resting in the 'trough' of the Chalk; Pickering Vale in the hollow of the Oolites; and a great part of the West Riding in the depression of the Coal tract.

If we suppose some of the strata which compose the lands of Yorkshire to appear in their original position in the sea bed, they would lie nearly horizontal, and present, in section, the appearance of the lower part of fig. 2, Pl. II. If next we suppose an upheaving force to be exerted in the direction marked by the arrow ↑ on the same figure, we shall have one of two appearances; either the strata will be uplifted on both sides and bent, as fig. 2, or uplifted on one side and broken, as fig. 1.

Each of these cases occurs in Yorkshire, the axis of uplifting being on or near to the western boundary of the county; and hence the eastward or south-eastward slopes of the strata so uplifted. But the surface is not marked with the uniformity of the slope which belongs to the strata. It is undulated by hills and valleys which cannot be explained by the act of elevation of the strata. These undulations are due to the violent action of the sea upon the rocks as they were raised out of the water and to the subsequent effect of the atmosphere, rains, and streams in the thousands of years during which the elements have been warring against them.

The successive steps by which the originally even and continuous surfaces of the strata have been cut and worn into the irregular forms of hills and valleys, may be understood by descriptions on paper, but more completely represented on models, and may be actually and experimentally witnessed on the sands of the sea-shore, or verified by artificial arrangements. Let us attempt an illustration of the process on paper.

In the section (Pl. II. fig. 2) W W is the level of the sea, under which are the strata marked G, a hard rock, as sandstone, —S, a softer rock, as shale,—and L, a firm limestone. All these rocks are divided by fissures, which have characteristic features in each:—in the sandstone they are somewhat irre-