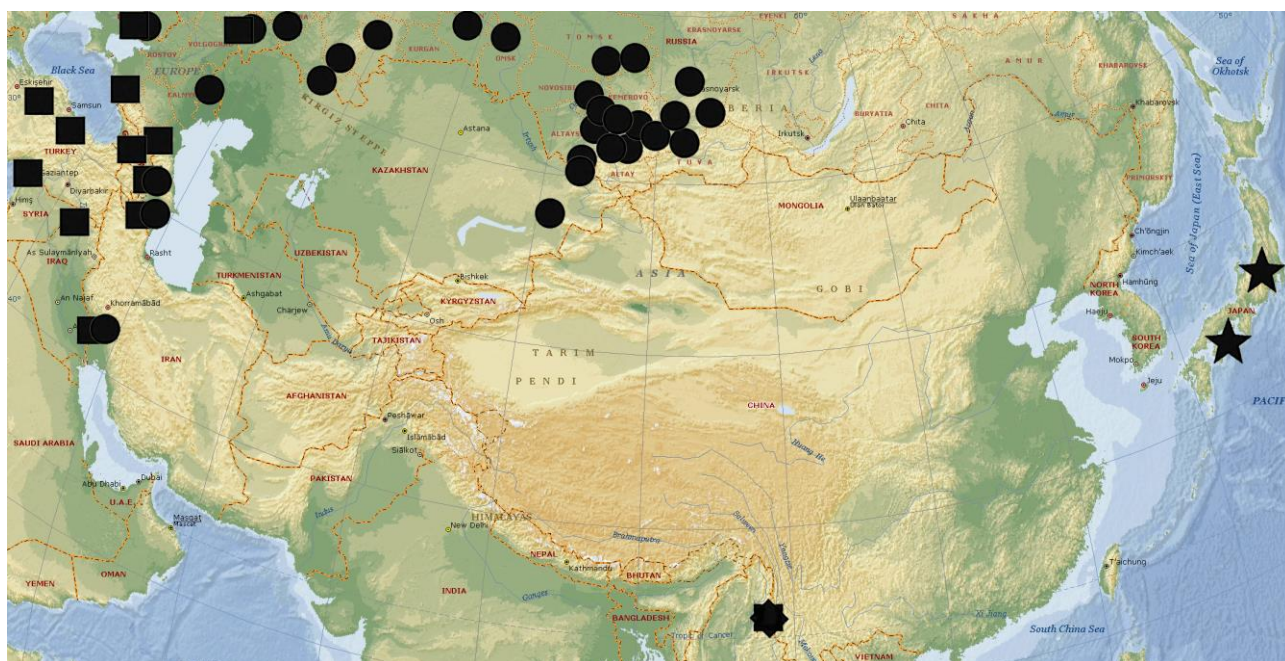


Figure 3. Distribution of *Orsodacne* spp. from Asia: square – *O. humeralis*, circle – *O. cerasi*, octagon – *O. yunnanicus* sp. nov., star – *O. arakii*.

List of the genus *Orsodacne* from Palaearctic

O. arakii Chujd, 1942 – Japan: Honshu, Shikoku.

=*nakanei* Chujd, 1942

=*kurosawai* Chujd, 1949

O. cerasi (Linnaeus, 1758) – Northern Europe: Great Britain, Denmark, Lithuania, Latvia, Estonia, Norway, Sweden, Finland; Southern Europe: Spain, France, Italy; Western Europe: the Netherlands, Switzerland, Germany, Liechtenstein, Austria; Balkans: Croatia, Serbia, Bulgaria, Macedonia; Eastern Europe: Czech Republic, Poland, Hungary, Belarus, Ukraine, Moldavia, Romania; European part of Russia; Caucasus: Azerbaijan; Asia minor: Western Turkey, Western Iran; North-western and Eastern Kazakhstan; Western and Middle Siberia.

= *Crioceris chlorotica* Olivier, 1791

= *Crioceris cantharoidis* Fabricius, 1775

=*nigroculata* Moll, 1784

= *Crioceris pallida* Geoffroy, 1785

= *Crioceris fidvicollis* Fabricius, 1792

= *Galleruca melanura* Fabricius, 1792

= *Crioceris glabrata* Panzer, 1795

=*limbata* Olivier, 1808

=*duftschmidi* Weise, 1891

=*baudii* Pic, 1913

=*lacordairei* Pic, 1913

=*limbatipennis* Pic, 1913

=*theresae* Pic, 1913

O. humeralis Latreille. 1804 – Northern Europe: Great Britain; Southern Europe: Spain, Portugal, France, Italy; Western Europe: Switzerland, Germany, Austria; Balkans: Croatia, Bosnia and Herzegovina, Montenegro, Serbia, Bulgaria, Macedonia, Greece; Eastern Europe: Czech Republic, Slovakia, Slovenia, Poland, Hungary, Ukraine, Moldavia, Romania; south of European part of Russia; Caucasus: Georgia, Azerbaijan; Asia minor: Turkey, Lebanon, Israel, Iraq, Western Iran, ?Syria.

= *Crioceris lineola* Panzer, 1795

=*nigriceps* Latreille, 1807

=*nigricollis* Olivier, 1808

=*coerulescens* Duftschmid, 1825

=*marginella* Duftschmid, 1825

=*picipennis* Duftschmid, 1825

=*violacea* Guérin-Meneville, 1844

=*mespili* Lacordaire, 1845

=*nematoides* Lacordaire, 1845

=*variabilis* Baly, 1877

=*croatica* Weise, 1883

=*ruficollis* Pic, 1895

=*syriaca* Pic, 1896

=*flava* Csiki, 1899

=*marginata* Csiki, 1899

=*hispanica* Pic, 1913

=*kraatzi* Pic, 1913

=*graeco* Pic, 1941

=*innotatipennis* Pic, 1941

=*luteoapicalis* Pic, 1941

=*luteonotata* Pic, 1941

O. yunnanicus Legalov, sp. nov. – China (Yunnan).

Acknowledgements

The author thanks Prof. Yu.E. Mikhailov (Russia: Yekaterinburg) for help with literature, and anonymous reviewers for the valuable comments that improved the manuscript.

References

- Clark, S.M., Riley, E.G. (2002) 123. Orsodacnidae Thompson 1859. *American Beetles. Vol. 2 – Polyphaga: Scarabaeoidea through Curculionoidea*. Arnett, Jr. R.H., Thomas, M.C., Skelley, P.E., Frank, J.H. (eds.). CRC Press, Boca Raton, P. 613–616.
- Dedyukhin, S.V. (2019) On the inventory of the leaf-beetles fauna (Coleoptera, Chrysomelidae) in Orenburg reserves. *Orenburg Reserves in the Environmental Framework of Russia. Proceedings of FSBI Orenburg Region Reserves*. 2. Saratov: LLC Amirit, 119–131.
- Guselnikov, S.A., Medvedev, L.N. (1984) Leaf beetles of the Western Sayan and Minusinsk depression. *Coleoptera of Siberia*. Irkutsk, 32–41.
- Gus'kova, E.V. (2010) The Leaf-beetles (Coleoptera, Chrysomelidae) of the South Urals. *Entomofauna: Zeitschrift für Entomologie*, 31 (14), 169–228.
- Heyden, L. (1880–1881) *Catalog den Coleopteren von Sibirien mit Einschluss derjenigen der Turanischen Länder, Turkestans und der chinensischen Grenzgebiete*. Berlin, 224 p.
- Kiseleva, E.S. (1928) K faune listoedov (Coleoptera, Chrysomelidae) okrestnostei g. Tomska. *Izvestija Tomskogo Gosudarstvennogo Univestiteta*, 79 (4), 247–260.
- Knopf, H.E. (2009) Contributions to the knowledge of the Insect fauna of trees in Iraq. *Journal of Applied Entomology*, 69 (1–4), 82–87. DOI: 10.1111/j.1439-0418.1971.tb03186.x
- Lawrence, J.F., Beutel, R.G., Leschen, R.A.B., Slipinsky, S.A. (2010). Chapter 2. Glossary of Morphological Terms. *Handbook of Zoology. Arthropoda: Insecta. Tb. 40: Coleoptera (Beetles). Vol. 2: Morphology and Systematic (Elateroidea, Bostrichiformia, Cucujiformia partim)*, P. 9–20.
- Lawrence, J.F., Ślipiński, A.S. (2014) 2.7.1. Orsodacnidae C.G. Thomson, 1859. *Handbook of Zoology. Arthropoda: insecta. Tb. 40: Coleoptera (beetles). Vol. 3. Morphology and Systematics (Phytophaga)*, P. 184–188.
- Legalov, A.A. (2021) First record of orsodacnid leaf beetle (Coleoptera: Orsodacnidae) from the Lower Cretaceous of Brazil. *Historical Biology*, <https://doi.org/10.1080/08912963.2021.1929204>
- Li, K, Liang, H. (2018) A comparative study of external female genitalia (including the 8th and 9th abdominal segments) in the family Megalopodidae and other related families of Chrysomeloidea. *ZooKeys*, 762, 69–104. <https://doi.org/10.3897/zookeys.762.22163>
- Lopatin, I.K. (1985) Leaf-beetle (Coleoptera, Chrysomelidae) of Iran. Results of the Czechoslovak-Iranian expeditions of the 1973-1977.IV. *Entomologicheskoe Obozrenie*, 64 (4), 760–772.
- Lopatin, I.K. (2010). *The leaf beetles (Insecta, Coleoptera, Chrysomelidae) of Central Asia*. Minsk, Belarussian State University. 511 p.
- Medvedev, L.N. (2015) To the knowledge of leaf beetles (Coleoptera: Chrysomelidae) from Turkey. *Caucasian Entomological Bulletin*, 11 (2), 391–394.
- Mirzoeva, N. (2001) A study of the ecofaunal complexes of the leaf-eating beetles (Coleoptera, Chrysomelidae) in Azerbaijan. *Turkish Journal of Zoology*, 25, 41–52.
- Moseyko, A.G., Ponomarev, K.B., Teploukhov, V.Yu., Knyazev, S.A. (2018) A review of the leaf-beetle fauna (Coleoptera, Chrysomelidae sensu lato) of Omsk Province. *Entomological Review*, 98, 1064–1087.
- Özdikmen, H., Turgut, S. (2008) The Megalopodidae and Orsodacnidae of Turkey (Coleoptera: Chrysomeloidea) with zoogeographical remarks and a new record, *Zeugophora scutellaris* Suffrian, 1840. *Munis Entomology & Zoology*, 3 (1), 285–290.
- Pic, M. (1895) [pour prendre date, donne les diagnoses de plusieurs Coléoptères rapportés de Syrie par M. G. Delagrange]. *Bulletin de la Société Enromologique de France*, 1894, CCLXXXIV–CCLXXXVIII.
- Reid, C.A.M. (2014) 2.7.1. 2. Chrysomeloidea Latreille, 1802. *Handbook of Zoology. Arthropoda: Insecta.Tb. 40: Coleoptera (Beetles). Vol. 3. Morphology and Systematics (Phytophaga)*, P. 11–15.
- Silfverberg, H. (2010) Family Orsodacnidae C.G. Thomson, 1859. *Catalogue of Palaearctic Coleoptera, Vol. 6, Chrysomeloidea*. Löbl, I., Smetana, A. (eds.). Apollo Books, Stenstrup, 337.