

*Loch Calder* (see Plate VII.).—Loch Calder lies about 5 miles to the south-west of Thurso. It is a large loch, distinguished from the other Caithness lochs visited by the Lake Survey by its great depth. At the time of the survey green algæ abounded in the water, and gulls and other birds were very numerous. The loch trends in a north-west and south-east direction, and is  $2\frac{1}{3}$  miles in length. The southern portion is narrow and shallow, while the northern portion is much wider and deeper, the maximum breadth being very nearly 1 mile, and the mean breadth of the entire loch exceeding half a mile. The superficial area is about 844 acres, or  $1\frac{1}{3}$  square miles, and the drainage area nearly 10 square miles. The maximum depth of 85 feet was observed towards the northern end and towards the eastern shore. The volume of water is estimated at 767 millions of cubic feet, and the mean depth at nearly 21 feet. The loch was surveyed on October 6, 1902, but the elevation of the lake-surface above the sea could not be determined; when levelled by the officers of the Ordnance Survey on May 28, 1870, the elevation was found to be 205·2 feet above sea-level. It was stated that the water might rise 2 feet above, and fall about  $1\frac{1}{2}$  feet below, the level on the date of the survey; but the level is affected by a sluice at Achavarn, which is used both by South Calder mill and by the Thurso waterworks.

Loch Calder is irregular in outline, and rather peculiar in conformation. In the wide portion of the loch, off the western shore, there is an island situated on a large bank surrounded by deeper water, and the narrow southern portion is so shallow that one must proceed three-quarters of a mile from the southern end before meeting with depths exceeding 11 feet. The deep basin is contained in the eastern half of the wide northern portion of the loch, the deepest sounding in 85 feet having been taken about half a mile from the northern shore and a quarter of a mile from the eastern shore. Here there is a basin about a mile in length, and exceeding 30 feet in depth, the 50-foot basin being nearly three-quarters of a mile in length, and distant about a quarter of a mile from the northern shore. The loch, as a whole, is comparatively shallow, since 72 per cent. of the lake-floor is covered by less than 25 feet of water, as will be seen from the following table, giving the approximate areas between the consecutive contour-lines, and the percentages to the total area of the loch:—

Feet.				Acres		Per cent
0 to 25	...	...	..	606	...	71·8
25 „ 50	...	...	...	170	...	20 1
50 „ 75	...	...	...	55	...	6·6
over 75	...	...	...	13	...	1·5
				—		—
				844		100·0

*Temperature Observations.*—The temperature of the surface water at 9.30 a.m. on the date of the survey was  $51^{\circ}\cdot 1$  Fahr., while the following