

one uniform direction, being parallel to each other within a few degrees of the compass, even when situated in remote regions; but the chains thrown up at different periods have, for the most part, different directions.

“4thly. Each ‘revolution,’ or as it is sometimes termed, ‘frightful convulsion,’ has fallen in with the date of another geological phenomenon; namely, ‘the passage from one independent sedimentary formation to another,’ characterized by a considerable difference in ‘organic types.’

“5thly. There has been a recurrence of these paroxysmal movements from the remotest geological periods; and they may still be reproduced, and the repose in which we live may hereafter be broken by the sudden upthrow of another system of parallel chains of mountains.

“6thly. We may presume that one of these revolutions has occurred within the historical era, when the Andes were upheaved to their present height; for that chain is the best defined and least obliterated feature observable in the present exterior configuration of the globe, and was probably the last elevated.

“7thly. The instantaneous upheaving from the ocean of great mountain masses must cause a violent agitation in the waters; and the rise of the Andes may, perhaps, have produced that transient deluge which is noticed among the traditions of so many nations.

“Lastly. The successive revolutions above mentioned cannot be referred to ordinary volcanic forces, but may depend on the secular refrigeration of the heated interior of our planet.”\*

Several of the topics enumerated in the above summary will be discussed in the 14th chapter, and I shall now confine myself to what I conceive to be the insufficiency of the proofs adduced in favour of the suddenness of the upthrow, and the contemporaneousness of the origin of the parallel chains referred to. At the same time I may remark, that the great body of facts collected together by M. de Beaumont will always form an invaluable addition to our knowledge, tending as they do to confirm the doctrine that different mountain-chains have been formed in succession, and indicating, at the same time, that there are certain determinate lines of direction or strike in the strata of various countries.

The following may serve as analysis of the evidence on which the new theory depends. “We observe,” says M. de Beaumont, “when we attentively examine nearly all mountain-chains, that the most recent rocks extend horizontally up to the foot of such chains, as we should expect would be the case if they were deposited in seas or lakes, of which these mountains have partly formed the shores; whilst the other sedimentary beds, tilted up, and more or less contorted, on the flanks of the mountains, rise in certain points even to their highest crests.”†

\* Ann. des Sci. Nat., Septembre, Novembre, et Décembre, 1829. Revue Française, No. 15. May, 1830. The latest edition of M. de Beaumont's theory will be found in the 4th vol. of the

Bulletin de la Société Geol. de France, p. 864. May, 1847.

† Phil. Mag. and Annals, No. 58., New Series, p. 242.