

# TEXT-BOOK OF GEOLOGY

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## BOOK III

### DYNAMICAL GEOLOGY

(CONTINUED)

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#### Section iv. Hypogene Causes of Changes in the Texture, Structure, and Composition of Rocks

**T**HE phenomena of hypogene action considered in the foregoing pages relate almost wholly to the effects produced at the surface. It is evident, however, that these phenomena chiefly arise from movements within or beneath the earth's crust, and must be accompanied by very considerable internal changes in the rocks which form that crust. These rocks, subjected to enormous pressure, have been contorted, crumpled, and folded back upon themselves, as if thousands of feet of solid limestones, sandstones, and shales had been merely a few layers of carpet; they have been shattered and fractured; they have in some places been pushed far above their original position, in others depressed far beneath it: so great has been the compression which they have undergone that their component particles have in many places been rearranged, and even crystallized. They have here and there probably been reduced to actual fusion, and have been abundantly invaded by masses of molten rock from below.

In the present section, the student is asked to consider