

who, at that distant period, had determined the latitude of Massilia with such exactitude, that twenty centuries afterwards Gassendi found it correct to within a few seconds. It is probable that the knowledge which Pytheas possessed in astronomy recommended him to his fellow-citizens as the chief of this expedition, the object of which was to rediscover the sources of the riches brought from distant parts by the Phœnicians and Carthaginians. Not only did Pytheas succeed in his mission, but his cruises yielded much new information concerning the ocean. A second expedition was sent to explore the coasts of Africa under another scientific man, Euthymenes. The records of this voyage are almost wholly lost, but it was reported that Euthymenes reached a river where crocodiles and hippopotami were seen in great numbers.¹

VOYAGE OF
PYTHEAS TO
BRITAIN.

Pytheas sailed round Spain and France to Britain. He appears to have traced out a considerable part of the east coast of Britain and to have visited the German coast on the other side of the North Sea. He brought home accounts of the land, six days' sail beyond Britain, named Thule, a name which he first introduced into ancient geography. He stated that the sea beyond Thule became thick and sluggish, like neither land nor sea, but resembling the substance of the jelly-fish, called *Pulmo marinus*, which he had himself seen; in this description we have the first hint as to the conditions prevailing in Arctic Seas.² He is said to have recorded as a fact that the length of the day at Thule was twenty-four hours at the summer solstice, from which he conceived it as lying under the Arctic circle, or parallel of $66\frac{1}{2}^{\circ}$ N. The Phocæan explorer likewise brought home accounts of the amber coasts, but it does not appear that these accounts, or those concerning Thule, rested on personal observation, or justify us in following those authors who extend the journey of Pytheas to the coasts of Lapland and the Baltic.³

Of the two works which Pytheas wrote, his first, a description of the ocean, has not been preserved; it contained his observations on the north-western countries and on the icy sea. The second, which bears the title of *Periodus* or *Periplus*, contains his voyage to the amber coasts of the Baltic, and has been partially preserved in Pliny, Strabo, and Polybius. Ancient writers do not appear to have been altogether just in their estimate of the learned Massilian. Many of his facts were regarded as being deficient in exactness; the same was said of the observations of Herodotus and Marco Polo, but at the present day the critic has vindicated these observers. There is no doubt that before the time of Pytheas the chart of the seas to the west of Europe was almost a blank, and that down to the time of Strabo it retained the form given it by Pytheas. He was the first investigator of the Atlantic, and by the extent of his observations, as well as by the nature of his researches, the voyages of Pytheas may be considered as true scientific

¹ Athenæus, ii. 87.

² As a matter of fact, this sea is, in addition to jelly-fish, sometimes so encumbered by gelatinous masses of Diatoms that fishermen find it impossible to work their nets.

³ Elton, *Origins of English History*, chap. ii.; Rhys, *Celtic Britain*, London, 1882; Markham, *Geogr. Jour.*, vol. i. p. 523, 1893.