



Geocryological Structure and Glaciers Novaya Zemlya archipelago in the context of global climate processes

Mikhail Kholmiansky and Vladimir Anokhin

VNIIOKEANGEOLOGIA, St-Petersburg, Russian Federation (holm936@rambler.ru)

New Earth glaciation due to the Quaternary glaciation .epohami and modern climate. We distinguish four types of ice sheets: small glaciers and snowfields - a capacity of up to 100 m .; mountain-valley glaciation - up to 200 m .; net (transition to the coverslip) - up to 300 m. and glaciation (ice sheet) - up to 500 m. The archipelago is characterized by continuous permafrost raprosraneniem, which is located under the roof of the seasonally thawed layer at a depth of 0.1 to 3.2 m . The depth is increased by its lakes and man-made Taliko up to 35 m.

The temperature of the permafrost Paleozoic sandstones and shales at a depth of 15 m. Reaches $-3,5^{\circ}$; limestones and shales containing cryopeg it reaches $-2,8^{\circ}$ at a depth of 130 m. Power Cryolithozone on drilling data and calculations 265-280 m.

The average temperature of ice sheets are formed depending on the type of ice, its cut and the power supply type and morphology of the surface. It differs from the temperature of the surrounding glacier rocks on $3-7^{\circ}$ and is at a depth from the surface of the glacier 13-15 m .: $-3 - -4,5^{\circ}$; at a depth of 30 m .: -2° .

In the age of the Quaternary glaciation entire archipelago was covered with continental ice. Global warming has resulted in a reduction of its area by 25%

In the northern part of the South Island there are snowfields and small lednichki. In the area of Matochkin Shar and further north to South Bay Sulmenova, found mainly hanging and cirque glaciers, severely degraded, and in most cases do not reach the sea. At the same time, in the South Bay and Sulmenova and a number of other areas there are powerful lobes were associated with the ice sheet interior of the North Island, and reaching the sea. In the west of the archipelago to reach the sea only a few branches of the Central ice sheet; in the eastern part of the North Island ice sheet breaks in the sea in the form of ice walls up to 400 meters. This part is called the Nordenskiöld glacier. The maximum ice thickness reaches 480 m.

Observations of the authors of the glaciers of Novaya Zemlya (Hammer and Sickle, Rose et al.), Carried out in the monitor mode, the last 15 years show an intensive retreat from the shoreline inland archipelago and sharply higher flow of silt-pelitic material kut bays. Lithological changes the picture of the bottom of the bays, which causes certain biogenic transformation of ecosystems.