the rocks of the continents. The bases are being continually leached out of the rocks of the continents and carried away in solution, the result being the deposition of the greater part of the heavier materials in the abysmal regions, and the accumulation of the greater part of the lighter insoluble and refractory quartz on or near the continents. The average chemical composition of the pelagic or abysmal deposits shows only about 36 per cent. of silica, while that of the terrigenous deposits and continental rocks shows about 68 per cent. of free and combined silica. Continental rocks have an average specific gravity of about 2·5; the abysmal deposits would form rocks with a specific gravity of over 3·1. In the original superficial crust all the silica was probably combined with bases; the deeper layers would be more basic than the surface ones, but all the rocks of the crust were probably much less acid than granite. Gneisses and granites were probably formed subsequently to the commencement of subaerial denudation on the planet. Many considerations indicate that the continental masses are lighter portions of the Earth's crust. Pendulum observations indicate a deficiency of mass beneath the continents. The plumb-line along continental coasts tend, it is said, towards the ocean basins. The grand result of all the denuding and reconstructing agencies in the past appears to have been a great accumulation of quartz and highly siliceous materials on the present continental areas, that is, on the continents and the adjacent areas covered by terrigenous deposits, and this is possibly the chief reason why the average level of the plane of the abysmal regions lies at about three miles beneath the plane representing the average height of the continents.

Relative Permanence of Continental and Oceanic Areas.

If down to the close of Palæozoic times the ocean had throughout a nearly uniform high temperature, the deposits then formed in deep water would certainly be different, for reasons indicated above, from what we now find in the abysmal regions. It is most probable that the Ocean Basins were not so deep in these early ages, and numerous islands probably existed in them, with rocks similar to those that now make up the bulk of continental land. Possibly these former land-masses now form the submerged bases of the groups of oceanic islands wholly consisting, so far as we can see, of erupted rocks. In the gradual evolution of the surface features of the planet, continental land appears, on the whole, to have become more compact, more circumscribed and higher, while the ocean basins have become more shut off from each other and deeper. Continental land has been far from permanent, but there are many reasons for believing that the areas on the surface of the planet, within which the present continents are situated, are areas within which continents have been torn down and built up again since the dawn of geological history, while similar revolutions have not taken place in abysmal or pelagic areas of the Ocean Basins to anything like the same extent, and not at all during any of the later geological periods. In the evolution of the surface features of the globe and in the evolution of climate, as in the evolution of the solar system and in the evolution of organisms, there has been a progressive advance from simple to complex conditions, from states of more or less homogeneity to those of greater heterogeneity.