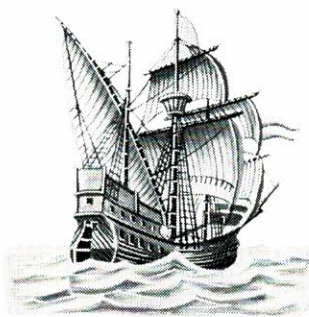


ELAINE SANCEAU

*Portugal's Contribution
to
Global Geography*



«POR MARES NUNCA DE OUTRO LENHO ARADOS»

Ed. do Centro de Estudos de Marinha

LISBOA • 1973

PORTUGAL'S CONTRIBUTION TO GLOBAL GEOGRAPHY¹

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In 1970 an ocean crossing is a matter of hours, a traveller can be in Lisbon and Chicago all in the same day, and explorers are already crossing the empty intervening space between the earth and the moon. It is strange to look back and recall how recent is our knowledge of this very earth!

THE WORLD IN 1400

The world picture was different for our forefathers in Europe in about 1400, at the end of the Middle Ages. Christendom as they knew it was a small oasis surrounded by abysmal dark. From western beaches they looked over an ocean that no man

had crossed, surging into infinity. To the North all was ancient ice; and to the East and South, though land went on, it trailed off into legend and mystery. Those were the realms of the heathen and Saracens — the infidel whom the Crusaders fought, and tales were told of pagan kings who held their glittering courts in remote lands where Christians rarely penetrated. North east stretched bare plains where wild yellow horsemen ranged, the fierce Mongols who from time to time broke forth, thundering across the steppe to lay waste cities and countries of eastern Europe.

Southward stretched the vast continent of Africa, known only in the Moorish kingdoms of its outer fringes. Nobody knew how far off was the end of Africa, not even the wandering Arabs who crossed the Sahara with their camel caravans, bearing the spices of the East to Mediterranean shores.

The Arabs were great travellers by land and sea. Their sailors navigated the Red

¹ This paper was presented by Miss Sanceau at the eighth Annual Symposium of the Department of Geography, De Paul University, Chicago, Illinois, March 29, 1969. The program was entitled «The Iberian Peninsula.» Miss Sanceau's participation was through a grant from the Fundação Calouste Gulbenkian, Lisbon, Portugal.

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Sea; their dhows were borne across the Indian Ocean by the rhythmic predictable monsoon, but neither Moor nor Arab dared face the Atlantic — «Green Sea of Darkness» it was to them, a moving waste ruled by uncertain winds, with no inhabited country beyond a shoreless abyss in which a ship might drift everlastingly till she was lost.

No one knew if Africa could be circum-navigated, although the learned of antiquity had surmised that it might. But it was one thing for scholars to surmise and another for seamen to verify by practical experiment. A legend told that the Carthaginian Hanno made the attempt, but how far he succeeded was anybody's guess. At a much later date, in 1291, the brothers Vivaldi, who had sailed from Genoa hoping to find a way around África, were never seen again, nor were the Catalans, who in 1346 set forth to seek the River of Gold, the Rio de Ouro on the west coast of Africa, of which legends had reached Europe over the Sahara. No one ever seemed able to get much farther south than Cape Non, of which the proverb said, «He will return or no»!; and although better informed persons might not believe that the sea really boiled within the tropics, and only the most ignorant considered the risk of falling over the edge of the earth, still everyone agreed that to sail south of the Moroccan coast was an act of madness.

What seems to have occurred to no one was the idea of a concerted plan to go and find out, little by little, in an organized series of voyages from the known to the unknown, just a bit farther every time until out of trial and error some positive conclusions might be reached that could be added to permanent knowledge.

A simple idea it may seem, but not easy to carry out without a master mind to guide it. What use were single and spasmodic voyages in which ships, storm-tossed to the

point of no return, caught glimpses of dream-like islands rising out of the sea, never to be found again?

The answer came from a small country in the West. The cosmic problem involved was more apparent to Portugal than to any other nation. At the end of the European continent, looking southward toward Africa and westward into space, Portugal is a narrow platform overlooking the Atlantic Ocean. All the lie of the land looks away from the continent and out to sea.

A vigorous and heterogeneous race had grown up on this coast. Phoenician, Celt, and Latin had already mingled their blood before the Visigoths arrived, followed by Saracen and Norman. Such varied elements combined to form a people diverse in type and of conflicting temperament, restless, adventurous, and often quarrelsome, but with a sense of nationhood achieved earlier than in most countries of Europe.

Portugal was one of the first kingdoms to achieve internal unity and permanent frontiers. Having expelled the Moors from the Algarve in 1249 and having assured their independence by victory over Castile at the end of the 14th century, the Portuguese were prepared to embark on their historic mission. Because of their long sea coast and a land frontier largely cut off by wild mountains, communications with the outside world came principally by sea, coasting by the edge of the pathless ocean.

The Atlantic was the Portuguese highway and nature had given them the finest port in Europe. The broad blue Tagus estuary invited all the shipping of the world and ensured the country against isolation. At the same time it lured the Portuguese out to sea. From remote ages the little ships of Portugal had plied their way up and down the Atlantic coast, visiting and trad-

ing with other lands. They sailed to France and England and the Netherlands. They rounded Cape St. Vincent in the south and skirted Moroccan shores; in the mid-14th century, it seems they even reached as far as the Canary Islands.

All these were hardly more than coasting voyages. No navigator dared strike out due west beyond all sight of land. As for African seas south of Morocco, most people believed these were not navigable at all. Long voyages were difficult along those shores where the prevailing winds and currents constantly held up returning ships. The quickest and easiest course for homing vessels would be to strike boldly west into mid-ocean, to meet the trades and ride home on their wings.

The Portuguese were the first people to discover this. It was a prince of Portugal who showed the way. Henry the Navigator well deserves the name given to him by later generations. Although he took no part in the voyages himself, he taught his father's subjects deep sea navigation. (Figure 1).

There is good reason to believe that the idea first came to him at the age of 21, after the conquest of the Moorish city of Ceuta, when he and his two brothers won their knightly spurs. Ceuta was the most prominent city by the Moorish coast, on the Straits of Gibraltar. It overflowed with lovely things from afar — pearls from the Persian Gulf, rubies from Ceylon, perfumes from Syria, and silks from Egypt. Within the flat-roofed houses faced with colored tiles were Persian carpets and Indian embroideries. Behind the houses there were mosaic courts scented with orange trees and musical with fountains; behind the town were fields of sugarcane, orchards, and vines; behind the orchards were the hills, and then behind those — what? This unknown Africa had long links overland with Arabia, Persia, and India, lands cut off from Europe by



FIGURE 1
Prince Henry the Navigator
Courtesy Casa de Portugal, New York

the Moslem powers that ruled between. But by sea could there be a passage? No one knew, for no one had reached the end of the mysterious continent, which seemed to trail away into the desert.

PRINCE HENRY'S EXPLOITS

For Henry the die was cast. From the first years after the conquest of Ceuta in 1415, he resolved to seek the unknown world; and he was seeking still in 1460 when he died.

The islands of the Atlantic were the first to be brought from legend into light, beginning with the discovery (or rediscovery) of Madeira. This island, so near the African coast, must have been seen before, but only after 1418 does it come to be a fixed point on the map. Much more vaguely known — if known at all, were the Azores, tiny,

specks lost in the immensity of the Atlantic Ocean, between Europe and the still unsuspected American continent. For a ship to be able to set a safe course toward these infinitesimal points in the featureless watery waste it became necessary to develop a new science, that of navigation on the high seas. Before Henry the Navigator's time why had no mariner set out deliberately to seek the fabled islands of the West? It was not from lack of courage or seamanship, but because he had no means of finding his position on the way. The world owes this science to Portugal through the initiative of Henry the Navigator. This highly cultured prince gathered around him mathematicians and astronomers together with practical seamen, and, conjugating the theories of the first with the experience of the second, formed a new school of technicians, the Portuguese pilots, expert in theory as in practice, who, during the 15th and 16th centuries became the teachers of all Europe in the science of navigation. For it was certain that the time-honored procedure of navigating by landfall, picking up points along the coast and following the compass in between, which had been quite adequate for sailing inland seas like the Mediterranean, would no longer serve for the long distance voyages into the unknown, for days and weeks together far from all sight of land.

The answer to the problem was written in the heavens. From ancient times astronomers had known how to draw angles from a point of earth to the Pole Star — but it must be a stable point of terra firma. Mariners on the trackless seas needed to find means to measure the position of their little ship rolling in moving space. The compass had been brought to Europe by the Arabs long ago. The astrolabe was not new to astronomers and the quadrant was also known to medieval observers. Henry the Navigator asked the mathematicians

and astronomers how instruments like these might be perfected, simplified, and adapted to use at sea. It is significant that the discovery of the Azores almost coincided with the doubling of Cape Bojador on the West Coast of Africa, after efforts repeated over many years. A document signed by the regent, D. Pedro, declares that his brother, Henry the Navigator, «had sent there quite fifteen times» before Captain Gil Eanes returned with a trophy of faded flowers gathered upon the sandy shores beyond Cape Bojador². Once that return route had been made possible, avoiding the head winds and treacherous currents of the coast, the little ships could sail far south and home again, meeting the trade winds in mid-ocean.

The way was open to explore the Guinea Coast where the white deserts gave place to the palmy forest. The seamen entered a new wonder world of everlasting green, strange flowers, and exotic perfumes, a world of intense life and of sudden death, when poisoned arrows rained out of the thicket at the intruders. More than one of the Navigator's valiant pioneers found his grave on the shaded banks of hidden rivers.

Exactly how far were the discoveries pursued in Henry the Navigator's time? Historians argue still. It is certain that at his death in 1460 the coast of Africa figured on the map as far as Sierra Leone, but some people find reason to believe his explorations had pushed farther still. The islands of the Atlantic had long ceased to be enchanting myths, constantly found and lost again. They were fixed realities on the world map, providing Europe with such practical commodities as wine, dairy produce, and sugar.

Henry the Navigator had sought for lands; but he was also anxious to explore the ocean

² *Monumenta Henricina*, Vol. 8, doc. 62 (Coimbra, 1967).

which, at his death, had ceased to be «Green Sea of Darkness» and the sailor's terror. His servant, Diogo Gomes, says that he «desired to know the far-off regions of the Western Ocean if peradventure there were islands and continents beyond those described by Ptolemy»³. He sent his mariners to ply their way from Finisterre to the Sargasso Sea, from the steamy Gulf of Guinea to the icy banks of Newfoundland. They came to know the seasons, zones, and currents, the doldrums, and the trade winds. So far as we know they did not reach the continent beyond, though some people believe that they suspected its existence. It is certain that the knowledge accumulated in many anonymous voyages later on made possible not only the voyage of Columbus, but also the most sensational nautical achievement of that century — the great voyage of Vasco da Gama.

Like all human endeavor, Henry the Navigator's work could not be his alone. He had magnificent helpers, beginning with his father the King D. João I, and his brother, who understood his aims and encouraged his efforts. But, dynamic though these princes might have been, they never could have attained their objective if they had not had at their command a nation of seafarers, accustomed for generations to sail their little ships along their dangerous coast up to the north of Europe. The Portuguese are born sailors, and Henry found in them a ready response.

The great work was carried on some years after Henry's death by a worthy successor. His great-nephew, the young prince D. João, heir to the throne, took up the problem where his great-uncle had left it, and sought untiringly to solve the riddle of the earth.

³ «Relação de Diogo Gomes», published in *Boletim da Sociedade de Geografia de Lisboa*, Serie 17, n. 5, p. 292.

The 15th century was a wonderful age in which to live. In some ways it reminds one of today when the impossible has receded and new concepts of the universe come into being. Not only the coast but the mysterious interior of Africa was yielding some of its secrets. The little ships of Portugal were sailing the mighty river Senegal for over 60 leagues upstream. The explorers made contact with the Negro kingdoms of Walof and Tuculol. They heard of the Songhai conquerors of Timbuktu and of the great empire of Mali, where silks, saffron, sugar, and spice were carried by camel caravan down from Morocco.

Still farther south the river Gambia led to the markets of Cantor, where gold was bartered for textiles and brass bangles. In 1471 the Gold Coast was reached where rivers flowed out of dimly shaded forests, carrying mud mingled with gold ore. Also in 1471 the Equator was crossed for the first time. The Portuguese found themselves at last in the Southern Hemisphere where the familiar stars were lost. These were the lands of which the ancients, who had never seen them, wrote that human beings could not live in the dreadful heat. Now the pioneers informed the world that these countries were densely populated with the blackest men on earth!

Somewhere beside the coast of Africa King John II hoped to hear news of Prester John, mysterious Christian ruler at the heart of Heathenesse, of whom legends were circulated in the Middle Ages. His realm was first alleged to be sited in Asia, but from the 15th century on, in Africa, for Europe had become aware of the Christian empire of Abyssinia. Ethiopian monks came to Jerusalem and had been seen at Rome. Messengers came to Church Councils with letters from their emperor. Some of these

travelled west to Aragon and were invited all the way to Portugal by the king.

What these men told about their country is not clear. Geographically and politically their information seems to have been vague. They must have painted the magnificence of their emperor with patriotic exaggeration to judge by the idea contemporary Europeans formed of his greatness and wealth. This could be none other than the fabled Prester John!

How might his land be situated in relation to the newly discovered Negro realms? Abyssinia could be reached via Cairo or Jerusalem, but had so vast a kingdom no western approaches! To find this out became the Portuguese endeavor throughout the 15th century. From the West Coast they radiated inland across the bush, through regions rarely visited even today, around the headwaters of the Gambia and the Niger. Everywhere they drew a blank, and little information came out of the Benin woods. João Afonso de Aveiro was the man who penetrated first into that strange forest-bound kingdom, where side by side with a certain artistic culture were practiced hideous human sacrifices. A trading post was organized at Gato, a river port some nine miles from the capital, a town of mud-built houses with a deep trench around. From Benin pepper was sent home, a fiery grain stronger than that which reached Europe from the East. In Flanders it aroused considerable interest, but merchants declared their preference for the oriental species.

João Afonso died of fever in Benin, a common fate of pioneers in West Africa. The explorers were a picked team of squires, and servants from the royal household, who at the bidding of their king were ready to wander far into the unknown and off the map, to bring back a faithful report

or perish in the wilderness, as many did, indeed.

Besides all these, the King John II, like his great-uncle Henry the Navigator, attracted an exotic crowd around him. His agents could be found from the Atlantic shores to the Red Sea, around the Mediterranean ports, and in the Near East. Berbers and Bedouin, Arabs and Jews and Levantines, from everywhere they brought him information.

Coordinating all these data were cosmographers such as D. Diogo Ortiz, the learned bishop of Ceuta and Tangier, and Mestre José Vizinho, a pupil of the great cartographer, Abraham Zacuto. There were astronomers and mathematicians and José Vizinho, went to Guinea and probably to Benin in 1485 to measure latitudes with João Afonso de Aveiro. Most remarkable of all, perhaps, was Duarte Pacheco Pereira, seaman, cartographer, and cosmographer, hero of great exploits in India, one of the most active of scientific explorers. All instruments of precision known to his age were familiar to him. As mathematician he calculated the degree of longitude with more accuracy than would be known for generations later. From practical experience he could write of every cape and inlet of the Guinea coast; inland he surveyed rivers and measured latitudes; he traveled through the bush; he heard the shriek of the baboon in African forest by night, and he tells us that he was four times in Benin city. His book, *Esmeraldo de Situ Orbis*, is the earliest and most minute description of the coast from the Gibraltar Straits down to the Cape of Good Hope ⁴.

⁴ Duarte Pacheco, *Esmeraldo de Situ Orbis*. Third edition with introduction and notes by Damião Peres. (Academia de Historia de Lisboa, 1954).

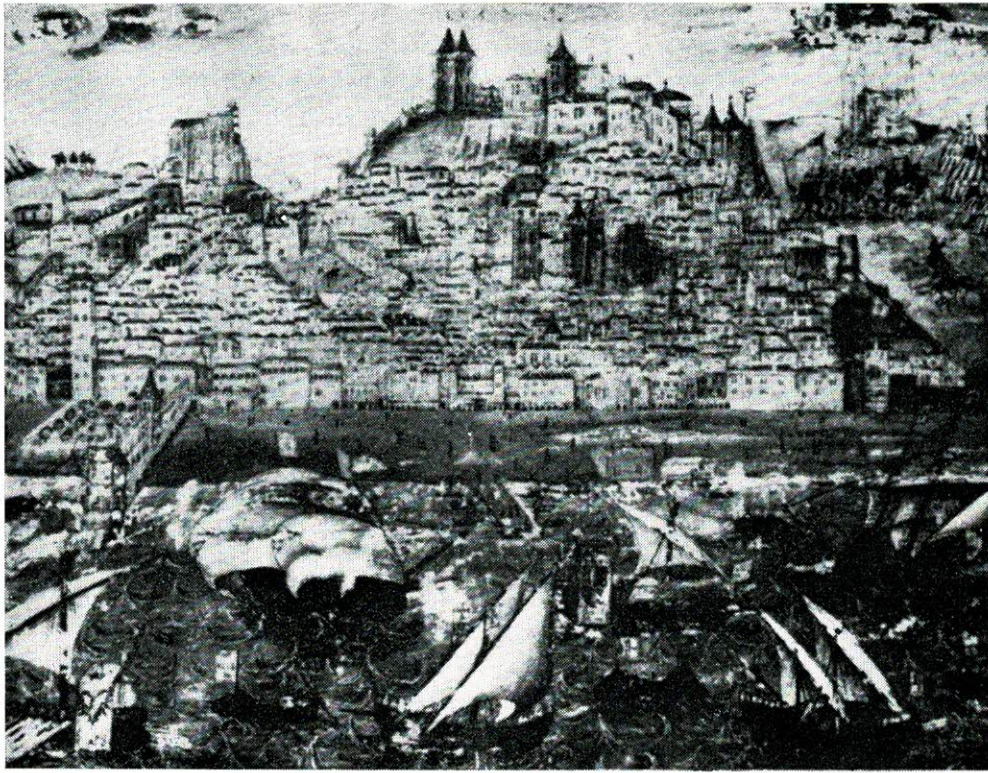


FIGURE 2

The harbor at Lisbon as it appears in a painting from the mid-sixteenth century
 Courtesy Casa de Portugal, New York

The great river Congo was discovered in 1482 by Diogo Cão. Out of the heart of the mysterious continent it flowed majestically, a waterway two leagues across its bar, mingling its brown waves with the blue ocean for twenty miles to sea. Diogo Cão followed the river eighty miles upstream until he reached the cataracts and rocks. There, in a gorge, on the face of the cliff, he and his men carved the cross of the Order of Christ. «Here came the ships of the enlightened King of Portugal», they wrote, and scratched their names upon the rock: Diogo Cão, Pero Anes, Pero da Costa, Alvaro Pires, Pêro Escobar, João de Santiago, and Gonçalo Alvares Antão. The inscription may be read today.

SIXTEENTH-CENTURY «ALLIANCE FOR PROGRESS»

The Portuguese traveled inland, across the bush, to the mud-built capital of Congo-Ambasse where the Manicongo, as they called him — greatest of African chiefs — sat upon a carved ivory throne raised on a dais. A horsetail hung with silver ornaments was clasped to his naked shoulder and round his loins he wore some damask cloths presented to him by the envoys of his European opposite number. The Portuguese on bended knee kissed the royal hand. Several of them remained in the Congo at the court of the King, while a few Afri-

cans were brought to Portugal to learn the language and give information of their country. In Lisbon these were treated to all the best and became baptized Christians. They returned to their native country dressed in splendid clothes, with glowing tales to tell of wonders seen. The King of Congo was so thrilled by their accounts that he declared that he would be a Christian himself, and his kingdom would be a second Portugal! He sent an embassy with a list of all he wanted ⁵. He asked for stone masons to teach his people to build houses like those of Lisbon (Figure 2), and master carpenters to show them how to fashion wood; he would have oxen to plough the fields of Africa, and farmers to teach agriculture. Women must come to demonstrate to African housewives the art of making bread, and schoolmasters to teach the people to read, and priests to catechize them. Some of all this was sent with the next voyage, and over the succeeding years supplies were constantly renewed as we may gather from contemporary documents preserved in the archives, setting forth lists of utilities to be dispatched to the King of Congo. They make interesting reading.

The promotion of agriculture in Africa seems to have been a serious preoccupation. In 1512 the King of Portugal sent grafts of fruit trees, especially figs, to be tried out in the Congo. Flax seed was also included in the experiments, and wheat and barley, «a little of each» ⁶. Peach stones and those of apricots, almonds, hazelnuts, and chestnuts were to be sown, and for the kitchen garden were provided hopefully cabbage, radishes, pulse of different kinds, beans, melons, pumpkins, cucumbers, onions, and

garlic. We do not know how many of these things survived in equatorial Africa, but the attempt was gallant and wellmeaning. In this, as in all else, the Portuguese showed eagerness to improve African standards of living. Smiths, carpenters, potters, and shoemakers were sent to teach their trades, and farmers to break oxen for the plough and demonstrate how to make cheese, for — observed the Portuguese — in that country all the milk was wasted! Stone masons and makers of roof tiles were also sent to Africa, because the King declared the King of Congo ought to live in a stone-built house, with an upper story — so much better for his health and safety, adds D. Manuel kindly ⁷.

All this, we may observe, derived from a wholly altruistic wish to raise the living standards of an underdeveloped people. There was no question then of settling Portuguese peasants in the Congo, nor any political hegemony in view. The correspondence between the King of Portugal and his African counterpart, of which many examples are preserved, are all upon a tone of equality, as of one independent ruler to another.

AROUND THE CAPE

South of the Congo the little ships sailed on, convinced there would be found at last a way round Africa into the Indian Ocean. In vain Columbus had been urging King John to leave the tiresome continent that seemed to run down to the Pole, and try to reach the East around the world by sailing due west. That would be much quicker.

The King had listened with faint interest. He had heard all this before. Of course the earth was round; of course the East might

⁵ Rui de Pina, *Cronica del Rey Dom Joham II.* (Coimbra, 1950), p. 58.

⁶ «Rol de objectos enviados para o Congo» in *Monumenta Missionária africana, coligida e anotada por Padre Antonio Brasio*. Vol I (1512), p. 66.

⁷ «Regimento de D. Manuel a Simão da Silva», *ibid.*, p. 236.

be reached from the West — but the Portuguese geographers knew that the globe was not so small as Columbus calculated, and there was good reason to believe that there were land blocks in the way. But those lands were Cathay and Zipangu!, Columbus cried. A few weeks sailing would bring one to China! The King shrugged his shoulders. For many years seamen sailing to and from the Western Islands had been aware of lands further beyond. In the Archives of King Afonso V are many grants of land westward of the Azores to mariners who had proposed to find them, but never had the Crown assisted actively in such an attempt. This was left principally to private enterprise. Africa and the East were the first objectives. If anybody dreamed of islands or continents to the West, then let him go and look for them himself! Columbus, as everyone knows, then turned to Castile for support. Under the aegis of the Catholic Kings he sailed and found those islands known today as the West Indies. The King of Portugal, though not best pleased to see his rivals enter the field of discovery, took it philosophically enough, and profited by the situation that arose to negotiate in 1494 the famous Treaty of Tordesillas. By mutual agreement and with papal sanction a line was drawn around the earth, 370 miles west of the Cape Verde Islands, dividing it into two hemispheres — the East for Portugal, and for Castile the West.

This was exactly what King John wanted. By then he was quite sure that he had found the eastern route to India. At the same time as he had been turning down Columbus' proposals, he had been organizing two expeditions, one overland and the other by sea, which were to give a final answer to his problem. The one would proceed overland to Egypt and the Red Sea, there to take passage on an Arab dhow for India, to study Indian Ocean navigation on the spot, to

see the lands in which the spices grew, before crossing over to Africa again and traveling inland to seek the realm of Prester John in Abyssinia.

Meanwhile three ships would follow the Atlantic route further and further south until they found and doubled the last cape of Africa. Pero da Covilham, a linguist with an adventurous soul and who spoke perfect Arabic, was to undertake the journey by land right through the Moslem belt, while Bartolomeu Dias, a fearless and experienced seaman, was to lead the little vessels around to the Indian Ocean.

Each man achieved his end. Bartolomeu Dias sailed south of the Congo along the coast, beyond the last point seen by Diogo Cão. He entered every bay and named each cape as he passed by; farther and farther south he sailed, but still the forsaken coast of Africa ran down towards the Pole — forest and mangrove swamps and solitary mountains and sandy deserts, countries of which Duarte Pacheco has said: «There is nothing in them to delight a man»⁸. No city and no sign of human culture all the length of those unnumbered leagues — from the equator down to Capricorn, and then out of the tropic belt the soft wind blew them on.

At last at 29° latitude they reached a bay swept by a strong SSE wind. Although they trimmed and tacked and struggled for five days no further advance could be made along that coast. Then they remembered their experience in the Northern Hemisphere — how often had they returned from the Guinea Coast by the Sargasso Sea, circling round the headwinds to meet the trades in mid-ocean. And so the little ships curved far out to the west. For fifteen days they sailed into infinity, 300 leagues from land, till at a latitude of 40° south they found a

⁸ *Esmeraldo de Situ Orbis*, Livro 3, cap. 9.

zone of variable winds and turned to seek the coast of Africa again — but failed to find it on the side where they had seen it last. It now ran constantly northeast. Clearly some great cape had been passed! Bartolomeu Dias left a pillar on a lonely hill standing out to sea, and then because his weary crew felt they could go on no more, reluctantly turned back. At least they sighted the great Cape on their return. Here it was, the end of the world, the Cape of Storms looking towards the twilight seas where fierce winds rage around the Pole, but also a Cape of Good Hope, the turning point upon the path that led to India and the Spice Islands. In 1488 the fleet was back in Portugal with the great news.

TIES WITH THE EAST

About the same time a report arrived from the land traveler, Pero da Covilham. A wandering Jew, Joseph of Lamego, brought letters written at the Persian Gulf. Pero da Covilham had visited the countries where the pepper grew, and watched the Arab traders loading spice at Calicut. He had embarked with them and sailed over the ocean down to Sofala, the last port visited by Arab shipping. If once the Portuguese could find their way around the hidden cape, the voyage to India should be easy. This was the last message received from this traveler who disappeared forever in the wilds of Abyssinia.

The missing pieces of the puzzle all were found. It only remained to fit them together.

Some years passed while the preparations for the Indian voyage were pushed on. Some people believe that the interval was filled by further investigation of the wind system of the South Atlantic. However that may be, when the King died in 1495 he left everything organized for the epoch-making

voyage that was to crown a century's endeavor. The new King Manuel, less than two years after his accession to the throne, was able to give the signal for the sailing of Vasco da Gama's fleet. Then it was seen how perfectly all had been planned, how fruitful had been the studies that made it possible for three little ships to sail for 90 days down the meridian in mid-ocean far from all sight of land, and then pick up the wind that carried them unerringly back to the African coast, a few miles from the Cape. As a feat of navigation compared to which that of Columbus was plain sailing, the voyage of Vasco da Gama was as yet unparalleled in history. For the first time a ship sailing from the West had reached the savage coast south of Madagascar, which lay beyond the last extreme of Arab navigation. Sea passage to the East — that age-old dream — was proved to be a practical reality.

LINKS WITH THE WEST

Every year after 1499 fleets sailed from Portugal to India, a six-month's voyage each way, to bring the precious loads of pepper. And in 1500 the second Indian fleet linked East to West by the discovery of Brazil. Here we fall into controversy. Was this a chance discovery? Historians still argue, though not many today believe it was by accident that Cabral's fleet curved so far west as to come within sight of the Brazilian coast. No contemporary account suggests that he was so compelled by the weather. From many documents we gather that the Portuguese believed in the existence of islands or even continents in the far West. There is no time to enter into the discussion here, but certainly the Portuguese were interested in finding out exactly what lands of the Western Hemisphere might be included in their share of Tordesillas. Part of Brazil was unquestionably so, as proved by several expeditions following along that coast.

Others went even to the frozen North, to Greenland and Labrador and Newfoundland, the Land of Codfish, as it came to be called. Ships were lost upon the edge of polar night. Gaspar Corte Real, seeking a Northwest Passage, disappeared. His brother, Miguel, sailed to find him and also was lost. Some see his fate inscribed upon the celebrated Dighton Stone: «Miguel Corte Real, by the grace of God chief of the Indians.» For this definite proof is not forthcoming. It would be fascinating to believe that Miguel Corte Real lived on in America among the Indians who made him their chief!

As for the Indian Ocean and the Far East, exploration naturally was carried on after the discovery of the Cape route. By 1511 the coast was known from Mozambique to Malacca; in 1512 remote Timor was reached; by 1517 the Portuguese had been to China; in 1540 or 1541 they were the first Europeans to visit Japan. Whether or not they discovered Australia is an open question, with arguments for and against.

CHRONICLES AND MAPS

Wherever they went the Portuguese took note of everything and wrote books to describe what they discovered. Beautiful maps were drawn. The Portuguese cartography of the 16th century is the pride of all the libraries that preserve their maps today, and many are in the United States. (Figure 3).

Many contemporary chroniclers confine themselves to narratives relating spectacular deeds of arms and amazing adventures. This may sometimes picture these pioneers as no more than conquistadores and fire-eaters. The fact is that they were not mere fortune-seekers, these knights and mariners who sought the golden East to perform mighty



FIGURE 3

Western Europe with the British Isles, the western Mediterranean and western Africa from the north as far as the Equator, after Lázaro Luis, 1563. Courtesy Casa de Portugal, New York

deeds of arms for their Faith and their King. Medieval lust for war and loot was not yet dead — does it not subsist under other names today? But the same spirit of scientific curiosity that had moved a crusading prince to devote his whole life to seeking unknown lands, followed the sons of these pioneers, causing them to investigate the strange phenomena around them.

These intelligent observers produced most interesting books. Thus Duarte Barbosa, clerk of the factory of Canannore in 1516, while keeping ledgers and watching ginger weighed for loading ships, employed his leisure by writing down all that he perceived of the peoples and customs of India. In Goa the physician Garcia da Orta gathered and classified medicinal plants, describing their properties in an exhaustive

treatise⁹. A century after the discovery of Brazil was published the *Dialogo das Grandezas* in the form of a conversation between two friends who describe the flora, fauna, mineralogy, and ethnology of that country¹⁰.

Even the warriors made their contribution to geography and science. The great Afonso de Albuquerque, amid his multifarious occupations, made a point of collecting all the information he could glean concerning the countries and peoples around his conquering path. From Malacca he sent an expedition to report on the Spice Islands, and dispatched an envoy to Siam with orders to take note of everything and write a book¹¹. In 1513 he led his fleet to the Red Sea, till then unknown to European navigation, and his interesting observations anticipate by nearly thirty years the more exhaustive account of D. João de Castro who, in 1541, accompanied an expedition from Goa to Suez. De Castro kept a diary of the voyage, describing the Red Sea in all its length and latitudes, its coasts and capes, islands, inlets, and soundings, for the guidance of navigators. Illustrations are the writer's own beautiful drawings¹².

One might also mention the *Treatise of the Discoveries* by Antonio Galvão, captain of the Moluccas, who has been called the uncrowned King of Ternate. This book

covers most of the countries discovered up to the mid-16th century.

Overland travelers also wrote informative books. One of the most remarkable of these is that of Father Francisco Alvares, who in 1521 accompanied the first Portuguese embassy to Abyssinia. His *Verdadeira Informação da Terra do Preste João* is perhaps the most interesting and certainly the earliest description of Ethiopia ever published. There is also a fascinating picture of the Indian kingdom of Vijayangar written by an anonymous envoy to that court; and Tomé Pires, apothecary at Malacca for many years before he disappeared in China, has left his *Suma Oriental* describing all the countries and kingdoms of the Far East.

There were also less literate informers, those useful *degredados* or convicts whose death sentence had been commuted into deportation. King John II used to say it was sheer waste to execute a man while there were so many islands to colonize and countries to explore. So it became the custom for each exploring fleet to carry a few convicts who could be dropped by unknown coasts to pick up information.

Such a one was Antonio Fernandes, a carpenter by trade, left at Kilwa on the east coast of Africa in 1500. He learned the language of the people and wandered up the fever-stricken rivers to the mysterious realm of Monomotapa whence gold was sent down to the coast at Sofala. Vast buildings with inscriptions nobody could read bore testimony to forgotten splendor, but the King of the present day lived in a village of straw shacks where he was served in solemn state by kneeling courtiers. Antonio Fernandes had a way with him. Everywhere he went, writes a contemporary, «the Kaffirs worship him like God, and where he goes all wars are made to cease

⁹ Garcia da Orta, *Coloquios dos Simples*, publicado por Ficalho, 1891-1895.

¹⁰ Antonio Fernandes Brandão, *Dialogo das Grandezas do Brasil* 1618. (Rio de Janeiro: Rodolfo Garcia and Jaime Cortesão, 1940).

¹¹ *Cartas de Afonso de Albuquerque*, Vol. 1, Carta XLI, December 3, 1513. (Academia Real das Sciencias de Lisboa, 1884).

¹² There are several editions of the three Roteiros of D. João de Castro, the most recent being that of the Agencia Geral das Colónias in 1943.

for love of him»¹³. During some years Antonio Fernandes traveled up and down between Sofala and Monomopata, returning every time by a different way, «in order to see new lands». It is a pity that Antonio Fernandes was not a ready writer, for the little known about his wanderings are a few notes dictated to a friend.

A great deal more could be cited, for Portugal discovered two thirds of the earth and left records and maps telling about it. To realize the wonder of their achievement it is enough to look at a map of the world, and note the tiny country on the western fringe of Europe which brought all this about. It has been calculated that in the year 1500 the Portuguese population numbered less than two million. This figure, of course, includes women and children, the infirm and

¹³ Documents on the Portuguese in Mozambique and Central Africa. Vol. 3 & 4. Published by the National Archives of Rhodesia in collaboration with the Centro de Estudos Históricos Ultramarinos of Lisbon, the Portuguese originals being accompanied by the English translation.

old. Yet before the Spanish takeover in 1580, this little nation had expanded over most of the globe, over three continents and two oceans. It had established trading-posts and fortresses all around Africa; it ruled the Indian Ocean from Mozambique to the Moluccas, and had made contact with China and Japan. In the western hemisphere it was colonizing the vast empty spaces of Brazil.

«Impossible!» one might exclaim on hearing this for the first time. Quite obviously it was impossible.

But it happened¹⁴!

¹⁴ For further bibliography, see the chronicles of Gomes Eanes de Zurara, João de Barros, Castanheda, Gaspar Correia, Damião de Gois, etc. and modern works such as the *História dos Descobrimientos* of Damião Peres; the *Expansão dos Portugueses no Mundo* compiled by Antonio Baião, Hernani Cidade, and Manuel Múrias; the historical and cartographical works of Jaime and Armando Cortesão and the *História de Portugal* in 8 volumes published at Barcelos between 1928 and 1937 under the direction of Damião Peres.

COMPOSTO E IMPRESSO
NO INSTITUTO HIDROGRÁFICO
LISBOA - AGOSTO - 1973
