

After these general remarks on the divisions of Geological time, I now propose to take up the characteristic features and succession of events in American Geology.

In the outset we are struck with the comparative simplicity of the North American continent, both in form and structure. In *outline*, it is a triangle, the simplest of mathematical figures; in *surface*, it is only a vast plain lying between two mountain ranges, one on either border, the Appalachian from Labrador to Alabama on the east, the Rocky Mountains on the west; and on its *contour* it has water, east, west, north and south.

Observe too that its border heights are proportioned to the size of the oceans. A *lofty* chain borders the Pacific, a *low* one the narrow Atlantic, while the small Arctic sea is faced by no proper mountain range.

This principle, that the highest mountains of the continents face the largest oceans, is of wide application, and unlocks many mysteries in physical geography. South America lies between the same oceans as North America: it has its eastern low range, its western Andes; and as the oceans widen southward, the continent is there pinched up almost to a narrow mountain ridge. It differs from North America in having a large expanse of ocean, the Atlantic, on the north; and, correspondingly, it has its northern mountain ridges. The world is full of such illustrations, but I pass them by.

This simplicity of ocean boundary, of surface features, and of outline, accounts for the simplicity of geological structure in North America. We may make indeed the wider statement, that all these qualities are some way connected with the positions and extent of the oceans, they seeming to point to the conclusion, that the subsidence of the oceanic basins had determined the continental features; and that farther, both results were involved in the earth's gradual refrigeration, and consequent contraction.

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also have been so.—2nd, *Graphite* is a common mineral in some of the crystalline rocks, and graphite is known to result from the alteration by heat of the carbon of plants.—3rd, the Huronian rocks, according to Sir W. E. Logan, actually contain some small seams of anthracite.—4th, *Vegetation*, as it is directly or indirectly the food of animals, should necessarily have preceded animal life.—With reference to the statement in the text above, it should be noted that vegetation has been observed growing among the Geysers of Iceland, in waters having a temperature of 180° F.; and the writer has seen a case of similar kind, on Luzon, one of the Philippines, where the temperature was 160° F. This is much beyond the limit, which the eggs of animals can endure and survive.