

talline structure ; but it is generally mixed with sand and various argillaceous matters, which have been deposited along with it, matters which go to form new minerals. These new minerals, however, are not disseminated by chance ; they develop themselves in the direction of the lamination, so to speak, of the limestone, and in its fissures, in such a manner that they present themselves in nodules, seams, and sometimes in veins.

Among the principal minerals of the saccharoid limestone we may mention graphite, quartz, some very varied silicates, such as andalusite, disthene, serpentine, talc, garnet, augite, hornblende, epidote, chlorite, the micas, the feldspars ; finally, spinel, corundum, phosphate of lime, oxide of iron and oligiste, iron pyrites, &c. Besides these, various minerals in veins figure among those which exist more commonly in the saccharoid limestone.

When metamorphic limestone is sufficiently pure, it is employed as statuary marble. Such is the geological origin of Carrara marble, which is quarried in the Apuan Alps on a great scale ; such, also, was the marble of Paros and Antiparos, still so celebrated for its purity. On examination, however, with the lens the Carrara marble exhibits blackish veins and spangles of graphite ; the finest blocks, also, frequently contain nodules of ironstone, which are lined with perfectly limpid crystals of quartz. These accidental defects are very annoying to the sculptor, for they are very minute, and nothing on the exterior of the block betrays their existence. In the marble of Paros, even when it is strongly translucent, specks of mica are often found. In the ancient quarries the nodules are so numerous as to have hindered their being worked, up even to the present time.

When the mica which occurs in granular limestone takes a green colour and forms veins, it constitutes the Cipoline marble, which is found in Corsica, and in the Val Godemar in the Alps. Some white marbles are quarried in France, chiefly at Loubie, at Sost, at Saint-Béat in the Pyrenees, and at Chippal in the Vosges. In our country, and especially in Ireland, there are numerous quarries of marble, veined and coloured of every hue, but none of a purity suitable for the finest statuary purposes. All these marbles are only metamorphosed limestones.

The white marbles employed almost all over the world are those of Carrara. They result from the metamorphism of limestone of the Lias. They have not been penetrated by the eruptive rocks, but they have been subjected upon a great scale to a general metamorphism, to which their crystalline structure may be attributed.

It is easily understood that the calcareous strata have not under-