Depth of the English Lakes

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30°·9 F., and the salinity of the water was slightly less than nearer the surface. Cold water of relatively low salinity was found on the north-east margin of the North Sea plateau, and again about 50 miles south-east of Sumburgh Head in Shetland.

CORRESPONDENCE.

Depth of the English Lakes.

In reference to the greatest depth of Lake Derwentwater, 72 fathoms, referred to in the "Monthly Record" for July, may I point out that it was ascertained by my lamented colleague, Clifton Ward, in 1872, when he was stationed at Keswick, and with the consent of our late Director-General, Sir Andrew Ramsay, F.R.S., made a bathymetrical survey of the English lakes, and many tarns, in association with Messrs. Aveline, F.G.S., Cameron, F.G.S., Hebert, F.G.S., and myself. The positions were fixed with the prismatic compass, and the observations were recorded on the 6-inch maps. A useful reduction of the work done appears in the plates accompanying Mr. Ward's papers on the "Glaciation of the Lake District," published in vols. xxx. and xxxi. of the *Quar. Jour. Geol. Soc.* 1875. The untiring energy and total disregard to the effects of a wet climate probably led to the Rev. Clifton Ward's premature death, when soon after he left the Geological Survey, he took orders, and became Vicar of Rydal.

The lakes examined by Mr. Aveline, who was in charge of the district, and his staff are as follows:—By the Rev. Clifton Ward, Derwentwater, Bassenthwaite, Wastwater, Grasmere, Rydal and Easdale tarns; by Messrs. Aveline and Cameron, Conistone; by Mr. Hebert, Burnmoor, Blea, and Little Langdale tarns, and Elter Water; by myself Windermere, above Belle Isle, and Loughrigg tarn. Mr. Ward also checked and added to the older observations of Mr. P. C. Crosthwaite, as regards Buttermere, Crummock, and Lowes Water, and fixed the positions on the 6-inch maps.

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[The early maps of the English lakes executed from surveys by P. C. Crosthwaite about one hundred years ago were so inaccurate in topography as to make them of little value at the present day, and we could only use them as a rough guide in getting a preliminary idea of the arrangement of depths. I am familiar with the admirable work of the late Mr. Clifton Ward and his colleagues, and when discussing the results of our survey I shall refer to it at some length. The observations then made, however, required extension from the geographical point of view. Briefly speaking, Mr. Ward's work sufficed for determining the general form of the cross-sections of the lakes, but was not sufficient to enable the horizontal contours to be laid down. I was not aware before reading Mr. de Rance's letter that these results had been recorded on the 6-inch (geological) maps, probably because I have only seen the 1-inch geological survey of the lakes, and the figures do not appear there nor on the 6-inch Ordnance maps. The results of the work by Mr. Heawood and myself would be used to supplement the earlier survey if we could be sure of the exact level of the lakes on the previous occasion. Probably Mr. de Rance can give us this information.—HUGH ROBERT MILL.]