

A. CORTESÃO

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COIMBRA—1970



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PIZZIGANO'S CHART OF 1424

ARMANDO CORTESÃO

In 1954 this University published a monograph on *The Nautical Chart of 1424* in which I told the story of its discovery in London and how, towards the end of 1949, I was asked to study it. Let me recall very briefly what this chart of the Central North Atlantic is, and my interpretation of what it represents.

On a sheet of parchment, 570 × 897 mm, are shown: The coasts of the North Sea, the British Isles, Western Europe and Africa until the latitude of the Canaries. The islands of the Azores are laid down north of Madeira, as was customary in most previous charts — a representation which, as far as I am aware, was never adopted by Portuguese cartographers, but is still found in some foreign charts, even as late as the beginning of the XVI century. However, what is more noteworthy in this chart, and gives it exceptional importance, is a group of four islands conspicuously depicted in the middle of the Central North Atlantic and named *antilia*, *stanazes*, *saya* and *ymana*.

Antilia and *Satanazes* are enormous islands, the former more than half and the latter more than a third the area of Portugal. The six islands grouped far north of Madeira, which correspond to the Azores, lie half way between *Antilia* and the coast of Portugal. These features are importante, as we shall see.

The fact that these exceptionally large islands are so conspicuously situated about the centre of the chart, in the middle of the Atlantic, and bear the only two geographical legends in the whole chart, respectively *ista ixola dixeno Antilia* and *Ista ixolla dixemo stanazes*, seems to show that the main and only purpose of the cartographer was to emphasize the importance of those new islands represented for the first time in cartography. Its main point, in my opinion, was to draw attention to some large lands which had just been discovered far to the west of the Azores.

The author's legend states quite clearly that the chart was drawn in 1424, but the name of the cartographer has been erased. Another name was written which in turn was also scratched out and finally it seems that there was an attempt to write in again the original name, which was not completed. What remains of the cartographer's name is *Zuane pizzi*, followed by a gap before *afato questa charta*. When the chart was still in London, I studied this palimpsest with the help of infra red and ultra violet lights and came to

the conclusion that the four letters which had been originally written after *pizzi* were *gano*, which fit exactly in that gap. Before the chart went to the University of Minnesota, where it is now preserved in the James Ford Bell Collection, its former owners in London did not allow me to make a chemical test because they had been advised that this would damage the chart. When in 1955 I was at the University of Michigan, Mr John Parker, Curator of the Bell Collection, brought the chart to Ann Arbor and I was then able to make the test I wanted. I used first ammonium sulphide, carefully applied through thin paper, and in a second test carbon sulphide, which confirmed my reading in London. The chart was not at all damaged, of course. The original author's legend read: *Mccccxxiiij adi xxij auosto Zuane Pizzigano afato questa charta*. That the cartographer was a Venetian is confirmed by the two legends written by *antilia* and *satanases* in the Venetian dialect.

This is the first of about a score of xv-century charts in which the Antilia group of islands is represented, more or less complete. Humboldt thought that a chart extant in Weimar, in which the Antilia group of islands represented and in which the author's legend is almost completely blurred and extremely difficult to make out, was dated 1424. This date has been contested by various authors. I showed in 1954, conclusively I think, that the chart must have been drawn by Hoctomani Freducci between 1460 and 1469, the last digit being entirely illegible.

I cannot enter here into the details I developed in my monograph of 1954, where I sought to demonstrate that: *a)* This group of the Antilia islands, represented for the first time in Pizzigano's chart of 1424, corresponds to the present Antilles and possibly some other part of Eastern North America, such as Newfoundland; *b)* Antilia appears here associated with the old legend (well-known in Portugal before 1424) of the Island of the Seven Cities founded far away in the Atlantic in the VIII century by a bishop of Oporto who, with other bishops, fled when the Arabs invaded the Peninsula, and that probably the seven names fancifully written on the island correspond to the «seven cities»; *c)* Antilia is a word of Portuguese formation, *ante ilia* or *illia*, that is, island before or in front (1). Satanazes (called *Satanaxio* in the next two Italian charts which show this group of islands — Beccaro's 1435 and Bianco's 1436) and *Saya* are also Portuguese words, the latter derived from the Latin *sagum*, a kilt used by Roman and medieval Portuguese soldiers, and being applied in later Portuguese cartography to islands similarly shaped (*Saia* in Italian has a different meaning); *d)* It seems obvious that the prototype of this chart was Portuguese and that it somehow found its way to Venice, which was then an important cartographic centre and where there was great geographical curiosity, as shown by Giovanni da Fontana, a contemporary

(1) I showed in 1960, answering some objections raised by a friend of mine, professor at his University. *Cartografia Portuguesa Antiga*, 68-07.

of the maker of the chart of 1424, who in his book *Liber de omnibus rebus naturalis* referred to some «terra incognita which bounded the Atlantic in the West». (This «Terra incognita» has been interpreted by some as an allusion to America, but Lyn Thorndike is not sure and asks: «Whence did Fontana obtain his knowledge of distant lands? Probably it was in large measure through his connection with Venice, the great trading power of the time». Indeed, Fontana may have got his information either directly or indirectly from the same sources which supplied the maker of the 1424 chart and other cartographers, such as Bianco, 1426 and 1448, with his *antilia, mar de бага, ixola otinticha*, etc.); *e)* It is most likely that the discoverers of the islands thus represented were Portuguese, not only because of the names given to them but also because the Portuguese were then most active navigators; *f)* After they had been sighted for the first time, their localisation was lost, but the tradition of the «lost islands», which already existed among the Arabs, and of the «Island of the Seven Cities» persisted, and attempts to find them again are referred to in various xv-century documents; after the chart of 1424, they still appear represented in at least twenty other surviving charts as a whole or in part, until the end of that century; *g)* An island surrounded by islets, named *himadoro*, situated south of the Canaries, may correspond to an incipient representation of the Cape Verde Islands; *h)* Therefore this chart has a capital importance in the history of cartography and of the discoveries, as well as in American history, because it shows that even before 1424 Portuguese ships, either by design or by hazard, sailed westward and discovered some American lands, as well as perhaps southward, possibly discovering the Cape Verde Archipelago much earlier than has hitherto been thought, and recording it in a chart.

I am convinced that the westernmost parts of the Atlantic were visited more than once from the East in ancient times, mainly by the Phoenicians, a subject which I dealt with at some length in 1954. After Paul Gaffarel published in 1892 his remarkable book *Histoire de la découverte de l'Amérique*, other works have appeared seeking to demonstrate that the Phoenicians and other ancient peoples, and after them the Vikings and other early Northern Europeans, have left in America many traces of their presence. All these writings, from the Classics to this very year of 1968, lead to a most important conclusion in this context: that is, the Atlantic could be and actually was crossed before the xv century by many navigators, from Phoenician until Viking times. I shall mention only some of the more recent studies: Frederick Pohl's remarkable work *Atlantic Crossings before Columbus*, 1961; Constance Irwin's fascinating and beautifully written book *Fair Gods and Stone Faces*, 1963; and Professor Cyrus Gordon's still more recent scholarly essays *The authenticity of the Phoenician text from Parahyba*, and *Canaan and Pre-Columbian America*, 1968. I do not need, however, to go as far as Professor Vincent Cassidy, when he states in his also recent book (1968), *The Sea around them — The Atlantic Ocean, A.D. 1250*, «Most modern authorities agree that in the great age of Atlantic navigation, which preceded

the Phoenician period by a thousand years, nearly all the North Atlantic islands and the American coast were visited by late Stone Age and Bronze Age navigators from Europe» (p. 79). As I am concerned only with the possibility of crossing the Atlantic and the fact that it was actually often crossed from early times and before the xv-century, I have not to consider here such works as Thomas Crawford Johnston's *Did the Phoenicians discover America?*, 1913 and 1965, which seeks to prove that the Phoenicians discovered America by sailing across the Pacific.

The main lines of reasoning which led me to the conclusion that the westernmost part of the Atlantic was reached again shortly before 1424 are: a) With the resumption of the Atlantic voyages in the XIII and XIV centuries, the well-founded tradition of the existence of lands far to the west in the Ocean was revived; that tradition was reinforced by the legends of the Island of the Seven Cities, the Imrama of St. Brendan's voyages, the Arab tales of the Maghrurins and of Kohshkahash, and the Sagas of the voyages of the Norsemen to Greenland and the North-east of the North American continent. All this information, some of which at least corresponded to factual though hidden knowledge, constituted a powerful incitement to explore towards the west for those navigators who, on account of their frequent voyages to the Canaries since the second quarter of the XVI-century, had already acquired a sound experience of seafaring and were beginning to try new methods of navigation. The new navigations had brought the need for producing such a vessel as the caravel, for developing nautical cartography and for finding new methods for orientating the ship when far from the sight of land by the application of astronomical knowledge already existing. The mariners of the beginning of the xv-century were better prepared for attempting the adventure of thrusting westwards than those who led the first expeditions along the west coast of Africa to the Canaries and beyond, and their imagination, curiosity and urge to unveil the mysteries of the Western Atlantic were certainly stirred by the provocative bits of information, confused though reasonable and credible enough, offered by tradition, legend and also positive knowledge. I think therefore that I am justified in assuming that at the beginning of the xv century there were in Europe, certainly among the Portuguese, navigators interested in thrusting westward into the mysterious Atlantic and possibly rediscovering the legendary islands of which they had heard.

b) Such voyages westwards could easily have taken place, either by design or by accident. It is a fact that a ship sailing between the Canaries and Madeira can be driven, either deliberately or forcibly, towards the Antilles by the ocean currents and chiefly by the strong north-east trades which prevail in this belt of calms and variable winds. The cartographic representation of Madeira and of some of the Azores islands in most XIV-century charts and the gradual improvement of their representation prove that they were often sighted after the second quarter of that century. Most of those ships were undoubtedly returning from a voyage to the Canaries and had to pass through the belt of calms and variable winds in that zone. It is quite possible



that some such ships, unable to resist strong head winds, were driven by storm to the Antilles. There are in the Classics various references to such cases and we have proof that they happened in modern times. I mentioned various cases in 1954 when I wrote: «We have reason to believe that, on their return voyage from the Canaries and the west coast of Africa, the early navigators avoided the Canaries current and the north-east trades and took to the high sea as others did in the XIV century and have done ever since. Let us assume that a ship fitted with round sails ... was caught between the Canaries and Madeira by a storm. The prevailing winds in this zone between the two archipelagos blow from the northeast and the force of the most frequent ones is shown by five feathers according to the Beaufort scale. If such a ship had no other means of propulsion than her round sails, she would stand every chance of being impelled south-westwards until reaching the belt south of the Sargasso Sea. There the trades that blow exclusively from the eastern quarter of the compass and the northern equatorial current, which becomes stronger from 40° W (though the north equatorial current seldom exceeds 10 miles per day at the beginning, its velocity increases after 40° W until, under the name of Antilles Current, it reaches even an average of 80 miles in 24 hours, as noted by Camille Vallaux) (2) would carry her irresistibly towards the Antilles. There is documental proof that ships in the same circumstances were helplessly thrust westwards». Humboldt (3), among others, had already drawn attention to these circumstances and mentioned some cases of ships being carried westwards, and Prestage wrote: «To a practical mariner it would seem very probable that a Portuguese ship navigating the Western Atlantic should have been driven out of its course to the coast of South America, because instances of it exist in later times» (4). Furthermore, it was certainly noticed by these mariners at an early date that the prevailing winds and ocean currents favoured a voyage westwards: if they wanted to explore that part of the Atlantic, as they certainly did, again they would have been driven to the Antilles or the American coast itself, as others were willingly or unwillingly. We do not know for certain, and it is unlikely that we ever will know, who were the XIV- or XV-century navigators who first saw the Antilles. They might have been Italian, Majorcan, French or Portuguese. The latter had already become the most active Atlantic navigators at the beginning of the XV century, besides the Portuguese origin of the names Antilia, Satanazes and Saya suggest that they were probably the first to visit the forefront of some part of Eastern America in modern times.

Behaim said that a ship went near the mysterious Island of the Seven Cities in 1414, and Ruysch and Medina also knew that it had been sought and could not be found. As I showed in 1954 (pp. 70 seqq), Ferdinand

(2) *Géographie generale des Mers*, 416, 439. Paris 1933.

(3) *Examen critique*, II, 257 seqq.

(4) *The Portuguese Pioneers*, 288. London 1933.

Columbus referred to a Portuguese ship that in the time of Prince Henry (perhaps about 1430) «was driven by stress of weather» to the island of Antilia; and Galvão also mentioned a ship which, when coming to Portugal in 1447, was «taken with a great tempest and forced to run westwards more than willingly the men would, and at last they fell upon an island which had seven cities». Particularly significant is the information of Diogo Domes, a navigator who served with the Infante D. Henrique, who said that the Prince, «wishing to know about the far away regions of the western ocean, whether there were any islands or *Terra firme*, besides those described by Ptolemy, sent caravels to discover». As I showed in 1954 (pp. 70 seqq) there are other and similar early references. The fact that the Antilia group of islands continued to be represented in so many xv-century charts, until Columbus' voyage and even afterwards, may show how well founded was the knowledge of the actual existence of lands in the Western Atlantic, probably often confirmed by successive voyages. Indeed, early xvi-century Portuguese cartography, such as the anonymous planisphere of 1502 (so-called Cantino) calls the West Indies, which had become widely known after Columbus' voyages, *Antilhas*. The idea that Antilia corresponded to both the West Indies and the American continent is evidenced in Lopo Homem-Reinel's Atlantic chart of 1519, where a red scroll in the Gulf of Mexico has written in golden letters *ANTE-YLLAS* and an inscription within a tablet drawn over the north part of South America refers to *ista antilliarum castelle Regis parte*. The Italian chart of c. 1510, «Egerton MS 2803», in the British Museum shows the *Septem civitate*, symbolically represented by seven mitres inland along the coast of North America, and has the word *Antiglia* written far inland in the north of South America. It was difficult to part with the tradition of Antilia and the Seven Cities, which had always been associated with American lands, and so we still find it in Desceliers' chart of 1546 as an island called *Sete Cidades*, written in correct Portuguese, and it continues to appear in, among others, Ortelius 1570 and Mercator 1587.

After all, I was not the first to identify Antilia with some American lands and to consider as Americana the early charts in which it is represented. This is so obvious that (as noted by Babcock) Peter Martyr d'Anghiera, writing before 1511, was of the opinion that «it seemeth that both these (islands discovered by Columbus) and the other islands adjoining are the islands of Antilia», and as long as 180 years ago Formaleoni wrote in the title of this study on Bianco's map of 1436 that in it is «demostrana l'isola Antilia prima scoperta di Cristoforo Colombo», coming to the conclusion that Antilia was one of the Antilles. Referring to a chart of 1463 by Benincasa, extant in the British Museum, Kohl write: «This map is remarkable because it has in the latitude of Spain the Island of 'Antilia', nearly as large as Portugal, and two other large islands to the west and north of it, named 'Rosellia' and 'Salvaga', which islands appear in the same or somewhat varying manner and shape on many other maps and may be considered as the first indication of larger

countries to be found to the west of Europe» (5). When listing the maps and charts of his «*Cartographia Americana Vetustissima*», HARRISSE gives the number 1 to the Laurana Medal of 1461 with its large continent *Brumae* in the south. (I must say that there are much earlier world maps, such as those of Beatus, VIII-century, which exhibit in the south a «*quarta pars trans oceanum interior est*», more or less like the *Brumae* of the Laurana Medal.) As No. 2 the distinguished Americanist lists also the rather late Benincasa chart of 1463, and commenting on Kohl's reference he writes: «That configuration and its nomenclature (of Antilia) are no longer found in the maps which Benincasa designed in 1466, 1467 and 1471 (6). But we may well imagin how such an important delineation may have strengthened the belief in the existence of transatlantic lands, and prompted so many maritime efforts westward ... the notion became more general when the Antilia commenced to figure in portolani, towards 1424». HARRISSE was referring to Freducci's chart in Weimar, which he thought to date from 1424, but which, as I have said, dates from between 1460 and 1469. If he could have known of Zuane Pizzigano's chart of 1424, he would not have failed to place it No. 1 in his list, as the first to show that larger lands were to be found to the west of Europe, beyond Madeira and the Azores, which began to be represented in XIV-century cartography. Nor could Nordenskiöld have inscribed as No. 1, at the head of his list of «The oldest maps of the New Hemisphere — A. Precolumbian Maps of Parts of the New World»: «1. 1424. Anonymous portolano at Weimar [in fact not earlier than 1460, as I have said] containing the island *Antillia*». As the mention of this large island, the name of which was afterwards given to the *Antilles*, in the portolanos of the fourteenth [obviously a misspelling for fifteenth] century, is probably due to some vessel being storm-driven across the Atlantic (as according to Behaim happened to a Spanish vessel in 1414), those maps on which this island is marked must be reckoned as Americana. But it seems to me that the islands *Insula de Brasil*, *Insula de Man* and *Insula St. Brandan* do not entail this right as, in case these names imply anything other than imaginary islands, they probably refer to islands in the Old Hemisphere». Then the same list follows with «2. 1426 and 1435. Portolanos by Becharius, including the island Antillia [in fact only the chart of 1435 represents the Antilia group of islands] ... 4. 1436. Andrea Bianco's portolano containing the island Antillia. 5. 1455. Planisphere by Pareto. The parallelogram island Antillia is entered here», etc. (7). Babcock, who

(5) J. G. KOHL, *Report upon the United States Geographical Surveys...*, I, 498. Washington 1889.

(6) HARRISSE did not know or may not have noticed other charts of Benincasa where Antilia continued to be represented, such as G. Benincasa 1470, 1482, and c. 1482, and those of P. Roselli 1464, 1466, and 1468, of A. Benincasa 1476, of A. Canepa 1480 and 1489, of J. Bertran 1482, and others before the end of the century, as well as B. Becaro 1435, A. Bianco 1436 and B. Pareto 1455.

(7) *Periplus*, 177.

discusses at some length and with great erudition the early cartographic representation of Antilia, begins by saying: «A good many decades before the New World became known as such, Antillia was recognized as a legitimate geographical feature», and ends with these words: «we may be reasonably confident that the Antillia of 1435 (in Beccaro's chart) was really, as now, the Queen of the Antilles» (8).

Therefore I have found myself in very good company—d'Anghiera, Formaleoni, Kohl, HARRISSE, Nordenskiöld (and others might also be mentioned)—when I came to the conclusion that the Antilia group of islands shown in Zuane Pizzigano's chart of 1424 correspond to the Antilles and is consequently the first attempt known at representing the forefront of America: it is indeed the first document extant which must be considered as «Cartographia Americana Vetustissima». As far as I am aware nobody protested against the conclusions of HARRISSE, Nordenskiöld and the others; but my monograph of 1954, in which I arrived at the same conclusions, have been the object of much adverse criticism, and even contempt, such as that expressed by a distinguished Harvard professor, for whom my honest and *desinterested* work (absolutely *desinterested*, I underline), which cost me a good deal of study and effort, could only «be thanked for a very beautiful and accurate reproduction of the Pizzi [not even admitting my reading of the palimpsest] portolan chart of 1424».

I wrote in the first page of my book of 1954: «I am quite aware of how controversial this subject is, and have no doubt whatever that many opinions diverge from mine... opinions will never be unanimous when interpreting and judging many of the happenings of history. I do not pretend therefore that the conclusions at which I arrived will convince everybody». That is just what has happened, and I am not surprised, of course. Anything connected with the «discovery of America» is bound to become a most controversial and touchy subject. There are the fanatics of Columbus as there are the fanatics of Vespucci, or both. Everybody knows who they are and where they come from. Their idols are taboo. They form sects, with their high priests who have laid down the law, and whoever disagrees with them on some point or other is condemned in advance. We all know of the amazing uproar arisen by the discovery of the «Vinland map», just to mention a more recent case. I do not remember where I have read that «to make sense, facts have to be fitted together, and the resulting jigsaw has to be justified by explanation or argument». I think that that is what I have sought to do. The facts that I found and my explanation and argument are, in brief: *a)* This chart was made by a Venetian who, apparently, used a Portuguese prototype. *b)* It is the earliest chart known on which the Antilia group of islands is represented. *c)* The system of winds and currents in

(8) W. H. BABCOCK, *Legendary Islands of the Atlantic*, 145-62, *passim*. New York 1922.

the Central North Atlantic can produce situations in which a ship sailing between the Canaries and Madeira may be irresistibly carried to lands in the Western Atlantic. *d)* Various such cases have been recorded by the Classics and are also known in modern times. *e)* In the first quarter of the xv-century active navigation in that part of the Atlantic had already begun, and there was a wish to explore westwards, as referred to by various xv- and xvi-century writers. Particularly important is the testimony of Diogo Gomes, a navigator of the Infante D. Henrique, to which I have referred above. *f)* The facts that the Antilia group of islands is represented so conspicuously in the middle of the ocean; that, according to the scale of the chart, the area of Antilia is about 77,280 Km², nearly as large as Portugal, while the largest of the Azores, St. Michael, is only 474 Km² (Cuba is 114,500 Km², Haiti 77,280 Km²); that the Azores, represented in the 1424 chart in their traditional position, are about midway between the coast of Portugal and Antilia; that the distance, in longitude, between the easternmost of the Antilles (Barbados) and the coast of Portugal is about the same as between the latter and Antilia, and that the same reasoning applies, and still more impressively, if we seek to identify Satanazes with Terra Nova. *g)* Having pondered all these facts and arguments, I came to the conclusion that the Antilia islands correspond indeed to some of the Antilles and probably Terra Nova which were discovered, or rather sighted, before 1424, probably by some unknown Portuguese navigator. Therefore the 1424 chart must be considered as the first Americana document, just as HARRISSE, Nordenskiöld and others considered as Americana various later xv-century charts in which Antilia is represented. *h)* This does not diminish in an iota the feat of the great Genoese navigator Christopher Columbus because any land is in fact *discovered* only when its discovery becomes universally known, as was the case with Madeira and the Azores islands, which were undoubtedly sighted by some unknown navigators in the xiv century, as we know for certain because they are represented, however embryonically, in xiv-century charts. But their real discovery (I would say their «official» discovery) took place only in 1419-20 and 1427. The same happened with the Antilles, which appear represented in rudimentary form in the 1424 chart, but became known to all Europe only after their «official» discovery in 1492.

If some critics have accepted my conclusions and even praised my work, more numerous are those who have not. Some of the latter have been either incorrect or aggressive or both, particularly among the Columbian or Vespuccian fanatics (such as the case of a South-American inveterate Lusophobe, with a Portuguese name and an Italian wife, who could find in my monograph no more than «national vanity»); I will disregard them. I could hardly have found time to answer separately all those adverse critics, however much I may respect their opinions. In what I have said above I have taken into account some of their opinions and arguments. Some just echo Humboldt, who wrote (referring to Freducci's chart of between 1460 and 1469, which he thought to be dated 1424): «On concoit plutôt que l'Antillia, qui était primiti-

vement une grande terre dans laquelle se confondaient les côtes mal connues de plusieurs des Açores, fut repoussée à l'ouest de ce groupe dès que l'on reconnut avec plus de précision la petitesse et les contours de chacune des îles qui le composent. Pour saisir la force de cet argument il faut se rappeler les véritables époques des découvertes faites par les Portugais dans la région tempérée de l'océan Atlantique». However, the German savant writes in the same page: «Si l'île Antillia avait été identique avec l'île Saint-Michel des Açores, il n'est pas probable qu'on l'eût encore figurée sur les cartes de Bianco, présentent simultanément tout le group des Açores», and he could not help adding, in a foot-note: «Behaim qui, à plusieurs reprises, habita l'île de Fayal, ... place l'Antillia loin du group des Açores» (9). Others limit themselves to saying or concluding, more or less, that «it is unlikely that the Antilles were known before 1427 and 1436», or that «the Antilia group of islands does not correspond to a real discovery — but represent an echo of the Norman voyages» etc., or «the new map of 1424 ... seems capable of furnishing really valuable aspects of the history of cartography itself, and is in itself an important historical document but does not solve any problems», or it is «unavoidable to doubt the value of the map as a historical document ... it does not solve any problems» or «the distance from the Azores to the Antilles is more than double that from the former to Portugal [but not the difference in longitude], and the latter do not lie west of the former but southwest», and [as everybody knows] «a sailing ship cannot reach the Central America archipelago following the rhumb of the Azores, because of contrary currents and winds», or «the arguments against this view [that the Antilia group of islands indicates a pre-Columbian Portuguese discovery of America], which, has not won general acceptance, have been stated by Admiral Morison». In fact, the main conclusion of Professor Morison, in his recension of my monograph (10), is that the Antilia group of islands in the 1424 chart does not represent «anything more than myths or the imagination of forgotten seamen», and that there is no documentary evidence of any voyage before 1424 on which these islands might have been discovered, etc. As this renowned Columbian scholar is one of my fiercest critics, I have endeavoured to answer his arguments, as well as some sarcasms, when discussing Zuane Pizzigano's chart of 1424 in Vol. II of my *History of Portuguese Cartography*, which I hope will be published next year (Vol. I is now in the printers).

I may also refer to Professor Erik Gren's very correct, serious and learned recension of my monograph (11), in which he also disagrees with my conclusions. But he emphasizes an interesting point, to which I have referred rather slightly (p. 73 *passim*): He says, «we should not limit ourselves to consider only the real voyages of discovery on the possibility that any of the rather

(9) *Examen critique*, II, 205.

(10) In *Speculum*, 1955, pp. 467-70.

(11) In *Lychnos*, 1956, pp. 373-8, a reprint of which Professor Gren kindly sent me.

numerous Portuguese vessels sailing along the western coast of Africa had been driven right across the Atlantic ... there seems to exist a much greater probability that roaming fishing vessels might have met with the same fate. And it is worth keeping in mind that sailors after reaching the waters off the Irish coast enter the belt of the changeable winds which can easily drive them across the Atlantic». This is a real possibility, which might help to identify Satanazes with Terra Nova, while Antilia may even include some stretch of the eastern coast of the North American continent. After saying that «the map itself is admittedly an Atlantic portolano», Professor Gren adds that it is in reality only a part copy of a Mediterranean portolano which has been mutilated and which has been furnished with partly new rhumb-lines with auxiliary compass roses farther out in the Atlantic than was required by the rules, and this in order to supply space for a certain number of additions, viz. exactly the Antilles, Satanazes, and the smaller islands farther towards the North-East». It seems to me that this is essentially an Atlantic nautical chart, and hardly could be called «a part copy of a Mediterranean portolan». The fact that for the first time wind roses appear far out in the Atlantic, as noted by Professor Gren, should not surprise us because, again, this is essentially an Atlantic chart, the main purpose of which was certainly to show and draw attention to the newly discovered islands. In connexion with these wind roses and their rhumb lines, Professor Green — who thinks that this chart, or rather its prototype, may date «perhaps even from the end of the 14th century», and that «certain features in the disposition (of the rhumb lines) seem to point rather to Catalan portolanos» — complains that I have «unfortunately avoided the question: how has the map originated, and what was its purpose?». I am sorry I did not know how, or was not able to make myself clear enough because I think that, far from avoiding the question, what I tried to do in my monograph was just to answer it.

I wish I could answer in detail all my critics, one by one and many of them fully deserve it, as proof of my regard and respect for their opinions, however much I may disagree with them — but that is not practicable, particularly at this moment.

In conclusion: I am convinced, and I sought to demonstrate, that the 1424 chart records the otherwise unknown early discovery of some American lands, possibly by some Portuguese navigator, and is therefore an important contribution to American history.

I have chosen this theme for my paper at this meeting because I think that it is of capital importance for the history of cartography, of navigation and of the discoveries. I wanted to submit my point of view to discussion by this gathering of most of the world's leading experts in these matters and to try to answer them as well as I can. I doubt whether a clearcut conclusion will ever be reached, but we may try to do the best we possibly can.

Be that as it may, I very much wonder whether all those here present are in agreement with me. I think that it will be all to the good, because progress would hardly be possible if everybody were always in agreement.

DISCUSSÃO

TEIXEIRA DA MOTA. — Sem de algum modo querer envolver-me nas complicadas controvérsias que a «Antília» da carta de Pizzigano de 1424 tem provocado, desejo apenas trazer à discussão uma importante fonte, que normalmente não é referida pelos que se ocupam das várias formas que na cartografia quatrocentista assumiu tal representação e das lendas que lhe dizem respeito. Trata-se da relação escrita por Eutsache de la Fosse acerca da viagem que em 1480 fez um navio espanhol ao Golfo da Guiné, neste sendo aprisionado por navios portugueses, num dos quais regressou a Portugal. A propósito da viagem de regresso, refere com amplos pormenores a lenda da Antilha colhida entre os marinheiros, em termos reveladores de que os portugueses não conheciam terras a oeste, embora colhessem indícios da sua existência e acreditassem na sua existência. Como conjugar este desconhecimento com a ideia de que a representação da Antília na carta de 1424 resulta de viagem portuguesa em que teriam sido avistadas terras americanas? Como é possível admitir que no curto período entre 1424 e 1480 se tivesse perdido entre marinheiros portugueses a notícia do encontro real de terras americanas por outros portugueses?

WASHBURN. — Perhaps my remarks may merely indicate the difficulty of overcoming or outgrowing one's education, but as a student of Samuel Morison, who regrets his inability to be here, I must retain a degree of scepticism at the thesis that the two large islands in the chart of the «forefront» of America, despite Professor Cortesão's cogent arguments and enormous erudition.

I would point out (in reference to Prof. Cortesão's remarks on the similarity the North American lands in the «Cantino» chart and Antília and Satanazes in the chart of 1424, in speaking about my paper of 24 October) that Antília and Satanazes have precise, clearly defined boundaries on all sides: the lands in Labrador — Newfoundland area of the «Cantino» chart show a precise eastern edge, but an undefined, indefinite mass of color (one can't call it a «line») on the West. The Cantino draftsman was evidently indicating definite knowledge of lands known on their east coast but whose extension was unknown. Pizzigano is recording with assumed precision (though possibly in a conventional form) knowledge about islands which may or may not have been based on some previous actual visit to North America but which more probably are based on literary assumptions, rumors, or other evidence not capable of being related to a previous visit to North America. May I also suggest the significance of tabulating the 15th century chart on which Antília and / or Satanazes appear or do not appear in order to determine why these islands appear in some maps and not in others. For example, in the portolan chart of 1492 by Jorge d'Aguiar, on which I will shortly report, the islands do not appear, although «mythical» islands like the circular «Brazil» west of Ireland do appear. Appearance or non-appearance of Antília and Satanazes on maps of the 15th century suggests something about the belief in, or knowledge of the islands should be considered as representing «known» islands.

MARCEL DESTOMBES. — Une hypothèse expliquerait la présence de deux îles, dont l'île de sept cités, dans l'Atlantique par le transport dans l'ouest des deux colonnes d'Hercule (qui sont physiquement représentées sur les cartes du Moyen-Âge — para exemple celle de Guillaume de Conches, XII.^e siècle) et qui figurent dans l'Atlantique sur la carte de Mecia Viladestes de 1413 avec la légende *Aqui posa Hercules duas columnas*. Il est possible en effet d'expliquer l'origine de l'île *Septa Civitas* par une déformation de *Septa Civita*, c'est à dire la ville de Ceuta. Je livre cette hypothèse pour ce qu'elle vaut.

DAVID WATERS. — Of course, to make the early voyages of exploration in the Atlantic, the Portuguese had need of suitable vessels and it is a remarkable and provocative fact a caravel is shown off the northwest coast of Africa on the Catalan Atlas of 1375. Any

Atlantic navigation to be repeatedly successful necessitated some aid such as altitude navigation based upon scientific measurement of heavenly bodies. The evidence does seem to be that this was evolved by the middle of the fifteenth century and it may well have had origins reaching back into the previous century if we consider the implications of the caravel of 1375. Such pioneer voyages must often have met with disaster or experienced near-disaster including perhaps being carried across the Atlantic and back again. The late Prof. E. G. R. Taylor wrote a very stimulating article, which appeared in the *Journal of the Institute of Navigation* (London) on ships being carried across the Atlantic and back again. However, in connection with the question of islands reported in the Atlantic I must remind those present of the very circumstantial report made by Martin Frobisher's expedition when returning from North America in the 1570's of a large island. It is possible that this had been carried across the Atlantic from the mouth of the Amazon but it does seem probable that whatever its geographical origin it was an island but a floating island.

Of course, Prof. Cortesão's most interesting paper is very much related to Dr. Washburn's so each adds to the interest and value of the other.

R. SKELTON. — Professor Cortesão's closely knit and learned argument, which commands admiration, raises more important issues than there is time to discuss now. I will confine myself to a few general remarks.

It is clear that (as pointed out by Professor Cortesão) the islands of *Antília* and *Satanazes* form a central feature of the cartographic design, suggesting that the chartmaker attached special significance to them. It is not less noteworthy that, so far as surviving documentation goes, these islands were a creation of the mapmakers, since they are referred to in no textual document before 1424. This being so, it is tempting to seek a cartographic, rather than a factual, explanation of them, as indeed some scholars have done. Could they (for instance) be a product of the original chartmaker's reinterpretation or corruption of a feature or features which he had seen in other maps and which he then associated with the familiar legend of the Seven Cities? If it were possible to establish such a derivation, by reference to other surviving maps, this would be fatal to the hypothesis that *Antília* and *Satanazes*, in the 1424 chart, represent actual discoveries.

It must be admitted however that all attempts so far made to identify analogues from which any such adaptation in design could have been made have failed. We are, for the present at least, compelled to assume that the two islands in the 1424 chart represent land which the chartmaker supposed to have an objective existence. In medieval maps, representations at the periphery of knowledge might draw on various sources, singly or in combination: literary tradition, rumours or reports of land (or varying reliability and precision), descriptions brought back from a landfall or discovery. The mapmakers were eclectic and not always very critical in their use of the sources; factual evidence was often mingled with hearsay or myth, by a process of assimilation. If *Antília*, in the 1424 chart, reflects an actual discovery, its conventional and generalised delineation suggests a land of which the cartographer had a report about its existence and approximate location but no data on its geographical conformation. The attempt to identify the outline of *Antília* and *Satanazes*, as drawn by Pizzigano and by later chartmakers following the same prototype, with particular tracts of the American coastline, in terms of mileage or latitude and presupposing a common scale, seems to me inconsistent with the professional methods of 15th-century nautical cartography.

The meteorological argument, which has been convincingly put by Professor Cortesão (in his monograph) and by Professor Taylor (in her article in the *Geographical Journals*, 1964) is doubtless the most satisfactory basis for identification of the lands which may be represented by the two large islands in the 1424 chart. The argument from winds and currents, however, led Professor Cortesão to the Antilles and Professor Taylor to Newfoundland!

Two points about the *Antília* representation are of interest in the cartographic and chronological context. The first cartographer to show it was a Venetian (Pizzigano, 1424),

the second a Genoese (Baptista Beccario, 1435). If their information came from Portugal, it is worth noting that Francesco Beccario of Genoa (doubtless a relative of Baptista) had in 1399-1400 collaborated in Barcelona with Master Jacme Ribes (*quondam* Jafuda Cresques), and that, as Gonzalo de Reparaz demonstrated, Master Jacome is almost certainly the Mestre Jacome de Malhorca who entered Portuguese service between 1420 and 1427, at the very time when the Pizzigano chart was drawn. Secondly, I should like to hear a convincing explanation of the very intermittent appearance of Antilia in Italian 15th-century charts. Why is it depicted in some, but not in others? Why is it particularly associated with Venice? Not until after he settled in Venice, in 1563, did Benincasa introduce it into his charts, and he never failed to do so thereafter.

A. CORTESÃO. — I am very glad that there was this opportunity for such an authority as Dr Skelton to make his comments on my paper, to which I will try to answer as well and as briefly as I can.

After acknowledging that the chartmaker attached special significance to the recording of the *Antilia* and *Satanazes* group of islands and that it forms a central feature of the chart — therefore not denying my assessment that it was its main purpose — Dr Skelton asks whether the representation of those islands «could be a product of the original chartmaker's reinterpretation or assumption of a feature or features which he had seen in other charts and which he then associated with the familiar legend of the Seven Cities?». My answer is yes, that was exactly what happened. But something must be added: the cartographer was led to that representation because he had received in Venice information from Portugal about some large lands which had just been discovered in the westernmost North Atlantic. That certainly was most exciting news, as I have shown, there was already in Venice and elsewhere the suspicion, if not the conviction, of the existence of such lands. That news was so important that the chartmaker thought it appropriate to represent them as «a central feature» of the present chart. I have no doubt that the news, and the respective prototype of the chart, were received from Portugal because:

- a) the Portuguese were then the most active navigators;
- b) we know that before 1424 they were thrusting westward into the Atlantic; and
- c) *Antilia*, *Satanazes*, and *Saia* are Portuguese words and nothing else.

The lack of documents referring to such voyage or voyages, to the prototype of this chart sent to Venice, and to how it was drawn, do not invalidate my arguments. This is one of the cases, I hold, in which circumstantial evidence must be called upon in order to explain some historical event — particularly a very important and exciting one such as this: the first cartographical representation of any American lands. If the islands were conventionally delineated it is because «the cartographer had a report about their existence and approximate location but no data about their geographical conformation», although he «supposed that they had an objective existence». His supposition was quite legitimate, as we know today.

I think that I have shown why the meteorological argument may help to explain both the discovery of the Antilles (*Antilia*) and of Newfoundland (*Satanazes*), and possibly even some stretch of the eastern coast of the North-American continent. Both Professor Taylor and I are right — there is no reason for surprise.

Dr Skelton «should like to hear a convincing explanation of the very intermittent appearance of *Antilia* in Italian 15th-century charts», and «why it is depicted in some, but not in others? Why is it particularly associated with Venice?». In the first place, news did not travel so fast in the xv century. Second, we can be sure that only a small part of xv-century charts have survived, therefore we cannot know in how many early charts *Antilia* was shown; it is understandable, nevertheless, that some charts with *Antilia* soon reached Genoa and other centres of cartographical activity. Third, I do not see any reason for surprise because some charts showed *Antilia* and others not. Fourth, nor can I be surprised because only after Benincasa settled in Venice, in 1463, did he represent the *Antilia* group of islands in some of his charts. In fact Benincasa's earliest chart, which

has reached us, is dated 1461, and only in four of his surviving six charts and fourteen atlases (with a total of 86 charts) is *Antilia* shown. I cannot see why any special significance may be attached to this, and it certainly cannot be said that only after he settled in Venice, in 1463, did Benincasa introduce it into his charts, and «never failed to do so thereafter».

Most interesting is Dr Skelton's information (which happily will be developed in an article in the next issue of *Imago Mundi*) about the association of Master Jacome de Malhorca with Francesco Beccario in Barcelona at the turn of the xiv century. It may be possible, but at the present stage of our knowledge we cannot go further than guess that Master Jacome had some interference, if any, in the making of the prototype of Pizzigano's chart of 1424.

I should like to thank Dr Skelton for his intervention in the discussion of this fascinating and most important problem of the representation of the *Antilia* group of islands in a chart of 1424. In conclusion I must say that the more I study and discuss the subject the more I am convinced that Pizzigano's chart of 1424 contains for the first time the representation of some American lands, and therefore the importance of this priceless document for the history of geography and of cartography is second to none. That is why I regret that my arguments have not convinced many scholars, as shown by the reticences of some here present. The assertion «Columbus discovered America» has so become a foregone conclusion and so blinded many people that they cannot admit that other navigators reached the westernmost parts of the Atlantic before, much before indeed, the genial Genoese navigator arrived there in 1492. It seems, in the case of Pizzigano's chart of 1424, that the distinguished Harvard Professor I have mentioned, the first to review my monograph, has mesmerized many people. Formaleoni, Kohl, HARRISSE and Nordenskiöld — who, before me, thought that any early chart representing *Antilia* should be considered Americana — were lucky to have escaped the criticisms of the Columbus adicts. Might it be because they were not Portuguese?

As regards the remarks of Cmdr. Teixeira da Mota, I can only say that there is no reason to believe that «in the short period between 1424 and 1480 the news of the discovery of American lands by some Portuguese was lost among Portuguese sailors». I am sure that such news was not lost, much on the contrary. But that is another long story which it is not possible to tackle at this moment.

I am sorry that there is no time for me to have given here but a brief résumé of my paper; however it has been distributed to all the participants in this Meeting and it will be printed with the Proceedings and be available to everybody, of course.

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