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## CURRENT NOTES ON PHYSIOGRAPHY (VI.).

### SURFACE CURRENTS OF THE GREAT LAKES.

A REVISED edition of the atlas of 'Surface Currents of the Great Lakes,' as deduced from the movements of bottle papers during the seasons of 1892, 1893 and 1894, by Professor M. W. Harrington, has lately been issued as Bulletin B of the Weather Bureau.

The text describes the method of study, and gives tables of the prevailing winds of the lake-port stations and a list of recovered bottles, 672 being found out of nearly 5000 floated. The chief drifts are: eastward along the south side of Superior, westward along the north side; south along the west side of Michigan and Huron, north along the east side; generally eastward in Erie and Ontario. Many irregular movements are noted, especially near shore. Local and transient currents, formed during severe gales, are sometimes strong enough to drag vessels from their moorings. "There also occurs, occasionally, on the Great Lakes a phenomenon which may be called a *seiche*, namely, a wave of considerable height which travels unaccompanied by other waves, and is seen by navigators as a white wall approaching and rapidly passing them." Following the use of the term *seiche* on the Swiss lakes, where it originated, it would be more properly applied to the rise and fall of the water on the shore, in periods of generally less than an hour; these being well known at our Lake ports, but as yet very little studied. These white-walled waves also call for investigation.

### BUCHAN'S CHALLENGER REPORT ON OCEANIC CIRCULATION.

THE latest volume of the Challenger reports contains thirty-eight pages of text and sixteen maps, prepared by Dr. Alexander