

**Distribution of *Cassida berolinensis* in the Czech and Slovak Republics
(Coleoptera: Chrysomelidae: Cassidinae)**

**Rozšíření *Cassida berolinensis* v České a Slovenské republice
(Coleoptera: Chrysomelidae: Cassidinae)**

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Abstract. The distribution of *Cassida berolinensis* Suffrian, 1844 in the Czech and Slovak Republics is reviewed. All literature sources are discussed. The first reliable records from Bohemia are presented, and its occurrence in Moravia is confirmed. Remarks on identification and ecological notes are given. A new host plant, *Salsola* sp. (Chenopodiaceae) is recorded.

INTRODUCTION

Cassida berolinensis Suffrian, 1844 is widely distributed in desert habitats of Asia to central Europe, with the Czech Republic and Eastern Germany representing the westernmost border of its range. It is not a rare species in central Asia, China and Mongolia, but very rare in the central Europe with only a few records. The lack of records is probably mainly caused by its cryptic way of life, rather than real “rarity”. A historical review of records from the Czech and Slovak Republics, supplemented with new records from both countries and bionomic notes, is given below.

HISTORICAL OVERVIEW

The species was firstly published from Moravia by Fleischer (1927-30) from the environs of Rakvice (Mazura leg., Fleicher coll.), however, the specimen was misidentified as *C. flaveola* Thunberg, 1794 (Sekerka 2004). Bechyně (1944) published 74 specimens from Mutěnice, Bzenec, and Čejč. In the same paper he also described a new aberration *güntheri* from Mutěnice which represent a plain colour form of *C. berolinensis*. Sekerka (2004) partly reexamined this material and confirmed the identification. Another part of the material studied by Bechyně is discussed here; however, we were unable to find such an extensive series of specimens although we examined Bechyně's collection as well as almost all collections mentioned in his paper. In total we found only 34 specimens, suggesting that a large part of the material published by Bechyně (1944) is probably lost; the same is true for many other

species recorded in that paper (L. Sekerka, unpubl. data). The only authentic specimen from Čejč that we found that was identified as *C. berolinensis* by Bechyně was misidentified; it is a partly damaged and teneral specimen of *C. flaveola*. The specimen of *C. berolinensis* reported here from Čejč was incorrectly identified by Bechyně as *C. sanguinolenta* Müller, 1776. Most specimens recorded by Bechyně (1944) were collected in Mutěnice, where the species was apparently not rare until the 1940s. Since that time only a single specimen was collected there, in 1963 (Sekerka 2004), which, together with a another specimen collected in 1963 reported by Havelka et al. (1964) from Mohelno, represent the last known records from Moravia until now. Unfortunately, we did not have the opportunity to reexamine the last mentioned specimen and confirm its identification.

Strejček (1993) reported this species from Bohemia but without any further comments and the record is probably erroneous (J. Strejček 2008, pers. comm.). A not officially published record was presented by Řehounek (1999) in his MSc. thesis. He reported a single specimen from the collection of Jaromír Havelka (now part of the private collection of Ladislav Ernest, Nymburk) collected in Nymburk in 1951. Unfortunately, we did not have an opportunity to study this specimen, but according to L. Ernest (2008, pers. comm.) it has a rust-coloured, coarsely punctate clypeus, a character unique for *C. berolinensis* among all central European *Cassida* species. The Bohemian specimens given here are the first reliable ones, and the species is recorded as new for Bohemia.

The first record from Slovakia (environs of Komárno) was published by Roubal (1941) and the species was considered as extremely rare. Recently, the species was reported from Malé Bielice (7375) (Cunev 1995), Horné Plachtince (7781) (Cunev et al. 1995) and Čenkov (Majzlan et al. 1999). Unfortunately, we did not have an opportunity to reexamine any of the Slovakian specimens mentioned above.

MATERIAL AND METHODS

All specimens reported here were identified by the authors. Faunistic data are given in the following order: locality, grid number, date of collection, number of specimens, collector, and depository in parentheses. Data that appears to be missing is absent from original labels.

List of abbreviations used in text:

FPHC – Filip Pavel collection, Hradec Králové;
JKHC – Jiří Krátký collection, Hradec Králové;
JPHC – Jan Pelikán collection, Hradec Králové;
JPPC – Jiří Plecháč collection, Pecka;
LSLC – Lukáš Sekerka collection, Liberec;
MOPC – Michal Ouda collection, Plasy;
MZKC – Miroslav Zúber collection, Kosmonosy;
NMPC – National Museum, Prague (Jiří Hájek);

PCZC – Petr Čížek collection, Žamberk;
RSLC – Richard Škoda collection, Liberec;
RZBC – Richard Szopa collection, Bystřice nad Olší;
VBPC – Václav Bededikt collection, Plzeň;
NNM – National Nature Monument;
NNR – National Nature Reserve;
NR – Natural Reserve;
PLA – Protected Landscape Area.

RESULTS

Cassida berolinensis Suffrian, 1844

Examined material. Czech Republic. Bohemia: Hrdly (5550-51), vi.1941, 1 spec. (LSLC); Stod (6344-45), 1 spec. (NMPC). **Moravia:** Bzenec, Stolařka pond (7069), 26.vi.2006, 3 spec., J. Pelikán lgt. (JPHC), 26.viii.2006, 3 spec., J. Pelikán lgt. (JPHC), 26.viii.2006, 1 spec.,

F. Pavel lgt. (FPHC), 7.ix.2006, 6 spec., J. Pelikán lgt. (JPHC, MOPC, MZKC), 7.ix.2006, 2 spec., J. Krátký lgt. (JKHC, LSLC); Čejč (7067), 1 spec., J. Bechyně lgt. (NMPC); Hodonín (7168), 29.vii.1942, 1 spec., A. Hoffer lgt. (NMPC); Mutěnice (7068), 19 spec., J. Bechyně lgt. (NMPC, LSLC), 1 spec., M. Kocourek lgt. (NMPC), 3 spec., H. Franěk lgt. (NMPC), vii.1941, 1 spec., V. Günter lgt. (NMPC); Rohatec (7169), vii.1942, 1 spec., A. Hoffer lgt. (NMPC). **Slovakia:** Čenkov, Čenkovská step NNR (8277), 19.vii.2007, 11 spec., J. Pelikán lgt. (JPHC, JPPC, RSZC), 16.ix.2007, 19 spec., J. Pelikán lgt. (JPHC, PCZC, VBPC), 16.ix.2007, 1 spec., J. Krátký lgt. (JKHC), 16.ix.2007, 2 spec., R. Škoda lgt. (RSLC), 6.vii.2009, 2 spec., J. Pelikán lgt. (JPHC), 6.vii.2009, 1 spec., F. Pavel lgt. (FPHC); Chotín (8174), vii.1961, 1 spec., M. Kocourek lgt. (NMPC); Malacky, Studenka (7468), 16.ix.2007, 1 spec., M. Ouda lgt. (MOPC); Nesvady (8074), 4.-5.vii.2003, 1 spec., L. Sekerka lgt. (LSLC), 20.viii.2005, 5 spec., J. Pelikán lgt. (JPHC), 20.viii.2005, 1 spec., F. Pavel lgt. (FPHC); Nesvady, Liššie diery NR (8074), 14.ix.2007, 1 spec., Pelikán J. lgt., (JPHC), 14.ix.2007, 1 spec., R. Škoda lgt. (RSLC); Somotor (7696), 12.ix.1951, 1 spec., Hoffer lgt. (LSLC); Štúrovo (81-8278), 3.vii.1954, 1 spec., Tichý lgt. (NMPC).

Distribution. Austria (Spaeth & Reitter 1926); Bulgaria (Gruev & Tomov 2007); China: Hebei, Nei Mongol, Shanxi, Xinjiang (Chen et al. 1986); Czech Republic (Sekerka 2004, present paper); Germany (Köhler & Klausnitzer 1998); Hungary (Kaszab 1962); Kazakhstan (Lopatin & Kulenova 1986); Kyrgyzstan (Weise 1896); Mongolia (Borowiec 1996); Poland (Burakowski et al. 1991); Romania (Spaeth & Reitter 1926); Russia incl. Far East (Borowiec 1996); Slovak Republic (Cunev 1995, Cunev et al. 1995, Majzlan et al. 1999, present paper); Turkey (Kismali & Sassi 1994); Ukraine (Brovdij 1983).

Identification remarks. *Cassida berolinensis* is often confused with *C. flaveola* as both species have almost regular punctuation of elytra, rust-coloured clypeus, and yellow elytra with diffuse brownish pattern. However, *C. berolinensis* is very distinct from *C. flaveola* and is rather close to *C. nobilis* Linnaeus, 1758 and *C. vittata* Villers, 1789. The two last mentioned share feeding preferences with it, as well as a narrow and quite declivous explanate margin of the elytra and deep clypeal grooves, but can be readily separated by strongly elongate body (shortly oval in *C. berolinensis*) and black moderately punctate clypeus, which is rust-coloured and coarsely punctate in *C. berolinensis*. *Cassida flaveola* differs in finely punctate clypeus with very fine and barely visible grooves, almost parallel-sided elytra, and broad subhorizontal explanate margin of elytra while *C. berolinensis* has coarsely punctate clypeus, shortly oval and posteriorly strongly tapering body, and narrow, moderately declivous explanate margin of elytra.

Bionomy. *Cassida berolinensis* is a psammophilous species restricted to extensive sandy areas (predominantly blowing sands or sand dunes) and lives on various Chenopodiaceae. It is a rare and very local species in the Czech and Slovak Republics although it might be locally common. It requires well-preserved sandy localities, which represent relicts of Pleistocene steppes like Čenkovská lesostep NNR or early Holocene like Liššie diery NR in southern Slovakia. The locality near Bzenec was a light pine forest path with well-developed sandy communities very close to Váté písky NNM. The whole area represents a unique locality of deep blowing sands formed during the late glacial period. All localities represent unique communities with many endangered species.

It was until now recorded from *Chenopodium album* and *Atriplex sphaeromorpha* (Chenopodiaceae) (Brovdij 1983). We observed the species on *Chenopodium album* as well and on

few other unidentified *Chenopodium* species in Bulgaria, Moravia and Slovakia. In addition we found it of *Salsola* sp. (Chenopodiaceae) in the environs of Čenkov (Slovakia), which was not previously reported and is here given as a new host plant. According to our observations adults occur from May to September with a peak in late August to early September.

Bechyně (1944) recorded as its host plant also *Minuartia viscosa* (Caryophyllaceae). The record is doubtful, however, we cannot confirm or reject it as *M. viscosa* is extremely rare and probably extinct in the Czech Republic. The last known locality was Váté pisky NNM in the environs of Bzenec, but it was not confirmed there in recent years. It also occurred in central Bohemia, south Moravia and in the environs of Mohelno (Fialová & Klaudisová 2006).

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SOUHRN

Práce se zabývá výskytem druhu *Cassida berolinensis* v České a Slovenské republice. Jsou zde shrnuty a zhodnoceny veškeré publikované údaje z obou států doplněné o nové údaje a bionomické poznatky včetně nově živné rostliny *Salsola* sp. (Chenopodiaceae). Druh je poprvé uveden z území Čech a je potvrzen jeho výskyt na Moravě a Slovensku.