
Ships and Navigation of the Ancients

From “The Life and Epistles of St. Paul” by W. J. Conybeare and J. S. Howson, Eerdmans ¹

Before entering on the narrative of that voyage ²which brought the Apostle Paul, through manifold and imminent dangers, from Caesarea to Rome, it will be convenient to make a few introductory remarks concerning the ships and navigation of the ancients. By fixing clearly in the mind some of the principal facts relating to the form and structure of Greek and Roman vessels, the manner in which these vessels were worked, the prevalent lines of traffic in the Mediterranean, and the opportunities afforded to travellers of reaching their destination by sea, we shall be better able to follow this voyage without distractions or explanations, and with a clearer perception of each event as it occurred.

With regard to the vessels and seamanship of the Greeks and Romans, many popular mistakes have prevailed, to which it is hardly

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² The nautical difficulties of this narrative have been successfully explained by two independent inquirers; and, so far as we are aware, by no one else. A practical knowledge of seamanship was required for the elucidation of the whole subject; and none of the ordinary commentators seem to have looked on it with the eye of a sailor. The first who examined St. Paul’s voyage in a practical spirit was the late Admiral Sir Charles Penrose whose life has been lately published (Murray, 1851). His MSS. have been kindly placed in the hands of the writer of this Chapter, and they are frequently referred to in the notes. A similar investigation was made subsequently, but independently, and more minutely and elaborately, by James Smith, Esq. of Jordanhill, whose published work on the subject (Longmans, 1848) has already obtained an European reputation. Besides other valuable aid, Mr. Smith has examined the sheets of this Chapter, as they have passed through the press. We have also to express our acknowledgments for much kind assistance received from Admiral Moorsom and other naval officers.

necessary to allude, after the full illustration which the subject has now received. We must not entertain the notion that all the commerce of the ancients was conducted merely by mean or small craft, which proceeded timidly in the day time, and only in the summer season, along the coast from harbour to harbour, and which were manned by mariners almost ignorant of the use of sails, and always trembling at the prospect of a storm. We cannot, indeed, assert that the arts either of ship building or navigation were matured in the Mediterranean so early as the first century of the Christian era. The Greeks and Romans were ignorant of the use of the compass: the instruments with which they took observations must have been rude compared with our modern quadrants and sextants ³: and we have no reason to believe that their vessels were provided with nautical charts: and thus, when “neither sun nor stars appeared,” and the sky gave indications of danger, they hesitated to try the open sea. But the ancient sailor was well skilled in the changeable weather of the Levant, and his very ignorance of the aids of modern science made him the more observant of external phenomena, and more familiar with his own coasts. He was not less prompt and practical than a modern seaman in the handling of his ship, when overtaken by stormy weather on a dangerous coast.

The ship of the Greek and Roman mariner was comparatively rude, both in its build and its rig. The hull was not laid down with the fine lines, with which we are so familiar in the competing vessels of England and America, and the arrangement of the sails exhibited little of that

³ We have no information of any nautical instruments at the time when we read of Ptolemy’s mural quadrant at Alexandria; nor is it likely that any more effectual means of taking exact observations at sea, than the simple quadrant held in the hand, were in use before the invention of the reflecting quadrants and sextants by Hooke and Hadley. The want of exact chronometers must also be borne in mind.

Ships and Navigation

complicated distribution yet effective combination of mechanical forces, which we admire in the East Indiaman or modern Frigate. With the war ships of the ancients we need not here occupy ourselves or the reader: but two peculiarities in the structure of Greek and Roman merchantmen must be carefully noticed; for both of them are much concerned in the seamanship described in the narrative before us.

The ships of the Greeks and Romans, like those of the early Northmen, were not steered by means of a single rudder, but by two paddle rudders, one on each quarter. Hence "rudders" are mentioned in the plural by St. Luke (Acts 27:40) as by heathen writers: and the fact is made still more palpable by the representations of art, as in the coins of Imperial Rome or the tapestry of Bayeux: nor does the hinged rudder appear on any of the remains of antiquity, till a late period in the Middle Ages.

And as this mode of steering is common to the two sources, from which we must trace our present art of ship building, so also is the same mode of rigging characteristic of the ships both of the North Sea and the Mediterranean. We find in these ancient ships one large mast, with strong ropes rove through a block at the mast head, and one large sail, fastened to an enormous yard. We shall see the importance of attending to this arrangement, when we enter upon the incidents of St. Paul's voyage (Acts 27:17, 19). One consequence was, that instead of the strain being distributed over the hull, as in a modern ship, it was concentrated upon a smaller portion of it: and thus in ancient times there must have been a greater tendency to leakage than at present; and we have the testimony of ancient writers to the fact, that a vast proportion of the vessels lost were by foundering. Thus Virgil, whose descriptions of everything which relates to the sea are peculiarly exact, speaks of the ships in the fleet of Aeneas as lost in various ways, some on rocks and some on quicksands, but "all with fastenings loosened:" and Josephus relates that the ship from which he so narrowly escaped, foundered ~ in "Adria," and that he and his

companions saved themselves by swimming through the night, an escape which found its parallel in the experience of the Apostle, who in one of those shipwrecks, of which no particular narration has been given to us, was "a night and a day in the deep" (2 Cor. 21:25). The same danger was apprehended in the ship of Jonah, from which "they cast forth the wares that were in the ship into the sea to lighten it"; as well as in the ship of St. Paul, from which, after having lightened it the first day, they cast out the tackling on the second day, and finally "threw out the cargo of wheat into the sea" (27:8, 19, 38).

This leads us to notice what may be called a third peculiarity of the appointments of ancient ships, as compared with those of modern times. In consequence of the extreme danger to which they were exposed from leaking, it was customary to take to sea, as part of their ordinary gear, undergirders, which were simply ropes for passing round the hull of the ship and thus preventing the planks from starting⁴. One of the most remarkable proofs of the truth of this statement is to be found in the inscribed marbles dug up within the last twenty years at the Piraeus which give us an inventory of the Attic fleet in its flourishing period; as one of the most remarkable accounts of the application of these artificial 'helps' (27:17) in a storm, is to be found in the narrative before us.

⁴ This is what is called "frapping" by seamen in the English navy, who are always taught how to frap a ship. The only difference is, that the practice is now resorted to much less frequently, and that modern ships are not supplied with "undergirders" specially prepared. The operation and its use are thus described in Falconer's Marine Dictionary: "To frap a ship is to pass four or five turns of a large cable-laid rope round the hull or frame of a ship, to support her in a great storm, or otherwise, when it is apprehended that she is not strong enough to resist the violent efforts of the sea." In most of the European languages the nautical term is, like the Greek, expressive of the nature of the operation. In Spanish the word is *tortorar*: a circumstance which possesses some etymological interest, since the word used by Isidore of Seville for a rope used in this way is *tormentum*.

Ships and Navigation

If these differences between ancient ships and our own are borne in mind, the problems of early seamanship in the Mediterranean are nearly reduced to those with which the modern navigator has to deal in the same seas. The practical questions which remain to be asked are these: What were the dimensions of ancient ships? How near the wind could they sail? And, with a fair wind, at what rate?

As regards the first of these questions, there seems no reason why we should suppose the old trading vessels of the Mediterranean to be much smaller than our own. We may rest this conclusion, both on the character of the cargoes with which they were freighted, and on the number of persons we know them to have sometimes conveyed. Though the great ship of Ptolemy Philadelphus may justly be regarded as built for ostentation rather than for use, the Alexandrian vessel, which forms the subject of one of Lucian's dialogues, and is described as driven by stress of weather into the Pineus, furnishes us with satisfactory data for the calculation of the tonnage of ancient ships. Two hundred and seventy six souls were on board the ship in which St. Paul was wrecked (27:37), and the "Castor and Pollux" conveyed them, in addition to her own crew, from Malta to Puteoli (28:11): while Josephus informs us that there were six hundred on board the ship from which he, with about eighty others, escaped. Such considerations lead us to suppose that the burden of many ancient merchantmen may have been from five hundred to a thousand tons.⁵

A second question of greater consequence in reference to the present subject, relates to the

⁵ The ship must have been of considerable burden, as we find there were no less than 276 persons embarked on board her. To afford fair accommodation for troops in a transport expressly fitted for the purpose, we should allow at the rate of a ton and a half to each man, and as the ship we are considering was not expressly fitted for passengers, we may conclude that her burden was fully, or at least nearly double, the number of tons, to the souls on board, or upwards of 500 tons.

angle which the course of an ancient ship could be made to assume with the direction of the wind, or to use the language of English sailors (who divide the compass into thirty two points), within how many points of the wind she would sail? That ancient vessels could not work to windward, is one of the popular mistakes which need not be refuted. They doubtless took advantage of the Etesian winds, just as the traders in the Eastern Archipelago sail with the monsoons: but those who were accustomed to a seafaring life could not avoid discovering that a ship's course can be made to assume a less angle than a right angle with the direction of the wind, or, in other words, that she can be made to sail within less than eight points of the wind

Pliny distinctly says, that it is possible for a ship to sail on contrary tacks. The limits of this possibility depend upon the character of the vessel and the violence of the gale. We shall find, below, that the vessel in which St. Paul was wrecked, "could not look at the wind," for so the Greek word (27:1515) may be literally translated in the language of English sailors, though with a less violent gale, an English ship, well managed, could easily have kept her course. A modern merchantman, in moderate weather, can sail within six points of the wind. In an ancient vessel the yard could not be braced so sharp, and the hull was more clumsy: and it would not be safe to say that she could sail nearer the wind than within seven points. To turn now to the third question, the rate of sailing, the very nature of the rig, which was less adapted than our own for working to windward, was peculiarly favourable to a quick run before the wind. In the China seas, during the monsoons, junks have been seen from the deck of a British vessel behind in the horizon in the morning, and before in the horizon in the evening. Thus we read of passages accomplished of old in the Mediterranean, which would do credit to a well appointed modern ship. Pliny, who was himself a seaman, and in command of a fleet at the time of his death, might furnish us with several instances. We might quote the story of the fresh fig, which

Ships and Navigation

Cato produced in the senate at Rome, when he urged his countrymen to undertake the third Punic war, by impressing on them the imminent nearness of their enemy. "This fruit," he says, "was gathered fresh at Carthage three days ago.'

Other voyages, which he adduces, are such as these, seven days from Cadiz to Ostia, seven days from the straits of Messina to Alexandria, nine days from Puteoli to Alexandria. These instances are quite in harmony with what we read in other authors. Thus Rhodes and Cape Salmone, at the eastern extremity of Crete, are reckoned by Diodorus and Strabo as four days from Alexandria: Plutarch tells us of a voyage within the day from Brundisium to Corcyra: Procopius describes Belisarius as sailing on one day with his fleet from Malta, and landing on the next day some leagues to the south of Carthage. A thousand stades (or between 100 and 150 miles), is reckoned by the geographers a common distance to accomplish in the twenty four hours. And the conclusion to which we are brought is, that with a fair wind an ancient merchantman would easily sail at the rate of seven knots an hour, a conclusion in complete harmony both with what we have observed in a

former voyage of St. Paul (Chap. 20), and with what will demand our attention at the close of that voyage, which brought him at length from Malta by Rhegium to Puteoli (Acts 28:13).

The remarks which have been made will convey to the reader a sufficient notion of the ships and navigation of the ancients. If to the above mentioned peculiarities of build and rig we add the eye painted at the prow, the conventional ornaments at stem and stern, which are familiar to us in remaining works of art, and the characteristic figures of Heathen divinities, we shall gain a sufficient idea of an ancient merchantman. And a glance at the chart of the Mediterranean will enable us to realise in our imagination the nature of the voyages that were most frequent in the ancient world. With the same view of elucidating the details of our subject beforehand, we may now devote a short space to the prevalent lines of traffic, and to the opportunities of travellers by sea, in the first century of the Christian era.
