

# First records of *Larca lata* (Hansen, 1884) and *Neobisium biharicum* Beier, 1939 in Hungary

J. NOVÁK

János Novák, Department of Systematic Zoology and Ecology, Eötvös Loránd University,  
H-1117 Budapest, Pázmány P. sétány 1/C. E-mail: novakjanos01@gmail.com

**Abstract.** The first records of *Larca lata* (Hansen, 1884) and *Neobisium biharicum* Beier, 1939 are reported from Hungary. With *L. lata* and *N. biharicum* the number of the recorded pseudoscorpion species for Hungary has raised to 47. The family of Larcidae Harvey, 1992 proved to be new for Hungary. The morphometrical and morphological characters of the specimens found are discussed.

**Keywords.** Pseudoscorpions, Central Europe, faunistics, taxonomy.

## INTRODUCTION

Although studies regarding the pseudoscorpions have more than a hundred years' tradition in Hungary (Tömösváry 1882, 1884; Daday 1889), the species list of the Hungarian pseudoscorpion fauna is far from complete, and even in the past few years several species new to the fauna of the country were reported (Kárpáthegyi 2007, Novák 2012).

Elaborating the pseudoscorpion material of the Hungarian Natural History Museum two species, *Larca lata* (Hansen, 1884) and *Neobisium biharicum* Beier, 1939 proved to be new for the fauna of Hungary.

The presence of *L. lata* has recently been reported from Slovakia (Christophoryová 2011a). This species occurs also in the neighbouring countries e.g. Austria (Beier 1956) and Romania (Dumitresco & Orghidan 1964). Regarding to our present knowledge *Larca lata* is possessing seemingly a Northern and Central European distribution with reported occurrences in Denmark (Hansen 1884), Sweden (Lohmander 1939), Poland (Beier 1956, Rafalski 1953, 1967), the Czech Republic (Ducháč 1993), Germany (Drogla & Lippold 1994) and the United Kingdom (Judson & Legg 1996). However, the species seems to be

absent from the Mediterranean region (Zaragoza 2005). The genus *Larca* is xerophyllous, and from its six European species *Larca lata* is the only epigeal one. It is regarded to one of the most rare European pseudoscorpion species (Judson & Legg 1996).

*Neobisium biharicum* was originally described from the Bihar Mts., Transylvania, Romania (Beier 1939), and later was reported from the Northeastern Carpathians (Gyertyánliget, Máramaros, Ukraine) (Szent-Ivány 1941), from the Lepşa Valley in the Eastern Carpathians, Romania (Dumitresco 1976) and from the Movile Cave in southern Dobrogea, Romania (Ćurčić *et al.* 1993).

The Hungarian specimens of *L. lata* and *N. biharicum* provide a good opportunity to broaden our knowledge regarding to their distribution area, and furthermore, their morphological and morphometrical variations.

## MATERIAL AND METHODS

The studied material belongs to the collection of the Hungarian Natural History Museum (HNHM), and it was not investigated until now. Unfortunately, as it is a very old sample, it was not accompanied by proper data on the habitat of collecting locality, the full name of the collector, nor the date of the collection.

The material was examined by using a stereo-microscope and light microscope. The specimens were cleared in lactic acid, drawings were made with the aid of a Zeiss Axioskop 2 microscope.

The specimens were identified using the publications of Beier (1939), Christophoryová (2011a; 2011b), Čurčić *et al.* (1993), Dumitresco & Orghidan (1964), Gardini (1983), Judson & Legg (1996) and Tooren (2001) and deposited in the Hungarian Natural History Museum, in 70% ethanol.

## RESULTS

### *Larca lata* (Hansen, 1884)

(Figures 1A–D)

*Material examined.* One male and one female specimen, data accompanied to the material: Pápa 1896.IV. Lg. Wachsmann J.

*Measurements* (in mm). *Male.* Body length 1.61. Carapace length 0.52. Palpal femur length 0.78, width 0.17, length/width ratio 4.58. Palpal patella length 0.59, width 0.18, length/width ratio 3.27. Chela length 1.0, width 0.23. Chelal hand length 0.56, chelal finger length 0.44.

*Female.* Body length 1.89. Carapace length 0.6. Palpal femur length 0.83, width 0.17, length/width ratio 4.88. Palpal patella length 0.62, width 0.18, length/width ratio 3.44. Chela length 1.0, width 0.23. Chelal hand length 0.56, chelal finger length 0.44.

*Short description.* *Carapace* (Fig. 1A). Triangular and granulated, with two transverse furrows, two pairs of well developed eyes with lenses. Epistome absent. At the male the carapace bears 38 setae, 8 situated at the anterior, 4 at the posterior margin of carapace. At the female the carapace bears 34 setae, 8 situated at the anterior, 4 at the posterior margin of carapace. The three situated between the eye-pairs apically enlarged. In case of both specimens 4 pairs of slitlike lyrifissures present.

*Chelicerae* (Fig. 1B). 5 setae are present on the cheliceral hand, and one on the movable finger.

The terminal end of the galea broken by both specimens. Flagellum with 4 blades, serrula exterior with 16 blades.

*Pedipalps* (Fig. 1C). Surface of pedipalps granulated, clavate vestitural setae present on its surface. Movable chelal finger with 2 trichobotria and 31 marginal teeth at the female, 28 at the male; fixed chelal finger with 8 trichobotria and 33 marginal teeth at the female (Fig. 1D), 30 at the male.

*Abdomen.* Tergites granulated, tergites II–VIII. divided, tergite IX partly divided. Tergal chaetotaxy of the male from tergite I. to tergite IX: 6:7:10:10:11:13:12:10:12. Tergal chaetotaxy of the female from tergite I to tergite IX: 6:9:10:12:12:12:14:12:12. Tergite X with 6 setae at the male, 8 at the female, and two long tactile setae broken at both specimens. Number of tergal lyrifissures at the male from tergite I to tergite X: 4:6:6:8:8:9:8:9:8:6. Number of tergal lyrifissures at the female from tergite I to tergite X: 4:8:8:10:10:10:10:10:10:6. Sternal chaetotaxy of the male from sternite IV to sternite X: 8:9:8:8:8:8:8. Sternal chaetotaxy of the female from sternite IV to sternite X: 10:8:10: 10: 10: 10: 10. Number of sternal lyrifissures at the male from sternite IV to sternite X: 7:8:10:8:8:8:6. Number of sternal lyrifissures at the female from sternite IV to sternite X: 6:8:8:8-10:8:8:6.

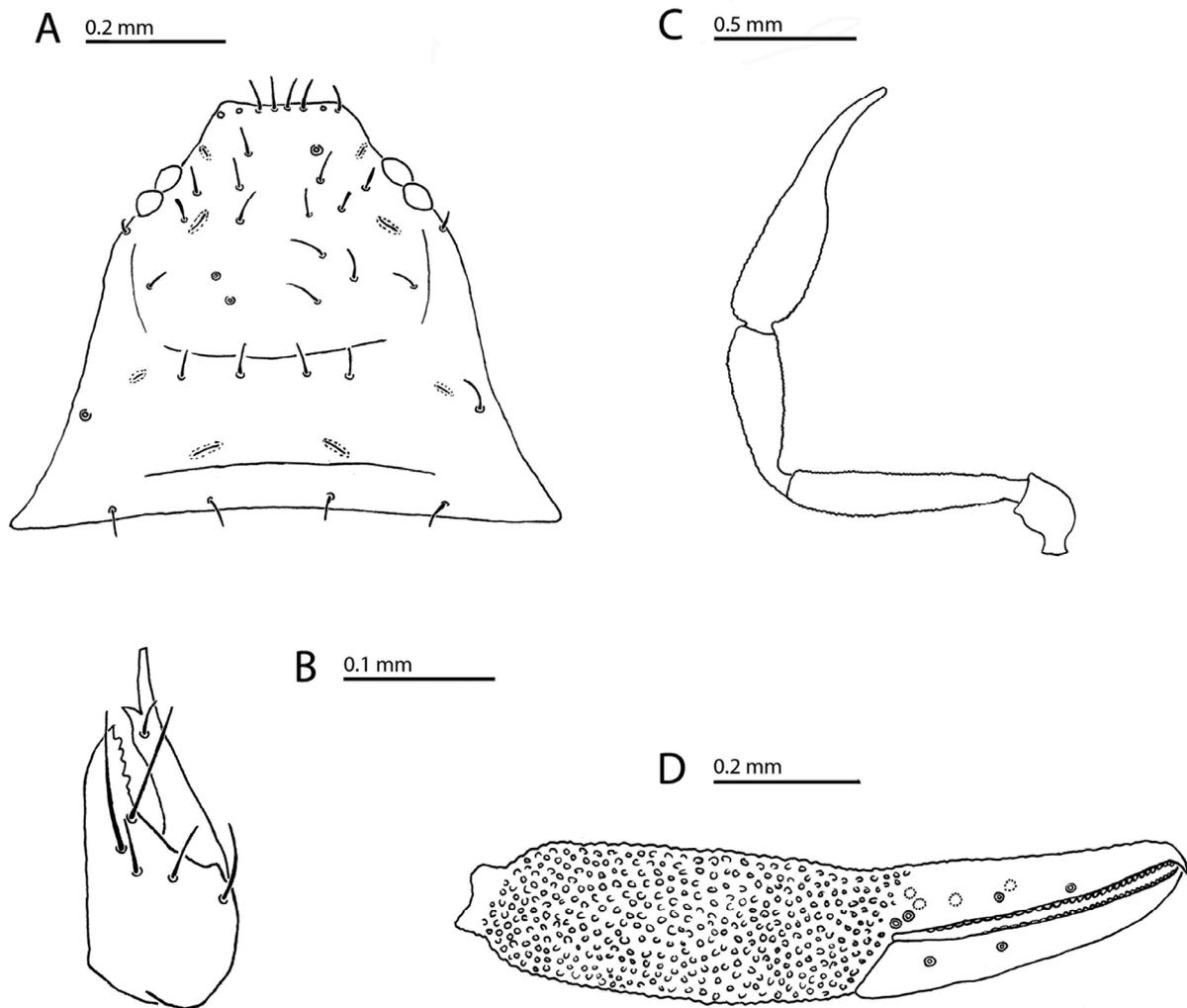
*Arolia.* The tarsal arolia longer than the claws of tarsi.

### *Neobisium biharicum* Beier, 1939

(Figures 2A–D)

*Material examined.* One female, data accompanied to the material: 1931. Macskabarlang (the Macskabarlang Cave is located in the Pilis Mts., Hungary).

*Measurements* (in mm). Body length 3.39. Carapace length 1.12. Carapace breadth 1.17. Chelicera length 0.75. Chelicera breadth 0.4. Length of movable cheliceral finger 0.5. Palpal femur length 1.8, width 0.38, length/width ratio 4.74. Patella length 1.26, width 0.42, length/width ratio 3. Chela length 3.1, width 0.75. Hand length with pedicel 1.35. Hand length without pedicel 1.2. Finger length 1.75.



**Figure 1.** *Larca lata*. A = Carapace of ♀, B = Chelicera of ♀, C = Pedipalp of ♀, D = Chela of ♀.

*Short description. Carapace* (Fig. 2A). With triangular, pointed epistome. Two pair of well-developed eyes with lenses. The carapace bears 24 setae and one or two microsetae at the praeopercular recesses. The carapace approximately as long as wide.

*Chelicerae* (Fig. 2B). Cheliceral palm with 8 setae, and one at the movable finger. Movable cheliceral finger with an enlarged medial tooth.

*Pedipalps* (Fig. 2C). Trochanter with tubercle. Femur with pedicel and without granulation or tubercles. The chelal finger approximately one third longer than the hand without pedicel. Fixed

chelal finger with 90, movable 78 close-set and mostly equal long teeth (Fig. 2D).

*Abdomen.* Tergal chaetotaxy from tergite I to tergite X: 7:8:8:8:6:6:8:8:8:6. Sternal chaetotaxy from sternite IV to sternite X: 8:8:10:10:10:10:8.

## DISCUSSION

After its Slovakian occurrence (Christophoryová 2011a), this is the second data of *Larca lata* from the Carpathian Basin. Although this is a quite rare pseudoscorpion species, according to our present knowledge its occurrence in Transylvania is also expected.

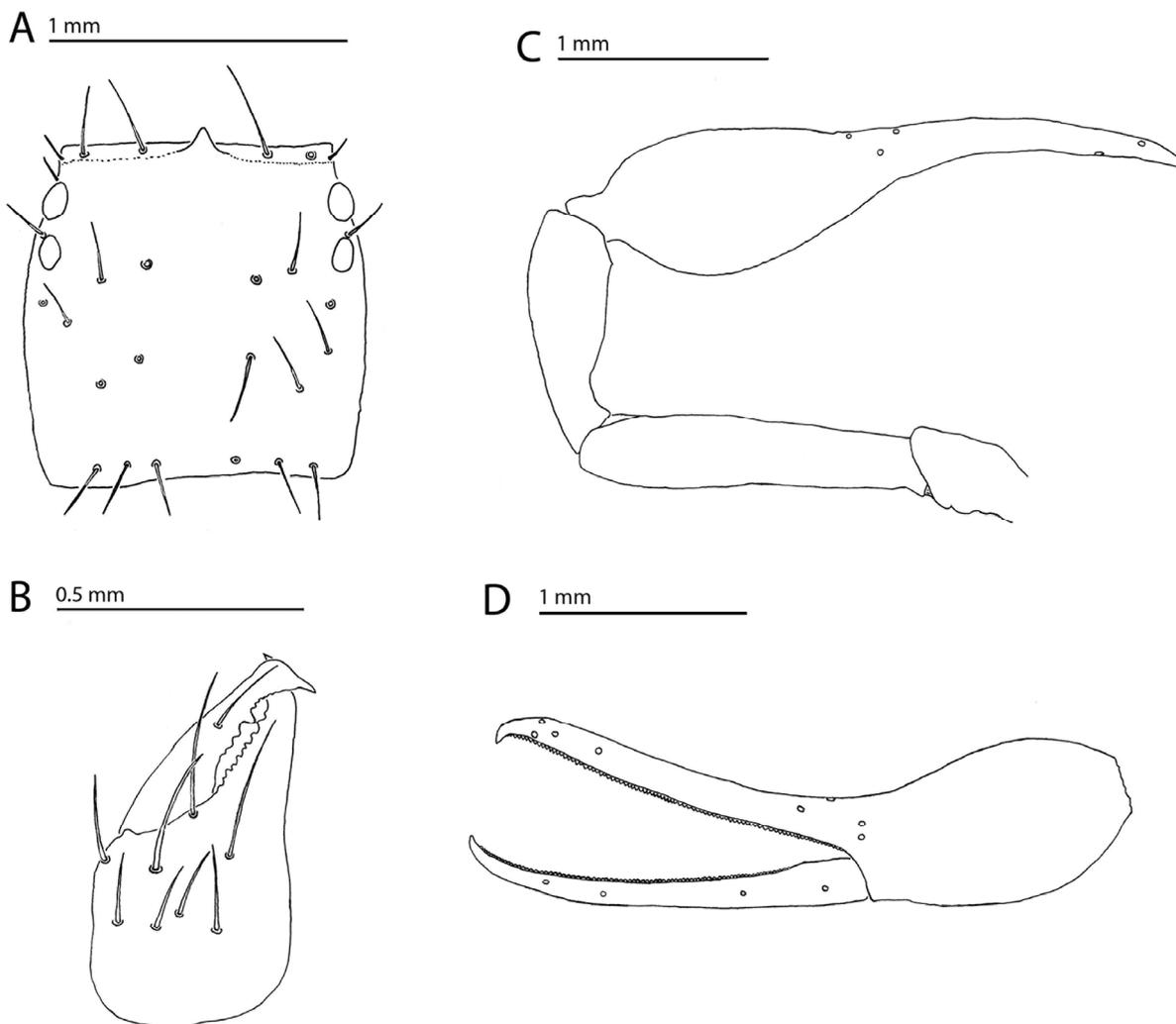


Figure 2. *Neobisium biharicum*. A = Carapace, B = Chelicera, C = Pedipalp, D = Chela.

Unfortunately, we have no detailed data on the habitat of these specimens, but as far as we know, *L. lata* prefers the hollows of old trees (Lohmander 1939; Rafalski 1953), birds' (Christophoryová 2011a; Ressler 1963) and mammals' nests (Ressler 1963). They were also found in caves in bat guano (Dumitrescu & Orghidan 1964).

Phoresy on parasitic insects is also recorded in case of *Larca lata* (Ressler 1965).

Comparing with the descriptions of Christophoryová (2011a), Judson & Legg (1996) and Tooren (2001), our specimens are in accordance

with the main taxonomic and morphometric characters reported. Nevertheless, the body size and the number of slitlike lyrifissures on the carapace show a greater variability than reported in the earlier literature.

After Romania (Beier 1939, Dumitrescu 1976, Ćurčić *et al.* 1993) and Ukraine (Szent-Ivány 1941), Hungary is the third country where the presence of *Neobisium biharicum* was reported. In the Pilis Mts., just like in Dobrogea, it was collected from a cave. Though *N. biharicum* is basically an epigeal species, it occasionally also occurs in caves (Ćurčić *et al.* 1993). The Hunga-

rian data of the species supports the opinion of Ćurčić *et al.* (1993), that this species earlier might have a larger distribution area, and now it represents a relict form. Regarding to our present knowledge, it seems that with the exception of the Bihar Mts., the Eastern and Northeastern Carpathians *N. biharicum* is restricted to cavernicolous habitats.

The main taxonomic characters observed correspond well with the descriptions of Beier (1939) and Ćurčić *et al.* (1993) however, the less number of teeth on the chelal fingers and the smaller body size assume a greater variability of these characters in *N. biharicum*. It is important to mention that during the comparative morphological investigations of several pseudoscorpion materials of the Museum of Natural History of Vienna, I have observed a *N. biharicum* specimen with a similar number of teeth on its chelal fingers, belonging to the material collected and identified by Dr. Max Beier.

With the two species mentioned above, the list of pseudoscorpions recorded for Hungary is raised to 47 (from 45; Novák 2012). Together with Larcidae recently there are nine pseudoscorpion families reported from Hungary (Harvey 2011).

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## REFERENCES

- BEIER, M. (1939): Pseudoscorpionidea de Roumanie. *Bulletin du Musée Royal d'Histoire Naturelle de Belgique*, 15(39): 1–21.
- BEIER, M. (1956): Bemerkenswerte Pseudoscorpioniden-Funde aus Niederösterreich. *Entomologisches Nachrichtenblatt Wien*, 8: 24–25.
- CHRISTOPHORYOVÁ, J., FENĎA, P. & KRIŠTOFÍK, J. (2011a): *Chthonius hungaricus* and *Larca lata* new to the fauna of Slovakia (Pseudoscorpiones: Chthoniidae, Larcidae). *Arachnologische Mitteilungen*, 41: 1–6.
- CHRISTOPHORYOVÁ, J., ŠŤÁHLAVSKÝ, F. & FEDOR, P. (2011b): An updated identification key to the pseudoscorpions (Arachnida: Pseudoscorpiones) of the Czech Republic and Slovakia. *Zootaxa*, 2876: 35–48.
- ĆURČIĆ, B. P. M., POINAR JR, G. O. & SARBU, S. M. (1993): New and little-known species of Chthoniidae and Neobisiidae (Pseudoscorpiones, Arachnida) from the Movile Cave in southern Dobrogea, Romania. *Bijdragen tot de Dierkunde*, 63: 221–241.
- DADAY, E. (1889): Ujabb adatok a magyar-fauna álskorpíóinak ismeretéhez. *Természetrzaji Füzetek*, 12: 25–28.
- DUCHÁČ, V. (1993): Zwei neue Afterskorpione-Arten aus der Tschechischen Republik. *Arachnologische Mitteilungen*, 3: 36–38.
- DROGLA, R. & LIPPOLD, K. (2004): Zur Kenntnis der Pseudoskorpion-Fauna von Ostdeutschland (Arachnida, Pseudoscorpiones). *Arachnologische Mitteilungen*, 27–28: 1–54.
- DUMITRESCO, M. & ORGHIDAN T. (1964): Contribution à la connaissance des Pseudoscorpions de la Dobroudja. 1<sup>re</sup> note. *Annales de Spéléology*, 19: 599–630.
- DUMITRESCU, D. (1976): Opilionida, Pseudoscorpionida et Acari. In: Contributions a la connaissance de la faune du département Vrancea. *Travaux du Muséum d'Histoire Naturelle Grigore Antipa*, 17: 273–276.
- HANSEN, H. J. (1884): Arthrogastra Danica: en monographisk fremstilling af de i Danmark levende Meiere og Mosskorpioner med bidrag til sidstnaevnte underordens systematik. *Naturhistorisk Tidsskrift*, 3(14): 491–554.
- HARVEY, M.S. (2011): Pseudoscorpions of the World, version 2.0. Western Australian Museum, Perth. <http://www.museum.wa.gov.au/catalogues/pseudoscorpions>
- GARDINI, G. (1983): *Larca italica* n. sp. cavernicole dell'Appennino Abruzzese (Pseudoscorpionida, Garypoidea) (Pseudoscorpioni d'Italia XV). *Bolletino della Società Entomologica Italiana*, 115: 63–69.

- JUDSON M. L. I. & LEGG, G. (1996): Discovery of the pseudoscorpion *Larca lata* (Garypoidea, Larcidae) in Britain. *Bulletin of the British Arachnological Society*, 10: 205–210.
- KÁRPÁTHEGYI, P. (2007): Pseudoscorpions of Hungary. *Folia Historico Naturalia Musei Matraensis*, 31: 81–90.
- LOHMANDER, H. (1939): Zur Kenntnis der Pseudoskorpionfauna Schwedens. *Entomologisk Tidskrift*, 60: 279–323.
- NOVÁK, J. (2012): New records of pseudoscorpions for the fauna of Bükk Mts., Northeast Hungary (Arachnida: Pseudoascorpiones). *Opuscula Zoologica Budapest*, 43(1): 57–65.
- RAFALSKI, J. (1953): Fauna of arachnids in the National Park of the Wolin island in the light of the previous studies. *Ochrona Przyrody*, 21: 217–248.
- RAFALSKI, J. (1967): Zaleszczotki. Pseudoscorpionidea. *Katalog Fauny Polski*, 32(1): 1–34.
- RESSL, F. (1963): Können Vögel als passive Verbreiter von Pseudoscorpioniden betrachtet werden? *Vogelwelt*, 84: 114–119.
- RESSL, F. (1965): Über Verbreitung, Variabilität und Lebensweise einiger österreichischer Afterskorpione. *Deutsche Entomologische Zeitschrift*, 12: 289–295.
- SZENT-IVÁNY, J. (1941): Neue Angaben zur Verbreitung der Pseudoscorpione im Karpatenbecken. *Fragmenta Faunistica Hungarica*, 4 (1–4): 85–90.
- TOOREN D. VAN DEN (2001): First record of the pseudoscorpion *Larca lata* in the Netherlands (Pseudoscorpiones: Garypoidea: Larcidae). *Nederlandse Faunistische Mededelingen*, 15: 33–39.
- TÖMÖSVÁRY, Ö. (1882): A Magyar fauna álskorpíói. *Magyar Tudományos Akadémia Matematikai és Természettudományi Közlemények*, 18: 135–256.
- TÖMÖSVÁRY, Ö. (1884): Adatok az álskorpíók ismeretéhez (Data ad cognitionem Pseudoscorpionum). *Természettudományi Füzetek*, 8: 16–27.
- ZARAGOZA, J. A. (2005). Two new cave-dwelling *Larca* species from the south-east of Spain (Arachnida, Pseudoscorpiones, Larcidae). *Revue suisse de Zoologie*, 112: 195–213.