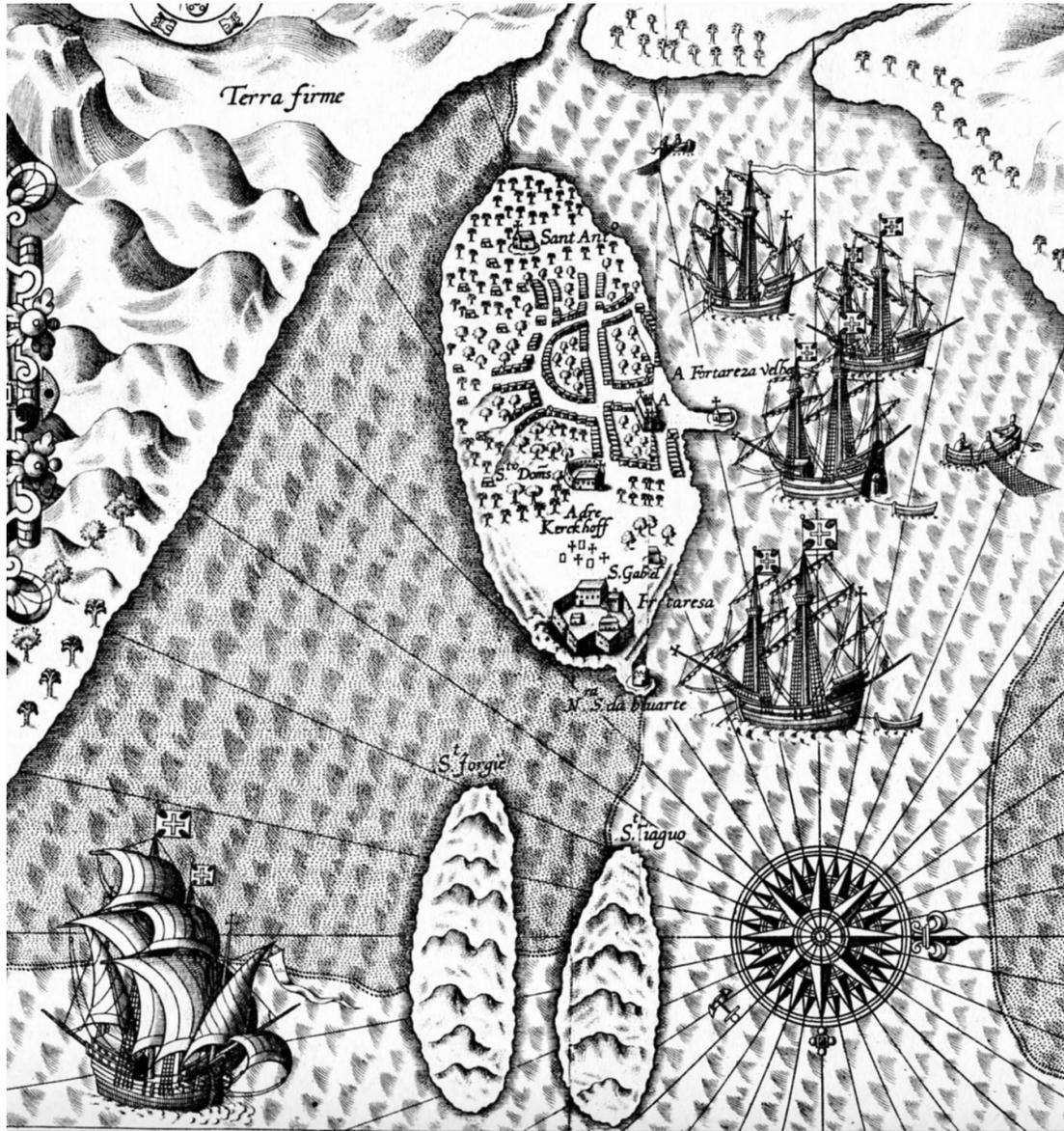




Ships on Early Maps  
Part Two

5.25



*Insulae et arcis Mocambique descriptio ... H. Linschoten inuent ... Joannes a Doetecomus junior fecit.*

*J.H. van Linschoten, 1596*

*Appears in J. Huygen van Linschoten's Voyage published in Dutch in Amsterdam in 1596*

*Ships carry the Portuguese standard.*

# Ships on Early Maps Part Two

5.25



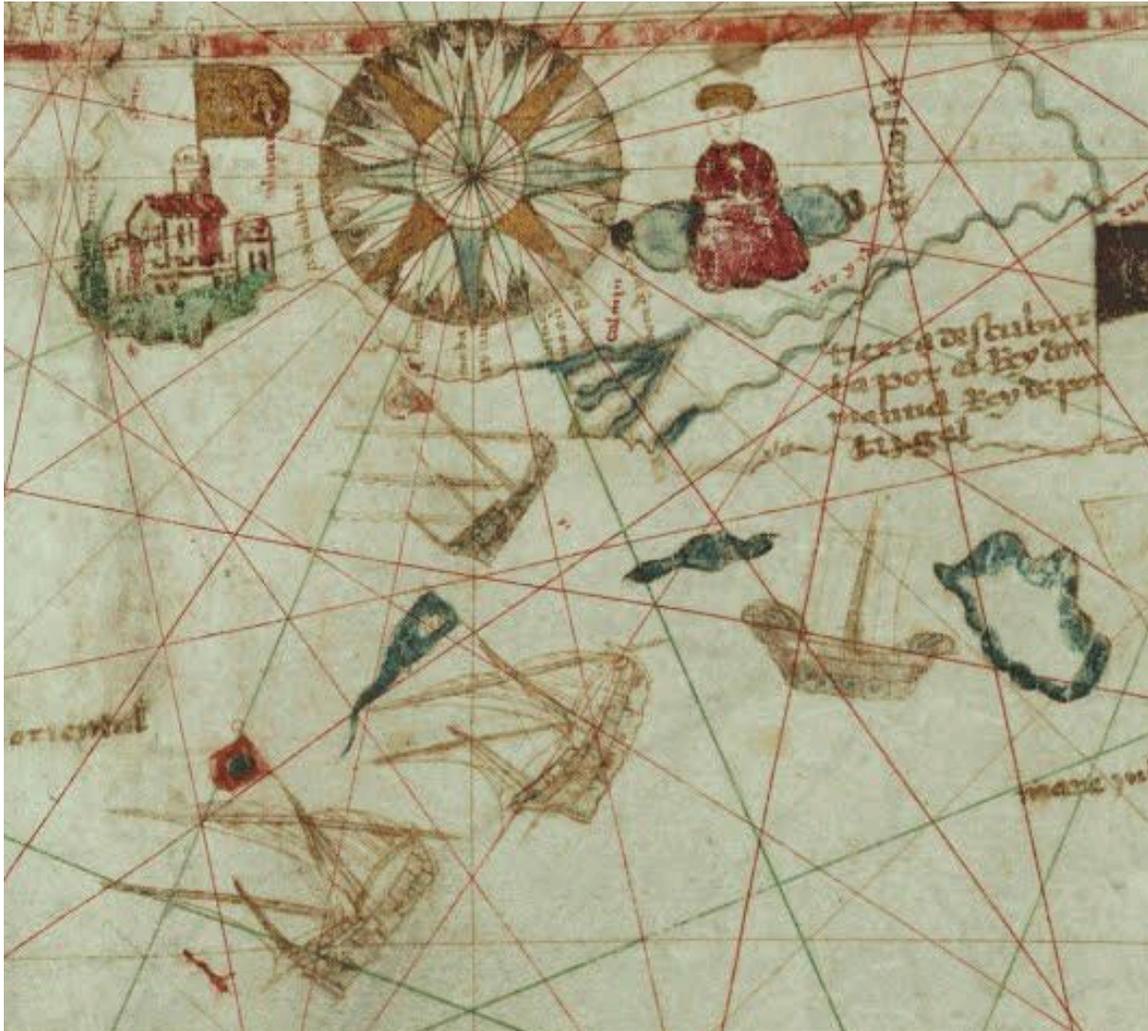
Ships on Early Maps  
Part Two

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Ships on Early Maps  
Part Two

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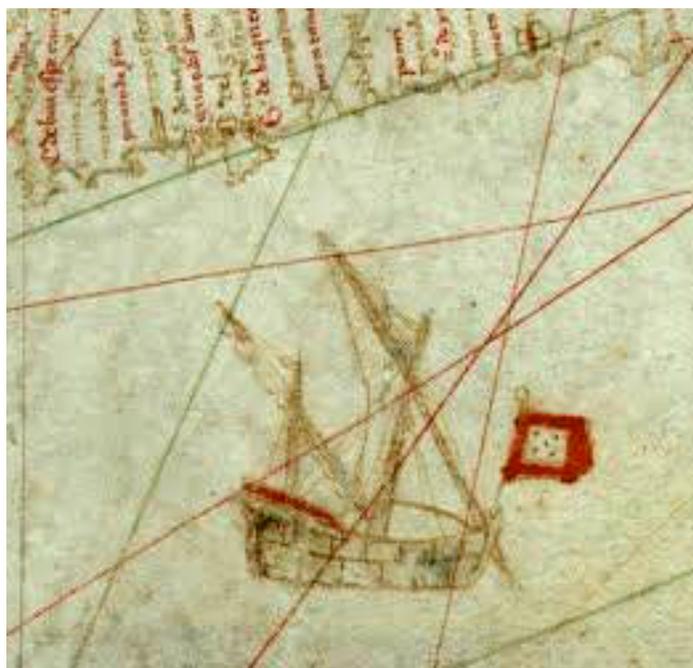


*Ships in the Indian Ocean on the Juan de la Cosa 1500 world map (#305, details below)*



## Ships on Early Maps Part Two

5.25



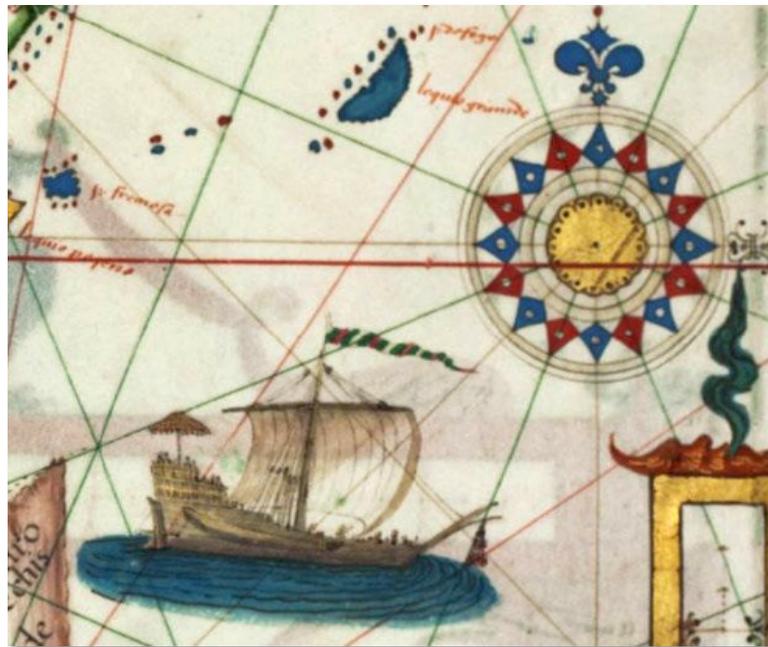
There are a total of 12 ships on the *la Cosa* map. Two of them are single-masted single sail high-charged ships which would have been more or less at home in northern Europe or along the Basque coast where the type appeared on town seals in the Middle Ages. There is one full-rigged ship complete with a high after-castle. The rest of the ships have the telltale low profile of *caravels*, often with a sharply curved stempost. There is a mixture of two- and three-masted versions and among the three-masters one suggests a square sail on the foremast and lateens on the other two masts. Some of the three-masted *caravels* carry only lateen sails. One of those is off West Africa and the other two are off the north coast of Brazil. The general shapes of the hulls on those ships are similar to the ones of the full-rigged ships that appear crossing the Atlantic on slightly later Portuguese maps. De la Cosa was an experienced sailor so would not have made a mistake in depicting the rig. It is possible that, just as Columbus changed the rig on a caravel to make the Atlantic crossing, captains changed the rig, dropping the square sails on full-rigged ships once they got into the Caribbean. That would have made the ships more maneuverable. There is no mention of such action though other Spanish maps show the same type of three-masted lateen-rigged ships.

Ships on Early Maps  
Part Two

5.25



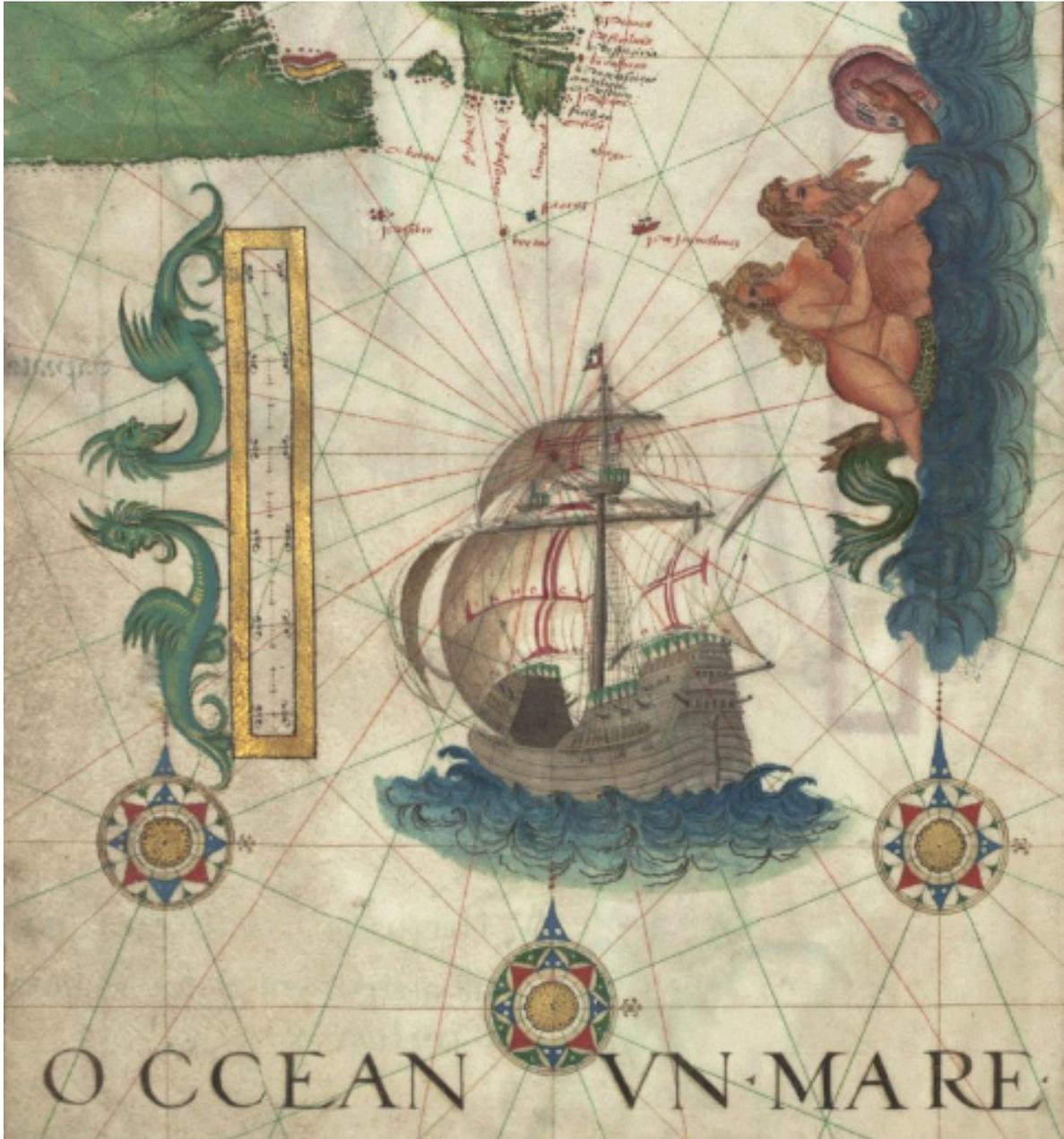
*The chart of the north coast of South America, Sebastião Lopes, 1565*



*The chart of Southeastern Asia, Sebastião Lopes, 1565*

Ships on Early Maps  
Part Two

5.25



*The chart of the north Atlantic with Newfoundland and Greenland, Sebastião Lopes, 1565*

Ships on Early Maps  
Part Two

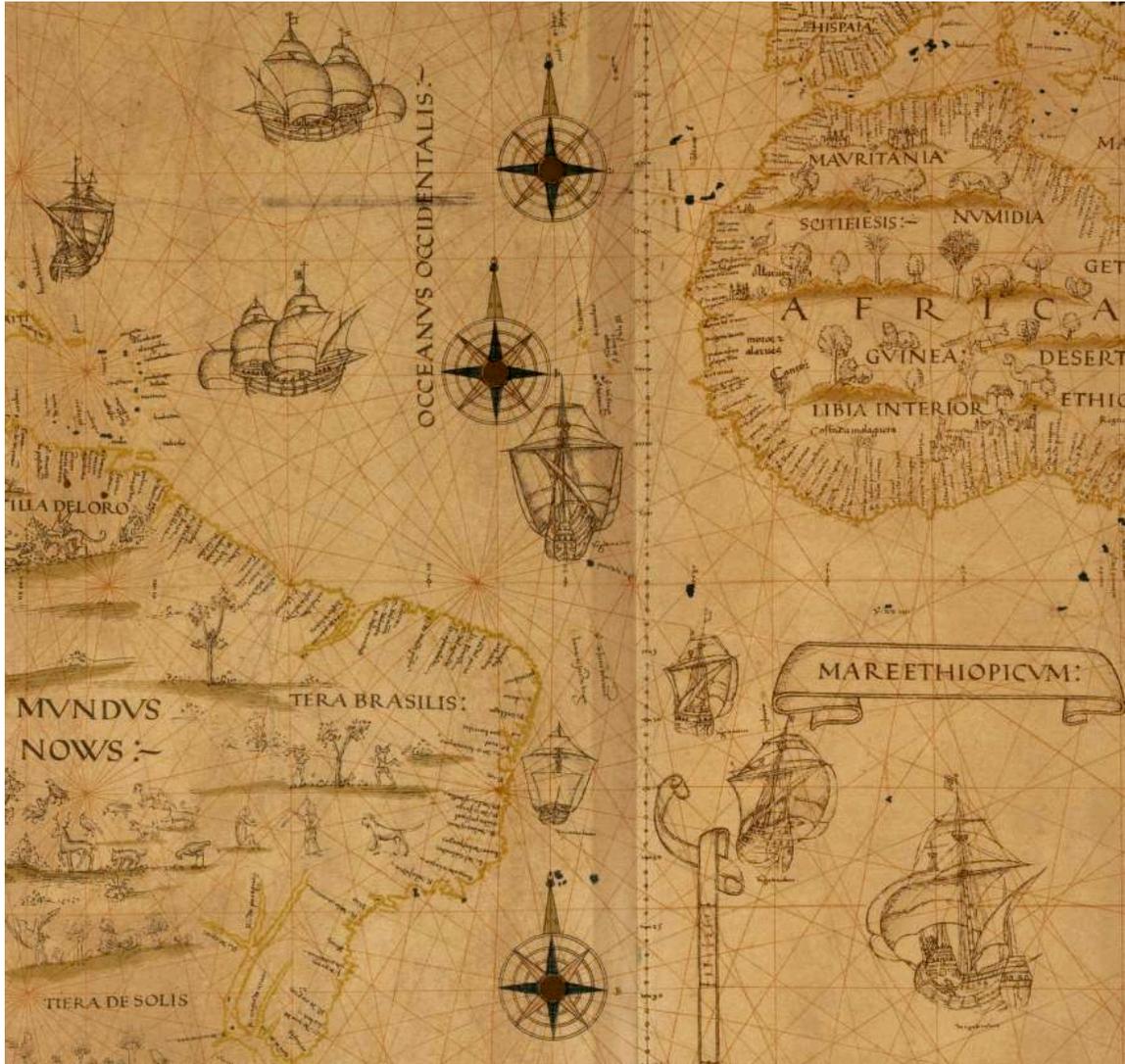
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*Examples of dhows on a Piri Re'is map*

Ships on Early Maps  
Part Two

5.25



Caravels in the Atlantic on the 1529 Diogo Ribeiro world map (#346)

## Ships on Early Maps Part Two

5.25



*Portuguese caravels, probably Magellan's, in the Pacific Ocean on Ribeiro's world map (#346)*



*A 1522 map of the Moluccas by Nullo Garcia de Torreno has three ships in the south Indian Ocean, all on the same tack so it is difficult to make out their rig though the mainsails and lateen mizzen suggest the standard high seas cargo ship. South of Java a fourth ship has four slightly canted rectangular sails, apparently another effort to show a Chinese junk*

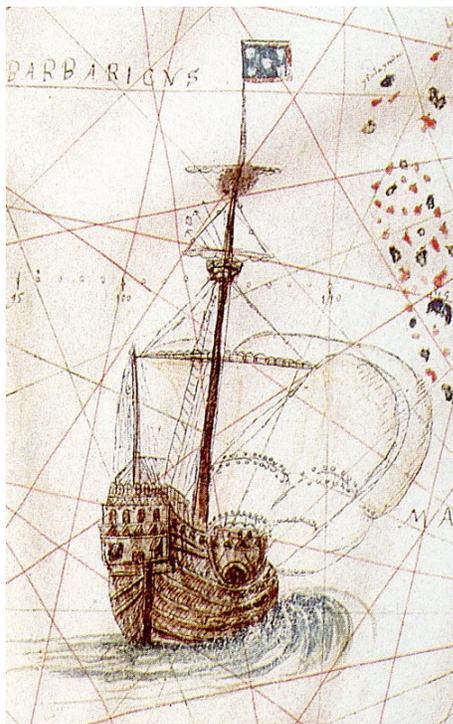
## Ships on Early Maps Part Two

5.25



*Ships in the South Atlantic and India Ocean on the 1526 Juan Vespucci world map (#338)*

The 1526 Juan Vespucci map, done by Amerigo's nephew and successor as *piloto mayor*, uses an imperial eagle in mid North America to indicate which lands were those of Charles V. The seas have eight ships, all but one being more or less the same three-masted vessel with a deep waist, high curved forecastle, and some of the sails set. The ships are the typical deep sea vessels of early 16<sup>th</sup> century long distance voyages, the only exceptional thing being their size indicated by the hull profile with castles towering over the main deck, the presence of main topsails, and bonnets. The one exception to the pattern of showing virtually the same ship repeatedly on the Juan Vespucci map is a vessel off Java that is perhaps intended to be a *Chinese junk*.



Ships on Early Maps  
Part Two

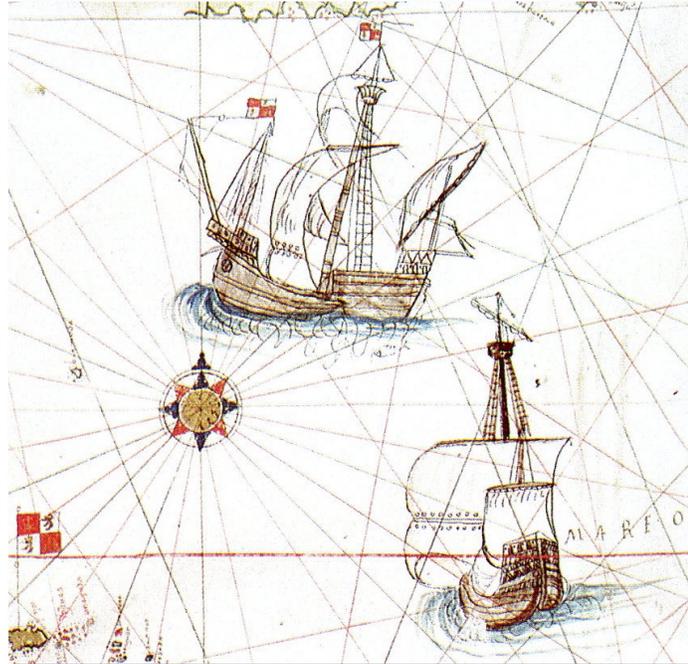
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*Ships in the Atlantic and Pacific on the 1526 Juan Vespucci world map (#338)*

## Ships on Early Maps Part Two

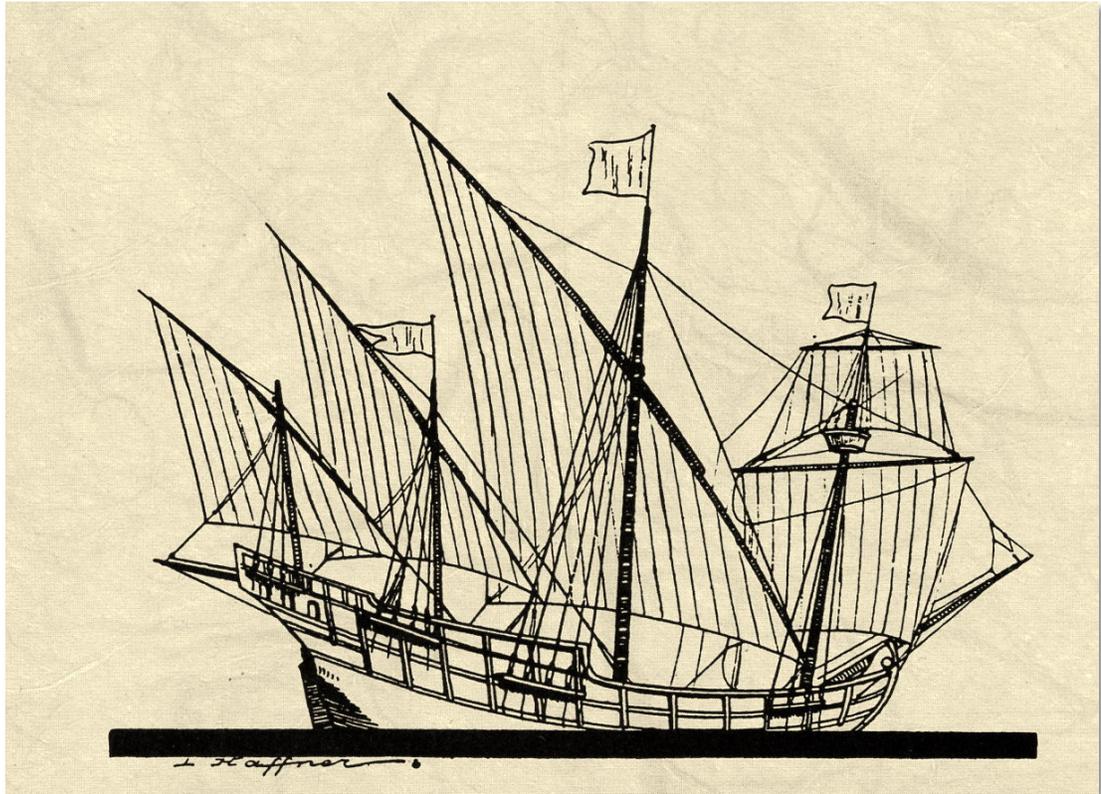
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*Two ships in the southern oceans on the 1527 Robert Thorne world map  
One is the rather standard three-master but with the straighter gunwales popular for ships crossing the Atlantic. Another has one mast with a spritsail and an additional sail hanging down from the forestay. It was meant to be a small open boat that one man could handle and not the kind of craft for open ocean sailing. The vessel in the Indian Ocean is a large full-rigged ship with all sails set and a deep waist, very similar to the ships on a number of other maps.*

Ships on Early Maps  
Part Two

5.25



*A 16<sup>th</sup> century caravel*

Ships on Early Maps  
Part Two

5.25



*Intinerariū Portugallēsiū e Lusitania in India & inde in occidentem & demum ad aquilonem*  
By Montalboddo Fracan [Fracanzano], 1508-12 (#316.2)

*This work from Milan had ships that are strange in many ways including a very small v-shaped sail on the single short mast, in one case stepped much further forward than would be prudent. The shape of the hull is vaguely consistent with ships of the time but the ratio of length to breadth seems rather higher than was typical. The drawings of the ships show a lack of precision and possibly also a lack of knowledge.*

## Ships on Early Maps Part Two

5.25

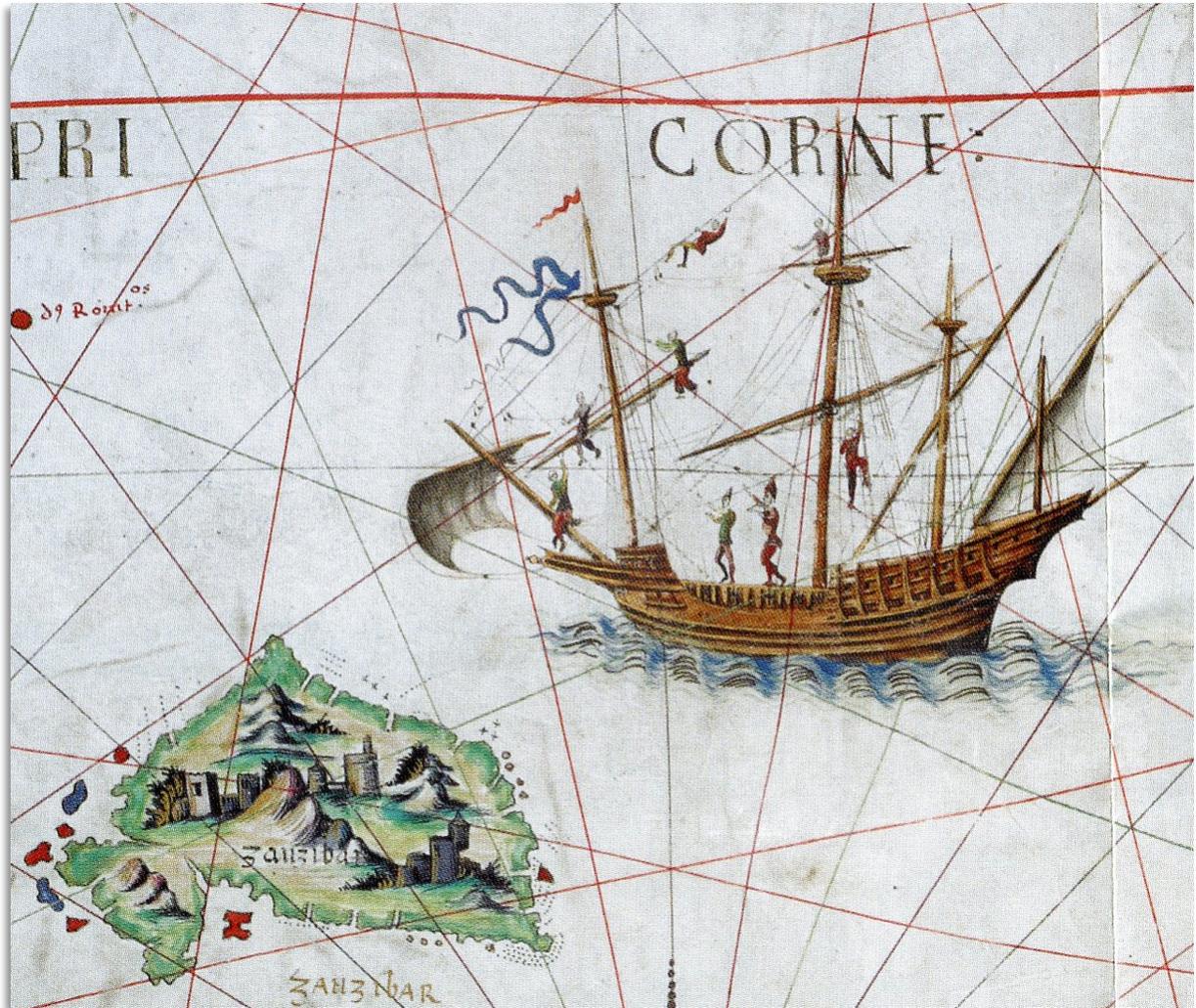


*Pierre Desceliers' Planisphere, 1550 (#378)*

Desceliers completed world maps in 1546 and 1550. The earlier chart had three ships, all remarkable for their deep waists. One ship, in the Pacific, is larger than the other two and carries four masts. Topsails are indicated on the fore and mainmasts and lateen sails are on the two mizzens. As with many other 16<sup>th</sup> century ships a massive spritsail is shown under a large bowsprit which rises at a better than 45% angle from the bow. The two ships in the Atlantic have the more standard three masts with square sails in use on fore and mainmasts. All three have extensive vertical fenders as well as sizeable whales running the length of the ship along the sides. The atlas that Desceliers created around 1546 carried similar ships on a number of the 12 maps. The place names used indicate reliance on a Portuguese prototype. The 1550 chart shown above is complete with two ships in the Pacific locked in battle, four in the Indian Ocean, another in the Philippines, and five ships in the Atlantic. The three in the North Atlantic and indeed everything in the northern hemisphere is inverted. It was a different half of the world. Most are the standard full-rigged ship with sails on the foremasts smaller than those on the main. One ship has four masts with lateen sails on the two mizzens. In general the ships have heavy hull protection like those on the 1546 map. One ship does have a deeper waist than the others so there was some effort, if limited, to differentiate among the ships. Desceliers included on his map 25 inserts with text to supplement and expand the information on the surface and making it the object of consultation and repeated examination. The ships were there to expand and extend the impact.

Ships on Early Maps  
Part Two

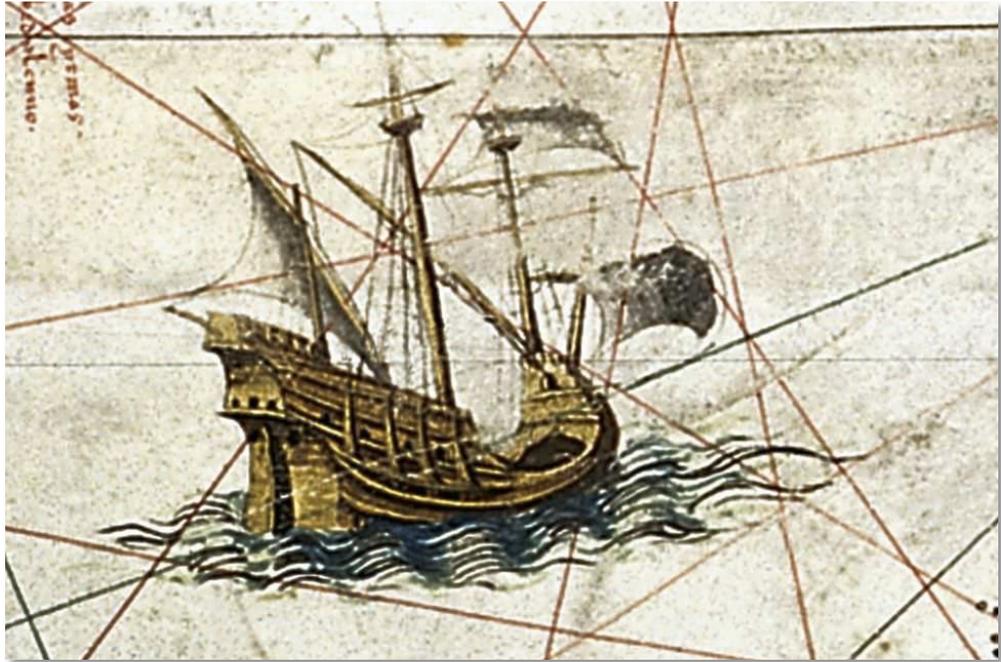
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*Four-masted ship off the coast of Zanzibar in Indian Ocean on the 1550 Desceliers map (#378)*

Ships on Early Maps  
Part Two

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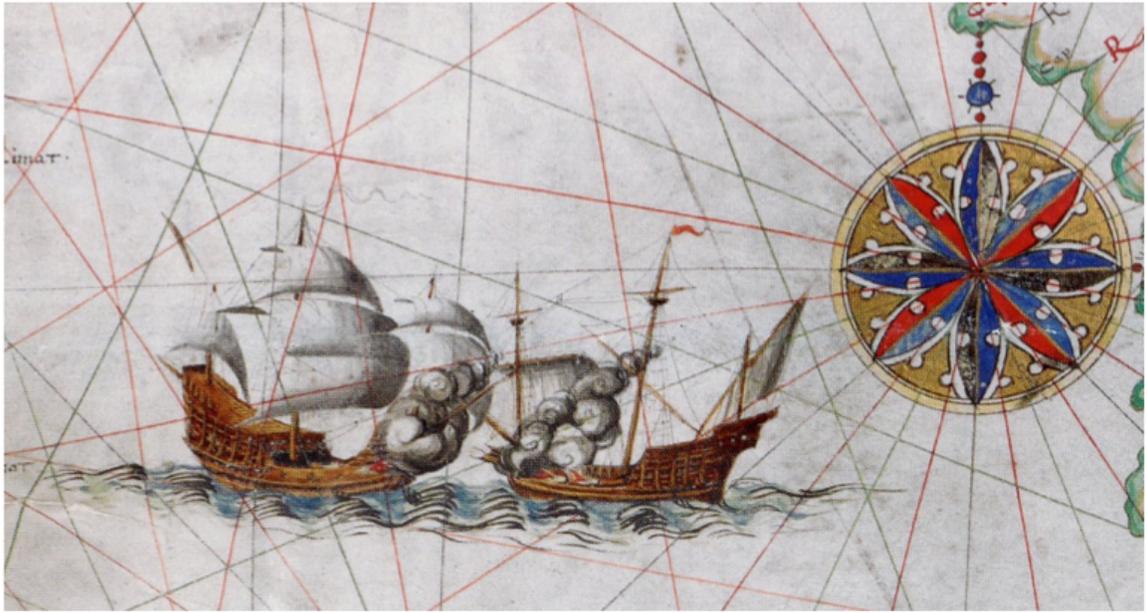
*Ship in the Indian Ocean on the 1550 Desceliers map (#378)*



*Ships in the South Atlantic/Indian Ocean on the 1550 Desceliers map (#378)*

Ships on Early Maps  
Part Two

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*Ships battling in the Pacific Ocean off South America on the 1550 Desceliers map (#378)*



*Open boat in the Pacific Ocean (#378)*

Ships on Early Maps  
Part Two

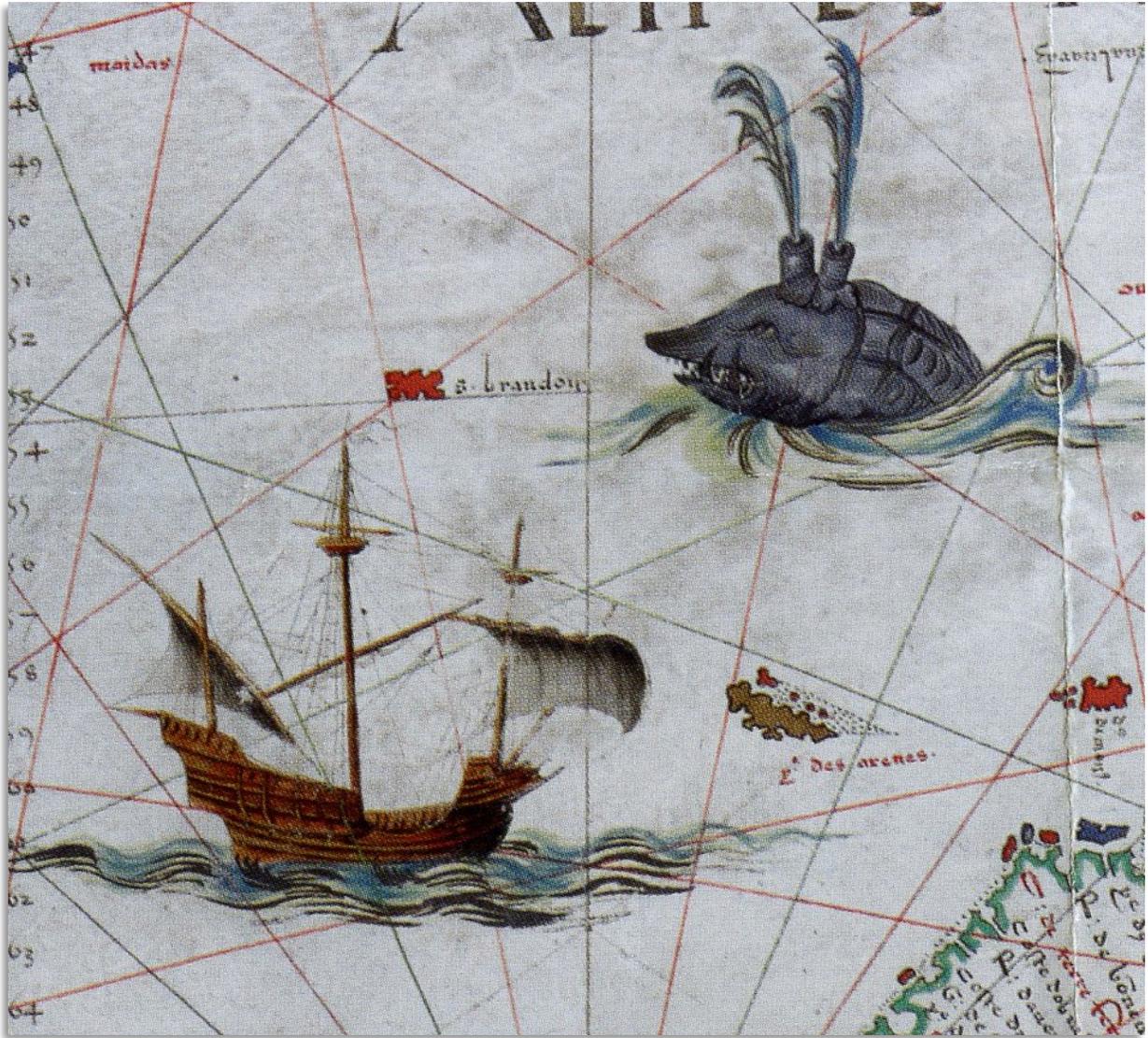
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*Above, a caravel off the coast of Canada; below, another caravel with a whale  
on the Pierre Desceliers's Planisphere, 1550 (#378)*

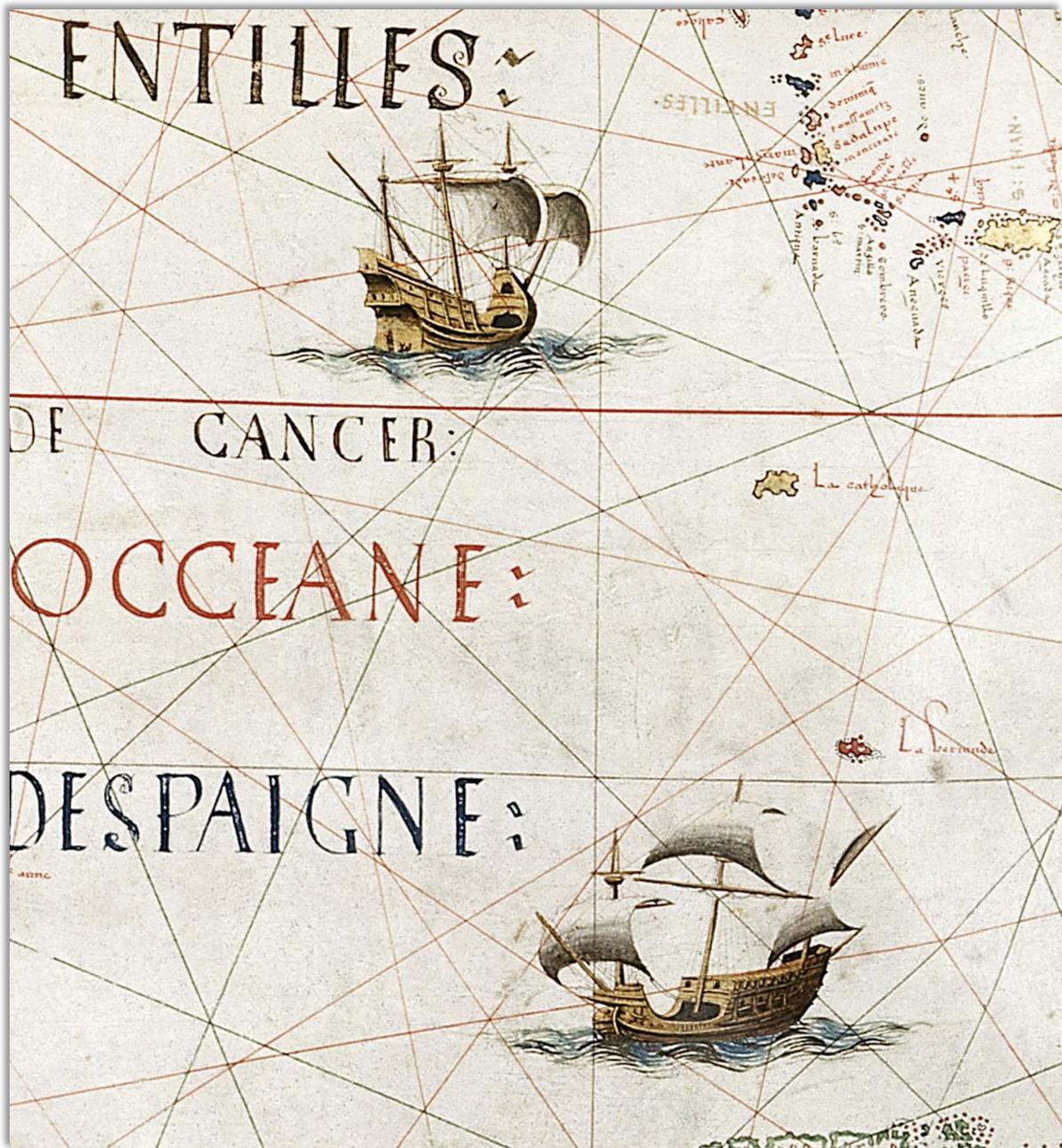
Ships on Early Maps  
Part Two

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Ships on Early Maps  
Part Two

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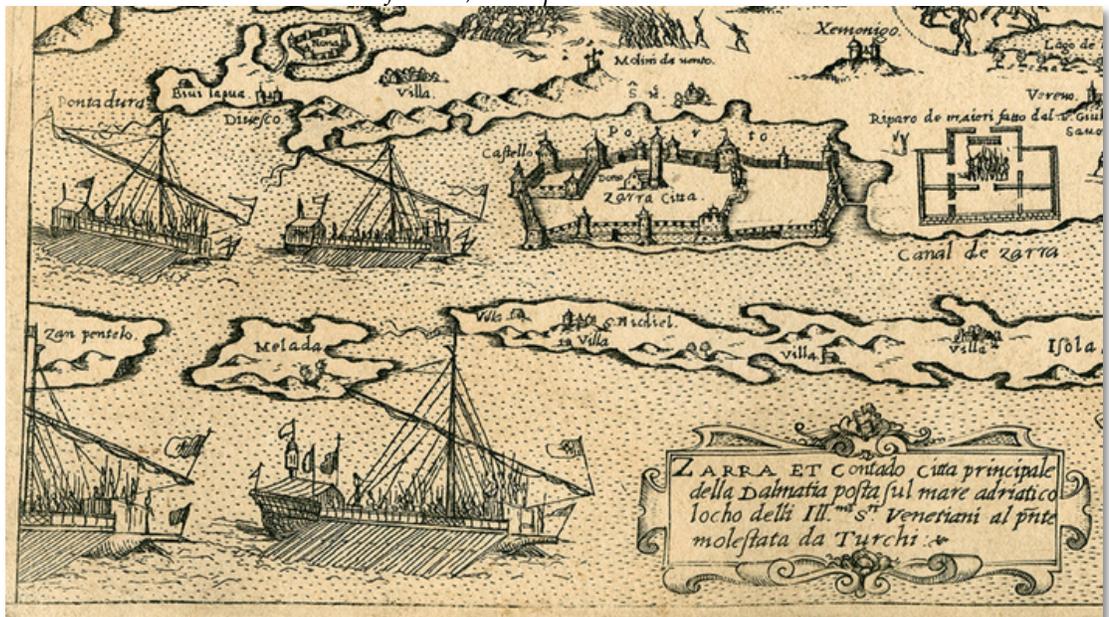
*Ships in the Atlantic Ocean on the 1550 Desceliers map (#378)*

# Ships on Early Maps Part Two

5.25



*Zara et contado cittit principak delle Dalmatia posto sui mare Adriatico locho delli Ill[ustrmi]mi S[igno]ri Venetiani al p[rese]nte molestata da Turchi, [Zara and surrounding countryside, principal city of Dalmatia, located on the Adriatic Sea, a place [belonging to] the Most Illustrious Venetian Lords, at present under siege by the Turks]. Camodo, "Isole famose," compiled c. 1571.*

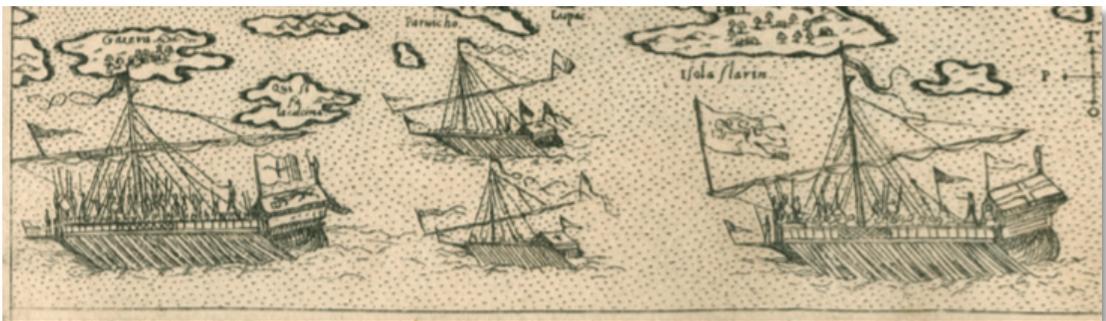


# Ships on Early Maps Part Two

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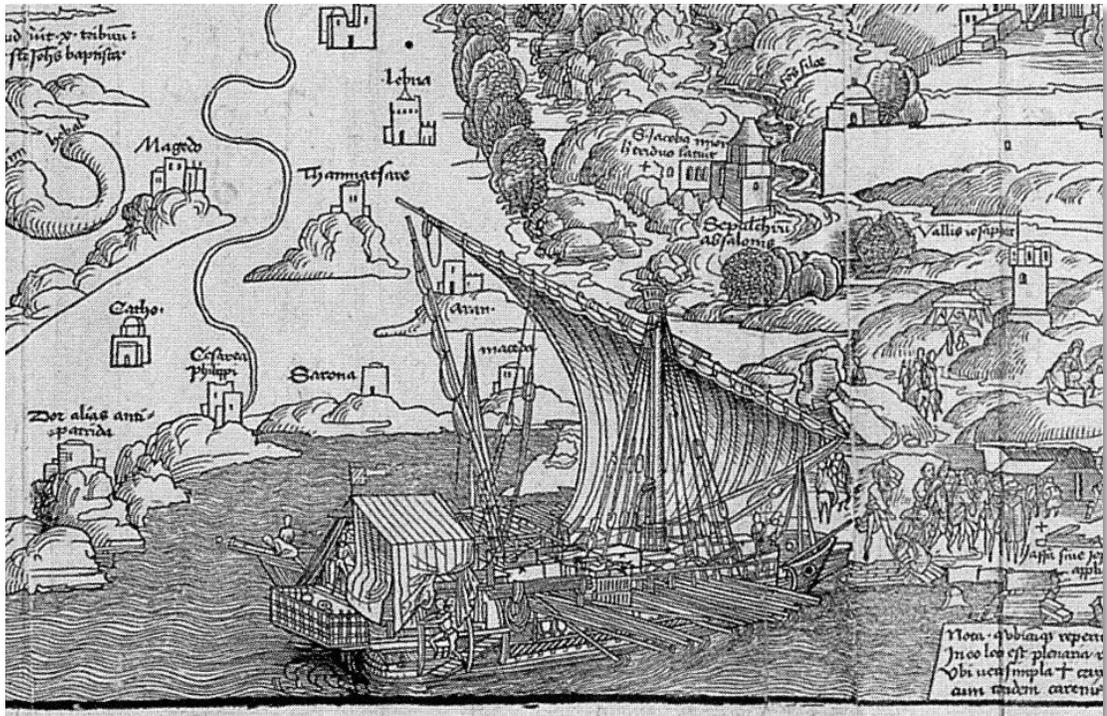


*Sebenico et contado citta nella Dalmatia confina[n]te con Zarra (sic) d[el]li Ill[ustrissi]mi S[igno]ri Venetiani al p[resen]te da Turchi molestado (sic): 1571, [Sebenico and surrounding countryside, city in Dalmatia, bordering Zara, of the Most Illustrious Venetian Lords, at present under siege by the Turks, 1571]. Camocio, "Isole famose," compiled c. 1571*



# Ships on Early Maps Part Two

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Ships on Early Maps  
Part Two

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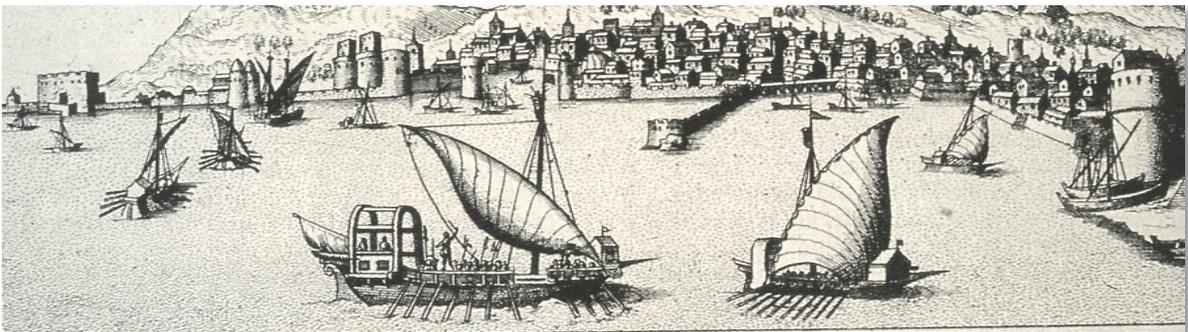
*Two carracks and a dhow in the seas around Byzantium by Braun and Hogenberg, 1572*

## Ships on Early Maps Part Two

5.25



*Carracks and galleys near Byzantium, Braun and Hogenberg, 1572*



*Galleys and dhows in the bay near Naples, Italy on a map by Gerard de Jode. 1578*

# Ships on Early Maps Part Two

5.25



*World map by Paolo Forlani, 1565 (#376)  
Detailed views below*



Ships on Early Maps  
Part Two

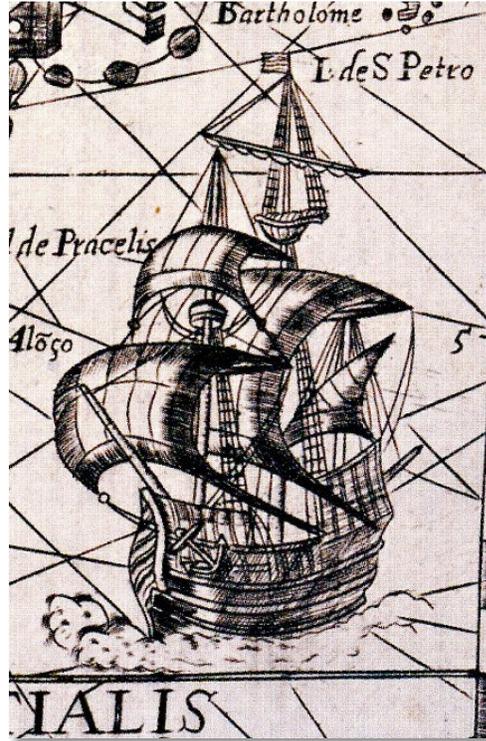
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*Ships displayed in the Pacific Ocean on  
Jan Huygen Van Linschoten's 'Itinerario' (1598)*

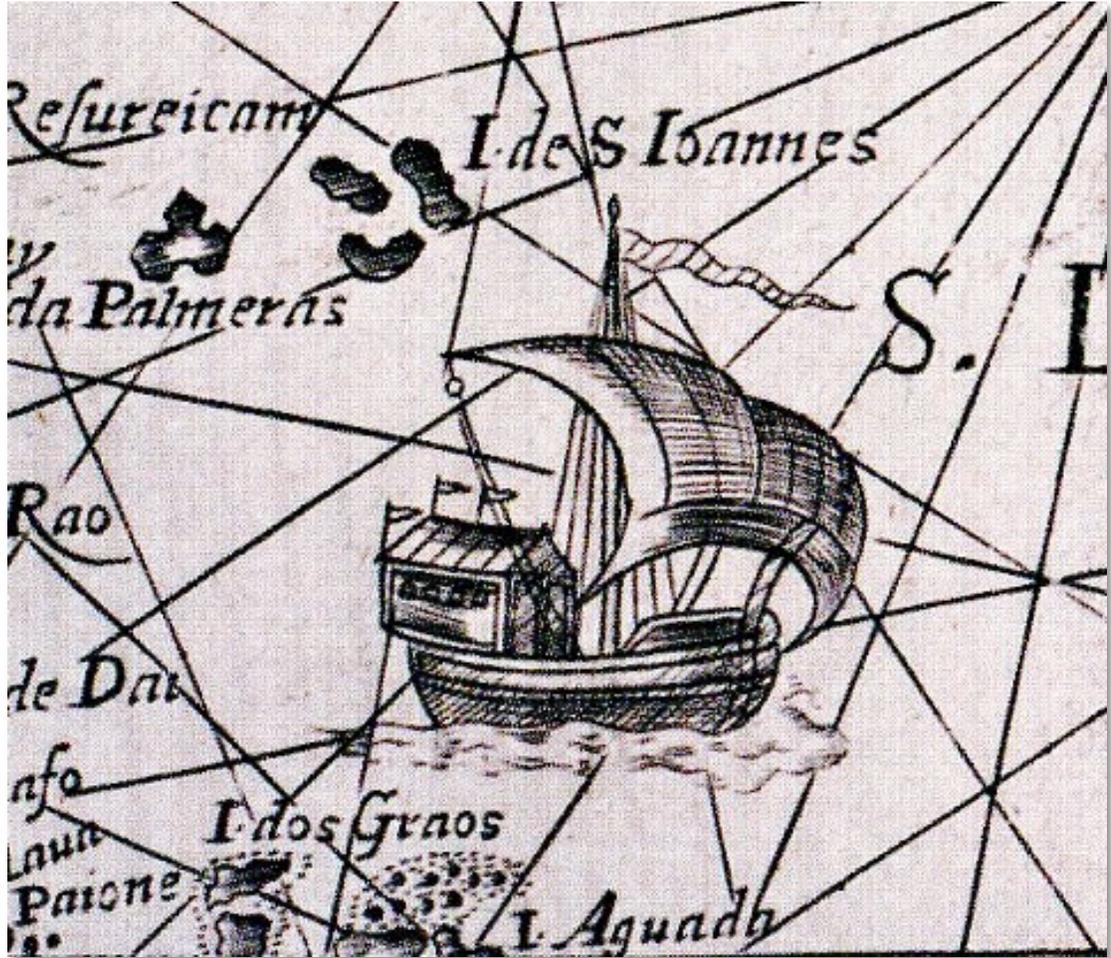
Ships on Early Maps  
Part Two

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Ships on Early Maps  
Part Two

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# Ships on Early Maps Part Two

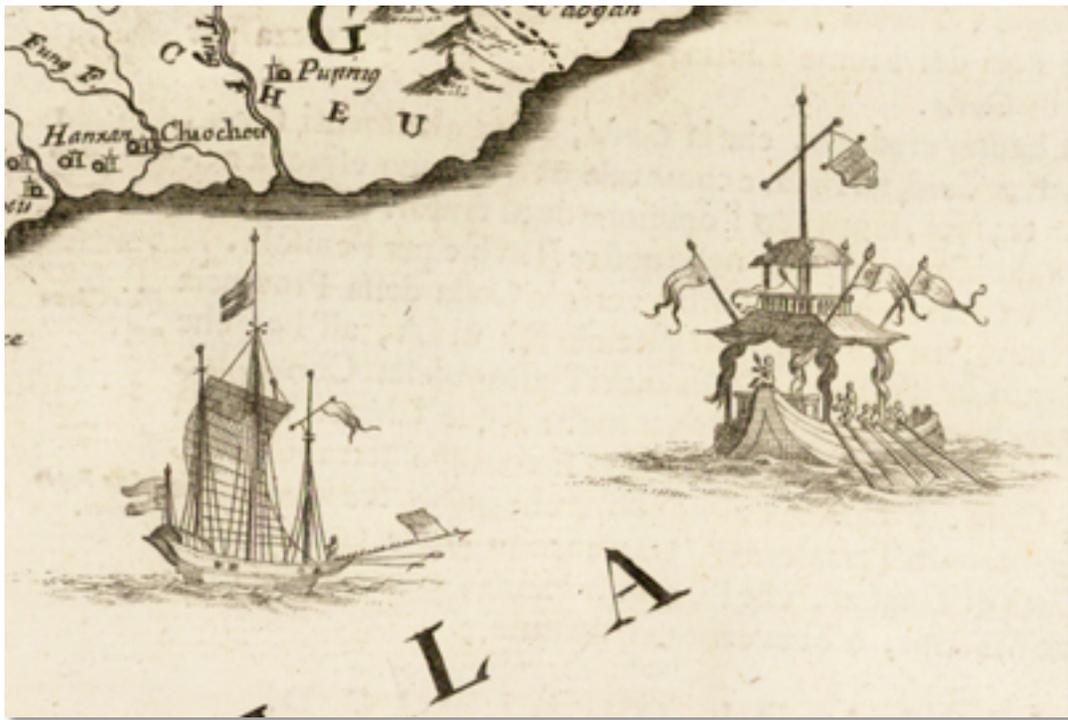
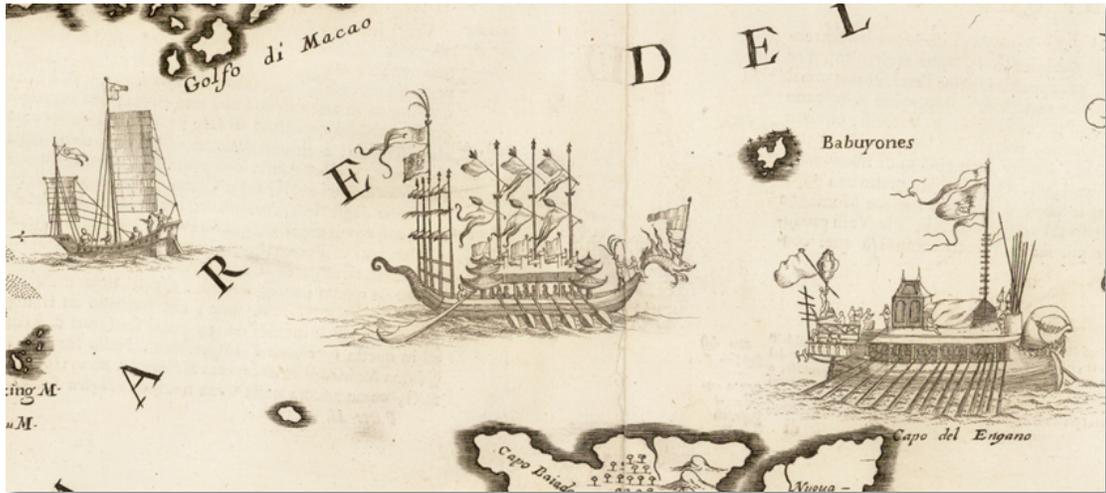
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*Detail from Quantung, e Fokien, prouincie della Chin by Vincenzo Coronelli, 1690 with two Chinese junks and three galleys*

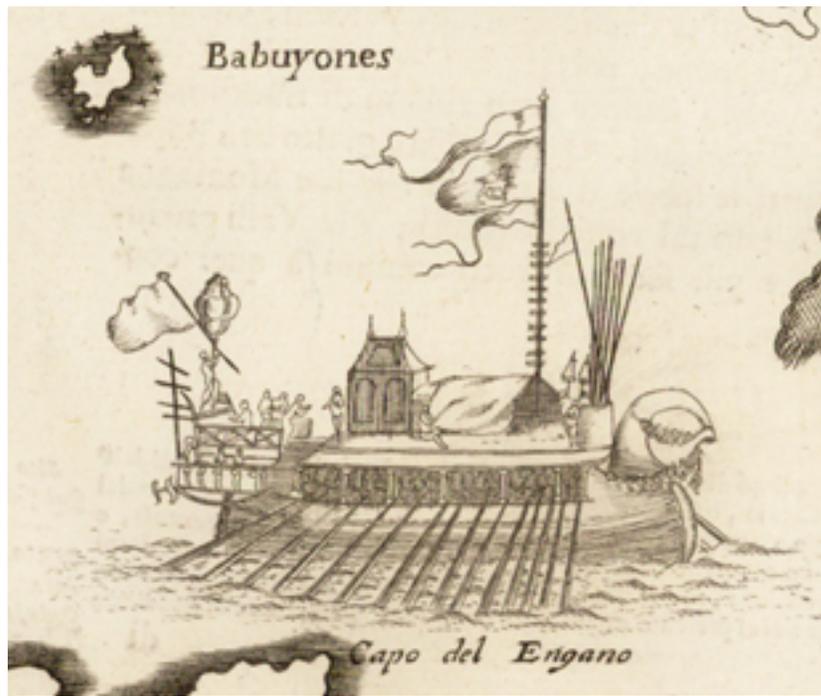
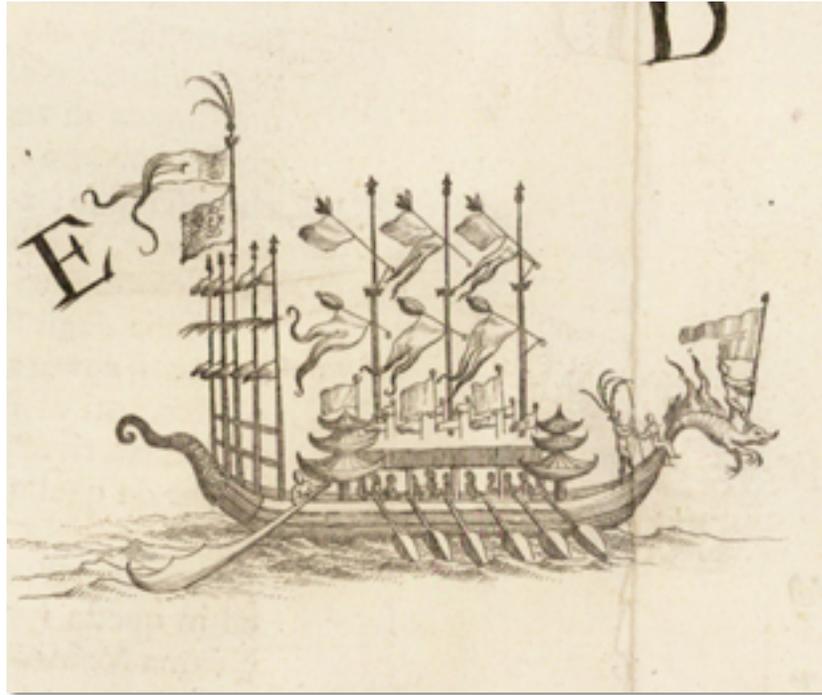
# Ships on Early Maps Part Two

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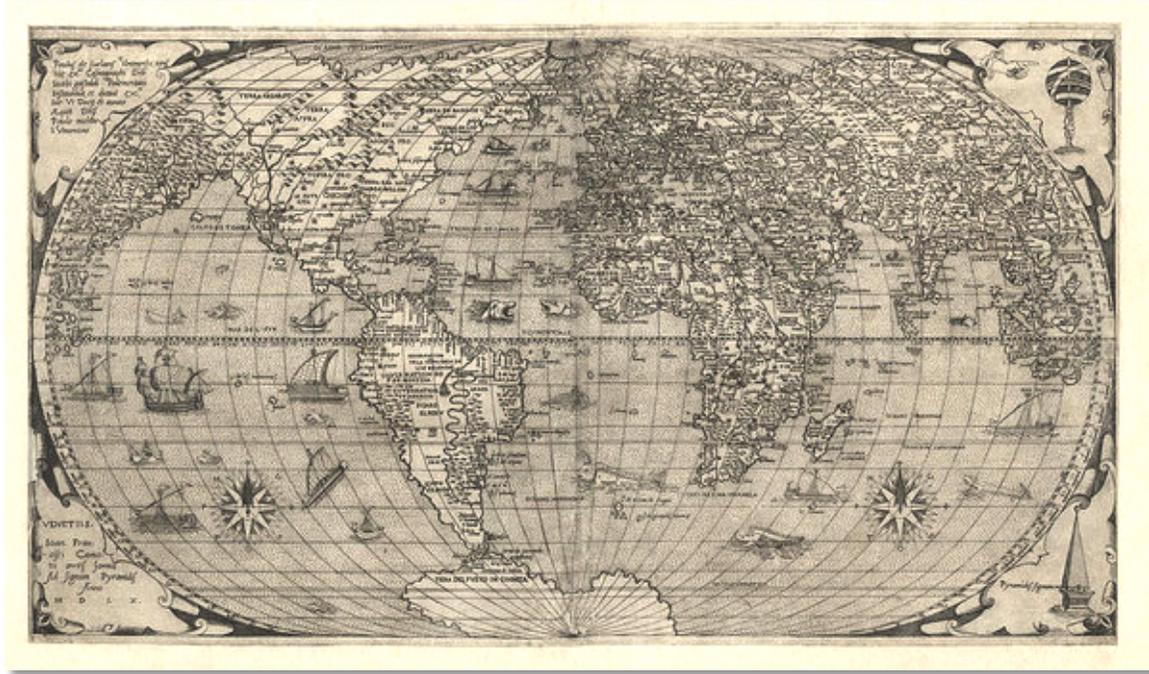
Ships on Early Maps  
Part Two

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## Ships on Early Maps Part Two

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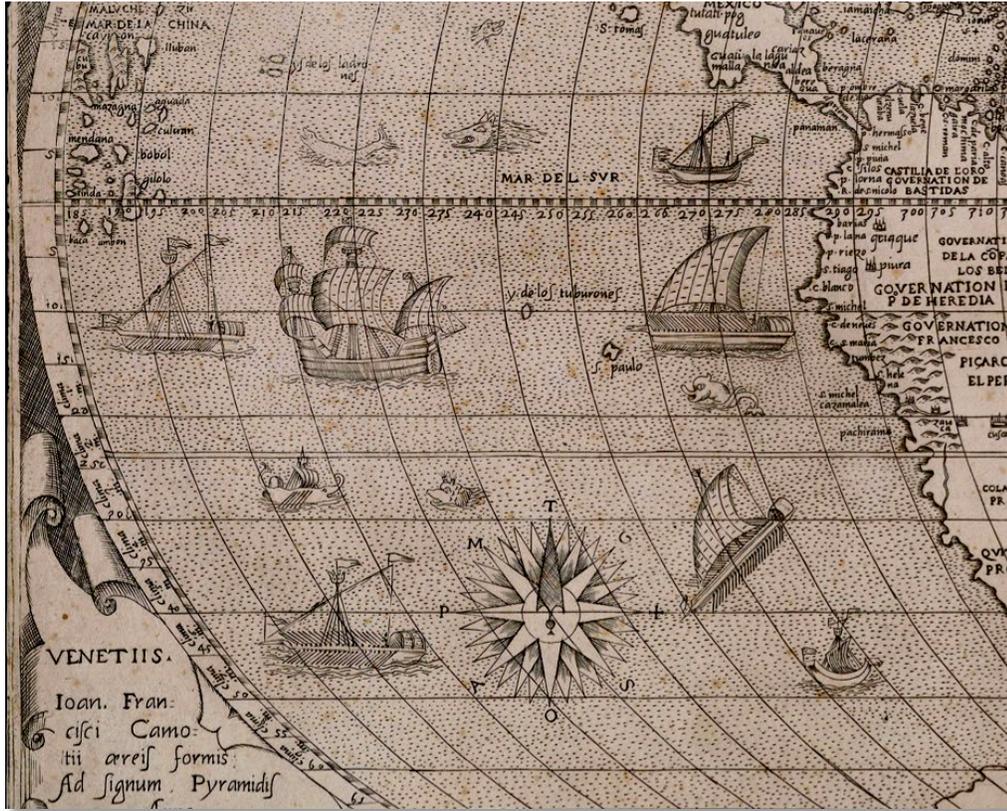


*Giacomo Gastaldi world map 1560, by Paolo Forlani*

*Many single-masted ships and galleys, only one three-masted ship, several are ships not normally used to cross the ocean. Gastaldi's output included a 1546 world map with 10 ships, prominently shown. Six appear to be single-masted and somewhat out of place on the high seas though the intention may have been to show fishing craft. Three of the ships are three-masted, not drawn very carefully. The remaining ship, in the Indian Ocean, might just be an attempt at depicting a Chinese junk but it is difficult to tell, as with the other vessels, because the ship is very small. On the other hand when the engraver Paolo Forlani published the Gastaldi world map in 1560 and again in 1565, though he tended to follow closely his models, he included large ships of different types. It was almost as if the oceans had become the background and even the frame for showing the carefully rendered ships. Detailed views below.*

# Ships on Early Maps Part Two

5.25



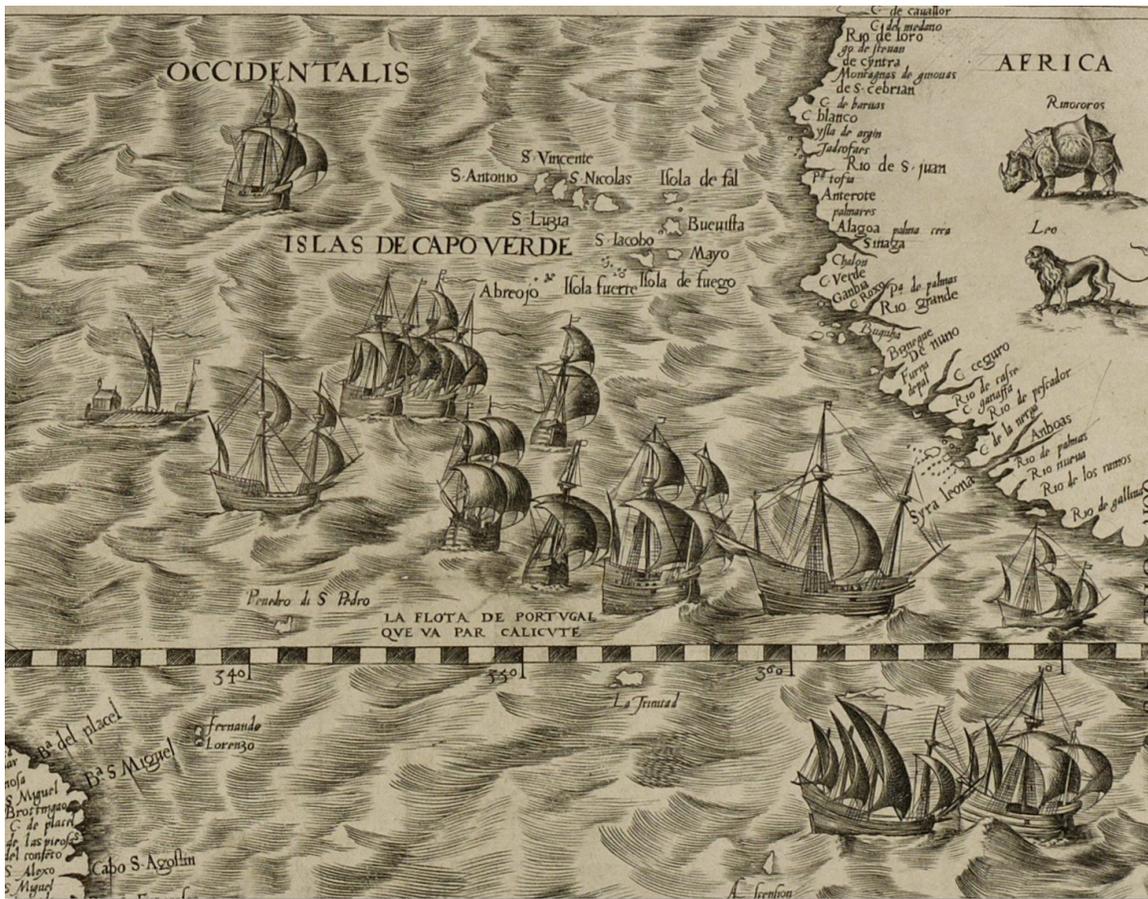


# Ships on Early Maps Part Two

5.25



Above, two ships off the Azores;  
below, a fleet of ships consisting of galleys and caravels off the west coast of Africa on the Diego Gutiérrez map *Americae sive quartae orbis arties nova*, 1562 (#400)

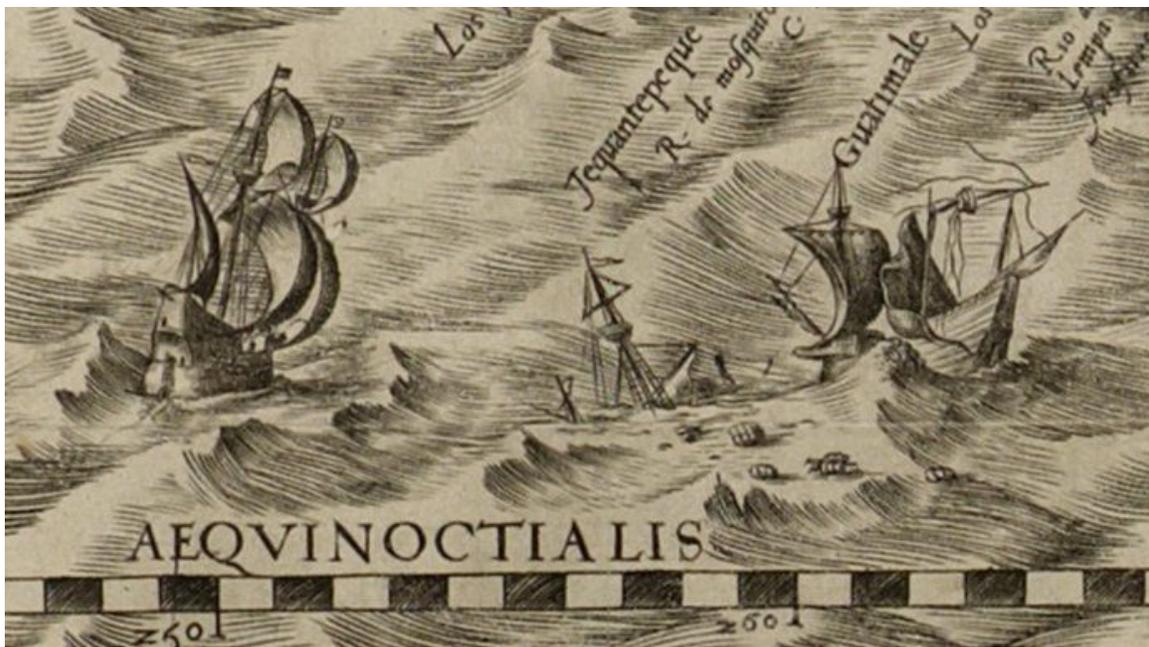


Ships on Early Maps  
Part Two

5.25



*A ship battle in the South Atlantic (#400)*



*A ship wreck off the west coast of Mexico (#400)*

Ships on Early Maps  
Part Two

5.25



Cyprus surrounded by ships from many nations with galleys, caravels, and a rowboat

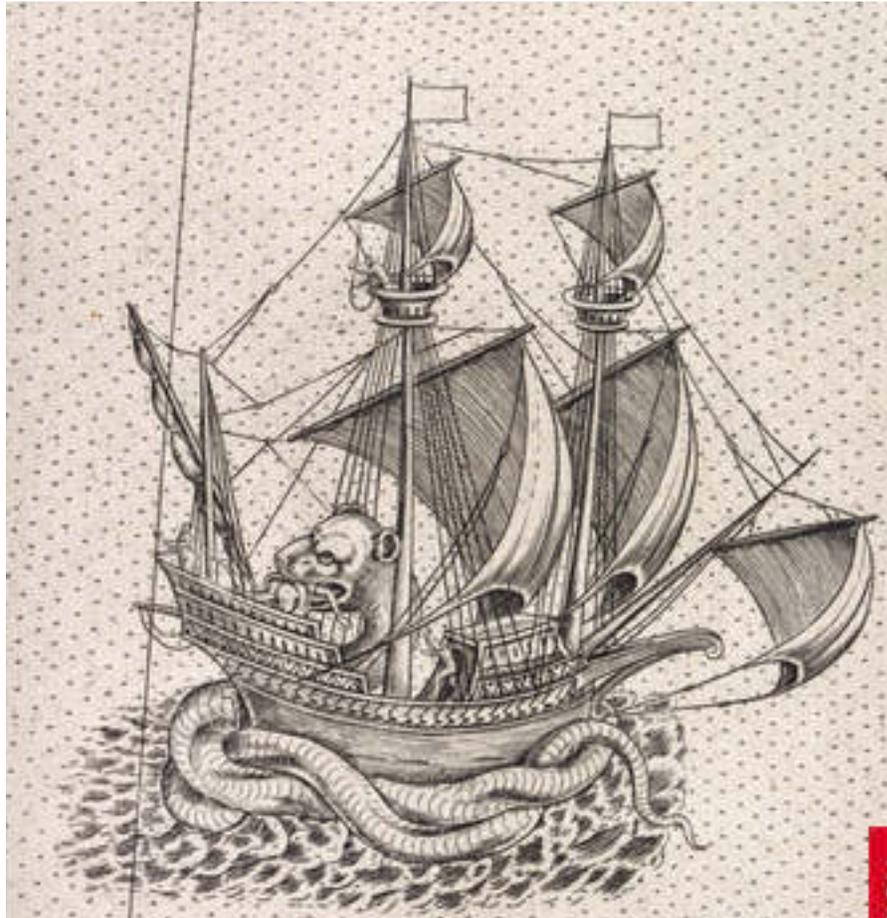
Ships on Early Maps  
Part Two

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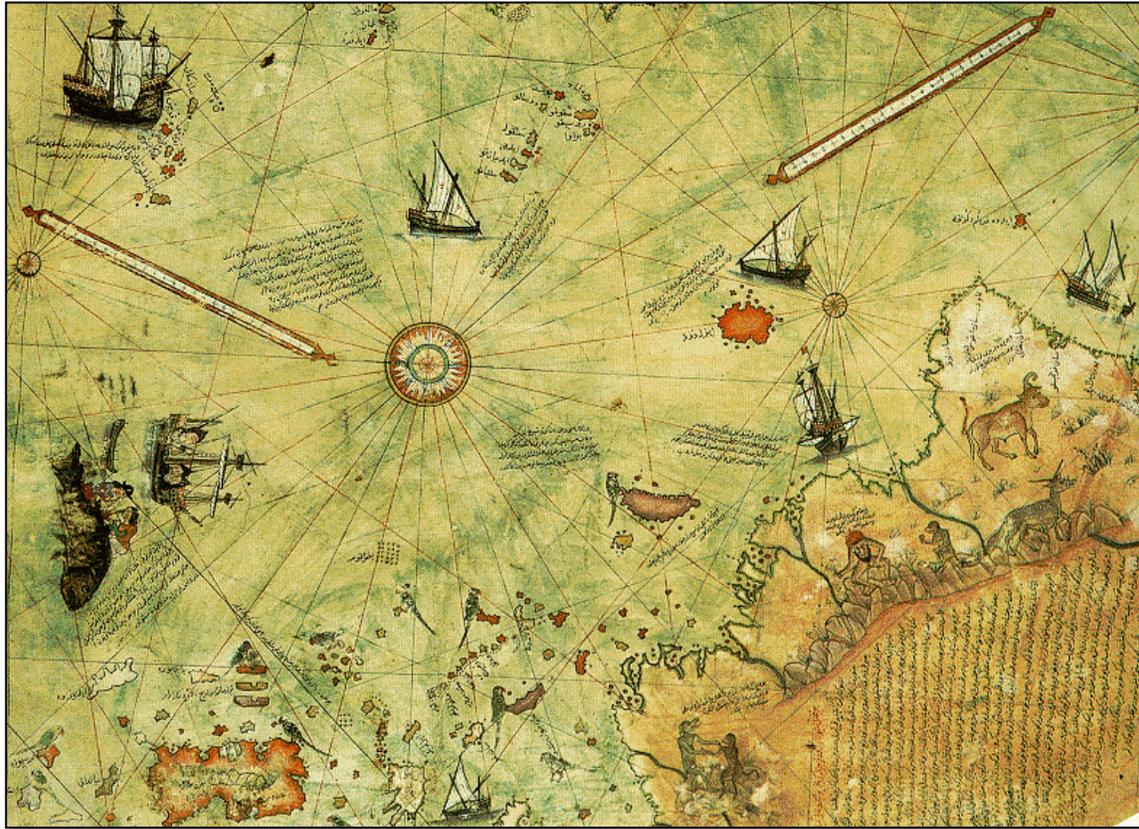
# Ships on Early Maps Part Two

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## Ships on Early Maps Part Two

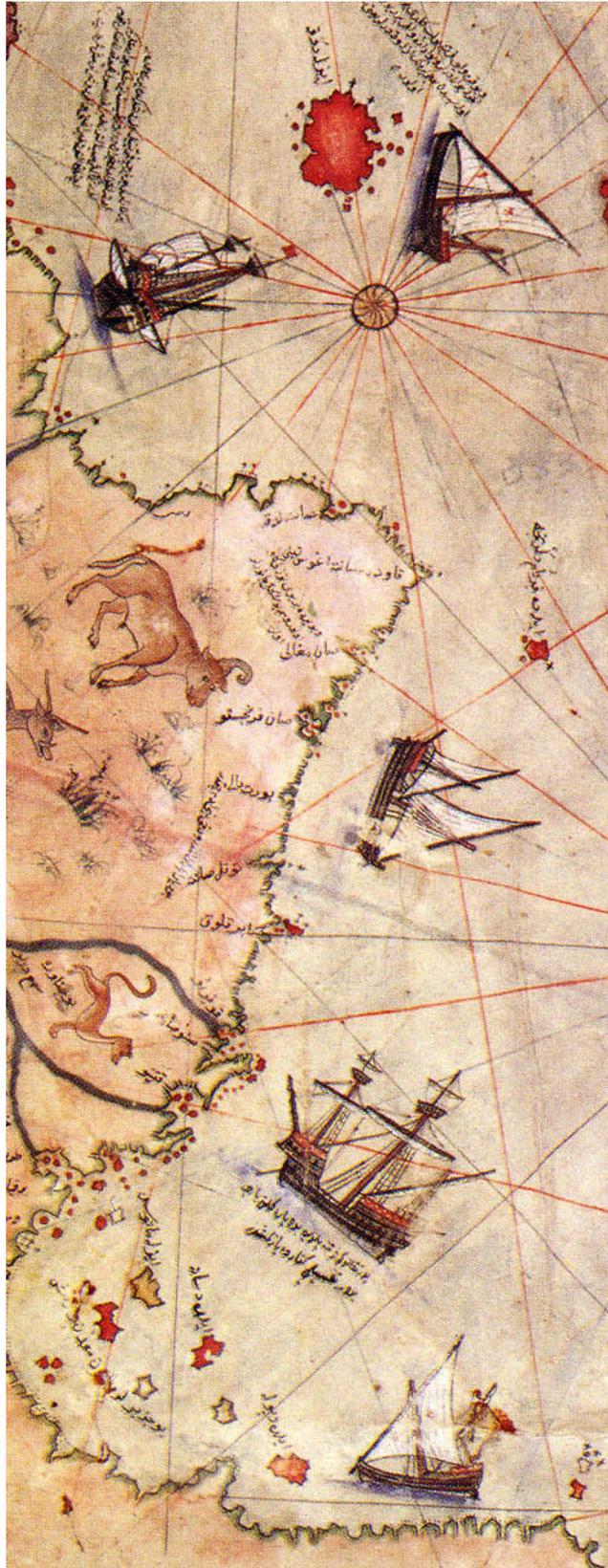
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*A variety of ships in the Caribbean and South Atlantic on Piri Re's map of 1513 (#322), At sea the coasts are lined with ten ships rather carefully and accurately drawn and shown at different angles. Half the ships are two-masted lateen-rigged ships with a low profile, possibly intended to be caravels, and called karavele. There are full-rigged ships, probably carracks and called barca and köke. They have only one square sail on each of the fore and main masts and a lateen mizzen. The square sails have bonnets to supplement them in good weather. The depictions of ships are included in such a way as to suggest they were thought of as an integral part of the map.  
Detail views below*

# Ships on Early Maps Part Two

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Ships on Early Maps  
Part Two

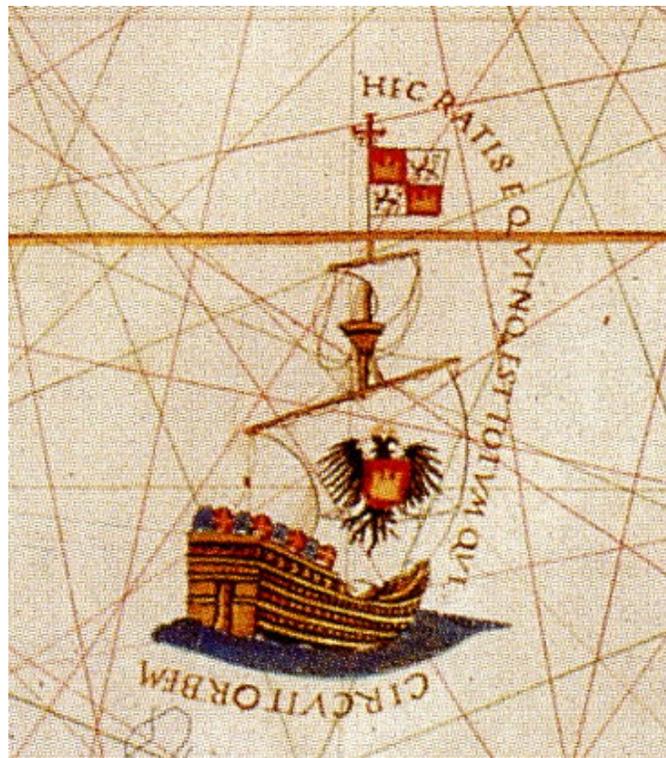
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Exotic ships on a map of Cairo, 1521-26, by Piri Reis. Surprisingly not in the water!

Ships on Early Maps  
Part Two

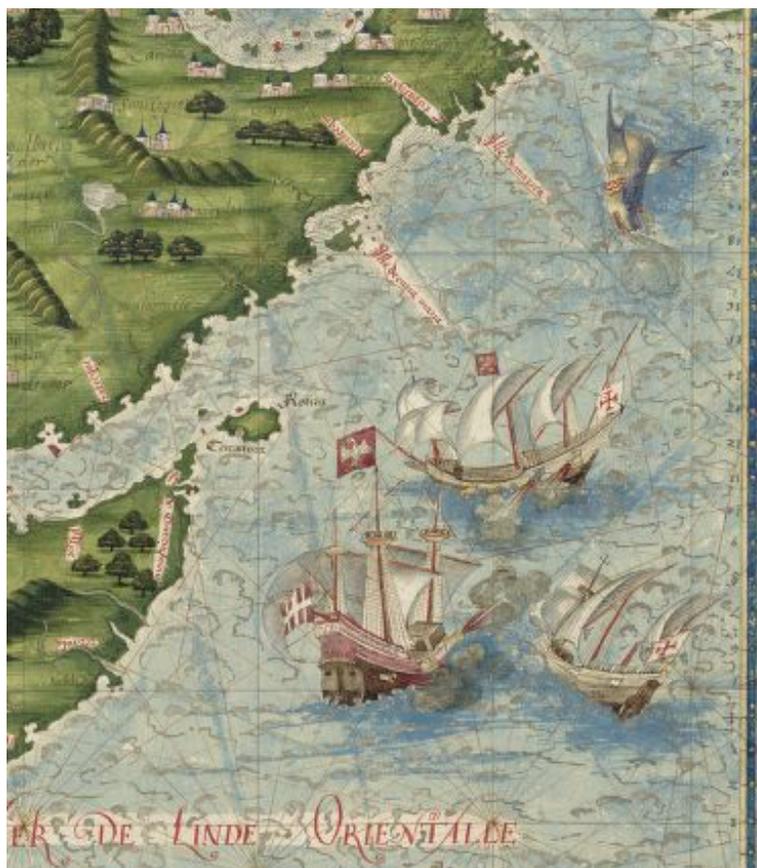
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*Ships on the Nuno Garcia de Torreno world map, 1524 (#336)*

## Ships on Early Maps Part Two

5.25



*Three European ships in the Indian Ocean on Guillaume Le Testu's 1555 map (#378)*

According to Unger, Guillaume Le Testu was a Dieppe pilot who was to die under the command of Sir Francis Drake in the New World in 1572. Le Testu was not above including ethnographic and biological information, like fellow members of the Dieppe school, which was based on observation, not on theory or received knowledge from the classical past. Presumably when Le Testu and the other Dieppe map makers put ships on their maps the depictions were based on observation as well. His atlas had ships in the North Atlantic all of much the same type with three masts, two sails on each of fore and mainmasts, and, oddly, no spritsails. The bows are sharply swept up and there are deep waists between midship and the forecandle. Le Testu did make a world map for his 1556 *Cosmographie universelle* published at Le Havre but on that there were no ships. Le Testu included a number of ships on each of a series of separate 1556 charts of the Atlantic coast of the Americas. The vessels are typically full-rigged with topsails on the main and fore masts. He did include a four-masted *caravel* with lateen sails on the main and mizzen-masts and a small square sail on the foremast near the bow, that south of Cuba. The full-rigged ships have very high after-castles and deep waists but fall within the range of the standard ship of map illustration of the mid sixteenth century. Le Testu did add a small, double-ended fishing boat, in the East Indies in possibly another attempt to describe a vessel used by indigenous people, and so a reflection of the ethnographic interests of members of the Dieppe school and for that matter other map makers of the day. Le Testu did not feel obliged to include ships every time but when it

## Ships on Early Maps Part Two

5.25

came to making another world map in 1566 he included a number of vessels, well and clearly rendered.



Ships on Early Maps  
Part Two

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*Guillaume Le Testu's 1556 map of the East Coast of North America (#378)*

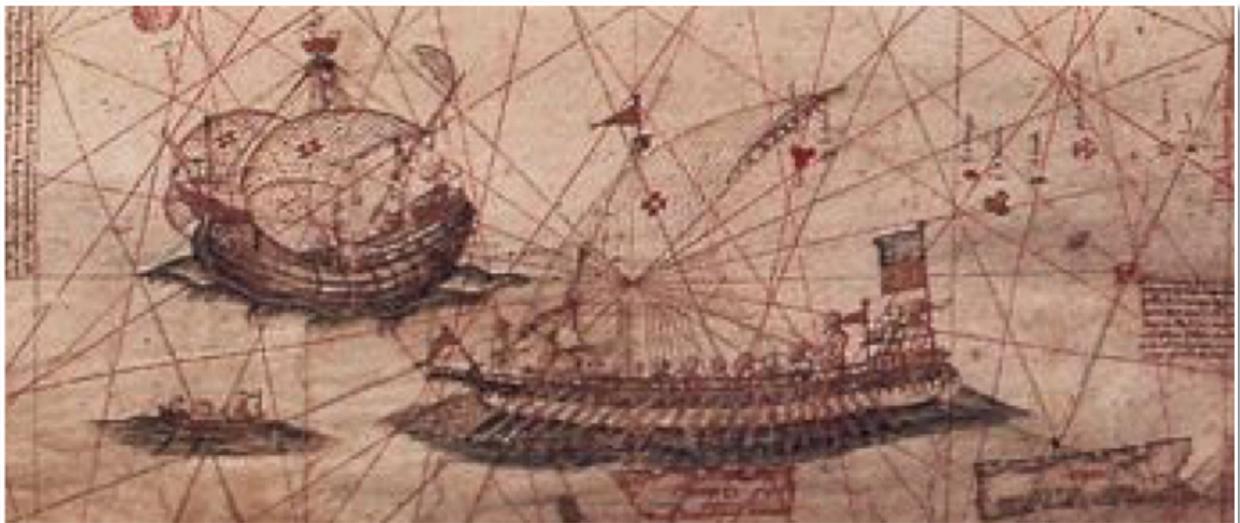


## Ships on Early Maps Part Two

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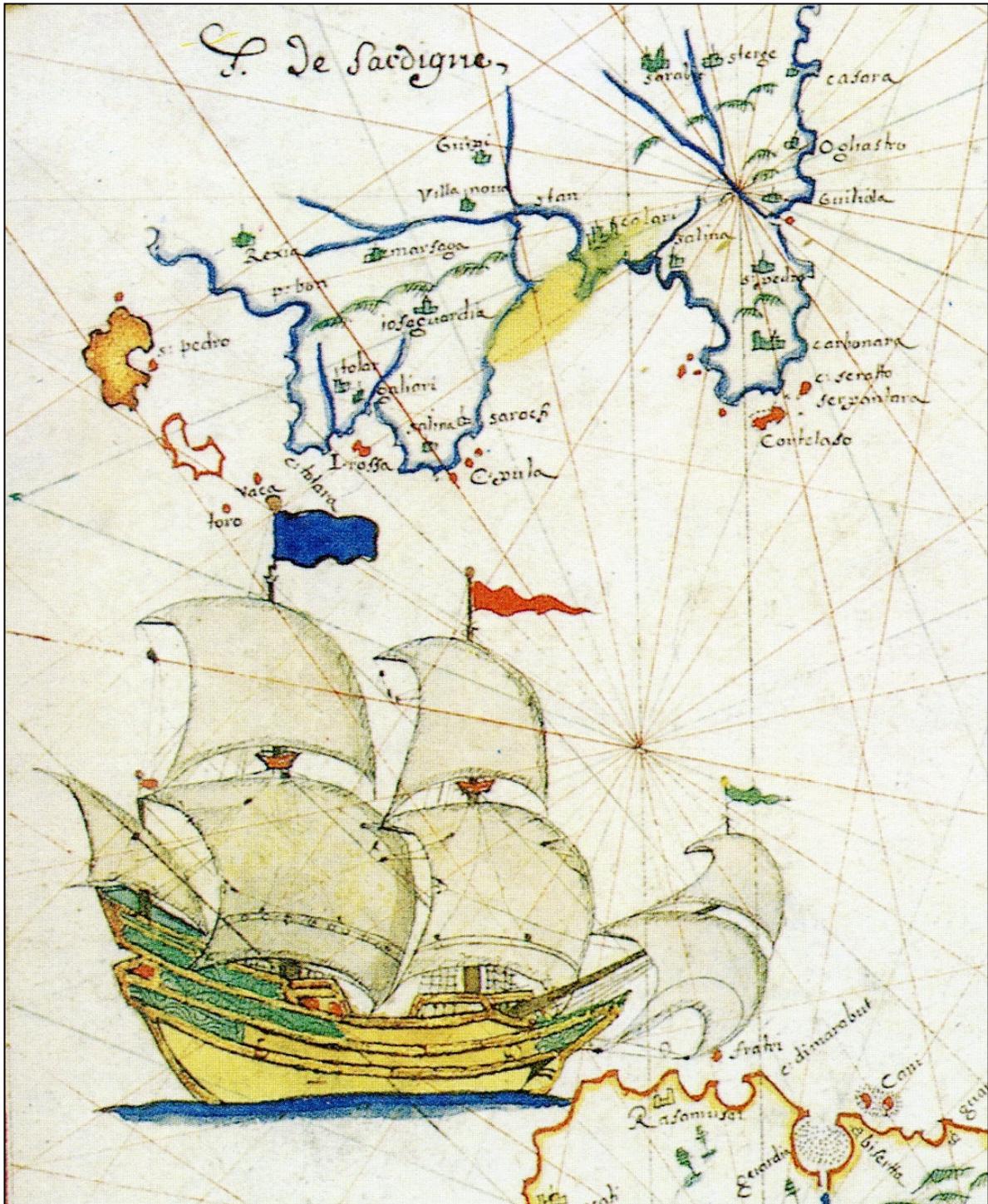
*Three carracks off the west coast of the British Isles on Guillaume Le Testu's 1555 map (#378)*



*A Portuguese caravel and a galley from Grazioso Benincasa's 1482 nautical chart. Sailing near the two mythical islands of Satanazes and Antillia (#250.3)*

Ships on Early Maps  
Part Two

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1620 Atlas of the Mediterranean by Charlat Ambrosin

Ships on Early Maps  
Part Two

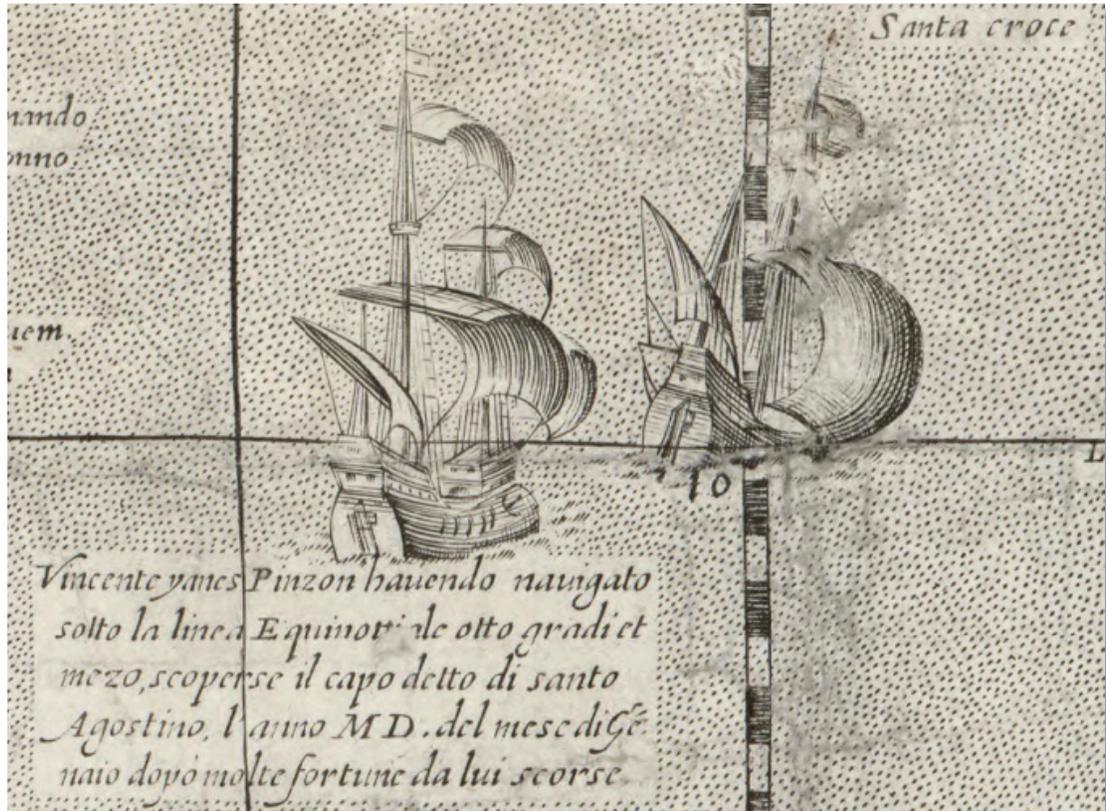
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*Marco Polo on Universale Descrittione di tutto il Mondo di Gioseppo Rosaceio  
Cosmographo...1642 (#475)*

Ships on Early Maps  
Part Two

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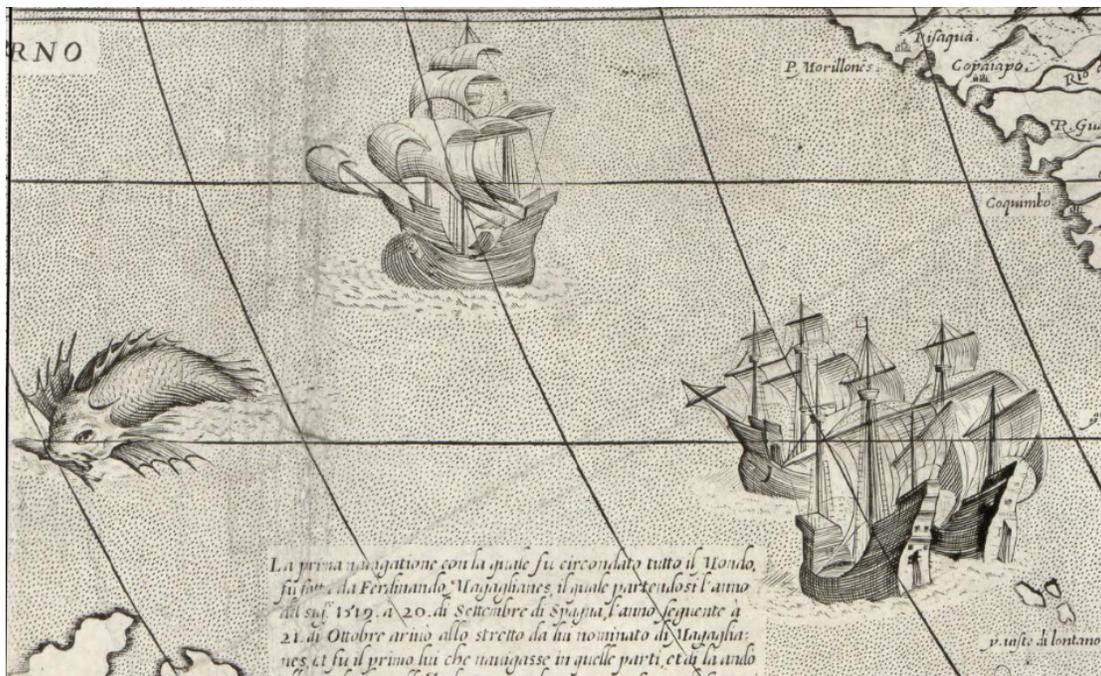
Amerigo Vespucci's ship on *Universale Descrittione di tutto il Mondo* di Giuseppe Rosaccio *Cosmographo*...1642 (#475)

## Ships on Early Maps Part Two

5.25



Vasco da Gama's ship rounding Cape Good Hope on *Universale Descriptione di tutto il Mondo* di Giuseppe Rosaceo Cosmographo... (#475)



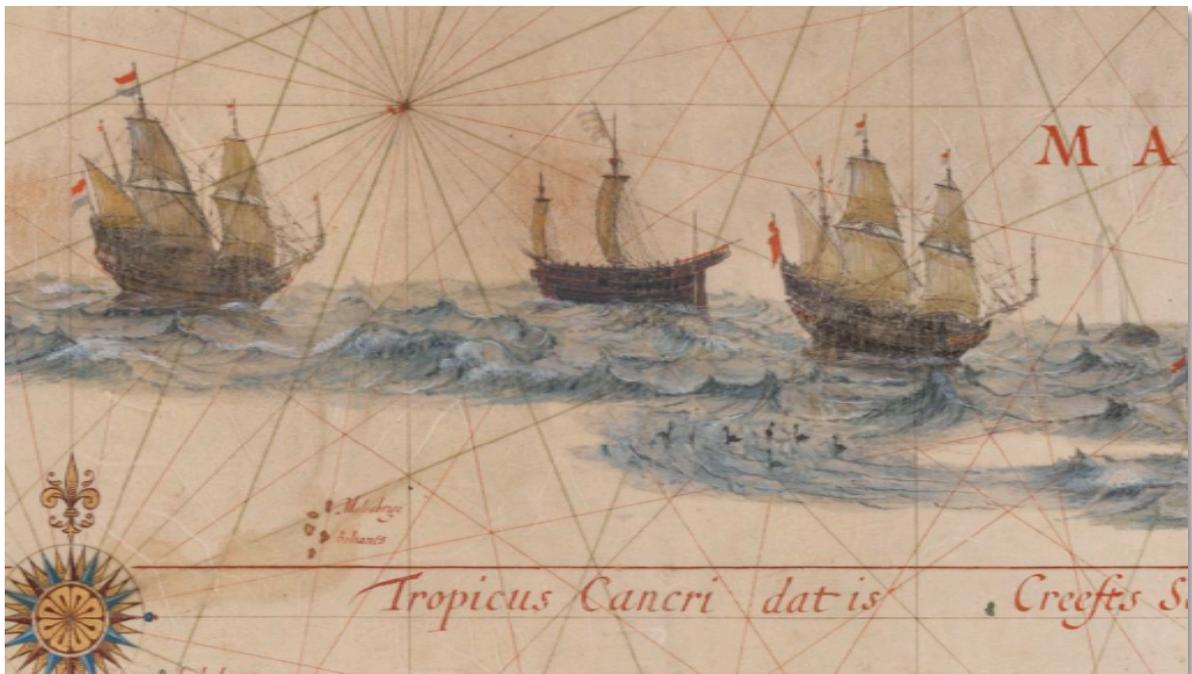
Magellan's ships on *Universale Descriptione di tutto il Mondo* di Giuseppe Rosaceo Cosmographo...1642(#475)

# Ships on Early Maps Part Two

5.25



Mar del Sur. Mar Pacifico by Hessel Gerritsz, 1622



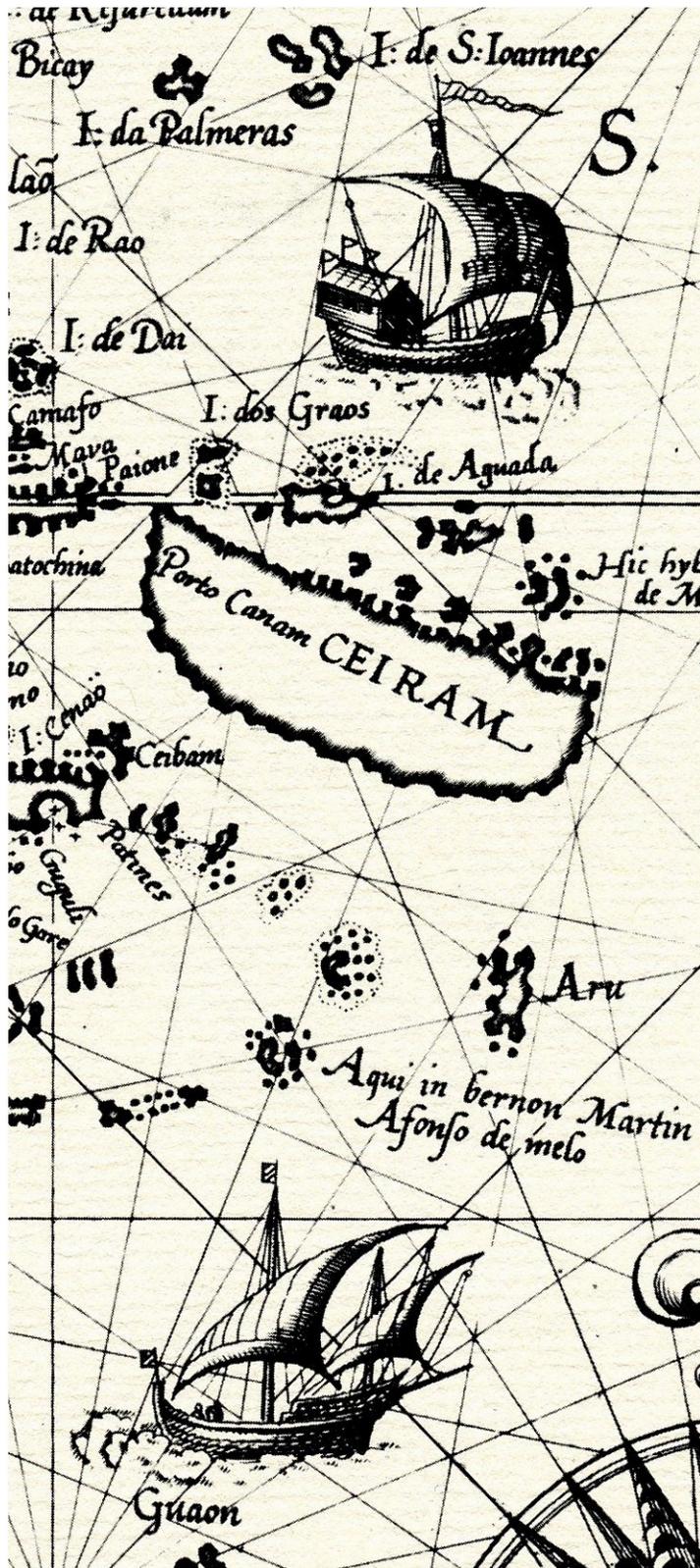
Ships on Early Maps  
Part Two

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Ships on Early Maps  
Part Two

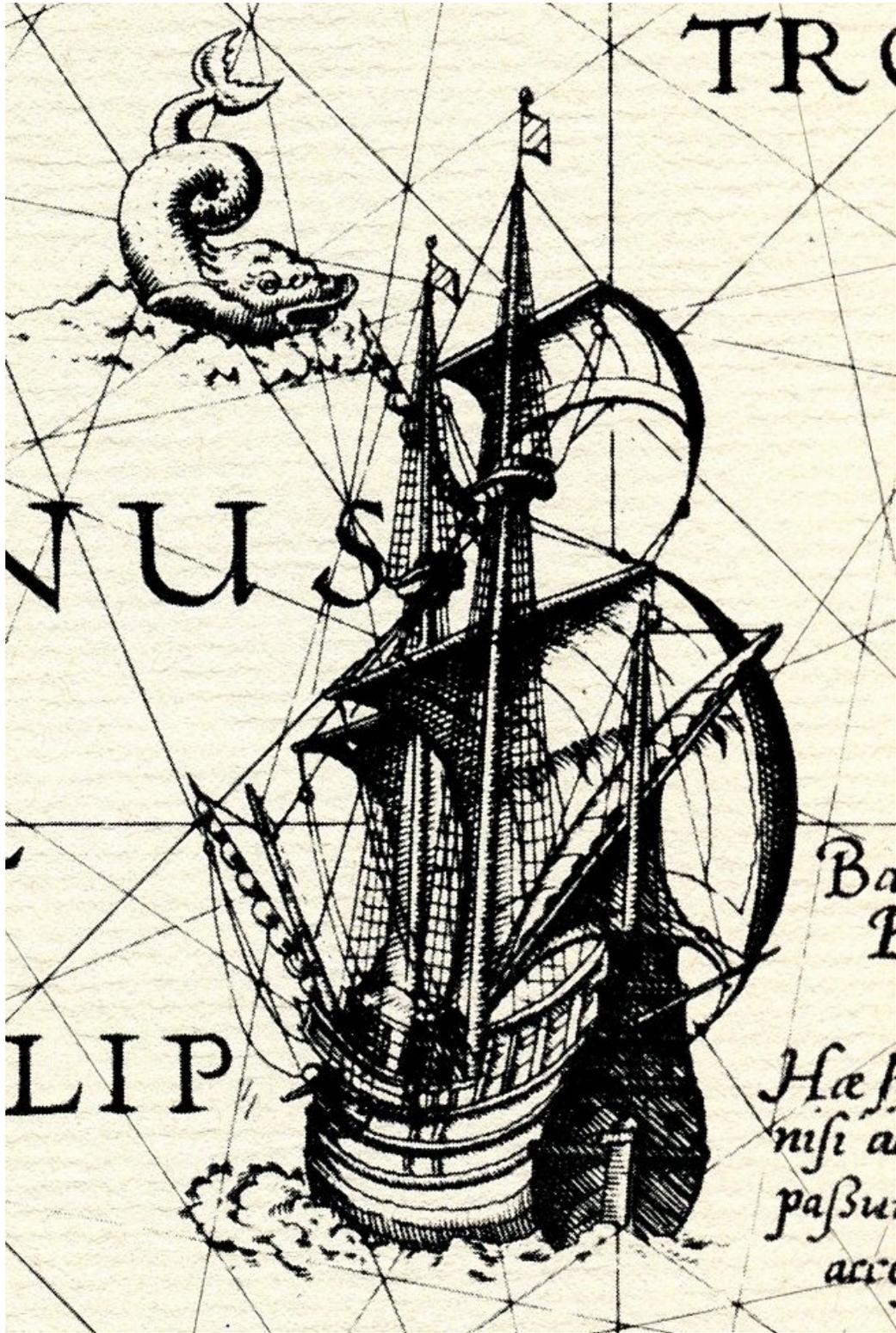
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Ships (a cog and a caravel) on Peter Plancius chart, 1598

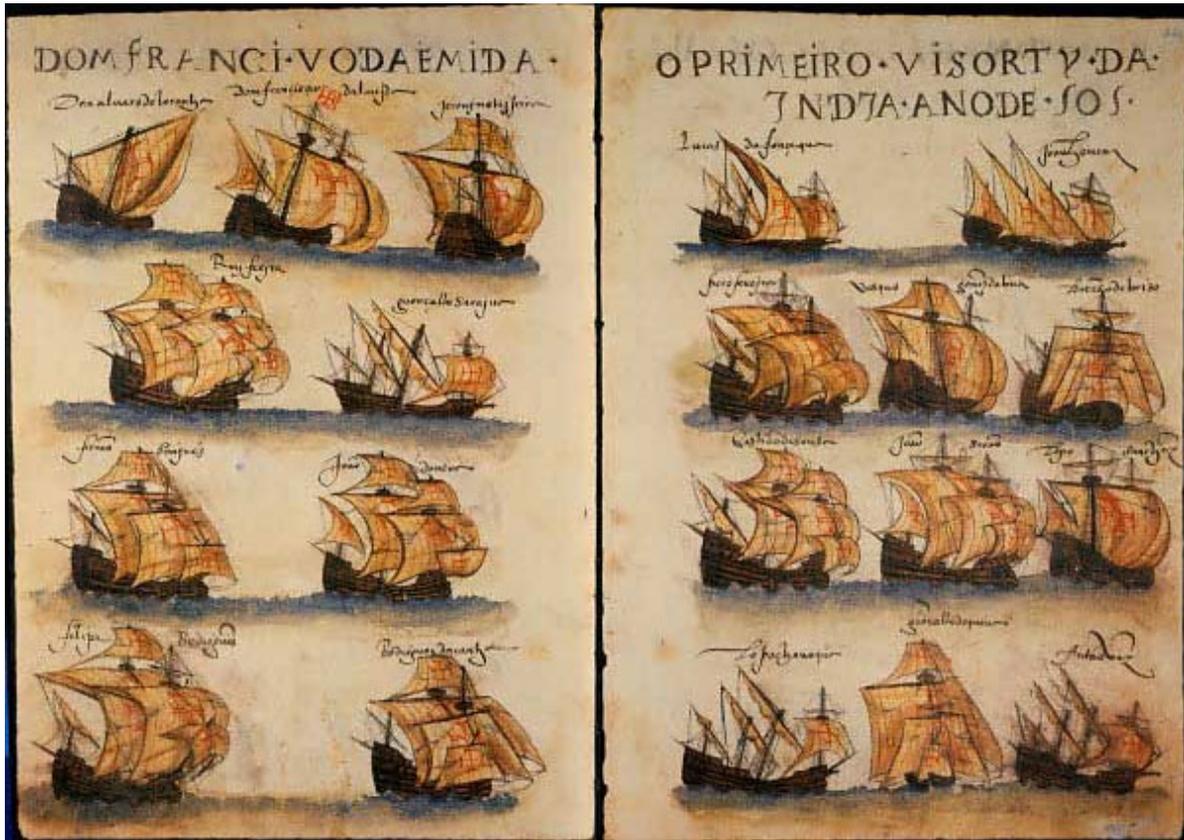
Ships on Early Maps  
Part Two

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## Ships on Early Maps Part Two

5.25



Engraved Plates from Volume III Of De Bry's 'Little Voyages' of the East Indies

Featuring Depictions of: The Azores, India, Sumatra, Madagascar, Pugnatan Island, Bantam Island, Sri Lanka, Bali, Nova Zembla and Kola. Documenting Linschoten's Voyages (Continued from Vol. II), Cornelis de Houtman's Voyage to the East Indies (1595-1597), and Gerrit de Veer's Journal of Three Dutch voyages to reach the East Indies by the North (1594-1597).

For years, the Dutch had watched Portuguese trade vessels sail to the Far East and return to the ports of Portugal loaded with valuable spices. Now, at the end of the 16th century, sweeping changes were about to happen. The nation was at war with Spain since 1568. It was made difficult for merchants to put in at the ports of Portugal, Spain's neighboring country with which the Dutch Republic had also been drawn into war. All this led a small group of Dutch entrepreneurs to decide to establish a trade company enabling them to undertake voyages to the East by themselves. This would become the *Compagnie van Verre* (long-distance company). But how to go about it, without encountering enemy ship of the Portuguese?

On April 2, 1595, Cornelis de Houtman and his brother Frederik de Houtman set sail from Texel to the East with the *Amsterdam*, the *Hollandia*, the *Mauritius* and the pinnace *Duyfken*. The first voyage ("De eerste schipvaart") was actually not much of a success. On

## Ships on Early Maps Part Two

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board, the crew was suffering from hunger and diseases like scurvy. The commander had to deal with exhaustion and mutiny among the crew. Only halfway through the journey, near Madagascar, a part of the crew had to be buried. Before long, flaming row developed between the skippers and the merchants, especially since no admiral of the fleet had been appointed.

The ships arrived at the Javanese city of Bantam on June 27, 1596. Here they assumed to be safe from the Portuguese. When a Portuguese ship did arrive, De Houtman let his men attack it. Bantam, too, got involved in the battle, for which the Dutchmen were not appreciated. They hurried out of the place. At a certain point, there were not enough men left to crew all four of the ships. Thus, they decided to set fire to the *Amsterdam*.

The ships sailed east past Java and arrived at Madura island where they were received peacefully. Fearing betrayal, De Houtman ordered to attack the locals, which was executed with great cruelty, upon which they fled. Also on the adjacent island of Bali, the Dutch received a warm welcome. Some of the crew even decided to stay there. Since the crew did not want to sail any longer, De Houtman decided not to set course any further to the East, the Moluccas. Instead, he returned home.

The voyage hardly yielded any profit and the company could barely cover its cost with the revenues. Only 89 of a crew of 249 survived. The goal of the voyage however, proving the possibility of reaching Asia past Cape of Good Hope, without being troubled by the Portuguese, was achieved. This expedition was one of the contributing factors to give rise to the establishment of the East India Company (VOC) in 1602.

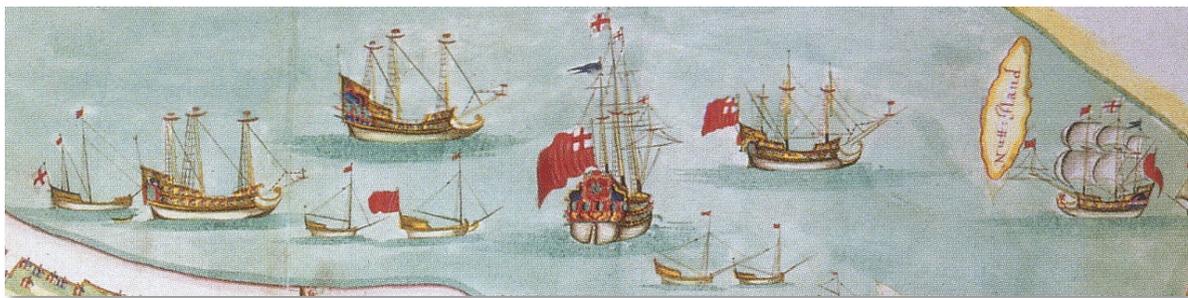
The journal of this first voyage ("*De Eerste Schipvaart*") is an outstanding source that still allows us to undergo the very adventures of De Houtman and his men. The story, together with its numerous illustrations, shows the tribes they encountered along the way and how these strangers lived, ate, sang and danced. The Dutchmen wondered about all the new things they encountered, sometimes in fear, sometimes in astonishment.

# Ships on Early Maps Part Two

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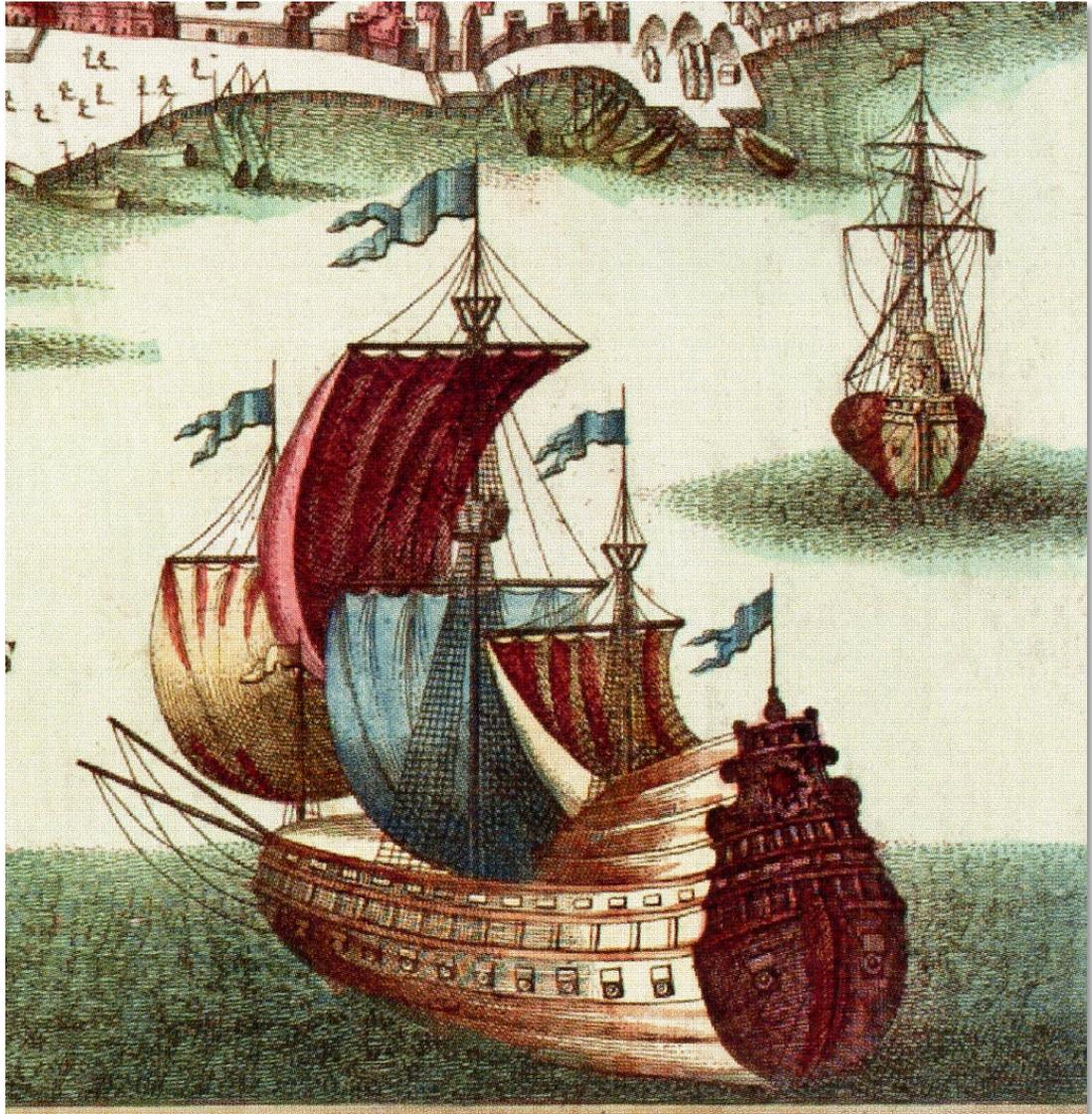


*The Duke's Plan of New York, 1664*



Ships on Early Maps  
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*A large caravel off the coast of Lisbon, ca. 1740, on a city map by Matthaus Seutter*

Ships on Early Maps  
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## Ships on Early Maps Part Two

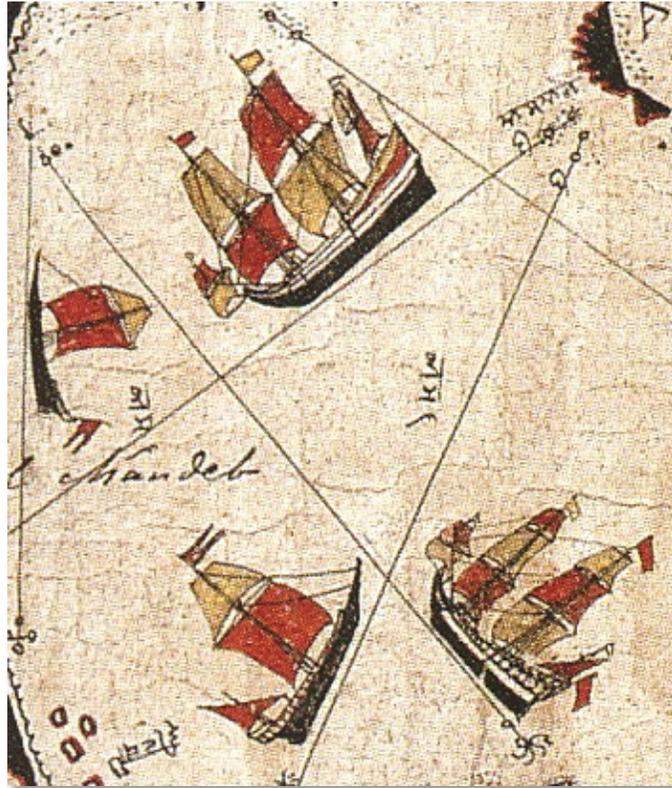
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clusters of stars on compass cards with thirty-two equal sectors. The apparent direction of these lines on the map had no close relation to those that would appear on modern nautical charts of the same area. Thus, it mattered little that the chart suggests that the Gulf of Aden and the Red Sea are aligned in a continuous direction, rather than at more or less right angles to one another as they actually are.



Ships on Early Maps  
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## Ships on Early Maps Part Two

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*Asian Vessels in Bantam*

Plate XXVIII, *Folgen hernacher viererlen Schiff deren sich die zu Bantam gebranchen*  
From Part III of Johann Theodor de Bry (1561-1623) and Johann Isreal de Bry's (1565-1609)  
*Orientalische Indien* ("Little Voyages"), *Dritter Theil indiae orientalis...* Frankfurt: 1599 (first  
edition) Engraving with original, early 17<sup>th</sup> century hand color heightened with gold on  
laid paper; paper dimensions: approximately: 11.5 x 7.5 inches  
Printed by Matthias Becker van Groesen 52

*Text: The Indians have another four kinds of ships the one kind is big with two masts and sails. The other kind is slightly smaller so that they can transfer the wares from one place to another. The third kind are very small fishing boats which are so fast as if they could fly that's why we call them the flying. The ships sails are woven out of weed and are very popular in Bantam several are also made from leaves of the trees they also use pipes for the boat they don't have a back rudder they just use a hand paddle on each side which they can handle very skillfully.*

The illustration shows four different types of vessel in the harbor of the trading town of Bantam on the northwestern tip of Java. The vessel on the left, with the high running aft and the two yards is called a *iuncos* in the journal, which is also called a *junk*, after the

## Ships on Early Maps Part Two

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Javanese word *Djong*. Left we see a *Chinese junk*. In the rear, there is a *proa* with a bowed prow and aft, used by the Javanese for trade along the coast. The foreground shows a *proa* with double outriggers. The Dutch called them '*kites*', because they seemed to skim across the water so fast, it seemed as if they were flying.

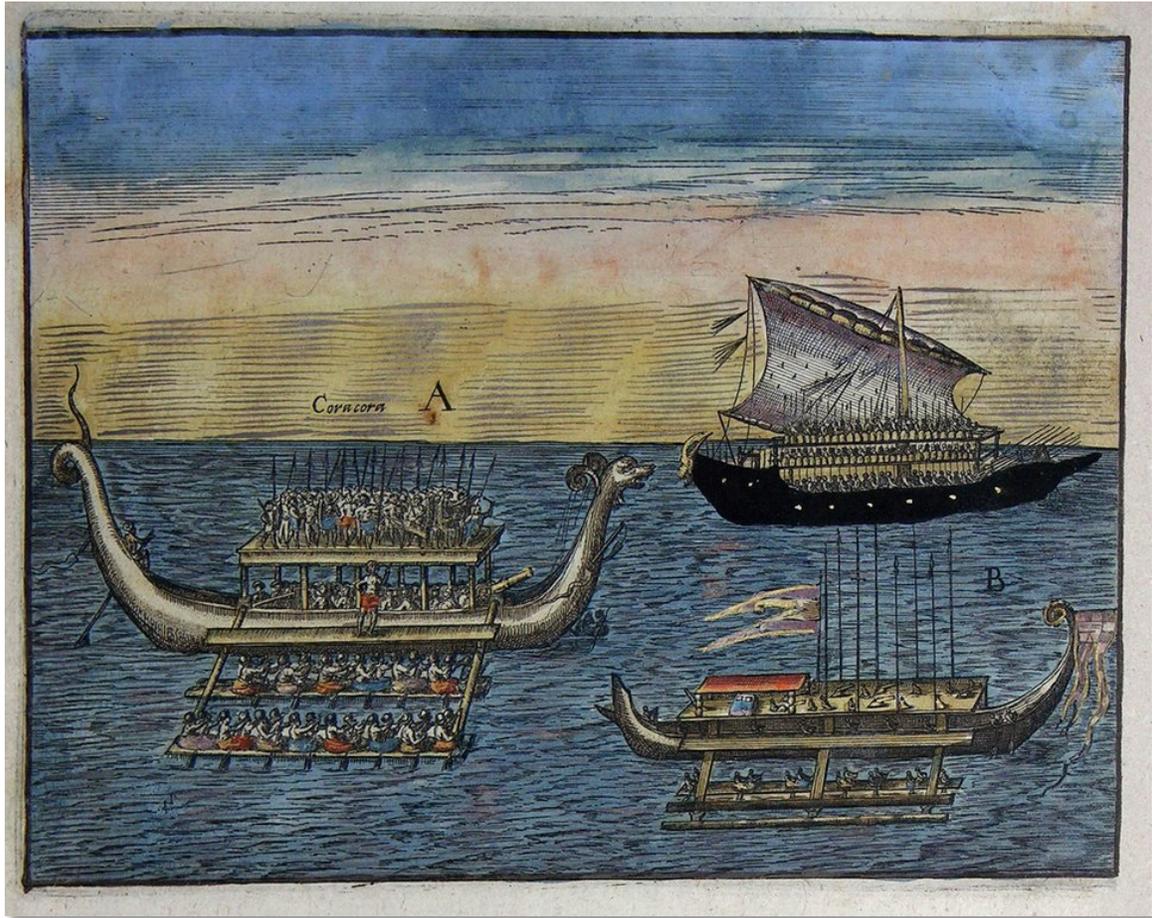


Plate XXVII, *Saliottem und Fusten der Ja uaner.*

From Part III of Johann Theodor de Bry (1561-1623) and Johann Isreal de Bry's (1565-1609) *Orientalische Indien* ("Little Voyages"), *Dritter Theil indiae orientalis...* Frankfurt: 1599 (first edition)

## Ships on Early Maps Part Two

5.25



*Ships of those from Banda and Ternate*

Plate XVI, *Schiff deren von Banda vnd Ternate.*

From Part V of Johann Theodor de Bry (1561-1623) and Johann Isreal de Bry's (1565-1609)  
*Orientalische Indien* ("Little Voyages"), Funffter Theil der Orientalischen  
Indien...Frankfurt: 1601

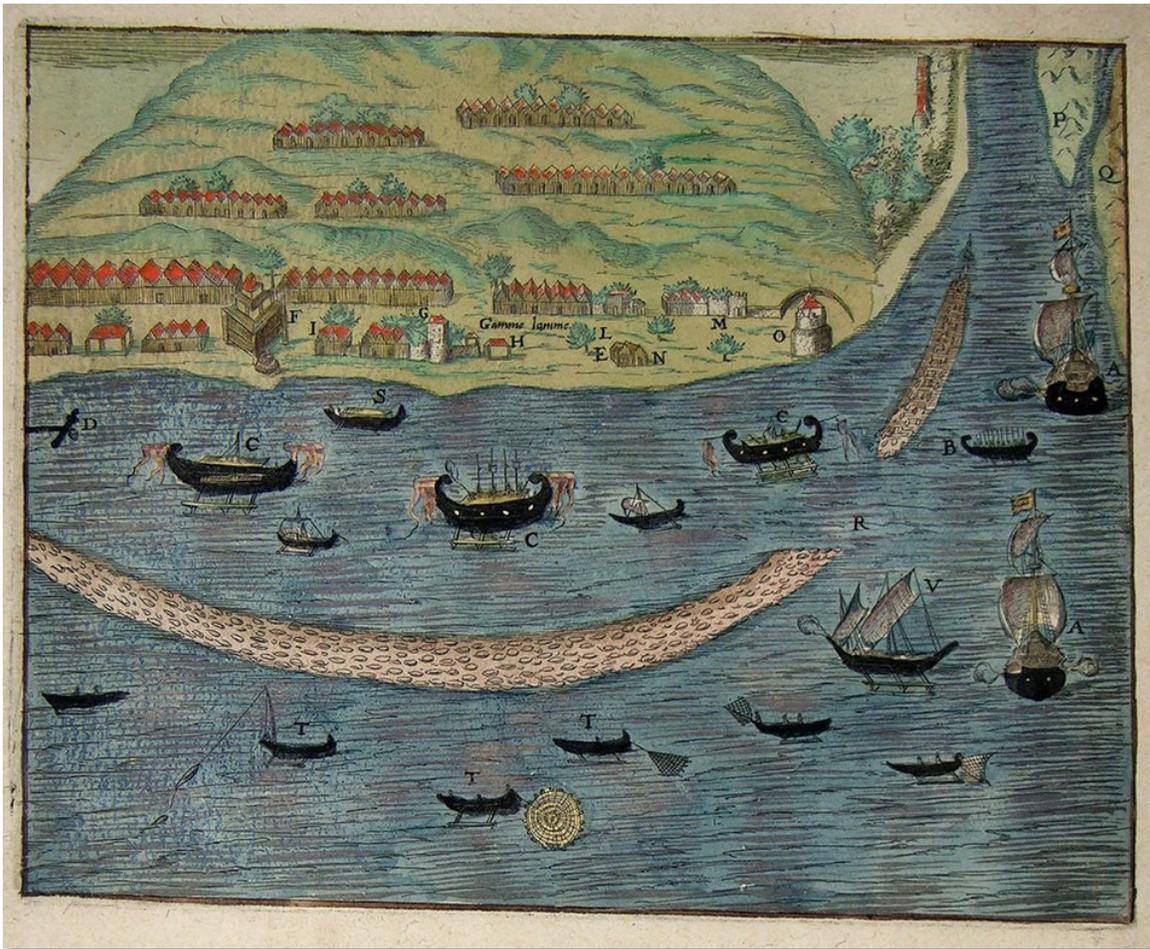
Those *galleys* from the island Banda called by the inhabitants *Carocolla* and marked with **A** are necessary for the war against their enemies because they know how to row very fast with those while they are built with thin siding and are very light they are not dabbled with pitch like ours but the joints stuffed with hemp from the Indian nuts and then greased with chalk and another material combined so that water cannot cause any damage. **B.** is the king of Ternate's, *Karkol*, with an extension built onto both sides lying almost flat on the water on which the slaves and servants are sitting and rowing at all times. Above on this *Karkol* are sitting several which are playing on drums and other instruments. There are also seven great cannons on top surrounded by several long spears on the back of this *Karkol* is a nice bed, beautifully decorated and gilded, on which the king's harness hangs velvet lined this bed was covered with a beautiful blanket on which the king lays down and also sits and has somebody next to him at all times who is fanning him with a fan.

## Ships on Early Maps Part Two

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Ships in the East Indies. Van Warwijck put in at Ambon and Ternate in 1599, while his colleague Jacob van Heemskerck sailed to Banda.

This print shows vessels that originate from these parts. On the left is the *cora cora* of the king, near the letter **A**. This Bandanese ship is propelled by large numbers of rowing men, others on board bang on drums and cymbals. The travel account describes them as a frenzied mob. The ship at the top right is a warship from Madura, the island east of Java. The spears of the crew can be clearly identified. At the right bottom we see the *cora cora* of the king of Ternate.



*Description of the city Gamme lamme*

Plate XIII, *Beschreibung der Stadt Gamme lamme sampt andern Gelegenheiten*

From Part V of Johann Theodor de Bry (1561-1623) and Johann Isreal de Bry's (1565-1609)

*Orientalische Indien* ("Little Voyages"),

*Funffter Theil der Orientalischen Indien...* Frankfurt: 1601

This city *Gamme lamme* is located on the island Ternate. In this city the Dutch also do a lot of trade their houses are made out of thick and split pipe twisted together. **A**. those are the Dutch ships how they arrived. **B**. is a *Karkol* (type of boat), which came to them on board to see what kind of people they are and what their intention was which when they found out

## Ships on Early Maps Part Two

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were almost happy about their arrival. **C.** a *Karkol* which they use for war. **D.** a pillar in the water on which they hung a head of one of their enemies. **E.** their market which they hold under a tree because of the sun. **F.** Their church or Musquita. **G.** the king's palace built out of stone. **H.** a small house with the metal cannon on top which captain Francis Drack, threw into the ocean during a storm and which they found. **I.** is the house of the Dutch king where they stayed. **K.** is the house where the Dutch made their trades. **L. M.** a monetary called S. Palace and is a stone house built by the Portuguese. **N.** The king's translator's apartment. **O.** is a tower on which a metal cannon lies. **P.** an island between Ternate and Tidore. **Q.** The island Tidore. **R.** is the entrance to the harbor which is surrounded by rocks and stones where the residents go to fish in shallow water. **S.** is a pleasure boat (a ship without real purpose). **T.** shows how they catch their fish plenty described in history. **V.** a trader ship which transports the wares from one island to another.

### *Ternatean and Dutch Ships off Gammelamme, Northern Maluku Islands*

Van Warwijck put in at Ambon and Ternate in 1599, while his colleague Jacob van Heemskerck sailed to Banda. Here we see the two Dutch ships on the right in the port of *Gamme Lamme*, the capital of Ternate. The city, present-day Castela, is on the west coast of the island. A rectangular building, the mosque, is clearly recognizable on the left. In the center of the city we see defenses built by the Portuguese in the 16th century.

In 1575 a local ruler came to power. He stayed in power until 1606, when the Spaniards conquered *Gamme Lamme*. In 1607 the king of Ternate asked the Dutch for assistance against the Spaniards. Even though the Dutch were unable to entirely drive the Spaniards off the island, their assistance did result in a treaty, which secured the Dutch a monopoly on the clove trade.

## Ships on Early Maps Part Two

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Plate XII, *Wie die Holländer von des Königs von Ternate Karkol, umgeben worden*  
From Part V of Johann Theodor de Bry (1561-1623) and Johann Isreal de Bry's (1565-1609)  
*Orientalische Indien* ("Little Voyages"), *Funffter Theil der Orientalischen Indien*...Frankfurt: 1601

### *Dutch Ships off Ternate, Northern Maluku Islands*

Van Warwijck put in at Ambon and Ternate in 1599, while his colleague Jacob van Heemskerck sailed to Banda. Here we see Ternate. The island was part of the northern Maluku Islands, which were grouped in small Muslim kingdoms, of which the sultanate of Ternate was the most powerful. The island was important to the Dutch for its supply of cloves. We see the two Dutch ships led by Van Warwijck at anchor, the taut ropes to the anchors under water are clearly indicated. Next to these sails the galley ship of the king, called a *cora cora*. The vessel has sponsons, just like a catamaran, on which rowers sit.

Ships on Early Maps  
Part Two

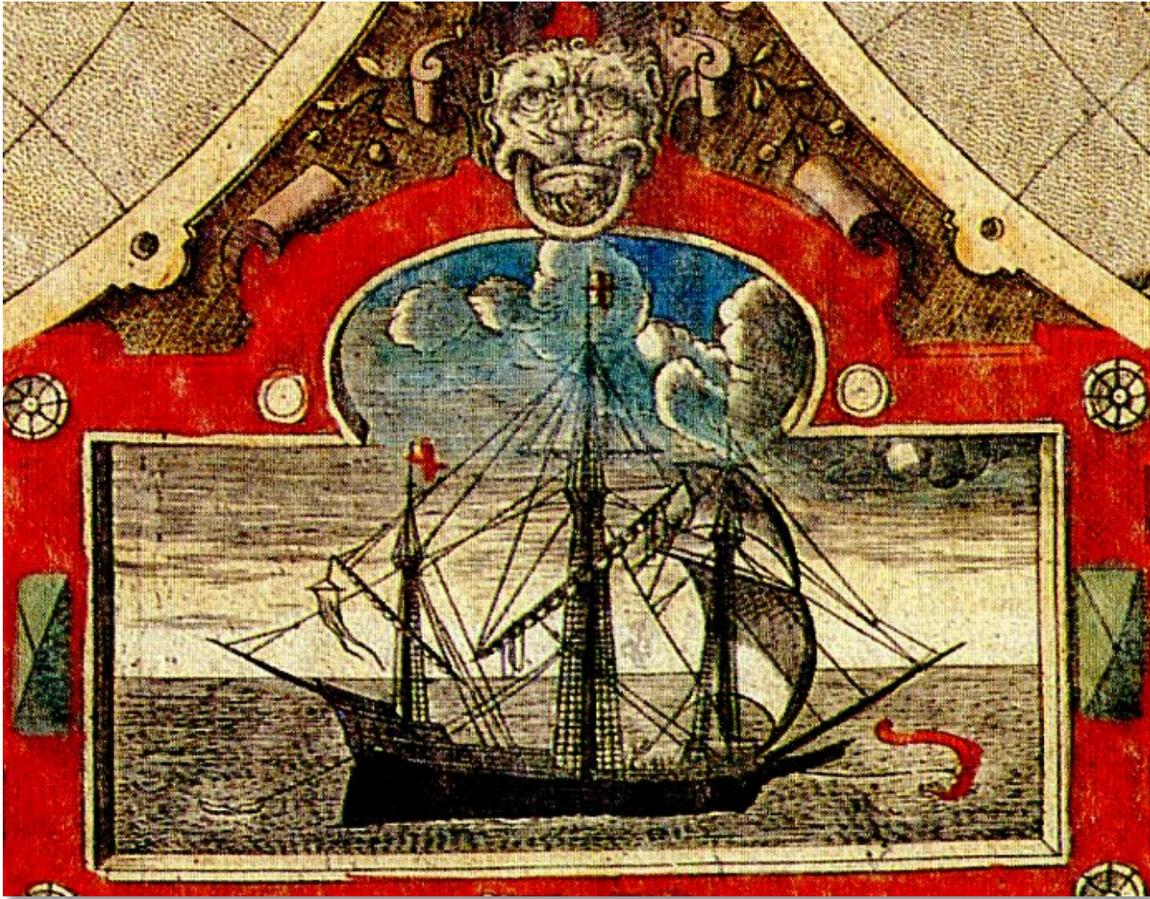
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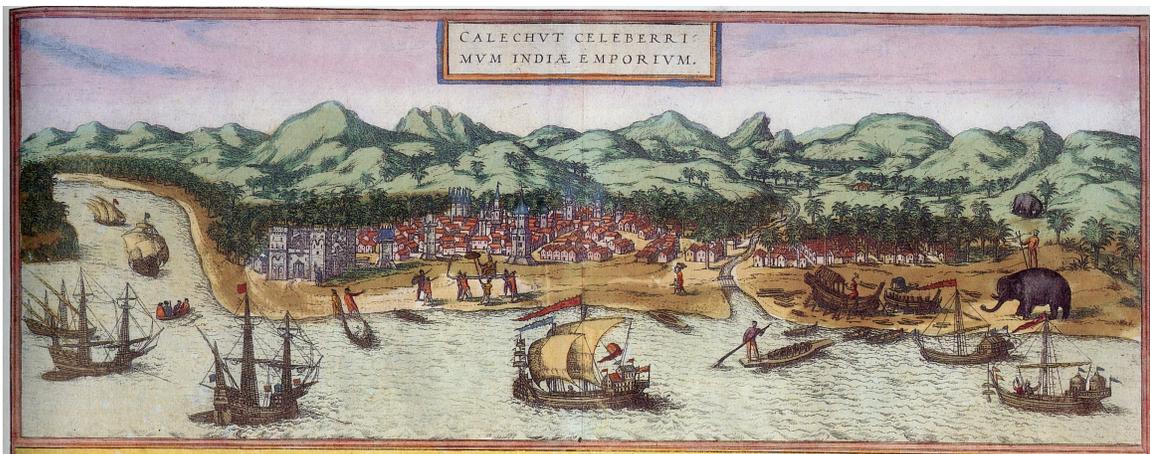
*Fernao Vaz Dourado 1568, northern tip of Sumatra*

Ships on Early Maps  
Part Two

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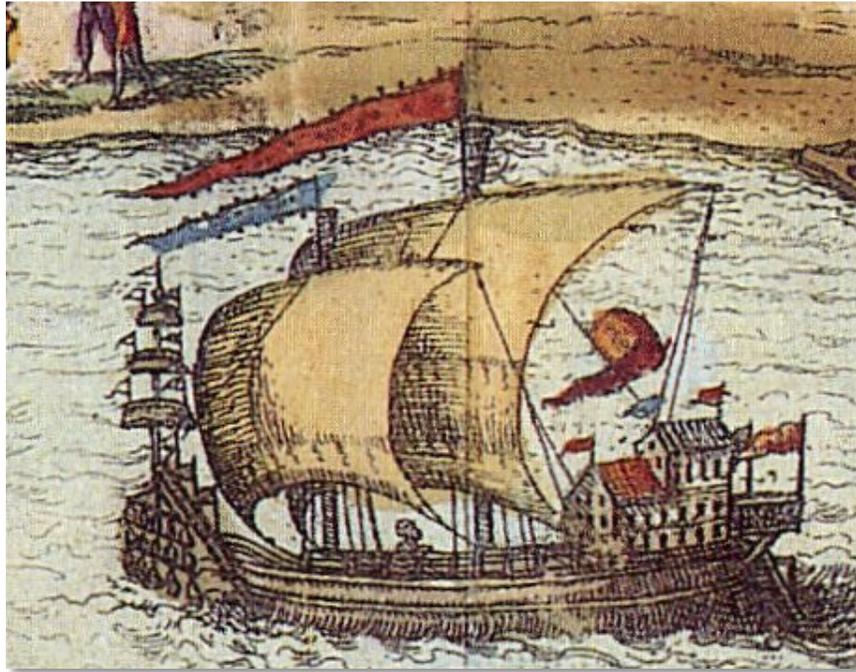


*Francis Drake's Golden Hind (Jodocus Hondius, 1590)*



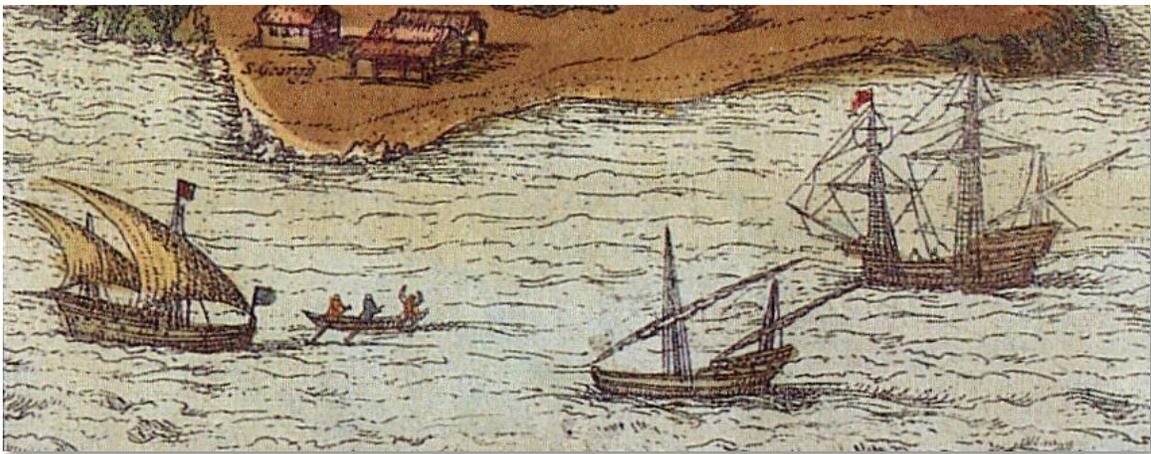
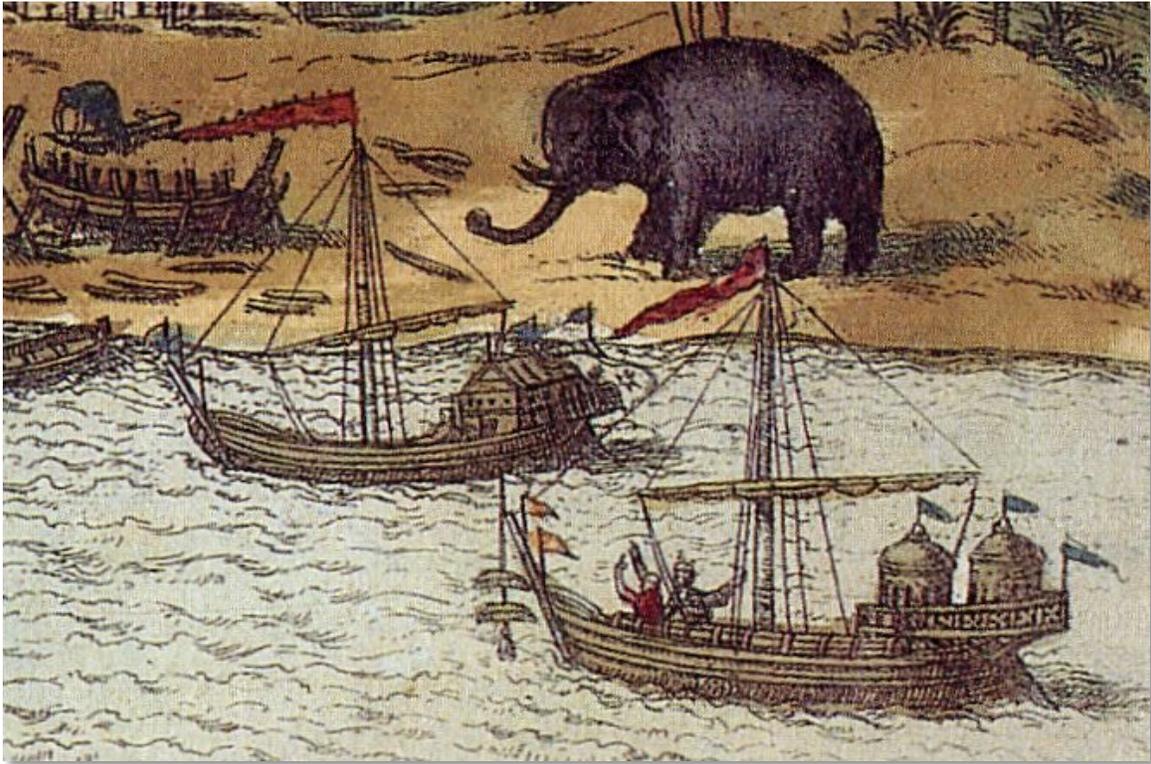
Ships on Early Maps  
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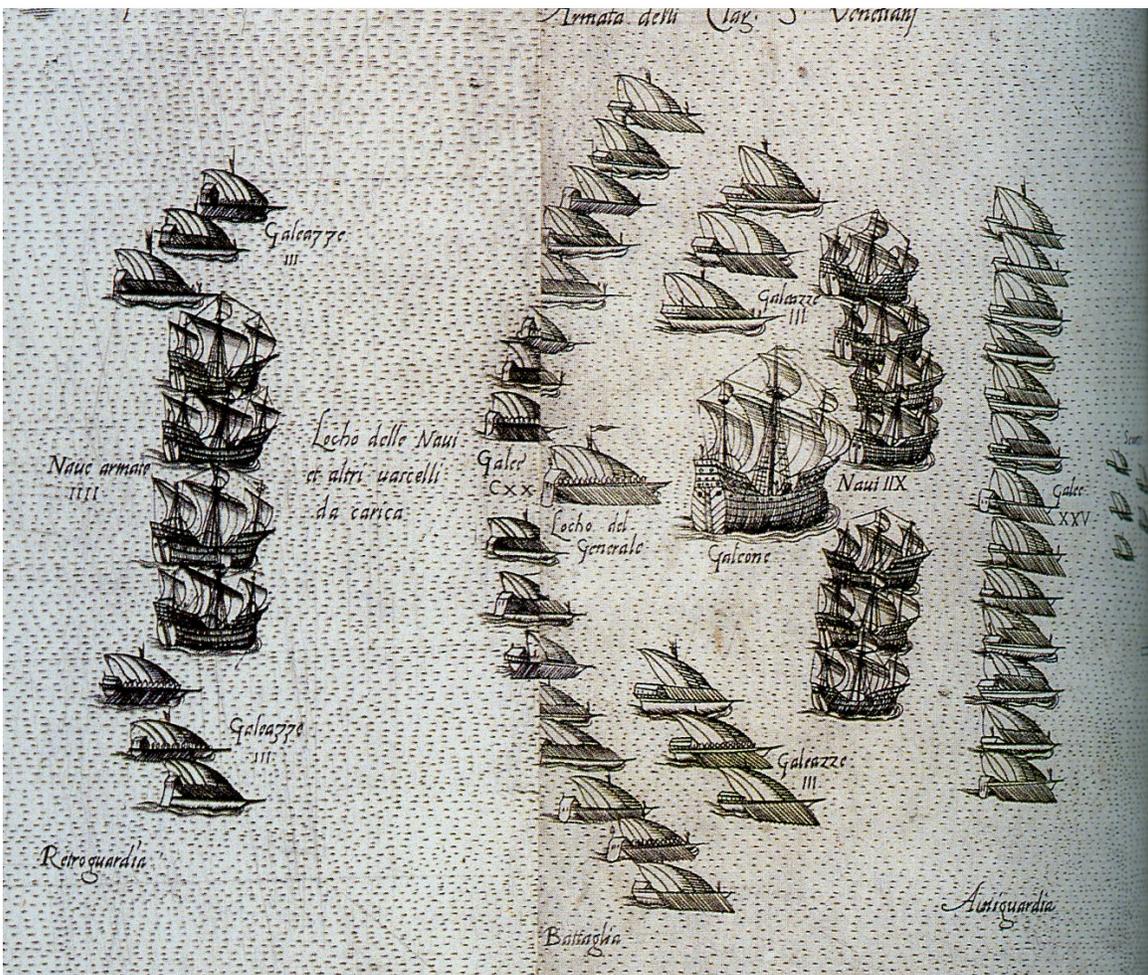
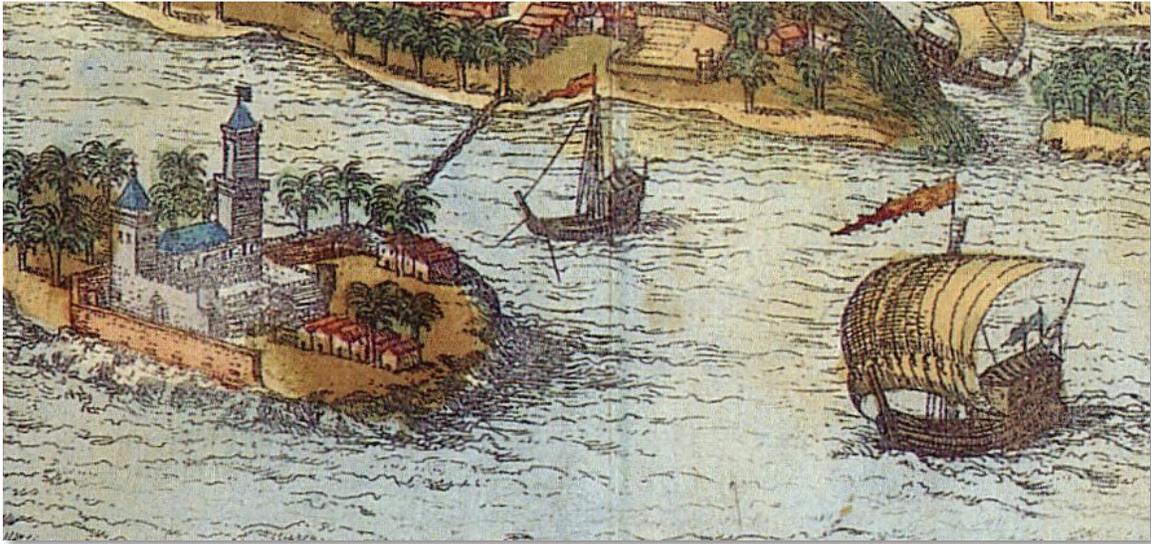
Ships on Early Maps  
Part Two

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# Ships on Early Maps Part Two

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# Ships on Early Maps Part Two

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*Ships on the Quantung, e Fokien, prouincie della China [cartographic material]! dedicate al Molto Reuerendo Padre Carlo Trigona, della Compagnia di Gesu, Teologo di Monsignor Illustriss: Arciuescouo di Palermo etc., 1695*

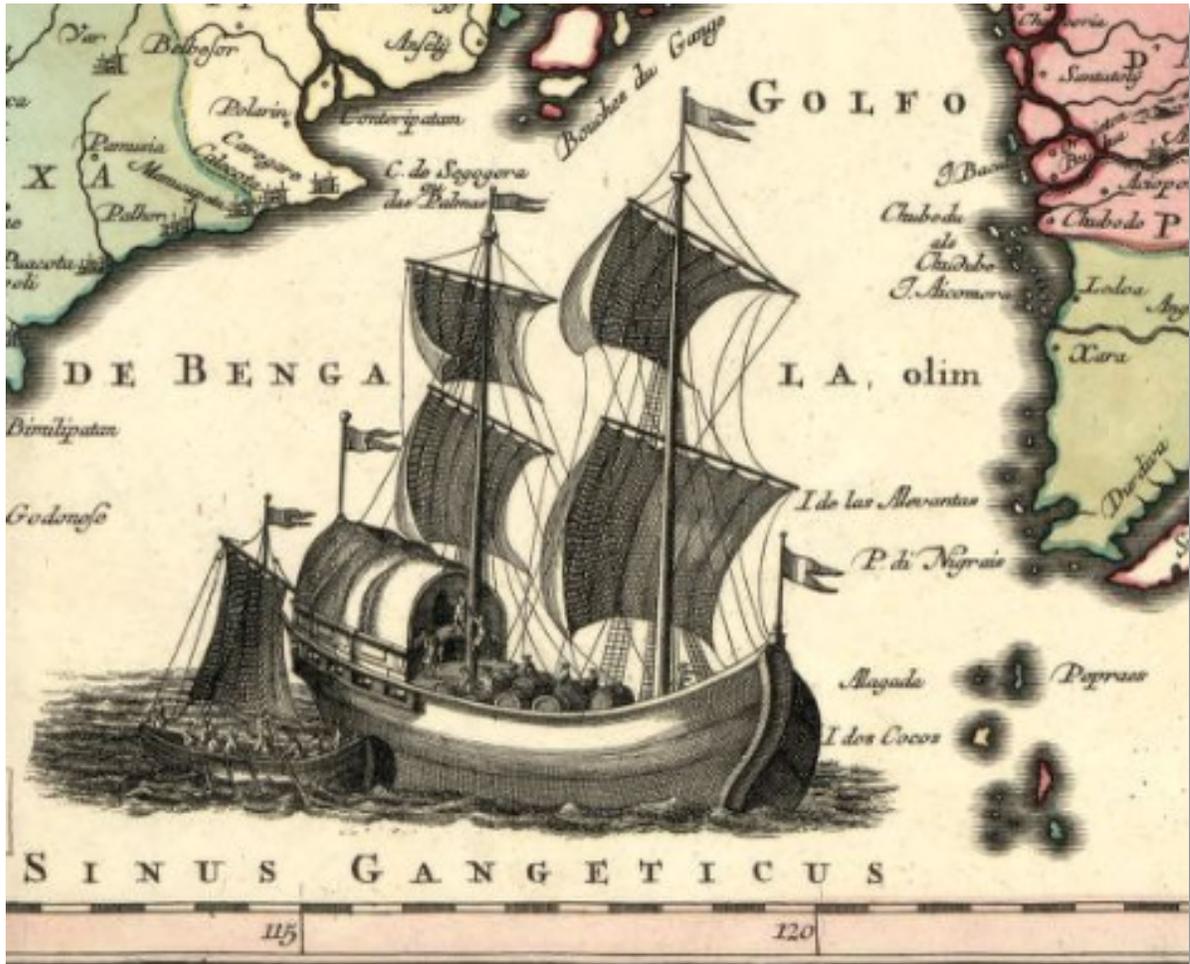
# Ships on Early Maps Part Two

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Ships on Early Maps  
Part Two

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*Ships in the Bay of Bengal from the Imperii magni Mogolis sive Indici Padschach, juxta recentissimas navigationes by Matthaeus Seutter, 1735*



*Ships on Ortelius' Serenissima Reipublicae Genuensis Ducatus et Domini nova descriptio, 1564*

Ships on Early Maps  
Part Two

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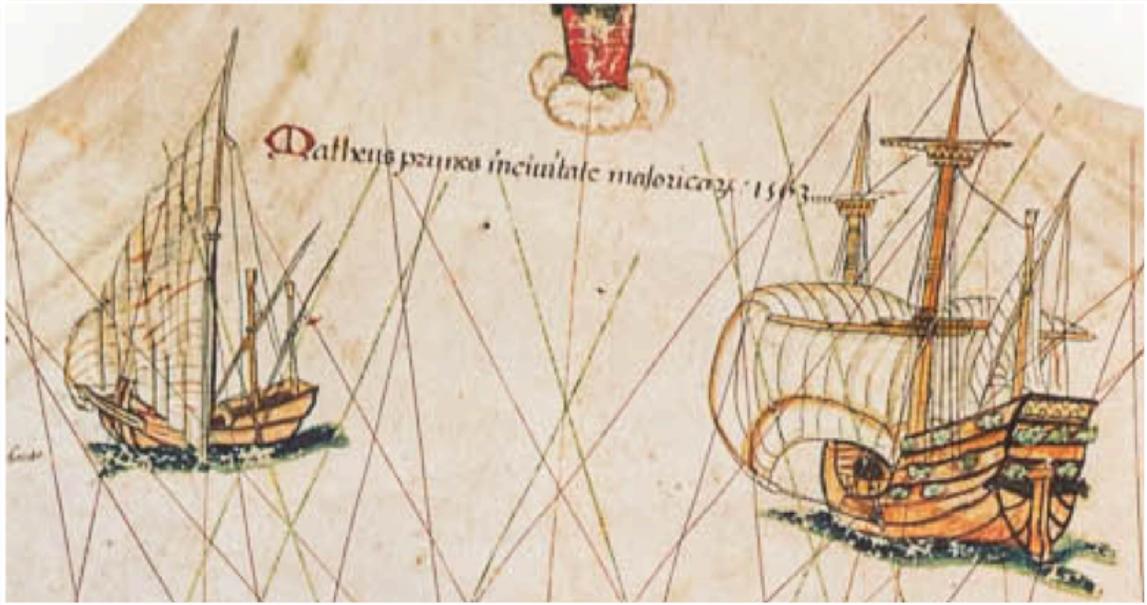


*A variety of ships, a kayak and a whaling boat in the North Atlantic*

## Ships on Early Maps Part Two

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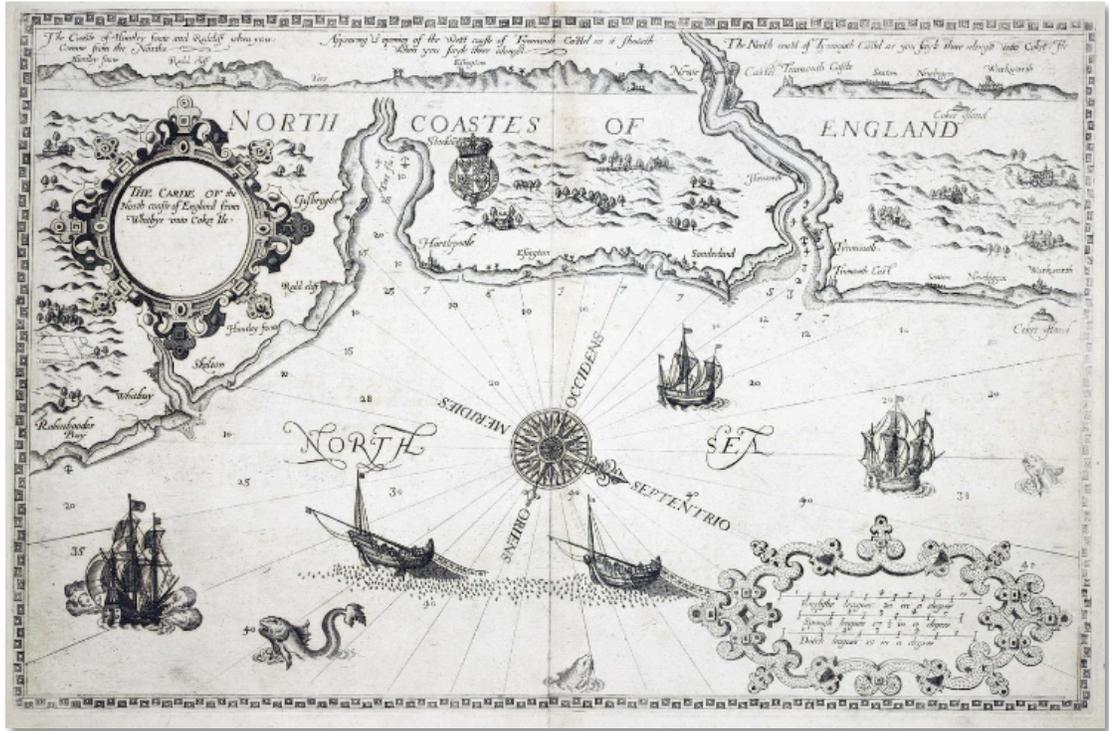
Just like the unknown peripheries, oceans are practically devoid of information. The emptiness of the oceans highlights the terra-centric nature of atlases. However, analyzing how the oceans are illustrated is of significance. On the one hand, the various ships sailing along the trade routes demonstrate the function of the ocean as a passage. On the other hand, sea monsters are used to decorate that which is unknown – as generic images of the unexplored and as intriguing details for the reader to examine. However, the earlier function of the sea monsters as an indication of danger is no longer evident. Furthermore, the few realistic depictions of ships and marine animals can be seen as a sign that the illustrations, perhaps, passed on information based on observations as well. The ships, sea monsters and the marine animals on the maps, therefore, are indications of the knowledge and insights attached to the ocean spaces.



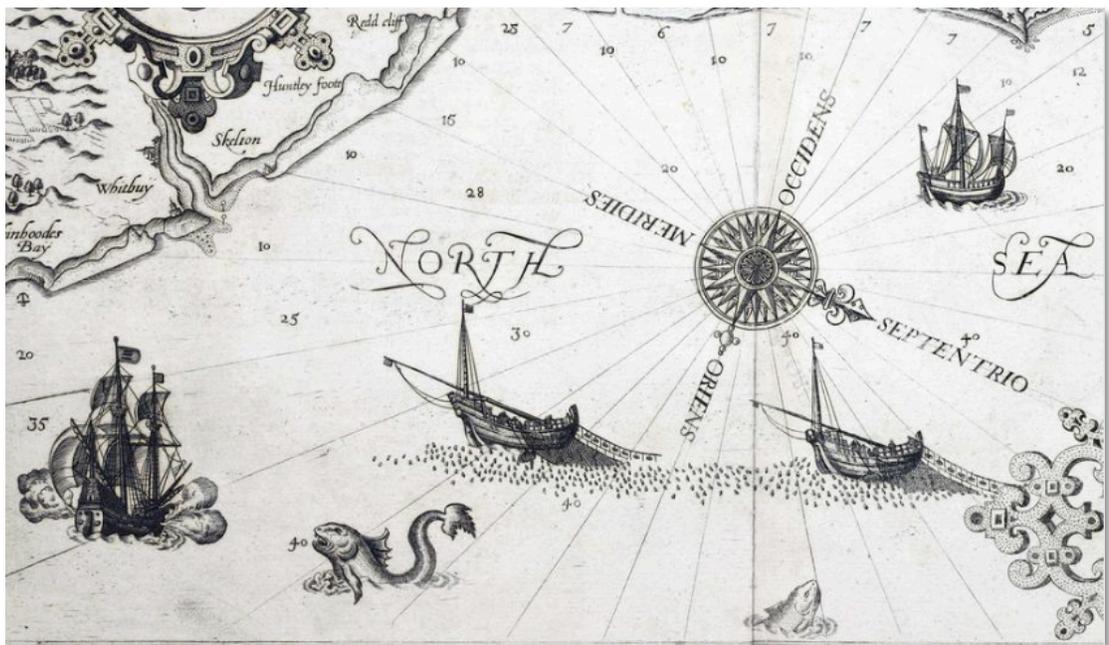
*Ships on the portolan chart by Mateo Prunes, 1563*

# Ships on Early Maps Part Two

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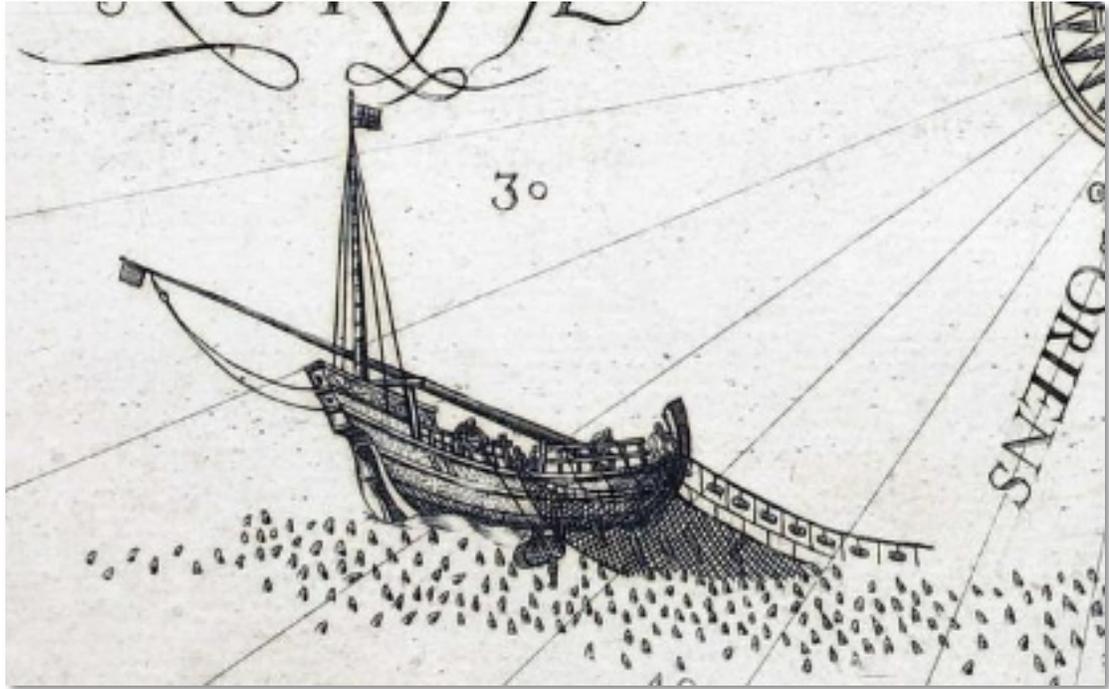


Fishing boats from Lucas Jansz Waghenauer's *The Carde of the North coaste of England from Whitby unto Coket Ile, 1588*



# Ships on Early Maps Part Two

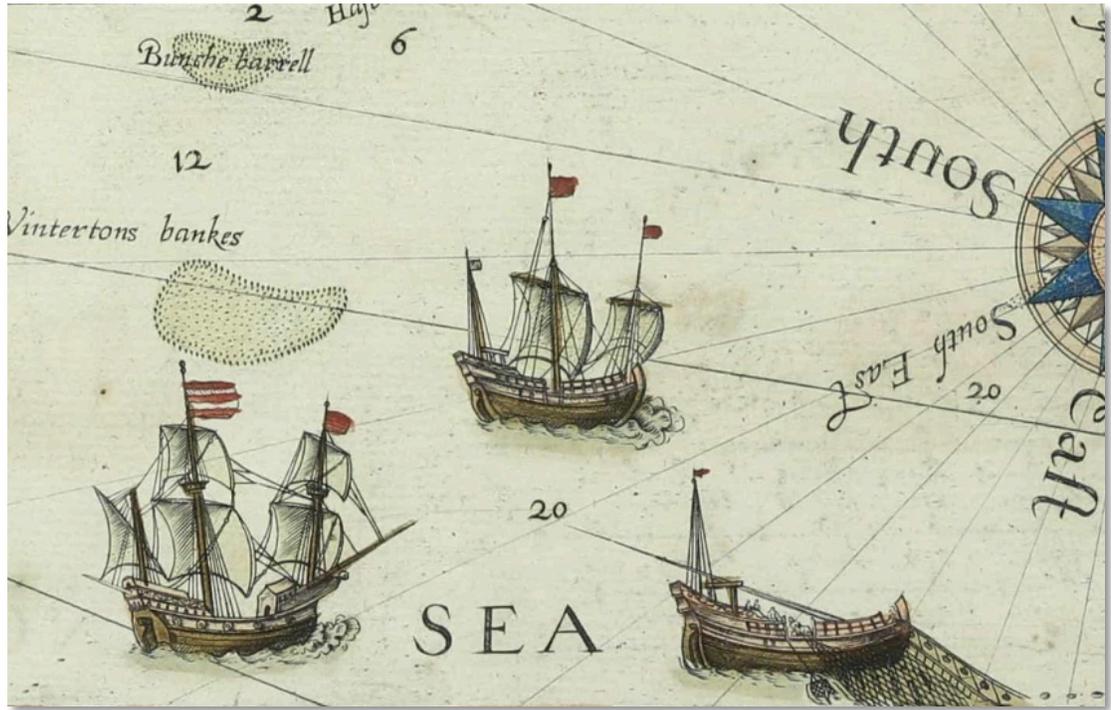
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*Ships and a fishing boat from Lucas Jansz Waghenaer's The Sea Mappe of the North coaste of England hetweene Walderswick & Burnham with all the bankes and sholdes there alongst, 1588*

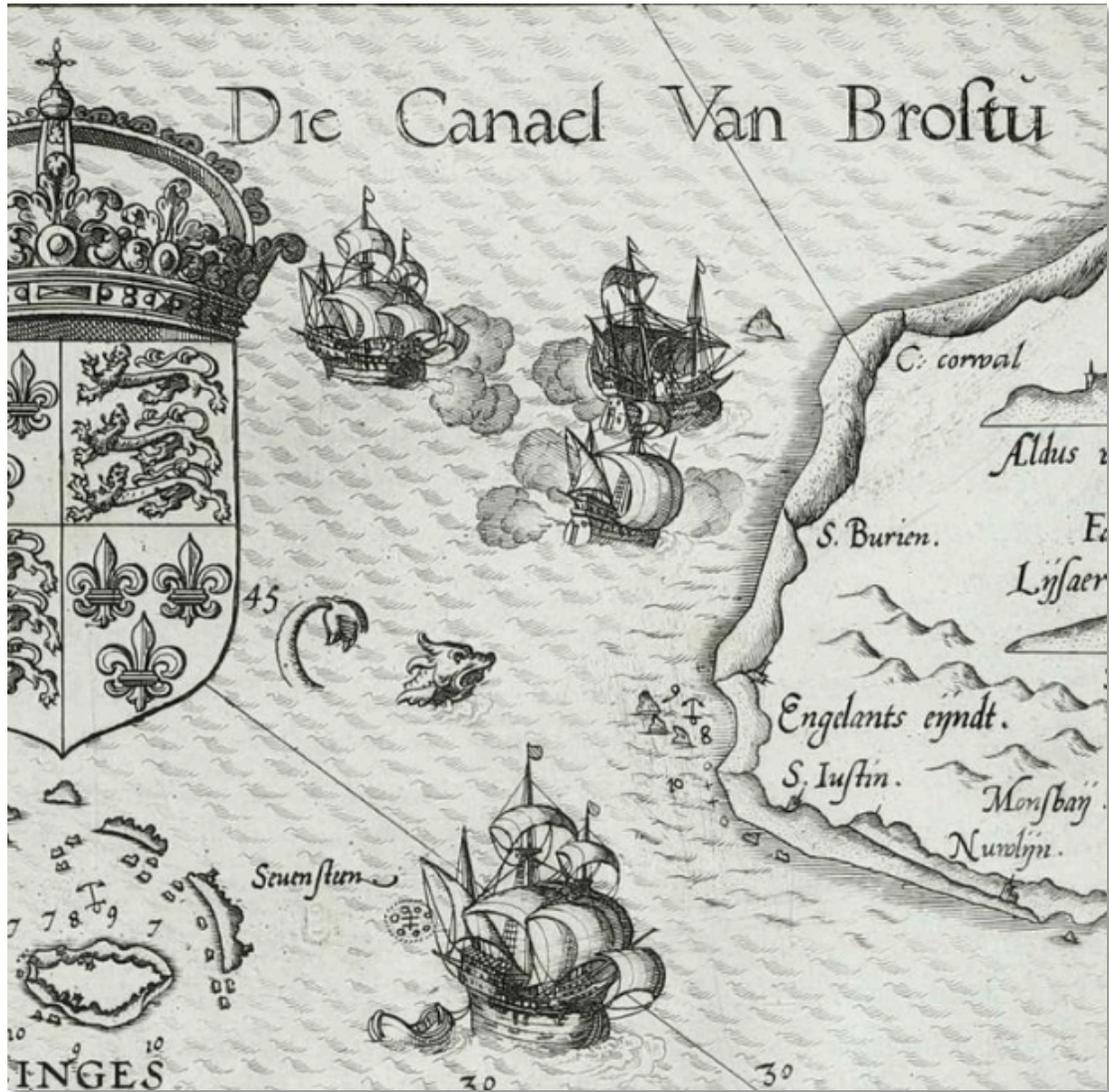
Ships on Early Maps  
Part Two

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Ships on Early Maps  
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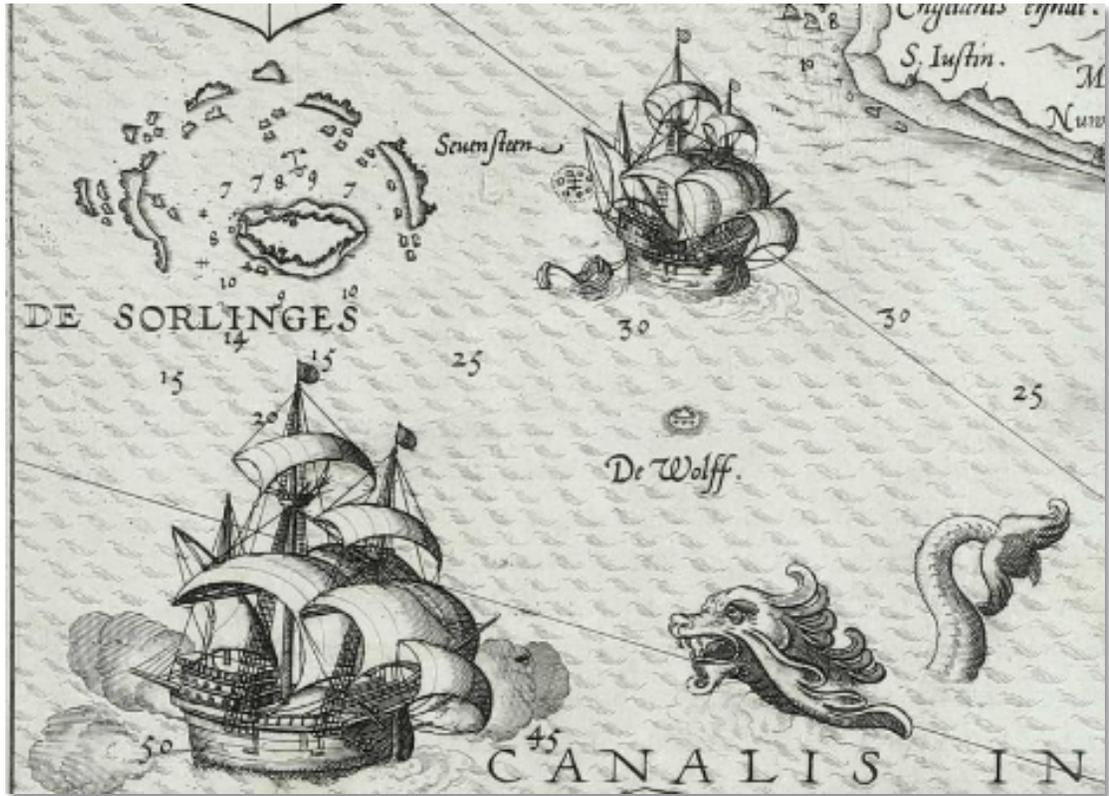
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from Lucas Jansz Waghenaer's *Zee Caerte van Engelants Eijndt, alsoe hem Tselfde Landt Verthoont Beginne van Sorlinges tot Pleijmond, 1583-[85]*

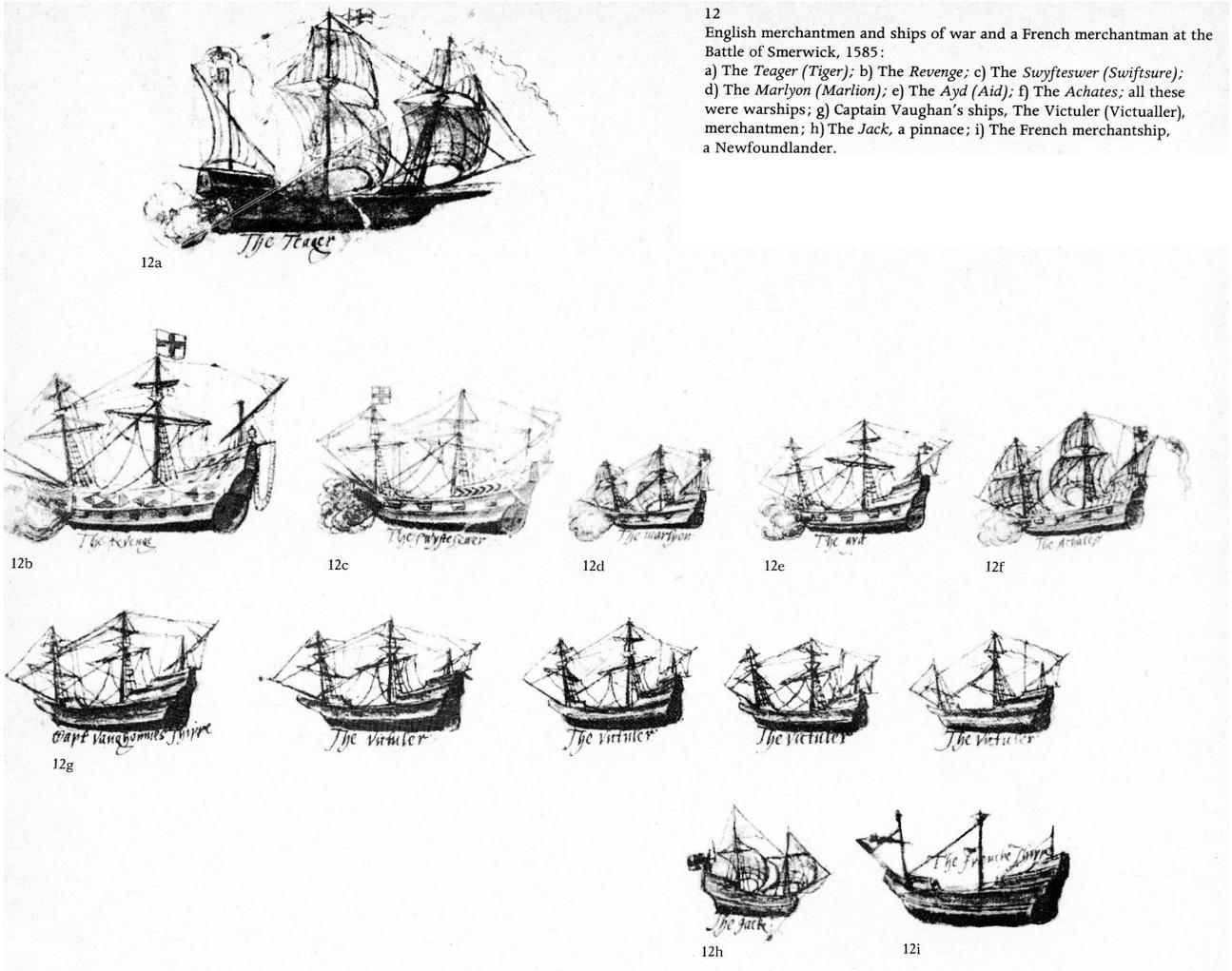
Ships on Early Maps  
Part Two

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# Ships on Early Maps Part Two

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# Ships on Early Maps Part Two

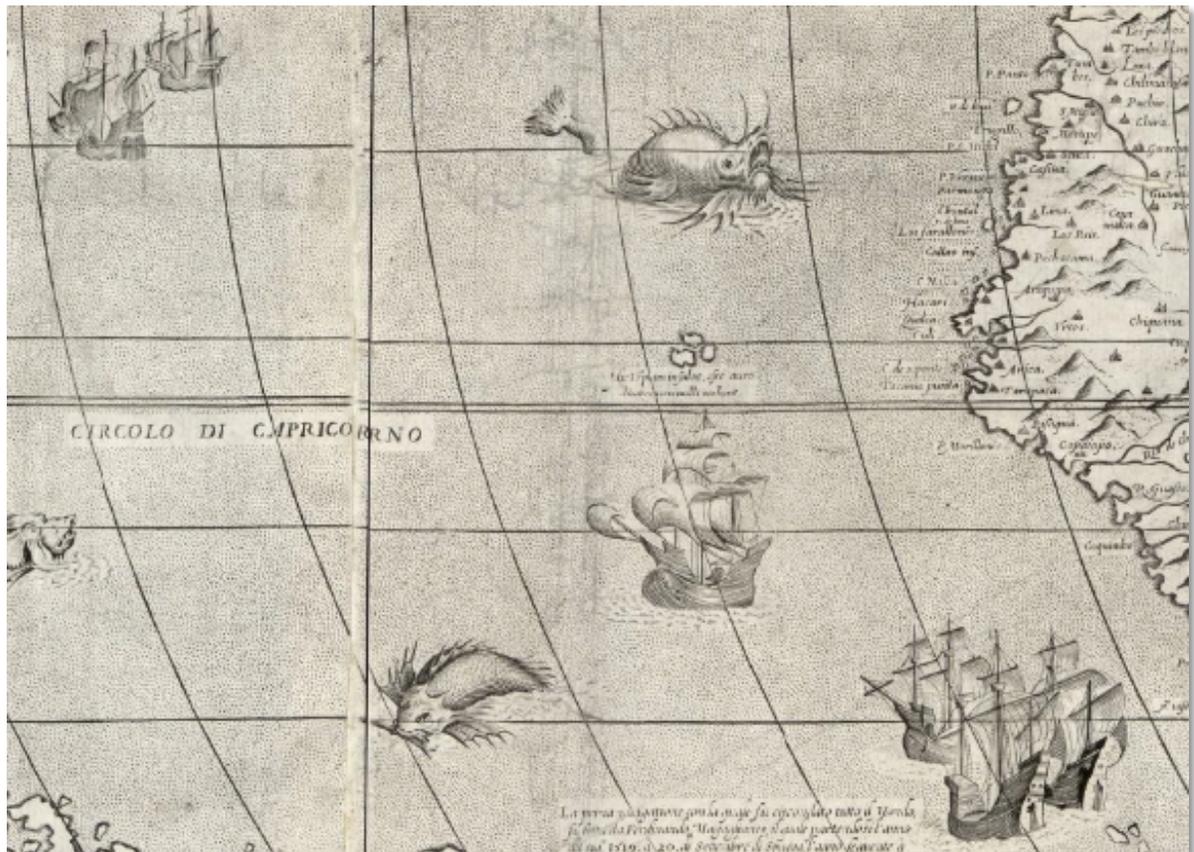
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*Ships displayed on Giuseppe Rosaccio's 1643 world map (#475)*



# Ships on Early Maps Part Two

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# Ships on Early Maps Part Two

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*Ships tow the cedars of Lebanon in the Eastern Mediterranean  
on Abraham Bar-Jacob's 1695 map of the Holy Land*

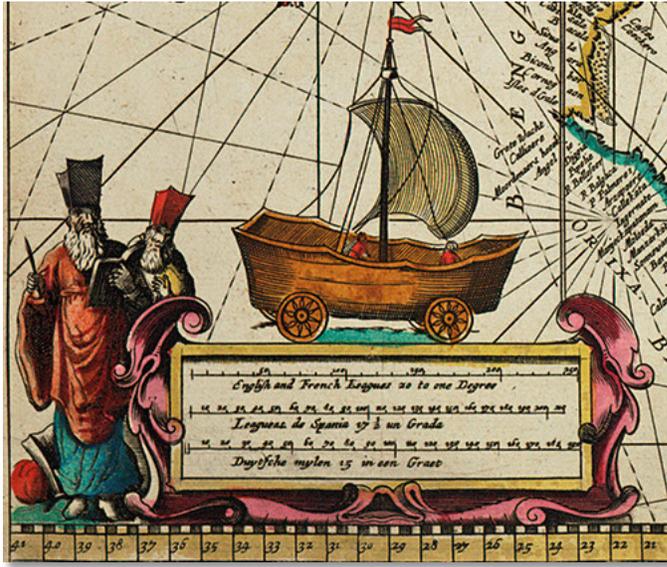


*Below, on the same map, is a depiction of the Biblical Jonah and the whale*



# Ships on Early Maps Part Two

5.25



"Prairie Schooners" on John Speed's map of China, 1626



Ships on Early Maps  
Part Two

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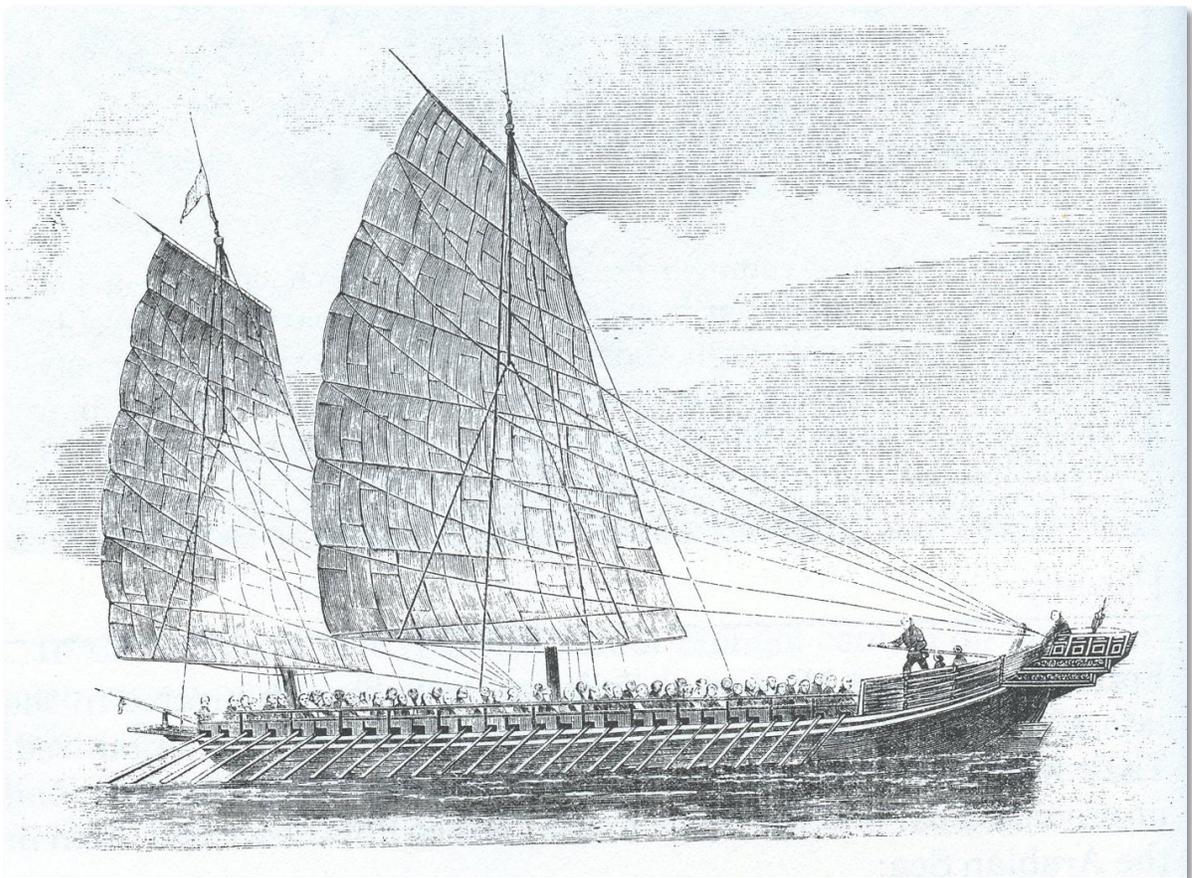
*"Prairie Schooners" in China in the 1606 Mercator-Hondius Atlas (#410H2)*



*A "Prairie Schooner" on Cornelius de Jode's map of China, 1593 (#410H2)*

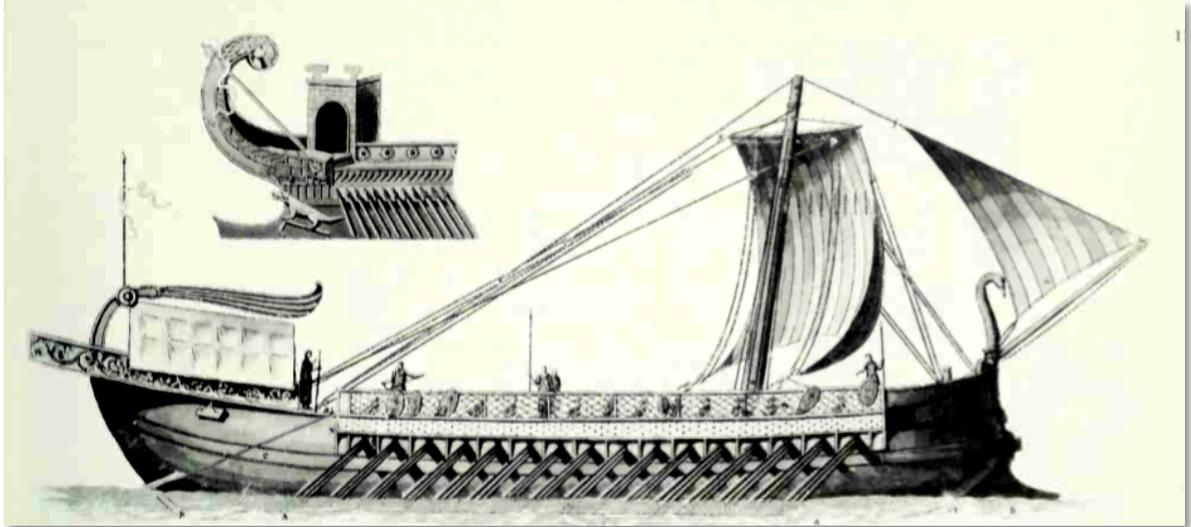
Ships on Early Maps  
Part Two

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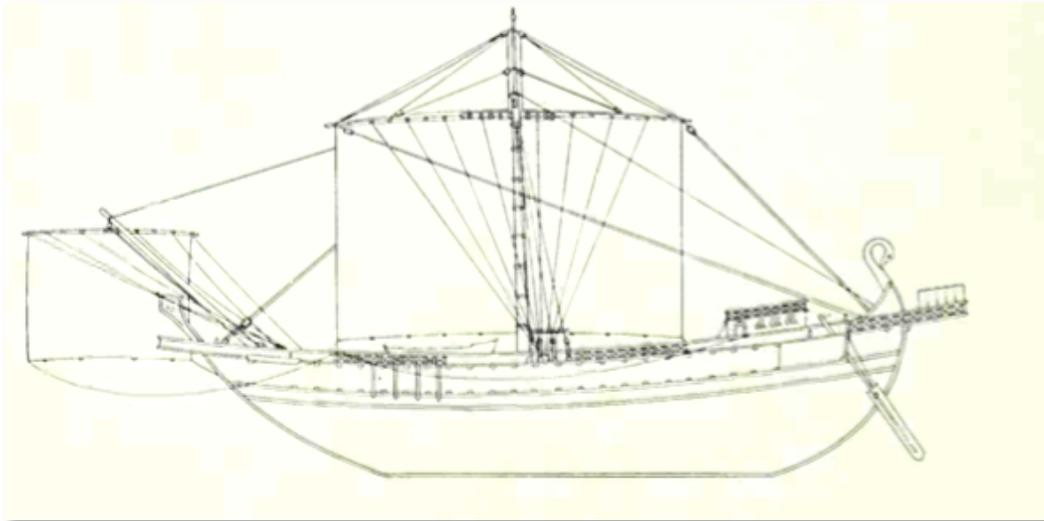


Ships on Early Maps  
Part Two

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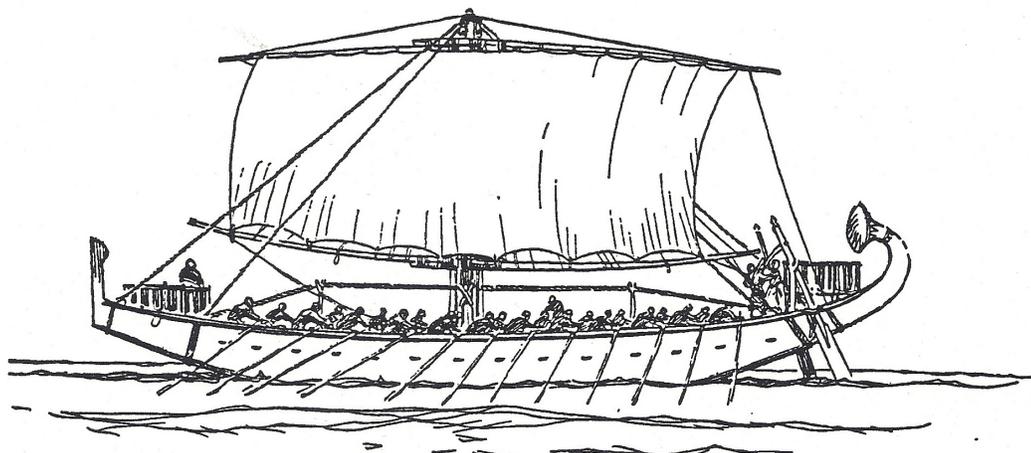
*Roman Galley*



*Roman  
Trader*

## Ships on Early Maps Part Two

5.25



### *Egyptian Ship*

The earliest possible drawing of a ship of exploration would be that of one of the vessels constructed at *Punt* that sailed back to Egypt in about 2,750 BCE. There are indeed representations of Egyptian vessels of about this period and of earlier vessels that were probably used only on the Nile. The earliest drawings of ships are on pre-dynastic pottery. The ships are already well developed, the forerunners of the ship shown above.

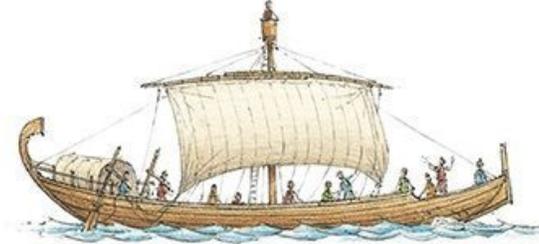
This is a drawing of one of the vessels used on the second known *Punt* expedition under Queen Hatshepsu of about 1,500 BCE. The drawing is based upon tomb carvings describing that expedition. This is already a developed ship. Earlier vessels were driven by paddles, but by this time they are rowing with oars and with their backs turned to the bow of the vessels. The vessel is steered with one or two rudders that are really enlarged paddles/oars, but they are ingeniously mounted on pillars at the stern and slung in heavy ropes and have a bar which foreshadows the later use of the tiller. The vessel is already provided with a mast and with a square sail mounted on upper and lower yards. The sail is raised by hoisting the upper yard. It is controlled by ropes, corresponding in a general way with halyards, which raise the yard and braces, which trim it. Since these vessels were shallow in draft and without a keel, and since the paddle-rudder was not very effective, we know that the sail could be used only in favorable winds.

A distinctive feature of the Egyptian vessel was the elaborate and heavy rope truss supported on two crutched poles. A double sling of ropes forming the truss passed around the raised bow and stern of the vessel. It gave longitudinal strength and prevented the ends of the ship from sagging and the midship section from being thrust upward (hogging). This truss is an ingenious device. It does not necessarily reflect lack of skill on the part of the Egyptian shipbuilders but was probably due to the fact that timber was and is scarce in Egypt. There were no trees large enough and strong enough to provide proper keel pieces. Lack of timber may also be the reason why Egyptians later more or less withdrew from the sea and left sailing and trading to the Minoans of Crete, the Phoenicians and the Greeks.

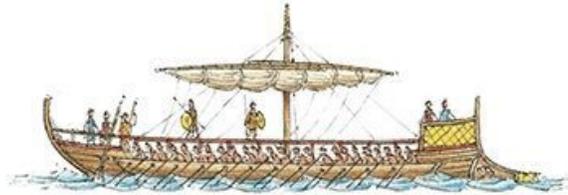
## Ships on Early Maps Part Two

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SOME OF THE SHIPS PYTHEAS MAY HAVE USED  
TO TRAVEL TO BRITAIN AND BEYOND



A trading vessel of the type used by merchants all over the Mediterranean. It was steered by large paddles at the stern.



A Greek warship powered by a sail and rows of oars. The bronze ram at the bow was for attacking enemy vessels.



A cargo-carrying riverboat used for trading on the many large rivers flowing into the Mediterranean.



A powerfully-built Celtic vessel: its tough construction enabled it to survive in the stormy waters of the Atlantic.

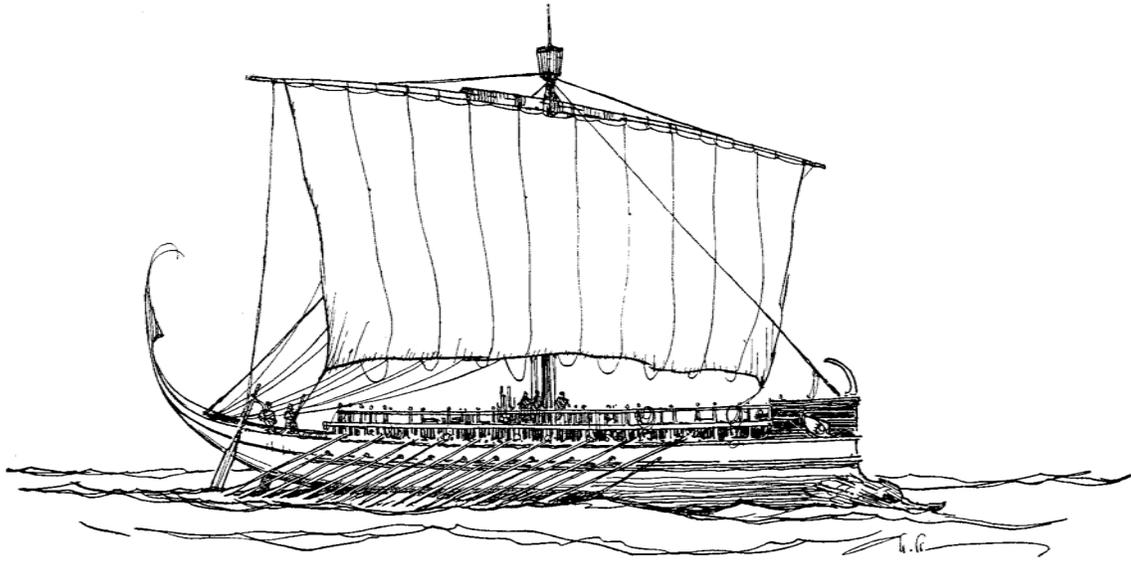


A local skin-covered curragh or coracle used by the Celts of Ireland and northern Britain.

Illustrations by Stephen Biesty

## Ships on Early Maps Part Two

5.25



*A Greek Bireme*

A long vessel for rowing or sailing with two banks of oars. In vessels generally similar to this the Greeks and Romans made war, and rulers and military leaders sped on distant errands. Adventurous navigators poked the decorative beaks of such ships into mysterious and unfrequented ports of the Atlantic coast of Europe.

This picture shows a characteristic classical ship. Larger vessels were built but the accounts of ships with many banks of oars are fanciful exaggerations or else we have a wrong understanding of what was meant by a bank of oars. As ordinarily understood, such ships would be mechanically impossible. The Greeks and Romans also had a rounder-hulled, heavier-built cargo vessel. The cargo vessel depended more on its sails and the long war vessel more upon its oars. But sail and oar were used together on most Mediterranean vessels up to the time of the Renaissance. It was probably in the cargo vessel that most classic exploration to the east through the Red Sea to India was carried out. But Nearchus who sailed for Alexander probably had a fleet of long galleys. The vessel which Pytheas drove around England was probably also of this type, for Pytheas had to be ready to fight the Carthaginians or run from them. Antony sat on the raised forward deck of such a vessel when he sped from the battle of Actium to join Cleopatra.

The sail was used only for travel from place to place with favorable winds. It was lowered and the ships were maneuvered altogether with oars in a naval engagement. Note the decorative boar's head or rostrum at the bow used for ramming enemy vessels. Note also the eye painted on the bows, to protect the ship from dangers and to seek out the way. The Chinese had a similar superstition. They painted, and still paint, eyes on the bows of their junks. In European vessels this feature was later cut through and became the hawse hole, through which the anchor-cables pass. We still speak of the "eyes of the ship."

These three ships were also known more popularly as a *galley*. An oared vessel with a low profile and relatively high length-to-beam ratio, usually 6: 1 or higher. Propulsion came from oars on either side of the hull and, alternately, from sails. The arrangement of oarsmen took on varied configurations over time with one of more banks of oars and with one or multiple rowers per oar. Used extensively in the Mediterranean from classical Greece

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to the 19<sup>th</sup> century, the low freeboard made the type vulnerable to the high seas of the open ocean.

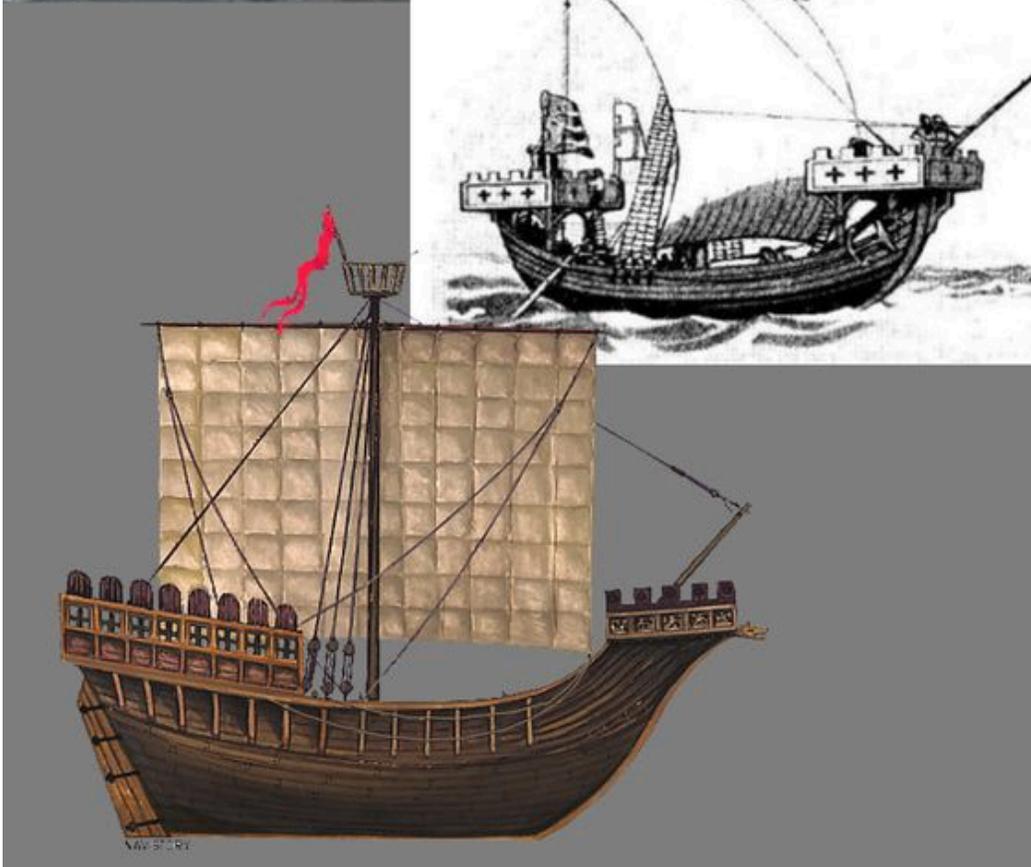
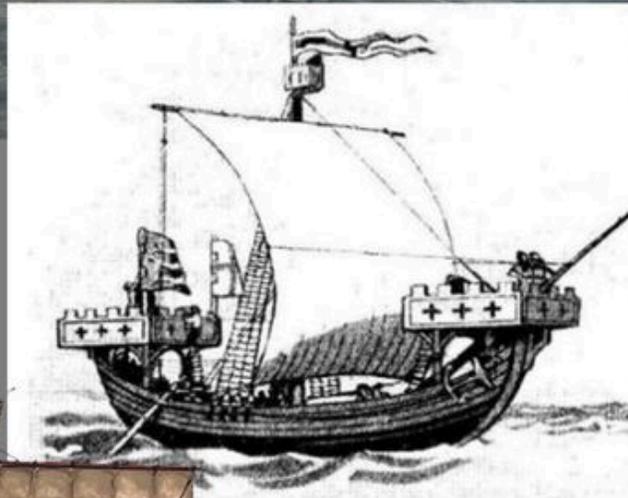


**Cog:** A flat-bottomed coastal vessel with Celtic roots, a type of ship that first appeared in the 10<sup>th</sup> century, and, with the addition of a keel in the 12<sup>th</sup> century, became a sea going ship and over time the principal bulk carrier of goods in northern Europe. It was tubby with a length-to-breadth ratio of 3:1 or less. It had a single mast with a single square sail, sharply angled posts at the bow and stern, and a deep hold that gave it considerable carrying capacity. *Cogs* were generally of oak, which was an abundant timber in the Baltic region of Prussia. Creation of the Hanseatic League in 1241 brought about a massive increase in maritime trading activity in northern Europe. This prosperity stimulated shipbuilding and revolutionized design of the merchant ship and later the warship, as seen in the development of the *Hansa Cog*. In configuration, the *cog* resembled a medieval round ship. It was broad in beam, keeled, and clinker-built (the outer boards overlapped each other). It had a rounded bow and stern, and the rudder was located in the center of the stern. The *cog* had a square sail mounted amidships. They ranged from about 15 to 25 meters (49 to 82 ft) in length with a beam of 5 to 8 meters (16 to 26 ft), and the largest *cog* ships could carry up to about 200 tons. Later versions displaced up to 600 tons and were up to 100 feet in length, with two smaller masts fore and aft. By 1304 Denmark had converted its entire fleet of over 1,000 longships to *cogs*. In time, however, the *cog* gave way to more specialized *carracks* and *galleons*. Its high speed and large cargo capacity made the cog the dominant merchant vessel of the North Sea for 200 years. Amerigo Vespucci's and Ferdinand Magellan's ships were *carracks*.

*A modern reconstruction*

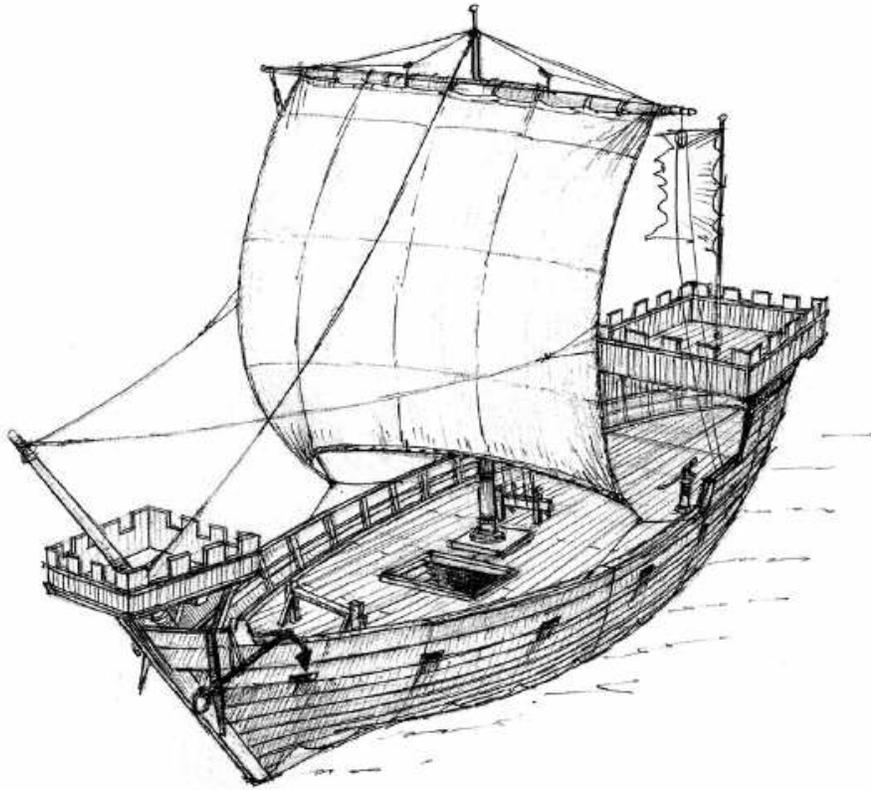
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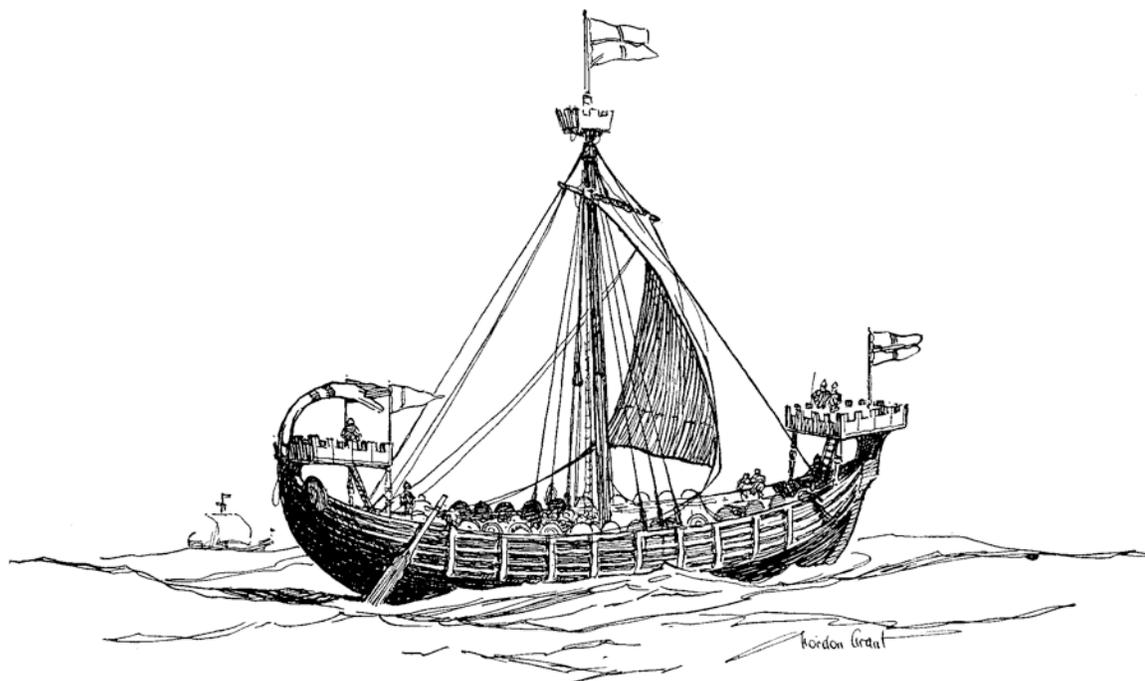
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*A modern reconstruction*

## Ships on Early Maps Part Two

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*The European Medieval Ship*

This drawing shows the characteristic ship of the later Middle Ages. To be more exact, this is a ship of the north European ports at about the time of the Crusades. It was in a fleet of vessels something similar to this that Richard the Lion-hearted sailed for Europe and the Holy Land. It is true that we have accounts of larger vessels such as could carry a captain, 15 sailors, 40 knights with their horses, 40 men-of-arms, servants and stores. But the larger ships were exceptions and this example is the characteristic type that probably changed little over a period of many years. No exact plans and no remains of medieval ships exist. Our knowledge of this type comes from tapestries, a few old drawings and the seals of the ports of the English and French coast. Cæsar gave us our first description of the vessels of the Atlantic coast. These were the ships of the Veneti of Brittany. These vessels were round and bowl-like, with shallow draft and rather flat bottoms so that they might be drawn up on beaches. They had a marked sheer, that is they swept upward at the bow and stern. They were built of unusually heavy timbers and planking; they depended upon sail and not upon oars. All of these characteristics are adapted to the heavy weather and rough seas of the Atlantic. The ships made an impression upon Cæsar because they contrasted with the lower, leaner, lighter *galley*s of the Mediterranean waters.

The medieval vessel preserved many of the characteristics of the ship of the Veneti. In the earliest ships the curious, raised structures that we see at the bow and stern were not permanent. These ships were mostly cargo and transport vessels. The European nations then had no Royal Navies. When war threatened, the merchant ships were taken over and these structures were erected on them and they became Naval vessels. The two raised platforms became the stations of the fighting men, the space under them served as shelter. Later they became part of the permanent structure of ships. They were known as the after-

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castle or summer castle and the forecastle. It is from the latter word that we derive our modern "fo'c'sle."



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**Caravel:** a small, highly maneuverable sailing ship developed in the 15<sup>th</sup> century by the Portuguese to explore along the West African coast and into the Atlantic Ocean. A fishing boat with north African roots which was modified for use in the Atlantic and became popular for 15<sup>th</sup> century Portuguese voyages of exploration. It was long relative to its width and had little or no upper-works. Beginning with one or two lateen rigged masts by the 16<sup>th</sup> century bigger *caravels* came from Iberian shipyards with three masts, all with lateen sails,

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or with four masts, three with lateen sails and the foremast with a square sail. The lateen sails gave it speed and the capacity for sailing windward (beating). A light, usually lateen-rigged sailing ship used by the Portuguese, as well as Spanish, for about 300 years, beginning in the 15<sup>th</sup> century, first for trade and later for voyages of exploration. They were usually built with a double tower at the stern (the *aftercastle*, or *sterncastle*) and a single tower (or none) in the bow (the *forecastle*). Displacing 100 to 300 tons *caravels* were generally rigged with three masts and a bowsprit, lateen sails and square sails on the foremasts and a spritsail. Top speed for a *caravel* was about 8 knots; the average was 4 knots for 90-100 miles in a day. Columbus' two ships, the *Pinta* and the *Nina* were *caravels*.



Caravela latina



Caravela redonda

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Although the *Santa Maria* - the flagship of Columbus' trio of ships - and the ships of Magellan were never recovered and there is no detailed description of them, reconstructions have been made of the kind of ship we know them to have been. The *Santa Maria*, for example, was a *caravel*, a class originally used for coastal trade and short trips. It was the kind of ship that was surely more often used for the initial exploration that helped gather data for *portolani*. However, after design improvements the *caravel* was found to be also capable of much longer trips. Because the early *caravels* that made transatlantic voyages were built in Europe, we might think of them as being constructed only there. However, Francisco Pizarro, Vasco Balboa, and other explorers built small versions of *caravels* in the Americas.

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*The Santa Maria*

No one knows the exact individual plan of Columbus' flagship, *Santa Maria*. But we know that most of the current paintings, drawings and models of the *Santa Maria* give a wrong impression. They are based on incorrect drawings and reconstructions created at the time of the Chicago-Columbian exposition. They show a vessel of a type that did not develop for a hundred years after Columbus. Gordon Grant's drawing shows a vessel which he believes, after long study, is characteristic of Columbus' time - just such a ship as the navigator would be likely to secure for his type of venture. Note the round stern, the relatively simple deck structure aft, the simplicity of the sail-plan. It is likely that the *Santa Maria* did not even carry a main-topsail, and she is shown here without this feature.

Note that the raised structures forward and aft have now become a permanent part of the ship and that this is the first of our European vessels shown to have a large vertical rudder permanently attached to the stern.

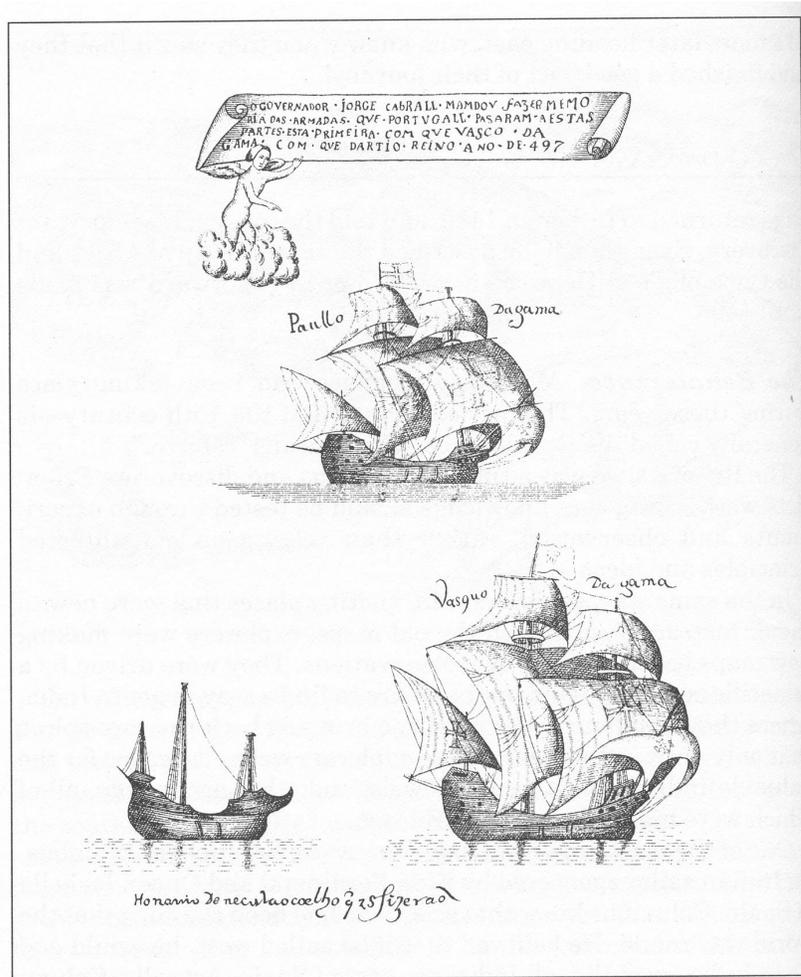
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*Square-rigged ship called a não like the one Vasco da Gama used to sail around Africa*

## Ships on Early Maps Part Two

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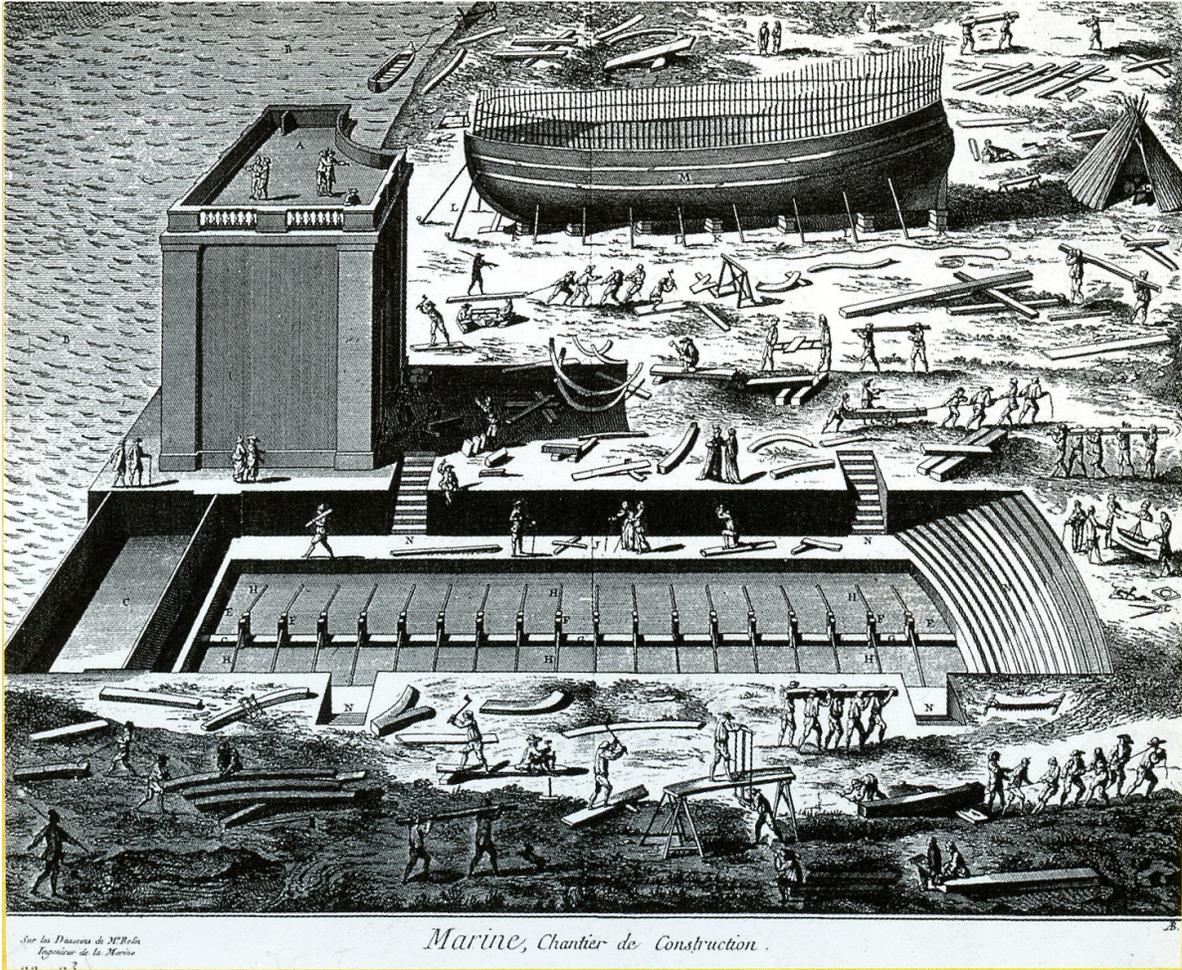


Plate from the *Encyclopédie* of Denis Diderot and Jean d'Alembert, Navy shipbuilding yard

**Carrack:** A large sailing ship developed in the 14<sup>th</sup> century originally with two masts, the main carrying a single square sail and the mizzen carrying a lateen sail. With a deep and capacious hull it was suited for voyages between northern and southern Europe. The version with full-rig was probably first built in Iberia around 1400. It was more efficient and reliable and served the same routes as well as new ones between Europe and the Indian Ocean, that into the seventeenth century. It had a deep hold, a length-to-breadth ratio around 3:1, and often high castles.

Developed from the single-masted *cog*, the *carrack* was first used for European trade from the Mediterranean to the Baltic and quickly found use with the newly found wealth and status of the trans-Atlantic slave trade. The later *carracks* were square-rigged on the foremast and mainmast and lateen-rigged on the mizzenmast. A large European sailing vessel of the 14<sup>th</sup> to 17<sup>th</sup> centuries similar to a *caravel* but square-rigged on the foremast and mainmast and lateen-rigged on the mizzenmast. In its definitive form, the *carrack* was a large sailing ship with a deep draft and a high freeboard to accommodate larger cargo capacity and a sail plan developed on three masts that responded to the increased displacement of the ship with greater sail area.

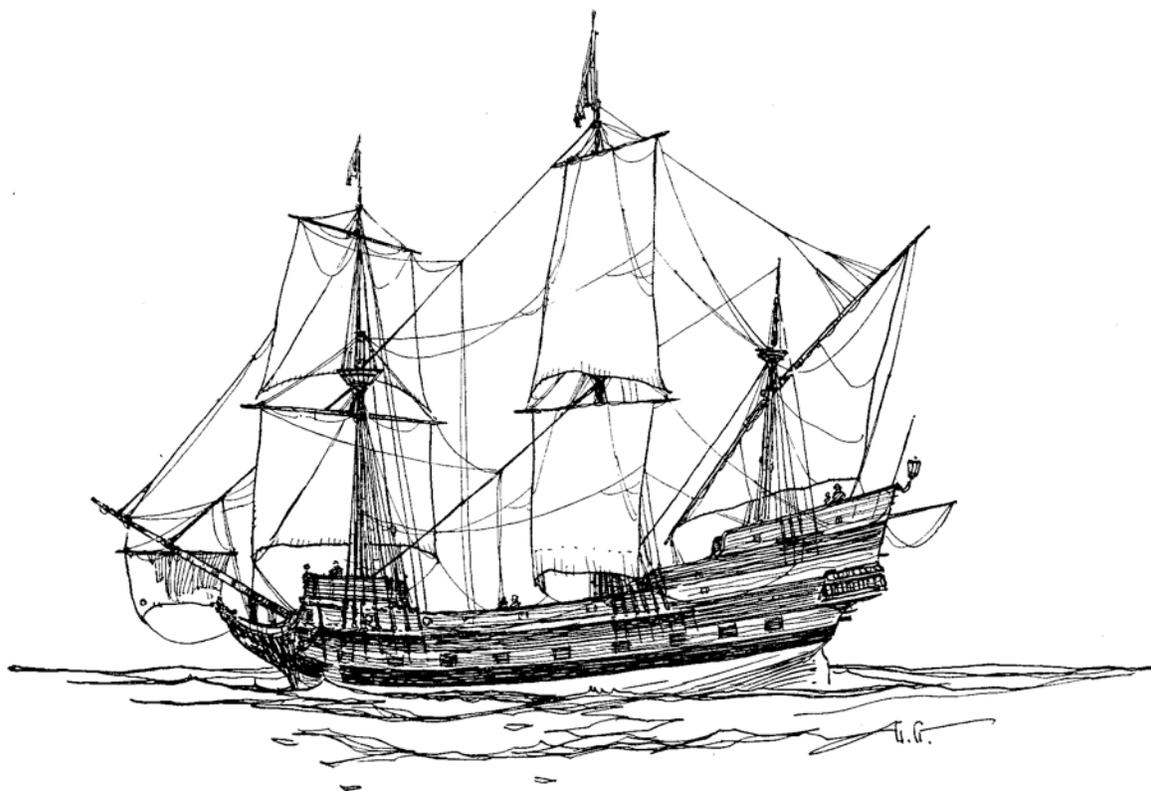
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## Ships on Early Maps Part Two

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*Drake's Golden Hind*

We do not have the exact plans for the *Golden Hind*, the first English vessel to pass around the world. Our drawing shows a ship characteristic in hull and in sail-plan of the south English ports of the middle 16<sup>th</sup> century. She is about the size that the *Golden Hind* must have been.

It is curious that we are so ignorant about the *Golden Hind*. We know that she was originally called *Pelican* and that when she brought Drake back from his voyage they thought well enough of her to build a special dry-dock of brick work at Deptford. In this she was preserved and exhibited but nobody thought well enough of her at the time to make a drawing of her or to preserve her exact measurements. We can guess at her form from the dimensions of the dock in which she rested. Her keel was probably 47 ft. in length; from stem to sternpost, she was 60 ft.; length over all 75 ft.; breadth 19 ft.; depth 8 to 10 ft. She was probably not much over 100 tons, though she once paid dues at a port on 150 tons.

We must not however be deceived by her small size into underrating her. Note how her hull and her sail-plan begin to forecast the character of later sailing vessels. See how the area of her sails has been increased over the vessel of Columbus' time. Despite the fact that the main-topsail is narrow, high and unhandy, the general sail area is broken into more easily managed pieces. The masts have shot up in height and the standing rigging - the shrouds and stays have been developed on an orderly plan to take the increased strain.

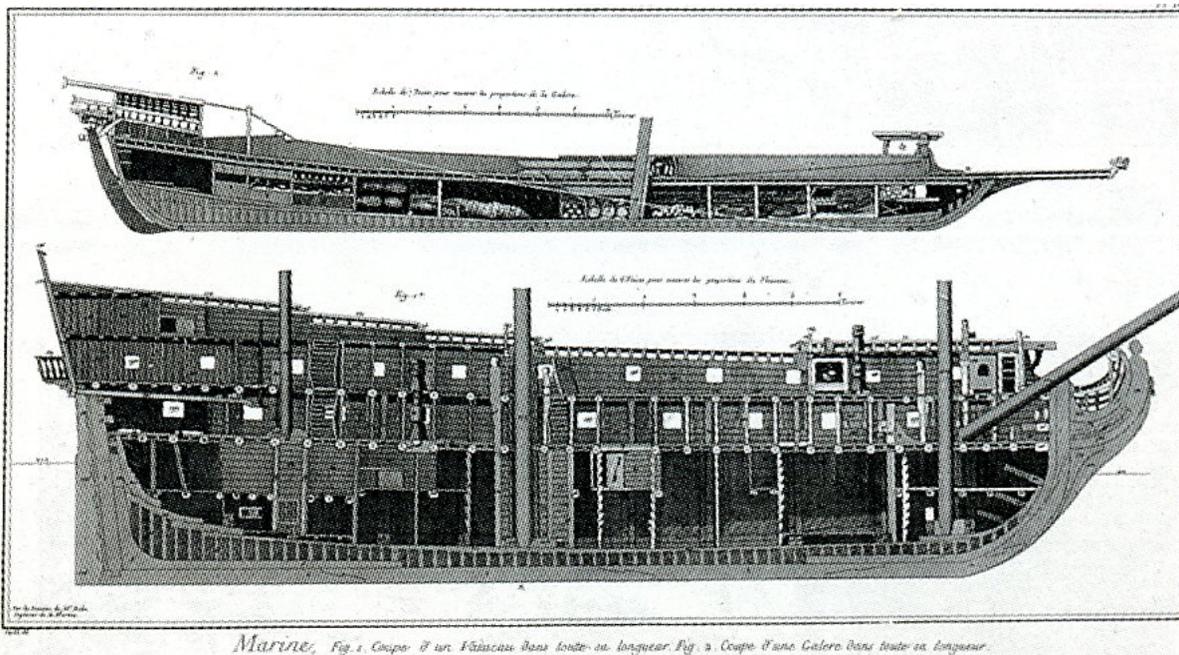
The sail on the mizzen- or after-mast is known as a lateen sail from the fact that it is taken from the rig of small vessels used chiefly in the Mediterranean among the Latin nations. In later ships the part of the long yard and of the sail that projected forward of the

## Ships on Early Maps Part Two

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mizzen-mast was cut off and in this way there grew up the gaff and the spanker -the fore-and-aft sail which found a place in the ship rig.

On the *Golden Hind* the mizzen and the little water-sail, which is seen hanging under the bowsprit, were used chiefly to keep the ship's head into the wind and for other steering purposes. They assisted the rather limited control provided by the old-fashioned rudder with its short range of action. Note the round holes cut in the corners of the spritsail. These were to let water out of the sail when the vessel dipped her bows in the long Atlantic swells.

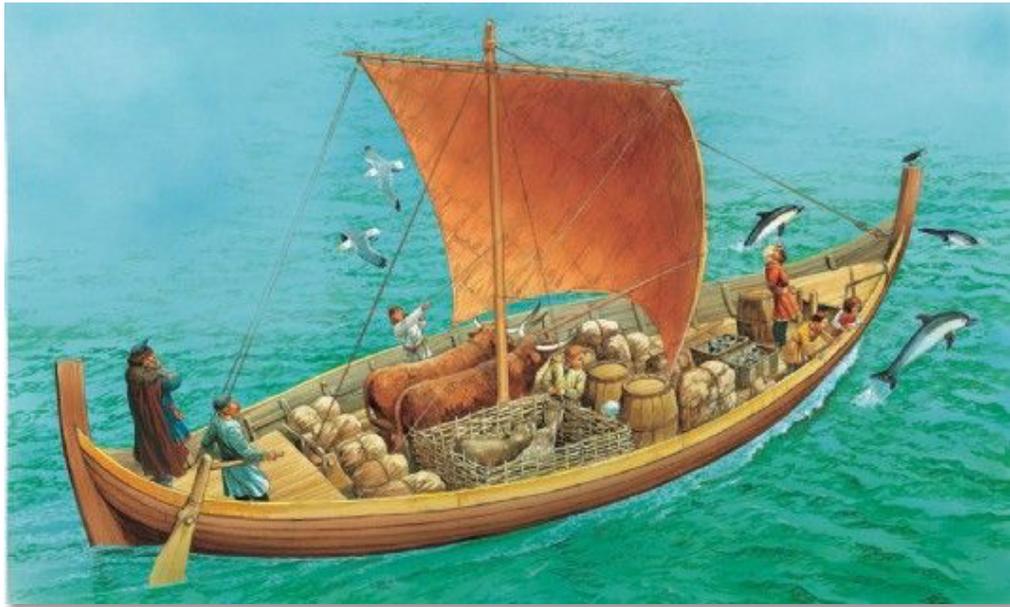


*Plate from the Encyclopedie of Denis Diderot and Jean d'Alembert.  
Navy: longitudinal cross-section of a ship and a galley.*

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**Knarr:** a type of Norse merchant ship used by the Vikings. The *knarr* (Old Norse: *knørr*, plural *knerrir*) was constructed using the same clinker-built method as longships, karves, and faerings. *Knarr* is the Old Norse term for a type of ship built for long sea voyages and used during the Viking expansion. The *knarr* was a cargo ship; the hull was wider, deeper and shorter than a longship, and could take more cargo and be operated by smaller crews. They were built with a length of about 16 m (54 ft), a beam of 5 m (15 ft), and a hull capable of carrying up to 24 tons. It was primarily used to transport trading goods like walrus ivory, wool, timber, wheat, furs and pelts, armor, slaves, honey, and weapons. *Knerrir* were also used to supply food, drink, weapons and armor to warriors and traders along their journeys across the Baltic, the Mediterranean and other seas. They routinely crossed the North Atlantic carrying livestock such as sheep and horses, and stores to Norse settlements in Iceland, Greenland and Vinland as well as trading goods to trading posts in the British Isles, Continental Europe and possibly the Middle East. *Knerrir* may have been used in colonizing, although a similar small cargo vessel (the *byrthing*) is another possibility.



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## Ships on Early Maps Part Two

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*The Viking Ship*

We know very well what the Viking ship looked like, how she was built, and how she was managed. The long ships were called "*Serpents*." Several examples of Nordic vessels of early times have been buried in Norway and later dug up and reconstructed. When a Viking king died he was buried in his ship. One of these is the *Gokstad* ship now in the museum of Oslo, Norway. This ship dates from the 10<sup>th</sup> century, but we know from other drawings and relics that the general style of the vessel differed little for hundreds of years before and after this date. It is on the ship that the present drawing is based. It was in such a vessel that Eric the Red and Leif and Karlsefni made their voyages.

This ship is primarily a rowing vessel. The beautiful easy lines of the hull show that she was designed to be driven. The sail-plan is the simplest possible and could be used only with favoring winds. The ship is open throughout save for the small raised platform on deck in the extreme bow and stern. The mast was set in such a way that it could be taken down in severe weather or at night, when it was set up in props and served as a ridge-pole for the sail or some other piece of canvas draped over it to form a tent. This was the only protection against weather that this ship provided.

Note the use of the rudder-paddle mounted at the quarter on the right side of the vessel. Thus this side was known among the Nordic peoples as the *steer-board*, or as we would say, *starboard* side of the ship. Standing at the tiller the helmsman faced this side; the other side of the vessel became therefore the *boekboard*, or backboard; in French, *baboard*; and in English, *larboard* side of the ship. In approaching a landing with this ship the rudder would preferably be kept on the off-shore or deep-water side of the ship. It is likely therefore that this feature would account also for our other name for the left side of the vessel, that is, the "*port*" or shoreward side.

## Ships on Early Maps Part Two

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**Dhow:** the generic name of a number of traditional sailing vessels with one or more masts with settee or sometimes lateen sails, used in the Red Sea and Indian Ocean region. Historians are divided as to whether the *dhow* was invented by Arabs or Indians. Typically sporting long thin hulls, *dhow*s are trading vessels primarily used to carry heavy items, such as fruit, fresh water, or other heavy merchandise, along the coasts of Eastern Arabia (Arab states of the Persian Gulf), East Africa, Yemen and coastal South Asia (Pakistan, India, Bangladesh). Larger *dhow*s have crews of approximately thirty, smaller ones typically around twelve. *Dhow* ships are known as innovative sailing vessels that have a raised hull and a sharp pointed bow. Made from wood, *dhow*s usually have minimum two triangular sails. Many *dhow*s even have single large sail that not only facilitate easy sailing but also provide excellent power to the boat. These large sails are called *lateens*. The timber that was used in construction of these *dhow*s was mainly mahogany or ekki, which is found in the forests of Africa.

*Dhow* was the name that westerners gave to the ships they saw in the Indian Ocean. The *dhow* is a very old type of ship; they have been in use since the Greeks were in power. No one knows who originally designed the *dhow*. Arab merchants and Indian traders used these ships to navigate the coasts of Africa and the Middle East. Their hulls were stitched together and their sails were a triangular (lateen) shape. Early versions of the vessel typically were pointed at both ends, but later versions had a square stern. The *dhow* was not designed for combat or deep-sea sailing. Its primary uses were fishing and trade, remaining close to shore.



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*"Lateen"*, like *dhow* itself, is a word based on a misunderstanding. Western Europeans first saw this kind of sail on ships from the eastern Mediterranean at the time of the Crusades. They called it a "Latin sail"; and the word reached the English as *lateen* because the English heard it from the French, and in French a sail is feminine: hence *une voile latine*. But the sail was not really Latin. It had reached the Byzantine Empire from the south and might better have been called a Muslim sail, because it existed on all the coasts the Arabs conquered after the time of the Prophet Mohamed.

The ancient Greeks and Romans did not have it, nor did the Egyptians, but it is believed to have been in use in the Arabian seas since at least the fourth century BC. And since it spread all over the Muslim shores, it seems likely it was spread by the early Muslim conquerors and had its origin in Arabia like the faith itself.... Whoever [its] inventors were, the lateen was a momentous idea, for it was the earliest sail that enabled men to beat against the wind.

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The essence of sailing against the wind is that the leading edge of the sail should be attached to something solid: the mast, a spar or a stay. A square sail, hung from a horizontal yard, can only be set at a limited angle to the wind before its leading edge is taken aback. But if the yard is tilted down toward the bows, the yard itself becomes the leading edge, and the sail can be set much closer [to the wind].

The Mediterranean lateen is a complete triangle, but the Arab lateen is not: Its forward corner is cut off, leaving a short unsupported vertical edge, a luff. This has been taken to mean that the Arab sail is an intermediate stage in the evolution, as if the Arabs had tilted their yards that far and never gone any farther.

The lateen has a second advantage over the square sail: It means you can set a much bigger sail on a mast of the same height, and the Arab luff makes the sail bigger still. Suppose the mast is 65 feet [20m] above the deck, which is a normal height for a big dhow: The forward part of the yard cannot be more than the effective height of the mast, because the whole yard has to be swung up vertically when the ship goes about. The after part has to be longer and heavier; altogether the yard would be about [37m] feet long. But in a triangular sail, the forward end of the yard is supporting very little canvas; by cutting off that corner you can add several hundred square feet to the [area of] sail [supported by the after part of the yard]. The luff has a hefty rope in it and is held bar taut by the weight of the yard, so it makes an effective leading edge. A *dhow* can set over 7000 square feet of canvas [650m<sup>2</sup>] in a single sail on a single 65-foot mast, much more than any other working rig that has ever been devised.

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# Ships on Early Maps Part Two

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## Ships on Early Maps Part Two

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**Chinese Junk:** The term “junk” may be used to cover many kinds of boat—ocean-going, cargo-carrying, pleasure boats, and live-aboards. They vary greatly in size and there are significant regional variations in the type of rig, however they all employ fully battened sails. The term *junk* (Portuguese *junco*; Dutch *jonk*; and Spanish *junco*) was also used by European explorers for large unrelated native Austronesian warships, like the Philippine *karakoa* and the Maluku *kora kora*. They are a type of ancient Chinese sailing ship that is still in use today. Junks were used as seagoing vessels as early as the second century CE and developed rapidly during the Song dynasty (960–1279). They evolved in the later dynasties, and were used throughout Asia for extensive ocean voyages.

The historian Herbert Warington Smyth considered the Junk as one of the most efficient ship designs, stating that "As an engine for carrying man and his commerce upon the high and stormy seas as well as on the vast inland waterways, it is doubtful if any class of vessel... is more suited or better adapted to its purpose than the Chinese or Indian *junk*, and it is certain that for flatness of sail and handiness, the Chinese rig is unsurpassed."

The structure and flexibility of Junk sails make the *junk* fast and easily controlled. The sails of a *junk* can be moved inward toward the long axis of the ship. In theory this closeness of what is called sheeting allowed the *junk* to sail into the wind. In practice, evidenced both by traditional sailing routes and seasons and textual evidence Junks could not sail well into the wind.

Classic *junks* were built of softwoods (although after the 17<sup>th</sup> century of teak in Guangdong) with the outside shape built first. Then multiple internal compartment/bulkheads accessed by separate hatches and ladders, reminiscent of the interior structure of bamboo, were built in. Traditionally, the hull has a horseshoe-shaped stern supporting a high poop deck. The largest *junks* ever built (420 feet) were possibly those of Admiral Zheng He, for his expeditions in the Indian Ocean. According to Chinese sources, the fleet for Zheng's 1405 expedition comprised nearly 30,000 sailors and over 300 ships at its height.

The Chinese *junk* served to extend the range of European exploration when it carried travelers like Oderic of Pordenone, Friar John of Monte Corvino and Marco Polo on their Asian travels in the 12<sup>th</sup> century. The Chinese were from time immemorial the great navigators and traders in the eastern seas. In Polo's day their great vessels were plying regularly to Sumatra and Java and to the farther islands. There is even the controversial voyages of Zheng He (also spelled Cheng Ho) who commanded seven expeditions involving hundreds of ships, the largest the world had ever known. He sailed from the waters of the East China Sea to the Indian Ocean and to the East African coast. Some historians speculate that he may have circumnavigated Africa long before the Europeans (1405-1433). As a result of these voyages, China expanded diplomatic and commercial relations with more than 30 countries. There are many different kinds of *junks*, small ones for the rivers and canals, and great large structures that dared the sea. This drawing shows just one of these types. The basic form of the hull and rig have persisted to the present day. Even the use of rattan sails, or sails made of matting have survived.

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*The Chinese Junk*

Some of the seagoing Junks of Marco Polo's time were extremely large. Most of the European travelers to Asia were impressed by them. They carried 200 to 300 men as crew. The hull was divided up into apartments occupied by important travelers, their women and their retinues of servants. There was a place as well for cargo and stores. These vessels were often elaborately decorated outside as well as within. Many of them carried boxes of earth in which plants and flowers flourished. They may have seemed unwieldy and slow, but they were undoubtedly very capacious and very strongly built.



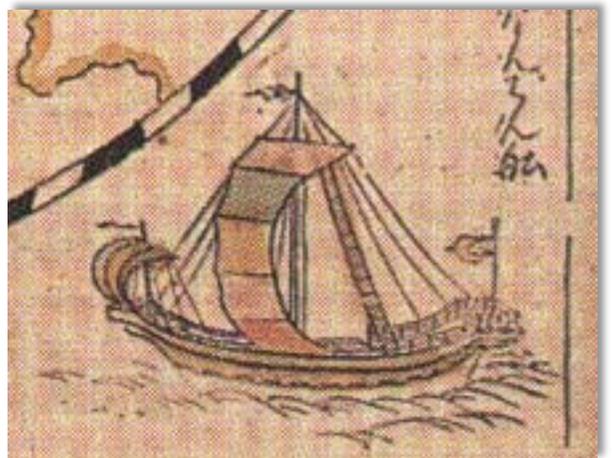
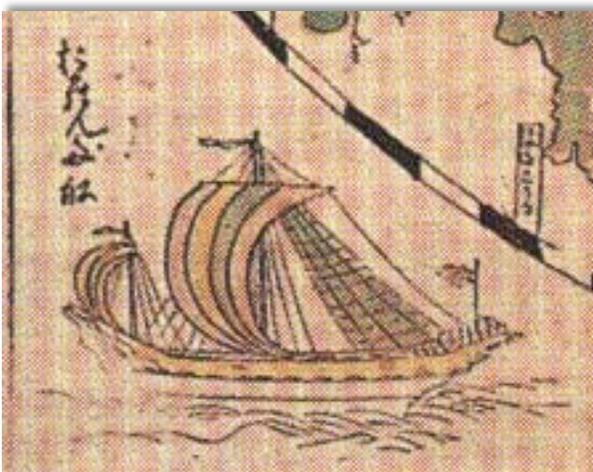
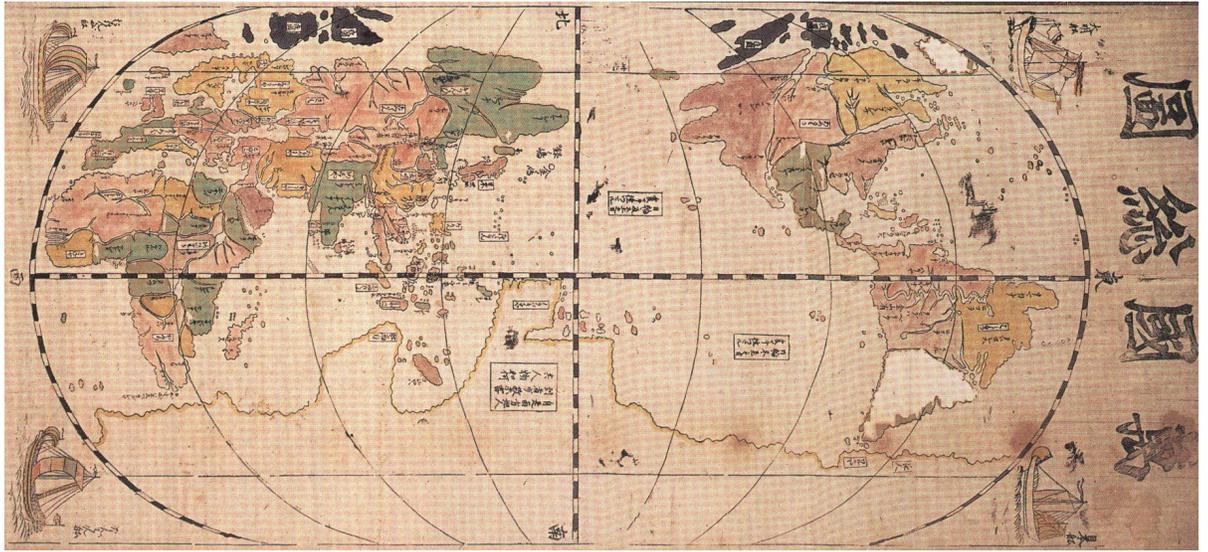
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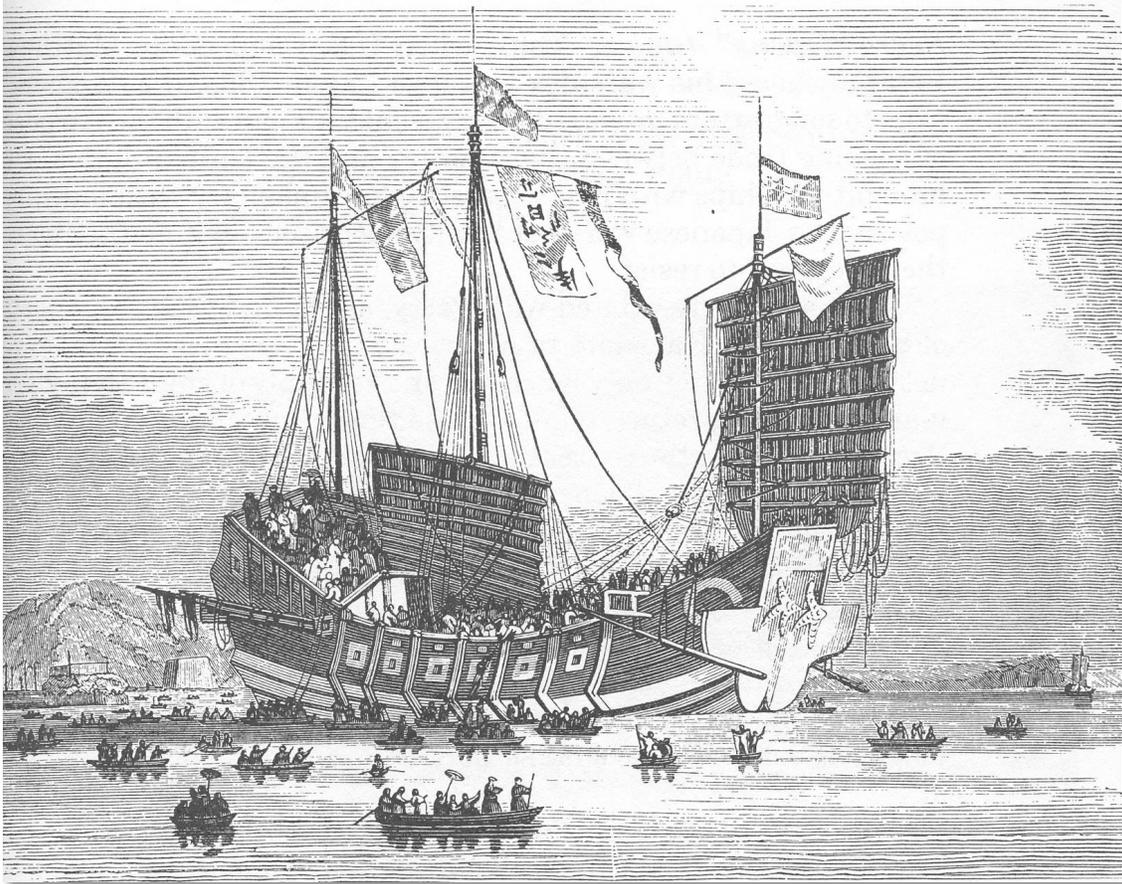
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205 T-O Noahic map from Jean Mansel's *La fleur des histiores*, Lambert of St Omer

207.13 Beatus *St. Sever mappamundi*, 1060

207.14 Beatus *El Burgo de Osma mappamundi*, 1086

223 *Psalter mappamundi*, 1225

224 *Ebstorf mappamundi* 1235

225 Matthew Paris' *Itineraries*, 1250

226 *Hereford mappamundi* 1290

232 Ranulf Higden, 1350

235 *Catalan Atlas*, 1375

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- 237 *Borgia mappamundi*, 1410
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- 248 *Genoese mappamundi*, 1457
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- 253 *Rudimentum Novitiorum*, *Map of Palestine*, 1475
- 253.2 Hanns Rüst *mappamundi*, 1480
- 322 Piri Re'is map, 1513
- 329.1 the *Miller Atlas*, 1519
- 365.1 South America by Evert Gijsbertsz in 1596
- 366 *Carta Marina*, Olaus Magnus 1539
- 378 Pierre Descelier's *Planisphere*, 1550; Guillaume Le Testu, 1555
- 379 *Universalis Cosmographie*, Giacomo Gastaldi, Paolo Forlani, 1560
- 381 Sebastian Munster's map *Totius Africae tabula*, 1546
- 381.2 the *Vallard Atlas*, 1547
- 395 *Queen Mary I Atlas* by Diogo Homem, 1558
- 400 Diego Gutiérrez map *Americae sive quartae orbis 243arties nova*, 1562
- 406 Gerard Mercator's *World Map*, 1569
- 410.6 *Russiae, Moscovia et Tartariae Descriptio* by Abraham Ortelius, 1598
- 410H2 *Chinae olim Sinarum regionis, nova descriptio* by Ortelius/Georgio, 1598
- 432 Cornelis de Jode's map *Brasilia et Peruvia*, 1593
- 436.1 A.F. Langren/ Linschoten's map of South America, 1595
- 444.1 G. Mercator/J. Hondius' maps *Iaponia* (1620) and *America* (1606)
- 482 G.J. Blaeuw's 1673 map *Nova et Acurata Totius Americae*
- 488 Vincenzo Coronelli's 1690 map *America Settentrionale . . .*



# Ships on Early Maps Part Two

5.25

