

animals in 1649 ;¹ while Buffon and other authors of less note contributed to the slowly increasing knowledge of littoral and pelagic animals and plants during the fifteenth, sixteenth, and seventeenth centuries. The honour of first employing the dredge as a means of scientific investigation is claimed for two Italians, Marsili and Donati, who about 1750 used an ordinary oyster dredge for obtaining specimens in shallow water. During the nineteenth century the knowledge of marine fauna and flora made, as we shall see, great advances by an extension of this method.

The following account, as told by Boyle, of Sir John Hawkins' observations, is interesting as indicating the views regarding marine life at this period :—

“ Were it not for the Moving of the Sea, by the Force of Winds, Tides and Currents, it would corrupt all the World. The Experience of which I saw *Anno* 1590, lying with a Fleet about the Islands of *Azores*, almost Six Months, the greatest Part of the time we were becalmed, with which all the Sea became so replenished with several sorts of Gellies and Forms of Serpents, Adders and Snakes, as seem'd Wonderful ; some green, some black, some yellow, some white, some of divers Colours, and many of them had Life, and some there were a Yard and a-half, and some two Yards long ; which had I not seen, I could hardly have believed ; and hereof are witnesses all the Company of the Ships, which were then present, so that hardly a Man could draw a Bucket of Water clear of some Corruption.”²

A SIXTEENTH
CENTURY DESCRIPTION
OF PELAGIC
LIFE.

The first notable account of marine algæ is Sir Hans Sloane's in his *Natural History of Jamaica*. His sea-weeds, however, especially the corallines and calcareous Siphonæ, get mixed up with corals and zoophytes. Other pre-Linnæan botanists enumerate forms similarly confused. Linnæus made no considerable reformation in limiting the organisms described as “ Fuci,” “ Ulva,” “ Spongia,” &c. ; and the earliest serious attempt to deal with algæ is the *Historia Fucorum* of Samuel Gottlieb Gmelin in 1768. This book was followed by Esper's *Abbildungen der Tange*, or *Icones Fucorum* (1797), and, most important of all, Dawson Turner's *Fuci* (1808–1819). However, so late as Lamouroux's *Histoire des Polypiers Coralligenes flexibles vulgairement nommés Zoophytes* (1816), we find the calcareous algæ and zoophytes intermingled. With the gradual shedding out of the zoophytes in the process of producing a natural classification—the work of C. Agardh, Greville, and others—the marine algæ became finally a consolidated natural group.

PROGRESS OF
KNOWLEDGE
RESPECTING
SEA-WEEDS.

E.—THE PROGRESS OF OCEANOGRAPHY FROM THE TIME OF COOK TO THE CHALLENGER EXPEDITION.

VOYAGES OF JAMES
COOK.

The period which opens with the voyages of James Cook, in the second half of the eighteenth century, may be considered as the beginning of the scientific exploration of

¹ Johnston, *Historiæ naturalis de Piscibus et Cetis, Libri v., de Exanguibus aquaticis, Libri iv.*, Francf. 1649, Amst. 1657.

² Boyle's Works, epitomised by Boulton, vol. i. p. 281, London, 1699.