

Prince Henry the navigator.

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BETWEEN 711 AND 1249, North African Muslims--Moors--ruled Portugal and Spain. Beginning in 1064, Christian armies made up of French, Spanish, and Portuguese knights began to push the Moors south and finally drove them from Portugal in 1249. For the next 166 years, the Moors attacked Portuguese ships from Ceuta, Morocco, their North African stronghold.

Portugal's King John I was determined to end Moorish sea power. On 25 July 1415, he left Lisbon with two hundred warships. With him were his three sons, Peter, Ferdinand, and twenty-one-year-old Prince Henry.

The appearance of the armada off Ceuta caught the Moors by surprise. The young princes stormed ashore with their troops. Ceuta fell on 24 August 1415. Now Portugal controlled the shipping lanes in and out of the Mediterranean Sea. African gold, jewels, and grain, and Indian spices and rare woods poured into Portuguese markets. But if Portugal were to remain a rich and powerful maritime nation, she had to explore more of Africa and reach India.

Prince Henry wanted to be the one to discover a fast, practical route to the riches of India. And he wanted to find out more about the world, of which so little was known in 1415.

Henry knew that India and China were located to the east, but he did not know how to reach these countries by sea. There were no accurate maps to point sailors in the right direction. Long-distance sea routes had not yet been established. Sailors did not voyage to far-off places. Most captains sailed close to land and usually in daylight. Prince Henry vowed to find a way to sail into distant, unknown waters, seek out what was there, and return--even if it took him his whole life.

To prepare for his expeditions, the young prince went to Cape Saint Vincent, Portugal's most southwesterly point. There, at Sagres, miles from Lisbon and civilization, he built a house and chapel high above the crashing sea. Henry amassed a library of books and maps. He brought ship captains, navigators, mapmakers, astronomers, and geographers to Sagres and formed a school of navigation.

Henry thought that only Africa to the south stood between himself and India. But no one knew the size and shape of Africa, since European ships had never sailed beyond Cape Bojador, on Africa's Atlantic bulge. Sailors did not dare attempt such a trip, some because they believed that if northern waters froze, southern waters boiled. Other sailors still believed the earth was flat and that ships would fall off any of its watery sides. Henry brushed aside all such nonsense and continued to plan his expeditions. He reasoned that one had to sail south along the African coast and eventually turn east to reach India. Henry offered prize money to anyone who would challenge the sea and find the route.

Henry prepared carefully for his expeditions. His scholars improved three tools that mariners used to find their way: the circular astrolabe, the triangular quadrant, and the compass. The astrolabe measured the angle of stars above the horizon. The quadrant measured the height of the sun or stars

above the horizon. Both devices helped to find latitude, one's position north or south of the equator, the horizontal imaginary line that circles the earth at the same distance from the North and South poles. Sailors still did not know how to plot longitude, one's position east or west of the imaginary line that circles the earth vertically through the North and South poles.

The third tool, the compass, was used to set a course in any direction--north, south, east, or west. Henry had a huge compass face built into the stones of his courtyard to train his captains. These few improvements enabled mariners to navigate out of sight of land.

Next Henry sent his heavy ships on trial runs along the North African coast. The captains made maps and charted currents, winds, and depths. Henry was too busy to go on any of these voyages, but he ordered his captains to keep daily Written-records, or logs, of their activities and course at sea. No one had ever done that before. Captains who did not return with such records were dismissed.

In 1420 Prince Henry's ships finally reached Madeira, a group of islands in the Atlantic Ocean about four hundred miles off the northwest African coast. The school of navigation grew with the promise of more great discoveries. But Prince Henry became impatient with the progress of his plodding, clumsy ships. He wanted a faster, wider, longer vessel, one that could catch the slightest breeze or cut through the heaviest seas. Henry's shipbuilders in neighboring Lagos gave him what he wanted--a new type of vessel, the caravel.

Henry sent his caravels far out into the Atlantic Ocean. In 1427 his captains discovered the Azores, a group of islands one thousand miles west of Sagres. And on Azore beaches they found strange wood carvings, plants, dead animals and people, all washed ashore by strong ocean currents. The sightings convinced Henry's captains that India must be only a short distance to the west.

But Henry was stubborn. He persisted in his plan to find India by going around Africa. His caravels edged farther south. His captains brought home gold to finance more voyages and established trading towns on the African coast.

In 1434 Henry's caravels sailed around Cape Bojador. In 1444, not content with trading goods for gold, his captains began kidnapping black West Africans and selling them in Lagos as slaves. Henry did nothing to stop the practice. He needed slavery to support his costly expeditions. Later he ordered his men to halt these kidnappings, but several unsavory captains continued to widen the slave trade. By 1460 Henry had run out of money and could no longer finance his explorations. He died that year at Sagres.

Portuguese captains continued to hold Prince Henry's vision. In 1482 a Portuguese ship sailed to the mouth of the Congo River. Six years later, Bartolomeu Dias sailed around the Cape of Good Hope. Henry's dream of reaching India by sailing south around Africa was fulfilled on 20 May 1498, when Vasco da Gama arrived with a fleet of four ships at Calcutta.

Prince Henry's school of navigation was the first maritime institute in the world for deepwater research. While Henry himself never sailed on his ships, he is called Henry the Navigator because he made it possible for sailors to find their way at sea with greater accuracy. Prince Henry expanded the oceanic frontier, which would eventually lead to the discovery of the Americas.

Prince Henry the Navigator

Portugal is a country that has no coast along the Mediterranean Sea so the country's advances in worldwide exploration centuries ago comes at no surprise. However, it was the passion and goals of one man who truly moved Portuguese exploration forward.

Prince Henry was born in 1394 as the third son of King John I (King Joao I) of Portugal. At the age of 21, in 1415, Prince Henry commanded a military force that captured the Muslim outpost of Ceuta, located on the south side of the Strait of Gibraltar.

Three years later, Prince Henry founded his Institute at Sagres on the southwestern-most point of Portugal, Cape Saint Vincent - a place ancient geographers referred to as the western edge of the earth. The institute, best described as a fifteenth century research and development facility, included libraries, an astronomical observatory, ship-building facilities, a chapel, and housing for staff.

The institute was designed to teach navigational techniques to Portuguese sailors, to collect and disseminate geographical information about the world, to invent and improve navigational and seafaring equipment, to sponsor expeditions, and to spread Christianity around the world - and perhaps even to find Prester John. Prince Henry brought together some of the leading geographers, cartographers, astronomers, and mathematicians from throughout Europe to work at the institute.

Although Prince Henry never sailed on any of his expeditions and rarely left Portugal, he became known as Prince Henry the Navigator.

The institute's primary exploration goal was to explore the western coast of Africa to locate a route to Asia. A new type of ship, called a caravel was developed at Sagres. It was fast and was much more maneuverable than prior types of boats and though they were small, they were quite functional. Two of Christopher Columbus' ships, the Nina and the Pinta were caravels (the Santa Maria was a carrack.)

Caravels were dispatched south along the western coast of Africa. Unfortunately, a major obstacle along the African route was Cape Bojador, southeast of the Canary Islands (located in Western Sahara). European sailors were afraid of the cape, for supposedly to its south lay monsters and insurmountable evils.

Prince Henry sent fifteen expeditions to navigate south of the cape from 1424 to 1434 but each returned with it's captain giving excuses and apologies for not having passed the dreaded Cape Bojador. Finally, in 1434 Prince Henry sent Captain Gil Eannes (who had previously attempted the Cape Bojador voyage) south; this time, Captain Eannes sailed to the west prior to reaching the cape and then headed eastward once passing the cape. Thus, none of his crew saw the dreadful cape and it had been successfully passed, without catastrophe befalling the ship.

Following the successful navigation south of Cape Bojador, exploration of the African coast continued.

In 1441, Prince Henry's caravels reached Cape Blanc (the cape where Mauritania and Western Sahara meet). In 1444 a dark period of history began when Captain Eannes brought the first boatload of 200 slaves to Portugal. In 1446, Portuguese ships reached the mouth of the Gambia River.

In 1460 Prince Henry the Navigator died but work continued at Sagres under the direction of Henry's nephew, King John II of Portugal. The institute's expeditions continued to venture south and then rounded the Cape of Good Hope and sailed to the east and throughout Asia over the next few decades.