

tributed. As it regards the area of land, it is found that the northern hemisphere contains three times as much as the southern; and as it regards the expanse of water, its superficial area in the southern exceeds that in the northern hemisphere.

§ 9. The Atlantic ocean is prolonged north and south so as to extend from pole to pole, while its breadth does not exceed 5000 miles. Its depth has been stated at about three miles; its area is 20,000,000 square miles. The Pacific ocean is prolonged from east to west. If measured on a line extending from Peru to the eastern coast of Africa, it is 16,000 miles. This great expanse of waters contains 70,000,000 of square miles, exclusive of the areas which are occupied by its islands. Its depth is four miles; but many points have not been fathomed even with lines six miles in length. The sounding in all waters, whether oceans or seas, or inland fresh and salt water lakes, demonstrates that their bottoms possess all the diversities of surface as the land, sinking in many places to profound and unfathomed depths; in others, banks and terraces spread out far and wide. These banks or terraces are probably made by the joint operation of the waves and of submarine and superficial currents, which are common to all great bodies of water.

The area of dry land does not exceed 35,500,000 of square miles. Its mean elevation is about 1000 feet; hence it follows that the entire surface of dry land may be covered with water. The great disproportion of dry land to water is a provision which is necessary to the well being of plants and animals.

§ 10. If water covers four-fifths of the earth's surface, it is evident that its influence, as a geological cause, should not be overlooked. The North American continent being skirted by two great oceans, and being supplied also with large inland lakes, and the largest and longest water courses in the world, we may expect to find those phenomena which are due to aqueous action upon the grandest scale; while the other element, volcanic fire, seems to be so far exhausted in its power in the United States, that it is impossible to obtain specimens for laboratory illustration. The Atlantic coast is remarkably