

Contribution to the study of marine harpacticoid fauna (Crustacea, Copepoda) of Iceland

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Abstract: The author reports 19 harpacticoid species (Crustacea, Copepoda) sampled from the marine coastal and brackish waters on the Icelandic shore of the Atlantic Ocean in June and July 2004.

Key words: Harpacticoida, brackish waters, Iceland.

Introduction

This work continues the series of articles on the copepod harpacticoid fauna of Iceland (Apostolov, 2004-2007, 2007, 2011). Our interest was focused in particular on the study of copepod harpacticoids living in brackish water and among marine algae along the Icelandic coast of the Atlantic Ocean.

The author describes 19 species of Harpacticoids representing 9 families sampled from brackish waters and also in littoral interstitial habitats of the Icelandic Atlantic shore. The genera *Platychelipus* Brady, 1880; *Leimia* Willey, 1923 and *Microarthridion* Lang, 1944 were recorded for first time in the coastal waters of Iceland.

Material and Methods

The samples were collected in June and July 2004 along the Western coast of Reykjanes Peninsula, Iceland, using a hand-net with mesh size of 0.40 mm. Two samples (St. 717, 733) collected during inter-Nordic *BIOICE* project (<http://www.ni.is/bioice/>) were analyzed (Table 1). Meiofauna was sorted in Sandgerdi Marine Station, according to classical methods. The specimens were fixed in 70% of alcohol for long term storage.

Morphological terminology follows Huys & Boxshall (1991), Lang (1948, 1965) and Wells (2007).

Results

Examination of the specimens revealed 19 species belonging to 9 families. The family Laophontidae is represented by 6 species, Canthocamptidae, Miraciidae and Ameiridae are represented by 3 species, Thalestridae, Tisbidae, Tachidiidae and Peltidiidae with 1 species.

Order HARPACTICOIDA Sars, 1903
 Suborder POLYARTHRA Lang, 1944
 Family LONGIPEDIIDAE Boeck, 1865
 Genus *Longipedia* Claus, 1863

***Longipedia coronata* Claus, 1863**

Material examined: St. 717 (2 ♀♀) bottom of gravel.
 Distribution in Iceland: Icelandic shore of the Atlantic Ocean.

Suborder OLIGOARTHRA Lang, 1944
 Family MIRACIIDAE Dana, 1846
 Genus *Amphiascus* Sars, 1905

***Amphiascus minutus* (Claus, 1863)**

Material examined: St. Sandgerdi (2 ♀♀). Rinsing macroalgae *Ascophyllum nodosum* (Linnaeus, 1863).
 Distribution in Iceland: Icelandic shore of the Atlantic Ocean.

***Amphiascus giesbrechti* Sars, 1906**

Material examined: St. Skogtjörn (2 ♀♀).
 Distribution in Iceland: In Brackish ponds, rinsing macroalgae.

Genus *Amphiascoides* Nicholls, 1941

***Amphiascoides subdebilis* (Willey, 1935)**

Material examined: St.10 (4 ♀♀). Rinsing macroalgae *Fucus vesiculosus* Linnaeus, 1753
 Distribution in Iceland: Icelandic shore of the Atlantic Ocean.

Family LAOPHONTIDAE T. Scott, 1905
 Genus *Laophonte* Philippe, 1840

***Laophonte setosa* Boeck, 1865**

Material examined: St.4 and 36 (10 ♀♀, 3 ♂♂). Rinsing macroalgae *Fucus vesiculosus* Linnaeus, 1753.
 Distribution in Iceland: Icelandic shore of the Atlantic Ocean.

Genus *Heterolaophonte* Lang, 1944

***Heterolaophonte stroemii stroemii* (Baird, 1837)**

Material examined: St.19 (2 ♀♀). In coastal algae.
 Distribution in Iceland: Icelandic shore of the Atlantic Ocean.

***Heterolaophonte minuta* (Boeck, 1873)**

Material examined: St.50 (5 ♀♀, 2 ♂♂). Rinsing macroalgae.
 Distribution in Iceland: new species for Iceland.

***Heterolaophonte littoralis littoralis* (T.& A. Scott, 1893)**

Material examined: St.50 (4 ♀♀, 2 ♂♂). Rinsing macroalgae *Fucus vesiculosus* Linnaeus, 1753.
 Distribution in Iceland: Icelandic shore of the Atlantic Ocean.

Genus *Platychelipus* Brady, 1880

***Platychelipus littoralis* Brady, 1880**

Material examined: St.56 (2 ♀♀, 2 ♂♂). In brackish ponds.
 Distribution in Iceland: Icelandic coast of the Atlantic Ocean.

Family THALESTRIDAE Sars, 1905

Subfamily THALESTRINAE Sars, 1903

Genus *Parathalestris* Brady & Robertson, 1873

***Parathalestris clausii* (Norman, 1869)**

Material examined: St.12 (5 ♀♀). Rinsing macroalgae *Fucus vesiculosus* Linnaeus, 1753.

Distribution in Iceland: Icelandic shore of the Atlantic Ocean.

Family TISBIDAE Stebbing, 1910

Subfamily TISBINAE Stebbing, 1910

Genus *Tisbe* Lilljeborg, 1853

***Tisbe minor* (T.&A.Scott, 1896)**

Material examined: St.12 (10♀♀, 7♂♂). Rinsing macroalgae *Fucus vesiculosus* Linnaeus, 1753.

Distribution in Iceland: Icelandic shore of the Atlantic Ocean.

Family AMEIRIDAE Boeck, 1865

Subfamily AMEIRINAE Boeck, 1865

Genus *Ameira* Boeck, 1865

***Ameira minuta* Boeck, 1865**

Material examined: St.10 and 50 (14 ♀♀, 4 ♂♂). St. 29 (2 ♀♀). Found in interstitial littoral habitat.

Distribution in Iceland: new species for Iceland.

Genus *Proameira* Lang, 1944

***Proameira hiddensöensis* (Schäfer, 1936)**

Material examined: St.10 (2 ♀♀). Found in interstitial sample.

Distribution in Iceland: new species of Iceland.

Genus *Nitocra* Boeck, 1865

***Nitocra spinipes* Boeck, 1865**

Material examined: St. 5(3 ♀♀). Small freshwater pond, among plants; St. 21(4 ♀♀). St. 29 (5 ♀♀). Psammal; St. 54.(5 ♀♀). In brackish ponds, algae; St. 55(4 ♀♀).

Freshwater pond with volcanic coarse sandy bottom.

Distribution in Iceland: In coastal marine waters and terrestrial environments, freshwater and brackish waters.

Family CANTHOCAMPTIDAE Brady, 1880

Subfamily CANTHOCAMPTINAE Brady, 1880

Genus *Mesochra* Boeck, 1865

***Mesochra lilljeborgi* Boeck, 1865**

Material examined: St. Skogtjörn, (3 ♀♀, 2 ♂♂). In brackish water, sandy bottom.

Distribution in Iceland: In saltwater and freshwater or brackish waters.

***Mesochra rapiens* Schmeil, 1894.**

Material examined: St. Sandgerdi (12 ♀♀). In Brackish ponds, with sandy bottom.

Distribution in Iceland: Generally in brackish waters or in water with high salinity.

Genus *Leimia* Willey, 1923

***Leimia vaga* Willey, 1923**

Material examined: St. Ellidaár River (3 ♀♀). Stones with algae.

Distribution in Iceland: Ellidaár River among algae on rocks. New species for Iceland.

Superfamily TACHIDIOIDEA Boeck, 1865

Family TACHIDIIDAE Boeck, 1865

Genus *Microarthridion* Lang, 1944

***Microarthridion littorale* (Poppe, 1881)**

Material examined: St. Sandgerðistjörn (3 ♀♀). Small pond.

Distribution in Iceland: new species for Iceland.

Superfamily TISBOIDEA Stebbing, 1910

Family PELTIDIIDAE Claus, 1860

Genus *Alteutha* Baird, 1845

***Alteutha oblonga* (Goodsir, 1845)**

Material examined: St.733 (2 ♀♀). In sandy silt.

Distribution in Iceland: new species for Iceland.

Table 1. Localities and coordinates of the sampling stations.

| Species | Date | Coordinate |
|--|------------|-----------------------|
| <i>Longipedia coronate</i> | 25.08.1955 | 63°30'12"N 17°42'07"W |
| <i>Amphiascus minutus</i> | 03.07.2004 | 64°04'58"N 22°41'37"W |
| <i>Amphiascus giesbrechti</i> | 08.07.2004 | 64°9'N 21°55'W |
| <i>Amphiascus subdebilis</i> | 30.06.2004 | 64°04'58"N 22°41'37"W |
| <i>Laophonte setosa</i> | 01.07.2004 | 64°02'31"N 22°42'52"W |
| <i>Heterolaophonte stroemii stroemii</i> | 08/07/2004 | 64°03'28"N 22°42'16"W |
| <i>Heterolaophonte minuta</i> | 03.07.2004 | 64°04'58"N 22°41'37"W |
| <i>Heterolaophonte littoralis littoralis</i> | 03.07.2004 | 64°04'58"N 22°42'37"W |
| <i>Platychelipus littoralis</i> | 03.07.2004 | 64°04'58"N 22°41'37"W |
| <i>Parathalestris clausii</i> | 03.07.2004 | 64°04'58"N 22°41'37"W |
| <i>Tisbe minor</i> | 03.07.2004 | 64°04'58"N 22°41'37"W |
| <i>Ameira minuta</i> | 30.06.2004 | 64°04'58"N 22°41'37"W |
| <i>Proameira hiddensöensis</i> | 30.06.2004 | 64°04'58"N 22°41'37"W |
| <i>Nitokra spinipes</i> | 29.07.2004 | 64°02'41"N 22°42'43"W |
| | 01.07.2004 | 64°03'30"N 22°42'30"W |
| | 08.07.2004 | 64°03'27"N 22°42'35"W |
| | 08.07.2004 | 64°74'N 22°0'W |
| <i>Mesochra lilljeborgi</i> | 08.07.2004 | 64° 9' N 21°55' W |
| <i>Mesochra rapiens</i> | 01.07.2004 | 64°03'30"N 22°42'30"W |
| <i>Leimia vaga</i> | 08.07.2004 | 64° 9' N 21°55' W |
| <i>Microarthridion littorale</i> | 29.07.2007 | 64°02'41"N 22°42'43"W |
| <i>Alteutha oblonga</i> | 15.09.2001 | 63°43'70"N 16°12'10"W |

Ecological and zoogeographical notes

From an ecological point of view the most of established harpacticoid species could be considered eurytopic, eurythermic, or euryhaline. They usually live in shallow ponds, brackish water, estuarine and temporary pools with low salinity. The species *Heterolaophonte minuta* (Boeck, 1873), frequent sandy bottoms. *Heterolaophonte ströemii*

ströemii (Baird, 1837) is a marine species living in shallow waters between algae and rarely freshwater ponds. She attended the crab *Carcinus maenas*.

From zoogeographical point of view, most of the species found are arctic prevalent in North Atlantic. Two species, *Heterolaophonte ströemii ströemii* (Baird, 1837) and *Platychelipus littoralis* Brady, 1880 are Arctic Boreal element.

The Mediterranean-Atlantic fauna is presented by two species. *Laophonte setosa* Boeck, 1865 can be considered as Mediterranean-boreal species and Western Atlantic and *Heterolaophonte littoralis littoralis* (T. & A. Scott, 1893) as Mediterranean-Boreal element.

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