

Christian vessels were no longer safe. It became essential to look towards the external ocean for another route to India, Cathay, the islands of spices, and all the charms and riches of the East.

The revelations of Marco Polo concerning the great Eastern Ocean rendered it necessary to make important changes in Ptolemy's map of Asia. There is evidence that this subject was much discussed in European cities, where some few men took an interest in geographical questions. The great Florentine astronomer, Toscanelli, was apparently the first to give definite shape to the new views, and to discuss in a scientific way the subject of transatlantic lands. In the year 1474 he addressed a letter and a map to the King of Portugal, setting forth clearly that it was possible to reach the land of spices by sailing westward. Years afterwards, probably in 1480, Columbus asked Toscanelli for information concerning the way to the land of spices, which it was thought possible to reach by sea direct from Europe. Toscanelli replied by sending a copy of the letter and map he had previously sent to the King of Portugal, and at the same time encouraging Columbus to undertake the voyage across the Atlantic. Columbus is believed to have taken Toscanelli's map with him on his first voyage. The map has been lost, but has been reconstructed, chiefly from materials furnished by the globe of Martin Behaim, which bears the date of 1492.<sup>1</sup> (For reproduction of Toscanelli's map, see Plate VI.)

Towards the end of the thirteenth century two Genoese galleys are said to have been fitted out with the view of rounding Africa from the west and opening up a route to India; this expedition was unfortunate.<sup>2</sup> In 1346 a sailor of the island of Majorca, Jacques Ferrer, also attempted to follow the west coast of Africa beyond the Canaries, but he was not more successful than the Genoese had been. The Portuguese expeditions of the fifteenth century along the African coasts were, however, the prelude to the grand maritime explorations which resulted in the discovery of America and the circumnavigation of the world. Not content with having expelled the Moors from their territories, the Portuguese followed them across the sea into the continent of Africa. These armed voyages originated a long series of discoveries in the Atlantic.

When, in 1420, Prince Henry the Navigator established his maritime observatory at Sagres, employed the best Italian map-makers and pilots, and commenced to give an impulse to the navigators of Portugal, these were so incompetent that they dared not venture more than six miles from the coast.<sup>3</sup> All the expeditions sent to round Cape Bojador, even up till the year 1433, returned unsuccessful, because a reef extended six miles seawards and barred the passage.<sup>4</sup>

PORTUGUESE  
EXPEDITIONS IN  
THE FIFTEENTH  
CENTURY.

HENRY THE  
NAVIGATOR.

<sup>1</sup> See H. Wagner, Die Rekonstruktion der Toscanelli-Karte v. J. 1474 und die Pseudo-Facsimilia des Behaim-Globus v. J. 1492, *Nachr. d. K. Gesellsch. d. Wiss. z. Göttingen*, Philol.-hist. Kl., 1894, No. 3, p. 208.

<sup>2</sup> The evidence for this expedition of the brothers Vivaldi (in 1291) is considered insufficient by R. H. Major.

<sup>3</sup> See Peschel (*op. cit.*, p. 237) concerning the instruments and methods employed by the Portuguese to determine latitudes at sea.

<sup>4</sup> See R. H. Major, *The Discoveries of Prince Henry the Navigator, and their Results*, ed. 2, p. 68, London, 1877.