

issue from those mountains, those of Las Trincheras ( $90\cdot4^\circ$ ) on its southern slope, and those of Onoto and Mariara on its southern slope. The former issue from a granite with large grains, very regularly stratified; the latter from a rock of gneiss. What especially characterizes the northern chain, is a summit which is not only the loftiest of the system of the mountains of Venezuela, but of all South America, on the east of the Andes. The eastern summit of the Silla of Caracas, according to my barometric measurement made in 1800, is 1350 toises high,\* and notwithstanding the commotion which took place on the Silla during the great earthquake of Caracas, that mountain did not sink 50 or 60 toises, as some North American journals asserted. Four or five leagues south of the northern chain (that of Mariara, la Silla, and Cape Codera,) the mountains of Guiripa, Ocumare, and Panaquire, form the southern chain of the coast, which stretches in a parallel direction from Guigue to the mouth of the Rio Tuy, by the Guesta of Yusma, and the Guacimo. The latitudes of the Villa de Cura and San Juan, so erroneously marked on our maps, enabled me to ascertain the mean breadth of the whole Cordillera of Venezuela. Ten or twelve leagues may be reckoned as the distance from the descent of the northern chain which bounds the Caribbean Sea, to the descent of the southern chain bounding the immense basin of the Llanos. This latter chain, which also bears the name of the Inland Mountains, is much lower than the northern chain; and I can hardly believe that the Sierra de Guayraima attains the height of 1200 toises.

The two partial chains, that of the interior, and that

only  $44\cdot5^\circ$ , and the bubbles of air which are disengaged at intervals, are at Onoto, as well as in the thermal waters of Mariara, pure nitrogen. The waters of Mariara (244 toises) have a faint smell of sulphuretted hydrogen; they leave, by evaporation, a slight residuum, that yields carbonic acid, sulphuric acid, soda, magnesia, and lime. The quantities are so small that the water is altogether without taste. In the course of my journey, I found only the springs of Cumangillas hotter than the thermal waters of Las Trincheras: they are situated on the south of Porto Cabello. The waters of Comangillas are at the height of 1040 toises, and are alike remarkable for their purity, and their temperature of  $96\cdot3^\circ$  cent.

\* The Silla of Caracas is only 80 toises lower than the Canigou in the Pyrenees.