

# QUANTITATIVE UNTERSUCHUNGEN ZUR STATIK UND DYNAMIK DES ATLANTISCHEN OZEANS

## 2. LIEFERUNG

### Ausbreitungs— und Vermischungsvorgänge im antarktischen Bodenstrom und im subantarktischen Zwischenwasser.

by

ALBERT DEFANT

(Berlin and Leipzig, 1936).

*(Quantitative research on the statics and dynamics of the Atlantic Ocean :  
The phenomena of Propagation and Mixing of the Antarctic bottom water  
and the Subantarctic intermediate waters).*

This second fascicle of the 2nd Part of Volume VI of the Scientific Results of the *Meteor* Expedition, is a continuation of the work of Georg Wüst, cited above, the results of which enable A. DEFANT to elucidate his theoretical study of the phenomena which may be called those of "free turbulence". For this he employs the sections relating to temperature and salinity in the Western portion of the Atlantic and draws from these his conclusions regarding the propagation of the Antarctic bottom water and the subantarctic intermediate waters. He even succeeds in furnishing us with the velocities of this weak current, between 1.5 cm. and 2.0 cm. per second over the rises (less than 1 nautical mile per day); 0.5 cm. to 1.0 cm. in the depressions; 0.3 cm. to 0.8 cm. in the deep current of the upper North Atlantic.

In order to study the propagation and mixing of the subantarctic intermediate waters, the author again has recourse to the same formulae and constructs the curves of propagation in accordance with the salinity measurements. His conclusion is that "the displacement of the liquid masses towards the place which pertains to them as a result of density and the mixing through this turbulent propagation are the principal phenomena which govern the circulation and the arrangement of the oceanic stratosphere".

A static condition is realized in fact, but the theory shows that this propagation should be subject to periodic and aperiodic changes deriving from the region of the source — changes which can only be verified by further systematic observations.

P. V.

