

MORPHOLOGY OF THE ATLANTIC OCEAN

by

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The International Hydrographic Bureau has received the second number of Vol. III, 1st Part, of the Scientific Results of the German Atlantic Expedition of the « Meteor ». This study by Theodor Stocks is devoted to the statistics of the different depths of the Atlantic Ocean. An analogous study based on Grolls Chart had been made in 1921 by E. Kossinna (1). It was interesting to compare the state of our knowledge after this interval of time during which considerable data has been provided by the « Meteor Expedition » and by numerous echo soundings, particularly with regard to the South Atlantic Ocean.

The author has given us, on Sheet N° 11 and in fig. 34, the limits of the Atlantic Ocean and the basins of which it is composed. He then shows in Chapter II the methods which he employed for the calculation of the surface areas, the volumes and the mean depths ; in Chapter III, he gives the results of his calculations and compares them with those of Kossinna. The mean depth arrived at was 3,713 m., in place of 3,788 m., obtained by Kossinna for the North Atlantic, and 3,984 m. instead of 4036 m. for the South Atlantic. The author remarks that the discovery of the banks of small expanse, but rather elevated, such as those of the Discovery and the Thorshavn, discovered by these vessels in 1936 and 1934, and of which it is not improbable that many others are unknown, will always lead to a reduction in the figures for the average volumes and depths. The investigation of the marginal seas is clarified in Sheet IV, giving the depths of the sea in the Caribbean by depth curves every 500 metres, and to about the same scale as the General Bathymetric Chart of the Oceans. This permits an interesting comparison to be made (the author does not appear to have had available the most recent material utilised by the Hydrographic Office of the U. S. A. in their beautiful new chart in colours N° 5487) then by fig. 50 reproducing to 40 millionths the Arctic Polar Sea with curves every 1000 metres of depth (2). It appears that the depths exceed 5000 metres, at about mid-distance between the pole and Behring Straits ; while Kossinna thought that the greatest depth did not exceed 3850 m. in this sea. In like manner, the author obtained for the mean depth of the North Polar Basin, a figure of 2231 m., whereas Kossinna gives a figure of 1605 m. The analysis of the marginal seas is completed in Sheet V, where there is given, with depth curves for every 500 metres, a chart of the Mediterranean to 10 millionths. (This differs little from Sheet A IV of the General Bathymetric Chart of the Oceans ; we note simply the absence of the shoal of 622 m., to the S.E. of Minorca). The total of the results is clearly and concisely summarized in chapter IV where the figures 59 and 60 show the diminution of the areas occupied by the depths of more than 5000 metres with respect to the Groll chart.

This interesting work is concluded by very comprehensive tables summarizing the results of the considerable calculations which they required.

P. V.



(1) Die Tiefen des Weltmeeres, Veröff. des Inst. für Meereskunde a.d. Universität, Berlin, Neue Folge, Reihe A. Heft 9, Berlin 1921.

(2) The representation of the depths around Jan Mayen does not appear to be quite correct, if we compare them with those shown on sheet B₁ of the General Bathymetric Chart of the Oceans.