masses by rather large openings, or by narrow passages thus forming inland seas or mediterraneans; gulfs, on the other hand, open widely towards the sea. These subdivisions were accepted by several hydrographers of his time.

The famous French hydrographer, C. F. Claret de Fleurieu,[1] in 1769, made, at the request of the Académie des Sciences, a voyage for the trial of the chronometers of Berthoud and Leroy. This voyage, and the one undertaken with the same object in 1771–1772 by Borda, de Verdun, and Pingré, are not only of importance from having improved the methods of determining longitudes at sea, but also from the considerable improvement effected in the charts of the Atlantic Ocean and North Sea, which till then were very imperfect. The construction of the quadrant by Hadley, of the sextant by Dollond, the measurement of an arc of the meridian in South America, the appointment of a board of longitude, the conception of the nautical almanac, and the formation of a surveying branch of the naval service, all belong to the same period.

Improvement in Methods of determining Positions at Sea.

Fleurieu wrote the introduction to Marchand's voyage,[2] and drew up along with Louis XVI. the instructions for La Perouse's voyage. The cruise of Marchand in 1791 along the north-west coast of America, though undertaken in a purely commercial spirit, added a few new facts to the knowledge of the archipelagoes in the Pacific Ocean, and materially improved the map of the Marquesas Islands; but the greatest interest of the narrative lies in Fleurieu's introduction, containing his views on hydrography. Fleurieu had two objects:—"My first aim," he says, "has been to bring back hydrographic divisions of the seas to natural principles, and to reform the erroneous qualifications and denominations given to them. My second object will be to rectify the hydrographic nomenclature, and to give each portion of the sea-border, in both continents, such names as are best suited to them." The earth is considered by the French hydrographer as formed of two continental masses and a universal sea. "The Ocean is one, it is infinite, its waters surround our planet from one pole to the other, and are equalised over the whole surface of the ocean." The two terrestrial continental masses advance into the ocean so as to divide the latter into two vast regions of unequal surface: the Atlantic Ocean between the western coasts of the Old World and the eastern coast of America, and the second ocean considerably larger, extending between the west coast of the New World and the east coast of the Old. He looks upon the Malay Archipelago and the great Australian lands as the remains of a terrestrial mass, once united to the south of Asia, which the mighty ocean ruptured. The Indian Ocean is included in his Great Ocean. He recognises besides a frozen Arctic Sea and an Antarctic Sea limited, as in most modern maps, by the polar circles. He placed the limits

Nomenclature of the Oceans by Fleurieu.

[1] Fleurieu, Voyage fait par ordre du Roi pour éprouver en mer les horloges, Paris 1783.

[2] Voyage autour du Monde par E. Marchand, précédé par les observations sur la division hydrographique du globe, et changements proposés dans la nomenclature générale et particulière de l'hydrographie, par Cl. Fleurieu, tom. iv. pp. 1–74, Paris l'an viii.