SIFTING DEPOSITS ON BOARD THE "CHALLENGER."

CHAPTER IV

THE DEPTHS AND DEPOSITS OF THE OCEAN

1. THE DEPTHS OF THE OCEAN

The earth as a planet.

IN the opinion of astronomers the earth is the only planet of our solar system which has oceans on its surface. If Mars and the moon once had oceans, these have apparently disappeared within their rocky crusts. Our earth is in what is called the terraqueous stage of a planet's development. The ocean is less than the hydrosphere, which is regarded as including all lakes and rivers, the water-vapour in the atmosphere, and the water which has penetrated deep into the lithosphere.

Figure of the earth.

If the whole globe were covered with an ocean of uniform depth, and if there were no differences of density in the shells of the rocky crust, the surface of the ocean would be a perfect spheroid of revolution. But, as every one knows, the surface of the earth is made up of land and water, and at all events the superficial layers of the lithosphere are heterogeneous. The figure of the earth departs from a true spheroid of revolution, and is called a geoid. The surface of the ocean is, therefore, farther removed from the centre of the earth at some points