

did not find favour with scientific or seafaring men, with the exception of the name of "Great Ocean," which he gave to the Pacific.

The simplest manner of studying the relief of the globe is by dividing the land into drainage basins, separated by ridges whose infinite ramifications cover the continents with a natural network. Upon this primitive fact the French geographer bases all his theories of general geography. Doubtless Buache's ideas are fundamentally true, but they have one fault: like all theories which precede observation, they strain the facts and exaggerate the deductions. They are, nevertheless, a first step in the right direction towards a scientific method, founding geography no longer on an abstract line, but on the real form and relief of each region.

Buache's oceanic nomenclature was soon abandoned, but his conception of submarine mountains found more or less favour with Alex. von Humboldt, Bergman, Kant, Gatterer, Ritter, and Leopold von Buch. Börsch, in his work on Orography,<sup>1</sup> opposes these ideas, saying:—"The mountains which reach the shore should not be considered as being united with those running in the same direction in islands or in other continents." Hiekisch,<sup>2</sup> on the other hand, thinks that although this proposition may be correct, it must not be taken in too absolute a sense, for the chain of mountains in the island of Nova Zembla should be considered as a prolongation of the Ural Mountains. Deep-sea soundings have proved that it is only in the vicinity of continental coasts and islands that the floor of the sea may be considered as a prolongation of the neighbouring land; these soundings have taught us to form a more correct idea of the orography of the sea, and have reduced hypothetical conceptions to their real value.

With the discovery of America and the circumnavigation of Africa a new era opened for navigation. Endeavours were immediately made to find more accurate methods of ascertaining the position of vessels in the open sea, and more care was bestowed on the construction of charts and the errors of the compass. The voyage of the Astronomer-Royal, Halley, in 1699, was undertaken solely with these objects in view, and was followed by the construction of a variation chart, and proposals for finding longitudes from occultations of fixed stars.

PROGRESS OF  
CARTOGRAPHY IN  
THE SIXTEENTH,  
SEVENTEENTH,  
AND EIGHTEENTH  
CENTURIES.

We have seen that the art of drawing up maps was cultivated in the fourteenth and fifteenth centuries by the seafaring nations of the Mediterranean, and marine charts improved more rapidly than maps of the land. In the sixteenth century this art passed into the hands of the Spaniards and Portuguese; about the middle of that century the German draughtsmen took the lead; towards the end of the sixteenth and during the seventeenth centuries the Dutch and Flemish map-makers flourished, and were afterwards superseded by the French.

<sup>1</sup> Börsch, Von den Unebenheiten des festen Landes, insbesondere von Gebirge, Marburg, 1817, p. 16.

<sup>2</sup> Hiekisch, Das System des Urals, Dorpat, 1882, p. 229.