

and augite ; an augitic porphyry. He found neither pumice-stone nor obsidian. Although Chimborazo has no actual appreciable crater, the volcanic forces are not extinguished in its womb. Subterranean noises are frequently heard, and shocks of more or less violence convulse the earth. But the natives, accustomed to these phenomena, manifest no alarm.

We pass on to the second ascent of Chimborazo, made about thirty years later (December 1831), by Boussingault, the eminent French traveller and naturalist.

After having completed some valuable physical and geodesical researches in the Andes, Boussingault was resting from his fatigues at Riobamba. The considerable elevation of the plateau on which it is situated, gives to that town a barren and wintry aspect. Against the horizon is displayed a panorama of snowy summits, upon which all the great meteorological phenomena are successively exhibited in their full magnificence—as, for instance, the storm midway up the mountain's colossal side ; clouds charged with electricity, forming at intervals around the aspiring pinnacles of each mighty peak, and acting as electric condensers ; a twilight produced suddenly, and in open day, by a veil of mist, which in a few moments spreads over the whole line of horizon. Thus, then, in this imposing framework are collected the grandest pictures of the wild and savage nature of the Andes.

After watching so magnificent a spectacle, M. Boussingault not unnaturally felt desirous to terminate his scientific labours by the ascent of Chimborazo, in the hope of discriminating more accurately than Humboldt had done the constituents of the mountain, and obtaining the mean temperature of a very lofty American position. Colonel Hall, who had been his companion in his previous excursions, agreed to join him also on this occasion.

Viewed from Riobamba, Chimborazo \* offers two very different slopes—the one, facing the Arénal, very abrupt ; the other, descending towards Chillapalla, much more gradual. It was on this side Boussingault resolved to make his attempt.

On the 14th December 1831, Boussingault and his companion took up their quarters for the night at the farm of Chimborazo, which lies on the mountain-side fully 12,400 feet above the sea ; and on the morning of the 15th they started, escorted by Indian guides—indifferent guides always, and on whom no reliance can be placed that they will ascend to any considerable height.

Following a limpid brook which flowed shut in by two vertical walls of trachyte, they arrived, not without much difficulty, at an elevation equal to that of Mont Blanc. There they deemed it prudent to cover their faces with veils of taffeta, to avoid the injurious effects on the skin of the solar rays reflected by the ice.

Next they found themselves compelled to climb a narrow ridge which led to a trachyte rock completely bare of snow ; but to reach it, they had to cut their way

\* The word "Chimborazo" signifies "snow of Chimbo;" the termination *razo*, which is found in the names of other mountains, meaning simply "snow."