

convinced myself that it is composed entirely of magnificent plates (*lames*) of granite, perpendicular to the horizon, and ranging from east to west. I had, formerly, been induced to believe, that these plates were folded round the peak, like the leaves of an artichoke, but this was an optical illusion, when seen imperfectly from below: here, where the eye could as it were, dart down into the interior structure of the mountain, the plates of rock appeared regularly parallel in a direct line." "I was also," says Saussure, "particularly desirous of ascertaining, whether the vertical beds were composed of the same substances at their summits as at their bases, where I had so frequently inspected them; and, I am perfectly satisfied, from actual examination, that they preserve the same nature through their whole extent, and are the same at the summit as below."* *Voyages dans les Alpes*, tome iv.

The inference drawn by Saussure, respecting the vertical position of the beds of granite that compose a principal part of Mont Blanc and the adjoining mountains, is, that they were originally horizontal, and have been subsequently elevated by some tremendous convulsion of nature. The summit of Mont Blanc, he says, must, at one time, have been more than two leagues under the surface. To the same convulsion he attributes also, the position of the escarpments or steep sides of the rocks which for a considerable extent, face Mont Blanc, and then turn from it in an opposite direction. This would be the case, had the surface of the globe been broken and elevated in the manner he supposes. There is a circumstance stated by Saussure, which tends strongly to confirm, if not absolutely to prove the truth of his hypothesis. Some of the vertical beds of rock, adjacent to the granite contain round pebbles, boulders, and water worn pieces of the lower rocks. See observations on these beds, Chap. IV. It is impossible to conceive that those rounded fragments could have been placed in a vertical position; for, if they be really pebbles and boulders, the beds on which they occur must, originally, have been nearly horizontal. Now as these beds are, at present, placed between others which are also vertical, and in the same range, it follows, that the whole have been overturned and thrown up, at a period subsequent to their formation.†

The Himmaleh Mountains in the centre of Asia, rise ten thousand feet higher than any mountains in the Alps, but, where their

* The extreme fatigue and exhaustion which Saussure experienced during the ascent of Mont Blanc, is supposed to have abridged the life of this active and intelligent philosopher. It may amuse the reader to be told, that Saussure, during his excursions in the Alps, wore a full dressed scarlet coat and gold laced hat. He informs us, that when he was seated on Mont Breven, the lace of his hat attracted the electric fluid from a passing cloud, and occasioned a hissing sound. *Tempora mutantur, et nos, &c.*

† Saussure says expressly, that the boulders in the rocks near Mont Blanc, are precisely similar to the boulders on the shores of the lake of Geneva.