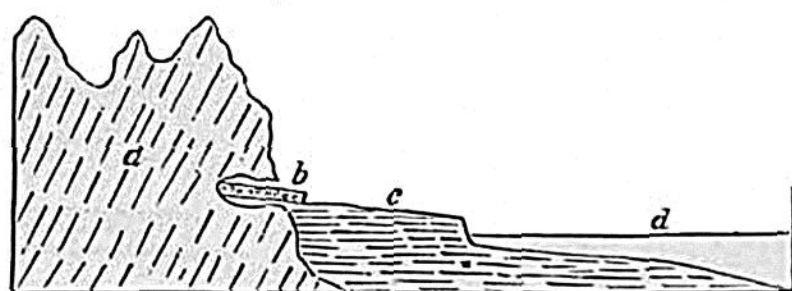


to expose to view these marks of boring-shells in the interior of the cave, it was necessary first to remove a mass of breccia, which consisted of

FIG. 98.



a. Monte Grifone.
 a. Plain of Palermo, in which are Newer Pliocene strata of limestone and sand.
 b. Cave of San Ciro.*
 d. Bay of Palermo.

numerous fragments of rock, and an immense quantity of bones of the mammoth, hippopotamus, and other quadrupeds, imbedded in a dark brown calcareous marl. Many of the bones were rolled, as if partially subjected to the action of the waves. Below this breccia, which is about 20 feet thick, was found a bed of sand filled with sea-shells of recent species; and underneath the sand, again, is the secondary limestone of Monte Grifone. The state of the surface of the limestone in the cave above the level of the marine sand is very different from that below it. *Above*, the rock is jagged and uneven, as is usual in the roofs and sides of limestone caverns; *below*, the surface is smooth and polished, as if by the attrition of the waves.

The platform indicated at c, fig. 93, is formed by a tertiary deposit containing marine shells almost all of living species, and it affords an illustration of the terrace of deposition, or the last of the two kinds before mentioned (p. 74).

There are also numerous instances in Sicily of terraces of denudation. One of these occurs on the east coast to the north of Syracuse, and the same is resumed to the south beyond the town of Noto, where it may be traced forming a continuous and lofty precipice, *a b*, fig. 94, facing towards the sea, and constituting the abrupt termination of a calcareous formation, which extends in horizontal strata far inland. This precipice varies in height from 500 to 700 feet, and between its base and the sea is an inferior platform, *c b*, consisting of similar white limestone. All the beds dip towards the sea, but are usually inclined at a very slight angle: they are seen to extend uninterruptedly from the base of the escarpment into the platform, showing distinctly that the lofty cliff was not produced by a fault or vertical shift of the beds, but by the removal of a considerable mass of rock. Hence we may conclude that the sea, which is now undermining the cliffs of the Sicilian coast, reached at some former period the base of the precipice *a b*, at which time the sur-

* Section given by Dr. Christie, Edin. New Phil. Journ. No. xxiii. called by mistake the Cave of Mardolce, by the late M. Hoffmann. See account by Mr. S. P. Pratt, F. G. S. Proceedings of Geol. Soc. No. 32, 1833.