

from whence to Jamaica he observed no alteration in the specific gravity in the least. And in confirmation of this I am likewise informed by one, who for his own satisfaction weighed the water, both under the Aequinoctial and at Cape of Good Hope, and found that the weight of both was the same. To which may be added that it is commonly observed at Mozambique, one of the hottest places in the world, that the sea is so salt there, that it bears up the ships a considerable height out of the water, more than in other places; and that the water may be much saltier in one place than another, by having more salt dissolved in it, does not only appear from what hath been said, but also from what is frequently observed in the different strengths of brine-pits.”<sup>1</sup>

Halley was of opinion that the saltness of the sea was due to the substances carried HALLEY. down in solution by the rivers.

The colour and transparency of sea-water were also the subjects of observation. OBSERVATIONS ON THE TRANSPARENCY OF SEA-WATER. Bouguer, who made experiments on the transparency of the water at Croisic and in the torrid zone, supposes that a depth of 10 feet of water weakens light at most in the proportion of 5 to 3, or perhaps 5 to  $3\frac{1}{2}$ .<sup>2</sup> He says that the depth at which sea-water loses the whole of its transparency will be found to be about 656 feet.<sup>3</sup> It was recognised even then, however, that the transparency varied at the same depth in different seas. Muncke<sup>4</sup> reports the following experiments made last century on board the ship “Coquille” :—“To judge of the transparency of sea-water, we used to tie a string to a board painted white, and would let it down till we could see it no longer. We found that near the island of Waïgion it disappeared from sight at a depth of 59 feet, and with a very bright sky at 75·3 feet; near Port Jackson, 38·3 feet; near New Zealand, 35 feet; and near Ascension between 28 and 36 feet.” There is a very wide divergence in the different statements, for Wood, in 1676, observed mussel shells on the bottom at 80 fathoms, near Nova Zembla, and Admiral Milne records having seen the bottom in the Caribbean Sea at 25 fathoms.

The celebrated experiment of Halley with the diving-bell seems to have led to the COLOUR OF THE SEA. study of the coloration of the sea. Newton said the colour of the sea was green; Marsilli thought it was blue, and explained it by the presence of salt in sea-water. This writer maintained at the same time that the colour varied in the upper and lower strata of the sea.

As regards the knowledge of marine organisms, Gesner in 1558 published the fourth MARINE ORGANISMS. book of his work,<sup>5</sup> which is devoted to the description of fishes and marine animals; and John Johnston, who studied at St. Andrews in 1619, published a treatise on aquatic

<sup>1</sup> Boyle's works, epitomised by Boulton, vol. i. p. 282, London, 1699.

<sup>2</sup> Bouguer, *Traité d'Optique*, p. 64, Paris, 1760.

<sup>3</sup> J. H. Lambert, *Photometria, &c.*, Augsburg 1760.

<sup>4</sup> In Gehler's *Physik. Wörterbuch*, Aufl. 2, Bd. vi. Abth. iii., p. 1708, Leipzig, 1837.

<sup>5</sup> Gesner, *Historiæ Animalium*, Liber iv., Tiguri 1558.