

TITLE: *Chart for the navigation of the islands lately discovered in the parts of India, known as the "Cantino World Map"*

DATE: 1502

AUTHOR: Pedro Reinel ?

DESCRIPTION: The *Cantino* map, a beautiful pen-and-ink drawing with added color and gilt, on vellum, and measuring 110 x 220 centimeters (43 x 86 inches). Just as the Juan de la Cosa map (#305) graphically dramatizes the impact of Columbus on Renaissance Europe, the *Cantino* planisphere glorifies the achievements of the great Portuguese navigators of the same period, including Vasco da Gama, Cabral, and the Corte-Real brothers. This, one of the first sea charts of the era of European trans-Atlantic discovery that can be precisely dated, is a manuscript born of controversy and intrigue.

Confirmation of the name of the cartographer remains unknown for interesting reasons. In the political atmosphere of this period, the need for anonymity was imperative. Success in the bitter rivalry between Spain and Portugal required that the new geographical data generated by discoveries in the East and West Indies be kept secret. Information from returning mariners was assembled by cartographers to form official charts for kings and their advisors. It may seem strange that, with so much exploration activity during this period, why no earlier original Portuguese charts has survived (as far as we know). This is mainly because of a policy of official secrecy by which the Portuguese authorities sought to restrict access both to lands discovered by the Portuguese and to any relevant information that may have been of value to a rival foreign power. An office known as the *Casa da Mina e India* was the body responsible for overseas territories and colonies, and it was this office which produced and revised charts and maps, issuing them to pilots for use on voyages, subject to their being handed in again on return to Portugal. The Portuguese king, João II, had placed an embargo on the provision of charts showing the new discoveries under penalty of death. Another possible explanation for the lack of any known charts drawn for Prince Henry or for João II is that any charts that were made may have been lost during the great earthquake that destroyed much of Lisbon in 1755.

Nevertheless, there were leaks. Because the Portuguese king had placed an embargo on all charts displaying new discoveries, Cantino ordered a map that was made by a cartographer in Lisbon, requiring ten months between December 1501 and October 1502 to complete, at a cost of twelve gold ducats (approximately \$60). An inscription in Latin on the reverse side of this map relates that *Carta de navigar per le Isole nouam tr[ovate] in le parte de India: dono Alberto Cantino al S. Duca Hercole* [this sea chart of the islands recently discovered in the regions of the Indies has been presented to the Duke of Ferrara, Ercole d'Este, by Alberto Cantino]. The Duke having expressed a desire to obtain a map illustrating those voyages, Cantino ordered it from a cartographer living in Lisbon, and whom some scholars suspect to have been an Italian artist. Historian Henry Harrisse's opinion is that there were then in Portugal several Italian artists who made maps, not as cartographers, but as copyists and miniaturists (the maps of Nicolas de Caveri (#307) and the *Kunstmann* No. 2 (#309), are clearly works of that kind). While yet in Lisbon, the probability is that Cantino interviewed Americus Vespucci, who had just returned to that city from his third voyage, and obtained from him supplementary information, which we assume to be the additional names in a cursive handwriting. The chart was clandestinely carried by Cantino to Genoa and then sent on to the House of Este, in Ferrara, where it remained until 1592. That year, Pope Clement VIII relieved

Cesare d'Este of his duchy, and the entire ducal collection was moved to Modena. At some point, the top of the map, bearing the title in large Gothic letters, was cut away to accommodate its use as a covering for a screen. During the popular outbreak of 1859, the palace was invaded by a mob and the map stolen, but it was discovered in 1870 by Signor Boni, librarian of the Biblioteca Estense. He noticed it in the shop of a pork butcher, called Giusti, on the Via Farini, still serving its purpose as a screen cover. This last possessor of this most valuable document put it to a very singular use. Wishing to cover a common screen, he had the map pasted on its folds, after cutting off and throwing away the top margin, which doubtless contained a title engrossed in large gothic letters, the tail end of one of which is still visible. Signor Boni bought the map, removed it from the screen, and presented it to the Este library where it still resides.

Alida C. Metcalf, using high resolution digital copies of charts in ArcGIS, the Cantino chart was compared to contemporaneous charts. The long-held assumption that this Cantino chart was a surreptitious copy of the Portuguese king's royal pattern chart is rejected in favor of a more simple explanation: Alberto Cantino commissioned the world chart from a chart maker in Lisbon, and that chart maker was Pedro Reinel.

The map is oriented politically to the Portuguese point of view. It ignores Cabot's discoveries and delineates land west of Greenland but east of the papal line of demarcation, and, therefore, within the Portuguese realm. The land is adorned with the Portuguese flag and a legend stating: (translated) *This land was discovered by order of the Most High and Excellent Prince King Dom Manuel of Portugal. It was found by Gaspar Corte-Real, one of his noblemen, who, upon discovering it, sent [thence] a vessel with men and women of that country. He remained with the other vessel, but never returned [home], and the belief is that he was lost. The country contains much mast timber.*

This large manuscript world chart is a "planisphere" drawn on vellum, colored and gilt, and is the earliest surviving Portuguese map of new discoveries in the East and West. It represents the known world at the exciting moment when Europe was learning of its actual extent. Due to the size of this chart, the coasts are shown in considerable detail, and, as shown above, the place-names are numerous. The Equator and tropics are drawn in, but there is no graduated scale of latitudes. From west to east it extends 257 degrees from Cuba to the eastern coast of Asia. The Tordesillas demarcation line



between the Spanish and Portuguese spheres is inserted, and the Portuguese discoveries in the northwest are made to lie just on the Portuguese side of the line.

Based on secret Portuguese charts and travel reports, the Cantino Map was never intended for navigation but rather as a presentation map, and its cartographic features declare its princely destination. Rhumb lines coexist with the equator and the tropics, which are proper to medieval *mappaemundi* and Ptolemaic maps; coastlines and port names, typically recorded in sea charts, mingle with city views and landscape details in bright color, useless for sailors but extremely informative for armchair travelers. Notable are the trees and parrots along the coast of Brazil. They are represented in an odd, albeit effective, perspective that combines the plan-view of the general chart with the perspective-view of the trees as they would appear from a moving ship. Elaborate legends inform about the richness of West Africa: gold, slaves, pepper, and other highly valued items. An inscription situated near Sumatra asserts its identification with *Taprobana*, the mythical island described by Ptolemy as rich in "gold, silver, precious stones, and pearls and very big and fine rubies and all kind of spices and silks and brocades," that Renaissance mapmakers had difficulty in placing on their maps. Clearly marked nations' flags mark their respective dominions of ports, lands, and trade routes throughout the world. Mathematically and chorographically, the *Cantino* map charted new lands, overseas dominions, and exotic goods. However, the map still bears traces of the medieval cartographic tradition by showing the land of the eschatological figures of Gog and Magog in a distant region in Asia.

It presents no border or margin of any kind. It is not likely that such an elaborate planisphere, executed for a prince, should have been left without some ornamented frame. There is, besides, a long easel stroke near the northern extremity of the line of demarcation, which has the appearance of the lower end of an ornate capital letter, which may have belonged to a running title. This, together with the act that the map, when rescued from the butcher's shop, was pasted on a screen after it had been stolen from the palace of the Dukes of Ferrara, indicate that the map may have suffered, on the part of its last owner, an excision all around the border. If so, there was probably a scale of latitude. Nor is it impossible that it should have also exhibited in the supposed cut-off part, a prolongation of the coast southward, such as we see in the map of Nicolay de Caveri (#307).

The continents are shown in a soft green, the islands in rich blues and reds. Flags in their proper colors mark the different sovereignties, from that of the Turks at Constantinople to that of the Spaniards near Maracaibo. The two tropics are in red, the equator in gold and the papal *Line of Demarcation* in a brilliant blue. Africa is characterized by a hilly landscape in pale blues and greens, a castellated Portuguese fortress, native huts, natives in jet black, birds of various hue and a huge lion-headed figure in brown and gold. The gold crosses on the west coast of Africa mark the locations of the *padrões* (stone pillars cut from Portuguese limestone) placed by the Portuguese explorers, particularly Cão and Dias. A circular structure labeled the *Tower of Babilonja* appears in Egypt, while Russia is marked by a grouping of characteristic architecture suggestive of Moscow. Newfoundland, placed to the east of the papal meridian and labeled *Terra del Rey de Portugall*, is displayed thick with trees in green and gold. The Brazilian coast is adorned with tall trees in green, gold and brown, among which are interspersed smaller trees and shrubs in various shades of blue and three enormous parrots intensely red with white beaks and claws and divers wing and tail

feathers in blue, buff and gold. The ocean is of an ivory tint, and the lettering, sometimes gothic sometimes cursive, is in black and red.

From the moment that we admit the existence of a map which exhibited the northwestern continental region as reaching only to the Tropic of Cancer, we may presume that there may also have been a map which represented that land ten degrees shorter still; inasmuch as such is, *prima facie* at least, its latitudinal area in the map of Cantino. In the present state of the enquiry, the critic is bound, therefore, to accept, as being within the meaning of the original cartographer, the configuration and extent of that continental land as we find them measured and depicted in the said map.

As to the nomenclature, in its relatively first stage, the Cantino map contains the following names, beginning with the most northerly designation inscribed on that continental land:

NORTHWESTERN CONTINENT

(beginning with the most northerly name)

Costa del mar vciano	Rio de los largartos	C: do fim do abrill
Cabo d. Iicōtu	Cabo Santo	El golfo bavo
Canju . . .	Rio de las almadias	C: lurcar
Cabo de b . . . a bentura	Putá Roixa	C: do mortinbo
Costa alta	C: del gato	G: do lurcor
Lago luncor	Rio de do diego	C: arlear
Las cabras	Cornejo	Rio do corno
	Rio de las palmas.	

SOUTHERN CONTINENT

Tamarique	Ylha della Rapossa	Canjbales
Ilha Rigua	I° tres testigos	Cabo de Sam jorge (bis)
Arcay	Terra de pan°	Anaresma
Boacoya	Ilha de los canjbales	San miguel
Golfo del unficisno	Las gayas	Rio de São francisco
Costa de gente braua	La punta de la galera	Abaia de todos sanctos
Rio de fonseca	Cabo deseado	Porto seguro
Montanbis albissimas	Rio grande	Rio de brasil
Cabo de las perlas	Golfo fremosso	Cabo de scta Maria

The latest geographical datum in the present map is, at the north, the legend expressing fears that Gaspar Corte-Real had perished: *e crese que he perdido* [and it is believed that he is lost]. This could have been inscribed only several months at least after the return to Lisbon, in October 1501, of two of his vessels; and perhaps so late as May 2, 1502, when Miguel Corte Real sailed from Portugal in search of his brother.

The names north and south of *Porto Seguro*, on the Atlantic coast, were inscribed, as already stated, after the map had been delivered to Cantino, but very soon afterwards, and at Lisbon.

As to the northwestern configuration, the historian Henry Harrisse is hesitant to believe that it appeared in *Cantino* for the first time. He states that it doubtless originated with other maps, and proceeded from a type on which had been grafted data borrowed from fragmentary surveys brought by mariners of different nations, as we suppose, and

who must have visited that coast several times in the course of clandestine expeditions, including the fishing ventures off the Grand Banks near Newfoundland.

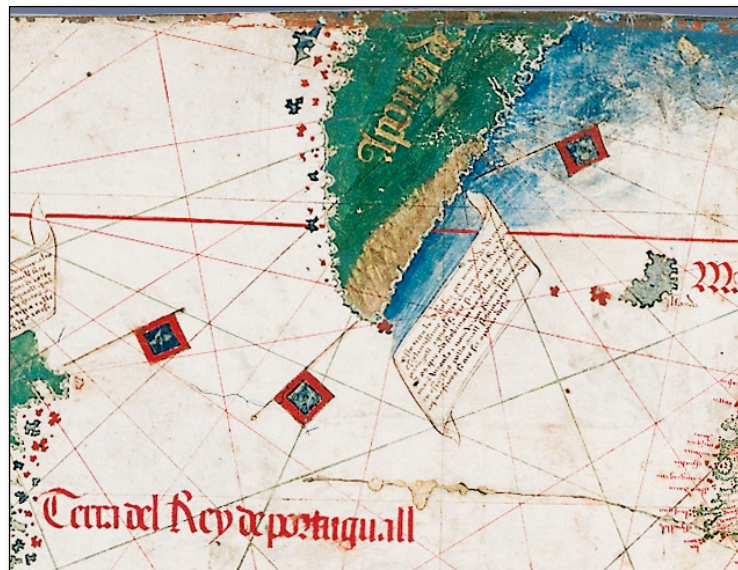
Evidence of when an early manuscript was produced is essential in determining its priority and significance. For example, several key but undated maps were made in the first years of the 16th century, but the primacy of the 1502 Cantino world map is established on the basis of its date. The *ad quem* date is fixed by the letter from Alberto Cantino, then in Rome, to Ercole d'Este, dated November 19, 1502, saying that the chart made in Portugal at the Duke's order had been left for him with an agent in Genoa. Additional evidence comes from the possibility and opportunity that Cantino may have interviewed Amerigo Vespucci, who had just returned from the New World, and may have acquired from him the new place-names that appear in cursive on the map. Further evidence, again, comes from the geographic information and a legend expressing fear that Gaspar Corte-Real, the Portuguese explorer, had perished in the North Atlantic. Because two of Corte-Real's ships returned to Lisbon and brought this news in October 1501, the map could not have been completed before then. Therefore, while the maker unfortunately remains unknown, the date is certain.

The American coastline remains fragmentary, because up to this time probes had been made only to the West Indies, Nova Scotia-Newfoundland, part of the South American coast, and possibly Florida. Portions of this explored area were recorded, but gaps in the coastline were not filled in until further explorations.

As in other planispheres of the early 16th century, and in contrast to Juan de la Cosa's map, the unknown Portuguese cartographer divides North America into three disconnected landmasses, widely separated from one another:

- *Punte de Asia* [Greenland?]
- *Terra del Rey de portugall* [Newfoundland?]
- the land to the northwest of *yssabella* [Cuba], which has been variously interpreted as representing Florida, Yucatan, and unintentional repetition of Cuba, or a peninsula in East Asia.

In the north Iceland is placed very nearly in its proper location and the Corte-Real landfalls in Greenland and Labrador (1500-01) are marked by Portuguese flags and by the legend contained in a *banderol* (against Greenland): "*This land was discovered by license of the most excellent Prince D. Manuel King of Portugal, and they who discovered it went not ashore, but viewed it and saw nothing but very thick mountains, whence according to the opinion of cosmographers it is believed to be the peninsula of Asia.*" Only the tip of Greenland is displayed, but with a fair amount of accuracy (see below). This represents the southeastern part of Newfoundland as surveyed by the vessels that returned from the Corte Real expeditions. Later maps showing the same land call it *Terra Corterealis*. However, the map also contains an amazingly accurate survey of



the southern part of Greenland. The "*peninsula of Asia*" would refer to Pliny's *Tabin Peninsula*, Asia's supposedly ultimate northeast peninsula. "*Went not ashore,*" indeed! According to James Enterline to survey this vast coastline with such accuracy, even including the myriad islands along the west coast, would have been so formidable a mission that they would have had no time left to survey Newfoundland. They would have had to spend every second available at sea under full sail without making a single navigational error while negotiating the unknown coastlines. Even then the fall drift ice would have caught them before they got very far. It is highly improbable that anybody could have sighted the ice cap of Greenland and seen nothing to report but "*very thick mountains.*" Perhaps more plausibly, this map of Greenland came from another unknown Norse or Eskimo prototype instead of from contemporary Portuguese explorers. Modern expectation that a Portuguese map must be based on Portuguese surveys might be an application of the provenance paradigm in our own time. Contrast the excellence of the Greenland outline with the relative poverty of likeness in the Newfoundland survey. Nevertheless, the islands along the west coast of Greenland are erroneous, belonging to the far north but not the southern west coast. This is not just an error but a degeneracy. Inaccuracies are characteristic of fresh explorations, but degeneracies are not. Perhaps some prototype for this map came down through Joao Vaz Corte Real.

One of the most striking aspects of the Cantino Map is its contrast with the La Cosa map's (#305) treatment of northern America, for which it shows nothing but open water. Some writers have suggested that the mapmaker purposely moved his *Terra del Rey de Portugall* away from the coastline. He may have wanted to bring it to the Portuguese side of the *Tordesillas Treaty* line, the heavy vertical meridian. This accusation is unjust, however, for his east-west placement of Newfoundland is exactly correct relative to the longitude of the easternmost end of the Indies. This compass map uses no particular projection theory, but it does seem to have a scale distortion in the New World area. The mapmaker allotted the same distance from the Tropic of Cancer to the Arctic Circle as from the treaty line to the newly discovered Florida area. The latter distance should have been about half the former. If the cartographer had wanted to cheat in favor of the Portuguese, he would have made this distortion in the opposite direction. The plain fact seems to be that he had no reason to believe that there was mainland in the northern part of the *Oceanus Occidentalis*. The Corte Reals had expressed the possibility that their discoveries might be connected to the Spanish lands, but they had not sent back any surveys to that effect. He had no reason to place land there unless he had access to the hypothetical La Cosa prototype and interpreted it in the same way La Cosa did. Meanwhile, it seems inevitable that he would have been aware of the Cabot explorations. It seems almost inevitable that by 1502 he would have seen one of the apparently several copies which had been made of Cabot's planning map.

The east and south coasts of Newfoundland from the Strait of Belle Isle to Placentia include a series of capes and bays. This suggests that Gaspar Corte-Real sent home a chart of the region, while the west coast is shown without any definition because it was not charted. Farther west, majestic trees on the large island labeled *Terra del Rey de portugall* [Land of the King of Portugal] in the North Atlantic recall the description of the east coast of Newfoundland given by the Corte-Reals when they returned to Lisbon in October 1501. A year or possibly two years later there appeared the Nicolo de Caveri world map (#307), the work of a Genoese cartographer, depending in many, but not all particulars, upon the *Cantino* production. One assumes that its maker had been allowed

to study the *Cantino* map while that document lay in Genoa. Though upon it is found no statement referring to Corte-Real or the King of Portugal, in the northern area it bears, as indication of sovereignty, the Portuguese flag upon the southern tips of Greenland and Newfoundland. Greenland is supposed to have been re-discovered by João Fernandes Labrador and Pedro de Barcelos between 1495 and 1498, and also visited by Giovanni Caboto (John Cabot), in the English expedition of 1498. But the depiction of the island on the map suggests it was based on the Portuguese mission of Labrador and Barcelos. Newfoundland was probably visited by an English expedition in 1497-98, and again, by the Portuguese explorer Gaspar Corte-Real in 1500 and 1501. The map makes clear that the land was discovered and charted for Portugal by Gaspar Corte-Real, for King Manuel I of Portugal.

These two maps, the *Cantino* and the *Caveri*, both of Portuguese background, are the basis of the cartographical series, dominant for the next quarter century, which Harisse aptly named the *Lusitano-Germanique* Group or Type (Ganong refers to this map as a *Vespucci Type*; also known as the *Cantino tradition*). Harisse discusses the influence of this *Lusitano-Germanic* type of map both on the geography of the New World and mapmakers in Central Europe for more than twenty-five years.

As the name indicates, that series of charts and globes was based upon data sent from Portugal. That is, the configurations and nomenclatures were derived from maps constructed by Lusitanian cosmographers, with information furnished at the close of the 15th century by Spanish or Portuguese navigators, and which soon afterwards found their way into Lorraine and Germany.

The prototypes have long since disappeared. We possess only what may be called "derivatives", more or less direct, some in manuscript others engraved, the complete affiliation of which cannot be established, as we do not know how many productions of that character have intervened, or when they were devised, nor precisely in what form originally. Yet the data that those derivatives set forth are so characteristic that we can almost reconstruct the "mother-charts" and divide them into cartographical families, as follows:

1. The first type omitted altogether the northwestern continental regions which were probably yet unknown when that type was created; but it exhibited the entire group of the West Indies, with Cuba, therein called *Terra de Cuba*, although the island was depicted in an insular form and in its proper place. A striking peculiarity consisted of a wide break on the north coast of the southern continent, between Brazil and Venezuela. Cast far away into the sea, to the northeast of the northwest coast, there was Newfoundland, designated as *Terra de Corte-Real*; whilst Greenland, under the name of *Terra laboratoris*, assumed the shape of a long and narrow island, stretching from east to west. *Kunstmann No. 2* (#309) is the oldest specimen of that type which we possess.
2. The second type set forth the same South American configurations as the first, but with the Venezuelan coast unbroken. The West Indian archipelago was also complete, including Cuba, which is there named *Ilha yssabella*. A new and important feature was, west and north of that island, an extensive continental region running from south to north, bearing no general title, but dotted with many names of capes, rivers, and landing places; the east coast bathed by the *Oceanus occidentalis*. To the northeast of that land, and at a great distance, lay an insular country ascribed to the Corte-Reals; and, still

more easterly, Greenland, but this time in the form of an extensive peninsula, trending west from Northern Europe. The *Cantino* map is the most ancient specimen known of this second type that has, thus far, reached us.

3. The third type differed from the *Cantino* chart with respect to the northwestern continental region by its extension southward about five degrees, and additional names inscribed on the northern coast. We possess no original specimen of this third type. But, notwithstanding cartographical distortions, due chiefly to the kind of projection adopted by the maker of the map, the original profiles of that continental land can be easily recognized in the corresponding region depicted by Johann Ruysch in his *mappamundi* (#313).
4. The fourth type differed from the preceding by a more complete or elaborate delineation of the northeastern continental region, which here extended, southwardly, about eleven degrees, with insular additions. This fourth type is represented by the curious planisphere of Nicolay de Caveri (#307), and, with modifications, in the Schönerean globes (#328).
5. The fifth type presented the same nomenclature and configurations as the preceding, but probably with different legends or general titles for the north and south continental regions. Its material difference from the three last types above described, consisted in a continuous coastline connecting the northwestern mainland with the southern continent. Neither do we possess a direct specimen of this fourth type; but it certainly revives in the *mappamundi* of Stobnicza (#319), and in the *Tabula Terre Nove* of Waldseemüller (#320).

These five types defined by Harrisse may be said to indicate a geographical evolution, the phases of which were apparently as follows:

1. A map with Cuba exhibited in an insular form, according to the first statements of Columbus himself, and without any continental region situated west of that island.
2. A map with Cuba (called *Ilha yssabella*) represented together with a western continent close to it, but the latter extending southward only to about our 20 degrees 30 minutes north latitude.
3. A map resembling the preceding, but with its northeastern coast prolonged through a gulf, about five degrees southwardly.
4. A map prolonging that coast still further towards the south by about eleven degrees.
5. A map with a continuous coastline, connecting definitely both sections of the American continent.

This evolution found its last term when the Lusitanian nomenclature, which is inscribed on that continental region, was blended with configurations borrowed from the *Sevillan Hydrography*, upon the latter appearing directly for the first time in Central Europe.

In the succeeding two years, two of the Portuguese maps in the so-called *Kunstmänn* series, one of them by Pedro Reinel, show the Newfoundland area with full indication of Portuguese sovereignty and occupancy (#307.2).

All of these were manuscript maps of limited circulation, but in 1506 a printed world map on a conical projection constructed by Giovanni Matteo Contarini appeared in Florence, engraved by Francesco Roselli (#308). In this production the Newfoundland-Labrador area is shown with the specific label: *Hanc terram invenere naute Lusitanor[um] Regis* [This country was discovered by Portuguese sailors].

The maps of the first type have exercised little or no influence on the contemporary cartographers of Central Europe. What HARRISSE calls the *Lusitano-Germanic* cartography begins only with the introduction of *mappamundi* that belonged to the second type, i.e., this *Cantino* planisphere. Again it is the earliest map known where the northwestern continental land is depicted; and, as it constitutes the starting-point of HARRISSE's comments on the *Lusitano-Germanic* cartography, it is necessary at the outset to recall its geographical bearing and nomenclature.

Again, the *Cantino planisphere* exhibits no scale of latitudes. All the other maps have such a scale; unfortunately, it can be of no service in this analysis. For instance, in reality the northwestern coast of Cuba is by 23° 11' N latitude. In *Cantino* it is shown at 38° 30' N; in *King* at 37° N; in *Schöner* at 31°N; and in *Waldseemüller* at 37° 30'N. But, as there can be no doubt as to the intention of the makers of all those maps to represent Cuba (under the name of *Ilha yssabella*), and as we know the exact latitude of that island, we will adopt its most northern cape, as fixed in modern charts (23° 11'), for a sort of meridian and touchstone to establish the relative position of all lands and islands in that part of the *Lusitano-Germanic* maps and globes.

By comparing together the configurations of that northwestern continental land in the maps which represent what we call *Types II, III, IV, and V*, the reader will notice and bear in mind that in *Cantino* (*Type II*), the said region ends at the south with a sort of peninsula trending eastward. In *Ruysch* (*Type III*, #313), the peninsula constitutes the northern shore of a semi-circular gulf, followed by about three degrees of southern coast. In *Caveri* (*Type IV*, #307), that southern coast, after exhibiting likewise the semi-circular gulf, continues still further, and shows lower down, close to the shore, two large islands, one lozenge-like, the other somewhat triangular, both of which are also to be seen at that place in *Waldseemüller* and *Schöner* (#310 and #328). In *Stobnicza* (*Type V*, #319), the southern coast continues unbroken until it meets the northern borders of South America. This, however, is only a hypothesis that other facts tend to repel. For instance, there are, both in *Ruysch* and *Caveri*, geographical representations and names showing that their prototypes differed in important respects from *Cantino*. The northwestern continental land in *Ruysch* is also far less complete than we find it depicted in *Caveri*; and it is certain, from its shape and position, that if *Ruysch's* prototype had presented a coast line extending, for instance, so far south as our 10° north latitude, he would not have cut it off ten degrees.

A series of islands appear in the Caribbean sea, and Cuba has the same shape as on the Juan de la Cosa map. To the west of that island there is a peninsula-named *Isabella* on the chart that HARRISSE believes is the first representation of Florida. He states, "The critical historian of maritime discovery is justified in considering the northwestern delineations in the *Cantino* planisphere as representing a continental region really existing. Now what is that country? Necessarily a portion of the Atlantic shores of the present United States, shown to have been discovered, visited, named, and described so

The image displays four historical maps illustrating the progression of geographical knowledge about the Americas:

- Cantino 1502:** A map showing the Americas as a single landmass labeled "Insulae occidentales" (Western Islands). It includes a compass rose and the text "has antilhas del Rey de castilla" (these Antilles of the King of Castile).
- Caveri 1504:** A map showing the Americas as a single landmass, with the text "Insulae occidentales" (Western Islands) visible.
- Waldseemüller 1507:** A map showing the Americas as a single landmass, with the text "Insulae occidentales" (Western Islands) visible.
- Ruysch 1507-1508:** A map showing the Americas as a single landmass, with the text "Insulae occidentales" (Western Islands) visible.

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the celebrated *King-Hamy-Huntington* chart (#307.1), an anonymous Italian production of a date slightly later than that of the *Caveri* map.

A significant point to be kept in mind in the discussion of the maps of *Cantino* and *Caveri* and their chief derivative, the Waldseemüller world map of 1507 (#310), is that, whether or not they regarded Newfoundland as an island, they showed Verrazzano and his contemporaries no connection of solid land between Newfoundland and the Florida landmass portrayed on them. On the contrary, the maps of this group display between Florida and Newfoundland a large area of open water, offering unimpeded passage to an explorer seeking a route to the China coast. The maps of the *Lusitano-Germanic* groups of the next twenty years or more, manuscript and printed, pictured this relationship one to another of the Newfoundland and Florida areas.

It is to be observed as a matter of special interest that the makers of both the *Cantino* and *Caveri* maps intended to convey the belief that the two continents of North and South America formed a grand division of the earth separated from both Europe and Asia and lying between the two. This belief is graphically portrayed in the *Caveri* map where open water borders the western shore of the North American continent. The conclusion in the case of the *Cantino* map must be arrived at by consideration of the fact that it shows only 257° of the 360° of the earth's surface and that its eastern coast of Asia is shown as bordering on open water. By having the western coast of his North American continent coincide with the western edge of the map, he left indefinite the length of its westward extension, but it seems reasonable to believe that the missing 103° of his design comprised not only westward-extending land but beyond it water of the same ocean that washed the eastern shore of Asia.

In the *Antilhas* [Antilles], which appear here for the first time by this name (previously called the *Indies*, later to be known as the *West Indies*), the statement appears that "*these are the West Indies of the King of Castille, discovered by Columbus... Admiral of these islands... at the command of the most high and mighty King don Fernando....*"

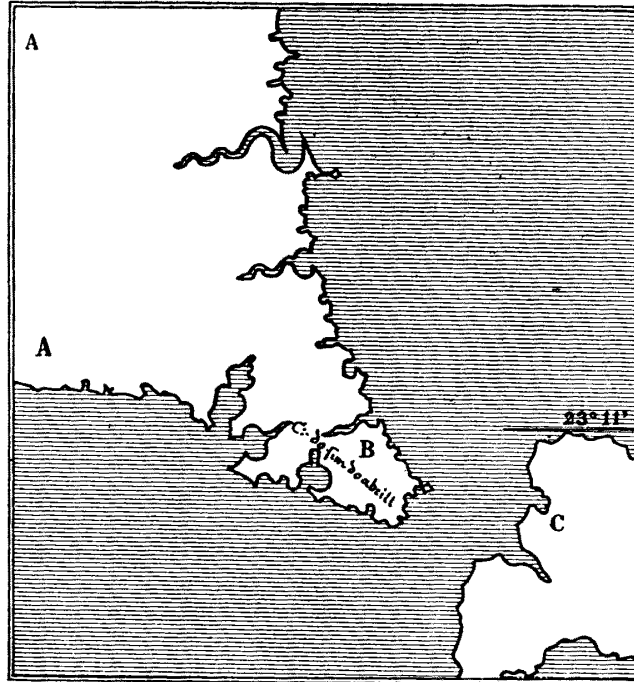
Taking, as a model, an outline of this section of the map, that characteristic configuration, in its earliest known form, is as follows:

Area **A** is the continental land that emerges from the northwestern extremity of the map, and trends eastwards.

Area **B** represents its peninsula, with one of the names that serve to identify the relative positions in *Lusitano-Germanic* maps and globes.

Area **C** is the west end of the island of Cuba, here called, as in all that class of maps, *Ilha yssabella*.

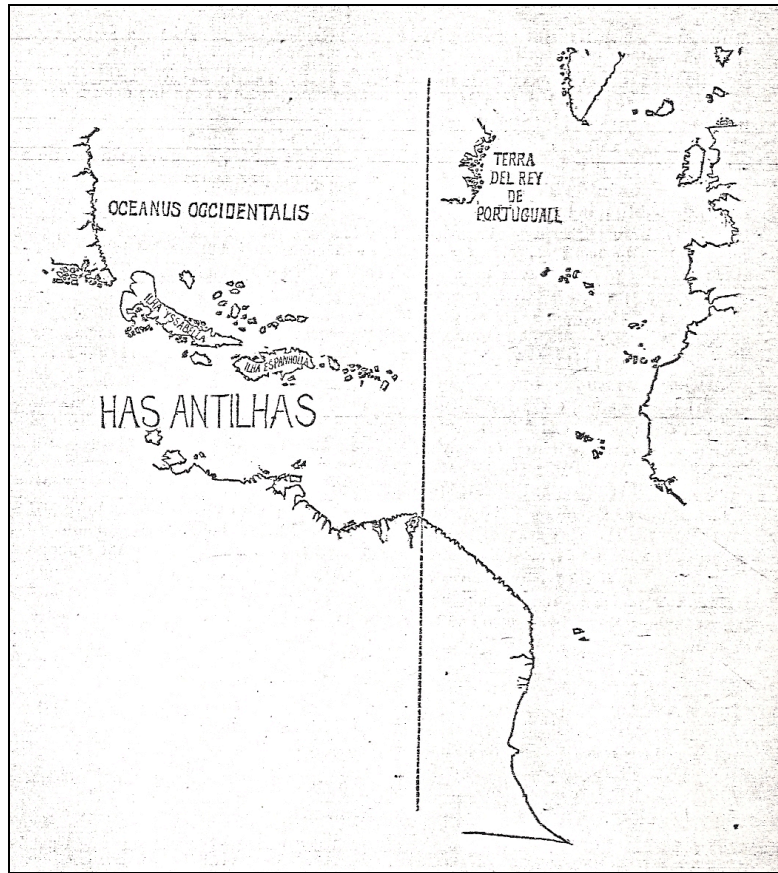
However Donald McGuirk and several other historians have put forth theories that the landmass in the northwestern section of this map (and those of Waldseemüller's 1507, Ruysch's 1508) is actually Columbus' Cuba and located just off the coast of Asia.



If we are seeing Cuba (C) and Florida (B), no one knows from whom this information came, as Florida was not formally discovered until 1513. There is speculation that an early Amerigo Vespucci voyage may have been the source, or that an unknown Portuguese pilot could have unofficially sailed through Spanish waters before 1500 and coasted Florida. The islands at the southern extremity strongly indicate a knowledge of the Florida keys and Tortugas; the general peninsula-like shape of the landmass at the southern extremity of most of the maps of this type or group and the general northerly direction of the Atlantic coast (the Florida coast actually trends northwest, not northeast; Savannah, Georgia is almost a degree west of Miami) support the belief that the landmass represents the southeast part of the American continent.

Northwest of *Ilha yssabella* a coastline is laid down marked *Parte de Assia* and bearing names from Columbus' first two voyages. This area, which is incomplete and partially off the map, perhaps is the greatest unsolved cartographic puzzle of the period. Although *yssabella* strongly resembles Cuba, and the peninsula to the northwest could be Florida, there are several theories to the contrary. One is that the anonymous Portuguese mapmaker confused Spanish reports of the configuration of the newly discovered islands and duplicated Cuba; first as the island but also as the incompletely explored area to the northwest. Another interpretation considers *yssabella* to be Cuba but regards the peninsula as the Asian mainland Columbus and Cabot believed they had reached.

Lawrence Wroth and other historians of New World discoveries believe that both Cuba and Florida were depicted, and that the *Cantino* chart was the prototype for the important maps of the *Lusitano-Germanic* series. These delineations, such as the *Waldseemüller* wall map (#310), did much to illuminate the New World for Europeans.

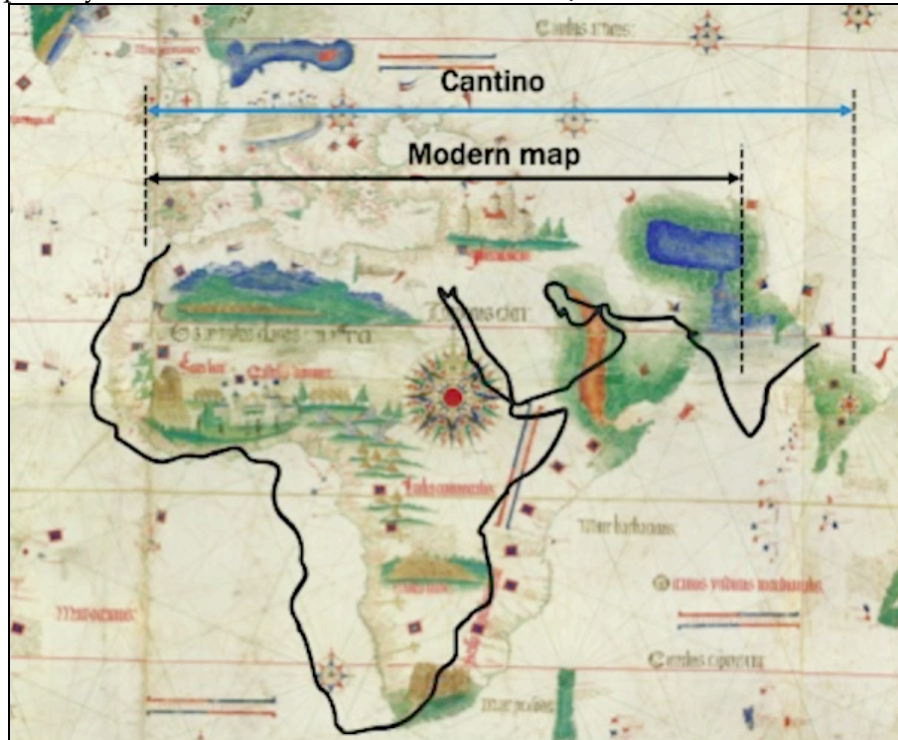


The Brazilian coast is decorated with Portuguese flags, beautiful parrots and trees and announcements of the landing in April 1500 by the Portuguese, Pedro Alvares Cabral. There is no reference to the arrival on the north part of the coast in 1499 of Vicente Pinzon, Columbus' early partner. Again, prominently shown is the *Line of Demarcation* of the Treaty of Tordesillas, signed by Spain and Portugal in June 1494. This, and the map of Juan de la Cosa (#305), are the oldest surviving maps to bear this historic line. A meridian was drawn some 960 nautical miles west of the Cape Verde Islands that divided the entire world in two for the purpose of European overseas expansion. Spain was given the portion west of this line in the Atlantic and Portugal the east. Consequently, although Spain claimed most of America, the Portuguese controlled the East Indies and Brazil. The chart is clearly the work of a Portuguese cartographer; at a later period apparently some amendment has been made to the Brazilian portion, and half a dozen Italianized names written in.

The African continent is shown for the first time with something closely approaching its correct outline: on the east coast the names of *Soffala*, *Mozambique*, *Kilwa*, and *Melinde* occur, and the island of Madagascar is inserted but not named. This area of the planisphere shows Africa and the Indian Ocean as known to the Portuguese after the voyages of Vasco da Gama (1497-99) and Cabral (1500-01) and later discoveries reported in Lisbon as recently as September 1502. Portuguese flags line the western coast and the fort of El Mina is depicted as a huge Renaissance city dominating Guinea. At the extreme left is the fort of São Jorge da Mina on the African Gold Coast; crosses further south mark *padrões* set up by earlier expeditions. Portuguese flags on the east coast of Africa denote the ports touched at by da Gama and Cabral. Comparisons with the more Ptolemaic outlines of the 1490 *Martellus* map (#256) show a striking improvement in the

delineation of Africa and India. South Africa no longer curves to the east; the peninsular form of India is now suggested, with Sri Lanka/Ceylon reduced to more true proportions and relative position. Madagascar, discovered by Western Europe in 1500, is shown for the first time. Two scales of degrees are given.

Again the interior of Africa is richly decorated as Portuguese territory and cities are boldly drawn. Curiously though, the *Alexandrian Lighthouse* has been drawn horizontally, but with the flag finial aligning to the city of Alexandria toponym. The elaborate portrayal of Venice is excellent, as is that of Jerusalem.



The Indian sub-continent (shown here on the right) is drawn as a sharply tapering triangle, on the western coast of which are names, (e.g., *Cambaya*, *Calecut*) and legends detailing the wealth of these parts, which were drawn from accounts of Vasco da Gama's voyage. These appear to mark the limit of first-hand knowledge; beyond, the outline must have been inserted largely by second-hand reports. That this was obtained from native seamen is probable from the circumstance that the term *pulgada* is used in place of a degree; it equaled about $1^{\circ} 42' 50''$. The places whose latitudes are given thus are inserted only approximately in their correct positions. East of India is a large gulf and then a southward-stretching peninsula, a relic of the coasts which Ptolemy believed to enclose the Indian Ocean. Near its extremity occurs the name *Malaqua* and off it the large island of *Taporbana* [Sumatra]. The eastern coast of Asia runs away to the northeast, almost featureless but with a number of names, mostly unidentifiable, on the coast and indications of shoals off shore. Recognizable names are *Bar Singapur* [Singapore]



and *Cochin* [China].

The main feature to be noted with regard to Asia is the almost complete abandonment of Ptolemy's conception of the southern coasts, and the great reduction in the longitudinal extent of the continent. The southeastern coastline of Asia is shown as lying approximately 160° east of the *Line of Demarcation*, a figure very close to the truth.

The so-called *King-Hamy* chart (#307.1), also dated 1502, is interesting as showing the Ptolemaic conceptions of Asia in the process of being fitted to the new discoveries in the west. This chart has many features of the Ptolemy world map in Southeast Asia, where *Malacha* and *Cattigara* appear together, but the point of importance is that the longitudinal extent eastwards from the demarcation line to the southeast Asian coast is still approximately 220 to 230 degrees.

The map's depiction of the region between Africa and southwest India was based extensively on reports of the voyages of Bartolomeu Dias, Pedro Alvares Cabral, and Vasco da Gama. Both Ptolemy's Malay Peninsula and Martellus's peninsula adapted from Ptolemy's *SINARVM SITVS* were absent. Both of these areas were replaced by a single peninsula that extended nearly to the Tropic of Capricorn and contains inscriptions that clearly identify it as the Malay Peninsula with Sumatra lying off its western coast.

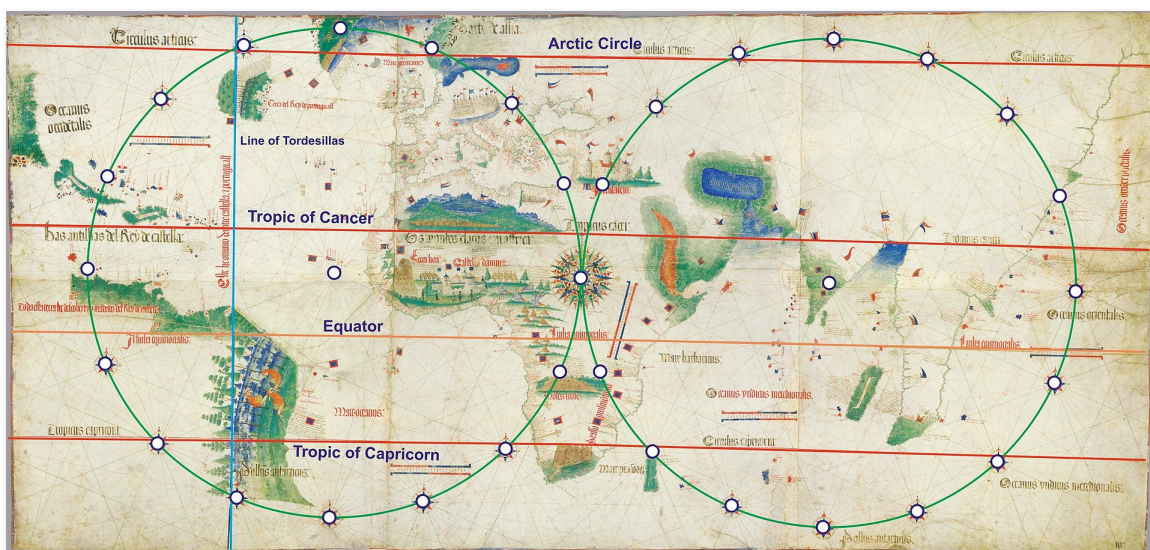
By 1502, no Portuguese ships had sailed beyond the southwest coast of India, so the depiction of the area east of Cape Comorin must have been derived from another source or other sources; two facts suggest that one of these was almost certainly Arabic. On the *Cantino* map, the cape at the head of the triangular Mekong delta is named *ffulucadora*. Now called Muy Ca-Mau, it was known to the Portuguese as *cabo de camboja* [Cape of Cambodia] of which it was then a part. Just off the cape on the *Cantino* map is the inscription "*este cabo fulucandora esta norte em iij pulgadas*" [this cape fulucandora is three *pulgadas* north]. The island group east of it reads "*ilha das baixas chamada fullucandora esta o norte em iij pulgadas*" [island of the shoals called fullucandora it is three *pulgadas* north]. Note that the name is recorded differently three times. The use of *pulgadas*, translating Arabic *isbas* [inches], to indicate latitude, rather than Portuguese *graus*, is one indication of an Arabic source, as the Portuguese did not use *pulgadas* to indicate latitude. The other is the use of *fulu*, an Arabic phonetic representation of the Malay word now spelled *pulau* [island], rather than *pulo*, as the Portuguese recorded it.

The *Cantino* chart, therefore, demonstrates clearly that Portuguese cosmographers had entirely abandoned the Alexandrian's figures, and were already aware that the Spanish discoveries in the west, far from neighboring on *Cipangu* [Japan] and the Asian mainland, were separated from them by an interval of almost half the circumference of the globe. The chart might even be said to predict the existence of the Pacific Ocean. The fact that the cartographer has a legend on the discoveries in the northeast American shores stating that they were thought to be part of Asia does not controvert this. For the Portuguese, theoretical and practical considerations happily coincided in this instance; when the question of sovereignty over the Moluccas arose, it was to their interest to reduce the longitudinal extent of Asia in order to bring the coveted islands within their sphere.

The *Cantino* planisphere is the earliest extant example of the so-called *latitude chart*, which was developed following the introduction of astronomical navigation, during the second half of the 15th century. Contrarily to the *portolan* charts of the Mediterranean, which were constructed on the basis of magnetic courses and estimated distances between places, in the *latitude chart* places were represented according to their

latitudes. In the *Cantino* planisphere, latitudes were incorporated only in the coasts of Africa, Brazil and India, while Europe and the Caribbean Sea continued to be represented according to the *portolan* chart model.

The construction of the rhumb line system in the *Cantino* planisphere uses two circles (some charts use only one, others use as many as three, depending of size): the western circle is centered on the Cape Vert Islands, the eastern circle is centered in India. The circumference of each circle is marked with sixteen equally spaced points, from which radiate the 32 classic rhumbs: 0° , $11\frac{1}{4}^{\circ}$, $22\frac{1}{2}^{\circ}$, $33\frac{3}{4}^{\circ}$, etc. The western and eastern outer circles are tangent to each other at a large wind-rose in central Africa, with a fleur-de-lis indicating North. This dense rhumb-line mesh was used in navigation as a reference, for reading and marking directions (courses) between places. Six scale bars graduated in Iberian leagues, with a variable number of sections (or logs), are distributed over the chart's area. These were used to measure distances between places.



Shown above, the rhumb-line construction scheme and geographic lines in the *Cantino* planisphere, adapted from Gaspar.

Illustrations are few, but elaborate. Two cities are grandly depicted – Venice and Jerusalem. There is also an elaborate depiction of the Portuguese castle of *São Jorge da Mina* (Elmina Castle, on the Gold Coast of west Africa), flanked by two African towns. Other illustrations include a lion-shaped mountain representing the Sierra Leone mountain range, the *Alexandria lighthouse* (laid horizontal), the mythical *Mountains of the Moon* (legendary source of the Nile River) in central Africa, and either the Table Mountain or Drakensberg range in South Africa. Along the central African coast are the various cross stone markers (*padrões*) erected by Diogo Cão and Bartolomeu Dias in the 1480s. In north Africa, there is the *Montes Claros* in the usual place of the Atlas mountains, the legend below on the left reading that *this is the land of King Organo, whose king is very noble and very rich*, and to the right of this is the *land of the King of Nubia, the king of which is continuously making war on Prester John and is a moor and a great enemy of Christians*.

Summary. This nautical chart, made in Portugal in 1502 at the behest of Ercole dEste, Duke of Ferrara, shows the recent expeditions of the Portuguese to the coasts of

Greenland and Newfoundland. Alberto Cantino, the Duke's envoy to Portugal, brought the map to Italy with him. It remained in the ducal archives until 1592 when it was removed to Modena by Pope Clement VIII. It disappeared at the sacking of the palace by a mob in 1859. Years later the librarian of the Biblioteca Estense, walking along Via Farini, saw it being used as a screen in a pork butcher's shop. It was bought, restored, and in 1870 returned to the Biblioteca Estense in Modena.

The beautiful illustrative detail shows the current influence in Portugal of the artistic style of the Flemish miniaturists Bening and Vrelant. The map clearly shows political orientation. The new discoveries are placed (incorrectly) east of the papal line of demarcation (i.e., the Treaty of Tordesillas, 1494) in the Portuguese sphere of influence, and Cabot's discoveries are not mentioned, though his expeditions were known. The most baffling problem on the *Cantino* map, and on a whole series of later maps, is the identification of a large unnamed landmass placed to the northwest of 'Yssabella', presumably the island of Cuba. One suggestion, still defended vigorously by competent scholars, is that it represents a chart made from an unrecorded discovery of the Yucatan peninsula, placed incorrectly and at right angles to its true setting. They point out a number of coastal place names similar to those on later delineations of Yucatan. Others argue cogently that it is a reduplication of Cuba, based on reports of different known voyages or on a confused interpretation of them by European mapmakers. A third explanation is that it is Florida, with the Key West islands at the south and the east Florida coast correctly trending north by northwest. This interpretation, on the basis of present evidence, appears to be the most reasonable.

To the very serious objection that no record exists of a voyage before 1502 which discovered southeastern North America the proponents of the mainland theory answer that unlicensed voyages were being made and that full reports about some known voyages are lacking. The problem remains tantalizingly unresolved; and the confusion that was in the minds of the map makers of the *Cantino* tradition is reflected in the variety of names given to the little-known territory north of the West Indies on the *Contarini*, *Waldseemüller*, *Ptolemaic* and other later maps.

There are honest confessions of ignorance in such legends as *Ulterius Terra Incognita*; confusion with Asia or Cuba; strange names such as *Zoanamela*; and identification with the fabled isle of *Bimini*.

Among the earliest Portuguese charts that have survived to the present day, the *Cantino* planisphere is moreover one of the most historically significant. At the time it was produced, it was valuable not only because of its large dimensions and fine decoration, but also because it offered up-to-date information at a time when knowledge of world geography was progressing rapidly, and access to such knowledge could confer serious strategic advantages. For scholars today, the *Cantino* planisphere provides a window into the process of maritime exploration – and concomitant innovations in navigation and cartography – in a particularly rich period of Portuguese, and, more broadly, European, history.

A legend on the back of the planisphere reads, in the Genoese dialect: *Carta da nauigar per Le Isole nouam.te tr[ovato] ... in le parte de I□ndia: dono alberto Cantino Al S. Duca Hercole* [Navigational chart of the islands recently [discovered] in the Indies: by Alberto Cantino for Duke Ercole]. The Alberto Cantino in question was an agent of Ercole I d'Este, Duke of Ferrara, sent to Portugal to learn about the state of ongoing oceanic voyages. Befitting his connections to the Italian elite, he was received at the court of King Manuel I. He acquired this nautical planisphere in Lisbon for twelve golden

ducats, and immediately brought it back with him to Italy. It is unknown, however, how he obtained it – at the time, the dissemination of charts and globes displaying newly-discovered regions was prohibited by the Crown. The generally accepted interpretation is that he commissioned it from an unknown Portuguese cartographer, who copied the design from the *Padrão del Rey*, the official pattern chart. This hypothesis requires some caveats, though. First of all, there is no documentary evidence suggesting that such a commission was made. Secondly, while there is no doubt that the *Cantino* planisphere incorporates up-to-date information, it also has errors that would unlikely be tolerated in an official pattern chart: the spacing between the Equator, the Tropics, and the Arctic Circle is inconsistent, and the dividing line of the *Treaty of Tordesillas* is improperly positioned at 385 leagues west of the island of Santo Antão, rather than the correct value of 370 leagues. A possible alternative is that the planisphere was initially produced for another client, perhaps a noble or important clergyman, but was ultimately sold to Cantino for a large sum of money. This interpretation is consistent with the possibility, mentioned later, that the title of the planisphere was removed in order to eliminate the name of its original intended recipient and even, perhaps, of its author.

The *Cantino* planisphere gives an illuminating snapshot of the geographical knowledge of the world that had reached Europe in the wake of the voyages of exploration to the Americas, Africa, and the “Indies” undertaken by the Portuguese and Spanish during the late fifteenth century. Little remains of the image of the *ecumene* in the maps connected to Ptolemy’s *Geography*, written fourteen centuries earlier. The Indian Ocean is no longer a closed sea, and hitherto unsuspected regions such as the West Indies, Newfoundland, and Brazil are placed in their correct geographical positions. Furthermore, parts of the known world treated vaguely or speculatively in Ptolemaic maps are here drawn with considerable rigor and detail. Like most charts of its time, the *Cantino* planisphere was compiled from a variety of sources. It includes data from recent exploratory voyages in the North Atlantic (for Greenland and Newfoundland), to the New World (for the Caribbean Sea and Brazil), and to Africa and India; geographical information of Arabic origin collected by the Portuguese (for the Indian Ocean and Southeast Asia); coastlines lifted from *portolan* charts (for the Mediterranean, Black Sea, and western coast of Europe); and representations inspired by the accounts of Marco Polo and Niccolo di Conti (for China), or imported from Ptolemy’s *Geography* (for the Red Sea and Persian Gulf).

Thirty-nine subtitles provide diverse supplementary information, not only about the regions already reached by Portuguese explorers, but also about remote places yet to be visited. Five of these legends, placed near Greenland, Newfoundland, Brazil, the Gulf of Aden, and India, testify to the arrival of the ships sent by King Manuel I, underscoring the laudatory aims of the planisphere. To the north of Newfoundland (*Terra del Rey de portugall*), for example, a legend refers to the discovery of the region and the disappearance of Gaspar Corte-Real:

“This land was discovered by order of the very high, most excellent prince Dom Manuel, King of Portugal, which was discovered by Gaspar de Corte-Real, a knight in the house of the said King, and when he discovered it, he sent [back] a ship with certain men and women whom he found in the said land, and he stayed in another ship and never came back and it is believed that he was lost [...]”

Next to Porto Seguro, in Brazil, another legend reports the arrival of Pedro Alvares Cabral in the region, on his way to India:

“Vera Cruz, called by this name, which was found by Pedro Alvares Cabral, a nobleman of the house of the King of Portugal, and he discovered it when he went as captain- major of fourteen ships that the said King was sending to Calicut and going this way, [he] found this land which was discovered [...] in the era of the 500s [i.e., the 16th century]).

Other legends provide information about the goods found in different regions, much of which was unrelated to any first-hand knowledge from Portuguese explorers. Such is the case of the inscription next to Malacca, only visited by the Portuguese in 1509, explaining that most of city’s wares came from abroad:

“Malacca. In this city there is all the merchandise that comes to Calicut, to wit, clove and benzoin and lignaloos and sandalwood...the major part [of it] comes from outside, on the side of the land of the Chinese.”)

As with Nicolo de Caverio’s planisphere (#307), based on the same sources and perhaps also designed in Portugal, as argued by Gregory McIntosh, the cartographic paradigm materialized in the *Cantino* planisphere was readily adopted across most nautical cartography at the time. Although subsequent explorations made it possible to complete and improve the geographic content of later cartography, such a model (the latitude chart), based on compass bearings and observed latitudes, would endure for more than three centuries. It was replaced by the Mercator projection (based on latitudes and longitudes) only in the mid-18th century, after the “longitude problem” had been solved and nautical charts started to be constructed using geographic coordinates. The longevity of the latitude chart was not due – as W. G. Randles and other historians have contended – to a crisis in 16th century nautical cartography, but to the limitations imposed by the navigation methods of the time, when it was not yet possible to determine longitude at sea and knowledge about the spatial distribution of magnetic declination was meager. In light of these constraints, it is not surprising that the paradigm heralded by the *Cantino* planisphere, which did not even take the Earth’s sphericity into account, constituted an essential support for early modern maritime expansion.

A peculiarity of the *Cantino* planisphere, shared by most 16th century nautical charts, is the longitudinal displacement and eastward stretching of the African continent, making the Isthmus of Suez appear enormous. This apparent deformation was an effect of magnetic declination, which impacted the compass directions measured by mariners along the African coast. Since the resulting representation was fully in harmony with the navigational methods of the time, it should not be treated as an error. The corresponding eastward shift of all lands to the east of Africa would later be reflected in charts showing the Moluccas, placing them, according to the *Treaty of Tordesillas*, in the Spanish hemisphere.

Given its large dimensions and opulent decoration, the *Cantino* planisphere was certainly not meant to be used on board a ship. In reality, its purpose seems to have been twofold: to celebrate the maritime achievements of Manuel I’s reign, and to signal the Portuguese monarch’s imperial ambitions. The presence of numerous finely-drawn decorative elements – compass roses, flags, vignettes, human figures and animals – suggests that a competent miniaturist, whose identity is still unknown, collaborated in the creation of the planisphere.

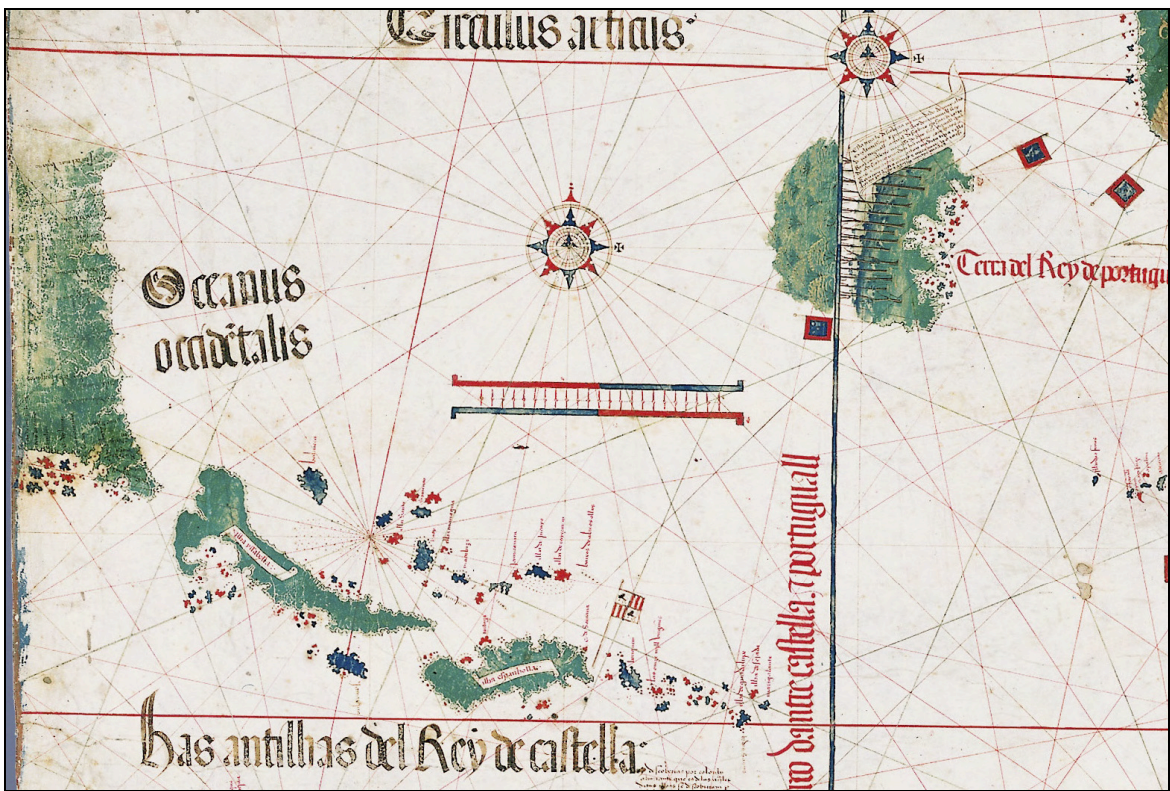
Location: Biblioteca Estense, Modena, Italy

Size: 110 x 220 centimeters (43 x 86 inches) three leaves of vellum

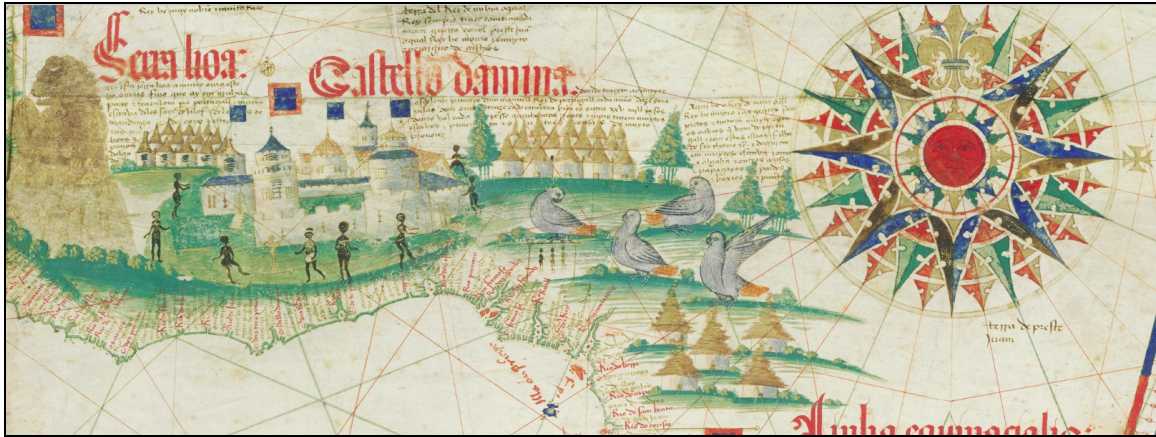
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*illustrated



Cantino map detail, Caribbean and Newfoundland (as an island)





Fort El Mina on the Cantino map, detail West Africa Guinea coast

Translations (from Ferrar):

Africa, Castello da Mina: *whence they bring to the most excellent prince Dom Manuel king of Portugal in each year 12 caravels with gold; each caravel brings 25,000 weights of gold, each weight being worth 500 reals, and they further bring many slaves and pepper and other things of much profit.*





Cantino detail: Europe



Cantino map detail, Asia



Cantino map detail, Greenland, Caribbean, South America

Translations (from Ferrar):

Greenland: *this land is discovered by order of the very excellent prince Dom Manuel, king of Portugal, which is believed to be the point of Asia, and those who discovered it did not land but*

saw it, and only saw mountain ranges very thick, and according to the opinion of the cosmographers it is believed to be the point of Asla

Above Terra Nova: this land is discovered by order of the very high, most excellent prince king Dom Manuel, king of Portugal which was discovered by Gaspar de Corte Real a knight in the house of the said king, and when he discovered it sent a ship with certain men and women whom he found in the said land, and he remained with another ship and never more returned and it is believed that he is lost and there are many masts.

Brazil: the true cross + called by this name was found by Pedro Alvares Cabral, a nobleman of the house of the king of Portugal and he discovered it when he went as Captain Major of 14 ships which said king was sending to Calicut and going this way he met with this land here, which is believed to be a continent, in which there are many people who go about naked as their mothers delivered them: they are more white than brown and have very lanky hair. This said land was discovered in the year 500.







Africa south of Cape Verde is a complete record of Portuguese exploration with four main "Padroes" shown in position. The Red Sea is however rather strangely drawn for a chart of this era. The vignettes are again excellent.

Translations (from Ferrar):

Central Africa: here is king Manicongo-who sent to beseech king Dom Jao, whom may god keep, that he should send there friars, because he wanted to become a Christian, and the king sent certain friars of the order of preachers and the king and queen as well as many of their kingdom hence became Christians; this king trades with those who are in the island of S. Tome and they give slaves for things of little value.

Malindi: here is the king of Malindi, very noble and a friend of the king of Portugal.

Kilwal: the king of this city is a very noble king and rules all this coast to wit from here to Sofala and he is lord of Mozambique and of Sofala. It is very abundant in gold and other things.

Sofala: here is the gold mine in which there is plenty of it, more than anywhere else, and is discovered by the king of Portugal.



The area covered by the Cantino map superimposed on an outline of a modern map



Author's copy (37" X 78")