Examples of Changes of Level in the Land.

1. Movements, up or down, are now going on along the coast of North America, Scandinavia, Greenland, and elsewhere. Alexander Agassiz states that at Tilibiche, in Peru, there is a coral limestone, 2000 to 3000 feet above the sea level, extending along for 20 miles, in which occur corals modern in aspect; and that the existence, in Lake Titicaca, of eight species of a salt-water genus of Crustaceans, Allorchestes, suggests the presence of the sea over this region, 12,500 feet in height, at no very distant period. There is no proof of corresponding changes over eastern South America.

2. On the coast of Cuba, limestone strata, made in the sea off the shores, are now (according to W. O. Crosby) at different levels up to a height of 1800 feet, and near Havana, over 1200 feet; and on Jamaica (according to Mr. Sawkins), and Haiti (according to W. P. Blake), of 2000 feet.

3. In the early Tertiary, the European and Asiatic seas contained Nummulites, and limestones were made of the multiplying disks. Now, those Eocene Nummulitic beds are at a height of 9000 feet in the Pyrenees, 11,300 feet in the Alps, 16,500 feet in the Himalayas in western Tibet, and a few hundreds only near Paris.

4. In the Cretaceous period, the region of a large part of the Rocky Mountains and of the Atlantic, Gulf, and Pacific borders of the continent were beneath the sea, but mostly near its surface; and the marine life of the sea contributed to the forming of Cretaceous beds. Now, the marine beds, filled with Cretaceous fossils, are at a height of 10,000 to 11,000 feet in the Rocky Mountain region; at a maximum height, on the Pacific border, of only 5000 feet; in Alabama of 700 to 800 feet; and in New Jersey not over 400; and in portions of the western mountain regions the beds are in great flexures.

5. In the Appalachian region, from the site of Albany, N.Y., to Alabama, at or near the end of the Carboniferous period, the surface was near the sea level, and the rocks, from the Cambrian to the Carboniferous, lay in a horizontal pile, the upper surface little emerged above sea level. Now, they are in mountain flexures, and heights of several thousand feet occur along the line.

6. All the world's mountains, excepting those of igneous formation, consist of rocks that were made chiefly in the sea; and the highest of them reached their present level during the latest of the geological ages. And while some portions of the earth's surface were raised in later geological time 10,000 to 19,000 feet, other parts underwent little or no recognizable elevation.

7. Formations of all thicknesses to tens of thousands of feet bear evidence of the shallow-water origin of the successive beds; and they thus prove that, while forming, a subsidence of extreme slowness was in progress over the great area; slow enough for the accumulation of the material in the surface waters by living growth if the beds consist of limestone, and by