Possidonius on the Size of the Earth.

at 70,000 stadia, which he considered half the circumference on the parallel of Rhodes, concluded that a vessel undertaking a voyage from the west of Spain with an east wind ought to arrive at India after a navigation of 70,000 stadia.[1] We thus find him, like Eratosthenes, speculating on the circumnavigation of the world many centuries before Columbus. He did not doubt that Africa could be circumnavigated, and in support of that view he cites the voyages of Eudoxus.[2] During his sojourn at Gades, he observed not only the daily flux and reflux of the tide, but its monthly variations, which he attributed to the influence of the diverse phases of the moon; he showed, indeed, that the high tides always coincided with the full moon, and the lowest with the last or intermediate quarters of the moon.[3]

Posidonius was the first to record the appearance of a new volcanic island in the Lipari group; his description of the appearances which accompanied the formation of the island does not differ from that given by modern observers of similar phenomena. The movements of the land caused by earthquakes and volcanic outbursts taught him the modifications which the surface of the globe might undergo under the influence of these forces. He even went so far as to admit that the Atlantis of Plato might not be a pure fiction, and that an island, equal to a continent, might really sink into the depths of the ocean by the dislocations to which the earth's crust is subjected.[4]

According to Posidonius, the sea about Sardinia was the deepest of known seas; it had been "measured" down to "somewhere about" 1000 fathoms. It would have been interesting to know the methods employed by the ancients in these deep soundings, but the author gives no information on the subject.[5] This may be considered the first account of a deep-sea sounding, and, for that reason, deserves to be noticed. Before we meet with another observation of this nature many centuries pass away; indeed, not till the time of the celebrated Portuguese navigator, Magellan, do we find a renewal of attempts to sound the deep sea.

The Romans.

When the Romans had extended their dominions to Egypt, they were able to acquire the geographical knowledge possessed by the school of Alexandria, but the genius of this conquering people was not directed towards scientific researches. The science of oceanography was not advanced among them, as among the Greeks, by the speculations of philosophers, by the observation of natural phenomena, or by commercial relations. It seems natural to expect that the Romans, who had carried their arms throughout nearly all the world known to the ancients, should have left some important documents relating to the physical aspects of nature in the regions over which they had extended their sway; few Latin writers have, however, made contributions to

[1] Strabo, ii. 3, 6. This estimate of the circumference of the globe was accepted by the later Greek geographers, and even by the astronomer Ptolemy, in preference to the more correct one of Eratosthenes.

[2] Strabo, ii. 3, 4. [3] Strabo, iii. 5, 8. [4] Strabo, ii. 3, 6.

[5] Strabo, i. 3, 9; see Bunbury, *op. cit.*, vol. ii. pp. 93–100.