

the strata by which they were once covered: this constitutes what is called a denudation. Instances of such denudations are of frequent occurrence.

Mountains, except those formed by volcanoes, are seldom, isolated masses rising from a plain, but they form groups, or are arranged together in a certain direction, and compose long and lofty ridges, denominated mountain chains. Lower ranges of mountains, running in the same direction as the principal range, and separated by valleys of greater or less width, may be observed accompanying almost all very lofty mountain chains. This fact appears to indicate the operation of a powerful elevating force, acting in one direction along a certain line, and decreasing in intensity as the distance from each side of this line increases; but, this action does not appear to extend with equal force on both sides of the line, for the smaller chains parallel to the great chain are seldom so numerous on one side of it as on the other. The principal mountain chain, if very large, has its sides furrowed by small lateral valleys, and has been, not unaptly, compared to a back bone or spine, with diverging ribs.

The shape of many countries and islands is, evidently determined by the direction of the grand mountain chains that run through them.

The principal mountains in Europe and Asia, when viewed on a large scale, may be considered as forming a mountain chain composed of numerous mountain groups, and extending, in an easterly direction, from Cape Finisterre in Spain, to the most eastern extremity of Asia. Various parts of this chain receive different denominations in the different countries through which they pass. The Pyrenees, the Alps, Mount Taurus, Mount Caucasus, the Altaic and the Himmaleh mountains, and the Yabblonnoy mountains of Tartary, which extend nearly to Behring's Straits, may be regarded as forming, together, one immense mountain chain, and dividing the northern from the southern dry land, both in Europe and Asia.

In North and South America, one unbroken chain of mountains, runs in a northerly and southerly direction, for eight thousand miles, near the western side of that vast continent, and with some minor diverging chains, has evidently determined the general outline of both countries.

A remarkable similarity occurs in the position of the escarpments, or steep sides of mountains, in the same mountain range. Various opinions have been formed respecting the law which the position of the escarpments appears to follow, but, I believe the rule I submitted to the attention of geologists in the first edition of this work, will be found to approximate to the truth.

Mountain chains or ranges present the steepest declivities on the sides nearest to the sea. This is remarkably the case in the long chain of the Alleghany mountains on the eastern side of America, which are steep towards the Atlantic. On the contrary, the Rocky Mountains, which run near the northwest coast, and the Andes, near