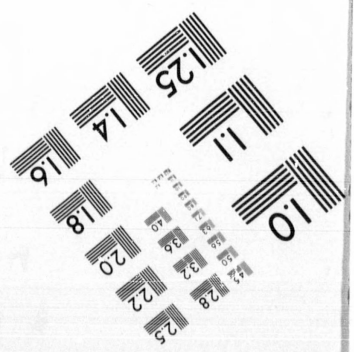
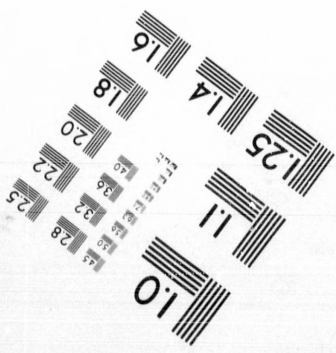
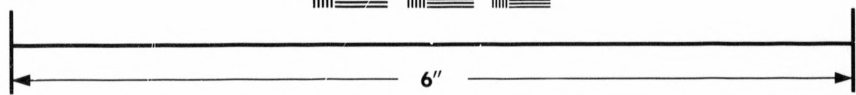
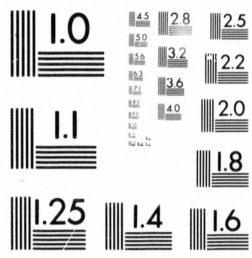


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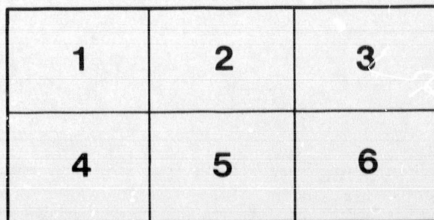
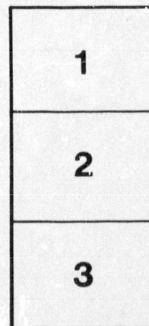
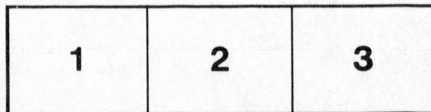
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Memphremagog à Cold Water Lake.

By A. T. DRUMMOND.

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Memphremagog a Cold Water Lake.

By A. T. DRUMMOND.

Lake Memphremagog is the Loch Lomond of Canada, but, being less easy of access from the great cities, does not attract the tourist as does the Scottish lake. It is, however, not less beautiful. From the summit of Owl's Head there is a view that for beauty and breadth is probably unsurpassed elsewhere in Canada, while at the lake margin there are lovely scenic effects particularly in the evenings when the purple hills are brought into bolder relief by the brilliant tints of the setting sun and are mirrored in the waters of the lake.

Whilst the surrounding mountains and glens have an interest to the botanist, and the whole environs of the lake present to the geologist a peculiar record of the past, the waters of the lake have in their temperatures a feature of interest to which, in a word, I would like to draw attention. Lake Memphremagog has a length of about thirty miles, an area of thirty-seven square miles, and, according to Sir William Logan, a surface level of 756 feet above the level of the sea. Lake Superior, with its cold waters, is in higher latitude but is only 600 feet above the sea level, whilst its deeper depths sink far beneath it. The smaller and shallower lakes are, like the rivers, susceptible to the equalizing influences of summer temperatures, but, in the case of Lake Memphremagog, circumstances peculiar to itself, affect the conditions of heat and cold in its waters. Whilst it is exceptionally high above the sea, it is in many places of considerable depth. Nearly opposite Owl's Head, the sounding line, it is claimed, has reached the depth of 600 feet, whilst near Georgeville, six miles further down the lake, there are places

where I have not found the bottom at 325 feet. The opposite shores at this point are about two miles apart, and it was here, about midway across, that last August the temperatures were taken. Negretti & Zambra's deep-sea thermometer was used for ascertaining bottom records. The following register made on 10th of August at 11 a.m. under the conditions of strong sun and cloudless sky, indicates generally the results:

Air in shade.....	77.5° F.
Water 1' below surface.....	74°
do 6 fms. do	57.5°
do 12 do do	51°
do 48 do do	48°
do 54 do do	44.75°

The results establish the two facts,

1. That Lake Memphremagog is a cold water lake whose bottom temperature at 54 fathoms is, in early August, as low as 44.75° F.

2. That the high temperature of the surface at the same period is only maintained for, relatively, a few feet beneath, beyond which the mercury falls rapidly to near the lowest temperature.

At the head of the lake at Newport, the flow of water from the small rivers rising in the Vermont hills, creates a decided surface current past Newport, and although I have not specially endeavored to trace this current onward to the outlet at Magog, it is suggestive from the temperatures that the warm waters from the neighboring rivers and streams flow, river-like, over the colder waters of the lake, just as the Gulf Stream, under a different influence, but lightly skims the surface of a large portion of the broad Atlantic Ocean.

To illustrate the relative temperatures, whilst the thermometer at 12 fathoms here registered 51°, the waters of Lake Ontario, at their outlet into the St. Lawrence, indicated at the same depth, and at about the same period, 67°.

