

Dr. T. Thomson found nummulites at an elevation of no less than 16,500 feet above the level of the sea, in Western Thibet.

One of the species, which I myself found very abundant on the flanks of the Pyrenees, in a compact crystalline marble (fig. 242) is called by M. D'Archiac *Nummulites Puschi*. The same is also very common in rocks of the same age in the Carpathians.

Another large species (see fig. 243), *Nummulites exponsus*, J. Sow., occurs not only in the South of France, near Dax, but in Germany, Italy, Asia Minor, and in Cutch; also in the mountains of Sylhet, on the frontiers of China.

Fig. 248.



Nummulites exponsus.
Sow. Europe and India.

In many of the distant countries above alluded to, in Cutch, for example, some of the same shells, such as *Nerita conoidea* (fig. 240), accompany the Nummulites as in France.

The opinion of many observers, that the nummulitic formation belongs partly to the cretaceous era, seems chiefly to have arisen from confounding an allied genus, *Orbitoides*, with the true Nummulite.

When we have once arrived at the conviction that the nummulitic formation occupies a middle place in the Eocene series, we are struck with the comparatively modern date to which some of the greatest revolutions in the physical geography of Europe, Asia, and Northern Africa must be referred. All the mountain chains, such as the Alps, Pyrenees, Carpathians, and Himalayas, into the composition of whose central and loftiest parts the nummulitic strata enter bodily, could have had no existence till after the Middle Eocene period. During that period the sea prevailed where these chains now rise, for nummulites and their accompanying testacea were unquestionably inhabitants of salt water. Before these events, comprising the conversion of a wide area from a sea to a continent, England had been peopled, as I before pointed out (p. 219), by various quadrupeds, by herbivorous pachyderms, by insectivorous bats, by opossums and monkeys.

Almost all the extinct volcanoes which preserve any remains of their original form, or from the craters of which lava streams can be traced, are more modern than the Eocene fauna now under consideration; and besides these superficial monuments of the action of heat, Plutonic influences have worked vast changes in the texture of rocks within the same period. Some members of the nummulitic and overlying tertiary strata called *flysch* have actually been converted in the Central Alps into crystalline rocks, and transformed into marble, quartz-rock, mica-schist, and gneiss.*

EOCENE STRATA IN THE UNITED STATES.

In North America the Eocene formations occupy a large area bordering the Atlantic, which increases in breadth and importance as it is traced southwards from Delaware and Maryland to Georgia and

* Murchison, Quart. Journ. of Geol. Soc. vol. v., and Lyell, vol. vi. 1850, Anniversary Address.