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PRINCE HENRY THE NAVIGATOR AND THE DISCOVERY OF THE SEA ROUTE TO INDIA

The first Eva G. R. Taylor lecture

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This year, 1960, Portugal has been commemorating the five-hundredth anniversary of the death of Dom Henrique—Prince Henry, "the Navigator". Since to him has been attributed the application of astronomy to navigation, and responsibility for the discovery of the sea route to India, it is most appropriate that the organizers of this lecture should have chosen such a subject in honour of Professor E. G. R. Taylor—the arch-navigator. I am very conscious of the honour of having been invited to speak on so great a subject, in honour of so great a scholar; and I am very conscious of my responsibilities.

Portugal came into existence at the cost of the Spaniard and the Moor; but by the middle of the thirteenth century she had attained her present frontiers. Cut off from the rest of Europe by frequent hostilities, and unable to wrest from her soil a sufficiency of food, she turned naturally to the sea. Her fishermen, pushing out into the broad Atlantic, became consummate fishermen; and her vessels carried to distant European ports her exports of salt and salted fish, cork and olive oil. The Atlantic became her first ally. She was soon to gain a second.

The battle of Aljubarrota in 1385 guaranteed for the time being the independence of Portugal, but fear of Castile remained. English bowmen had helped secure the victory, and in 1386 the earlier Treaty of London was replaced by the Treaty of Windsor, by which Portugal and England agreed "there shall be inviolate, and endure for ever...a solid, perpetual and real league, unity, confederacy and union" between the two countries. Further to bind the alliance King João married Philippa, daughter of John of Gaunt who was commanding the English forces in Iberia. Henry, the third child to survive, was born in 1394. Authentic information about him is lamentably lacking, and the chronicle of Zurara remains the main source (see list of authorities, p. 154). We are ignorant even of Henry's appearance (the most authoritative work on this controversial subject is that of Ernest Soares (1959), which includes a full bibliography.)

In 1409 a senior official suggested the capture of Ceuta. This capture, it was appreciated, would aid the passage of Christian shipping through the Strait of Gibraltar, and complicate Moorish communication between Africa and Spain; it would provide a base for raids on Moorish shipping; and it would lead to Portuguese expansion into the wheat-producing lands of Morocco. After much detailed planning, upwards of 200 vessels set out from Portugal in 1415 with some 20,000 men aboard. Henry displayed great courage in the assault, and he and his elder brothers,
who had been brought up in an atmosphere of chivalry, were knighted on the field of battle.

Portugal’s capture of Ceuta burst the geographical bounds of Europe; it initiated expansion into Africa—and beyond. More immediately, in Ceuta Portugal learnt at first hand about the geography of north-west Africa; and details of the gold trade, especially, must have provided inducement for further advance (Bovill, 1933; Taylor, 1927; Mauny, 1960, pp. 55–8). In 1418 Henry assisted in the relief of Ceuta from Moorish attack; immediately afterwards he started casting his eyes southwards. There is no reason to doubt Zurara’s reasons for Henry’s interest in exploration: simply to know the country beyond C. Bojador, then the limit of Europe’s knowledge of the north-west African coast; to bring back articles of trade, and generally to increase commerce; to reconnoitre the strength of the Moors; to search for Christian princes who would serve as allies in the war against the Moors; and lastly and incidentally to increase the Christian faith.

Maritime expansion began with the rediscovery of Porto Santo in 1419 (when two of Henry’s squires raiding Moorish shipping were blown off course) and of Madeira in 1420. These islands were occupied primarily to forestall the Castilians; but the colonization of Madeira soon provided economic returns from timber and sugar; and voyages there and back added to knowledge of the winds.

Attempts to round Bojador began in 1422. Magalhães Godinho suggests that the main reason for the lack of immediate success was that piracy against Moorish vessels was more remunerative (Godinho 1956, I, 242). Professor Taylor has stressed that the difficulty was not so much in rounding Bojador as in returning against the prevailing northerly and north-easterly winds and currents. The rediscovery in 1427, however, of the Açores, which lay in the region of variable winds, provided the key to the problem, and before long vessels returning from the African coast were heading out into the Atlantic, before taking advantage of winds which, in the winter, were often from the south and south-west (Taylor, 1936, p. 159). Some Portuguese writers insist that these voyages to and from Madeira and the Açores postulate astronomical navigation by this time (Fontoura da Costa, 1960, p. 35); but there is no evidence of this, and mariners appear to have had no other aids than their compasses, and rhumb-lined charts; nor was magnetic variation yet understood.

In 1434 Gil Eanes succeeded in rounding Bojador (lat. 26° 07’ N.); the next year he and Gonçalves Baldaia sailed fifty leagues beyond, and in 1436 Baldaia reached the over-optimistically named Rio do Ouro (lat. 23° 37’ N.). But in 1437 came the ill-led and disastrous expedition to Tangier, when Henry and his entire army were forced to surrender. He undertook to hand over Ceuta to the Moors, and gave his youngest brother as hostage; but Portugal refused to ratify such retrocession and the unfortunate brother remained in captivity until his death. In 1438 King Duarte, Henry’s eldest brother, died, leaving a son aged six. Henry had some share in the negotiations which confirmed the ousting of the widowed Queen, a Spaniard, and the appointment of Pedro, Henry’s widely-travelled, cultured and intelligent elder brother, as Regent (Gonçalves, 1955). There can be little doubt that from that date, 1440, until his death Pedro became primarily responsible for the impetus now given to maritime exploration.

In 1441 Nuno Tristão in a caravel, the first time that a vessel of this type is referred to in the records, and Antão Gonçalves took the first captives on this stretch of coast. Tristão may have continued to C. Branco (lat. 20° 46’ N.), which was passed the next year by Gonçalo de Sintra and Dinis Dias; in 1443 Tristão reached Arguim. Private expeditions set out, with Pedro’s blessing, to trade for gold and for slaves. In 1444 Tristão reached the Senegal, which marked the end of the Sahara’s
contact with the Atlantic, and Dinis Dias passed beyond C. Verde (lat. 14° 43' N.). In 1446 Tristão met his death at the mouth of the Gambia, but Alvaro Fernandes passed beyond that river. The Bianco map of 1448 records these discoveries. Trade in negroes made voyages worth while, but this commerce, and further exploration, suffered interruption. Pedro had approved the elevation of an illegitimate son of João I as Duke of Bragança; the Duke gained dominance over the youthful King Afonso V and set him against Pedro. Henry failed to intervene on behalf of Pedro, who was killed in the battle of Alfarrobeira, 1449. It was not until 1456 that exploration was resumed.

In 1456 Cadamosto and Diogo Gomes reached the Rio Grande, which was most likely the Geba. Four years later Pedro de Sintra reached the Serra Leoa (lat. 8° 30’ N.) which, despite all the arguments of Jaime Cortesão (1940, 1960, pp. 30–3), remains generally accepted as the limit of African exploration at the time of Henry’s death.

Henry was a man of many parts. As brother and uncle and counsellor of kings he had to spend much time at court. He was Master of the Order of Christ, which required his frequent attendance at Tomar, and Duke of Viseu, lord of Covilhã, etc., with their separate commitments. To supplement his numerous direct revenues, he was given several monopolies, including one of tunny fishing in the Algarve. He also received 20 per cent., or the remission of the 20 per cent. due to the King, on all goods imported from beyond Bojador. These goods were landed almost exclusively at Lagos, and it was at Lagos more often than not, or in nearby Raposeira, that he used to reside, the better to direct his exploring and commercial enterprises. Since he was a man of action himself, men flocked round him, and he listened eagerly to their reports of discovery and achievement. Being a man of means, he could induce men, including foreigners such as Jafuda Cresques, the cartographer, to serve him. That he maintained a school of navigation is a myth; but there was constant informal exchange of knowledge in the house of the patron, Henry, wherever he might be.

There is no evidence that Henry ever lived on C. Sagres, except perhaps for the last few weeks of his life, and even that is problematical. It is true that in 1443 Pedro granted Henry a cape, called the Cabo de Trasfalmenar, and a league about it, for the founding of a vila. But the purpose of this Henry explained in a testament of 1460. Vessels often had to wait off Sagres for many days for a favourable wind, without food, without water and without the comforts of religion, because the nearest village was one and a half leagues away. “I therefore ordered a vila to be built on the other cape, which is situated before the said C. Sagres to those who come from west to east, which was called Terçanabal, to which vila I gave the name Infante.” In view of this confusion, and in the absence of any contemporary map or description, it is impossible to determine the exact site of this small fortified village (Silva Marques, 1944, I, 436–7, 586; Gomes, 1940, pp. 81–91, Malpique, n.d.). The earliest plan known is that drawn by an Englishman in 1587 (B.M. Cotton MSS. Aug. i ii 113).

In another testament Henry declared that he had had three aims in life: to gain knowledge about unknown seas and countries for the benefit of Christianity; to convert the heathen; and to develop commerce. The last he certainly did; his religious impulses grew stronger in his latter years; and he was responsible for the discovery of a great stretch of coast. His achievements, however, should not be exaggerated. Magalhães Godinho lists thirty-five recorded voyages made between 1419 and 1460; of these only eight were on Henry’s initiative, and two of divided inspiration; while of the 360 leagues of coastline discovered in those years, 200 were during the eight years of Pedro’s vigorous regency (Godinho, 1956, III, 319–22). The explorations, in fact, were a national, not an individual effort. Too grandiose ambitions must not
The battle of Aljubarrota, 1385; from a miniature in a late fifteenth century Flemish MS. (B.M. Royal MS. 14 E. iv, f. 204)

Marriage of King João I of Portugal and Philippa of Lancaster; from the same MS. (B.M. Royal MS. 14 E. iv, f. 284)
Commonly accepted portrait of Prince Henry attributed to Nuno Gonçalves; detail of a triptych painted about 1457–9 and now in the Museu de Arte Antiga, Lisbon
be attributed to Henry. He had no plan to reach India; Ethiopia was his most advanced objective (Cordeiro de Sousa, 1940, p. 100; Leite, 1959, pp. 96-122; Peres, 1943, pp. 36-8).

Nor should excessive claims be made for Henry in the direction of astronomical navigation. There may have been instrumental aids to help pilots to and from Madeira and the Açores in the second quarter of the fifteenth century of which we are ignorant. Certainly pilots returning from the Guinea coast early adopted the *volta do mar*, which is confirmed by the fact that in 1446 the survivors of Tristão’s vessel, a clerk, a seaman and three boys, returned from the Gambia without sighting land, and made their landfall only twenty leagues from their destination. But the first record of any scientific observation at sea dates only to 1451, when a sister of Afonso V, on her way to Italy, had in her retinue “magistris astrologis, juxta stellas et polum viarum bene doctis.” In 1455, however, Cadamosto referred to the height of the pole-star only in terms of a lance-length. The first direct reference to an instrument used at sea was the statement of Diogo Gomes regarding his voyage to Guinea in 1460: “I had a quadrant when I went to those parts, and I wrote the height of the arctic pole on the board of the quadrant.” Professor Taylor has suggested that the pilots of those days simply marked place-names on their quadrants where the plumb-line crossed the board; the quadrants were not yet marked in degrees, nor did the charts yet bear latitudes (Fontoura da Costa, 1960, pp. 35-6; 1942, pp. 544-5; Taylor, 1959, pp. 159-61; Peres, 1943, pp. 125-7; Albuquerque, 1960, pp. 15-24; Leite, 1959, pp. 375-410). Such facts only make the achievements of Henry’s seamen all the greater; and to Henry must undoubtedly be given the credit of providing both the original and continuing stimulus for navigation and exploration during the long period from 1419 to 1460.

Pedro de Sintra returned to Portugal after the death of Henry from a voyage in which he reached C. Mesurado (lat. 6° 19’ N.). The discoveries to this point since 1446 are well shown on the Benincasa map of 1468, which added fifty-five new names between C. Verde and C. Mesurado (Crone, 1937, pp. 78-84; Academia portuguesa de História, 1948, pp. 74-9, 196-8; Peres, 1943, pp. 109-11; Cortesão, A. 1960, pp. 88-9).

In 1469 Afonso V leased to Fernão Lopes the monopoly of the trade of Guinea for five years, on condition that each year he discovered 100 leagues of coastline, starting from Serra Leoa. This private venture met with outstanding success. In 1471 Pero Escobar and João de Santarem reached the gold-producing area of Shama (long. 1° 38’ W.), and exploration began to pay handsome dividends. From about this period dates the only fifteenth century Portuguese map to survive (Fontoura da Costa, 1940c). Fernão do Pó discovered, probably in 1472, the Ilha Formosa which came later to be called after him, but there is no certainty as to the year when the Ilha de Santo António, later to be known as Principe, was found, or the island of S. Tomé; or when Lopo Gonçalves discovered the cape which was named after him, or Rui de Sequeira, the Cabo de Santa Catarina (lat. 1° 53’ S.). The last was certainly not later than 1475, when the explorations financed by Gomes, which had been extended for one year, ceased. Gomes had inspired the exploration of a greater length of coastline in six years than Henry in forty. The difference was accounted for largely by the incentive of gold. The wealth of the region intensified Castilian claims to Guinea, but Portugal insisted firmly on a doctrine of *mare clausum* (Pacheco Pereira, 1937, pp. 99-129, Kimble trans. pp. 103-38; Blake, 1942).

João II, who had been entrusted with the direction of Guinea affairs in 1474,

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1 “Skilled astronomers, well versed in the stars and in the ways of the Poles.”
succeeded to the throne in 1481. He promptly ordered a fortress to be built at Mina (long. 1° 20' W.). With increased traffic to and from the Guinea coast, improvement in navigational aids became urgent. Diogo de Azambuja took an astrolabe with him when he went to Mina. Zacuto worked out declination tables for 1483 or 1484, while in 1485 the King sent José Vizinho to the Guinea coast to verify various latitudes (Fontoura da Costa, 1960, pp. 67–9, 1940a, pp. 548–9; Albuquerque, 1960, p. 9).

João II did not content himself with the rich trade of Mina; he planned to explore to India. In the middle of 1482 he sent out Diogo Cão. Cão took with him several padrões, carved from Portuguese limestone, which carried the arms of Portugal and an inscription which advertised Portuguese priority in discovery and asserted Portuguese rights; they were surmounted by crosses as symbols of Christian domination. The first of these padrões Cão raised on the southern point at the mouth of the Congo. The lower part of the circular shaft, the only fragment to survive, was taken to Lisbon in 1859; it is in the Sociedade de Geografia of Lisbon. His second he erected on the Cabo do Lobo, the modern Santa Maria (lat. 13° 26' S.). This padrão was taken to Lisbon in 1892, and the deciphering of the inscription by Luciano Cordeiro resolved doubts about the number and date of the Cão voyages. The inscription read: “In the year 6681 of the creation of the world and 1482 of the birth of our Lord Jesus Christ, the very high, very excellent and powerful prince King João II of Portugal ordered this land to be discovered and these padrões to be placed by Diogo Cão, esquire of his house.” Cão, seeing a great expanse of water stretching to the east (later called the Bahia de João de Lisboa, and still later Lucira Grande) was apparently under the delusion that he had rounded Africa, judging by remarks made by Fernandes de Lucena in his Oration of Obedience of D. João II to Innocence VII in Rome in 1485: “Quippe cum emerso jam multo maximo Africae ambitu prope Prassium promontorium, unde Arabicus incipit sinus, superiori anno nostri appulerunt; flumina, littora, portusque annes perscrutati, quae ab Olissipone supra quinquies et quadragies centena passuum millia ceetissima maris terrarum ac siderum observatione numerantur.” Cão returned to Lisbon in April 1484 to be rewarded and ennobled (Cordeiro, 1892; Fontoura da Costa, 1935, pp. 14–18, 22–3, 49–50; Peres, 1943, pp. 181–4, 188–96). His discoveries were recorded on the Soligo maps, now in the British Museum (Egerton 73, fol. 33) (Cortesão, A. 1960, p. 93).

Cão set out again in the autumn of 1485. He sailed up the Congo to return hostages taken during the previous voyage, and at Yelala, near Matadi, members of his crew inscribed on some rocks a record of their visit. On C. Negro (lat. 15° 42' S.) he erected another padrão which was also taken to Lisbon in 1892, but its inscription was illegible. His last pillar Cão erected at Cape Cross (lat. 21° 47' S.). Still in an excellent state of preservation, it was taken aboard a German cruiser in 1893, and is now in the Museum of the Institut für Physikalische Hydrographie in East Berlin (Rohr, 1956, pp. 43–6). In 1953 I examined a low mound of rock and sand, its centre 33 feet north-west of the replica erected by the Germans in 1895 on Cape Cross; down the middle was a socket of sand and small stones. The mound, when sieved, yielded over a hundred chips of Portuguese limestone.

The exploration continued as far as Serra Parda, where Cão probably died. A legend on the Martellus map, c. 1489 (B.M. Add. MS. 15760, fol. 68v.–69) ends:

1 “After the emergence of far the greatest orbit of Africa, our forebears in an earlier year named the promontory near Prussus, from where the Arabian Gulf begins; so that after a careful examination, the rivers, shores, harbours and streams, which are more than fifty and forty times a hundred miles each from Olisippo(n), are enumerated by observation of the world’s oceans and of the stars.”
The West African coast, from a chart by Andrea Bianco, 1448, in the Biblioteca Ambrosiana, Milan
Plan of the promontory of Sagres, drawn by an English hand, May 1587 (Cotton MS. Aug. I. ii. 113)

The promontory of Sagres
AND THE DISCOVERY OF THE SEA ROUTE TO INDIA

"Serram Pardam quae dictat ab monte negro mille miliarum et hic moritur."¹ Argument has raged since 1876 as to whether it was Cão or the Serra that died (summarized in Peres, 1957, pp. 21–4). A. C. da Silva Castro Junior, at the Congresso Internacional da História dos Descobrimentos in 1960 (Resumo das Comunicações, pp. 28–32), favoured Cão’s death. There are no subsequent references to Cão in the records of the time; the Spanish delegates to the Badajoz conference, 1524, mentioned his death at Serra Parda; and there is no range south of Cape Cross that “dies”. The legend on the Cuppo map, 1520, is unacceptable (quoted in Almagià, 1951, pp. 48–50).

Bartolomeu Dias took with him similar padrões, for the remains of which I have searched on various occasions. Dias sailed from the Tagus in the middle of 1487. He left a store-ship in the Angra das Voltas, the later Lüderitz Bay (lat. 26° 39’ S.) (Coutinho, 1955, pp. 390–401). Then, so far from being carried southwards in a storm as the sixteenth century chroniclers would have us believe, he probably tired of beating against the prevailing southerly winds, and deliberately set a course out to sea (Coutinho, 1951, I, 230). Eventually he steered east and found no land; he steered north, and saw the coast a short distance west of the watering place of S. Bras, the later Mossel Bay. It was probably in the Bahia da Lagoa, a name which became corrupted to Algoa Bay, that the crews became restive. The two caravels turned at the Infante River, which was the Great Fish or the Keiskama (Axelson, 1940, pp. 169–71; Huth). At the first opportunity the expedition raised a padrão, dedicated to S. Gregório, probably on 12 March 1488. Fragments of this were found in 1938, and the reconstructed padrão stands today in the library of the institution responsible for its recovery, the University of the Witwatersrand.

Sixteenth century chronicles described this padrão as being on an island, 5 leagues west of the Ilhéus Chãos, the Bird Islands at the eastern end of Algoa Bay. Pacheco Pereira described it as being on an islet, half a league from low sand dunes, 5 leagues east of the Chãos. The rutter of João de Lisboa, written in about 1514, gave this as its distance east of the Chãos, and added that the islet only looked like an islet from out to sea; it was really linked to the mainland by half a league of sand and sand dunes. Five leagues, 17¹/₂ miles, measured off from the Bird Islands on the Admiralty Chart landed squarely on a headland False Island, locally known as Kwaai Hoek. The Africa Pilot gave a description of the headland that was almost identical with that of João de Lisboa. On my first visit to the site, in December 1937, I could find no trace of the padrão. My brother Charles drove me there the next month, and we started excavating at the crest of the 90-foot high headland. We found fragments of Portuguese limestone, 8¹/₄ inches across, and at the foot of the cliff a block of the same width. The University of the Witwatersrand then financed a more thorough search. In February–April 1938 I excavated a hole 60 feet by 30, to a maximum depth at rock bottom of 19¹/₂ feet, and made further searches at the base of the cliff, recovering in all some 5000 chips and fragments, including a dozen which carried the remains of an inscription; there were also traces of charcoal, lead, iron and glass. The limestone fragments were assembled by Professor C. J. van Riet Lowe, Professor Leo Fouche and Mr. John Harcus. (Axelson, 1938, 1940, pp. 172–81.)

Dias discovered and named the Cape of Good Hope, where he may have erected another padrão. The Cantino map shows a padrão, but no rutter mentions it. Barros (1778, pp. 190–2) twice referred to it, but elsewhere declared that the

¹ "Serra Parda which lies a thousand miles distant from the Monte Negro and here he [it] dies."
"tempo", meaning the time or the weather, made it impossible for Dias to go ashore. I have made several searches for this padrão, but without success. Dias returned to the store-ship, and raised another, on either 1 May or 25 July 1488. This pillar was still standing in 1786, when it was sketched by Captain T. B. Thompson of the sloop Nautilus, who recorded that the face of the cross was to the westward; on the eastern and western sides was an inscription neatly carved in old Roman characters, but illegible; while at the end of the arm pointing to the south were the arms of Portugal. By 1825 the pillar had been shattered. In 1855 four fragments were taken to Cape Town, where one remained and entered the South African Museum; two were claimed by Portugal, and are in the Sociedade de Geografia de Lisboa; the smallest was taken to New Zealand by Sir George Grey and has since been mislaid. In 1955 further fragments were recovered, which are now in Windhoek.

Lüderitz raised a spar on the most likely site, a 55-foot high knoll of black gneiss overlooking the sea, where later a foghorn and commemorative cross were erected. Later there was doubt as to whether the padrão might not have been placed on the higher lighthouse ridge several hundred yards to the east. The Historical Monuments’ Commission of South-west Africa invited me to look at the two possible sites in 1953. I picked up a piece of Portuguese limestone, $8\frac{1}{4}$ inches across, at the foot of the foghorn knoll, which was confirmed as the site when the next day Dr. C. J. C. Lemmer, the Chairman of the Commission, found a block of the same width carrying the remains of an inscription. Systematic search by Dr. Lemmer, my wife

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**Fig. 2. Site of Bartolomeu Dias’s padrão dedicated to S. Gregorio**
and myself yielded fragments totalling 120 lbs. in weight. Reconstruction of the padrão was interrupted by Dr. Lemmer's untimely death. The sketch by Thompson, a water-colour in a journal in the possession of Mr. Quentin Keynes, gives the padrão a very different appearance from those of Cão, and from the Kwaai Hoek reconstruction (Axelson, 1955).

Dias made a greater contribution to the discovery of the sea route to India than any other individual navigator. Not only did he round Africa, but he discovered the method of rounding it, on a wide seaward tack. By the time he had to desist from his exploration the coast was running to the north-east, and the warm current confirmed that he had indeed reached the Indian Ocean.

Pedro de Covilha penetrated to the Indian Ocean by way of the Mediterranean and the Red Sea. After reconnoitring centres of the spice trade on the west coast of India he crossed to east Africa, and sailed as far as the southernmost Arab port of Sofala. He was forced to remain in Ethiopia, but the information he collected almost certainly reached Portugal (Ficalho, 1898; Beckingham, 1960, pp. 93–5). Less than 14 degrees of latitude remained to be bridged.

Authorities in Portugal awaited news from Covilha before sending out the next expedition, and the illness and death of João II caused further delay. There is no evidence of any other expedition to the Indian Ocean before that of Vasco da Gama's, but it is probable that there were other explorations to the western Atlantic. It is true that T. A. Chumovsky (1960, p. 42) has a reference to Portuguese ships being overwhelmed on the shoals of Sofala, but there is no indication of date. On page 48 of the same work, the year 900 is obviously a slip and the Vasco da Gama voyage of 1498 is meant, for the second voyage of the Franks is correctly attributed to the year 906 (A.D. 1500–1).1

Vasco da Gama followed a course which took him close to the Brazilian coast, and then in a wide sweep to the south-east and east, along a route approximating to that recommended to this day for sailing vessels rounding Africa. His pilot did not recognize the landfall near St. Helena Bay, but calculated that the Cape could not be more than 30 leagues away—which was the exact distance. At Mossel Bay, Vasco da Gama's men raised a padrão, which Hottentots overthrew before they had left the anchorage. I have searched for this but found no trace of it. The obvious site would have been where the lighthouse was subsequently erected.

On Christmas Day 1497 the squadron was off the Pondoland coast (probably off Brazen Head and Port St. John's). It called at the Aguada da Boa Gente, and the Rio dos Bós Sinais. At the latter, usually accepted as being the Quelimane, the Portuguese erected another padrão, which rapidly disappeared. My wife and I searched for this in 1951, but found no trace of it, the sea having apparently encroached on the land. This was confirmed by Lieutenant J. A. Barahona Fernandes, who was doing a new survey of the coast; he declared that over half a mile of land at the mouth of the Quelimane had disappeared since 1910. Vasco da Gama's ships visited Moçambique and Mombasa, while at Malindi he was fortunate enough to secure the services of Mādjid, the most distinguished Indian Ocean pilot of his day. At Calicut the Portuguese realized their dream of reaching India. At Calicut they left a padrão, and one on St. Mary Island. Returning to Malindi, they cemented their friendship with the sultan, and left another padrão. The shaft of this has disappeared, but on the site stands a masonry tower, from the top of which rises a cross of Portuguese limestone, with the Portuguese arms, which may well be part of the original padrão. The cross was recently alleged to be of local coral, but in 1959 my wife and I recognized it as being of the familiar Portuguese limestone. The

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1 This sentence was interpolated after Dr. Cortesão had made his remarks (p. 157).
Geological Survey of Kenya confirmed that it was not of local rock, and Serviços Geológicos of Portugal, under D. António de Castello Branco, found, after examining a sample, that the fossils bore a resemblance to those found in Lisbon limestone beds. This cross may well be the only surviving fragment of all the pillars erected by Gama. His last he raised on the islet of S. Jorge, off the island of Moçambique; my wife and I searched for this in 1951, but found the eastern side of the islet of S. Jorge to have been swept clean by cyclones and heavy seas.

The discovery of the sea route to India, with all that implied both to Europe and the East, was the culmination of the nautical effort started by Henry the Navigator. Though we do not accept that he himself had India in mind as a goal, the policy that he helped conceive and execute led inevitably to the Portuguese discovery of western, southern and eastern Africa, the Indian Ocean and India. In was an amazing achievement, especially considering that the population of Portugal through the fifteenth century numbered scarcely a million. Tonight we pay tribute not only to Henry, but to Portugal and the Portuguese.

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There is a vast literature on Henry: see Comissão Executiva, etc., Bibliografia Henriqueina, 2 vols., Lisbon, 1960, which lists 4661 items (not all of which, however, are about Henry and his times). Very useful are A. Fontoura da Costa (1946) and Damilão Peres (1943) which remains the standard work on the subject. Refreshing are comments by Duarte Leite (1959), and by V. Magalhães Godinho (1956).

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By permission of the Trustees of the British Museum
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DISCUSSION

Evening Meeting, 17 October 1960

The President (Lord Nathan): This is an unusual, indeed, in its way, a unique occasion. There have recently been two unusual celebrations: one in Stockholm, the 19th International Congress of Geography; the other in Lisbon, which was attended on behalf of the Society by General Sir James Marshall-Cornwall, for the quincentenary of Prince Henry the Navigator. The International Geographical Congress
Inscription recording the visit of Diogo Cão, at the head of the Congo estuary

Photograph by Michael Teague
The padrão set up by Bartolomeu Dias near False Island, South-east Africa