

First study on the zooplankton of the Kerid (Kerið) Crater Lake, Iceland

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Abstract. We studied the qualitative composition of zooplankton of the Kerid Crater Lake. We found 10 taxa from which five rotifers and two lower crustaceans. Three of the recorded species are new to the freshwater fauna of Iceland: the rotifer species *Keratella* cf. *americana* Carlin, 1943 and *Colurella sulcata* (Stenroos, 1898), and the crustacean harpacticoid *Bryocamptus (Bryocamptus) minutus* (Claus, 1863).

Key words: Crater, lake, Kerid, zooplankton, Iceland.

Introduction

Iceland is rich in inland freshwater bodies: from temporary small pools to large tectonic or glacial lakes. Nevertheless, studies on the freshwater invertebrate fauna of Iceland are scarce. The first investigations date back to the 19th century (Guerne & Richard, 1892 a, b). The main studies on zooplankton fauna concern two of the big Icelandic lakes: Myvatn (Jónasson, 1979) and Thingvallavatn (Antonsson, 1992). Scher *et al.* (2000) surveyed the qualitative composition of zooplankton of shallow freshwater bodies.

The aim of present paper is to give the first data on the zooplankton composition of one of the most famous crater lakes of the world - Kerid Lake, South-western Iceland.

Material and Methods

Kerid Crater Lake (64°2.475"N 20°53.109"W) (Fig. 1) is situated in the neovolcanic Grimsnes area. Its caldera is 170 and 270 wide, and 55 m deep, while the depth of the lake varies between 7 and 14 m (Jakobsson, 1966; Norðdahl *et al.*, 2008). Some authors note that the age of this lake is 5000 – 6000 years (Jakobsson, 1966), while others consider that it is younger with 2000 - 3000 years (Norðdahl *et al.*, 2008).

Zooplankton samples were collected with qualitative plankton net (type “Apstein”, mesh size 38µm) and with hand-held plankton net. The material was fixed in 70% ethanol. For taxonomic description and determination, the specimens were mounted temporally in mixture of glycerin and ethanol. Specimens were identified to the lowest practicable level, using taxonomical articles and guides: Apostolov (2010), Manuylova (1964), Monchenko (1974), Segers (1995), Sørensen (2009).



Fig. 1. Kerid Crater Lake, South-western Iceland.

Results

The zooplankton of the Kerid Lake comprised 10 taxa, mostly belonging to the Rotifera phylum (Table 1). The highest were the densities of *Keratella* cf. *americana* Carlin, 1943, *Lecane lunaris* (Ehrenberg, 1832) and *Colurella sulcata* (Stenroos, 1898). Other frequent zooplankton taxa belong to lower crustaceans from Cladocera and Copepoda (Table 1). The most frequent of them were the juvenile specimens of *Acanthocyclops vernalis* (s. lat.) (Fischer, 1853).

Table 1. Zooplankton taxa found in the Kerid Crater Lake.

Group	Taxon
Rotifera	<i>Keratella</i> cf. <i>americana</i> Carlin, 1943 <i>Lecane lunaris</i> (Ehrenberg, 1832) <i>Colurella sulcata</i> (Stenroos, 1898) <i>Colurella</i> sp. <i>Cephalodella</i> sp.
Cladocera	<i>Alona affinis</i> (Leydig, 1860)
Cyclopoida	<i>Acanthocyclops vernalis</i> (s. lat.) (Fischer, 1853) Copepodites indet. Nauplii indet.
Harpacticoida	<i>Bryocamptus</i> (<i>Bryocamptus</i>) <i>minutus</i> (Claus, 1863)
Other	Chironomidae indet. (larvae) Nematoda indet.

Discussion

We found that Rotifera dominates the other taxa. This finding confirms some previous studies on the inland freshwater zooplankton from Iceland (e.g. Antonsson, 1992). *K. cf. americana* and *C. sulcata* were recorded for the first time from Icelandic inland freshwaters.

The cyclopoid *Acanthocyclops vernalis* was frequent in our samples. It was recorded previously in five from all the 34 small freshwater bodies studied by Scher *et al.* (2000). The authors found this cyclopoid exclusively in small water bodies with depth varying between 15 and 20 cm.

To the best of our knowledge this is the first record of the copepod *Bryocamptus (Bryocamptus) minutus* from Iceland. This harpacticoid species, as well as the larvae of Chironomidae and the nematods are not characteristic of zooplankton communities.

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