

and with a geographical sketch of the universe, or, I would rather say, a true *map of the world*, such as was traced by the bold hand of the elder Herschel. If, notwithstanding the smallness of our planet, the most considerable space and the most attentive consideration be here afforded to that which exclusively concerns it, this arises solely from the disproportion in the extent of our knowledge of that which is accessible and of that which is closed to our observation. This subordination of the celestial to the terrestrial portion is met with in the great work of Bernard Varenius,* which appeared in the mid-

* *Geographia Generalis in qua affectiones generales telluris explicantur*. The oldest Elzevir edition bears date 1650, the second 1672, and the third 1681; these were published at Cambridge, under Newton's supervision. This excellent work by Varenius is, in the true sense of the words, a physical description of the earth. Since the work *Historia Natural de las Indias*, 1590, in which the Jesuit Joseph de Acosta sketched in so masterly a manner the delineation of the New Continent, questions relating to the physical history of the earth have never been considered with such admirable generality. Acosta is richer in original observations, while Varenius embraces a wider circle of ideas, since his sojourn in Holland, which was at that period the center of vast commercial relations, had brought him in contact with a great number of well-informed travelers. *Generalis sive Universalis Geographia dicitur quæ tellurem in genere considerat atque affectiones explicat, non habita particularium regionum ratione*. The general description of the earth by Varenius (*Pars Absoluta*, cap. i.-xxii.) may be considered as a treatise of comparative geography, if we adopt the term used by the author himself (*Geographia Comparativa*, cap. xxxiii.-xl.), although this must be understood in a limited acceptation. We may cite the following among the most remarkable passages of this book: the enumeration of the systems of mountains; the examination of the relations existing between their directions and the general form of continents (p. 66, 76, ed. Cantab., 1681); a list of extinct volcanoes, and such as were still in a state of activity; the discussion of facts relative to the general distribution of islands and archipelagoes (p. 220); the depth of the ocean relatively to the height of neighboring coasts (p. 103); the uniformity of level observed in all open seas (p. 97); the dependence of currents on the prevailing winds; the unequal saltness of the sea; the configuration of shores (p. 139); the direction of the winds as the result of differences of temperature, &c. We may further instance the remarkable considerations of Varenius regarding the equinoctial current from east to west, to which he attributes the origin of the Gulf Stream, beginning at Cape St. Augustin, and issuing forth between Cuba and Florida (p. 140). Nothing can be more accurate than his description of the current which skirts the western coast of Africa, between Cape Verde and the island of Fernando Po in the Gulf of Guinea. Varenius explains the formation of sporadic islands by supposing them to be "the raised bottom of the sea:" *magna spirituum inclusorum vi, sicut aliquando montes e terra protusos esse quidam scribunt* (p. 225). The edition published by Newton in 1681 (*auctior et emendatior*) unfortunately contains no additions from this great authority; and there is not even mention made of the polar compression of the globe, al-