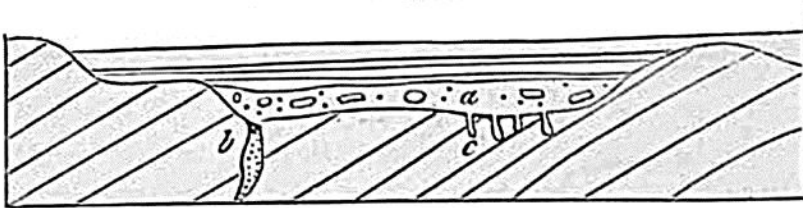


could not be expressed. From the point of view here selected, the underlying beds of the perpendicular schist, *a*, are visible at *b* through a small opening in the fractured beds of the covering of red sandstone, *d d*, while on the vertical face of the old schist at *a' a''* a conspicuous ripple-mark is displayed.

It often happens that in the interval between the deposition of two sets of unconformable strata, the inferior rock has not only been denuded, but drilled by perforating shells. Thus, for example, at Autreppe and Gusigny, near Mons, beds of an ancient (primary or paleozoic) limestone, highly

Fig. 84.



Junction of unconformable strata near Mons, in Belgium.

inclined, and often bent, are covered with horizontal strata of greenish and whitish marls of the Cretaceous formation. The lowest and therefore the oldest bed of the horizontal series is usually the sand and conglomerate, *a*, in which are rounded fragments of stone, from an inch to two feet in diameter. These fragments have often adhering shells attached to them, and have been bored by perforating mollusca. The solid surface of the inferior limestone has also been bored, so as to exhibit cylindrical and pear-shaped cavities, as at *c*, the work of saxicavous mollusca; and many rents, as at *b*, which descend several feet or yards into the limestone, have been filled with sand and shells, similar to those in the stratum *a*.

*Fractures of the strata and faults.*—Numerous rents may often be seen in rocks which appear to have been simply broken, the separated parts remaining in the same places; but we often find a fissure, several inches or yards wide, intervening between the disunited portions. These fissures are usually filled with fine earth and sand, or with angular fragments of stone, evidently derived from the fracture of the contiguous rocks.

It is not uncommon to find the mass of rock, on one side of a fissure, thrown up above or down below the mass with which it was once in contact on the other side. This mode of displacement is called a shift, slip, or fault. “The miner,” says Playfair, describing a fault, “is often perplexed, in his subterraneous journey, by a derangement in the strata, which changes at once all those lines and bearings which had hitherto directed his course. When his mine reaches a certain plane, which is sometimes perpendicular, as in *A B*, fig. 85, sometimes oblique to the horizon (as in *C D*, *ibid.*), he finds the beds of rock broken asunder, those on the one side of the plane having changed their place, by sliding in a particular direction along the face of the others. In this motion they have sometimes preserved their parallelism, as in fig. 85, so that