

# The Genoese ships in the 12th and 13th centuries

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**Abstract.** The history of the great Genoese power has generally well known historical reputation, which continues over the decades, with its roots sunk in the Middle Ages and lasting until the Renaissance, period of greater magnificence, in which it was known as the *Superba*. From a historical point of view related to shipbuilding, it is therefore interesting to find out which boats had to compose and thus give life to this great traffic network, above all commercial and diplomatic, which made Genoa great; in particular we will concentrate in the 12th and 13th centuries, when the control of the city came to include the coasts from Ventimiglia to Portovenere and it was in the full development and economic expansion of this enormous maritime power. Entering between different issues such as the analysis of the most used boats, which were in particular the *navis*, the commercial boat for excellence, the galley, with the thinnest and fastest shape compared to the previous one and the *bucius*, a type similar to the *navis* for the shape of hull even if of reduced dimensions, we want to expose, albeit in an area limited to an academic article, the development in these centuries of these boats. We also want to take into consideration the economic value that these boats had been taking into account different factors that affected it, such as the age of the ship and its state of preservation; we will also give a look to the men who were part of this fermented world, as could be the shipwright during the construction, the owner or co-owners of the ships, and also the crewmen who made the boat alive each with different tasks, how could they be rowers, armed sailors and officers, guiding her along the different routes, during the trips across the Mediterranean. All this without neglecting some aspects of life that were part of the activities carried out all around the boats, dwelling for example on the relations between the shipyard and the client, or the *loca*, an investment vehicle widely used by the traders of the time. It will also be shown how the trade routes were modified, noting an expansion of the range of action in conjunction with the passage of time, an effect explained by the probable increase in length and size that the boats themselves underwent changing over decades. This operation is possible thanks to the analysis of the notary documents preserved in the State Archives of Genoa and of the contemporary genre literature such as the Annals of Caffaro di Rustico Da Caschifellone (1080 or 1081 - circa 1164), crusader as well as analyst and diplomat who gave us a vast compendium of information recording the chronicles of the city of Genoa relating to the Middle Ages.

**Keywords.** Genoa, Genoese ships, *navis*, galley

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## 1. Introduction

The Republic of Genoa was one of the most important European maritime powers during the period of the Maritime Republics and its great political and economic importance can be traced back to the first decades of the 9th century. An example of the city value can be found back in 1095, when Pope Urban II made a support request to Genoa, which was known as *Compagna Communis*, not yet a Republic. He sent the bishops of Grenoble and Orange to ask for help against the Turkish people. The city accepted the request and within two years it was able to put a fleet of twelve boats, which was already at the eastern Mediterranean sea in July 1097, at the service of the pontiff<sup>2</sup>.

Since then, a series of numerous events have involved Genoa in naval conflicts with the other Maritime Republics and in logistic support to Christian armies during the Crusades. This glorious history, which ended around the middle of the fourteenth century, sees a beginning linked to the sea: the Liguria territory is composed of mountains towards the North and natural border of the coasts to the South. This particular conformation divided and at the same time sheltered the native populations, which are thought to date back to the time of the Etruscans, from the surrounding areas. Thus the development of the Ligurian populations could only find an outlet in the Mediterranean, evolving and transforming itself over time into an indissoluble and visceral connection. Already Diodoro Siculus (90 BC - 20 BC) stated that the Ligurian people faced the Sardinian and Libyan seas for commercial purposes, demonstrating their great abilities despite their boats and equipment backwardness<sup>3</sup>. Although this connection between Genoa and navigation is undeniable, there is a relatively low diffusion of knowledge on Genoese vessels, which were evidently the lifeblood for the social, political and economic development of this great maritime power.

## 2. The most common vessels in the Ligurian fleet: the *navis* and the *galley*

The predominantly commercial nature of Genoa's maritime traffic in the Middle Ages meant that the transport of goods was the main activity of the Genoese, seeing them active along numerous routes across the Mediterranean. Consequently, the ideal ship for this activity had to be big in order to support long journeys, and large in order to have a good capacity for storing goods. These characteristics were found in the type of boat called *navis*, which was the most used and widespread boat, according to the notary documents referring to the mid-12th century, of the Ligurian territory. Its round hull ensured a large capacity, with a load capacity that could reach over 100 tons. The goods were stowed in bulk in the lower deck, in fact, the *navis* had two bridges<sup>4</sup>, and it was equipped with two trees, as was usual for the sailing boats of the time. The mast was positioned forward, therefore it was the bow tree, and at the time it was called *arbor de prora*. The smaller tree was positioned aft of the hull, it was the stern tree called *arbor de medio*. The propulsion was exclusively entrusted to the Latin sails, called *artimon*, and they were one per tree; it was not possible to use auxiliary oars

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<sup>2</sup> Donaver, Federico. *Storia della Repubblica di Genova*. Genoa: Guido Mondani, 1978; p.7.

<sup>3</sup> Airaldi, Gabriella. *Storia della Liguria. Dalle origini al 643 d.C.* Vol 1. Genoa - Milan: Marietti S.p.A., 2008; p.18.

<sup>4</sup> Krueger, Hilmar Carl. *Navi e proprietà navale a Genova: seconda metà del sec. XII*. Genoa: Società Ligure di Storia Patria, 1985; p. 24.

with the consequent disadvantage of depending completely on the wind and this could be problematic in the event of unfavourable weather conditions. The manoeuvre of the boat was entrusted to two rudders (*timones*) arranged laterally, one at each side, at the stern. Already in the twelfth century the *navis* was equipped with two superstructures positioned one aft and the other in the bow, called respectively *supra castellum* and *castellum*. Raised above the upper deck, these structures had a precise function: equipped with internal cabins, they were used to host important notables and passengers on board, as well as the owner, the helmsman and the captain, or other occasional passengers. In fact, another reason for maritime traffic was the diplomatic journey; therefore, often, different political figures or passengers of high social class, as could be the condottieri of the crusades, or rich merchants who had to undertake business trips were embarked on the ships that sailed the Mediterranean. In addition to being very capacious, the *navis* were also among the largest boats and consequently they were able to tackle longer journeys, having the possibility of taking on larger quantities of supplies. Thus they came to spread economic traffic to cities in North Africa, sometimes going as far as Constantinople, as well as to the nearest economic centres on the European coast. Specific information reported on the registers of the time is few and consequently we do not have precise measurements referring to individual ships. Nevertheless, it can be said that the largest ships of the 12th century reached a length of 24 meters (80-100 feet). Moreover, it is also known that the length of the trees on board was equal or sometimes bigger than the total length of the boat, thus reaching, most likely, 30 meters. The crew of the largest boats was composed of about one hundred people, and it could even reach 120 sailors<sup>5</sup>.

The best characteristic that the *navis* possessed in an economic optics, which was the rounded shape of the hull, had a negatively affect on the speed: the less narrow shapes made this boat slower than other types, such as the galleys. It is precisely for this reason that the *navis* was practically not used in the naval battle or in the actions of piracy, where speed was necessary to defeat the enemy, board the boat and get the better of the rival. However, that does not mean that the *navis* was completely excluded from any war-related activity; on the contrary it was very useful for transporting weapons, soldiers, supplies and even horses for fighting on land and, nevertheless, for transporting the faithful during pilgrimage trips to the Holy Land.

The other type of ship widely used and widespread was the galley (*galea*). It also followed the *navis* in size, being the second largest boat built by the European shipyards. There was a substantial difference in the propulsion between the galley and the *navis*; while the latter relied exclusively on sails, the galley used oars as the main method for navigation, which could range from a minimum of 20 to a maximum of 80. The galley had the possibility of using Latin sails as having one or two masts, thus allowing the rowers the chance to rest in which case the wind had been favorable. At the time, the galleys were generally bireme, that is equipped with two rowers per bench<sup>6</sup>; that implied the presence of about 160 men for rowing in larger units. The *navis* could be called a *wide ship*, due to its roundish shape, and the galley was the *long ship* given its tapered and thinned hull lines at the ends. The narrow and elongated shapes guaranteed a greater speed than the *navis*, and consequently a higher possibility

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<sup>5</sup> J. E. Dotson. Jal's Nef and. Genoese Naval Architecture in the 13th Century, *Mariner's Mirror*, 59, 1973, pp. 161-170; cfr. p. 163.

<sup>6</sup> Bork, Robert Odell; Kann, Andrea. *The Art, Science, and Technology of Medieval Travel*. Burlington: Ashgate, 2008; p.33.

of escaping piracy attacks, very frequent at the time in the Mediterranean waters. Regarding speed, it must be remembered that the maximum speed of a rowing boat of the time was assumed to be around 10 knots. This estimate refers to a pace that can be reached only with ideal climatic conditions, therefore assuming wind and waves in favour. Furthermore, by keeping the pace necessary to sustain this speed, the rowers would have consumed all their energy in less than half an hour, without preserving the forces necessary to sustain any naval combat (in the Genoese boats of the time, the rowers were often the same soldiers who would have had to fight in case of an armed conflict). Considering the possible climatic aversions and the tiredness to which the oarsmen were inevitably subject, it can be estimated that the average speed of a rowing boat of the Middle Ages could be around 2 and a half knots on frequent journeys that included rather long distances <sup>7</sup>.

Not suitable for the transport of large loads of goods or long sea routes, the galley found mainly two uses, one related to trade and the other related to naval warfare. The limited storage capacity made the commercial trip profitable only with high value merchandise: this made it the most suitable vessel for the transport of luxury goods with high economic profit. In these cases, the most common routes were those from Genoa to the islands of Corsica, Sardinia or Sicily, or to the coastal cities, both of the peninsula and of Provence, thus preferring short and safe routes, generally remaining close to the coast<sup>8</sup>. In addition, the galley was also widely used for the transport of diplomatic characters who could be accommodated in the aft superstructure equipped with covered cabins; there were no superstructures on the bow. Because of its speed, the galley was widely used both as a means for piracy and in naval wars; During the naval wars, the aft superstructure provided a raised position from which the archers could more easily strike the soldiers of the enemy ships. The naval wars of the time simulated ground fighting: the galleys were positioned in a compact manner and to ensure that position, they were placed side by side and sometimes they were even connected by means of ropes or wooden planks<sup>9</sup>. Thus a compact and powerful blockade was created for the battlefield and the soldiers could thus fight once the rival fleets had clashed. Although the galleys were equipped with a rostrum to ram the other boats, generally this was not used, since, both in case of battle and of piracy, it was preferable to board the ship and plunder the loot, rather than damage it irreparably and make it sink without being able to plunder the transported goods.

The Republic of Genoa did not have its own fleet, as was for example in the Venetian reality starting from the 13th century<sup>10</sup>. Consequently, in case of war, the Republic requisitioned the galleys of private citizens to set up a temporary fleet, returning the boats to the owners once the conflict ended. In doing so, there were no maintenance costs for public spending that would have been with a fixed fleet.

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<sup>7</sup> Bork, Robert Odell; Kann, Andrea. *The Art, Science, and Technology of Medieval Travel*. Burlington: Ashgate, 2008; p.32.

<sup>8</sup> Krueger, Hilmar C. *Navi e proprietà navale a Genova: seconda metà del sec. XII*. Genoa: Società Ligure di Storia Patria, 1985; p. 27.

<sup>9</sup> Puncuh, Dino. *Storia della cultura ligure. Atti della società ligure di storia patria*, New edition, Vol. XLI (CXV) Dossier. I, Genoa: Società Ligure di Storia Patria, 2000; pp. 273-274.

<sup>10</sup> Bellavitas. *L'arsenale di Venezia*. Venice: Marsilio Editori, 1983; p. 42.

### 2.1. Development of boats in the 12th and 13th centuries

Still in the mid-13th century, the *navis* and the galleys were the most used types of boats by the Genoese. In particular, the *wide ship* represented almost 80% of all Ligurian boats, and although it is true that over the years there has been a decrease in its use, the *navis* always represented more than 50% of the total fleet throughout the Middle Ages. Instead, for what concern galley, its use increases with the passing of the decades. However, there was also another type of boat, called *galiotus*, or *lignum galiotus*, whose forms and features were similar to a small galley. Thus the *galiotus* can be taken into account in the counting of units of this type. The percentage of this family of boats varies with decades from around 12% to almost 20%<sup>11</sup> of the total Genoese waterway between the 12th and 13th centuries. There is therefore a relative decrease in larger vessels in favour of an increase in lower units. By relating this datum to the period in which the phenomenon occurs, which coincides with a phase of expansion of the territories under the Genoese economic-political influence, this expansion of the use of the smaller ships could be justified in consideration of the increase in trade towards new coastal areas, where it was possible to transport goods with smaller boats, which, although less capacious, were faster and less expensive than larger vessels.

From the 12th to the 13th century there was also an expansion of the action range of the same boats, which over time became stronger and more resistant; as for the *navis*, its most frequent routes moved from the African coasts to centres in the East, reaching even commercial centres in the Black Sea. In particular the Republic supported frequent exchanges with Constantinople, in fact, from 1273 Galata (district of today's Istanbul) became a Genoese colony until the mid-fifteenth century. The main trade goods was wheat, which from the Black Sea was bought and transported by sea to Liguria, to then be used as maintenance of the city or sold to France and Spain<sup>12</sup>.

Even the galley underwent the same use on the routes to the east, and from a boat used exclusively in the Tyrrhenian Sea, it saw its expansion in trades on longer routes touching the easternmost waters of the Aegean Sea and Constantinople. The destinations previously belonging to the galley were also travelled by the *galiotus* even though it was mainly used in the western sea towards the European coasts and the islands of the Tyrrhenian Sea. These short routes could include calls in Spain or Sicily without ever reaching the East. In these sections the presence of another type of vessel, the *bucius*, which was probably to the *navis* as the *galiotus* was to the galley, is most frequently detected<sup>13</sup>. Indeed, given its similarity in terms of form and purpose with the *navis*, it was not unusual for a *small navis* to be reported in the registers with the term *bucius*<sup>14</sup>. The *bucius* was a cargo ship, therefore characterized by rounded hull shapes, but smaller than the *navis*, and which had the possibility of using auxiliary oars<sup>15</sup>. Many other types of smaller boats were also among the Genoese boats, such as the *sagittea*, the *cazanellum* (or *cazanellus*) and the *ascarium*. The information on them is few, but in consideration of their small size, it can be assumed that they were used for

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<sup>11</sup> Krueger, Hilmar C. *Navi e proprietà navale a Genova: seconda metà del sec. XII*. Genoa: Società Ligure di Storia Patria, 1985; p. 156.

<sup>12</sup> Bertolotti, Davide. *Viaggio nella Liguria marittima*. Torino: Tipografi eredi botta, 1834; pp. 50-51.

<sup>13</sup> Byrne, Eugène H. *Genoese shipping in the twelfth and thirteenth centuries*. New York: Kraus Reprint, 1930.

<sup>14</sup> Krueger, Hilmar Carl. *Navi e proprietà navale a Genova: seconda metà del sec. XII*. Genoa: Società Ligure di Storia Patria, 1985; p. 18.

<sup>15</sup> *Ibidem*; p. 13, note 7.

trade along the shortest routes, thus remaining in the area of Genoese domination, for example along the Ligurian coast.

### 3. The value of a boat

A legitimate question that can be asked during studies on medieval ships is: how much was a boat worth at the time?

The value of the boats in the twelfth century is complicated to estimate as several factors affected it. For example, the category to which the unit belonged was important: larger boats had a higher value because they were able to carry a greater quantity of products and therefore they were able to enrich the owner more. The condition of the boat and the age of the boat also influenced its value. Given the various vicissitudes that could occur during a trip, such as storms or pirate attacks, which could lead to the loss of the unit, the average life of a 12th century vessel was between 10 and 15 years.

However, there are some documents that can help answer this question, although not precisely. One of these is the purchase deed, which reported the price paid for the boat construction. It must be considered that very often it was the client who supplied the material necessary for the construction of the shipyard, such as the hull timber; therefore the cost of what was purchased by the future owner was not counted in the evaluation of the price of the ship, and consequently the value reported on the sales documents almost never coincided with the total amount spent by the buyer.

#### 3.1. *Loca*, investment tool

Another element to consider in the value of a boat is represented by the *loca*. The word probably dates back to the time of the Roman empire, in which the rental of a boat could be of two types: *locatio navis*, with which the entire boat was intended and *locatio vehendarum mercium*, which involved renting a part of the boat; in this case the rented quota could be expressed in units of goods, precisely *loca*, or by *partes*, that is in terms of space<sup>16</sup>. So the *loca* was an investment tool through which traders rented part of a boat; It was mainly used by the co-owners of the boat who financed the expedition, but external investors could also participate who received a percentage of the amount of gain obtained from the trip, or from merchants who wanted to secure the transport of their products to distant lands without owning their own ship. External investors could guarantee a *loca* either permanently or for one or several trips. The *loca* was advantageous for both the investor and the ship owner: the investor received a percentage of the gain obtained as a shareholder and the owner had the security of avoiding an empty trip from which he would have been in economic loss. The *loca* had, in turn, several factors that affected its value, for example, the set route and destination, the quantity of goods transported and the value of the same, and also the period of the year in which it was intended to undertake the journey, since all these elements were to affect the potential gain: the higher the profit, the greater the price that a *loca* could take.

Once the boat had returned to the port of departure, concluding its journey, there was an operation that always precedes the subdivision of the gains: the subtraction,

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<sup>16</sup> Pelaez Manuel J. Il contratto di noleggio Marittimo e Fluviale nel diritto medioevale catalano. In *L'eau au moyen âge*. Malaga: Universidad de Malaga, Presses universitaires de Provence, 1985; pp. 291-317.

from the total amount, of the travel costs. Crew salaries, officers' wages, procurement costs for embarked men and any maintenance and repair costs were included. Finally, the expenses due to the taxes and tolls of the various ports to which the ship had called were also subtracted. Moreover, there were also taxes to be paid for the port of Genoa, such as the *decima maris*; this was a fee requested from the boat owner each time the boat entered the port of Genoa; It happened that ship-owners from ports near the city landed several times a year in it, having to repeatedly pay the tax, even if, in some cases, this tax was charged once a year. In 1129 AD, to settle this obvious confusion and clarify definitively whether the tax was to be paid annually or whenever Genoa entered the same ship, the bishop and the consuls of justice of Genoa decided to establish that *decima mari* should be paid annually by each ship, but taking into account the capacity of the ship the greater the transport capacity, the greater the amount due to the Republic<sup>17</sup>.

Through the different registers of the time, the number of places that a single boat possessed in a given trip can be found. In particular, when a ship changed the owner, the value and quantity of the locations registered at the time of the transfer of ownership were also shown in the documents relating to the sale.

### 3.2. Deed of sale

One of the most important documents to understand the value of a boat is the deed of sale, with which the transfer of ownership from one owner to another was recorded. Unlike the purchase act where sometimes the cost of the material was not reported for the reasons previously described, in this contract the sale price was proportionate to what the boat was economically worth. Also in this case, however, it must be considered that the value of a ship also depended on its age and state of preservation, elements which, although taken into consideration when assessing the ship, were not reported in official documents, thus not allowing accurately determine this value, but still making a plausible estimate possible.

The minimum value that could be attributed to a *navis* was between L.90 and L.130, while as regards the maximum values one could get to buy this boat for L.1.900 up to reach L.2.000 for boats particularly in good condition and with a high number of *loca*. To get a clearer idea of this value, consider that 1 Genoese lira in the 12th and 13th centuries was around 10-12 modern Lira<sup>18</sup>. In particular, the highest price spent on the purchase of a *navis* corresponds to L. 2,480 in 1192. This ship had 80 *loca*, a very high number considering that on average the boats of the time had associated from 30 to 40 *loca*. The high price for the sale and the high number of places indicate that the boat was large and also in excellent maintenance conditions. Moreover, similar *loca* values were found only many decades later, in 1248, for the *Leopardus* boat which appears to have had 70 *loca*<sup>19</sup>. Considering that a boat, the more it was large and many

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<sup>17</sup> Krueger, Hilmar Carl. *Navi e proprietà navale a Genova: seconda metà del sec. XII*. Genoa: Società Ligure di Storia Patria, 1985; p. 6.

<sup>18</sup> Bertano, Lorenzo. *Storia di Cuneo: medio evo 1198-1382, Volume 1*. Cuneo: Tipografia subalpina di Pietro Oggero, 1898; pp. 155-156.

<sup>19</sup> Byrne, Eugène Hugh. *Genoese shipping in the twelfth and thirteenth centuries*. Cambridge, Massachusetts: Mediaeval Academy of America, 1930; p. 20, nota 2.

more could own, this means that that boat of 1192 with 80 *loca* was probably one of the largest Genoese ships of the time<sup>20</sup>.

The galley was proportionally much less used than a *navis*, so it is not surprising that there is even less documentation on it. Nevertheless, it can be estimated that the value of a ship of this type could be between a minimum of L.125 and a maximum of about L.250; also in this case, the age and state of conservation of the unit in question was taken into account in the evaluation of the sale price, but these are not shown in the documents in our possession. Not surprisingly, the galley had a lower value than the wide ship, because, being smaller, it required less material for construction, such as lumber, cordage, rigging and more, consequently lowering the price of construction and consequently of the total value. It should also be kept in mind that, being a rowing ship, the high number of men needed to manoeuvre these boats had a negative impact on the earnings of each trip, having to subtract from them the cost of their maintenance and salary, thus increasing the cost of management.

#### **4. Ship building, shipyard**

The construction of a boat from the 12th and 13th centuries took place inside a shipyard. Arenzano, Chiavari, Finale, Portovenere, Recco and Sampierdarena were some of the major centres of activity among all the centers of the Ligurian Riviera. There were also lower centers that probably realized a smaller quantity of units, but that went anyway to increase the number of boats in the territory, for example Sarzana, Savona, Noli and Ventimiglia. At this time the construction could vary from a minimum time of six months for smaller boats up to a maximum of one year for larger ships. The central figure, who directed the works in all the various phases of the realization, was the shipwright who could sometimes collaborate with other expert craftsmen to manage the complex world of the construction site. The shipyard included many workers, each with different and specific tasks; the number of workers could vary from a minimum of fifty up to a maximum of 100 people for the construction of a single hull<sup>21</sup>. There were expert attendants who dealt with complex and delicate operations, such as the choice of the wood to be cut or the caulking of the hull once the external shell was completed. There was also a less specialized workforce that dealt with jobs where no particular knowledge was required, such as cutting selected wood and transporting material to the construction site. Then there were the apprentices, future skilled artisans who learned the art of the trade, the know-how, through the observation of their masters at work.

#### **5. Capacity of a ship**

As we have seen, the capacity of a boat was an extremely important fact, especially for those ships used for trade. In the few data available of the 12th century, in which the capacity of some ships is recorded, the unit of measurement used is the

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<sup>20</sup> Krueger, Hilmar C. *Navi e proprietà navale a Genova: seconda metà del sec. XII*. Genoa: Società Ligure di Storia Patria, 1985: pp. 159-161.

<sup>21</sup> Puncuh, Dino. *Storia della cultura ligure. Atti della società ligure di storia patria*, New edition, Vol. XLI (CXV) Dossier. I, Genoa: Società Ligure di Storia Patria, 2000; p.119.

*mina*. It coincided with a weight of about 105 pounds, or 50 kg, even if this equivalence is quite relative, because during the course of the years, the exact weight varied constantly, thus not allowing an exact estimate.

Taxation in Genoa was based on capacity. Making a similarity with some boats of which we have indications both on the capacity and on the corresponding taxation, we can assume the capacity of other boats of which taxation is known. In this way the average capacity of coeval boats can be estimated based on a higher number of boats. It emerges from these comparisons that at the time there were boats capable of carrying a maximum load of about 150 tons. There is a greater presence of data in the registers and in the various notary's documents referring to the estimate of the tonnage of the 13th century boats. Generally we note a greater load capacity than that assumed for the previous century, which ranged from 200 tons to over 400 tons at the end of the century<sup>22</sup>. This data coincides with the larger dimensions of the various boats, of which the maximum size, estimated at around 25 meters for the 12th century, can be considered increased up to reach 30 meters in length for the largest ship. Also this limit is destined to be overcome, and already in 1249 a *navis* was built in Genoa that could be considered enormous for the time: the *Paradisus Magnus*, made for the first crusade of Louis IX. This boat reached 500 tons of load, and it had a length of 38 meters for a width of 14 meters and over 9 meters of draft. The galleys obviously follow the same course becoming increasingly powerful and at the end of the 13th century we witness another great transformation the galley becomes *trireme* galley, that is equipped with three oars rowers, reducing at the same time the number of oars<sup>23</sup>. Consequently also the shape of the hull was modified, since the boats had to be slightly wider, to accommodate three oarsmen per side, instead of two, but on the contrary it was possible to reduce the length; this was going to decrease the length / width ratio, also increasing the stability of the ship. It is thus possible to perceive what the slow process of modification that will lead to the age of great sailing ships will be in the following centuries.

## Conclusions

With this short essay we tried to highlight a relatively unknown world, but fundamental for understanding the great commercial development that the Genoese territory had in the XII and XIII centuries. We have tried to open a small window overlooking the now distant and lost world of Ligurian boating, but still interesting and fascinating. A world composed of a teeming infinity of figures that populated it as masters of the ax, traders, sailors, officers, pilgrims; but also a world of travel to near and far land and, above all, a world in which the many and different boats of the time lived, the focal point of a frenetic and adventurous environment in constant development, such as the city of Genoa in the Middle Ages.

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<sup>22</sup> Krueger, Hilmar C. *Navi e proprietà navale a Genova: seconda metà del sec. XII*. Genoa: Società Ligure di Storia Patria, 1985; p. 168.

<sup>23</sup> Bork, Robert Odell; Kann, Andrea. *The Art, Science, and Technology of Medieval Travel*. Burlington: Ashgate, 2008; p. 34-36.

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