

*Newer Pliocene Strata of Sicily.*—In no part of Europe are the Newer Pliocene formations seen to enter so largely into the structure of the earth's crust, or to rise to such heights above the level of the sea, as in Sicily. They cover nearly half the island, and near its centre, at Castrogiovanni, they reach an elevation of 3000 feet. They consist principally of two divisions, the upper calcareous, the lower argillaceous, both of which may be seen at Syracuse, Girgenti, and Castrogiovanni.

According to Philippi, to whom we are indebted for the best account of the tertiary shells of this island, thirty-five species out of one hundred and twenty-four obtained from the beds in central Sicily are extinct. Of the remainder, which still live, five species are no longer inhabitants of the Mediterranean. When I visited Sicily in 1828 I estimated the proportion of living species as somewhat greater, partly because I confounded with the tertiary formation of central Sicily the strata at the base of Etna, and some other localities, where the fossils are now proved to agree entirely with the present Mediterranean fauna.

Philippi came to the conclusion, that in Sicily there is a gradual passage from beds containing 70 per cent. of recent shells, to those in which the whole of the fossils are identical with recent species; but his tables appear scarcely to bear out so important a generalization, several of the places cited by him in confirmation having as yet furnished no more than twenty or thirty species of testacea. The Sicilian beds in question probably belong to about the same period as the Norwich Crag, although a geologist, accustomed to see nearly all the Pleistocene formations in the north of Europe occupying low grounds and very incoherent in texture, is naturally surprised to behold formations of the same age so solid and stony, of such thickness, and attaining so great an elevation above the level of the sea.

The upper or calcareous member of this group in Sicily consists in some places of a yellowish-white stone, like the calcaire grossier of Paris, in others, of a rock nearly as compact as marble. Its aggregate thickness amounts sometimes to 700 or 800 feet. It usually occurs in regular horizontal beds, and is occasionally intersected by deep valleys, such as those of Sortino and Pentelica, in which are numerous caverns. The fossils are in every stage of preservation, from shells retaining portions of their animal matter and color, to others which are mere casts.

The limestone passes downwards into a sandstone and conglomerate, below which is clay and blue marl, like that of the Subappennine hills, from which perfect shells and corals may be disengaged. The clay sometimes alternates with yellow sand.

South of the plain of Catania is a region in which the tertiary beds are intermixed with volcanic matter, which has been for the most part the product of submarine eruptions. It appears that, while the clay, sand, and yellow limestone before mentioned were in course of deposition at the bottom of the sea, volcanoes burst out beneath the waters, like that of Graham Island, in 1831, and these explosions recurred again and again at distant intervals of time. Volcanic ashes and sand were showered