

of the present day, and the same may be said of the general superficial outlines of the other oceans.

Among the more important marine Expeditions which added to our knowledge of the ocean between the time of Cook and the Challenger Expedition may be mentioned<sup>1</sup>—The “Boussole” (French), La Perouse (1785–1788); the “Recherche” and “L’Espérance” (French), D’Entrecasteaux, in search of La Perouse (1791–1793); the “Neva” (Russian), Captain Krusenstern accompanied by Horner and Kotzebue (1803–1806); the “Rurik” (Russian), Captain Kotzebue accompanied by Chamisso (1815–1818); the “Coquille” (French), Captain Duperrey (1822); the “Jane” and “Beaufoy” (British), Captain Weddell (1822–1824); the “Predprijatje” (Russian), Captain Kotzebue accompanied by Lenz and Eschscholz (1823–1826); the “Blossom” (British), Captain Beechey (1825–1828); the “Ssenjavin” (Russian), Captain Lütke accompanied by Erman (1826–1828); the polar voyages of Parry, John Ross, and Scoresby (British, 1806–1827); the “Astrolabe” (French), Captain Dumont d’Urville (1826–1829); the “Adventure” and “Beagle” (British), Captain Fitzroy accompanied by Darwin (1831–1836); the “Princess Louise” (German), Captain Wendt accompanied by Meyen (1830–1832); the “Bonite” (French), Captain Vaillant (1836); the “Venus” (French), Captain Dupetit-Thouars (1836–1839); the “Astrolabe” (French), Captain Dumont d’Urville, and the “Zélée,” Captain Jacquinot (1837–1840); the “Porpoise” (American), Captain Wilkes accompanied by Dana (1839–1842); the “Erebus” and “Terror” (British), Captain Sir James Clark Ross accompanied by Hooker (1839–1843); the “Sulphur” and “Samarang” (British), Captain Belcher (1837–1846); the “Herald” (British), Captain Kellet (1845–1851); the “Rattlesnake” (British), Captain Stanley and Lieutenant Dayman accompanied by Huxley (1846–1850); the “Novara” (Austrian), Admiral von Wüllerstorff-Urbair (1857–1860); the “Bull-dog” (British), Captain M’Clintock accompanied by Wallich (1860). (For subsequent Expeditions see page 101 *et seq.*, and for tracks of voyages, see Plates VIII. and IX.)

Cook left little to be done by his successors in regard to the discovery of new lands, but in the records of the splendid set of sea-voyages above enumerated, there are inexhaustible materials dealing with the science of the earth and of man. Investigators gradually directed their attention to the physical and biological conditions of the sea, and to the study of the causes of oceanic phenomena, so that all these voyages added much to our knowledge of terrestrial physics, hydrography, zoology, and botany. We shall now endeavour to indicate the views held by navigators and scientific men on these subjects, from the time of Cook down to the Challenger Expedition.

Buffon in his *Histoire Naturelle*<sup>2</sup> distinguishes oceans, mediterraneans, and gulfs. Oceans are those seas surrounding continents, which occasionally penetrate into the land

<sup>1</sup> For a more complete enumeration of the scientific cruises in the oceans and various seas, the reader is referred to Boguslawski, *Handbuch der Ozeanographie*, Bd. i. pp. 390–400, Stuttgart 1884.

<sup>2</sup> Buffon, *Histoire naturelle, générale et particulière*, tom. ii. p. 101, Paris 1769.