

of water; the goats for want of grass died by hundreds. During our stay at the Orinoco, the order of the seasons seemed to be entirely changed. At Araya, Cochen, and even in the island of Margareta, it had rained abundantly; and those showers were remembered by the inhabitants in the same way as a fall of aërolites would be noted in the recollection of the naturalists of Europe.

The Indian who was our guide scarcely knew in what direction we should find the alum; he was ignorant of its real position. This ignorance of localities characterises almost all the guides here, who are chosen from among the most indolent class of the people. We wandered for eight or nine hours among rocks totally bare of vegetation. The mica-slate passes sometimes to clay-slate of a darkish grey. I was again struck by the extreme regularity in the direction and inclination of the strata. They run north 50° east, inclining from 60° to 70° north-west. This is the general direction which I had observed in the gneiss-granite of Caracas and the Orinoco, in the hornblende-slates of Angostura, and even in the greater part of the secondary rocks we had just examined. The beds, over a vast extent of land, make the same angle with the meridian of the place; they present a parallelism, which may be considered as one of the great geologic laws capable of being verified by precise measures. Advancing toward Cape Chuparuparu, the veins of quartz that cross the mica-slate increase in size. We found some from one to two toises broad, full of small fasciculated crystals of rutile titanite. We sought in vain for cyanite, which we had discovered in some blocks near Maniquarez. Farther on, the mica-slate presents not veins, but little beds of graphite or carburetted iron. They are from two to three inches thick, and have precisely the same direction and inclination as the rock. Graphite, in primitive soils, marks the first appearance of carbon on the globe,—that of carbon uncombined with hydrogen. It is anterior to the period when the surface of the earth became covered with monocotyledonous plants. From the summit of those wild mountains there is a majestic view of the island of Margareta. Two groups of mountains already mentioned, those of Macanao, and La Vega de San Juan, rise from the bosom of the waters. The capital of