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Records of three rare ant-lion (Neuroptera: Myrmeleontidae) species from the Czech Republic

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ŠUMPICH J. 2015: Records of three rare ant-lion (Neuroptera: Myrmeleontidae) species from the Czech Republic. *Acta Musei Moraviae, Scientiae biologicae* (Brno) **100(1):** 17–22. – Faunistic records of three ant-lion species – *Dendroleon pantherinus* (Fabricius, 1787), *Myrmeleon bore* (Tjeder, 1941) and *Megistopus flavicornis* (Rossi, 1790) from the Czech Republic are presented.

Keywords. Neuroptera, Myrmeleontidae, Czech Republic, faunistics

Introduction

In the course of research into the Lepidoptera fauna of the Czech Republic, light sources sometimes attract ant-lion species. Some of the author's findings have already been published (ŠUMPICH & KAČÍREK 2006). Further findings of species, known only from a restricted number of localities in the Czech Republic, of which distribution knowledge still remains very incomplete, are introduced in the current contribution.

Material and Methods

The adults of ant-lions recorded here were attracted to various types of light source generating UV spectrum. All the data presented are documented by voucher specimens. The nomenclature follows JEDLIČKA *et al.* (2004). The four-digit codes of faunistic map fields (in round brackets after the name of the site) are after PRUNER & MÍKA (1996).

The material examined is deposited in the following collections:

NMPC . . . . . National Museum collection, Prague, Czech Republic
AKSO . . . . . Antonín Kačírek coll., Solnice, Czech Republic

Results

Dendroleon pantherinus (Fabricius, 1787) (Fig. 1)

Material examined. Moravia mer., Hnanice, 48°48′28.288″N, 15°59′33.659″E (7162), 23.-24.viii.1997, 1 spec., J. Batelka et P. Švácha leg. et det. (NMPC); Podmolí-Šobes, 48°49′7.733″N, 15°58′26.441″E (7161), 400 m a.s.l., 30.vii.2008, 1 ♂, J. Šumpich leg. et det. (AKSO).

Remarks. A thermophilous species, distributed from the Caucasus through central Europe and the Balkan Peninsula to western Europe, where its occurrence borders on south-western France (COLOMBO *et al.* 2013); in the south of Europe it runs as far as

Sicily (Aldini *et al.* 2012). It has also been reported from China (Wang & Wang 2008), but Krivokhatsky (2011) maintains that the Chinese data refer to a related species *Dendroleon similis* Esben-Petersen, 1923. The first record from the Czech Republic was listed by Zelený (1977) in the context of a list of Czechoslovak insect species, but no faunistic details were provided. A later paper by the same author notes that this first record for the Czech Lands was based on a record from 1971-1972 from the locality Horní les, near Lednice (Zelený 1995). The same author also mentioned a record from the environs of Břeclav (Zelený 1992), but no faunistic details were mentioned in any of these cases. The first concrete Moravian records, from 1992 and 1994, were presented by Kačírek (1995) and Holuša (1997) from the Břeclav region, specifically from Soutok (Ranšpurk National Nature Reserve and the Kančí obora preserve). In 1989 the species was also found in the Podyjí National Park, on Kraví hora Hill near Znojmo (Kačírek 1995), where it has later been confirmed (see Material examined) several times. All existing records from the territory of the Czech Republic are restricted to the southernmost, climatically warmest, parts of southern Moravia. A very early occurrence in Polish Silesia (Wilczyn environs: Wzgórza Trzebnickie; Rotermund 1837, Aspöck *et al.* 2011) is interesting within this context.

Myrmeleon bore (Tjeder, 1941) (Figs 2, 4–5)

Material examined. Bohemia bor., Oleško, 50°29′11.466″N, 14°12′14.096″E (5551), 150 m a.s.l., 18.vii.2008, 1 ♂, J. Šumpich leg. et det., A. Kačírek revid. (AKSO).

Remarks. A psammophilous species, distributed from Japan to central Europe, bordering in Italy, Switzerland and Germany (Aspöck *et al.* 2001, 2011). On the Balkan Peninsula it was not known until a recent record in Croatia (Drava river floodplain; Ábrahám 2008). The centre of its European occurrence is situated in northern and central Europe and the Baltic countries. The first record for the Czech Lands was made in northern Bohemia near Osečko (Knížetová *et al.* 1987). In Moravia, the species was found several years later in a number of localities (Bzenec, Mutěnice, Moravský Písek, Čejč and Vracov) (Kačírek 1995). To date, its occurrence in the Czech Republic has also been published from Rokytno and Lípa nad Orlicí in northern Bohemia (Kačírek 1995). All known localities consist of sandy habitats. All the records above originate from extensive sands, where the species is probably common. This claim is supported by the discovery of thousands of the pits typical of the group on a former military shooting-range (Figs 3–4). The high density of pits in this locality is also characteristic of the species (Matsura 1986, 1987, Ábrahám 2006, 2008). On the sands near Oleško, it was found together two other ant-lion species, *Myrmeleon formicarius* (Linnaeus, 1767) and *Euroleon nostras* (Geoffroy in Fourcroy, 1785).

Megistopus flavicornis (Rossi, 1790) (Fig. 3)

Material examined. Moravia mer., Lanžhot-Soutok, Doubravka locality, 48°41′14.470″N, 16°56′14.068″E (7367), 160 m a.s.l., 26.v.2011, 1 ♂, J. Šumpich leg., A. Kačírek det. (NMPC).

Remarks. *M. flavicornis* is distributed in the western Palaearctic, absent from the more northern countries, in contrast widely distributed on the Balkan Peninsula (Kačírek 2013). Quite local in central Europe, absent from Germany and Poland, the countries adjoining the Czech Republic. Within the Czech Republic, it was recorded for the first time from southern Moravia (Čejč, Vracov, Bzenec, Mutěnice) (Kačírek 1995) in the last decade of the 20th century. The specimen presented was collected at a light trap in alluvial forest. The northern boundary of its European occurrence just intrudes upon southern Moravia.

Conclusions

Ant-lions are rare in the Czech Republic, with the exceptions of only *Myrmeleon formicarius* Linnaeus, 1767 and *Euroleon nostras* (Geoffroy in Fourcroy, 1785), which occur throughout the area except at higher altitudes. Most other ant-lion species have become far more endangered in recent years.

Dendroleon pantherinus and *Myrmeleon bore* had already been included into the Red Book of the Czech Republic more than 20 years ago (Zelený 1992), and three more species have since been added (Zelený 2005). Today, nearly three-quarters of Czech ant-lion fauna are considered endangered, including all three species introduced in the current paper.

The critically endangered *Dendroleon pantherinus* is reliant on old, rotting oaks (*Quercus* sp.), alternatively horse-chestnut (*Aesculus hippocastanum*), ash (*Fraxinus excelsior*) and other woody species (Roubal 1936). *Myrmeleon bore* (together with *Distoleon tetragammicus* (Fabricius, 1798)) is included in the category of endangered species, rendered vulnerable by the decline of its sandy habitats: never more than sparsely distributed in the Czech Republic, such places are becoming overgrown or developed (Šuhaj & Hudeček 1998). The threat to *Megistopus flavicornis* has not been considered too serious to date and the species is presented as only near-threatened. The fact that knowledge of its distribution in the Czech Republic is incomplete may contribute to this. Finally, *Euroleon nostras*, the fifth species included in the Red List, is categorised as vulnerable. The above species also feature in many other European red lists (e. g. Devetak 1992, Dobosz R. 2004).

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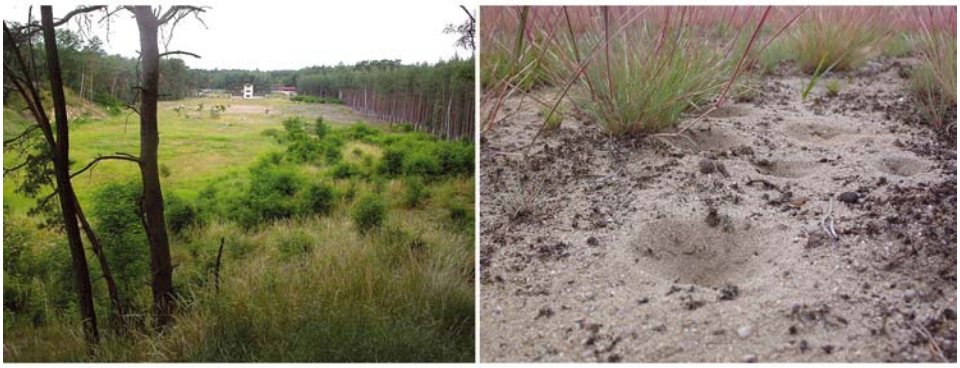

Figs 1–5. Habitus of ant-lion species recorded in the Czech Republic: 1 –*Dendroleon pantherinus* (Fabricius, 1787), ♂, Šobes, 30.vii.2008 (AKSO); 2 – *Myrmeleon bore* (Tjeder, 1941), ♂, Oleško, 18.vii.2008 (AKSO); 3 – *Megistopus flavicornis* (Rossi, 1790), ♂, Lanžhot-Soutok, 26.v.2011 (NMPC). Habitat of *M. bore* near Oleško: 4 – A former military shooting-range near Oleško with the dominant grass *Corynephorus canescens* and abundant occurrence of *M. bore*; 5 – Characteristic appearance of ground with *M. bore* pits.

Souhrn

Mravkolvi patří na území České republiky ke vzácnějším druhům hmyzu. Výjimku představují pouze *Myrmeleon formicarius* Linnaeus, 1767 (mravkolev běžný) a *Euroleon nostras* (Geoffroy in Fourcroy, 1785) (m. skvrnitý), kteří obývají téměř celé území s výjimkou vyšších poloh. Většina druhů mravkolvů se stává v posledních letech stále více ohrožená. *Dendroleon pantherinus* (m. okatý) a *Myrmeleon bore* (m. dunový) byli zařazeni do Červené knihy České republiky už před více než 20 lety (Zelený 1992), později byly na červený seznam zařazeny i další tři druhy mravkolvů (Zelený 2005). V současnosti jsou téměř tři čtvrtiny druhů české fauny považovány za ohrožené, včetně všech tří druhů uváděných v tomto příspěvku. Kriticky ohroženým druhem je *Dendroleon pantherinus*, který je existenčně závislý na zachování starých vykotlaných dubů (*Quercus* sp.), popřípadě jírovců (*Aesculus hippocastanum*), jasanů (*Fraxinus excelsior*) a dalších dřevin (*cf.* Roubal 1936). *Myrmeleon bore* (spolu s *Distoleon tetragammicus* (Fabricius, 1798) – m. ostruhatý) je veden v kategorii ohrožených druhů. Ohrožení druhu spočívá především v ohrožení jeho lokalit, kterých je v Česku navíc velmi málo (viz též Šuhaj & Hudeček 1998). Ohrožení druhu *Megistopus flavicornis* není dosud v Česku přikládána příliš zvlášť vysoká důležitost, veden je pouze jako téměř ohrožený druh. Důvodem mohou být mimo jiné i nedostatečné znalosti o jeho rozšíření u nás. Doplnit lze i pátý druh mravkolva, který je veden v Červeném seznamu, a to *Euroleon nostras* v kategorii zranitelný druh. Prezentované druhy figurují i v mnohých evropských červených seznamech (např. Devetak 1992, Dobosz 2004).

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