

wind was called Hippalus in honour of this navigator. Coast routes, followed up to his time, were abandoned, and a fresh impetus was given to voyages in oriental waters.

Pomponius Mela,<sup>1</sup> who belongs to the same epoch, gives a few details referring to the morphology of the ocean. He points out that four seas are, so to speak, deducted from the great ocean that surrounds the world, and penetrate into the bosom of the land; the Scythian Ocean thus forms the Caspian, arms of the Indian Ocean form the Persian and Arabian Gulfs, and, lastly, a fourth sea runs into the land from the west, but is designated by no special name. Up to this period the Romans had no other appellation for the Mediterranean than that of *Mare Nostrum*.<sup>2</sup> Mela does not even employ the name *Mare Internum*, which is sometimes met with in Pliny's writings. Solinus<sup>3</sup> was the first to make use of the word Mediterranean.<sup>4</sup> Mela refers to the existence of the continent of the Antichthones, in the southern temperate zone, separated from the south of Africa and Asia by the Ethiopian Sea, the Red Sea, and the Indian Ocean, but inaccessible on account of the intervening torrid tract. This hypothetical continent includes the island of Ceylon, and is, indeed, in a sense, an immense extension of that island towards the west.<sup>5</sup> (See Plate IV.)

The philosopher Seneca<sup>6</sup> applied himself with ardour to the study of nature, and his seven books of Physical Investigations (*Quæstiones Naturales*) may be considered as presenting a general view of the knowledge of the ancients concerning the natural sciences. He supposes that the world, at its origin, was a chaos, in which the elements dissolved in the water separated out in the course of time. Igneous action, vigorous at first, became extinguished finally, and there remained only water at the birth of the actual world. He divides the waters of the globe into (1) oceanic waters, which are from all eternity, and form the principal mass, the source from which all others are derived; (2) subterranean waters, which circulate in the faults of the subsoil, and appear at the surface in the form of springs; (3) waters which circulate or remain stagnant on the top of the soil; (4) waters in the form of vapours disseminated in the atmosphere. He has very exact notions on evaporation, but he supposes that all the elements can be derived the one from the other, and that water, in particular, may be derived from earth.<sup>7</sup> The course of the water in the air permits it to level the surface of the earth, and to work incessantly in pulling down that which the volcanic forces have built up; although the action of this element is less striking than that of fire, its effect is not less considerable. In virtue, especially, of its continuous action, water affects the solid bodies which constitute the land by dissolving and disintegrating them and transporting them,

FIRST CENTURY  
A.D.  
SENECA.

SENECA'S VIEWS  
ON EVAPORATION  
AND CHEMICAL  
ACTION OF WATER.

<sup>1</sup> Flourished about 43 B.C.

<sup>2</sup> "Id omne, qua venit, quaque dispergitur uno vocabulo Nostrum Mare dicitur" (i. sec. 6).

<sup>3</sup> Flourished in the third century A.D.

<sup>4</sup> Solinus, c. 24.

<sup>5</sup> See Bunbury, *op. cit.*, vol. ii. p. 353.

<sup>6</sup> Born a few years B.C.

<sup>7</sup> "Quod fiunt omnia ex omnibus, ex aqua aër, ex aëre aqua, ignis ex aëre, ex igne aër; quare ergo non e terra fiat aqua?"