Caspian to be in communication with the external sea. The Nile takes its source in the same external ocean. It is not necessary to dwell on other cosmographical conceptions of the Ionian school; the spherical form of the earth, which must be regarded as the fundamental principle of all scientific geography, was unknown to them. (See Plate I.)

Pythagoras[1] and his followers, however, regarded the earth as a sphere,[2] not from a PYTHAGOREAN study of facts but rather from speculative considerations; they gave the earth a spherical SCHOOL. shape, because they held that form to be the most perfect. It is asserted by some writers that Pythagoras taught to his chosen disciples the true doctrine that the sun occupies the centre of the solar system, and that the earth is only one of the planets revolving around it; and it is further affirmed that this knowledge was acquired from the Egyptians and Chaldeans.[3]

In the fifth century B.C. there appeared one of the most remarkable writers of FIFTH CENTURY antiquity, Herodotus,[4] who abandoned speculative theories and gave his attention to the B.C. observation of facts. He may be considered the founder of the science of physical HERODOTUS. geography, Hecatæus of Miletus being, to some extent, his precursor; for, in addition to the cosmographical ideas we have mentioned above, Hecatæus gives much information concerning the coast towns of the Western Mediterranean. Herodotus had relatively little knowledge of the western regions and seas, while, on the other hand, he gives copious information about the east and north. He had learnt from the Greek merchants of the Pontus Euxinus that, contrary to the view of Hecatæus, the Caspian was entirely isolated from the ocean, and he knew its form and extent. Herodotus gives to the Palus Mæotis[5] an extent nearly equal to the Euxinus, although the latter is at least six times greater. Commentators and geographers, founding upon this estimate of the Greek historian, have concluded that great physical changes have taken place in the region of the Sea of Azov in recent times. Scylax, a century after Herodotus, estimated Lake Mæotis at one-half of that of the Euxinus.[6] Down even to the time of Ptolemy the ancients gave too great dimensions to this little sea. (See Plate II.)

It is not without interest to note that the estimates of the Pontus Euxinus are made in Herodotus by means of the ὀργυιά,[7] corresponding to the fathom (brasse, faden), FATHOMS USED which is always employed by sailors as a measure of depth. "In a long day," he says, TO MEASURE "a ship usually accomplishes about 70,000 fathoms, and about 60,000 in the night." DISTANCES AT SEA. This employment of the word ὀργυιά indicates distinctly that this was not only a bathymetrical measure, but also a nautical measure of length, the place of which has been taken by the modern knot of navigation. Herodotus himself translates fathoms into stadia.[8]

The practical spirit of Herodotus concerned itself only with facts, and he dealt

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[1] Flourished in the sixth century B.C.   [2] Whewell, Hist. of Ind. Sci., ed. 3, vol. i. p. 115, London, 1857.
[3] Harkness, On the Magnitude of the Solar System, *Nature*, vol. i. p. 532.   [4] 484 to 408 B.C.
[5] Sea of Azov.   [6] Scylax, Periplus, 69.   [7] The length of the outstretched arms.
[8] 100 ὀργυιαι, or fathoms, 600 feet = a cable's length = 1 stadium (see Bunbury, *op. cit.*, vol. i. pp. 176 and 209).