

with anticlinal and synclinal folding. Thus, a monoclinical fold may by increase of movement be developed into a fracture (Fig. 265). Beautiful examples of this relation have been observed by Powell and others among the little-disturbed formations of the great plateaus of Utah and Wyoming. But it is in mountainous regions that they are chiefly

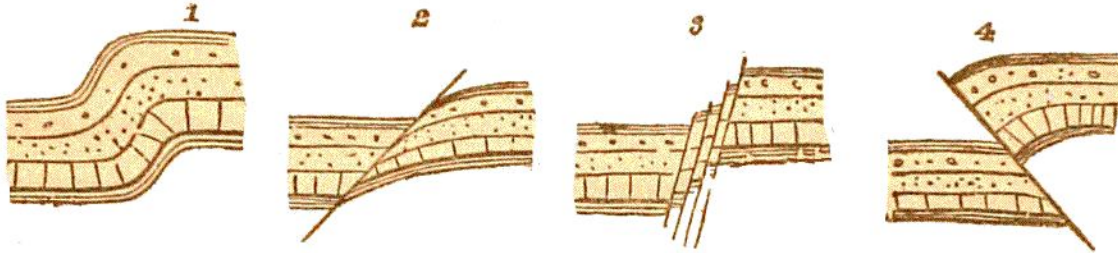


Fig. 265.—Sections to show the relations of Monoclinical folds and faults. 1, Monoclinical fold; 2, Monoclinical fold replaced by a single normal fault; 3, Monoclinical fold converted into a series of parallel normal faults; 4, Monoclinical fold developed by increase of plication into a reversed fault.

developed; they become there, indeed, the common type of dislocation. Many excellent examples have been adduced from the plicated rocks of the Alps.⁴

Thrust-planes.—Under this name the Geological Survey of Scotland has described a remarkable type of reversed fault, where the hade is so low that the rocks on the upcast side have been pushed for miles horizontally across the rocks on which they lie (see Figs. 249, 311, 328, 331, 334).⁵ Such a structure points to enormous tangential pressure, under which the very foundations of a country were thrust

the existence of stresses in the crust of the earth which are from time to time relieved by dislocation. But the nature of these stresses and the manner in which faults arise are still among the obscure problems of geology.

⁴ See Powell in the works cited already on p. 397. Heim, "Mechanismus der Gebirgsbildung," Plate XV. Fig. 14. Compare C. W. Hayes, Bull. Geol. Soc. Amer. ii. 1891, p. 141.

⁵ B. N. Peach and J. Horne, Nature, 13th Nov. 1884. The details of this structure with numerous illustrations will be found in the Report of the Geological Survey, Quart. Journ. Geol. Soc. xlv. 1888, p. 378. M. Bertrand has described under the name of "failles courbes" certain curved faults which affect the rocks of the Jura and south of France, but do not, he thinks, descend into the crust; and he cites the Mont Faron near Toulon, which, he says, one cannot climb from any side without crossing a large fault that brings Jurassic down upon Triassic rocks (Bull. Soc. Geol. France (3), xii. 1884, p. 452).