

**TITLE:** *Catalan-Estense World Map*

**DATE:** 1450-1460

**AUTHOR:** *unknown*

**DESCRIPTION:** This Catalan world map in the Biblioteca Estense, (C.G.A.1) has no author or date. It is circular, on a sheet of vellum with a 10 mm blue border and is very well preserved. Although the catalogue of that library gives a greater size, Kretschmer's figures of 1157.5 mm (east to west) by 1140 mm (north to south) (45.5 x 44.8 in.) the diameter measures, taking into account the border, 1130 mm which is nearer the mark. Seas are mostly in blue or green, rivers in blue, mountains in green or brown. The map belonged to the collection of the Dukes of Ferrara, who since 1452, had also been Dukes of Modena and Reggio. Many of them had collections in more than one place and the Estense library is very rich in their collections of different periods. The map was taken there in 1598 by Cesare d'Este who was the illegitimate son of Duke Alfonso I.



To the extent that it is based on the *portolan* [nautical] chart tradition, there are rhumb-lines (thirty-two out of each of sixteen centers) and two unlabeled scales; also the map features shields and flags over Europe and kings in tents elsewhere. However, the equator is drawn in and named three times. The map aims at covering all the lands of the "Old World", but including the whole of Africa. The central point is not Jerusalem but near the abode of the mythical Christian king *Prester John* [*Presta Iohan*], placed in *Nubia* between the two branches of the Nile. The abandonment of Jerusalem as a central point is found on several other European *mappaemundi* of the 14<sup>th</sup> and 15<sup>th</sup> centuries. Africa, to which the cartographer's attention was clearly directed as new discoveries were incorporated, is enlarged, crosses the equator, and reaches a southern coast. Asia is largely confined to the northern hemisphere. The Atlantic occupies a larger space than is usual for the period.

The legends for the lower part are written so as to be read from the North above, and for the upper part from the South at the top. The language of the fifty-two legends, apart from the one in Latin on the Canaries, is Catalan. A Latin cosmography with very similar wording exists in Genoa University Library Codex B.1.36. Textually comparable are the legends on the Catalan map at the Central National Library, Florence Port. 16, to be dated after 1416. There are also linguistic and topographical similarities with a fragment of a Catalan world map in the Topkapu Saray Library, Istanbul. As these Catalan maps developed, some of them aimed at including the latest information available from European navigators and compilers. This offers clues to historians of cartography as to approximate dates.

The map uses a system of rhumbs of 800 mm. in diameter to sixteen secondary centers, each comprising thirty-two lines; The center of the system is on the vertical axis of the map, but at 150 mm. south of the horizontal axis. The east-west horizontal line passing through the center of the rhumb system is designated by three legends as the equinoctial line. There are two scales of miles (in the North West of Africa and the North of Europe), no doubt taken from the nautical chart which served as a model for the Mediterranean basin. The land forms a roughly circular block, offset from the center of the ocean around them, the latter being wider to the West.

The oldest of the *portolan* charts to survive are of Italian origin, made at Genoa and Pisa; those dating from the latter half of the 14<sup>th</sup> century are mainly Catalan. But the typical Catalan map is not strictly speaking a *portolan* chart. It is more than that; for while

the latter is essentially a sailing guide concerned with coastwise navigation, the Catalan map is really a world map built up around the *portolan* chart. It is true that in some cases the term 'world' connotes simply the habitable, or known earth as conceived by the author; nevertheless, in others, as the *Catalan-Estense* map, it is interpreted to include lands not yet discovered, but only posited. This aggravated the cartographer's task very considerably for it meant that he was continually being faced with the problem of choosing between scanty and often poorly substantiated facts on the one hand, and plausible and often well-attested theory on the other. It is a tribute to the integrity of these men that their work contains so much that subsequent investigation has proved true. In fact it is this careful sifting of evidence that constitutes one of the chief merits of the Catalan school of cartography, in an age when intellectual honesty was none too common. The value of the Catalan maps, as commentaries upon the state of contemporary knowledge at once becomes apparent and we are hardly surprised to find that the *Catalan Atlas* of 1375 (#235) has the finest delineation of Asia that Europe had seen up to that time, or that, in its knowledge of *Cathay* [northern China] and the Sudan, the same map is surpassed in the Middle Ages only by the 1459 *Fra Mauro* map (#249).

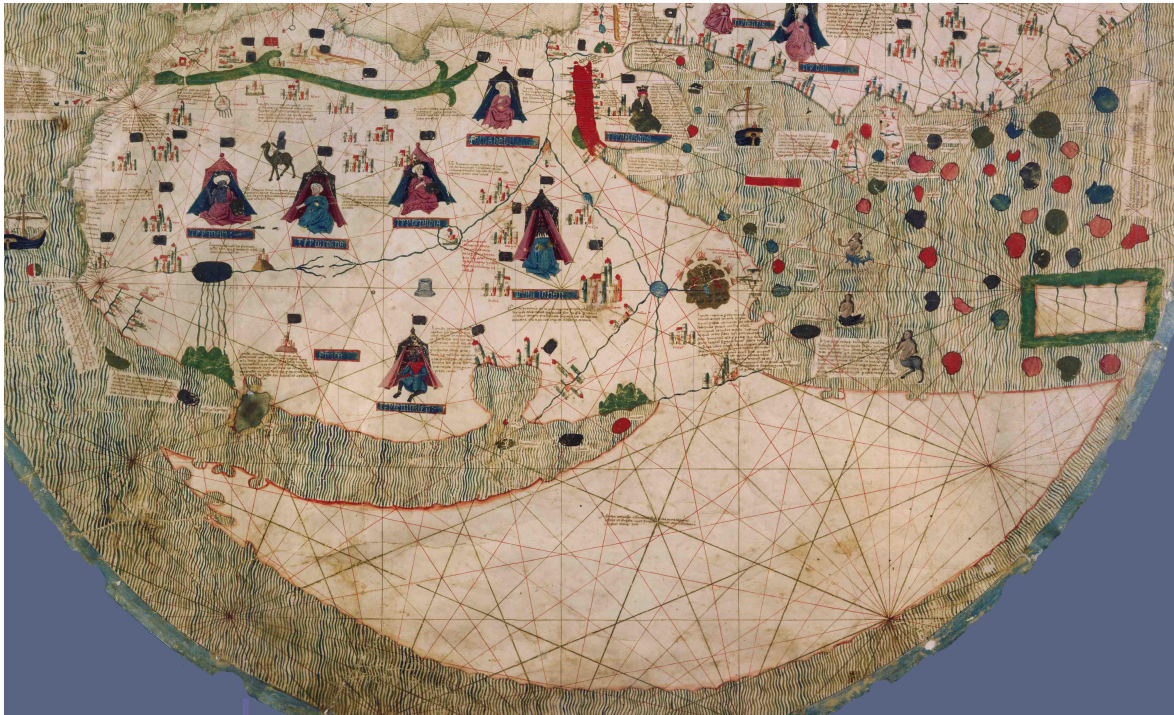
The main axis of the Mediterranean Sea is a little north of the horizontal axis of the map, with Jerusalem indicated only by the mention *San Sepulcra* without vignette. The whole of Asia is in the eastern half of the map, its North-South extension being reduced by the enlargement of the Indian Ocean. India does not have a peninsula shape like the *Catalan Atlas* of 1375 (#235). The southern part of Africa is represented as a mass of land in the shape of a crescent that draws a large arc at the eastern end of which the Ocean Indian spreads towards the South. It is almost cut off from the North of Africa by a deep gulf of the Atlantic Ocean which extends towards the East and which communicates with the Indian Ocean by a narrow strait to the south of which is the legend: *Aphrica comensa al flum de nilles in the parts degipta e fenex in Gutzola vert ponent circuit tota la barbaria e the part of mig jorn.*

Scarcely less valuable and certainly more interesting for the student of geographical theory, are the Catalan speculations concerning the unexplored territories of the earth. Unlike many medieval scholars the draftsmen of Majorca showed a praiseworthy restraint in this respect. Thus we may look almost in vain for those fanciful creatures with which the cosmographers of that age filled their empty continents. At the same time, these men saw nothing strange about a belief in the *Terrestrial Paradise*, or in a hydrographical system stretching from sea to sea. For the most part their speculations were of another kind, and usually they contained at least a partial truth. For instance, *Lacus Nili*, the *Pactolus* of Strabo and the *Palolus* of later maps, which in the *Catalan Atlas* and subsequent works is located in the neighborhood of Timbuktu, may reasonably be identified with the flood region of the Niger River above that town.

However, on one matter the mapmaker could hardly refrain from speculating, for this reason: land exploration had for a long time now outrun oceanic discovery, and so, concerning Africa, for example, much more was known of the Sudan by the end of the 14<sup>th</sup> century than was known of the oceanic fringe in the same latitudes. Africa is more carefully represented than Eurasia. The comments of the descriptive legends are longer, the decoration richer and the information more recent. The west coast carries a nomenclature up to the points reached by the Portuguese in 1446. Cape Verde and Cape Rosso (c. *Groso*), are indicated with the legend *A quest cap es.fi de la terra del ponent on the part of Affrica a questa Zinia es an la equinocsiall ...* [To this end of the land of the west on the part of Africa to this Zinia is the equinocial ...] Two islands off the coast are designated as



*Illa de cades esi posa ercules due colones.* The coasts of Africa at this place, like the coasts of Western Europe, are surrounded by red on the side of the earth, while elsewhere they are, like the coasts of South Asia, surrounded by green on the side of the Sea. Perhaps it was intended to mark a distinction between known shores and those whose trace would only be supposed. The Gambia River flows into the sea near the Senegal estuary, north of Cape Verde. Beyond the point where the northern shore of the gulf bends towards the east, the *Monts de la Lune* (*Aquesta montay (n) dien los saraysis mont gibe! Camar qui voldir en n (ost) ra lengua mons de la luna la qual montay (n) es sobre la Zinja equinocsiall*). Mountains of the moon towards the northwest flow five rivers (*riu de lor*) which flow into a lake, probably a representation of the region of the upper Niger between Jenne and Timbuktu where annual floods occur.



The earlier draftsmen insisted upon cutting the continent short just beyond the limit of coastal knowledge, that is, in the vicinity of Cape Bojador. By so doing, however, they found themselves reducing the vast extent of the Sahara almost to a vanishing point. Thus, in the *Catalan Atlas* of 1375 (#235), *Sigilmesa* and the *Rio del Oro* [i.e., the Senegal-Niger River system] are placed in closer proximity than *Ceuta* and *Cape Non*. Later draftsmen, in order to escape the embarrassment caused by indicating the great trans-Saharan caravan routes within these narrow limits, began to speculate on the course of the African coast, south of Bojador. By general agreement it was made to tend south-south-east. Speculation of this sort did at least have the merit of enabling the mapmaker to draw the Sahara with greater accuracy. It should be noted that all of the Catalan maps, with the exception of this *Catalan-Estense* world map, which was the last of its line, stop short of their southern side in the latitude of Sierra Leone approximately, that is, where knowledge gave place to ignorance and speculation.

The shape of Africa on this map is unique, and it is much enlarged in relation to Europe and Asia. Below the Gulf of Guinea, which nearly cuts the continent in two, is a large crescent-shaped appendage extending to the east and forming a southern shore for the Indian Ocean. A thin canal across its narrow waist implies a passage between the

Atlantic and Indian Oceans. The southern landmass, which may be intended for a separate continent, has no place-names or pictures, demonstrating remarkable restraint on the part of the artist.



*the canal from the Gulf of Guinea to the Indian Ocean on the Catalan world map*

Africa occupies most of the southern half of the map. The continent ends in a great arc, conforming to the circular frame of the map, and extending eastwards to form the southern boundary of the Indian Ocean. On the west, a long narrow gulf from the circumfluent ocean almost severs this southerly projection from northern Africa. The southern interior is blank save for the legend *Africa begins at the river Nile in Egypt and ends at Gutzola in the west: it includes the whole land of Barbaria, and the land in the south*. This outline and legend have been interpreted to imply some knowledge of the southern extremity of Africa, and perhaps of a practicable route from the west to the Indian Ocean.

That the great western gulf reflects some knowledge of the Gulf of Guinea is more probable. The design of the northern half of the continent in general resembles that of the other Catalan charts, but the northwestern coast embodies some details of contemporary Portuguese voyages as far as *C. ude* (Cape Verde) and *C. grosso*. From this evidence, the map is usually dated about 1450. Near the gulf is the *Mountains of the Moon*, from which five rivers flow northwards to a lake on the *western Nile*. This lake probably represents the area around the Upper Niger liable to inundation; G.H. T. Kimble has pointed out that these rivers may well represent the five main sources of the Niger. These *Mountains of the Moon* are stated to be on the Equator, and the streams are called the *riu de lor*. We may therefore assume that the headwaters of the Niger marked the approximate limit of contemporary knowledge in this region, and it is not improbable that reports of the sea to the south had been received. These may have induced the cartographer to accept the western gulf of Ptolemy, but to enlarge it considerably. Again, the name *Rio del Oro* [River of Gold] recalls the inscription on the *Catalan Atlas* and the classical tradition. The portrayal of the interior thus goes back at least to 1375. Therefore, apart from a small portion of the coastline, the map owes nothing to Portuguese exploration.

Some surprise has been expressed that a map of 1450 should contain relatively up-to-date details coupled with antiquated ideas in other areas, and this has produced some rather involved explanations. Taking into consideration the lack of details and names in the southern regions of Africa, we may plausibly conjecture that, as an exception to the usual conservatism, the draftsman, in Africa at least, had removed all the detail for which

he had no evidence, to obtain a framework on which to insert the latest Portuguese discoveries. It must remain debatable whether the outline of the southern extremity represents some knowledge of the Cape. The outline may be entirely imposed by the frame of the map: at the most, it may reflect the kind of report that we find on *Fra Mauro's* map (#249).

The merit of the Catalan cartographers lay in the skill with which they employed the best contemporary sources to modify the traditional world picture, rarely proceeding further than the evidence warranted. In the same spirit they removed from the map most of the traditional fables which had been accepted for centuries, and preferred, for example, to omit the northern and southern regions entirely, or to leave southern Africa a blank rather than to fill it with the *Anthropagi* and other monsters which adorn so many medieval maps. Though drawings of men and animals still figure on their works they are in the main those for which there was some contemporary, or nearly contemporary, warrant; for example, *Mansa Musa*, the lord of Guinea, whose pilgrimage to Mecca created a sensation in 1324, or *Olub bein*, the ruler of the Tatars. In this spirit of critical realism, the Catalan cartographers of the 14<sup>th</sup> century threw off the bonds of tradition, and anticipated the achievements of the Renaissance.

In the case of the *Catalan-Estense* map, whose date was earlier conjectured to be 14<sup>th</sup> century, the determining area would appear to be the west coast of Africa. The map names Cape Verde, which was discovered by Dias in 1444 and whose first recorded mapping is by Andrea Bianco in 1448 (#241). The Cape Verde islands also appear cartographically in Benincasa's map of 1468 but are not featured on the *Catalan-Estense* map. This coastline looks in the Modena map rather similar in its outline to Bianco's 1448 chart. So that would suggest a date soon after for the *Catalan-Estense* map. Differences in ink and supposed linguistic variants caused earlier scholars to wonder if two different periods of composition were involved, but George Kimble (1934) pointed out that the handwriting had been judged the same throughout.

Also shown off the west coast of Africa is a ship that is located somewhat south of the Jacme Ferrer ship that appears in the 1375 *Catalan Atlas* (#235). While it is depicted differently, it is still low slung but carries a single square sail and has a sternpost rudder, more reminiscent of the types of vessels common to northwest Europe than to the Mediterranean.

Further south, no discoveries are evident in the Gulf of Guinea later than a friar's journey, ca. 1350, recorded in a book called *Libro del conocimiento de todos los reynos y tierras* [Book of knowledge of all kingdoms and lands]. Nevertheless it is interesting that his islands *Gropis* and *Quible* reappear on the *Catalan-Estense* map in the west-east order of the friar's navigation (the cartographer does not change the order to east-west as Kimble implies). Nor can we prove a date from the legend to a mountain near the same gulf, which may be translated as *This mountain is called by the Saracens Mt Gibel Camar, which in our language means Mountain of the Moon; this mountain is on the equator*. Five rivers are shown flowing north from it, one of them a river of gold, flowing through a lake not connected with the Nile. This river of gold is different from the *Rio del Or* reported in the *Catalan Atlas* of 1375 (#235) as having been discovered in 1346; that is an inlet in the former Spanish protectorate of Rio de Oro. A *Mons Lune* [Mountain of the Moon] is also found by the Gulf of Guinea on the *Medici Atlas* (#233), whose world map is now thought to be 15<sup>th</sup> century. In the interior the *Catalan-Estense* map has the land of King of Melli said, as on the Paris and Florence maps, to be rich in gold, to which the Modena map adds that it is

poor in salt, which comes to be worth its weight in gold. Both salt and gold in West Africa are mentioned by al-Idrisi (1099-1164, #219).

A prominent feature of this map is the very long extension of the Gulf of Guinea eastwards, linked apparently by a river to the Indian Ocean, which is given a gulf south of the Horn of Africa. A waterway linking east and west Africa is reminiscent of the tradition going back to Crates of Mallos (168 BC, #113) and Macrobius (AD 400, #201), according to whom northern and southern Africa were separated near the equator by a body of water. South of the narrowest point, rather irrelevantly, is a legend which may be translated: *Africa begins at the R. Nile in Egypt and ends at Gutzola [i.e. the land of the Gaetuli, near the Atlas Mountains] to the West; it encompasses all Barbary and the land of the South.* "Gutzola is shown on the Moroccan coast just south of Safi. Near Cape Verde we are told, "At this cape is the end of the land of the west part of Africa. This line is at the equator on which the sun stays continually, making twelve hours of night and twelve of day." Nearby is an island labeled *Illa de eades: Here Hercules placed his two columns. So the Pillars of Hercules have slipped down the coast and will eventually disappear completely.*

Africa contains half a dozen reigning monarchs, from Musa Melli to Prester John, sitting in splendor in their royal tents. The mapmaker omits the usual array of monsters in Africa, and the only animal depicted is a camel with a rider, sedately proceeding along the caravan route to the sea. The Saharan cities that appeared on the *Catalan Atlas* also appear here; among them are *Siguilmese, Tenduch, Tagort, Buda, and Melli*. It is likely that the southern extension reflects an Arab tradition. The continent widens out again enormously, and the peninsula presents a curved south coast roughly parallel to a surrounding sea. The eastern part of this peninsula resembles that of al-Idrisi (#219).

In the north of Africa, the course of the Atlas Mountains is very similar to that on the *Catalan Atlas* of 1375, even including a curved northern prong in the central area. There is more detailed information on the interior than is usual on *portolan* charts. Clearly the pass in Morocco leads from Marrakesh to the Wadi Draa: the legend begins: *This pass is called Dra valley and Sus valley; through this pass travel the merchants who want to go to Melli.* A pass in the eastern part of the range is called a route of Islamic pilgrims, another piece of evidence of Arab sources. The eastern end of the Atlas range is extended too far east, ending in *Cyrenaica*.

Associated with this habit of speculation, was the practice of what G.H.T. Kimble calls 'harmonizing' established facts with long-held 'traditions'; a practice which became very popular from the 14<sup>th</sup> century onwards. The people who found pleasure in reconciling the views of such influential ancients as Pliny, Ptolemy, Aristotle and Ambrose were not easily disturbed by the challenge of the new school of practical cartography.

With the development of Portuguese seafaring in the 15<sup>th</sup> century and the subsequent widening of the southern horizon, the 'harmonizing' problem became increasingly acute. Each mapmaker tackled it *de novo*, so that scarcely any two world maps of this period provided the same world-view. Compare, for instance, this *Catalan-Estense* map, the *Walsperger* world map (#245) and the *Genoese* world map (#248), all of approximately the same date, ca. 1450. According to Kimble, there are at least three distinct influences, in addition to the *portolan* chart tradition, that can be detected. These influences are Classical, Christian and Arab. Of these only the Arab influence is strong, while it is improbable that the Classical influence was direct. Thus, in the case of the *Catalan-Estense* map, it owes nothing to the Ptolemaic tradition, and it is less likely that its author should have taken his idea of a southern continent direct from Crates, the



originator of the concept (150 B.C., #113), than that he should have taken it from Arab or Christian cosmographers, such as Abu'l Fida or Isidore (#205), who revived it. The influence of the medieval Christian tradition on the *Catalan-Estense* map is betrayed in such elements as the legend relating to *Prester John* and the portrayal of the *Terrestrial Paradise*. There can be no mistaking the Arab influence. We have only to compare the delineation of the southern half of Africa on the map with the description given by the 11<sup>th</sup> century writer, Al-Biruni (#214.3), of the shores of the *Southern Ocean* to be convinced of the kinship. Thus, the *Catalan-Estense* map, although embellished with castellated towns, ships and portraits of African princes, attempts to furnish an up-to-date picture of the world and to resolve the ancient riddle of *Africa nondum cognita* [not yet identified].

The northern portions of Asia and Europe on the *Estense* map, which lay outside the limits of the *Catalan Atlas*, significantly, contain very little detail.

This map, like the *Walsperger* (#246) and *Bianco* (#241) maps, has the disk of the Earth's land displaced off-center in the disk of the sea. Thus, at one side the lands touch or are tangent to the border while at the opposite side the extent of the sea is emphasized. In earlier times the *Orbis Terrarum* was believed to be a perfect domelike cap emerging from a sphere of water. An assumed miraculous off-centering of a sphere of solid land within an independent shell of water was a means of explaining why the sphere of land was not completely inundated by the supposedly spherical shell of water.

This off-centering reminds one of the statement in the inscription in the Yale *Vinland* map (#243) that *Vinland* lay "toward the most distant remaining part of the ocean." The *Walsperger* map showed no evidence of the Arctic archipelago or of Norse activities in the western ocean, but rather in the north. Its displacement is accordingly such as to make the ocean widest in the north. This Catalan map in Modena, on the other hand, does show the archipelago in the west, and *Bianco* shows his strange promontory in the east, while the *Vinland* map shows its archipelago in the east. The latter three accordingly make the western ocean the widest. This correlation again suggests trans-global, one-ocean thinking by the cartographers.

James Enterline states that the archipelago is shown on this map in more detail than on the map in Florence, and the individual "Icelands" are given names such as *Donbert*, *Tranes*, *Tales*, *Brons*, *Mmau*, *Bilanj*, etc. This Catalan map also shows inherited evidence of the archipelago in the north and has an Arctic bay with the same two islands, *Naron* and *Salmos*. In this map, however, *Naron* though not easily discernible at this scale of reproduction, has the unusual outline suggestive of Victoria Island, showing the indentation of Prince Albert Sound. The group of three islands farther east bears an inscription to the effect that "In these waters live very beautiful girfalcons" and attributes the land to the Grand Khan of Marco Polo's description.

On the southern coastline of Asia there are some differences, generally slight, between the two maps. The peninsula of India is much less pronounced on the *Catalan-Estense* map, and to the south is the large island of *Salam* or *Silan* [Ceylon/Sri Lanka] which also fell outside the physical limits of the *Catalan Atlas*. A legend refers to its wealth in rubies and other precious stones. There can be no doubt however that the two outlines are fundamentally identical. To the east is the island of *Java*, as on the *Catalan Atlas*. The island of *Trapobana* is much enlarged, and is placed on the southeastern margin of the map. The surrounding ocean, the *Mar deles indies* is filled with numerous nameless and featureless islands.



Arctic archipelago "Icelands"

Recollections of medieval maps include the *Earthly Paradise* with Adam and Eve and the tree, here not in Mesopotamia but in *Abyssinia*, between the eastern branch of the Nile and the Red Sea, at a spring from which the four medieval rivers of Paradise flow. A legend of the *Genoese world map* of 1457 (#248) in the Central National Library of Florence tells us that some have put *Paradise* in this part of Africa, while others have said it is beyond India. The *Catalan-Estense* map also gives a short caption on the *Diamond Mountains*, said to be guardians of the *Earthly Paradise*. In translation: *This region is the Terrestrial Paradise, an especially lovely place. Paradise is completely surrounded by fire whose flames reach the sky. ... In Paradise lies a source divided in four rivers: One is Euphrates, the second Tigris, the third Gyon, the fourth Phison.... Isidore speaks about this place saying that Paradise is situated in the middle of the Equator.* This is an abbreviated caption from the *Catalan Estense* map describing a circular garden surrounded by flames and placed in eastern Africa, from which the mentioned source springs and in which two red figures pray under a tree. Placing *Paradise* in eastern Africa on medieval maps is very unusual and is at the same time typical for late medieval *mappae mundi* that were both bound by tradition and innovation, determined by contemplations of salvation history as well as practical spatial considerations.

A legend on the island of Meroe on the White Nile claims this as the place where there is a deep well, on the bottom of which the sun shines; similar ones on the Pizigano map of 1367 (Parma) and the Florence Catalan map mentioned give the month when this happens as June. The legend of the nefarious Gog and Magog enclosed behind mountains is provided in far eastern Asia.



In addition to the *Terrestrial Paradise*, we find Jerusalem (*santasepulcra*), only slightly shifted from the center of the world. The Red Sea is, following medieval tradition, painted red, but with a caption that hints at empirical knowledge: not the water, but the sea bottom is red.

Elsewhere, the mapmaker was aware of the empirical travel knowledge of his time, be it in Asia or in Western Africa. In the hinterland of Asia the most prominent feature is the Caspian Sea, orientated northwest-southeast as in the *Topkapu Siray* fragment, but similar in shape to Ptolemy's. Not only are the Portuguese discoveries up to 1445 represented, but we find the Caspian Sea only once on the map and as an inland sea with the names *Mar de sala* (from *Sarai*, the Mongol central place at the lower Volga that flows into that sea), and *de bacu* (from the city of Baku in Azerbaijan, still today on the western coast of that sea). This clearly is a decision by the mapmaker in favor of empirical knowledge and against antique traditions, while other geographical sources chose to combine the different descriptions by putting one alongside the other. Twelve figures of rulers are depicted in Asia and Africa, mostly in front of their tents: in Asia Minor the anonymous sultan of the Ottomans, in the Middle East, the *rey dilli* (Delhi) and the *rey tauris* (Tabriz, c. 1300 center of the Mongol il-khanat). There are also two east Asian Mongol rulers, known, among others, from the work of Marco Polo, which was still considered useful, described by lengthy map legends. Further south, on the easily recognizable Arabic peninsula, we find the biblical *reyna sabba* [Queen of Sheba], characterized as a ruler from the past whose land is possessed by the Saracens; and *civitas meca* is depicted at the side of the *provincia arabia*. In Africa rule *rey melli*, *rey dorgana*, *rey de nubia* and *solda[n]babilonia* (the Sultan of Babilonia/Cairo), known also from earlier (mostly Catalan) maps.

In the far south of Africa, a ruler has the head of a dog (*rey benicalep*), like the Cynocephali on older maps. But the mapmaker does not refer to Latin European tradition, claiming instead that "this people are called *benicalep* in the Saracen language, in our language *fill de cha* [Son of the Dog] because their faces resemble those of dogs."

The depiction of Asia and the Indian Ocean is simpler and less extensive than on the *Catalan Atlas*, and is derived from Marco Polo and accompanied by legends, inspired or transcribed from the *Divisament dou Monde*, like the *Catalan Atlas*, this map indicates the great islands of Java and *Trapobana* (Sumatra, rectangular), Chinese junks (*inquis*) in the North Indian Ocean. But it also shows Ceylon/Sri Lanka (*silan*) with a legend and three types of sirens, particular to this map. For the hydrography and the orography of Eurasia, the *Estense* map is similar to the *Catalan Atlas*, as well as for the representation of the northwest of Europe and the British isles. The figuration of Iceland by a group of eight islands (*Questas illas son appelladas islandes*) is only found on this map and that of Florence. In the West of Ireland, *illa de brezill* [the mythical isle of Brazil] and *illa de mam* [the mythical isle of Mam]; and off the coast of Africa the *Fortune Islands* with a long legend in Latin: *Fortunarum Insule que multa nomina rep(er) iuntur ut dicit ysidore i(n) XV capitols and a beato brandano Insule fortunate ...* [indicating the mythical St. Brendan island]. More to the South, *illa of cades* and *illa of gentiles*, the latter with a legend recalling the myth of *Atlantis* of Plato.

The map has 52 legends (oceans and islands 13, Europe 14, Asia 19, Africa 16). All are in Catalan, except that of the *Fortune Islands* which is in Latin. They were entirely transcribed by Kretschmer (1897) and (with corrections) by Pulle and Longhena (1908). By collating them with the legends of the other Catalan maps, one notes such a similarity (sometimes word for word) that one cannot doubt that these maps derive from a common

source. The nomenclature is also Catalan, except for a few Portuguese names on the West coast of Africa.

Southern Asia, separated from Africa by a Red Sea, has a flattened and too northerly coastline. The Persian Gulf is rectangular as in Ptolemy but does not narrow at the exit. A *barcha* seen from the stern is shown nearby whose description and measurements are given in a legend (a *barcha* is a single-masted ship descended from the Viking longship used by the Portuguese sailors in early voyages of exploration along the African coast). The northern coast of the gulf continues east almost straight, the whole coast of India being much foreshortened. There is nothing corresponding to the Malay peninsula, only a gentle bend leading north-westwards to surrounding Ocean. What mountains are given are well north of the Himalayas or in China.

Of the many islands in the Indian Ocean the largest, to the southeast, has the shape of a rectangle surrounded by mountains with the legend, in translation: *Island called Trapobana [sic], where there are wild mountains, in which live people very different from others: they are strong and as big as giants [1375 atlas: 12 cubits high, like giants], and are black, and if they capture any people from the mainland, they eat them...* This refers not to Sri Lanka which appears as *Silan* (so is not the Ptolemy *Taprobane*) but to Sumatra, called by the Genoese world map of 1457 *Taprobane* and *Ciamutera* and by Fra Mauro *Siomatra* or *Taprobana*. The description of its alleged cannibals comes from Marco Polo (III,10), as does the similar description of Java, here named as *Jana*.

The account of China is also derived from Marco Polo, who mentions charts and gives occasional bearings, and from whose voyages the map that existed in 1459 in the Palace of the Doges, Venice, was drawn. The *Catalan Atlas of 1375* is the earliest still surviving to incorporate material from Marco Polo's text. The *Catalan-Estense* map not only incorporates no new material, but some omission and corruption have occurred. Thus the capital [Beijing] of *Cathay* is said to be *Cambalec* and to have had an ancient city called *Garibalu* nearby. What Marco Polo says (II.11) is that the capital was *Camaluc* and the earlier town across the river was *Taidu*; hence *Garibalu* is probably a corruption of *Cambaluc*. The circumference of the capital in Marco Polo is 24 miles, in the *Catalan-Estense* map 24 leagues. Despite this primitive cartographic approach to Asia, the evidence given above from West Africa seems conclusive on the dating.

To the generally good delineation of European coasts there are exceptions, especially in more northern areas. Britain, as in many medieval maps, is shown split in two, or almost so, by a stretch of water, which may or may not reach the east coast between *Scardenburgh* [Scarborough] and *Bernie* [Berwick]. One may wonder if this originated as a misunderstanding of *Hadrian's Wall* or of a line of hills, for example the Cheviots. Of the northern islands, the furthest northwest is *Islanda* [Iceland], one of eight in an archipelago. *Archana* is clearly, by comparison with other maps, Orkney. But south of it is *inssula [sic] destillant*, whose inhabitants are said to be Norwegian-speaking Christians. This island is surely not a misplaced *Estland* [Estonia], as Kretschmer gives, but Shetland [*Hjaltland*], for which compare *Ilia de Scillanda*, near *Archania*, in the 1375 *Catalan Atlas*.

The *Estense* map also shows some significant deviation from contemporary *mappamundi*. As mentioned above, Jerusalem is not in the center and has no city vignette; it is simply marked *San Sepulera* and located on the River Jordan. Other than the coastal cities, only the Dead Sea (*Mar Gomora*), Judea, and the Jordan are mentioned.

On this Catalan map Christian and Muslim forces are positioned opposite each other. As the mapmaker points out, the king of Organa is continuously fighting the

*Sarains*, and the king of Nubia is constantly fighting the Nubian Christians, who are under the rule of *presta iohan* [Prester John], the great Latin crusade hope from the 12<sup>th</sup> century. He is seated a just west of the *Terrestrial Paradise*.

Slightly north of Prester John, two rivers flow together and then go onward, as the Nile, to Egypt and the Mediterranean. One of the rivers springs from *Paradise*, the other from the west, where it shares a headwater with another river that then flows to the west and into the Atlantic. The latter has five tributaries that come from the south and out of the *gibelcamar*. This name quotes Ptolemaic and Arabic traditions, in which it usually is the Nile that springs from the *Djibal-qomr*, the *Mountain of the Moon*. On Ptolemaic, Arabic, and Latin European world maps that note this version of the Nile's sources, these mountains are usually placed south of Egypt. Of course, the Nile's western African source was an alternative discussed in Antiquity. In terms of content, we here have *Paradise* as source of the Nile and an alternative to *Paradise* as source of the Nile worked into one and the same map, but the latter is used for another river close to the Nile. Only slightly south of *Paradise*, a small land bridge, crossed by yet another river, connects inhabited northern Africa to the uninhabited or unknown south. These parts of the continent are mostly separated by a broad estuary reaching eastward from the Atlantic. We may see here a reminiscence of the southern continent (*terra australis*) found on several medieval maps, or it may reflect the great hope of Portuguese seafarers of the time that the Indian Ocean was easily accessible – even though Africa reaches out far to the south.

The far north in Europe and Asia is more frightening than Africa, showing a naked giant pursuing a fox, a nine-headed idol being adored by two worshippers, and a strange hanging head, which appears on several other 15<sup>th</sup> century world maps. The Caspian Sea is enclosed, but there are two unlabeled gulfs in the northern ocean. China is pretty much the world of Marco Polo; the Great Khan is still ruling there. To the south the Indian Ocean is greatly enlarged and full of brightly colored islands, but only three are named: *Silan*, *Trapobana*, and *Java*. A Chinese junk, identified in a legend, sails through the water, menaced by three half-human figures: one part fish, one part bird, and one part horse. South Asia lacks a definite Indian peninsula and shows no trace of the *Golden Chersonese*.

The entire map has been shifted to the east in its circular frame, thus making more room in the Atlantic for its islands. The Azores, Canaries, and Madeira's are shown. Next to the Canaries, a long Latin text, drawn from Isidore and the voyage of Saint Brendan, describes the Fortunate Islands of antique fame. Plato's tale of *Atlantis* is recalled near an island labeled *illa de gentils*; *it was once as large as all Africa but now, by the will of God, is covered with water*. In the north is a group of colorful islands marked, *These islands are called 'islandes'*, which may be a reference to Iceland. West of Ireland can be found the islands of *Main* and *Brezill*.

The combination of archaism and modernism is an outstanding characteristic of this map, and it is interesting to note that the cultured and humanistic Duke of Ferrara, Ercole d'Este, the owner of this map, also had in his library a copy of Ptolemy's *Geography*, edited by Nicholas Germanus. As mentioned, no evidence of Ptolemy's influence on this map can be discovered. The duke owned a copy of Mandeville's *Travels* as well, which he must have treasured, as there survives a letter he wrote demanding its return from a borrower.

This map is of interest because of its eclectic identity. Circular in shape, with different religious and legendary motifs along with certain Arab influence, it retains the rigor of *portolans*. It has no titles, notes or dedications, clues to its intended use. Such a map implies several highly complex unknown factors as regards the level of realism

aimed at by the artist. It is, for example, inconceivable that contemporary seafarers believed that a large expanse of land actually existed in the south of Africa. Or that the scientists of new Humanism believed that kings with dogs' faces did exist. Or that theologians could accept that *Paradise*, which ceases to appear in Asia following Marco Polo's travels, could be relocated to Ethiopia. It is also difficult to imagine that they believed that the laws of God and nature ceased to apply beyond the frontiers of Europe and that it was possible anything was there. It is more logical to think that this map depicts different levels of representation.

According to Chet Van Duzer, a legend says that there are three types of sirens in the Indian Ocean on the *Catalan Estense mappamundi*. The three types of sirens are half-woman half-fish, half-woman half-bird, and half-woman half-horse, and all three types of sirens are depicted below. The half-woman half-fish siren holds a mirror, symbolically indicating beauty but also vanity. The sirens on the *Catalan Estense mappamundi* are of particular interest because they provide insight into the techniques for making sea monsters in a cartographic workshop. The wavy lines representing the water are discontinuous at a rectangle around each of the sirens, indicating that a blank space had been left for each creature, and that the sirens were painted by a different artist, no doubt a specialist in decorations such as sea monsters. The same discontinuity in the wavy lines is visible around the two ships on the map, and given the similarities between the faces of the sirens and those of some of the sovereigns painted in Africa, it is tempting to conclude that one specialist painted all of the more artistically sophisticated decorative elements on the map: the sirens, the ships, the sovereigns, and so on. The legends about sirens on the *Catalan Estense mappamundi* derive ultimately from the so-called Tuscan bestiary, perhaps by way of a Catalan bestiary.



The decoration includes flags and pavilions (in Europe only), vignettes of vines (tower profiles), rulers generally in tents (in Asia and, sines with more care, in Africa). We can also note in the north of Europe a man mounted on a reindeer, his head hanging from a gibbet; in Africa, a man rides a camel, Adam and Eve with the tree in the *Terrestrial Paradise*; in Asia, *Noah's Ark*, a human figure playing a double metal flute (on Alexander's wall), two characters praying in front of a big black idol (at Castema on the Volga), three horsemen heading towards l'Est (corresponding to the caravan of the *Catalan Atlas* and the fragment of Istanbul). On the Western Ocean, a European ship; in the Indian Ocean, a ship and three sirens, but there are no decorated wind roses.

Coloring - the border is in blue fence. The Ocean, the Baltic Sea and the Caspian Sea (*mar de sola e de baw*) have blue stripes and a pale blue shore; the Mediterranean and the Black Sea, wavy green fence lines with a pale green shore. The rivers are in blue, the mountain ranges in green (some in brown), the islands in red, black, blue and brown, the terrestrial Paradise in pink shade of bruno. The names are in black or red.

The *Estense* map was certainly intended to represent the geography of Africa, for which it gives details later than those of other Catalan maps. As George H.T Kimble has shown, the design and nomenclature of the African coast from Cape Bojador to Cape Verde is very similar to that of Andrea Bianco's 1448 map (#241) and must come from a common Portuguese source. The Gulf of South Cape Verde (already represented, although less marked, by Petrus Vesconte c. 1320, #228) may indicate some knowledge of the Gulf of Guinea which, according to Taylor (1928), would have been common in the Mediterranean world at the beginning of the 14<sup>th</sup> century. Destombes believes that it does not seem possible to agree with Kimble that the author of the *Estense mappamundi* borrowed this trace from the *Liber del Conoscimiento de todos los reynos y tierras*, written by a Spanish Franciscan between 1330 and 1350 who would have had before his eyes Catalan maps. The extension of Africa towards the South, below the Gulf of Guinea reflects (according to Kimble, who quotes Abulfeda) an Arab conception of the world, the oldest cosmographic conceptions of a mass of southern land and of an enclave of the Indian Ocean towards the South (Kretschmer 1897). But since Petrus Vesconte has a similar trace, it would be risky to conclude that the author of the *Estense* map directly used an Arab source.

Regarding the representation of Europe and Asia, although these extend further north and south than on the *Catalan Atlas*, it seems that the *Estense* map is of the same type as the *Atlas*, but simplified. The drawing of Asia, inspired by Marco Polo, is simplified, but could not be considered more archaic than that of the *Atlas*. That there is borrowing from Nicolo de Conti also seems doubtful.

**LOCATION:** Biblioteca Estense, Modena, Italy

**SIZE:** 113 cm diameter

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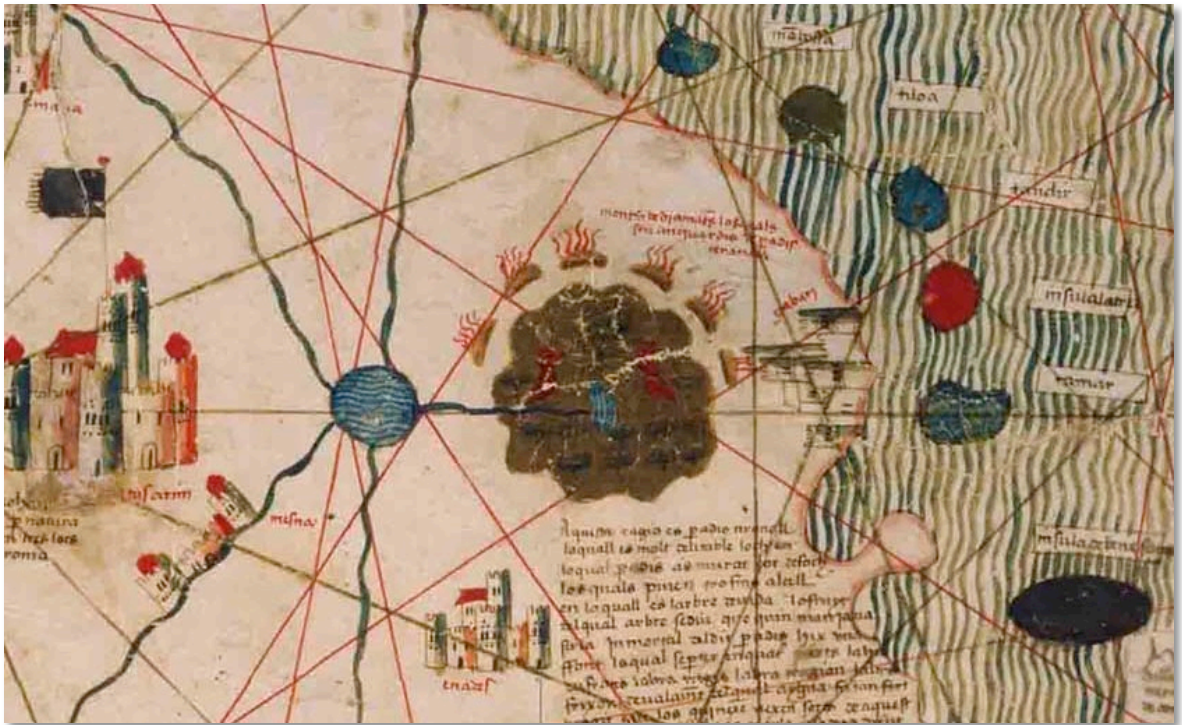






Catalan-Estense: Asia, Indian Ocean





#### *Catalan-Estense: The Terrestrial Paradise*

*Located near the territory of Prester John between Nubia and the city of Arin [Civitasarim], the latter prominently marked and centrally placed in the Horn of Africa, not far from the Indian Ocean in which six islands of various sizes and colors are depicted. Paradise is guarded by five high "Diamond Mountains" surmounted by flames. Within Paradise Adam and Eve are shown standing on either side of the Tree of Life. The single river originates in the middle of the Garden before flowing out of it into a lake, there after to separate into four streams. One legend, near Cape Verde, explains the equal duration of night and day at the equator and, another, close to Paradise, emphasizes that the delights of the Garden of Eden are incomparable with the features of any other earthly region. Under the graphically depicted Paradise is the legend:*

*This region is the Terrestrial Paradise, an especially lovely place. Paradise is completely surrounded by fire whose flames reach the sky. ... In Paradise lies a source divided in four rivers: One is Euphrates, the second Tigris, the third Gyon, the fourth Phison.... Isidore speaks about this place saying that Paradise is situated in the middle of the Equator*





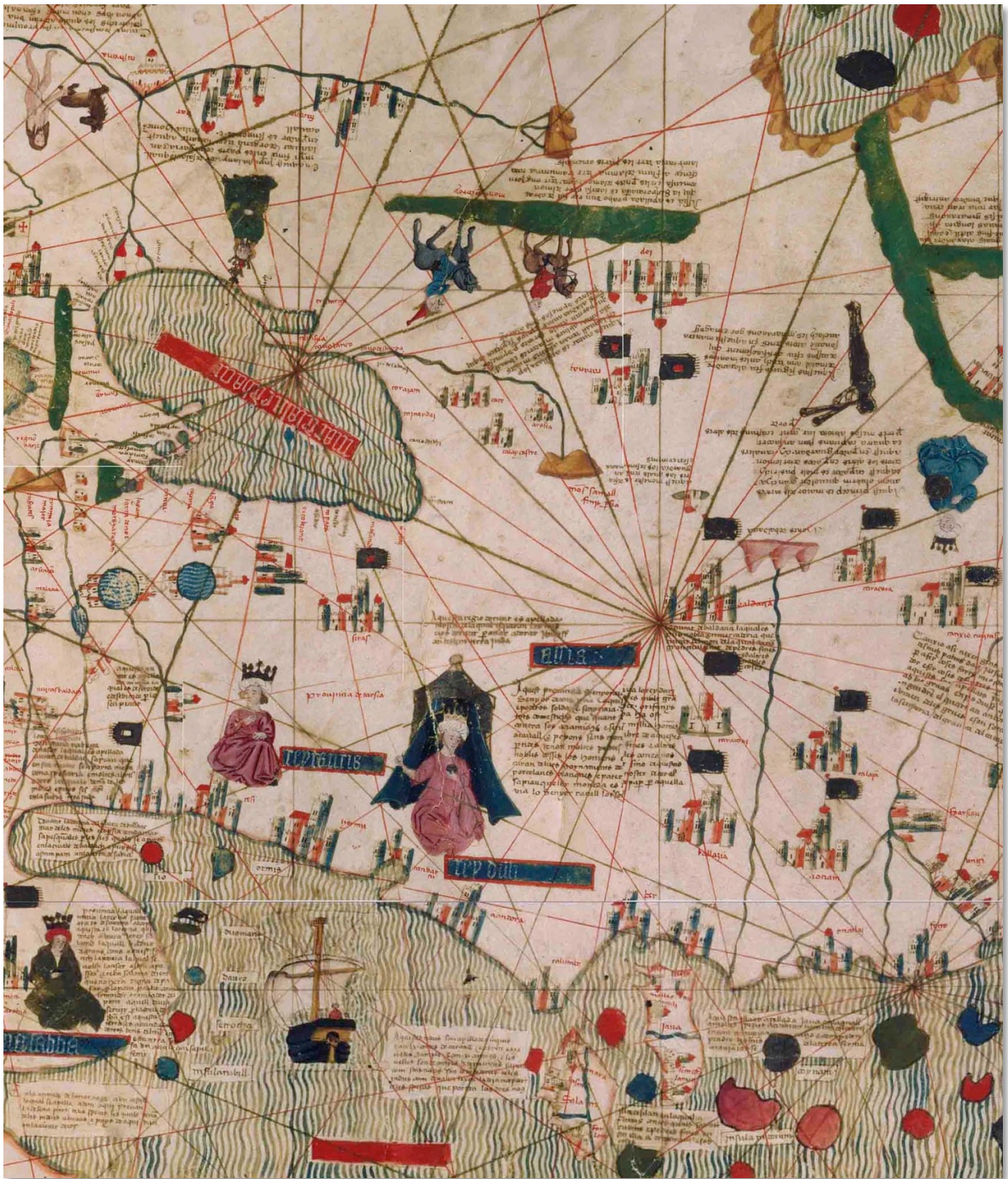
*Catalan-Estense: Europe*

Britain is divided by a double line north of Scarborough. The islands north of Scotland are "Inssula destillant" [Shetland] and "Insula darchana" [Orkney], "in which there are said to be six months of and six of continuous day." Northwest of these is a group labeled "islandes" of which the southernmost is called "Islands" [Iceland].



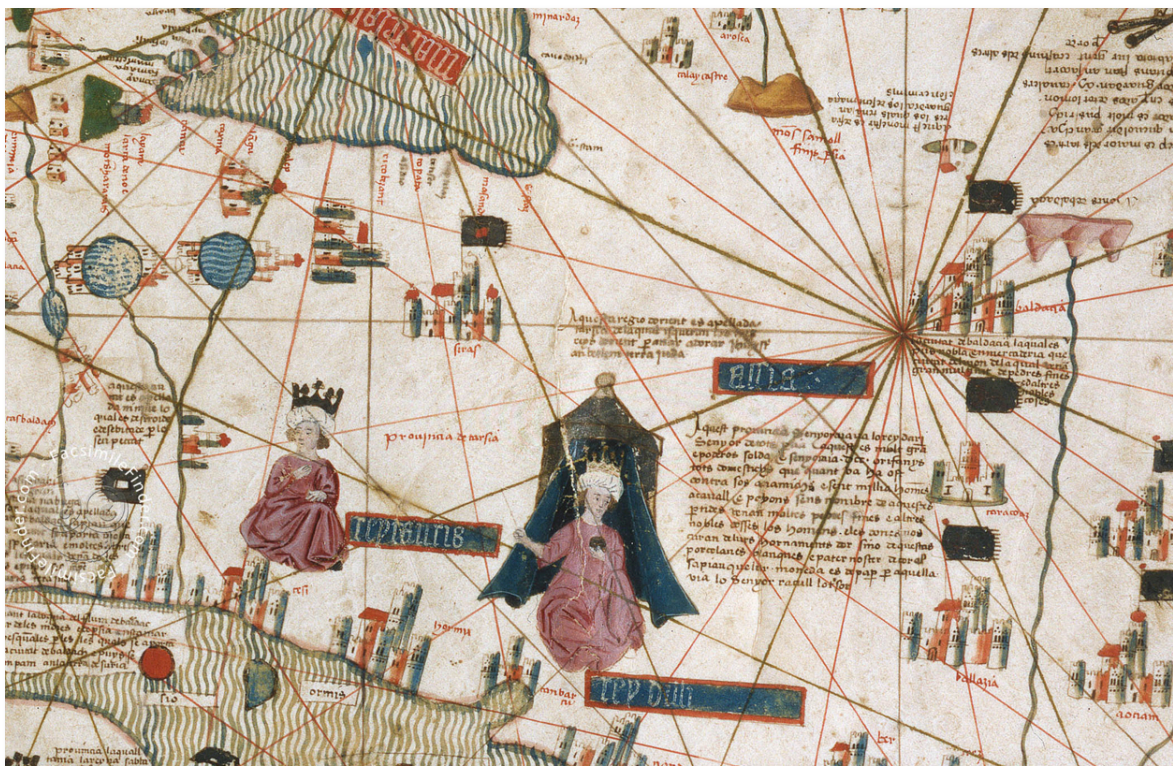
*The mythical islands of Mam and Brezill are shown southwest of Ireland*



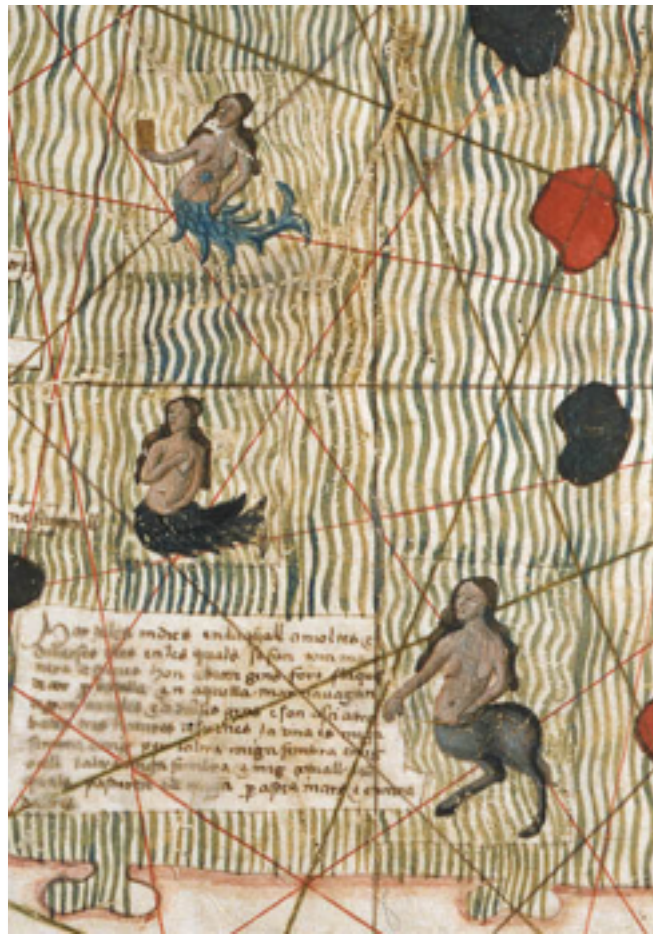


Catalan-Estense: Northern Asia, India, showing the giant chasing the fox (upper left), the Polo-like caravans, Caspian Sea and Sri Lanka, and in the upper left-center, east of the Armenian plateau where the Tigris and Euphrates Rivers are shown originating, is Mount Ararat and Noah's Ark perched on top. The Queen of Sheba is shown on the Arabian peninsula (lower left) with the inscription "Where earlier the Queen of Sheba ruled now the Muslims have their main pilgrimage place, Mecca."

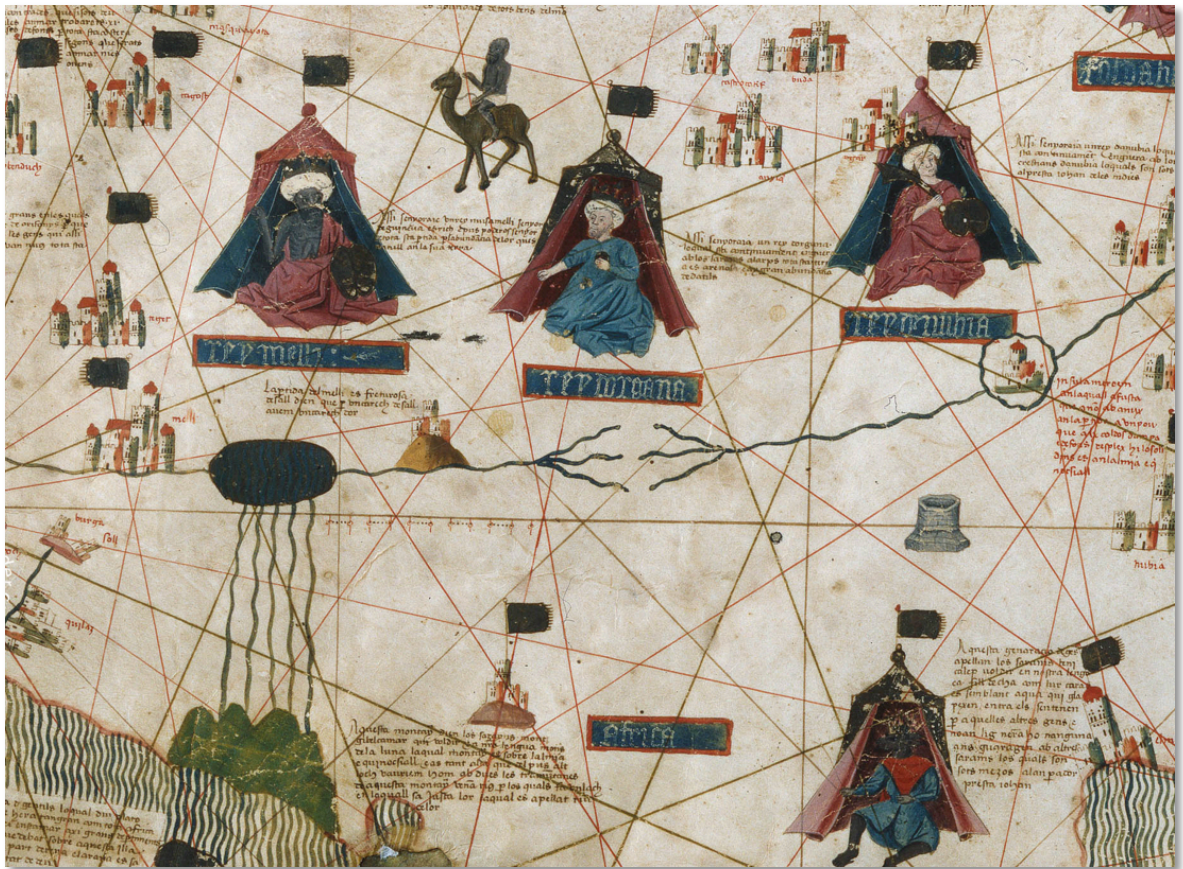








21



Rulers in West Africa



Petrus Vesconte, c. 1321



Albertin de Virga, c. 1414



Borgian, first half XV century



Andrea Bianco, 1436



Andreas Walsperger, 1448



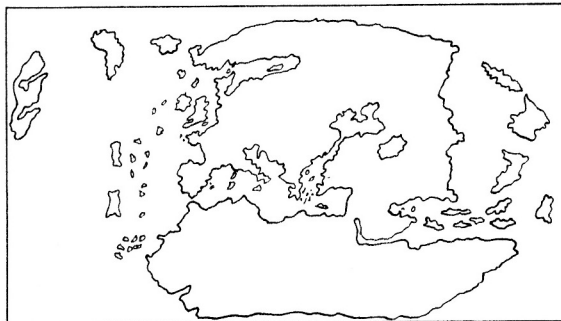
Giovanni Leardo, 1452-3



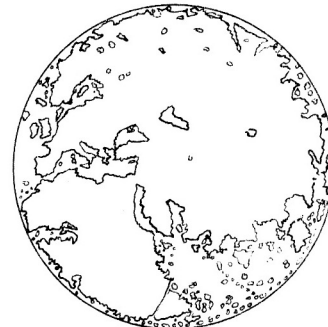
Catalan-Este,  
c. 1450



Genoese, 1457



Vinland Map, mid XV century (?)



Fra Mauro, 1457-9