

of the Andes which struck me most, as contrasted with the other mountain chains with which I am acquainted, were—the flat fringes sometimes expanding into narrow plains on each side of the valleys—the bright colors, chiefly red and purple, of the utterly bare and precipitous hills of porphyry—the grand and continuous wall-like dikes—the plainly-divided strata which, where nearly vertical, formed the picturesque and wild central pinnacles, but, where less inclined, composed the great massive mountains on the outskirts of the range—and lastly, the smooth conical piles of fine and brightly-colored detritus, which sloped up at a high angle from the base of the mountains, sometimes to a height of more than 2,000 feet.

I frequently observed, both in Tierra del Fuego and within the Andes, that where the rock was covered during the greater part of the year with snow it was shivered in a very extraordinary manner into small angular fragments. Scoresby¹ has observed the same fact in Spitzbergen. The case appears to me rather obscure: for that part of the mountain which is protected by a mantle of snow must be less subject to repeated and great changes of temperature than any other part. I have sometimes thought that the earth and fragments of stone on the surface were perhaps less effectually removed by slowly percolating snow-water² than by rain, and therefore that the appearance of a quicker disintegration of the solid rock under the snow was deceptive. Whatever the cause may be, the quantity of crumbling stone on the Cordillera is very great. Occasionally in the spring great masses of this detritus slide down the mountains and cover the snowdrifts in the valleys, thus forming natural ice-houses. We rode over one, the height of which was far below the limit of perpetual snow.

¹ Scoresby's *Arctic Regions*, vol. i. p. 122.

² I have heard it remarked in Shropshire that the water, when the Severn is flooded from long-continued rain, is much more turbid than when it proceeds from the snow melting on the Welsh mountains. D'Orbigny (tom. i. p. 184), in explaining the cause of the various colors of the rivers in South America, remarks that those with blue or clear water have their source in the Cordillera, where the snow melts.