

made an excursion thither on a cool and misty morning. The waters, which are loaded with sulphuretted hydrogen, issue from a quartzose sandstone, lying on compact limestone, the same as that we had examined at the Morro. We again found in this limestone intercalated beds of black hornstein, passing into kieselschiefer. It is not, however, a transition rock; by its position, its division into small strata, its whiteness, and its dull and conchoidal fractures, (with very flattened cavities), it rather approximates to the limestone of Jura. The real kieselschiefer and Lydianstone, have not been observed hitherto except in the transition-slates and limestones. Is the sandstone, whence the springs of the Bergantin issue, of the same formation as the sandstone of the Impossible and the Tumiriquiri? The temperature of the thermal waters is only 43.2° cent. (the atmosphere being 27°). They flow first to the distance of forty toises over the rocky surface of the ground; then they rush down into a natural cavern; and finally they pierce through the limestone, to issue out at the foot of the mountain, on the left bank of the little river Narigual. The springs, while in contact with the oxygen of the atmosphere, deposit a good deal of sulphur. I did not collect, as I had done at Mariara, the bubbles of air that rise in jets from these thermal waters. They no doubt contain a large quantity of nitrogen; because the sulphuretted hydrogen decomposes the mixture of oxygen and nitrogen dissolved in the spring. The sulphurous waters of San Juan, which issue from calcareous rock, like those of the Bergantin, have also a low temperature, (31.3°); while in the same region, the temperature of the sulphurous waters of Mariara and Las Trincheras (near Porto Cabello), which gush immediately from gneiss-granite, is 58.9° the former, and 90.4° the latter. It would seem as if the heat which these springs acquire in the interior of the globe, diminishes in proportion as they pass from primitive to secondary superposed rocks.

Our excursion to the Aguas Calientes of Bergantin ended with a vexatious accident. Our host had lent us one of his finest saddle-horses. We were warned at the same time not to ford the little river of Narigual. We passed over a sort of bridge, or rather some trunks of trees laid