

over, and despite the great amount of organic *débris* resulting from the myriads of animals and plants living in the water, as well as sediment brought in by the streams, the stones were clean, or there was only a thin slimy film due to the growth of diatoms and other algæ. How is the clean paved bottom and the absence of peaty deposit so general at the bottoms of these lochs to be accounted for? Is all the sediment derived from every source carried off by the ordinary slow current of the loch, and is the paved bottom an original and permanent feature? It does not accord with experience of shallow lochs elsewhere to suppose this. Such lochs commonly silt up, and become overgrown with weeds, and are converted eventually into marshes. If these lochs of Orkney are silting up in the usual way, why the clean bottom and freedom from deposit? An explanation may be found in supposing that the lochs are violently agitated to the very bottom during gales, the stones re-arranged on the top of the latest formed mud, and the material in suspension in the water carried off during spates.

Loch of Stenness (see Plate XC).—The Loch of Stenness is a large sheet of salt water, measuring nearly 4 miles long and $1\frac{1}{2}$ miles broad, and is about 2 miles north-east of the town of Stromness. The surrounding heather-clad moorland abounds in monuments of ancient peoples. In places the action of the waves has worn the shores into very low cliffs of rock or gravel, but in general the slope is gentle to the water's edge. The axis of the loch runs north-west to south-east, with a slight sigmoid curvature. The greatest breadth is in the centre, where a broad bay running to the south-west branches into arms running to north-west and south-east. In the southern bay the tide enters from the Bay of Ireland, under the Bridge of Waith. Though the channel is broad, and the access free, the level of the loch is but little affected by the tides, which indicates that the bar is but little below ordinary high-water level. At the eastern extremity the loch communicates with the Loch of Harray, under the Bridge of Brogar. During the whole of our stay in the islands the two lochs never differed measurably in level, though a current could be seen in one direction or the other. Marine algæ grow throughout the loch, and the fauna is marine.

The Loch of Stenness is flat-bottomed, and has a mean depth of $10\frac{1}{2}$ feet, and a maximum depth of 17 feet, near the south-eastern extremity. The superficial area is $2\frac{1}{2}$ square miles, and the volume of water 716 millions of cubic feet. The drainage area, including the Loch of Harray and many small lochs, measures 60 square miles. Apart from the inflow at the Bridge of Brogar, only a few small burns enter the loch. The surface at the date of the survey (August 19, 1903) was 3.6 feet above sea-level. Sir Walter Scott refers to both lochs (Stenness and Harray) as the Loch of Stenness.

The surface temperature on August 19, 1903, was $58^{\circ}0$ Fahr., and on August 20, $60^{\circ}2$.