

*Morphology of the Earth's Surface.*—In a general way Strabo, Seneca, and Ptolemy had discussed the geographical distribution and individual forms of the elements that make up the surface configuration of our globe. But the works of Cluverius, Nathanael Carpenter, Kircher, and Varenius in the seventeenth century, contain the earliest attempts at systematic treatment of surface forms according to their mode of origin. From the seventeenth century to the present day the study of the earth's configuration may be said to have gone hand in hand with that of geology, for the theories which at any time prevailed amongst geologists were not without influence upon contemporary views regarding the surface forms.

Hutton and Playfair drew attention to the marked effects of water and heat upon the earth's surface; and Werner and his followers showed the connection between the geological structure of the ground and the particular distribution of surface forms—continents, islands, mountain-chains, solitary mountains, plateaux, valleys, etc. The first accurate and convincing proofs of the relation between geological structures and the shapes of mountains were given by Pallas and by De Saussure, who was the first to carry out the complete ascent of Mont Blanc.

As our geographical knowledge widened, the necessity made itself felt of grouping the scattered and fragmentary facts together and deriving from them some general principles of surface morphology. An effort in this direction was made towards the end of the eighteenth century by Reinhold Forster, whose *Bemerkungen auf einer Reise um die Welt* (1783) contained a formal treatment of such features as the shape of the continents, the structure and position of islands, coastal forms, and coral reefs.

But the ever-increasing love of travel found its first inspired scientific exponent in the great Humboldt, whose wonderful descriptions of his personal impressions of natural landscapes and form were as artistic as his classification and distinction of structural types in tropical America and in Central Asia were masterly. Humboldt's writings bore essentially the stamp of an eye-witness, and were concrete in character. The works of Carl Ritter, his *Erdkunde* and books of travel, were abstruse and teleological, the works of a student and thinker. Richthofen writes of him: "Never have all the known facts regarding a group of geographical areas, never