

and their order of arrangement are exactly like what we found in descending the Adirondacks.

The Laurentian, therefore, has the same constitution as the Adirondacks. It is an elongated elevation, however, instead of a cluster of peaks. It presents an *anticlinal* structure. The oldest or bottom rocks are in the center, and rise to the highest altitude. The rocks geologically higher in position attain to successively lower and lower altitudes; they dip down on each side of the granitic axis, like a series of planks leaning against a stone wall.

This is the general plan of a *mountain of upheaval*. We find the same in the Blue Ridge, in the ranges of the Rocky Mountains and many others of the great ranges of the country. Mountains, therefore, exist as long folds of the earth's crust; and very generally, where one fold exists, two or three others exist parallel with this, as in the Appalachians.

It will be borne in mind always, that every orographic or mountain feature has undergone a great amount of alteration. The summits of the mountains have been much lowered. The strata enwrapping their flanks have been cut back; they stretch to less distances than formerly toward the summit. In many cases, indeed, we have room to conjecture that they extended originally over the summit, and have been worn away in the course of ages, uncovering the granitic nucleus only in later geological time.

In some cases, the erosion of parallel and contiguous mountain crests has proceeded so far that the summits are lower than the valleys between them. The valleys then become the mountains, and in place of the original mountains are valleys of erosion. So we sometimes find a *synclinal* structure in mountains, and an *anticlinal* structure under valleys. Sometimes we find a river cutting through a mountain from side to side and from top to bottom. The Green river in Wyoming, affords a striking example. It cuts through the 15,000 feet of the altitude of the Unita Mountains. It seems quite evident that the river was here before the mountain. The mountain rose gradually under the river, and as it rose, the river sawed its gap to the