Alona rectangula and other taxa from the family Chydoridae. An increase of *Chydorus cf. sphaericus* is typical sign of increased level of nutrients and of eurtophication processes. In all lakes cladoceran assemblages are quite rich and diverse with relatively stable structure.

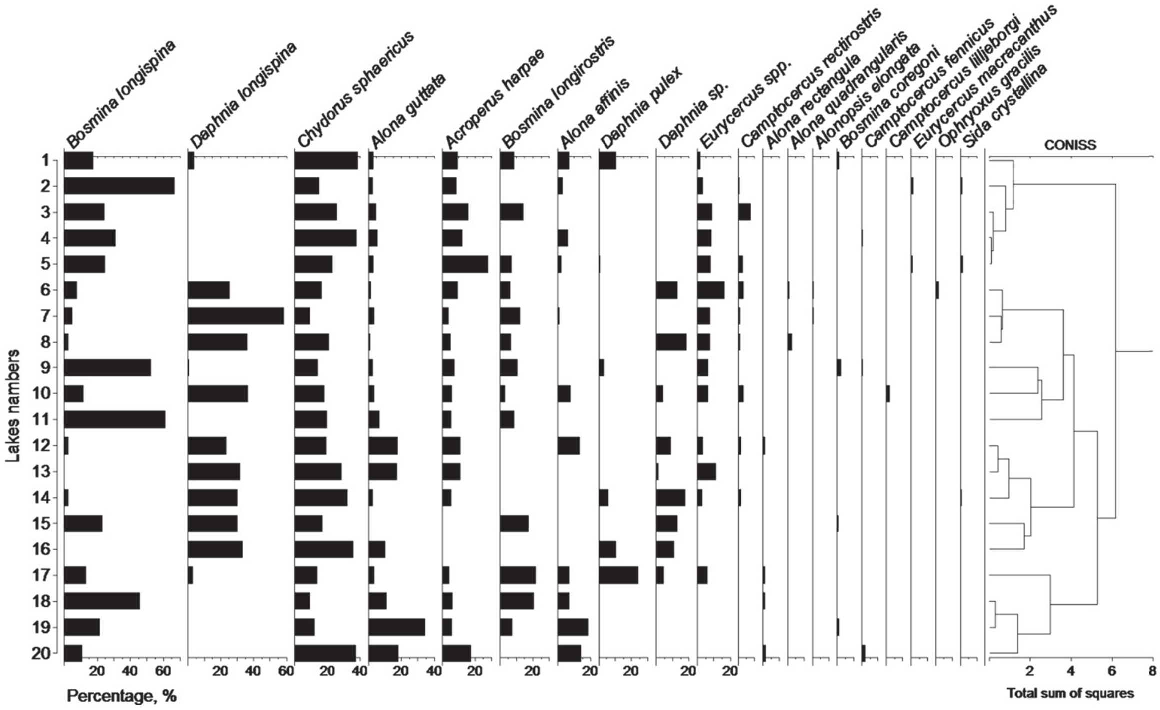

Fig. 2. Relative abundance of the cladoceran taxa in the lakes of Khatanga river basin

The average value of the Shannon index was 2.41, that allows to classify lakes as moderately polluted. The average value of the Pielu index was 0.80, that indicates the proximity to stable and aligned community structure. The index of the species diversity of Simpson was calculated, values varied from 0.53 to 0.85 (average value - 0.75), indicating a uniform distribution of species in the lakes.

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DIATOM COMPLEXES IN THE BOTTOM SEDIMENTS OF TURGOYAK LAKE (CHELYABINSK REGION, RUSSIA)

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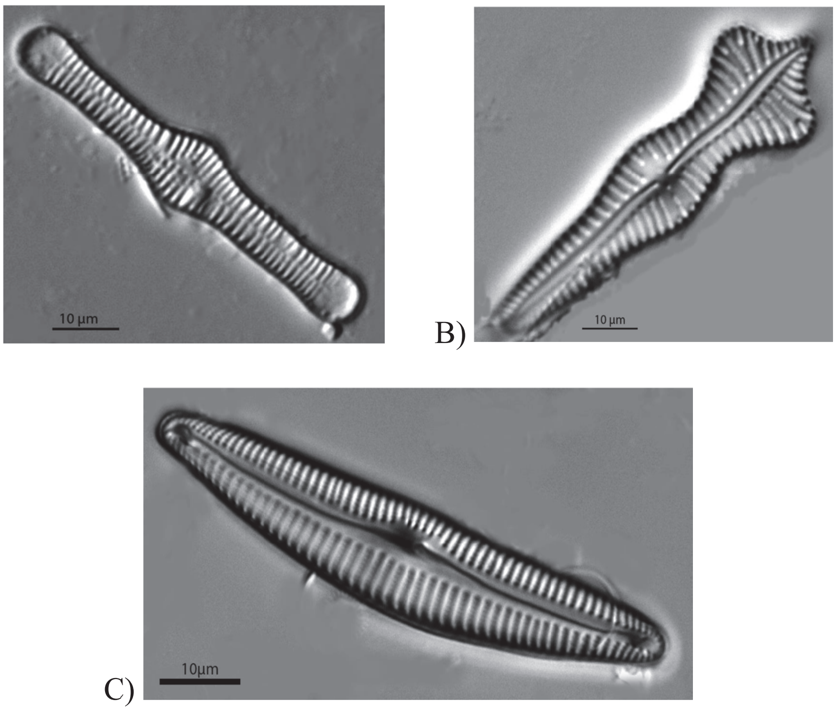
The research species composition and ecological parameters of diatoms from lake sediments provide an informative historical record of changes in lake ecosystems. Reconstruction of past environment is usually based on chemical information from sediments or microfossils Diatoms, pollen, and remains of plants are used as indicator groups in paleoecological studies [1]. Due to the large number of taxa, diatoms are good indicators of a variety of lake water conditions including salinity, pH, light availability, temperature and nutrient levels [2]. But diatoms as palaeoindicators are relatively poorly studied in the Chelyabinsk region. Our results will provide additional data for regional databases and will help increase the accuracy of paleoecological reconstructions. The purpose of this work is to study the taxonomic composition and ecological features of diatoms in the palaeoarchives of Turgoyak Lake.

The Turgoyak Lake (N 55°09'; E 60°05') is located in the Chelyabinsk Region (Southern Ural, Russia). It is the second cleanest lake in Russia after Lake Baikal. The area of the lake is 26.4 km^2, the total catchment area is 76.0 km^2. The average depth is 19.1 m. The maximum depth is 36.5 m. The water of the lake has a high transparency which is from 10 to 17 m. Altitude above sea-level is 320 m.

Core no. 5 (N 55° 09' 48,1'; E 60° 05' 14,2') was taken from Lake Turgoyak during the KFU expedition in July 2017. The 560 cm-long lake sediment core covers the time from 27000 cal years BP to the present-day. All samples were processed by the standard methods using 37% hydrogen peroxide as an oxidant of the organic matter present in the samples, including 10% HCl treatment in order to remove calcium carbonate, followed by rinsing with distilled water [3]. The slides were prepared with the help of high refracting Naphrax® resin (RI=1.7). Diatoms were identified under a Zeiss Axio Scope A1 microscope using oil immersion at an objective magnification of 100× (1.4 n.a.) with Nomarski differential interference contrast. Diatom identification and taxonomy was based mainly on the Russian and foreign publications [4-7]. The diatom valves were counted up to a maximum of 300.

According to preliminary results the fossil diatom flora from Lake Turgoyak consists of 48 species that belong to 31 genera. The spectra are dominated by planktonic, oligotrophic and alkalinophilous to neutrophilous forms. The species-rich genera include of *Amphora* Ehrenberg, *Tabellaria* Ehrenberg, *Diploneis* (Ehrenberg) P.T. Cleve, *Navicula* Bory, *Staurosirella* D.M. Williams & Round, *Gomphonema* Ehrenberg, *Cymbopleura* (Krammer) Krammer, *Encyonema*, *Cymbella* Agardh and *Cavinula* D.G. Mann & Stickle [Fig 2]. At the same time, the presence of centric diatoms *Ellerbeckia arenaria* (Moore ex Ralfs) Crawford indicates the well-developed littoral vegetation, probably with an inclusion of separate species of mosses (Fig. 1). The presence of representatives of the genus *Campylodiscus spp*. reveals the high degree of water transparency in the lake.



A) B) C)

Fig. 1. A) *Tabellaria sp*., B) *Gomphonema sp*., C) *Cymbella sp*.

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AREA AND VOLUME CHANGES OF THE LAKE ONEGO IN THE LATE GLACIAL TIME

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Formation and development of lakes during and after ice sheets retreating were evident to be one of the crucial factors in shaping the landscape, regional climate changes, making an impact on the global ocean-climate system [Clark et al., 2001]. While development of large proglacial lakes (Agassiz, Baltic Ice Lake and etc.) are well studied, the history of relatively small ice-lakes, especially associated with southeastern and eastern flanks of the Scandinavian Ice Sheet (SIS), as well as their meltwater volumes and drainage routings remain unclear [Larsen et al., 2014].

Lake Onego (61°42´N, 35°25´E) is the second largest lake in Europe with surface area approximately 10 000 km^2. The lake is located in the tectonic depression in suture zone of Fennoscandian Shield and East European Platform. Mainly tectonic forces formed the Onego lake depression; however, Pleistocene Scandinavian glaciations significantly affected its structure. The lake depression was numerously enveloped by the ice streams during glaciations and fresh and sea waters in interglacial periods [Stroeven et al., 2016]. In the Late Weichselian time, the lake depression was covered with the Onego ice stream of the White Sea ice stream complex located in the southeastern part of the SIS. The retreat of the Onego ice stream in the Late Glacial time led to the formation of the proglacial lake and its evolution during and after the ice sheet retreatment.

Several original models of the Onego lake depression deglaciation in the Late Glacial are presented. The models differently assessed sizes of the lake, glacioisostatic uplift of the territory, and location and altitude of drainage thresholds. Demidov's [2006] model was created on the basis of acomprehensive study of ancient costal and forms and bottom sediments, used new and previously obtained data on the geological and geomorphological structure of the lake depression, paleomagnetic and radioisotope dating of sediments. The model aggregated all the available isobase values until that time together with a new paleo dates and presently is the most detailed of them.