

the mountain vegetation presents the same features as the vegetation of the marshes in the north of Europe on soil moistened by melting snow.*

Before we leave the plains of Cumana, and the breccia, or calcareous sandstone, which constitutes the soil of the seaside, we will describe the different strata of which this very recent formation is composed, as we observed it on the back of the hills that surround the castle of San Antonio.

The breccia, or calcareous sandstone, is a local and partial formation, peculiar to the peninsula of Araya, the coasts of Cumana, and Caracas. We again found it at Cabo Blanco, to the west of the port of Guayra, where it contains, besides broken shells and madrepores, fragments, often angular, of quartz and gneiss. This circumstance assimilates the breccia to that recent sandstone called by the German mineralogists *nagelfluhe*, which covers so great a part of Switzerland to the height of a thousand toises, without presenting any trace of marine productions. Near Cumana the formation of the calcareous breccia contains:—1st, a compact whitish grey limestone, the strata of which, sometimes horizontal, sometimes irregularly inclined, are from five to six inches thick; some beds are almost unmixed with petrifications, but in the greatest part the cardites, the turbinites, the ostracites, and shells of small dimension, are found so closely connected, that the calcareous matter forms only a cement, by which the grains of quartz and the organized bodies are united: 2dly, a calcareous sandstone, in which the grains of sand are much more frequent than the petrified shells; other strata form a sandstone entirely free from organic fragments, yielding but a small effervescence with acids, and enclosing not lamellæ of mica, but nodules of compact brown iron-ore: 3d, beds of indurated clay containing selenite and lamellar gypsum.

The breccia, or agglomerate of the sea-coast, just described, has a white tint, and it lies immediately on the calcareous formation of Cumanacoa, which is of a bluish grey. These two rocks form a contrast no less striking than the molasse (bur-stone) of the Pays de Vaud, with the calcareous limestone of the Jura. It must be observed, that, by contact of

* Wahlenberg, de Vegetatione Helvetiæ, et summi Septentrionis, pp. 47, 59.