

# ***Branchiobdella* (Annelida: Clitellata) Species Found in the Crayfish Collection of the Natural History Museum of Denmark**

**Mitko A. Subchev**

Institute of Biodiversity and Ecosystem Research, Bulgarian Academy of Sciences, 2 Gagarin str., 1113 Sofia, Bulgaria;  
E-mail: subchev@yahoo.com

**Abstract:** Thirty-nine samples totaling 89 crayfishes in the Natural History Museum of Denmark were examined and 371 branchiobdellidans (crayfish worms) were separated and identified. These branchiobdellidans came from Denmark, Belarus (originally labeled Russia), Romania, France and Germany, and belonged to five species: *Branchiobdella astaci* Odier, 1823, *Branchiobdella parasita* (Braun, 1805), *Branchiobdella pentadonta* Whitman, 1882, *Branchiobdella hexadonta* Gruber, 1883 and *Branchiobdella kozarovi* Subchev, 1975. We made the first reports of branchiobdellidans in Belarus (*B. kozarovi* and *B. astaci*) and Møn and Bornholm islands, Denmark (*B. parasita* and *B. pentadonta*), and the first report of *B. kozarovi* in Romania.

**Key words:** *Branchiobdella*, distribution, Europe

Recently information on species diversity and distribution of Branchiobdellida (Annelida: Clitellata) has been obtained by studying slide collections and crayfish hosts in several European natural history museums (SUBCHEV 2007, 2008, 2009; SUBCHEV, GELDER 2010; SUBCHEV 2012). Here we report on the results obtained from an examination of the crayfish collection in the Natural History Museum of Denmark.

Thirty-nine samples with a total of 89 crayfishes belonging to three species: *Astacus astacus* (Linnaeus, 1758), *Astacus leptodactylus* Eschscholtz, 1823 and *Austropotamobius torrentium* (Schränk, 1803) from the crayfish collection of the Natural History Museum of Denmark were examined for branchiobdellidans (crayfish worms). The methods used were described in SUBCHEV (2007).

As a result 371 branchiobdellidans from 14 crayfish samples were found and identified. The following worms: *Branchiobdella astaci* Odier, 1823, *Branchiobdella parasita* (Braun, 1805), *Branchiobdella pentadonta* Whitman, 1882 and *Branchiobdella hexadonta* Gruber, 1883 and *Branchiobdella kozarovi*, Subchev, 1975 were found in the crayfish samples from Denmark, Belarus (originally labeled Russia but

nowadays Mogilev is located in Belarus), Romania, France and Germany (Table 1).

The first report on branchiobdellidans (*B. parasita* and *B. pentadonta*) in Denmark (SUBCHEV, 2009) was based on badly preserved specimens of crayfish from Sealand, the main Danish island, deposited in the Swedish Museum of Natural History. Later, Subchev (2012) found *B. parasita* in a crayfish sample also from Sealand in the London Natural History Museum. Now *B. parasita* and *B. pentadonta* are reported for the first time in the adjacent Danish islands of Møn and Bornholm.

*B. astaci* and *B. kozarovi* are the first branchiobdellidans to be reported from Belarus, and *B. kozarovi* is reported for the first time in Romania.

The latter species is endemic to the eastern Euro-Mediterranean subregion as defined by BĂNĂRESCU (1990), with an apparent focus on the countries around the Black Sea, although additional records are known from Armenia, western Russia, and Poland (FARD, GELDER, 2011). Thus finding *B. kozarovi* in Belarus and Romania is not a surprise as both countries are adjacent to those where the species have already occurred.

A species found in other countries is *B. astaci*, which is known from several localities in France (SUBCHEV 2008) and *B. hexadonta* being widely distributed in Germany (SUBCHEV 2007, 2011).

**Acknowledgments:** Thanks are due to Dr Jørgen Olesen from the Natural History Museum of Denmark for his generous assistance, Prof. Stuart R. Gelder for his helpful suggestions on the text and financial support from the European Commission's Research Infrastructure Action via the SYNTHESYS (DK-TAF 1928).

**Table 1.** *Branchiobdella* species recovered from in the Crustacea collection of the Natural History Museum of Denmark

Locality, date, and catalogue number as it appears on the label	Crayfish species, number of specimens	<i>Branchiobdella</i> sp., number of specimens
Denmark, Vidåen, 19/9 2008 ZMUC-CRU-10091	<i>Astacus astacus</i> , 1	<i>B. pentadonta</i> , 1 ad.
Denmark, Tystrup Sø, Midtsjælland, 7. 10. 1936 ZMUC-CRU-10092	<i>A. astacus</i> *, 2	<i>B. parasita</i> , 1 ad.
Denmark, Den stare ar fra Rude Sø ved Rudersdal, 3. 7. 1933 ZMUC-CRU-10093	<i>A. astacus</i> *,	<i>B. parasita</i> , 6 ad. + 3 juv. <i>B. pentadonta</i> , 1 ad.
Denmark, Sjælland, 7. 10. 1936 ZMUC-CRU-10094	<i>A. leptodactylus</i> , 2	<i>B. parasita</i> , 2 ad.
Denmark, Liselund, Møn, 20. 07. 1934 ZMUC-CRU-10095	<i>A. astacus</i> *, 10	<i>B. parasita</i> , 126 ad. + 163 juv.
Denmark, Allmindingen (Bornholm) ZMUC-CRU-10098	<i>A. astacus</i> , 3	<i>B. parasita</i> , 1 ad.
Denmark, (?) ZMUC-CRU-10099	<i>A. astacus</i> , 2	<i>B. parasita</i> , 1 ad. + 5 juv. (bad condition)
Denmark, Møn: St. Damme, Askeby, oct. 1944 ZMUC-CRU-10101	<i>A. astacus</i> *, 1	<i>B. parasita</i> , 1 ad. + 1 juv. (bad condition)
Denmark, Farum Sø, 10 maj 1989 ZMUC-CRU-10102	<i>A. astacus</i> , 1	<i>B. parasita</i> , 1 ad.
Denmark, Næstelø gadeker, S. Sjælland, 18 sep. 1988 ZMUC-CRU-10104	<i>A. astacus</i> ,	<i>B. parasita</i> , 11 ad. + 6 juv. (bad condition)
Denmark, Møn: St. Damme, Askeby, 29.10. 1944 ZMUC-CRU-10105	<i>A. astacus</i> *, 1	<i>B. parasita</i> , 12 ad. + 16 juv.
[Belarus], RUSSIA, Near the Mogilev, 1878 ca. 54 N, 30 E, ZMUC-CRU-10090	<i>A. astacus</i> *, 2	<i>B. kozarovi</i> , 1 ad. <i>B. astaci</i> , 3 ad.
Romania, Crisan, Donau - Deltaet ZMUC-CRU-10096	<i>A. leptodactylus</i> , 2	<i>B. kozarovi</i> , 1 ad. (bad condition)
France, Wilsberg par Berlingen, Lorraine (Gisselnacht), VII, 1915 ZMUC-CRU-10103	<i>A. astacus</i> *, 2	<i>B. astaci</i> , 4 ad.
Germany, Tyskland, Spessart ZMUC-CRU-10097	<i>Austropotamobius torrentium</i> , 2	<i>B. hexadonta</i> , 6 ad.

\*on the original label – *Astacus fluviatilis*

## References

- BĂNĂRESCU P. 1990. Zoogeography of Fresh Waters. Aula-Verlag Wiesbaden, Germany, 1-1617.
- FARD, ALI NEKUIE, STUART R. GELDER 2011. First report of *Branchiobdella kozarovi* Subchev, 1978 (Annelida: Clitellata) in Iran, and its distribution in the eastern Euro-Mediterranean subregion. – *Acta zoologica Bulgarica*, **63** (1): 105-108.
- SUBCHEV M. 2007. Branchiobdellidans (Annelida: Clitellata) found in the crayfish and annelid collections of the Natural History Museum of Humboldt University, Berlin, Germany. – *Acta zoologica Bulgarica*, **59** (3): 275-282.
- SUBCHEV A. 2008. *Branchiobdellida* (Annelida: Clitellata) found in the crayfish and annelid collections of Paris National Museum of Natural History and on recently collected crayfishes from France. – *Acta zoologica Bulgarica*, **60** (3): 233-237.
- SUBCHEV M. 2009. *Branchiobdellida* (Annelida: Clitellata) Found in the Crayfish Collection of the Swedish Museum of Natural History with Remarks on the Swedish Branchiobdellid Fauna. – *Acta zoologica Bulgarica*, **61** (3): 287-292.
- SUBCHEV M. 2012. *Branchiobdella* (Annelida: Clitellata) species found in Crayfish Collection of London Natural History Museum. – *Acta zoologica Bulgarica*, **64** (3): 319-323.
- SUBCHEV M., S. GELDER 2010. Branchiobdellida (Annelida: Clitellata) found in the crayfish collection of the Natural History Museum in Vienna, Austria, with a re-description of *Branchiobdella papillosa* Nesemann & Hutter, 2002. – *Acta zoologica Bulgarica*, **62** (1): 33-42.

Received: 10.01.2013

Accepted: 23.05.2013