water (in the south) had a temperature of 55°·6 Fahr. (13°·1 C.), and the coldest bottom water (in the north) was 39° Fahr. (3°·9 C.). These temperatures seemed relatively low for the time of year, but still lower figures were recorded in 1899, especially in the north. In the latter year the vertical distribution of temperature was found to be inverse at all the deep-water stations, the difference from the distribution in 1897 being attributable to the unusually low temperature which had prevailed throughout North-Western Russia during the spring and early summer of 1899. Although Ladoga certainly belongs to the category of temperate lakes, according to Forel's classification, it would appear to come very near the border-line separating temperate from polar lakes, in which the vertical distribution is always inverse. The maximum temperature gradient occurred at a much lower level in 1899 than in 1897, because of the generally higher temperature of the water in 1897. The lake is covered with a sheet of ice annually from December till April, and near Valaam Island masses of ice are sometimes piled up to a height of 75 feet, presenting from a distance the appearance of hills of weathered schist. Notwithstanding the freezing of the lake, its animal life is very abundant, including not only fishes but a species of seal, which may be seen in winter at the edge of the ice-cracks.

Lake Onega lies 236 feet above sea-level, and has an area of 3763 square miles. The length of the lake is 145 miles, the greatest depth 740 feet,[1] and the volume of water is estimated at 21,000,000 million cubic feet. The River Svir connects it with Lake Ladoga, and a series of lakes and rivers affords communication with the White Sea. Its northern shores form numerous bays running to the north-west, and the water-system is prolonged towards Lapland by chains of small lakes and rivers following the same direction, separated by lines of hills between 800 and 1000 feet high. The River Vitegra brings it into connection with the Volga system on one side and with the Mezen on the other.

Three small lakes[2] lying to the south of Lake Onega, and communicating with that lake by the Megra River, belong to the class of intermittent lakes, and are connected with the "Karst"[3]

[1] Halbfass gives the maximum depth as 124 metres (407 feet), and the altitude as 174 metres (571 feet).

[2] See *Geogr. Journ.*, vol. xxxi. p. 441, 1908.

[3] In Austria-Hungary a region along the east side of the Adriatic Sea, known as the Karst, is a tract of land underlain by white limestone nearly free from soil. Atmospheric agencies have eroded its surface so that sink-holes abound, and numerous short gullies, ravines, and valleys in the limestone terminate abruptly, discharging their waters into caves or subterranean tunnels, from which the streams may not emerge till they reach the coast. Topography similar to that of this region, and developed in the same way, is known as Karst topography.