

SCHICHTUNG UND ZIRKULATION DES ATLANTISCHEN OZEANS (Zweite Lieferung). DIE STRATOSPHERE.

by

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(STRATIFICATION AND CIRCULATION IN THE ATLANTIC OCEAN.
THE STRATOSPHERE).

This work forms the second fascicle of the 1st Part of Volume VI of the publication containing the scientific results of the *Meteor* Expedition. The author, basing his conclusions on all of the observations made in the Atlantic Ocean, not only by the *Meteor* but by all other vessels engaged in oceanographic research, gives his theory of the stratification and circulation of the waters in the stratosphere, i. e. in the deep waters. The results of the measurements of salinity, temperature and oxygenation enable the author to give a representation of the stratification of the waters of the Atlantic and to locate the *Kernschichten* (1) (control layers) and the *Grenzsichten* (limiting layers). This method, which is almost entirely the author's own, permits him to depict the circulation of the waters of the stratosphere and terminates a comprehensive study, the importance of which from an oceanographic standpoint cannot be ignored.

Readers of the Hydrographic Review have already been given some insight into these theories by the articles of G. Wüst and Camille VALLAUX which appeared in Hydrographic Review, Vol. XIII N° 2, Monaco, November 1936.

P. V.

(1) NOTE. — *Extract from letter by Dr. Wüst dated 26th July 1937* :—

By "Kernschichten" I understand the surfaces, mostly curved, in which the main water bodies of the deep-sea circulation (hence the subantarctic, intermediate water, the North-atlantic deep water, the antarctic bottom water, etc.) possess their typical constitution and extension; thus the "Kernschicht" of the intermediate subantarctic water is characterised by the intermediate minimum of salinity, the "Kernschicht" of the upper North-atlantic deep water is determined by the intermediate maximum of salinity of the Mediterranean inflow, the "Kernschicht" of the mean North-atlantic deep water is determined from the upper intermediate maximum of oxygen. The "Kernschicht" of the Antarctic bottom water is determined from the minimum of the potential temperature which is found directly above the bottom. The English and French translations offer some difficulty, as there scarcely exists in these two languages any expression corresponding exactly to the German expression and in particular to the word *Kern* in the sense we give it. In my opinion the best translation in English would be *nucleus-layer*, derived from the Latin word *nucleus* = nucleus of a cell. In French the expression *strate du nucleus* or *couche du nucleus* might be admissible. Other English translations might be *chief layer* or *control-layer*. In one English publication I have come across the translation *main-tongue*. The French oceanographer VALLAUX has used the translation, in my opinion somewhat complicated, *les strates liquides maîtresses*. The expression might more briefly be put *couches essentielles*.

