

*sure*, to which they were originally not adjusted; and the phenomena of earthquakes, volcanic explosions, etc., may arrive." These results are favored by the fact that the deposits were not half consolidated, and, therefore, little able to resist the pressure.

In the consequent collapse from the continued pressure, the included strata would be necessarily shoved up out of place, flexed in anticlines and synclines, and traversed by great oblique fractures, as Daubrée's experiments illustrate, which would become the courses of displacements, all on a scale of magnitude comporting with the thickness of the accumulated formations. The flexures were not flexures of the earth's crust, but of the supercrust, or the beds in the geosyncline. The work was slow in progress; for the great flexures in such mountain-making are produced without obliterating or seriously obscuring the stratification.

In the great forced movement, if the pressure on the two sides of the trough was unequal, as was commonly the fact, the beds were shoved from the side of strongest pressure, or thrust, toward the opposite. Consequently the flexures became crowded and steepest on the former side, and the overthrust flexures and upthrust blocks were thrust toward the other side. Hence the resulting mountain range and its flexures are inequilateral. In the case of the Appalachians, the thrust was strongest on the side toward the ocean. Further: on the side of least pressure, the mountain range often declines into elevated plateaus, with feebly undulating or horizontal stratification, as exemplified, on the landward side of the Appalachians, in the Cumberland plateau and its continuation northward; in the Uinta Mountains and the high plateaus of Utah on the landward side, and to the south, of the Wasatch. In the narrow troughs of deposition of eastern North America, the flexures often fail to indicate inequilateral pressure.

After a mountain-birth there has commonly succeeded a time of relaxed lateral pressure; and then occurred adjustments, largely by gravitation, in the moved masses or faulted blocks making chiefly downthrow displacements, besides producing new fractures and faults. Such displacements have taken place especially in the region of mountain plateaus, where the pressure was least.

Illustrations of the steps in the contraction process of mountain-making have been above derived mostly from the Appalachian Range. They may be found almost equally apposite in most of the mountains of the world, as the examples already given prove. The Taconic Range, on the borders between New England, and New York and Canada, has the same general characteristics as the Appalachian, with the addition of the universal metamorphism of the beds of sandstone, shale, and limestone. Its preparatory geosyncline was on a parallel line with the northern part of the Appalachian; and the two were deepening and taking in deposits together until the close of the Lower Silurian, when the Taconic mountain-making crisis came. The rocks of the range are, therefore, only those of the Cambrian and Lower Silurian. It is probable that this mountain belt extends through