

of December or the beginning of January. It remains bound for a period of four to four and a half months, the ice-cover being sometimes $9\frac{1}{2}$ feet thick. Wide cracks in the ice appear at intervals, and on the broken sheets coming together again the ice is piled up in heaps, called "toros." These crevasses, which have a breadth of from 3 to 6 feet, or more, are sometimes about half a mile long, and form a serious impediment to communication. Sledge traffic lasts for three months, but at the end of April the ice melts near the shore and softens. The breaking of the ice-surface, as in the Alpine glaciers, is accompanied by a loud crash, recalling an explosion, followed by a rumbling noise. The crack is instantly filled with water to the level of the ice-surface, forming a kind of river. In eight to fourteen days it freezes again, and a new crack appears at another place. The ice melts slowly, the process lasting nearly two months.

The fauna of Lake Baikal bears a close resemblance to the marine fauna,¹ but on account of the great distance of the glacial Arctic Ocean and of the Pacific Ocean, it is difficult to suppose that the fauna of the lake had any connection whatever with the oceanic fauna, and besides its waters are quite fresh. The German geographer, Peschel,² holds that Lake Baikal was in time past a gulf of the glacial Arctic Ocean, which in the Tertiary epoch probably covered the whole of Eastern Siberia. The German geologist, Neumayer³ sustains this opinion, according to which Lake Baikal is a relict lake. Chersky refutes this, and says that the Arctic Ocean did not extend so far. Hoernes, on the other hand, points out the resemblance of the molluscs of the family Hydrobiidæ to the fossil shells supposed to have been derived from the great inland sea, Sarmate, which stretched from Graz and Kraina to the mountains of Thian Shan, and covered almost all Central Russia in Miocene and Tertiary times.⁴ A third view is that of Androussoff, according to which the great depth of Lake Baikal, and the similarity of its external conditions to those of the sea, might enable the fresh-water crustacea to form original species resembling marine forms. These are, of course, only hypotheses, but the fauna of the lake is very interesting⁵ from the theoretical point of view, and merits further study.

A most interesting and little-known fish, characteristic of the

¹ See Schokalsky and Schmidt, *op. cit.*, p. 50.

² *Ibid.*

³ *Ibid.*

⁴ Bogdanovich (*Works of the Tibet Expedition*, 1889-90, vol. iii. p. 60) says that the fossils from the mountains near Kashgar, described by Stoliczka as Triassic and taken as confirming the supposition of the existence of the Sarmate Sea in Mesozoic times, were in reality Devonian. There appears to be no trace of either a Mesozoic or a Tertiary sea in that area, and it may be assumed that Central Russia has not been under the sea since Palæozoic times.

⁵ See p. 359.