A Case of Abnormality in Presence of Coxal Pores in Lithobiomorpha (Chilopoda)

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Abstract: A case of abnormal distribution of coxal pores of Lithobius sibiricus is described. An additional single pore is situated on one of the 11th coxae.

Introduction

The pattern of distribution of coxal pores, i.e. openings of the probably multifunctional glandular coxal organs (Rosenberg & Bajorat 1984, Littlewood & Blower 1987), is a strong taxonomical character in the Lithobiomorpha (Bonato et al. 2010). Although the number of these pores is increasing during the post-larval development and intraspecific variability might affect their number (Murakami 1960, Andersson 1976), their presence or absence on certain legs is very stable. This taxonomic character is used even at the subfamily level within the family Lithobiidae, where only members of the subfamily Pseudolithobiinae Matic, 1973 (one species in Ottobius Chamberlin, 1952 and two in Pseudolithobius Stuxberg, 1875) have coxal pores also on the 11th coxae in addition to those on the 12-15th (Zapparoli & Edgecombe 2011).

Several papers have reported abnormal specimens in the Lithobiomorpha (e.g. Borek 1969, Demange 1971, Garcia Ruiz 2006), including also some reports on cases with unusual arrangement of coxal pores on the last four pairs of coxae (Matic 1981, Lewis 1987, 1989, 1990). Nevertheless, there has been only one note about the presence of pores on coxa of 11th pair of legs till now: Matic (1958) documented a male of Lithobius forficatus (L., 1758) with coxal pores pattern formula 4, 8, 7, 8, 6 (right side) and 0, 9, 9, 6 (left side). In this communication, we report another case of abnormality in the distribution of coxal pores observed in the family Lithobiidae.

Materials and Methods

Evaluating a material of centipedes collected in Mongolia, we found another specimen with an abnormal arrangement of coxal pores. The specimen is a male of Lithobius sibiricus Gerstfeld, 1858 collected via singling at the field station of the Mongolian National University from a Picea sibirica wood on a slope with northern exposition (47°46’00.37” N, 106°53’10.52” E, 1550 m a.s.l.) by I. H. Tuf on 10 June 2016. The specimen is currently deposited in the Soil Zoology Collection of the Hungarian Natural History Museum, Budapest, Hungary.

Results and Discussion

The abnormal specimen of Lithobius sibiricus had one pore situated on one of the 11th coxae (Fig. 1).

For the number of coxal pores on the last four pairs of legs in L. sibiricus, Eason (1976) mentioned 6, 7, 7, 7, while Loks (1965) documented 6, 6, 6, 6 for Lithobius anornatus, and it is typically varying between five to eight per coxa (Zaleskaja 1978).
The examined specimen had the following coxal pores formula on legs 11-15th: 1, 6, 7, 7, 4 (right side) and 0, 6, 7, 7, 5 (left side). There were no other abnormalities in the specimen, although the 13th left leg had been lost during its capturing and the 10-12th left legs had been partially detached at an earlier event (probably a predatory attack) in the specimen’s life. According to Fründ’s experiments on centipede scars (Fründ 1992), the darkly scabbed cicatrised lesions of these latter legs proved that these injuries had been acquired well before the collecting of the specimen, but after its last moulting. Assuming that there were no other damages on the same legs already, also before the predatory attack, i.e. before the last moulting, we can consider that these injuries had not affected the development of the coxal pores on the other legs. Indeed, it is a known phenomenon in Lithobiomorpha that losing some of the last pairs of legs might affect the appearance of secondary sexual characters on some of the remaining legs in unusual positions (Eason 1993). There are no records of a similar effect regarding the coxal pores and these changes can be established only during the subsequent moultings of the specimen.

Although the identification of our specimen is doubtless, there have been several cases when symmetrical (or unrecognised asymmetrical) abnormalities led to its wrong taxonomical evaluations and descriptions of new lithobiomorph taxa (Crabill 1981, Eason 1993).

References


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