

FIRST RECORD OF PHORESY OF PSEUDOSCORPION *LAMPROCHERNES CHYZERI* IN SLOVAKIA (PSEUDOSCORPIONES: CHERNETIDAE)

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Abstract: A phoresy of the pseudoscorpion, *Lamprochernes chyzeri* (Tömösváry, 1882), was observed on the locality Devínske jazero (garden estate in the vicinity of Bratislava) in Slovakia. One phoretic male was attached to the leg of the house fly *Musca domestica* Linnaeus, 1758.

Key words: pseudoscorpion, *Lamprochernes chyzeri*, Diptera, *Musca domestica*, phoresy, Slovakia.

INTRODUCTION

Phoresy in pseudoscorpions represents a generally known and common phenomenon in certain pseudoscorpion groups (KAISILA 1949). It is a non-parasitic association between two animals of mostly different taxons due transportation, and may or may not be associated, at least in the early stages of its evolution, with the predatory behaviour of pseudoscorpions (LEGG & JONES 1988). In Europe, the phoresy is typical mainly for the families of Chernetidae and Cheliferidae, specimens of which do attach themselves to flies, harvestmen, beetles but also to moths or hymenopteran (for example BEIER 1932, 1948, 1963; LOHMANDER 1939a, 1939b; KAISILA 1949; RESSL & BEIER 1958; MINÁŘ 1966; LEGG & JONES 1988; MAŠÁN & KRIŠTOFÍK 1992; DUCHÁČ 1993; POINAR et al. 1998; GARDINI 2000; DROGLA & LIPPOLD 2004).

Furthermore the phoresy of *Neobisium sylvaticum* (C. L. Koch, 1835) from the family Neobisiidae on *Musca domestica* Linnaeus, 1758 was recorded in Europe (POINAR et al. 1998). Besides the mentioned families, phoretic pseudoscorpions were found also in families of Chthoniidae, Tridenchthoniidae, Geogarypidae, Atemnidae, Cheiridiidae and Withiidae in Brazilian Amazonia (AGUIAR & BÜHRNHEIM 1998). Twenty-four species were recorded there in phoretic association with 56 insect species, belonging to five orders – Hemiptera, Neuroptera, Coleoptera, Lepidoptera and Diptera. POINAR et al. (1998) provided the direct evidence of ten pseudoscorpion families with at least 44 insect families and three arachnid families in the world. The ev-

idence of pseudoscorpion phoresy on arthropods can be recorded through findings of pseudoscorpions attached to the appendages of carriers or pseudoscorpions riding on the bodies of large arthropods (BEIER 1948).

Two species, *Lamprochernes chyzeri* (Tömösváry, 1882) and *L. nodosus* (Schränk, 1803), are known from genus *Lamprochernes* Tömösváry, 1882 in Slovakia. *L. nodosus* is a species whose phoresy has been commonly observed in Europe (for example BEIER 1932, 1948; LOHMANDER 1939a; RESSL & BEIER 1958; HELVERSEN 1966; MINÁŘ 1966; RAFALSKI 1967; POINAR et al. 1998; DROGLA & LIPPOLD 2004). In Slovakia, only two specimens were found as phoretic on flies – one male on *Hydrotaea similis* Meade, 1887 and one male on *Lucilia caesar* (Linnaeus, 1758) (MAŠÁN & KRIŠTOFÍK 1992). Cases of phoresy of *L. chyzeri* have been rarely recorded in Europe (VACHON 1954; MEINERTZ 1964; LEGG & JONES 1988; DROGLA & LIPPOLD 2004). Our finding represents the first record of phoresy of *L. chyzeri* in Slovakia.

MATERIAL AND METHODS

We recorded one male of *Lamprochernes chyzeri* from Slovakia, the Borská nížina Lowland, on locality the Devínske jazero (suburban area of Bratislava; the cadastre of the Záhorská Bystrica Borough) (48°15'44"N, 16°57'52"E, altitude 140 m; 7.8.2011, leg. V. Stloukalová, E. Stloukal). The male was attached to the leg of the house fly *Musca domestica* (Diptera, Muscidae) (Figs 1A, 1B). The specimen of *Lamprochernes chyzeri* was identified using

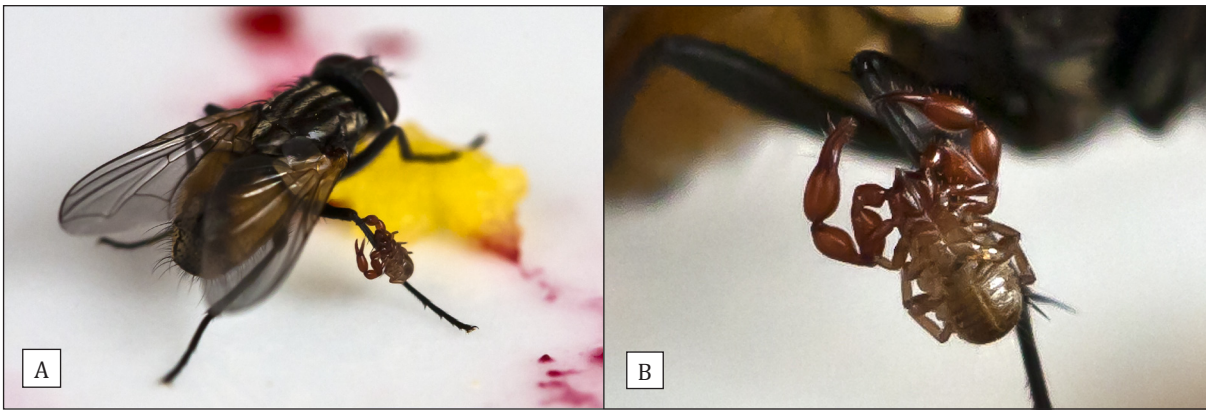


Figure 1. **A** – *Lamprochernes chyzeri* attached to the leg of the house fly *Musca domestica*. **B** – Detail of attached *Lamprochernes chyzeri*.

the identification key of CHRISTOPHORYOVÁ et al. (2011b). It was studied as temporary slide mount, photographed using a Leica DM1000 compound microscope with ICC50 Camera Module (LAS EZ application, 1.8.0). The material is deposited in the first author collection in the Comenius University, Bratislava. Live macrophotographs were taken by the camera Canon EOS 5D with macrolenses Canon EF 100mm f/2,8 Macro USM and the flash Canon Macro Twin Lite MT-24EX.

NOTES ON THE PHORESY OF *LAMPROCHERNES CHYZERI*

The pseudoscorpion *Lamprochernes chyzeri* is known mainly from Europe (Austria, Bulgaria, Croatia, Czech Republic, Denmark, Finland, Germany, Hungary, Italy, Latvia, Norway, Poland, Romania, Slovakia, Sweden, Switzerland, former Yugoslavia, and United Kingdom) and also from Georgia, Kazakhstan and Turkey (HARVEY 2009). TÖMÖSVÁRY (1882) recorded the species for the first time and among type localities he mentioned Malé Ozorovce Village, Trakany Village, Sninský kameň Mt., Nitra Town and the Turňa nad Bodvou Village in Slovakia. *L. chyzeri* occurs beneath the bark of old and decaying trees (LOHMANDER 1939a; KAISILA 1949; BEIER 1963; RAFALSKI 1967; JĘDRYCKOWSKI 1987; LEGG & JONES 1988; DROGLA & LIPPOLD 2004; PETROV 2004; KRUMPÁL & CHRISTOPHORYOVÁ 2007) and in compost heaps (LOHMANDER 1939a; HELVERSEN 1966; LEGG & JONES 1988; DROGLA & LIPPOLD 2004; CHRISTOPHORYOVÁ 2009). There have been records from bird nests (KRUMPÁL & CYPRICH 1988; CHRISTOPHORYOVÁ 2010; CHRISTOPHORYOVÁ et al. 2011a), formicaries of *Formica fusca* Linnaeus, 1758 (Beier 1948), from greenhouse (KRUMPÁL et al. 1997) or in moss (PALMGREN 1973). In Denmark the species is characterized as synanthropic (MEINERTZ 1964).

Several authors stated that the paucity of records of the species has probably been a result of confusing it with *Lamprochernes nodosus* (LEGG & JONES 1988; DROGLA & LIPPOLD 2004; CHRISTOPHORYOVÁ

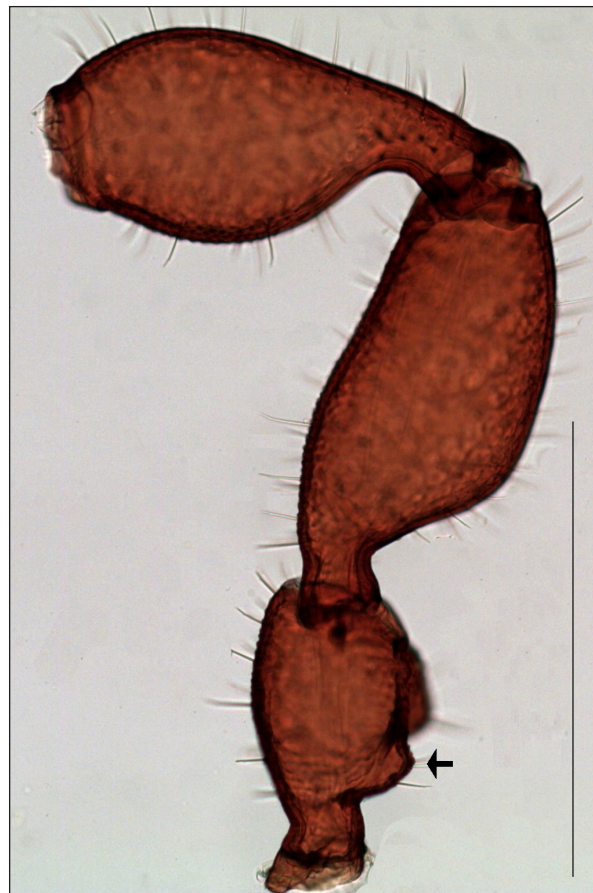


Figure 2. Palpal trochanter, femur and patella of *Lamprochernes chyzeri*. Arrow points to the conical and pointed protuberance on palpal trochanter. Scale: 0.5 mm.

et al. 2011b). Both species do occur in similar habitats and they can be easily confused because their identification is based on many overlapping morphometric and morphological characters. According to LEGG & JONES (1988) females differ in chaetotaxy of genital operculum: anterior part of the operculum bears more than 20 setae in *L. nodosus* and 9–11 setae in *L. chyzeri*. CHRISTOPHORYOVÁ et al. (2011b) has found out that some specimens of *L. nodosus* have anterior genital operculum with less than 20 setae. A more reliable determination character is the shape of palpal trochanter (CHRISTO-

PHORYOVÁ et al. 2011b). In *L. nodosus* the protuberance on palpal trochanter is blunt and rounded and in *L. chyzeri* the protuberance on palpal trochanter is conical and pointed (Fig. 2). After that the pseudoscorpions of both species from Slovakia were revised. The misidentifications are mentioned in the actual checklist of Slovak and Czech pseudoscorpions (CHRISTOPHORYOVÁ et al. 2011c).

The phoresy of *Lamprochernes chyzeri* was observed for the first time in Slovakia and it is only the second known case of pseudoscorpion phoresy in the country [first one published by MAŠÁN & KRIŠTOFÍK (1992)]. In other countries *L. chyzeri* was recorded as phoretic only for few times. VACHON (1954) found the species attached to a moth *Graphiphora augur* (Fabricius, 1775) and MEINERTZ (1964) on *Musca domestica*. LEGG & JONES (1988) mentioned that the species is phoretic on flies. DROGLA & LIPPOLD (2004) collected seven specimens from flies; in one case they collected both species *L. chyzeri* and *L. nodosus* on one fly.

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