

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. p. 161 *seqq.*) and great cross-bows with winding gear,* whilst there were shot-ports† 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 under water when the vessel was at sea.‡

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. 43), and it is constantly resorted to by the Catalans in the battles described by Ramon de Muntaner.§

Sanudo 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,

* 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 Greek fire in the cut at p. 49, I doubt if there is evidence of its use by the Italians in the thirteenth century. Joinville describes it like something strange and new.

In after days the artillery occupied the same position, at the bow of the galley.

Great beams, hung like battering rams, are mentioned by Sanudo, 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. 48), 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 du Sage Roy Charles* (V. of France), explains also the use of the soap: "*Item, on doit avoir plusieurs vaisseaulx legiers à rompre, comme poz plains de chauls ou pouldre, et gecter dedens; et, par ce, seront comme avuglez, au brisier des poz. Item, on doit avoir autres poz de mol savon et gecter es nefz des adversaires, et quant les vaisseaulx brisent, le savon est glissant, si ne se peuvent en piez soustenir et chiéent en l'eaue*" (pt. ii. ch. 38).

† *Balistaræ*, whence no doubt *Balistrada* and our *Balustrade*. Wedgwood's etymology is far-fetched. And in his new edition (1872), though he has shifted his ground, he has not got nearer the truth.

‡ *Sanutius*, p. 53; *Joinville*, p. 40; *Muntaner*, 316, 403.

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