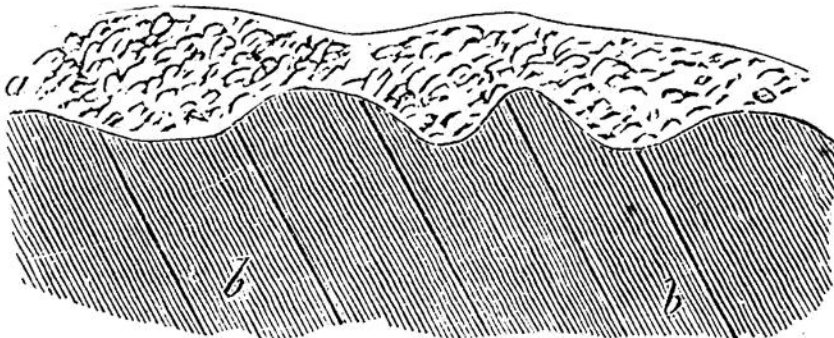


from their parent beds: the formation of caves, and the scooping out of valleys.

SUPERFICIAL GRAVELS

It is well known that many districts in England are covered by beds of gravel, which consist of fragments of rock and rounded pebbles. These fragments and pebbles will be found, if examined, to consist in many places of rocks which are not to be obtained in the neighbourhood where the gravel is deposited. In many districts of the midland counties in England, a nearly complete suite of rocks might be collected from the gravel, and must therefore have been carried from various, and some from very considerable distances. Mr. Phillips, speaking of the superficial gravel in Holderness, on the coast of Yorkshire, says—"The rocks from which the fragments appear to have been transported, are found, some in Norway, in the Highlands of Scotland, and in the mountains of Cumberland; others in the western and northwestern parts of Yorkshire, and no inconsiderable portion appears to have come from the seacoast of Durham, and neighbourhood of Whitby. In proportion to the distance they have travelled is the degree of roundness they have acquired."

The distribution of these fragments of rocks could only have been effected by a vast body of water. From the facts that have been gathered by geologists, it appears that it has taken a direction from north to south over the British Isles, and, according to Mr. Phillips's statement, has even transported fragments from Norway. In this course it has been modified by hills and mountain ranges, which may have divided



a a, bed of gravel; *b b*, strata scooped out by the action of water. The body of water, and caused the many irregularities which are to be observed in the deposition of the gravel-beds. In