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N. 6 2025

Fascicolo 21. Marzo 2025 Storia Militare Medievale

a cura di Marco Merlo, Fabio Romanoni e Peter Sposato



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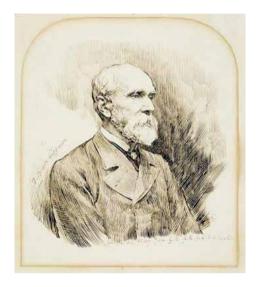
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Sigillo di Leszek I di Polonia detto il Bianco (Leszek Bialego) Grafika pochodzi z książki: *Poczet królów i książąt polskich*, Czytelnik, pod red. Andrzeja Garlickiego, Warszawa 1984. Public Domain, Wikimedia Commons

Digression concerning the War Galleys of the Mediterranean State in the Middle Ages¹

Sir Henry Yule [1820-1889]



25. Arrangement of the Rowers in Medieval Galleys; a separate oar to every man.

nd before entering on this new phase of the Traveller's biography it may not be without interest that we say something regarding the equipment of those galleys which are so prominent in the medieval history of the Mediterranean.²

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¹ From Colonel Sir Henry Yule [1820-1889], *The book of Ser Marco Polo, the Venetian, concerning the kingdoms and marvels of the East*, London, John Murray, 1871, I, pp. lx-lxix [= 3rd Edition revised by Henri Cordier [1849-1925], I, pp. 31-41]. Trad. it. "Marco Polo e il suo libro", del Colonnello Henry Yule C. B., in *Archivio Veneto*, T. II, 1871 ("Digressione relativa alle galere da guerra degli stati del Mediterraneo nel Medio Evo", pp. 153-161).

² I regret not to have had access to Jal's learned memoirs (*Archéologie Navale*, Paris, 1839), whilst writing this section. Since doing so I have just been able to look hastily through his Essay on the difficult subject of the oar arrangements, and I see that he does not admit so

Eschewing that "Scrbonian Bog, where armies whole have sunk" of Books and Commentators, the theory of the classification of the Biremes and Triremes of the Ancients, we can at least assert on secure grounds that in *medieval* armament, up to the middle of the i6th century or thereabouts, the characteristic distinction of galleys of different calibres, so far as such differences existed, was based *on the number of rowers that sat on one bench pulling each his separate oar, bnt through one* portella or *rowlock-port.*³ And to the classes of galleys so distinguished the Italians, of the later Middle Age at least, did certainly apply, rightly or wrongly, the classical terms of *Bireme, Trireme,* and *Quinquereme,* in the sense of galleys having two men and two oars to a bench, three men and three oars to a bench, and five men and five oars to a bench.⁴

That this was the medieval arrangement is very certain from the details afforded by Marino Sanuto the Elder, confirmed by later writers and by works of art. Previous to 1290, Sanuto tells us, almost all the galleys that went to the Levant had but two oars and men to a bench ; but as it had been found that three oars and men to a bench could be employed with great advantage, after that date nearly all galleys adopted this arrangement, which was called *ai Terzaruoli*.⁵

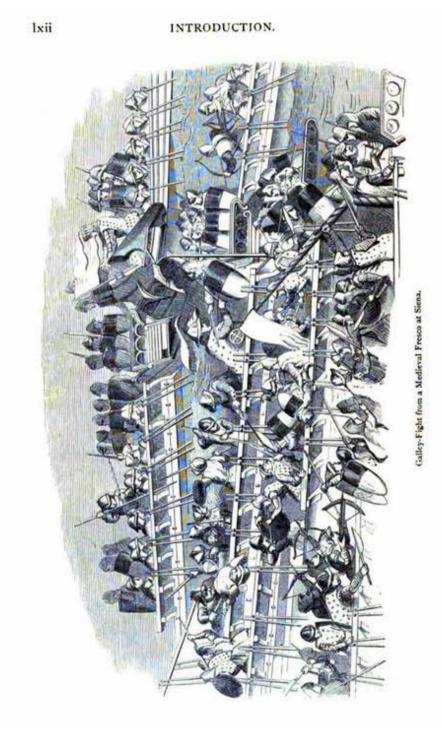
Moreover experiments made by the Venetians in 1316 had shown that four rowers to a bench could be employed still more advantageously. And where the galleys could be used on inland waters, and could be made more bulky, Sanuto would even recommend five to a bench, or have gangs of rowers on two decks with either three or four men to the bench on each deck.

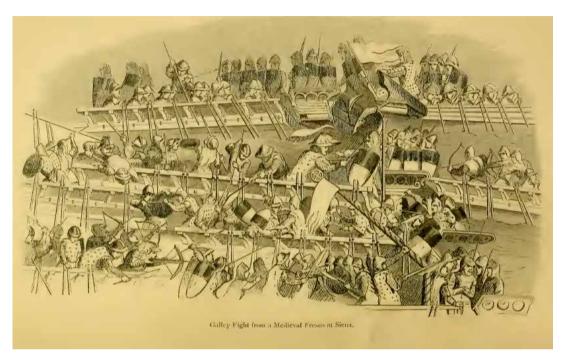
great a number of oars as I have deduced from the statements of Sanuto and others.

³ It seems the more desirable to elucidate this, because writers on medieval subjects so accomplished as Buchon and Capmany have (it would seem) entirely misconceived the matter, assuming that all the men on one bench pulled at one oar.

⁴ See Coronelli, *Atlante Veneto*, I. 139, 140. Marino Sanuto the Elder, though not using the term trireme, says it was well understood from ancient authors that the Romans employed their rowers three to a bench (II: 59).

^{5 &}quot;Ad terzarolos" {Secreta Fidelium Crucis, p. 57). The Catalan Worthy, Ramon de Muntaner, indeed constantly denounces the practice of manning all the galleys with *terzaruoli*, or *tersols*, as his term is. But his reason is that these thirdsmen were taken from the oar when crossbowmen were wanted, to act in that capacity, and as such they were good for nothing; the crossbowmen, he insists, should be men specially enlisted for that service and kept to that. He would have some 10 or 20 per cent, only of the fleet built very light and manned in threes. He does not seem to have contemplated oars three-banked, and crossbowmen besides, as Sanuto does (see below; and Muntaner, pp. 288, 323, 525, &c.)





26. Change of system in 16th Century.

This system of grouping the oars, and putting only one man to an oar, continued down to the i6th century, during the first half of which came in the more modern system of using great oars, equally spaced, and requiring from four to seven men each to ply them, in the manner which endured till late in the last century, when galleys became altogether obsolete. Captain Pantero Pantera, the author of a work on Naval Tactics {1616}, says he had heard, from veterans who had commanded galleys equipped in the antiquated fashion, that three men to a bench, with separate oars, answered better than three men to one great oar, but four men to one great oar (he says) were certainly more efficient than four men with separate oars. The new-fashioned great oars, he tells us, were styled *Remi di Scaloccio*, the old grouped oars *Remi a Zcnzile*,—terms the etymology of which I cannot explain.⁶

It may be doubted whether the four-banked and five-banked galleys, of which Marino Sanuto speaks, really then came into practical use. A great five-banked

⁶ L'Armata Navale, Roma, 1616, pp. 1 50-151.

galley on this system, built in 1529 in the Venice Arsenal by Vettor Fausto, was the subject of so much talk and excitement, that it must evidently have been something quite new and unheard of.⁷ So late as 1 567 indeed the King of Spain built at Barcelona a galley of thirty-six benches to the side, and seven men to the bench, with a separate oar to each in the old fashion. But it proved a failure.⁸

Down to the introduction of the great oars the usual system appears to have been three oars to a bench for the larger galleys, and two oars for lighter ones. The *fuste* or lighter galleys of the Venetians even to about the middle of the 16th century had their oars in pairs from the stem to the mast, and single oars only from the mast forward.⁹

27. Some details of the 13th Century Galleys.

Returning then to the three-banked and two-banked galleys of the latter part of the 13th century, the number of benches on each side seems to have run from twenty-five to twenty-eight, at least as I interpret Sanuto's calculations. The 100-oared vessels often mentioned {e.g. by Muntaner, p. 419) were probably two-banked vessels with twenty-five benches to a side.

The galleys were very narrow, only $15 \frac{1}{2}$ feet in beam.¹⁰ But to give room for the play of the oars and the passage of the fighting-men, &c., this width was largely augmented by an *opera-morta*, or outrigger deck, projecting much beyond the ship's sides and supported by timber brackets.¹¹ I do not find it stated how great this projection was in the medieval galleys, but in those of the 17th century it was *on each side* as much as 2/9ths of the true beam. And if it was as great in the 13th century galleys the total width between the false gunnels would be about 22 $\frac{1}{4}$ feet.

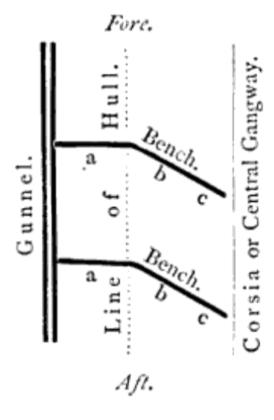
⁷ See a work to which I am indebted for a good deal of light and information, the Engineer Giovanni Casoni's Essay "Dei Navigli Poliremi usati nella Marina dagli Antichi Veneziani," in *Esercitazioni dell'Ateneo Veneto*, vol. II, p. 338. This great Quinquereme, as it was styled, is stated to have been struck by a fire-arrow and blown up, in January 1570.

⁸ Pantera, p. 22.

⁹ Lazarus Bayfius, *de Re Navali Veterum*, in Gronovii Thesaurus, Yen. 1737, vol. xi. p. 581. This writer also speaks of the Quinquereme mentioned above (p. 577).

¹⁰ Marino Sanuto, p. 65.

¹¹ See the woodcuts opposite, and at p. Ixvi; also Pantera, p. 46 (who is here, however, speaking of the great-oared galleys), and Coronelli, i. 140.



In the centre line of the deck ran, the whole length of the vessel, a raised gangway called the *corsia*, for passage clear of the oars.

The benches were arranged as in this diagram. The part of the bench next the gunnel was at right angles to it, but the other twothirds of the bench were thrown forward obliquely, a, b, c, indicate the position of the three rowers. The shortest oar a was called *Terlicchio*, the middle one *b Posticcio*, the long oar *c Piamero*.¹²

I do not find any information as to how the oars worked on the gunnels. The Siena fresco (see p. lxii) appears to show them attached by loops and pins, which is the usual practice in boats of the Mediterra-

nean now. In the cut from Tintoretto (p. lxvi) the groups of oars protrude through regular ports in the bulwarks, but this probably represents the use of a later day. In any case the oars of each bench must have worked in very close proximity. Sanuto states the length of the galleys of his time (1300-1320) as 117 feet. This was doubtless length of *keel*, for that is specified ("*da ruoda a ruoda*") in other Venetian measurements, but the whole oar space could scarcely have been so much, and with twenty-eight benches to a side there could not have been more than 4 feet gunnel-space to each bench. But as one of the objects of the grouping of the oars was to allow room between the benches for the action of crossbowmen, &c., it is plain that the rowlock space for the three oars must have been very much compressed.¹³

¹² Casoni, p. 324. He obtains these particulars from a manuscript work of the 16th century by Cristoforo Canale.

¹³ Signor Casoni (p. 324) expresses his belief that no galley of the 14th century had more

The rowers were divided into three classes, with graduated pay. The highest class, who pulled the poop or stroke oars, were called *Portolati* ; those at the bow, called *Prodieri*, formed the second class.¹⁴

Some elucidation of the arrangements that we have tried to describe will be found in our cuts. That at p. lxii is from a drawing, by the aid of a very imperfect photograph, of part of one of the frescoes of Spinello Aretini in the Municipal Palace at Siena, representing the victory of the Venetians over the Emperor Frederic Barbarossa's fleet, commanded by his son Otho, in 1176 ; but no doubt the galleys, &c., are of the artist's own age, the middle of the 14th century.¹⁵ In this we see plainly the projecting *opera-morta*, and the rowers sitting two to a bench, each with his oar, for these are two-banked. We can also discern the Latin rudder

- 14 Marino Sanuto, p. 78. These titles occur also in the *Documenti d'Amore* of Fr. Barberino referred to at p. 110 of this volume : "Convienti qui manieri / *Portolatti e prodieri* / E presti galeotti / Aver, e forti e dotti." (Quoted in the *Vocab. Ital. Universale.*)
- 15 Spinello's works, according to Vasari, extended from 1334 till late in the century. A religious picture of his at Siena is assigned to 1385, so the frescoes may probably be of about the same period.

than 100 oars. I hesitate to differ from him, and still more as I find M. Jal takes a like view. I will state the grounds on which I had come to a different conclusion, (i) Marino Sanuto assigns 180 rowers for a galley equipped ai Terzaruoli (p. 75). This seemed to imply something near 180 oars, for I do not find any allusion to reliefs being provided. In the French galleys of last century there were no reliefs except in this way, that in long runs without urgency only half the oars were pulled (see Mém. d'un Protestant condamné aux Galères, &c., Reimprimés, Paris, 1865, p. 447). If four men to a bench were to be emploved, then Sanuto seems to calculate for his smaller galleys 220 men actually rowing (see pp. 75-78). This seems to assume 55 benches, i. e., 28 on one side and 27 on the other, which with 3-banked oars would give 165 rowers. (2) Cassoni himself refers to Pietro Martire d'Anghieria's account of a Great Galley of Venice in which he was sent ambassador to Egypt from the Spanish Court in 1503. The crew amounted to 200, of whom 150 were for working the sails and oars, that being the number of oars in each galley, one man to each oar and three to each bench. Casoni assumes that this vessel must have been much larger than the galleys of the 14th century; but, however that may have been. Sanuto to his galley assigns the larger crew of 250, of whom almost exactly the same proportion (180) were rowers. And in the *galeazza* described by Pietro Martire the oars were used only as an occasional auxiliary (see his Legationis Babylonicae Libri Tres, appended to his 3 Decads concerning the New World; Basil. 1533, f. 77 ver.). (3) The galleys of the last century, with their great oars 50 feet long pulled by 6 or 7 men each, had 25 benches to the side, and only 4' 6" (French) gunnel-space to each oar (see Mem. d'un Protest., p. 434). I imagine that a smaller space would suffice for the 3 light oars of the medieval system, so that this need scarcely be a difficulty in the face of the preceding evidence. Note also the three hundred rowers in Joinville's description quoted at p. lxix.

on the quarter (see this volume, p. 111). In a picture in the Uffizj, at Florence, of about the same date, by Pietro Laurato (it is in the corridor near the entrance), may be seen a small figure of a galley with the oars also very distinctly coupled. %¹⁶ Casoni has engraved, after Cristoforo Canale, a pictorial plan of a Venetian trireme of the 1 6th century, which shows the arrangement of the oars in triplets very plainly.

The above cut has been sketched from an engraving of a picture by Domenico Tintoretto in the Doge's palace, representing,! believe, the same action as Spinello's fresco, but with the costume and construction of a later date. It shows however, very plainly, the projecting opera-morta, and the arrangement of the oars in fours, issuing through row-ports in high bulwarks.

28. Fighting arrangements.

Midships in the medieval galley a castle was erected, of the width of the ship, and some 20 feet in length ; its platform being elevated sufficiently to allow of free passage under it and over the benches. At the bow was the battery, consisting of mangonels (see vol. II, pp. 121, *seqq*.) and great cross-bows with winding gear,¹⁷ whilst there were shot ports¹⁸ for smaller cross-bows along the gunnels in the intervals between the benches. Some of the larger galleys had openings to admit horses at the stern, which were closed and caulked for the voyage, being

¹⁶ This is engraved in Jal's *Archeologie Navale*, I, 330; as are some other medieval illustrations of the same circumstances.

¹⁷ To these Casoni adds Sifoni for discharging Greek fire ; but this he seems to take from the Greek treatise of the Emperor Leo. Though I have introduced it in the cut at p. lxxvii, I doubt if there is evidence of its use by the Italians in the thirteenth century. Joinville describes it like something strange and new. Great beams, hung like battering rams, are mentioned by Sanuto, as well as iron crow's-feet with fire attached, to shoot among the rigging, and jars of quick-lime and soft soap to fling in the eyes of the enemy. The lime is said to have been used by Doria against the Venetians at Curzola (infra, p. lxxvi), and seems to have been a usual provision. Francesco Barberini specifies among the stores for his galley: — "*Calcina*, con lancioni, Pece, pietre, e ronconi" (p. 259). And Christine de Pisan, in her *Faiz da Sage Roy Charles* (V. of France) explains also the use of the soap : "*Item*, on doit avoir plusieurs vaisseaulx legiers a rompre comme *poz plains de chaulx* ou poudre, et gecter dedens; et par ce seront comme avuglez au Ijrisier des poz. *Item*, on doit avoir autres *poz de mol savon* et gecter es nefs des adversaires, et quant les vaisseaulx brisent, le savon est glissant si ne se peuent en piez sous tenir, et chiéent en I'eaue" (pt. II, *ch*. 38).

¹⁸ Balistariae, whence no doubt our Balustrade. Wedgwood's etymology is farfetched.



Part of a Sea Fight, after Dom. Tintoretto.

under water when the vessel was at sea.19

It seems to have been a very usual piece of tactics, in attacking as well as in awaiting attack, to connect a large number of galleys by hawsers, and sometimes also to link the oars together, so as to render it difficult for the enemy to break the line or run aboard. We find this practised by the Genoese on the defensive at the battle of Ayas {infra, p. lxxi}, and it is constantly resorted to by the Catalans in the battles described by Ramon de Muntaner.²⁰ Sanuto says the toil of rowing in the galleys was excessive, almost unendurable. Yet it seems to have been performed by freely-enlisted men, and therefore it was probably less severe than that of the great-oared galleys of more recent times, which it was found impracticable to work by free enlistment, or otherwise than by slaves under the most cruel driving.²¹ I am not well enough read to say that war-galleys were never rowed by slaves in the Middle Ages, but the only doubtful allusion to such a class that I have met with is in one passage of Muntaner, where he says, describing the Neapolitan and

¹⁹ Sanuto, p. 53 ; Joinville, p. 40 ; Muntaner, 316, 403.

²⁰ See pp. 270, 288, 324, and especially 346.

²¹ See the *Protestant*, cited above, pp. 441, et seqq.

Catalan fleets drawing together for action, that the gangs of the galleys had to toil like "formats" (p. 313). Indeed, as regards Venice at least, convict rowers are stated to have been first introduced in 1549, previous to which the gangs were of galeotti assoldati.²²

29- Crew of a Galley. And Staff of a fleet.

We have already mentioned that Sanuto requires for his three-banked galley a ship's company of 250 men. They are distributed as follows;

Com/fo or Master	1
Quartermasters	8
Carpenters	2
Caulkers	2
In charge of stores and arms	4
Orderlies	2
Cook	1
Arblasteers	50
Rowers	180
Total	25023

This does not include the Sopracomito, or Gentleman-Commander, who was expected to be *valens homo et probus*, a soldier and a gentleman, fit to be consulted on occasion by the captain-general. In the Venetian fleet he was generally a noble,²⁴

The aggregate pay of such a crew, not including the sopra- comito, amounted monthly to 60 *lire de grossi*, or 600 florins, equivalent to 280*l*. at modern gold value ; and the cost for a year to nearly 3160*l*., exclusive of the victualling of the vessel and the pay of the gentleman-commander. The build or purchase of a galley complete is estimated by the same author at 15,000 florins, or 7012*l*.

We see that war cost a good deal in money even then. Besides the ship's own complement Sanuto gives an estimate for the general staff of a fleet of 60 galleys.

²² Venezia e le sue Lagune, II, 52.

²³ Mar. Sanuto, p. 75.

²⁴ Ibid. p. 30.

This consists of a captain-general, tv/o (vice) admirals, and the following:

- 6 Probi homines, or gentlemen of character, forming a council to the Captain-General
- 4 Commissaries of Stores ;
- 2 Commissaries over the Arms ;
- 3 Physicians;
- 3 Surgeons
- 5 Master Engineers and Carpenters ;
- I5 Master Smiths;
- 12 Master Fletchers ;
- 5 Cuirass men and Helmet-makers ;
- 15 Oar-makers and Shaft-makers ;
- 10 Stone-cutters for stone shot ;
- 10 Master Arblast-makers
- 20 Musicians;
- 20 Orderlies, &c.

30. Music; and other particulars.

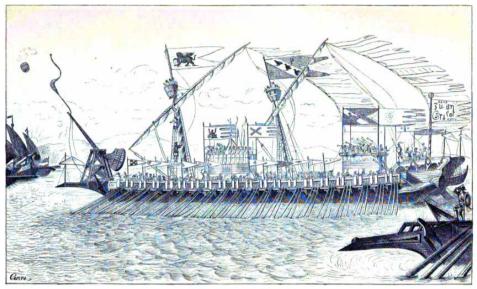
The musicians formed an important part of the equipment. Sanuto says that in going into action every vessel should make the greatest possible display of colours ; gonfalons and broad banners should float from stem ro stern, and gay pennons all along the bulwarks ; whilst it was impossible to have too much of noisy music, of pipes, trumpets, kettle-drums, and what not, to put heart into the crew and strike fear into the enemy:²⁵

So Joinville, in a glorious passage, describes the galley of his kinsman, the Count of Jaffa, at the landing of St. Lewis in Egypt :—

"That galley made the most gallant figure of them all, for it was painted all over, above water and below, with scutcheons of the count's arms, the field of which was *or* with a cross patée gules.²⁶ He had a good 300 rowers in his galley,

²⁵ The Catalan Admiral Roger de Loria, advancing at daybreak to attack the Provencal Fleet of Charles of Naples (1283) in the harbour of Malta, "did a thing which should be reckoned to him rather as an act of madness," says Muntaner, "than of reason. He said, 'God forbid that I should attack them, all asleep as they are! Let the trumpets and nacaires sound to awaken them, and I will tarry till they be ready for action. No man shall have it to say, if I beat them, that it was by catching them asleep." (Munt. p. 287.)

²⁶ A cross pattée, is one with the extremities broadened out into feet as it were.



Marco Polo's Galley going into action at Curzola

and every man of them had a target blazoned with his arms in beaten gold. And, as they came on, the galley looked to be some flying creature, with such spirit did the rowers spin it along ; or rather, with the rustle of its flags, and the roar of its nacaires and drums and Saracen horns, you might have taken it for a rushing bolt of heaven."²⁷

The galleys, which were very low in the water,²⁸ could not keep the sea in rough weather, and in winter they never willingly kept the sea at night, however fair the weather might be. Yet Sanuto mentions that he had been with armed galleys to Sluys in Flanders.

I will mention two more particulars before concluding this digression. When captured galleys were towed into port it was stern foremost, and with their colours dragging on the surface of the sea.²⁹ And the custom of saluting at sunset (probably by music) was in vogue on board the galleys of the 13th century.³⁰

We shall now sketch the circumstances that led to the appearance of our Traveller in the command of a war-galley.

²⁷ Page 50.

²⁸ The galley at p. lxxvii is somewhat too high; and I believe it should have had no shrouds.

²⁹ See Muntaner, passim, e.g. 271, 286, 315, 349.

³⁰ Ibid., 346.



Hausbuch von Schloss Wolfegg, Venus und Mars, Fol. 13r: Mars und seine Kinder (Venus und Mars. Das mittelalterliche Hausbuch aus der Sammlung der Fürsten von Waldburg Wolfegg". München 1997). Wikimedia Commons.

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