KEUPER SUB-PERIOD.

The formation which characterises the Keuper, or saliferous period, is of moderate extent, and derives the latter name from the salt deposits it contains.

These rocks consist of a vast number of argillaceous and marly beds, variously coloured, but chiefly red, with tints of yellow and green. These are the colours which gave the name of *variegatea* (Poikilitic) to the series. The beds of red marl often alternate with sandstones, which are also variegated in colour. As subordinate rocks, we find in this formation some deposits of a poor pyritic coal and of gypsum. But what especially characterises the formation are the important deposits of rock-salt which are included in it. The saliferous beds, often twenty-five to forty feet thick, alternate with beds of clay, the whole attaining a thickness of 160 yards. In Germany in Würtemberg, in France at Vic, at Dieuze, and at Château-Salins, the rock-salt of the saliferous formation has become an important branch of industry. In the Jura, salt is extracted from the water charged with chlorides, which issues from this formation.

Some of these deposits are situated at great depths, and cannot be reached without very considerable labour. The salt-mines of Wieliczka, in Poland, for example, can be procured on the surface, or by galleries of little depth, because the deposit belongs to the Tertiary period; but the deposits of salt, in the Triassic age, lie so much deeper, as to be only approachable by a regular process of mining by galleries, and the ordinary mode of reaching the salt is by digging pits, which are afterwards filled with water. This water, charged with the salt, is then pumped up into troughs, where it is evaporated, and the crystallised mineral obtained.

What is the origin of the great deposits of marine salt which occur in this formation, and which always alternate with thin beds of clay or marl? We can only attribute them to the evaporation of vast quantities of sea-water introduced into depressions, cavities, or gulfs, which the sandy dunes afterwards separated from the great open sea. In PLATE XIV. an attempt is made to represent the natural fact, which must have been of frequent recurrence during the saliferous period, to form the considerable masses of rock-salt which are now found in the rocks of the period. On the right is the sea, with a dune of considerable extent, separating it from a tranquil basin of smooth water. At intervals, and from various causes, the sea, clearing the dune, enters and fills the basin. We may even suppose that a gulf