

gestive ideas which were not without their influence in directing subsequent investigation to the causes of great climatological variations.

Humboldt, who was in possession of large private means, now began to make arrangements for a few years of travel on a large scale, and went in May 1798 to Paris. In June 1799, accompanied by the botanist Aimé Bonpland, he set out for Central and South America.

The expedition was undertaken primarily to obtain more knowledge of the physical geography and botany of tropical regions, but Humboldt at the same time devoted a large share of attention to the volcanoes, earthquakes, and geological structure of the New Continent. He said that one of the chief motives of his journey was to test a hypothesis which he had formed—that the older strata composing mountain-systems had a parallel strike. It had struck him during his stay in the Fichtel mountains that the older members in the rock-succession showed always a N.E.–S.W. strike; and he found the same general strike in the Erz mountains, the Salzburg Alps, and the “slate” mountains of the Rhine. He had therefore concluded that all the older rock-formations of the earth strike in N.E.–S.W. direction, and cross the meridians at a constant angle of about 52° .

His observations in Columbia and in the coastal ranges of the Gulf of Mexico led to the same result, and from this agreement he drew the general principle that the strike of the older strata was quite independent of the geographical trend of mountain-systems, and was regulated by a force which took its origin in the original laws of attraction governing terrestrial matter. This principle has, however, proved quite untenable, and is at the present day completely forgotten.

After a short stay in Teneriffe, Humboldt landed at Venezuela, and in November 1799 for the first time witnessed an earthquake at Cumana. He made a detailed study of Venezuela, then spent some time in the Orinoco district, and was in Cuba from December 1800 until March 1801. Afterwards he proceeded to New Granada, Peru, and Ecuador, where he remained until 1803, then worked for a year in Central America. In the summer of 1804 he returned by Havana and North America to Paris. There he became at once absorbed in physical and chemical studies, conducted along with Biot, Gay Lussac, and Arago, and he also com-