

plicated or folded by the force, whatever it may have been, which elevated the mountains. The three folds on the right, marked *a*, are of the type of these that Prof. Rogers calls *Folded flexures*; *b*, is an example of a *Normal flexure*—steeper on one side than on the other; *c*, is a *Symmetrical flexure*, or one which slopes equally in both directions. The hollows are generally called by geologists *synclinal axes* and the ridges *anticlinal axes*.

Prof. Rogers shows that on the south western side of that part of the disturbed region now occupied by the western States the flexures are broad, flat swells not sufficiently abrupt or elevated to constitute mountain chains. But proceeding south easterly or towards the present Atlantic ocean they become more and more lofty and more closely crowded together. The western undulations are symmetrical, that is to say, they exhibit an equal slope on both sides but towards the east they gradually become steeper on one side—then vertical and even overhanging or overthrown. The steep sides are always towards the west and the overthrows are also all in the same direction.

The question to be answered is: what caused this wonderful folding up of the earth's crust? But before proceeding to give an account of the various solutions of the problem that have been proposed, we may state for the benefit of the non-geological reader that although at the present day these mountains consist of long parallel ridges they are not always the original ones. In the process of curvation the strata must have been fractured along the crest of each wave, and the rocks being thus broken up rendered more easily operated upon by atmospheric or aqueous agencies or by the action of both combined than those which formed the bottoms of the valleys. In many instances it can be shown that in consequence of the enormous denudation to which they have been subjected the original mountains have been completely worn away down to their very bases; and further that many of the finest and most fruitful valleys of the South are scooped out of the foundations of the ancient hills. On the other hand the bottoms of the hollows not having been so much fissured have been enabled to withstand the wear and tear of nature's forces until at length they constitute the crests of the ridges of the present day. We have thus mountains where once there were valleys and we have also valleys where of old, the mountains stood. The general aspect of the whole region has been so much changed during the long ages that have passed away since