
Document 1580

A short treatise on the evolution of the galleon during the 14th, 15th and 16th centuries

Main source: Henry B. Culver's The Book of Old Ships (New York, Doubleday, 1924).

The ancestors of the galleons were round ships

Introduction.

It has been seen that the proportion of breadth to length was greater in the round ships than in the galleys. The long ships of early times were primarily the vessels of war, celerity of movement being of the utmost importance. The round ships, however, both of antiquity and of the Middle Ages, constructed to carry heavy cargos, were not exactly swift movers. Not that the round ships of these times were not sometimes used for fighting: quite the reverse. Although usually designed as carriers of freight and passengers, their greater bulk naturally enabled them to embark a greater number of armed men, and later, when cannon were introduced, to mount armaments disposed in a manner impossible in the long narrow rowing craft...

By a curious verbal transposition the square sails of the round ships were sometimes called in certain maritime localities "round" sails; while the ships themselves on account of the shape of their rectangular canvas were designated as "square" ships.

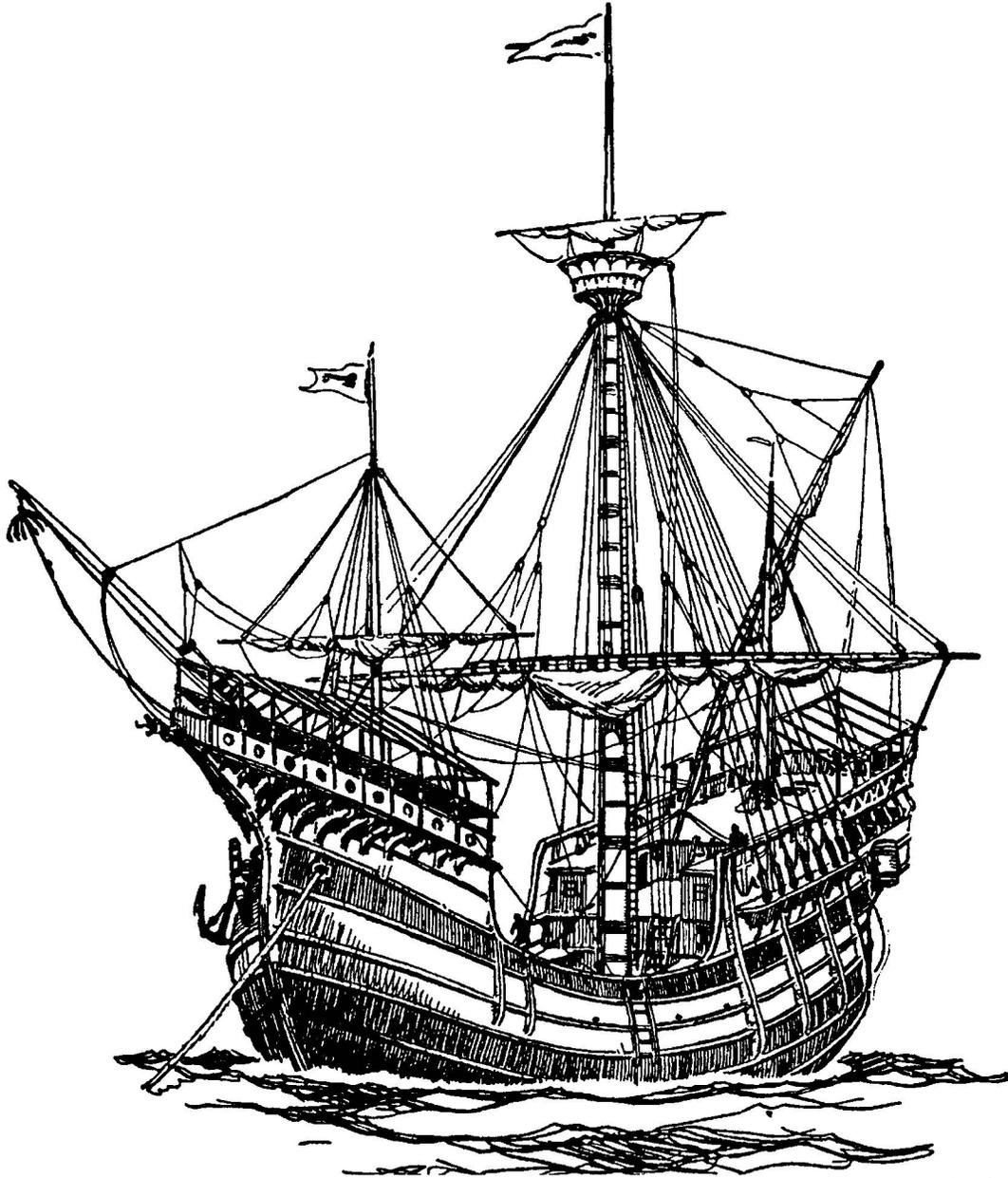
The carrack.

The word employed to designate the larger ships of an indeterminate period, which certainly embraced the 14th, 15th, and part of the 16th centuries, and probably a considerable period of time prior to the earlier date mentioned above, was carrack. Appearing in various forms such as *carraca*, *carraque*, and *kraeck*, the term is of doubtful origin.

During the period above mentioned it was essentially a vessel designed to carry large burdens, but often employed also for purposes of war, and was undoubtedly an

integral part of the shipping of all European maritime nations, although, as to some countries, it may not be possible to identify it by name with any particular ship.

The carrack differed from the *nef*¹ in that it was bigger, of greater draught, and had higher top-sides. Some were probably as large as 1,000 tons.



A typical northern carrack of the 15th century. With the round caravel of the Mediterranean Sea, the northern carrack was at the origin of the very successful hybrid design of the galleon. (From Culver's Old Ships, as drawn by Gordon Grant)

1 Ed. note: The *nao* of the Spanish and Portuguese, which was based on a round caravel.

The hulk.

One of the most interesting subjects in the study of the English language is that which concerns itself with the changes wrought by time and use in the meaning of words. The point is well illustrated in “hulk”. During the early years of the 16th century it was applied to a type of the larger-size vessel. This craft was round sterned, square tuckled, high pooped, covered with weak and ineffectual clench work or skids. The rig was substantially that of the ship of a corresponding date...

Today the term “hulk” signifies a vessel reduced to its poorest, meanest condition, the remains or carcass of a ship. At its prime, the hulk constituted one of the principal classes of cargo carriers of merchant vessels *par excellence*.

The galleon.

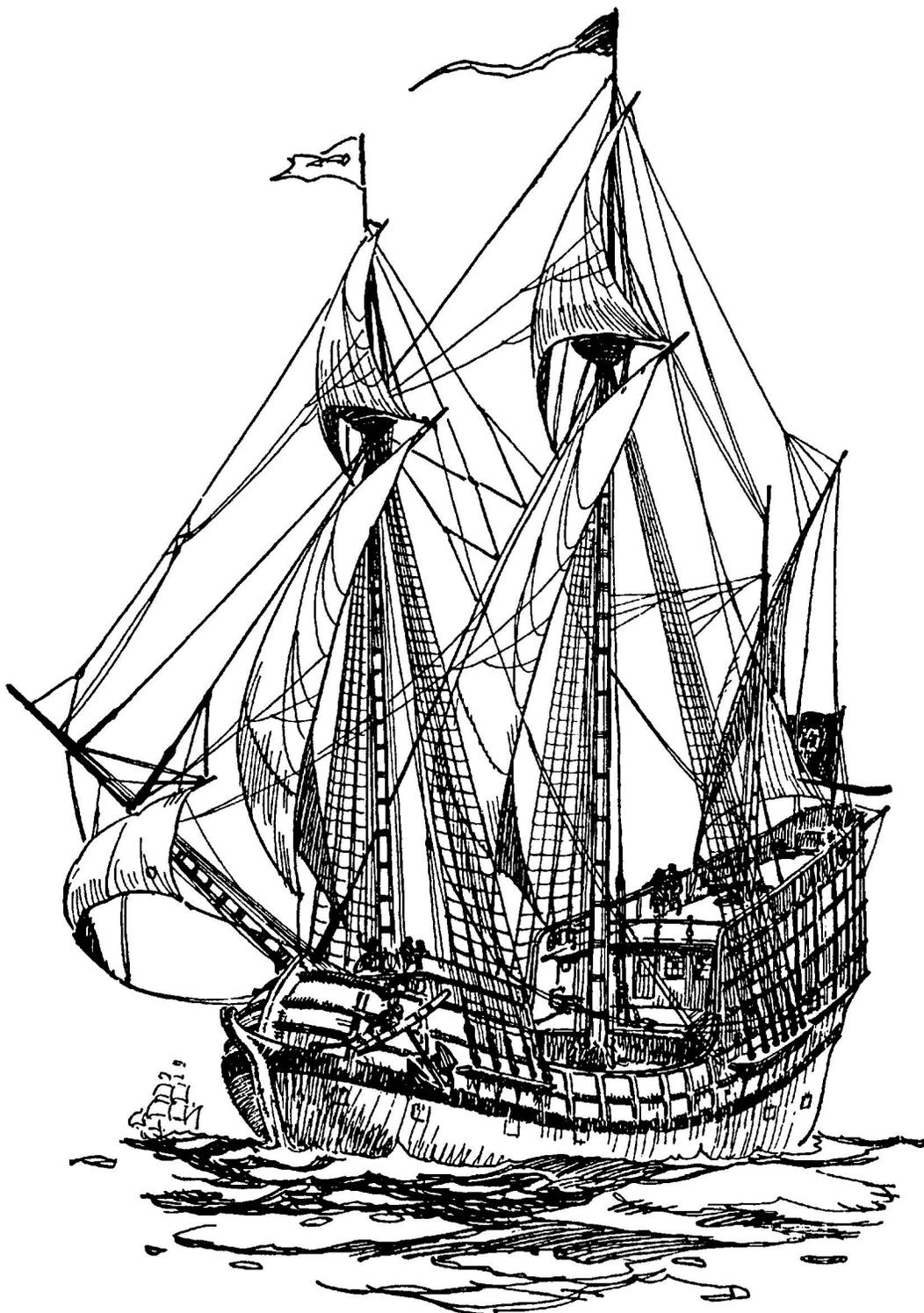
Almost every untutored person who sees a model or picture of an old-time ship calls it a galleon. The reason probably is that the galleon is the type of ancient vessel most exploited in romantic literature.

The galleon was primarily a war vessel. Her “great period” was during the 16th century and early years of the 17th century.

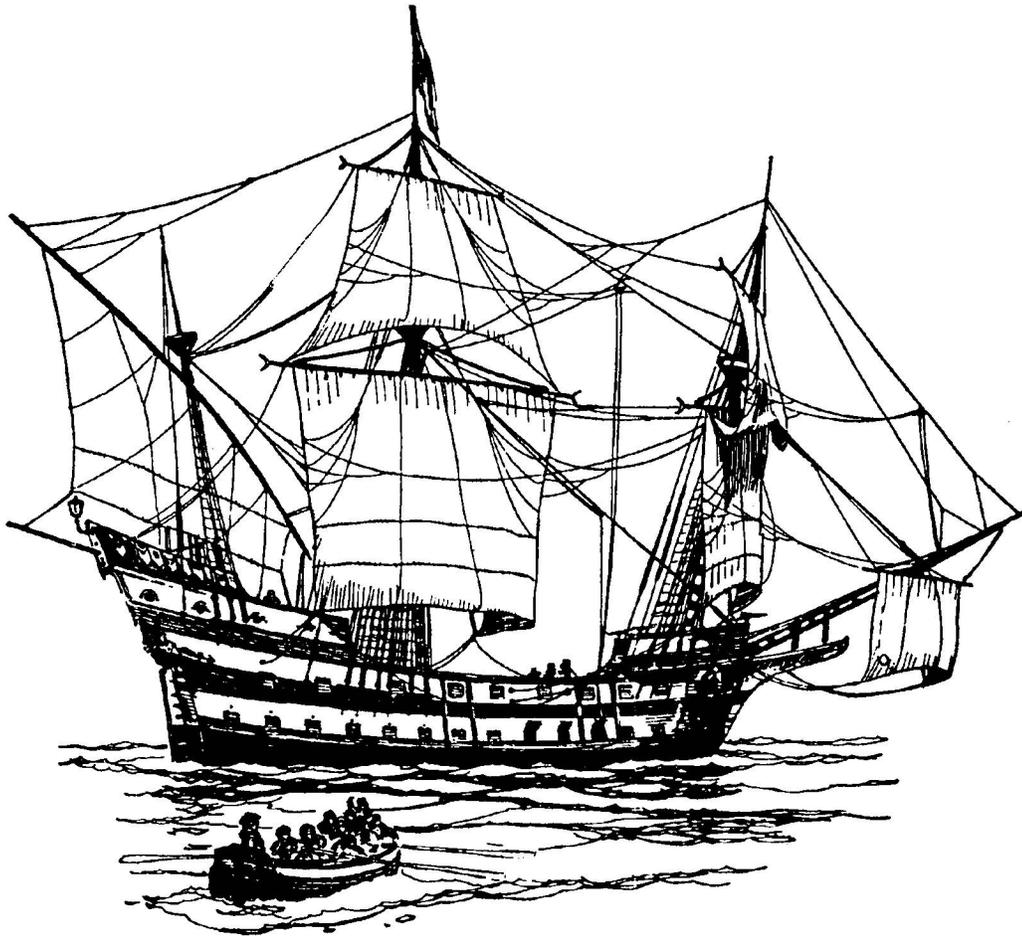
Originally less highly charged, i.e. with fewer decks than her companion the great or capital ship, she was more graceful of aspect and probably a better sailer. Another distinction claimed by some writers is that the decks of the galleon had three divisions or levels, while the great ship had four. One of the peculiarities of the galleon build was the form of her head. Instead of the long projecting forestage or forecastle of many of the larger ships of her time, the galleon’s forecastle ended at her stem, while a long slim beak, similar to that of the galley, projected far forward. The transom of the stern was square, the poop narrow. Clench work or skids strengthened the sides, but this characteristic, while retained in Spain, Portugal, and the Spanish Netherlands seems to have passed out of fashion in English ships at an early date.

The fore and main masts were equipped with round tops and carried courses and topsails. Galleons had also one and sometimes two lateen mizzens. Generally speaking, the running rigging did not differ, except in degree, from that of a much later date. Reef points did not form a part of the equipment.¹

¹ Ed. note: The vessels of the Spanish Armada of 1588 consisted not only of galleons and hulks, but also of pataches, pinnaces, galleys, galleasses, and even caravels equipped with oars.



A hulk, a cargo carrier of the late 16th century. (From *Culver's Old Ships*, as drawn by Gordon Grant)



A European galleon of the late 16th century. Its design evolved mostly from the carrack and the hulk. (From Culver's *Old Ships*, New York, 1924)

The Manila galleon.

The first of the Spanish galleon to cross the Pacific back and forth was the **San Pedro** in 1565.¹ The last one put into port in 1815.² Almost yearly, for the 250 years that lay between the above two dates, the galleons made the long and lonely voyage between Manila and Acapulco. No other line of ships has ever endured so long. No other regular navigation has been so trying and dangerous as this, for in its 250 years the sea claimed dozens of ships and thousands of men and many millions in treasure. As the

- 1 Ed. note: This section is a summary of William Schurz' book entitled: *The Manila Galleon*, mostly his Chapter 5. Schurz repeatedly mentioned the name of the first galleon as being the *San Pablo*, instead of the correct name which was the *San Pedro*; this mistake has unfortunately been copied by many other writers.
- 2 Ed. note: So says Schurz. As a matter of fact, the last galleon into Acapulco was the *Magallanes* in 1817.

richest ships in all the oceans, they were the most covered prize of pirate and privateer. The English took four of them: the **Santa Ana** in 1587, the **Encarnación** in 1709, the **Covadonga** in 1743, and the **Santissima Trinidad**, largest ship of her time (2,000 tons), in 1762.

In 1580, the Duke of Alba conquered Portugal and King Philip II became the most powerful monarch on earth. Soon Manila became the center of Hispanic power in the orient, displacing even Goa. Never again was Manila to know such greatness. The decadence of Manila began when the Moluccas were abandoned to the Dutch in 1662. Though not to the same degree, the Philippines shared in the decadence of the mother country under the later Hapsburgs and the first of the Bourbons. The creation of the monopolistic Royal Philippine Company in 1785 was to mark the beginning of the end, which occurred with the independence of the Spanish American colonies.

During the golden century of the Manila galleon (1565-1665), Spain was the envy of the rest of Europe and east-west trade in the Spanish Lake was part of the reason. The Manila galleons had the high forecastle and poop characteristics of their class. The apparent topheaviness of ships whose ends stood so high out of the water was partly offset by their unusual breadth of beam. In the latter half of the 18th century, the high stern and bow were cut down to approximate the lines of the frigate.

Most of the Manila galleons were built in the yards of Cavite on the Bay of Manila, where a great force of Chinese and Filipino workmen carried on the work of construction and repairs. However, many were built in other parts of the northern islands, where there were found together the three requisites of a safe port and a plentiful supply of good timber and of native labor.¹

The hard woods of the islands were very well adapted for ship-building. The framework was often made of teak, while other native woods were used in the remainder of the ship. For the ribs and knees, the keel and rudder, and inside work the hard Philippine *molave* was generally employed. The sheathing outside the ribs was usually of *lanang*, a wood of great toughness, but of such a peculiar nature that small cannon balls remained embedded in it, while larger shot rebounded from a hull made of this timber. Excellent cordage for the rigging was obtained from the *abaca* or Manila hemp. Sail cloth was produced in the province of Ilocos, while the metal necessary was mostly bought from China, Japan, Macao, or even from India and worked up by Chinese smiths. When completed, these galleons were of unusual strength. In capturing the **Santissima Trinidad** in 1762, the English put over 1,000 balls into her without penetrating her sides...

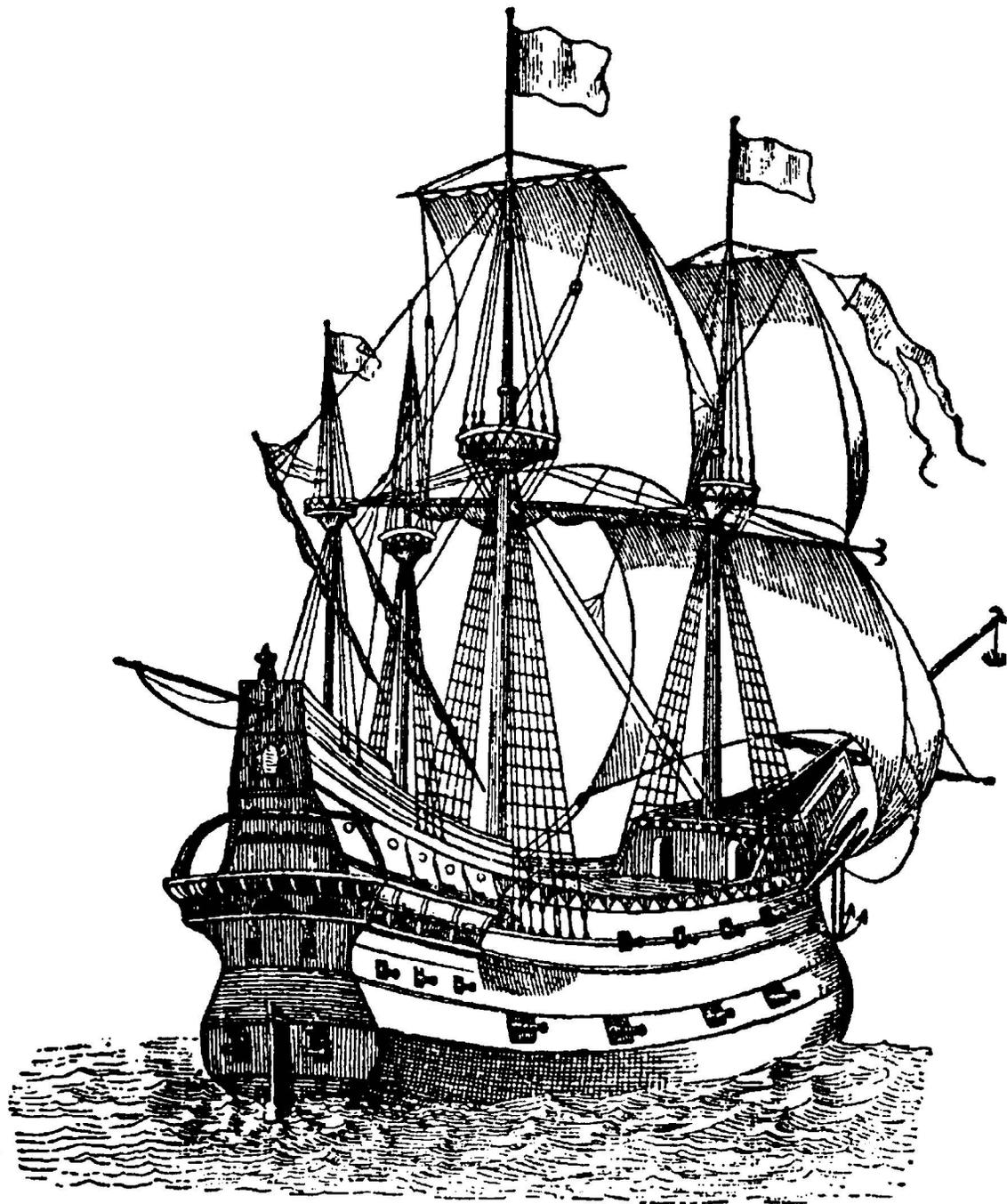
1 Ed. note: Some were also built outside the Philippines, until an order of 1679 prohibited this practice.



Model of a Manila galleon. *(From the photographic files at the Ayala Museum in Manila)*

“Full blow the trades adown the Spanish Main.
With billowing courses, flowing topsail sheets,
and mizzen well distended to the gale, with boiling foam
and spouts of iridescent spray beneath her lengthy beak
and forefoot broad, with gaudy pennants,
and with ancient proudly flaunting in the breeze,
the lordly galleon drives along the ocean’s trackless
plane.
What heaps of tawny gold filched forth from heathen
fanies her orlop holds!
What glittering jewels raped from idol forms
her iron-bound coffers fill!
What lives have sped and tears and blood have
drenched the treasure that she bears!
In vain.
Afar, uplifting from the keen horizon’s blade,
there looms a sail.
In vain.
Can heron foil gerfalcon’s dazzling stroke?
Full soon to her eternal doom
amid the waving sea-kelp’s bloom shall sift
the riven frames of what was once a ship;
and the remnant of her proud Castilian crew
cowering at the terror-laden name of Drake!”

(Henry B. Culver, *The Book of Old Ships*)



A Spanish treasure galleon, ca. 1580. (*From Jurien de la Gravière's Les marins du XV et du XVI siècles*)