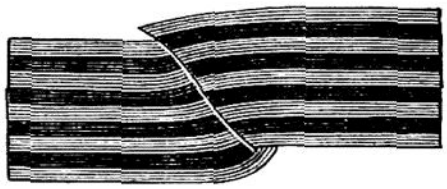
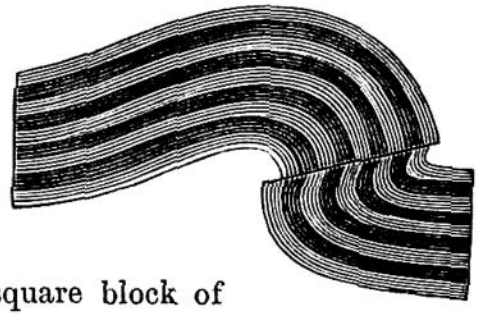
sometimes large displacements in the same upthrust way. The direction of dip of the plane of fracture, as the figures show, is, *in the case of a synclinal bend, the reverse of that in the anticlinal.*

325.

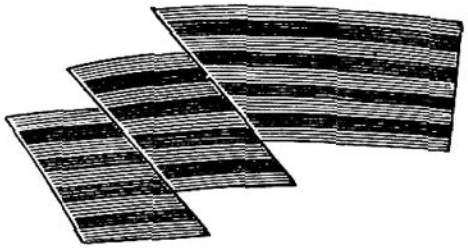


326.



In subjecting to vertical pressure a square block of wax, having a breadth of five and a half inches and a height of about a foot, an oblique diagonal fracture was made with some bulging of the sides; and, adjoining the fracture, as a consequence of the molecular movements in the bulging, fine rectangular cracks were produced, like a delicate network.

327.



Cubes of hard rock under vertical pressure usually break off at the angles and edges, leaving two rounded cones with their apexes at the middle; but a tabular block of limestone was reduced by Daubrée to vertical prisms and plates.

Characteristics of Some Typical Mountain Ranges.

1. The Appalachian Mountain Range.

The structure of the Appalachian Mountains was first investigated by Professors W. B. and H. D. Rogers in connection with geological surveys of the States of Virginia and Pennsylvania; and their results (1842) gave many fundamental principles to orographic science.

Fig. 328, A, B, sections of part of the belt in Virginia, by H. D. Campbell, afford a general idea of the system of flexures (1893). Each represents the rocks for a breadth of about 10 miles across the range, in Rockbridge and Bath counties. Between the two sections there is an interval of about eight miles. The numbering of the formations corresponds with that on page 410; the limestone areas are blocked, the shales ruled, and the sandstones dotted. Farther to the southeast, in the same line, there are closely crowded overthrust flexures.

In the construction of the mountain range from New York to Alabama (1) the whole Paleozoic series of strata to the floor of crystalline Archæan rocks — in some parts 40,000 feet thick — were involved in the system of flexures; (2) the flexures are generally parallel to the axis of the mountain