

Unless beds, the horizons of which are known, can be recognized on both sides of a fault, exposed in a cliff or other section, the fault at that particular place does not reveal the extent of its displacement. It would not, in such a case, be safe to pronounce the fault to be large or small in the amount of its throw, unless we had other evidence from which to infer the geological horizon of the beds on either side. A fault with a considerable amount of displacement may make little show in a cliff, while, on the other hand, one which, to judge from the jumbled and fractured ends of the beds on either side, might be supposed to be a powerful dislocation, may be found to be of comparatively slight importance. Thus, on the cliff near Stonehaven, in Kincardineshire, one of the most notable faults in Great Britain runs out to sea, between the ancient crystalline rocks of the Highlands and the Old Red Sandstones and conglomerates of the Lowlands of Scotland. So powerful have been its effects that the strata on the Lowland side have been thrown on end for a distance of two miles back from the line of fracture, so as to stand upright along the coast-cliffs like books on a library shelf. Yet at the actual point where the fault reaches the sea and is cut in section by the shore-cliff, it is not revealed by a band of shattered rock. On the contrary, no one would at first be likely to suspect the existence of a fault at all. The red sandstone and the reddened Highland schists have been so compressed and, as it were, welded into each other, that some care is required to trace the demarcation between them.

**Dip-Faults and Strike-Faults.**—The same fault may give rise to very different effects, according to variations in the inclination or curvature of the rocks which it traverses, or to the influence of branch faults diverging from it. Faults