

found in his memoir on the formation of mountains and the changes that have taken place on the globe, particularly with regard to the Empire of Russia.¹ The highest mountains, he remarked, are composed of granite, with various schists, serpentine, grits, and other bedded masses in vertical or highly inclined positions. These formed his Primitive band, and in his opinion were older than the creation of organized beings, for no trace of organic remains was to be found in any part of them.

The primitive schistose band of the great chains is immediately succeeded by the calcareous band, which consists first of solid masses of limestone, either containing no marine productions or only slight traces of them. The thick beds of limestone are placed at high angles and parallel to the direction of the chain, which is also generally that of the schistose band. As they recede from the line of the mountains, the limestones rapidly sink down into a horizontal position, and soon appear full of shells, corals and other marine organisms. These upheaved limestones form the Secondary mountains of Pallas. A third series of rocks, which seemed to him to be the record of some of the latest revolutions of the globe, consists of sandstones, marls, and various other strata, forming a chain of lower hills in front of the limestone range. To this series of deposits he gave the name of Tertiary mountains.²

¹ *Act. Acad. Sci. Imp. Petropolit.* 1777, pp. 21-64.

² A threefold classification of the rocks was also made by Arduino in Northern Italy and by Lehmann in Germany, as will be more particularly referred to in the following chapter.