

general results were arrived at which are of great interest even in their present crude form.

I propose in this chapter to summarize these results, giving briefly a general outline of the conditions as to the contour of the bottom of the ocean, the nature of the deposits which are being laid down on the bottom, the general distribution of temperature, the direction and force of surface and submarine movements of the water, and the nature and distribution of the deep-sea fauna, according to my present impressions; premising that these may be modified to a certain extent by further study of the materials in our hands. I will, however, confine myself at present, as far as possible, to the facts which appear to be ascertained with some approach to certainty.

The Contour of the Bed of the Atlantic.—During the first few days of our cruise we verified many previous observations to the effect that, after passing a comparatively narrow, shallow belt, the water deepens rather suddenly along the coasts of Europe and North Africa, to between 2000 and 2500 fathoms, a peculiar ridge, first observed by the Swedish corvette *Josephine*, and lately by the United States sloop *Gettysburg*, running down in a south-westerly direction from about Cape Roca, including the Josephine Bank and Madeira, and giving its western boundary to a tongue of deep water which passes in a north-easterly direction between Madeira and the mainland toward Cape St. Vincent. (See Frontispiece.)

From Teneriffe westward, except at one spot about 160 miles south-west of the Island of Ferro, where we sounded in 1525 fathoms on the top of a ridge, the water gradually deepened to the westward to the depth of 3150 fathoms at the bottom of a wide valley, which extends more than half-way across the Atlantic. About long. 43° W. the floor began to rise, and at long. $44^{\circ} 39'$ W. we sounded in 1900 fathoms on the top of a gentle elevation. Farther to the westward the depth again increased, and in long. $61^{\circ} 28'$ N. we sounded in 3050 fathoms