

**ON ANCIENT GALLEYS:
AND THEIR MODE OF
PROPULSION**

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On Ancient Galleys: And Their Mode of Propulsion by W. S. Lindsay

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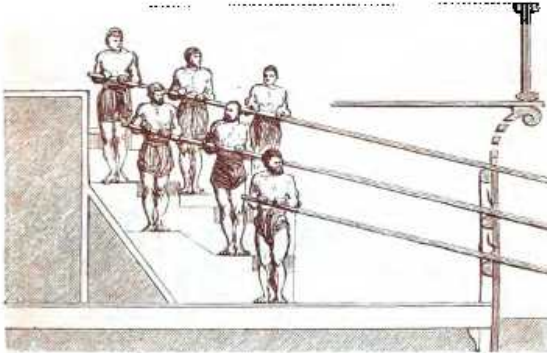
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*His own
feature*
BY
W. S. LINDSAY, ESQ.



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ON ANCIENT GALLEYS, AND THEIR MODE OF
PROPULSION.

[THE following paper will form a part of a large and important work on the shipping of all nations, for which my friend Mr. Lindsay has been during some years collecting materials: I am induced to read it to you this evening because, while examining some of Mr. Lindsay's papers his views on the manner in which the oars were arranged in ancient galleys—in other words, on the way in which the motive power was utilized in the case of Triremes, etc.—appeared novel, and tending materially to solve a problem from all time a puzzle to the learned. Mr. Lindsay has kindly acceded to my request, that he would allow me to make such use of his papers on this subject as I thought best: I shall now, therefore, read to you such portions as I think will most clearly convey his meaning to the Society.

I ought perhaps to add, as many of you may not be aware of this fact, that the writer, Mr. Lindsay, was once well known in the commercial world of England as an extensive shipowner, and that he sat in Parliament for the Tynemouth boroughs, and afterwards for Sunderland, for fourteen years. He has now for some years been confined to his arm-chair by the severe affliction of paralysis in his lower limbs, and the work of which I am now going to give you some extracts has been the study and the amusement of a mind which retains its intellectual powers unimpaired.—W. S. W. V.]

ON ANCIENT GALLEYS, AND THEIR MODE OF PROPULSION.

BY W. S. LINDSAY, ESQ.

[Read before the Royal Society of Literature, Feb. 15, 1871; Sir PATRICK COLQUHOUN, V.P., in the Chair.]

Ancient
Galleys.

Frequent reference has been made in the course of this work to the row-galleys of the ancients, and no subject connected with shipping has called forth more conflicting opinions: nor is this surprising. Most ancient writers who refer to it are less or more at variance with each other; while the engravings on coins and monumental sculptures are generally so confused and contradictory that they afford little assistance in its elucidation. Within the last two centuries numerous authors have endeavoured to solve the problem how these galleys were classed and rowed, and to establish a system of propulsion which, while applicable to every class, would harmonize with the accounts preserved of the size of these vessels and of the number of rowers employed on board of them.

Different
descrip-
tions.

Galleys appear to have been rated by their banks of oars, that is, uniremes had one, biremes two, triremes three, quadriremes four, quinqueremes five, hexiremes six, septiremes seven, octoremes eight, and so forth, up to the enormous ship, with forty banks of rowers, built by Ptolemy Philopater. But the chief point of controversy has been what constituted a bank or *tier*.

According to Homer, the Greek fleet at the siege of Troy consisted entirely of uniremes. They were

then undecked, with the exception of a platform at ^{B.C. 1184.} each end on which the archers or principal fighting men stood; and were guided by oars or sweeps at both extremities, so as to ensure rapid evolution. Pliny ^{about.} states that the Erythræans were the first who built ^{B.C. 900} biremes. Various ancient writers give the Corinthians ^{B.C. 796.} the credit for having been the first to construct triremes. "And now Greece," remarks Thucydides,¹ "began to construct navies and to apply herself more assiduously to nautical affairs. The first who introduced a change in the structure of vessels, so as to form them very nearly in the present mode, are said to have been the Corinthians; and *triremes* are thought to have been built first for Greece at Corinth. It appears, too, that Amiocles, a Corinthian ship-builder, also constructed four such vessels for the Samians."

Although triremes, in the time of Thucydides, and ^{B.C. 450.} for some centuries afterwards, were more approved for purposes of war than any other description of vessel, the authority of Pliny, Diodorus Siculus, Athenæus, Polybius, and others, is sufficient proof that vessels of four, five, six, and ten banks of oars were built;—that Alexander increased the number of banks to twelve;—that Philip, father of Perseus, had a galley of sixteen banks; and—that vessels of four and five banks were frequently engaged in war. The triremes, however, were much more numerous than any other class of galleys except those which had only one bank of oars. Themistocles built three hundred triremes for the purpose of carrying on the war against Ægina; and he obtained a decree authorizing the construction of a further, but limited number of these vessels from the

¹ Thucydides (Bloomfield), vol. i. book 1, c. xii. p. 37.

produce of certain mines. After his time, twenty triremes were annually built by the Athenians, so as to maintain in efficient order a permanent fleet of from three to four hundred vessels of this description. Triremes consisted of two classes, fighting ships and transports. The former were propelled at great speed frequently reaching seven to eight miles an hour; the average number of rowers employed on each, varying from fifty to two hundred. The transports were bulkier and stronger vessels, and, though armed, were not brought into action except in cases of urgent necessity.

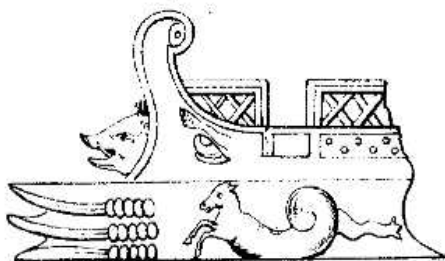
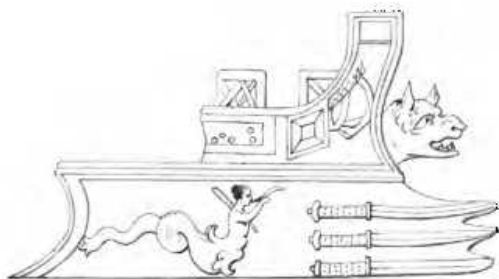
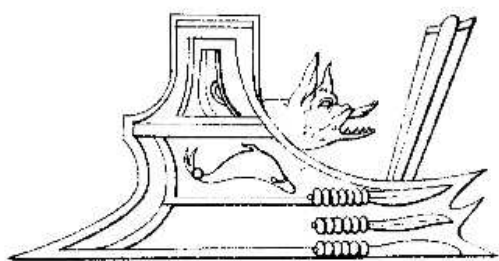
B.C. 481
to 404.

B.C. 400.

B.C. 265.

No mention is made of any vessel with more than three banks of oars having been employed in the Peloponnesian War, but quadriremes and quinqueremes were known, in the reign of Dionysius I., of Syracuse, and were employed by the Carthaginians, in the first Punic War, who had also in their service some vessels of the hexireme and septireme class. From the ease, however, with which the Romans captured these large vessels (even allowing for their superior energy and vigorous mode of close action), they were evidently much less efficient in proportion to their size than triremes. Nevertheless, according to the testimony of Plutarch, very large galleys were in high favour with Demetrius Poliorcetes, whom he represents as a prince possessing superior knowledge of the arts, and of a highly inventive turn of mind. That prince, he states caused several of fifteen and sixteen banks to be built, he himself superintending their construction; and so formidable are these vessels said to have appeared, that Lysimachus, when he had ocular confirmation of reports he had heard of their strength and capacity, raised the siege of Rhodes rather than encounter them

Fig 2.



in action. Plutarch also states that Anthony possessed a fleet of no less than five hundred armed vessels, magnificently adorned, having eight and ten banks of oars, and that he selected the best and largest of them for the celebrated battle of Actium. However exaggerated some of the accounts preserved of these very large galleys may be, and however imperfect and inconsistent the descriptions of them by ancient authors, their existence has been established beyond all doubt.

With reference to their outfit, it is sufficient to state that, in nearly every instance, they were highly ornamented with figures carved on the bow and stern. Below the bow, and between it and the fore foot or keel, there was generally a projecting piece of very strong timber, to which was attached either a ram's head, sharp metal bolts, cleavers, or some other instrument of destruction. These beaks were at first constructed so as to be visible above the water, but afterwards they were immersed, like the beaks of the iron-clad rams of our own time, themselves evidently copies from original Grecian and Roman designs. The most trustworthy illustrations of these have been taken from the Trajan column and a few coins of the period, of which the drawing on the opposite page (Fig. 2) exhibits a fair representation. Nearly the whole of the ancient war galleys had their bows and sterns considerably elevated above the level of the deck. From the former, or the "*coursier*"—centre platform—an officer regulated the duties of the rowers; whilst the pilot directed, from the quarter-deck, the course of the ship. In many cases, this officer sat under a highly ornamented canopy, from which he issued his commands, and, behind it, there

Their outfit.

Beaks and rostrums.

Stern.