

SHORT PERIOD VERTICAL OSCILLATIONS IN THE WESTERN BASIN OF THE NORTH ATLANTIC

by

H. R. SEIWELL

(21 × 28 cm. - 44 pp. + 9 fig. — Contribution N° 137 of the *Woods Hole Oceanographic Institution* - Cambridge and Woods Hole, Massachusetts, May 1937).

As early as 1926 HELLAND-HANSEN and NANSEN had ascertained that there probably existed considerable vertical oscillations of the water layers in various regions of the Ocean. Hence the occasional vertical series of observations cannot be expected always to represent the average conditions at any particular station. These types of oscillations might in general be connected with the tides, but it is difficult to explain in this way how the tidal wave can produce vertical movements of such dimensions in the different strata of the sea; we have here a problem and a phenomenon of fundamental importance to oceanography.

The present volume is based on temperature, salinity and oxygen observations made by the *Atlantis* in a selected station of the Atlantic Ocean from 9th to 13th July 1936.

It would seem that, although the short period oscillations observed appear to be correlated with daily and half daily tidal periods, there are other factors which disturb the periodic recurrence of the different phenomena in varying degrees of intensity. By theoretical considerations of dynamic oceanography, the author deduces from the *Atlantis* observations the order of magnitude of the effect of vertical displacements of the water column on transport, i.e. the current created, between two fixed verticals in the sea, according to methods similar to those generally applied to observations of temperature and salinity in this sort of computation.

H. B.

