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Reviewed work(s):

Source: *The Journal of Hellenic Studies*, Vol. 27 (1907), pp. 48-60

Published by: [The Society for the Promotion of Hellenic Studies](#)

Stable URL: <http://www.jstor.org/stable/624404>

Accessed: 24/02/2013 08:32

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## THE FLEETS OF THE FIRST PUNIC WAR.

ACCORDING to Polybius, there took part in the battle of Ecnomus 680 quinqueremes and 290,000 men, *i.e.* crews 204,000 and troops 86,000; while in the next year, at the battle of the Hermaean promontory, 550 quinqueremes were engaged. The only figures comparable to these in Roman history, manifest absurdities apart, are those given by Appian for the battle of Naulochus, and perhaps those for Actium. At Naulochus 300 ships of all sizes are said to have been in action on either side, and no doubt Agrippa's fleet, at any rate, did amount to this large number<sup>1</sup>; while at Actium Octavian may have had anything up to 400.<sup>2</sup> But in Octavian's time the population of all Italy may have been 7 to 8 millions<sup>3</sup>; the Mediterranean was almost a Roman lake, and its entire resources went to furnish the fleets for the civil wars. But for the generation next after that of the first Punic war, the population of Roman Italy has been reckoned at only 4 to 4½ millions, that of Carthaginian Africa at perhaps 3 to 4 millions,<sup>3</sup> while the Mediterranean supported several considerable fleets beside those of Carthage and Rome. More than one writer has seen that the numbers given for Ecnomus are impossible<sup>4</sup>; and it seems worth while making an attempt to get at some more reasonable figures for the first Punic war.

As to the materials, if Polybius is to be corrected it must be from Polybius himself, and not from the later writers.<sup>5</sup> Apart from his being a great historian, he is far nearer in time to the original tradition than any one else.

<sup>1</sup> J. Kromayer ('Die Entwicklung der römischen Flotte,' *Philologus* 1897), who has gone into the figures for the civil wars, accepts 300 for the fleet of Sextus Pompey also. But this seems to me impossible; for Pompey's 3 squadrons at Mylae, totalling 155, are described by Appian as constituting the larger part of his fleet; after losing 30 at Mylae and some at Tauromenium he cannot have had more than 250 at the most at Naulochus, for building between the two battles was out of the question. This would give a total of about 550 ships in action.

<sup>2</sup> J. Kromayer in *Hermes* 34 (1899) p. 1. If Octavian had 400, and Antony 170 (plus 60 Egyptian), over 600 ships were engaged. But

the figures for the Actium campaign are very uncertain.

<sup>3</sup> See J. Beloch, *Die Bevölkerung der gr.-röm. Welt*; also *Die Bevölkerung Italiens in Alterthum in Beiträge zur alten Geschichte*, vol. 3.

<sup>4</sup> The following helps one to realise what such figures mean. On a population of 42 millions, the British Navy has a personnel of 121,983 (including coastguard and marines), and mobilised 319 vessels of all sorts for the manoeuvres of June—July, 1906; while in crew and troops two quinqueremes carried about the same number as one battleship.

<sup>5</sup> Meltzer has stated this (*Gesch. der Karthager*, vol. 2, p. 568, n. 49). But he makes no application of it to the numbers.

Of the rest, Zonaras (Dion Cassius) is confused and gives no figures. The epitomators of Livy, as they often disagree, must be the subject of considerable textual corruption; but even could we restore Livy, he must either agree with Polybius or be of less authority. There remains Diodorus. It seems agreed that, while Polybius is partly Fabius, partly Philinus, and partly neither, Diodorus is certainly largely Philinus, *i.e.* that he often gives what is substantially the Carthaginian version. Now I regard it as certain that Philinus would tend to exaggerate the Roman numbers, for obvious reasons, just as Fabius would the Carthaginian; Diodorus may therefore be of occasional use as giving a superior limit for Roman figures. I assume that, *other things being equal*, the smaller of two numbers is to be taken.

What, now, was the position when war broke out?

Carthage had finally got the better of Syracuse in their secular duel, and was the greatest sea-power of the west. But it is easy to exaggerate to oneself that power. Meltzer gives an instructive list of prior Carthaginian fleet-numbers: 480 B.C., 200 warships; 406 B.C., 120 triremes; 397 B.C. (war with Dionysius I.), 100 triremes, raised to 200 the next year; 368 B.C. (again against Dionysius), 200 warships; in Timoleon's war, first 150, then 200 warships; in 311 B.C., 130 warships; finally, 130 offered to Rome for help against Pyrrhus. (I omit two small squadrons prior to the fourth century.) These numbers are chiefly from Diodorus, and may not be accurate; but anyhow they shew two things; first, that there was a tradition that in a time of supreme national effort Carthage could raise a fleet of 200 ships; secondly, that it was believed that the ordinary establishment of the Carthaginian fleet prior to the war with Rome was 130 or thereabouts. Whether these two beliefs existed at the time of, or whether they were a consequence of, the first Punic war may for the moment be left undecided.

Rome, of course, had possessed, or had had the control of, warships since the middle of the fourth century B.C., if not earlier.<sup>6</sup> But a distinction must be made, prior to the war with Carthage, between the true Roman fleet (*i.e.* the *duumviral* squadrons)<sup>7</sup> and the ships which, after the war with Pyrrhus, were liable to be furnished under treaty by the Italian towns. *Duoviri* *navales* were first created in 311 B.C.; in 283 B.C. a squadron of 10 ships under a *duovir* was attacked by the Tarentines and five ships taken<sup>8</sup>; in 181 B.C.<sup>9</sup> and 178 B.C.<sup>10</sup> we find that the double *duumviral* squadron consisted, on each occasion, of 20 ships, each *duovir* commanding 10. We may perhaps assume that the double *duumviral* squadron was regularly 20 ships. Such a squadron was only fitted out when required, and then laid up again. Polybius says that when Appius Claudius crossed to Messina the Romans

<sup>6</sup> The view that Rome, prior to 260 B.C., used Greek ships only, seems again coming into prominence, no doubt as a reaction against Mommsen; see *e.g.* E. Speck, *Handelsgeschichte*, 3, i, § 715. But it is demonstrably wrong. Rome controlled no Greek ships before 327 B.C. (treaty with Neapolis); while the first treaty

with Carthage, which cannot be *later* than 348 B.C., presupposes Roman warships.

<sup>7</sup> Not, of course, manned by Romans.

<sup>8</sup> Liv. *Per.* 12; App. *Samm.* 7, 1.

<sup>9</sup> Liv. 40, 26.

<sup>10</sup> Liv. 41, 1.

had not a single ship of their own; no squadron therefore had been fitted out. But probably in the *navalia* were at least 15 old ships, the remains of the squadron of 283 B.C.<sup>11</sup>

They had, however, afloat a squadron of triremes and pentekontors, furnished under treaty by various Italic towns,<sup>12</sup> Tarentum, Locri, Elea, Neapolis. These treaty contributions were very small. In 210 B.C. D. Quinctius obtained 12 ships from 'the allies and Rhegium and Velia and Paestum' in full discharge of their obligations (Liv. 26, 39). In 191 B.C. C. Livius got from Naples, Rhegium, Locri and the *socii ejusdem juris* 25 open ships due under treaty, some being *rostratae*, some *speculatoriae* (scouts).<sup>13</sup> The treaty contribution of Carthage herself in 191 B.C. was only six cataphracts (Liv. 36, 4 and 42). Messana, says Cicero, had to supply one ship. The obligation of Rhegium was one ship, that of Locri 2 (Liv. 42, 48). We cannot suppose that the Romans got more than 25 ships from the Italic towns in 260 B.C.

The Romans, having resolved to contest the sea, built 100 quinqueremes and 20 triremes. The 20 triremes must represent the double *dumviral* command,<sup>14</sup> the number the Romans had previously been accustomed to build when they wanted a fleet. The 100 quinqueremes are probably correct, seeing that the first measure of the Romans, when war broke out with Antiochus, was to decree 100 quinqueremes,<sup>15</sup> though they were never all built. The Romans must also have refitted any old ships in the *navalia*, their regular operation at the beginning of a war (*e.g.* Liv. 35, 20; 42, 27). The Roman fleet therefore would consist of 120 ships newly built, some 15 refitted, and some 25 Italic; possibly also two or three from Massilia<sup>16</sup>; that is to say, about 160 altogether.<sup>17</sup> Obviously, Rome was not going to challenge Carthage with deliberately inferior numbers, though an exaggerated idea of the strength of the Carthaginian navy has led most writers to suppose that she did so; the Carthaginian fleet in 260 B.C. should therefore be somewhat less, and no doubt the number was 130, the number which Polybius gives them at Mylae (possibly taken from Duilius' column), and which agrees with, or else was the cause of, the already noticed belief that

<sup>11</sup> Mommsen thinks the Tarentines had to give up their ships after the war with Pyrrhus; but probably this was not the case (see Niese, *Grundriss d. röm. Gesch.* in Müller's H. d. k. A. III, 5, (1906), p. 70, n. 4), for Tarentum kept its independence and had a number of ships in the second Punic war. Even if they did hand over some ships, the Romans, as was their custom, probably burnt them.

<sup>12</sup> Polyb. 1, 20.

<sup>13</sup> The number appears (quite clearly) from App. *Syr.* 22 combined with Liv. 36, 42, and is presumably that of Polybius.

<sup>14</sup> I do not mean that they had anything to do with *duoviri*, who are not heard of during the period of the great naval wars.

<sup>15</sup> Liv. 35, 20. In the affairs of Greece and Syria Livy is supposed to represent the substance of Polybius fairly accurately, and for the naval war with Antiochus the way in which Appian agrees with and complements Livy makes this almost certain. If the 100 quinqueremes of 260 B.C. be from Fabius those of 192 B.C. are not.

<sup>16</sup> Two Massiliotships joined Cn. Scipio in 217 B.C. (Polyb. 3, 95 = Liv. 22, 19); and in 211 B.C. four joined the *propraetor* M. Junius Silanus (Liv. 26, 19).

<sup>17</sup> Naturally I attach no importance to the fact that Florus 1, 18, 7 says the Romans built 160 ships in 260 B.C.

the ordinary establishment of the Carthaginian fleet prior to the war with Rome was about 130.

As regards the opening of the naval campaign, it is clear that in chs. 21 and 22 of book 1, Polybius has combined two different accounts.<sup>18</sup> Both commenced with Boodes capturing 17 Roman ships; ch. 21 then makes Hannibal blunder into the Roman fleet with 50 ships and lose some 30 ('more than half'); but ch. 22 knows nothing of this; here the main Roman fleet, still far off and concerned at Boodes' victory, puts in (? to Messina) and equips itself with the *corvus*. The account of Mylae that follows, the Carthaginian confidence, the honours paid to Duilius, are all inconsistent with a prior Carthaginian defeat; and the battle of ch. 21 must undoubtedly be, as Dr. Beloch supposes, the Carthaginian version of Mylae taken from Philinus,<sup>19</sup> though Polybius may well be excused for not recognising it. If so, it is some evidence that (as we may, indeed, suspect from Polybius) the whole Carthaginian fleet was not engaged in that battle.

The Roman fleet at Mylae, then, was some 140 strong, (about 160 less 17,) against the whole or part of a Carthaginian fleet of 130. The Romans took 30 ships and the hepteres, and sank 19. Their own loss is not given, but must have been less than 19; say 10. If they were able to refit 20 out of the 30 prizes,<sup>20</sup> they were probably about 150 strong the next year.

Hannibal, with the 80 ships left, returned to Carthage, procured reinforcements, (probably Boodes' prizes and a few old ships,) and sailed to Sardinia perhaps 100 strong. Here he lost 'many' ships, but apparently not their crews. As Polybius gives the total Carthaginian loss in the war at about 500, we can see, by adding up the other losses in his figures,<sup>21</sup> that he must have taken the loss in Sardinia at about 60. But it will appear that we

<sup>18</sup> F. Reuss, *Philologus* 60 (1901) p. 102, who has made the latest examination of Polybius' sources, gives Chs. 20-24 as all from Fabius. But such a result seems to me merely to condemn his method; for the break in the sense of the narrative between Chs. 21 and 22 is patent to anyone.

<sup>19</sup> *Gr. Gesch.* vol. 3, i. p. 677 n. 1. If this be so, it is noteworthy that Philinus knows nothing of the boarding-bridge (*corvus*, *κόραξ*); and no doubt Ihne was right in suspecting the traditional account of this machine, which is not heard of after Ecnomus, and which seems part of the deliberate introduction by Fabius of an element of wonder into this war: for, after all, boarding and *πείζομαχία* were the oldest form of sea-fighting known, and the Carthaginians would have been delighted with an arrangement that would have prevented more than two Romans coming aboard at once. Now the Athenians had used grapnels in 413 B.C., and they occur commonly in the second Punic war; and the *κόραξ* was probably an improved

grapnel on a pole, like Agrippa's *ἄρπαξ*. Dion Cassius so understood it, for Zonaras speaks of the Romans using *χείρας περικόντους σιδηρᾶς*; and Appian so understood it, for whereas Agrippa's ships at Naulochos use the *ἄρπαξ* (described App. *b. c.* 5, 118), at Mylae these same ships have *κόρακας* (*b. c.* 5, 106). The supposed boarding-bridge must have been taken by Fabius from the bridge or ladder of the *sambuca* used by Marcellus in attacking Syracuse, no doubt a real machine, as it appears again (somewhat altered) in the sieges of Rhodes and Cyzicus by Mithradates (App. *Mith.* 26 compared with 73). Some sort of ladder for boarding occurs, however, at the battle of Cumae (App. *b. c.* 5, 82), if this be the meaning of Appian's unique use of *καταβάκται*.

<sup>20</sup> About the proportion refitted after Ecnomus.

<sup>21</sup> Viz., battle of ch. 21, 30, Mylae 50, Tyndaris 18, Ecnomus about 100 (64 + over 30), Hermaea 114, Aegates Insulae 120; 432 altogether.

require some further loss for Hermaea; and 500 is a very round figure. We may put Hannibal's outside loss in Sardinia at 40; it may have been nearer 20, leaving him some 60 to 80 ships.

These ships encountered the Roman fleet at Tyndaris (257 B.C.). That the Romans were in greatly superior numbers (we have seen it might be about 150) appears from the account of the battle<sup>22</sup>; and the only extant figures<sup>23</sup> are at least evidence of a great disproportion in strength. The Romans lost nine ships, the Carthaginians 18.

The Carthaginians had paid the penalty of despising their enemies. They now set to work in earnest to beat them, as did the Romans to invade Africa; both, says Polybius, made a great effort. The results were Ecnomus (256 B.C.) and Hermaea (255 or 254 B.C.).<sup>24</sup> The figures in Polybius are as follows: Ecnomus, Romans 330, Carthaginians 350; Roman loss 24 sunk, Carthaginian more than 30 sunk, 64 captured. Hermaea, Romans 350 (*i.e.* 330 less 24 sunk plus 44 prizes refitted,<sup>25</sup> the 40 ships left in Africa taking part in the battle), Carthaginians 200, some of which had been built in a hurry (Polyb. 1, 36); the Romans capture 114; no other losses given. On the way home the Romans encounter a storm, and out of the 364 all are lost but 80.

Here are two big discrepancies. If the Romans had 350 ships at Hermaea, then (on Polybius' evident assumption that they had no losses) they should have had 464 ships in the storm, not 364, (*i.e.* 350 + 114 prizes in tow); while the Carthaginians, with 250 left after Ecnomus, need not have built in a hurry to get 200 to sea.

To take the Roman figures first. Supposing Polybius' account of Hermaea to be correct, the figure 364 for the storm (250 + 114) shews, on the assumption of no Roman losses, that the Roman fleet at Hermaea was 250.<sup>26</sup> If so, that at Ecnomus was 230 (230 - 24 sunk + 44 prizes refitted, as before = 250). Is, then, Polybius' account of Hermaea correct?

<sup>22</sup> The consul hurries after the enemy as an easy prey, going forward with 10 ships; they surround him and sink 9, but, pursuing the flagship, become engaged with the main Roman fleet, and lose 8 sunk, 10 taken.

<sup>23</sup> Polyæn. 8, 20; Romans 200, Carth. 80.

<sup>24</sup> The date is fortunately not material here, for either year is open to serious objection. For a summary of the arguments, see Reuss, *u. s.*; also Beloch, *Gr. Gesch.* 3, ii, 234, whose reasons for 254 are hardly convincing. The difficulty is this: 255 gives no time for the siege of Clypea, and does not explain why the Hermaea triumph fell in 253; while 254 makes the Romans first waste a year before succouring their beaten troops (though the fleet was ready), and then send out the fleet, not under the consuls (as on all other occasions in this war), but under the consuls of 255-4 as proconsuls, without any apparent reason; for the very

different proconsular squadron-commands of the 2nd Punic war can hardly be cited in support.

<sup>25</sup> Polyb. 1, 29, says they refitted the prizes. If he means all, which is unlikely, then only forty-four were taken, and the lower of the two numbers hereafter discussed for the Carthaginian fleet at Ecnomus becomes even more probable.

<sup>26</sup> The number 350 given for Hermaea does not shew that the storm number should be 464, because, *ceteris paribus*, the smaller number is to be followed. But as a fact Eutropius, or some scribe, had the curiosity to add up, and Eutropius does give 464 for the storm; and Meltzer hereupon suggests that the real Polybian tradition may have been 464, a suggestion which is out of the question for at least three separate reasons: it prefers the easier version and the larger number, and corrects a good

It has been criticised on two grounds: one, because Polybius gives 114 Carthaginian ships as captured and none as sunk; the other, because he dismisses in three lines what (on his shewing) was a greater victory than Ecnomus, to which he gives as many chapters. There was, too, another (? Carthaginian) version of this battle, which makes it a stubborn fight (Zonaras), the Carthaginians losing 24 ships (Diodorus); and Ihne was inclined, following Haltaus, to take Polybius' *ἑκατὸν δεκατέσσαρας* as a corruption of *ἑξήκοντι καὶ τέσσαρας*.

Correcting Polybius' account of a Carthaginian loss by Diodorus is hardly convincing work; but in fact there is little doubt that the battle was a great defeat for Carthage. Not only was she impotent at sea for years after, but the consul Aemilius Paullus, who was in command, set up a column rostrata to celebrate the victory (Liv. 42, 20), and we only hear of one other such column prior to Augustus, that of Duilius. As to the captures, Polybius' phrase *ἐξ ἐφόδου καὶ ῥαδίως τρεψάμενοι* shews that the battle was of the Drepana type: the Carthaginian fleet, in part hastily built and manned by crews of whom some must have been inexperienced and the remainder possibly shaken by a great defeat, was surprised or caught at a disadvantage and jammed against the shore, all, or almost all, the ships that could not make the open sea being captured.<sup>27</sup> And Polybius presumably dismisses the battle in three lines just because he *had* given so much space to Ecnomus, for he had to keep his account of the war brief.<sup>28</sup>

The Roman numbers, then, are 230 Ecnomus, 250 Hermaea, 250 + 114 in the storm, of which all were lost but 80.<sup>29</sup> The number 330 for the Roman fleet at Ecnomus no doubt arose from reckoning in the transports<sup>30</sup> and calling the whole warships; the number 350 for the Carthaginian fleet merely shews that Fabius, as a good patriot, had given a number a little bigger than that of his own side as he made it out. The hurried building of the Carthaginians before Hermaea may have been from 50 to 100 ships, according as from 150 to 100 escaped from Ecnomus; the figure, then, at Ecnomus would have been at the outside 250 (100 being lost), but might not have exceeded 200. Apart from the preference to be given to the smaller number, if sufficient, other considerations all point to 200. The Roman number 230 shews that they expected to meet a fleet of not over 200, or else, looking to

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early writer with a sound text by a poor and late compiler. Reuss, u. s. and Speck, *Handels-gesch.* 3, ii, § 824-5, follow Meltzer; but one cannot write history merely by taking the line of least resistance.

<sup>27</sup> Possibly the number 114 comes from the column. Perhaps, too, the reason why Philinus (Diodorus) gives the Roman loss at Drepana as 117 was to shew that the Carthaginians had had a full revenge for Hermaea.

<sup>28</sup> There is an exact parallel in Appian's account of the war against Antiochus; he dismisses in two casual lines the very important defeat of Hannibal by the Rhodians at Side,

which Livy gives at length; and this in a war where his general agreement with Livy over the naval operations is most marked.

<sup>29</sup> If any Roman ships were lost at Hermaea, the number lost in the storm would be fewer, 80 anyhow remaining.

<sup>30</sup> This must be a common source of confusion in classical (as in modern) fleet numbers. No figures in antiquity are more exaggerated than those of transports; after such numbers as 3,000 and 1,600, the writer who confined himself to less than four figures must have been astounded at his own moderation.

what they did later, they could easily have built more, having some 140 ships and 10 prizes in hand to start with. The Roman number 250 at Hermaea, which came automatically without building, would have been increased had Carthage shewn ability to put 250 to sea, and almost proves that the Carthaginian number at Ecnomus was less; for it is to be remembered that, both before and after Ecnomus, Rome, in addition to her greater resources, had a very long start in building. We have, too, the tradition, whether prior to or due to this war, that 200 ships meant a supreme effort for Carthage.<sup>31</sup> Most important of all, perhaps, is the battle itself, which points to the Carthaginians being outnumbered; they tried enveloping<sup>32</sup> tactics, and failed because their centre was too weak for its work. We must, I think, give Carthage at Ecnomus 200, as at Hermaea; anyhow not much over. If the Romans after Hermaea took off 114 prizes in tow, there must have been a few ships too badly wounded to tow<sup>33</sup>; if we say 16, and give Carthage some 70 not very efficient ships remaining, that is all they can well have had.<sup>34</sup>

To continue Polybius' figures. After the first storm, off Camarina, the Romans, having 80 ships left, built 220, raising their fleet to 300 (254 B.C.); they capture Panormus (253 B.C.); they lose 150 ships in a second storm, off the Lucanian coast (253 B.C.), and retire from the sea; in 252 B.C. they escort a convoy to Panormus with 60 ships; they again build 50 ships, making 200 in 250 B.C., in which year they form the siege of Lilybaeum; in 249 B.C. P. Claudius has 123 ships at Drepana, and L. Junius 120. In 251 B.C. Hasdrubal sails to Sicily with 200 ships and a large army; after Drepana Adherbal receives a reinforcement of 70 ships under Carthalo. These are all the numbers given by Polybius. It will be best to work backwards from Drepana.

Claudius' plan was to sail from Lilybaeum to Drepana with every ship he had.<sup>35</sup> Polybius says 30 escaped, and *the rest*, 93, were captured; the account shows that some of them were much damaged. His fleet, then, numbered 123. Adherbal's force is not given. It must have been smaller than the Roman; first, because Claudius thought it feasible to attack him under the catapults of Drepana; secondly, because Adherbal's victory was looked upon as an unexpected salvation for Carthage; thirdly, because in Polybius' list of the advantages on the Carthaginian side that of numbers is not included. At the same time, it was large enough to capture the bulk of the Roman fleet. We shall not be far wrong if we put it at 100 at the outside, possibly rather less. Why Claudius attacked is clear enough; he must have heard that Adherbal was about to receive a reinforcement of 70 ships, (which in fact arrived after the battle,) and he very properly

<sup>31</sup> The difficulty, of course, all through (money apart), both at Rome and Carthage, must have been, not ships, but men to row them.

<sup>32</sup> The Romans are described as in wedge formation, not in line.

<sup>33</sup> Even at Drepana, Polybius says, there was some ramming, and some ships settled.

<sup>34</sup> Assuming that they *did* have as many as 200 ships at Hermaea.

<sup>35</sup> Polyb. 1, 49, *πάντι τῷ στόλῳ*. I mention this as it is commonly assumed that he left a squadron at Lilybaeum, a most useless proceeding, as the blockade was a failure anyhow, and his striking force insufficient.

supposed that if he did not attack while he could, that able man would presently attack *him* in overwhelming force. No wonder he lost his temper with the sacred chickens.

After the battle, Carthalo, with the 70 ships he had brought and 30 others<sup>36</sup> given him by Adherbal, attacked the 30 Roman ships that had escaped to Lilybaeum with Claudius, and accounted for 'a few' (*ὀλίγα*) of them, towing off some and destroying others. Diodorus says he captured 5 and sank a few; and Philinus would make the most of it. Putting both accounts together, we may say that Carthalo cannot have accounted for more than 10 of the 30. Carthalo then took up his station not far from Lilybaeum, to hinder the approach of the other consul, L. Junius,<sup>37</sup> who was coming up with a convoy and 120 warships, which figure included ships that had joined him from 'the camp and the rest of Sicily.'<sup>38</sup> He had these 120 *before* Carthalo's attack on the thirty ships at Lilybaeum, and anyhow the surviving 20 could not have joined him, as Carthalo with 100 ships lay between. Junius' entire fleet was lost in a storm. At the end, then, of this disastrous year, in which the Romans lost some 223 ships, they had some 20 only remaining.

Now to work backwards. The Romans built 50 ships in 250 B.C.; in 249 B.C. they had 243; their number, then, in 250 B.C., before they built, was not 150, as Polybius says, but 193. They did not, therefore, lose 150 ships in the second storm, off the Lucanian coast. Now they had 80 ships left after the first storm, and are said to have built 220, making 300 altogether. Why they should raise their fleet to this unparalleled figure at a time when Carthage was quite impotent at sea does not appear. Diodorus gives the total Roman fleet after this building (not the new-built ships only) as 250, and we have assumed that Philinus was likely to exaggerate the Roman strength. The real number, therefore, was probably under 250; and as we have to account for the figure 220 in Polybius, there can be little doubt that 220 was the total, not of the newly built ships, but of the whole Roman fleet after the building.<sup>39</sup> The fleet, then, in 254 B.C. was 220 ships; the loss in the second storm in 253 B.C. was not 150, but 27 ( $220 - 27 = 193$ ); 193, with the 50 built in 250 B.C., make up the 243 required for the year of Drepana. The supposed loss of 150 in the second storm must, then, be a duplicate of the loss in the first storm;<sup>40</sup> and if the Romans sent only 60

<sup>36</sup> Polybius says the prizes were taken to Carthage. Some were damaged; if we take the same proportion as after Ecnomus, 60 to 70 at the most would be worth refitting, and Adherbal would have remaining just about the same number of ships to tow them.

<sup>37</sup> The Fasti shew that he was Claudius' colleague. Polybius speaks as if he were his successor and sailed the next year (248 B.C.), but it seems reasonably clear that the naval operations under both consuls form one connected sequence and took place in the same year, 249 B.C.

<sup>38</sup> Pol. 1, 52. If, in fact, any ships joined

him from *Lilybaeum*, they must have been sent off before the battle of Drepana.

<sup>39</sup> The 300 of Polybius may be another instance of confusion due to transports or ships other than warships; for Diodorus says the Romans sailed to the siege of Lilybaeum with 240 long ships and 60 *cercuri*, *i.e.* 300 vessels. *Cercuri* occur in the Roman navy (or the Roman service) in both the second and third Punic wars; Liv. 23, 34; App. *Lib.* 75.

<sup>40</sup> At first sight the loss in the first storm would seem to be 170 Roman ships and 114 prizes; for the prizes would, of course, have been cast off when the storm broke. But as

with a convoy in 252 B.C. it was because 60 sufficed, and not because they were retiring from the sea.

For that the Carthaginian navy did not easily recover from the battle of Hermaea seems certain. They had perhaps 70 not very efficient ships left, and the Romans did what they liked at sea. They took Panormus; they sent supplies there with only 60 ships as escort; they blockaded Lilybaeum. The Carthaginians in 250 B.C. could not attempt to raise the blockade; they had to confine themselves to running it; how little there was to fear from the sea side is shown by the Romans dividing their fleet, and also laying up part of the blockading fleet and using the rowers as land troops. The history of the second Punic war seems to shew that Carthage could not, and knew she could not, support at once a great fleet and a great army; and in 251 B.C. she had sent to Sicily the army and the elephants with which Hasdrubal attempted to retake Panormus by land.<sup>41</sup> The destruction of that army and the danger to Lilybaeum, however, compelled Carthage once more to turn to her fleet; by 249 B.C. Adherbal had perhaps 100 ships, and 70 others were ready at Carthage; it was this growing danger that compelled Claudius to strike.

For the period after Drepana there is little to say. The Carthaginians had some 170 ships, less any lost at Drepana, plus some 60 to 70 prizes worth refitting. But after a little they laid up their fleet, no doubt because the crews were wanted for the war already on their hands in Africa;<sup>42</sup> under these circumstances it is wholly unlikely that any prizes were fitted out. When the Romans again built they built 200 ships; these, with the 20 or so remaining after Drepana, which according to Zonaras had meanwhile been used as privateers, would give them about 220 in the final battle of the Aegates Insulae. The Carthaginian number is unknown; Polybius merely says they got ready 'the ships'; if we assume that they had 100 ships at Drepana and no losses there, and could and did refit 70 prizes—all the most favourable hypotheses, in fact—they *may* have controlled 240 ships, as an outside number. But if they laid up their own fleet, it is unlikely that they had fitted out the prizes. They had used up their trained crews; both the rowers and the marines who took part in the battle were extemporised; no doubt they were in part got together from the crews of the transports; for that there were no men to spare for transports is shown by the warships themselves being loaded down with stores for the army of Sicily. It is not in such

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rostra were forthcoming for Aemilius Paullus' column, one division must have got to harbour with its prizes; consequently the Roman ships lost were more than 170.

<sup>41</sup> The 200 'ships' with which Hasdrubal crossed to Sicily (Polyb. 1, 38) are obviously transports. To suppose that they were warships makes nonsense of the events before Lilybaeum in 250 and 249 B.C., more particularly of the Romans laying up part of their fleet, the account of which is very circumstantial. It is no objection

to this that Hasdrubal *did* get his large army across; the Romans had no naval base facing Africa, and even if they had had, the command of the sea (such as it was with galleys) rarely, if ever, prevented an army crossing in ancient times. Pompey commanded the sea absolutely as against Caesar; so did the liberators as against Antony and Octavian; yet in each case the Adriatic was crossed in force.

<sup>42</sup> Meltzer, vol. 2, p. 336.

circumstances, and with such a dearth of men, that they could have got to sea a fleet of 240 ships, the largest in their history. If we give them their own ships, 170, we shall be nearer the mark, with perhaps 200, the number of Ecnomus and Hermaea, as an outside figure.<sup>43</sup> But this time seamanship was on the side of Rome; 120 Carthaginian ships were sunk or taken; and the war was over.

If any reader has had the patience to follow the foregoing analysis, he will already have seen the deduction from it; but for clearness' sake I may repeat the figures that seem probable. In 260 B.C. the Romans had about 160 ships, the Carthaginians 130. At Ecnomus, Romans 230, Carthaginians about 200 (with a possibility of a somewhat higher Carthaginian figure). At Hermaea, Romans 250, Carthaginians 200. In 254 B.C., Romans 220, Carthaginians about 70. In 249 B.C., Romans 243, Carthaginians about 170. At the Aegates Insulae, 241 B.C., Romans about 220, Carthaginians perhaps 170 to 200 at the outside.

The tradition, then, that a fleet of 200 ships meant a supreme effort for Carthage dates from before the war, and was well founded; it was known to the Romans; and the Romans, in their bid for sea-power, were not invading the realm of miracle, but were acting on a reasonable, cool-headed calculation. They reckoned that, with their greater resources, they could keep up a fleet of from 20 to 40 ships in excess of 200, that is, in excess of anything they expected Carthage to do; and that if they did this they must win. And they did win; though their calculations were nearly upset by the genius of Adherbal and the jealousy of the sea. Their victory was none the less a heroic achievement because it was founded in a well-reasoned policy and because the Carthaginian sea-power was perhaps not so great as we have been accustomed to think.<sup>44</sup>

One other conclusion appears to follow from the figures. The Romans were throughout building to the Carthaginian numbers, not *vice versa*. This does not necessarily mean that they could build more quickly, for they had (so to speak) the whip hand in the matter of building from Mylae to Drepana; but it does mean that they must have known a great deal more of what was going on at Carthage than the Carthaginians knew of what was

<sup>43</sup> There is another, perhaps a better, way of getting at the Carthaginian fleet of 241 B.C. In the war with the mercenaries the Carthaginians had nothing but triremes and pentekontors (Polyb. 1, 73); they had therefore lost all their quinqueremes at the Aegates Insulae, including presumably the Roman prizes. Suppose all the 120 ships lost to have been quinqueremes, the swifter ships alone escaping. 120 is 50 per cent. of 240, 60 per cent. of 200, 70 per cent. of 170, 80 per cent. of 150. But we know that in 219 B.C. the Carthaginian fleet of Spain contained 88 per cent. of quinqueremes, (post, p. 9); it is therefore most unlikely that their fleet of 241 B.C. contained as few as 50 per

cent., or even 60 per cent., and we come back to this, that a fleet of not over 170 cannot be far from the mark. Of course, if the 120 ships lost were not all quinqueremes, the argument is even stronger.

<sup>44</sup> If 200 ships or so was in fact Carthage's effective limit, the limitation must have had to do with the *crews*, of which we know little. It has nothing to do, for instance, with the number of the *νεώπια* at Carthage being 220; for, apart from Utica, the Carthaginians had the control of the docks built by Agathocles at Hippagreta (App. *Lib.* 110); and besides, a fleet could at a pinch winter ashore anywhere (*e.g.* Liv. 36, 45).

going on at Rome. Did Hieron provide for the intelligence of his allies, as well as for their commissariat? <sup>45</sup>

The probability of the correctness of the view which I have taken is much enhanced by a consideration of the figures handed down for the second Punic war. I am not going into these in detail, but I may give a few salient points. The Romans began operations in 218 B.C. by sending out 220 ships.<sup>46</sup> By 217 B.C. it was clear that Carthage was not going to fight at sea. In 215 B.C. the Carthaginians had 120 ships at sea,<sup>47</sup> plus a few in Spain, possibly 18.<sup>48</sup> In 214 B.C. the Roman fleet is down to 185.<sup>49</sup> In 212 B.C. the largest Carthaginian fleet of the war, 130 ships under Bomilcar, attempts to relieve Syracuse.<sup>50</sup> In 211 B.C. the Roman fleet is raised to 215, a new squadron of 30 being fitted out and sent to Spain under M. Junius Silanus,<sup>51</sup> giving 100 for Sicily, 65 for Spain, and 50 for the Adriatic; the latter squadron, however, was tied to watching Philip, and could hardly be counted as available against Carthage. In 208 B.C. there was a scare of a great Carthaginian fleet, the number, of course, being put at 200.<sup>52</sup> Rome had already 233 ships this year, *i.e.* those of 211 B.C. plus 18 taken by Scipio at New Carthage and fitted out<sup>53</sup>; all the ships in Spain, however, had been laid up and the crews added to the army, while the fleet of the Adriatic did not count as against Carthage. Scipio was therefore ordered to equip and send to Sardinia 50 ships, and 50 additional ships were fitted out at Rome, giving, with the fleet of Sicily, 200 ships<sup>52</sup>; while Silanus had in addition 30 quinqueremes in Spain for which he had crews, and which were available should the Carthaginian fleet materialise.<sup>54</sup>

The events of the year 208 B.C., in which Rome equipped 230 ships to meet a threatened Carthaginian fleet of 200, do appear entirely to support the conclusion come to with regard to the first Punic war.

One word as to the total losses given by Polybius. Assuming that his figures for the losses in the separate battles are correct—and without this assumption we cannot go into the figures at all—the total of 500 given for the Carthaginian loss is not very wide of the mark; as worked out in this

<sup>45</sup> The only time, except in Spain, when a Roman squadron seems to have been outnumbered by a Carthaginian was after Syracuse had joined Carthage; Marcellus, in 212 B.C., had to offer battle to Bomilcar with an inferior force.

<sup>46</sup> Polyb. 3, 41 = App. *Ib.* 14 = Liv. 21, 17. Livy adds 20 celoces.

<sup>47</sup> Liv. 23, 32.

<sup>48</sup> The number captured at New Carthage, Polyb. 10, 17.

<sup>49</sup> *i.e.* 150 for Sicily and the Adriatic (Liv. 24, 11), plus 35 in Spain, the original squadron of Cn. Scipio. There were also in Spain 25 prizes taken from Himilco (Polyb. 3, 96 = Liv. 22, 19), but it appears from Polyb. 10, 17, that these were not fitted out.

<sup>50</sup> Liv. 25, 27. I find it impossible to make

out from Livy's confused narrative (24, 36; 25, 25; 25, 27) whether there were or were not 20 other Carthaginian ships in the harbour of Syracuse with Epicydes.

<sup>51</sup> Liv. 26, 19.

<sup>52</sup> Liv. 27, 22. The 80 ships of Scipio that he mentions are the original 35, the 18 taken at New Carthage, and the 25 taken from Himilco and never fitted out.

<sup>53</sup> Polyb. 10, 17.

<sup>54</sup> In estimating this tremendous effort (280 ships), it must be remembered that the Romans were now in part using slave rowers (Liv. 24, 11; 26, 35); and that some of Scipio's crews were pressed Spaniards (Polyb. 10, 17 = Liv. 26, 47.)

paper, the actual loss may have been something like 450.<sup>55</sup> But the total of 700 for the Roman loss is much too high, even on Polybius' own showing; for it includes the 114 prizes taken at Hermaea, which are thus reckoned twice over. The Roman loss cannot well have been much over 500.<sup>56</sup> Even so, these are very large figures; as large as for the eighteen years preceding and including Actium.

Even, however, if the numbers arrived at in this paper seem more probable than the traditional ones, there still remain two difficulties—the question of light craft, and Polybius' use of the word *πεντήρης*. The Roman figures are, of course, inclusive totals, comprising all ships under Roman control, Italian or otherwise: it seems that the Romans did not call on Hieron's navy at all. But a question arises whether the fleet numbers do or do not include light craft; also whether in the third century B.C. light craft took part in fleet actions at all, as they undoubtedly often did in the second. I am not going into this here; but light craft (by which I mean lembi and other ships smaller than pentekontors) raise many difficulties in studying ancient fleet numbers, and may be responsible for many apparently purposeless exaggerations.<sup>57</sup> The fleets of the first Punic war were of course accompanied by a few scouts,<sup>58</sup> but whether these be included or not, they would be much the same for both sides, and would not alter the proportions.

It is necessary, however, to refer to Polybius' use of *πεντήρης*. That these large numbers of quinqueremes were not all quinqueremes is now almost a commonplace. Other wars apart, we know that in this one both sides had triremes<sup>59</sup> and pentekontors,<sup>60</sup> and the Carthaginians quadriremes.<sup>61</sup> The same usage of *quinqueremis* is not infrequently found in the third decade of Livy, no doubt taken from Polybius; and Livy sometimes supplies a sort of proof that *quinqueremes* do not always mean quinqueremes.<sup>62</sup> The real question, of

<sup>55</sup> Mylae 50, Sardinia 20 to 40, Tyndaris 18, Ecnomus 100, Hermaea something over 114, say 130, Aegates Ins. 120: or about 438 to 458 all told. Polybius adds another 30 or so for the supposed battle before Mylae.

<sup>56</sup> Boodes takes 17, Tyndaris 9, Ecnomus 24, first storm (with Hermaea) 170, second storm 27, year of Drepana 223=470. Add some 10 for Mylae, and an unknown loss at the Aegates Insulae. Polybius gets his figure by counting the Hermaea prizes again, and adding another 123 for the second storm.—Refitted prizes make the Roman and Carthaginian totals overlap to some extent, perhaps 70 to 80 ships.

<sup>57</sup> Perhaps I may give one instance of what I mean. Battle of Corycus, 191 B.C.; Livy and Appian agree exactly as to the Roman fleet, but Livy gives Polyxenidas 100 ships (70 cataphracts, 30 *apertae*), while Appian (*Syr.* 22) gives him 200. Now Appian, who himself wrote on the Roman navy, does not, as a rule, throw naval numbers about anyhow; (for the proof of this see Kromayer's article in *Philologus* before cited,

*passim*); and the explanation must be that Polyxenidas' battle fleet of 100 ships was accompanied by some 100 light craft, which Livy has not given. As we fortunately know that 10 years earlier Philip V. had fought in these waters with a fleet containing 150 lembi to 53 cataphracts, we can see that Appian is probably right, especially as Polyxenidas was engaging an enemy 151 strong; and for once we completely justify the larger number.

<sup>58</sup> Polyb. 1, 53, 9, *οἱ προπλεῖν εἰθισμένοι λέμβοι*.

<sup>59</sup> Polyb. 1, 20; Duilius' column.

<sup>60</sup> Polyb. 1, 20; 1, 73.

<sup>61</sup> Polyb. 1, 47.

<sup>62</sup> For instance, Marcellus' fleet before Syracuse is 60 quinqueremes (Polyb. 8, 4 (6)=Liv. 24, 34); but he has a quadrireme (Liv. 25, 30) and 2 triremes and 3 smaller craft (Liv. 26, 39). (I do not say that the smaller craft are reckoned in the 60.) Again, Liv. 21, 49 and 50, the praetor M. Aemilius cuts off and captures 7 Carthaginian quinqueremes, with 1,700 milites

course, is Polybius' credit; and I think we can go a little nearer than the mere assertion, no doubt partly true, that he used *πεντήρης* simply for 'warship,' as some writers use *τριήρης*.

There can be no doubt that, for the Roman navy of the third and second centuries B.C., at any rate, the quinquereme *was* the standard warship, quite apart from the first Punic war. If Rome engaged to aid a foreign power, it was with quinqueremes.<sup>63</sup> If a victory was to be announced, a quinquereme was sent.<sup>64</sup> Envoys and commissioners always sailed in quinqueremes, usually one apiece.<sup>65</sup> It was the typical Roman ship; and after 260 B.C. was very likely almost the only type of ship built in Rome itself,<sup>66</sup> seeing that the treaty cities supplied open vessels, triremes or lesser, and did not (except Carthage after 202 B.C.) supply cataphracts.

Fortunately, we do possess one trustworthy piece of evidence of the composition of a Carthaginian fleet in 219 B.C.; probably a Roman squadron was very similar. When Hannibal set out on his march, he handed over to his brother Hasdrubal his ships, consisting of 50 quinqueremes, 2 quadriremes, and 5 triremes.<sup>67</sup> Polybius rather apologises for being so precise, but says he took the details from the inscription on bronze, which he had read, left by Hannibal himself in the temple of Hera Lacinia. This would make the proportion of quinqueremes in a squadron sometimes as high as 88 per cent.<sup>68</sup> The Arcadian, mediterraneus homo, may be pardoned for talking of a fleet as a fleet of quinqueremes when in fact 12 per cent. of the number were something else; while the philosophic historian would certainly consider the discrepancy supremely unimportant. When Polybius has good authority before him, Hannibal or an admiral of Rhodes, he gives precise details; elsewhere it may be that he is satisfied with conveying what he considers to be a substantially correct impression; and, after all, he himself had seen a fleet of the old Roman navy, perhaps the last of its fleets to go into action. For that navy scarcely survived the destruction of its great antagonist; and Rome was content to fight with ships of Greece and Asia until the *lex Gabinia* opened a new chapter in the history of the sea.

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nautaeque, *i.e.* about 242 to a ship; the *rowers* on a quinquereme were more than that, according to Polybius.

<sup>63</sup> Liv. 23, 24, the treaty with Aetolia. That quinqueremes were in fact sent appears from Liv. 27, 32, where on 15 of the ships Sulpicius ferries 4,000 troops over the Gulf of Corinth, giving an average of 266 on a ship, which Kromayer says is the highest to be found.

<sup>64</sup> Polyb. 10, 19 = Liv. 26, 51.

<sup>65</sup> Polyb. 15, 2; Liv. 28, 17; 29, 9; 30, 25; 30, 26; 31, 11.

<sup>66</sup> I think there is no instance of any other type being built.

<sup>67</sup> Polyb. 3, 33 = Liv. 21, 22.

<sup>68</sup> If I may venture on one modern parallel, the place of the quinquereme at this time was

exactly that of the 74 under Nelson; the quadrireme and trireme corresponded to the smaller ships of the line of 60 or fewer guns, the 'light craft' to frigates and brigs, while the heptereis and dekereis of the Hellenistic powers took the place of the ships of 110 and 120 guns built by France and Spain. Though both quinquereme and trireme fought in the line, the fact that Livy classes triremes among ships *minoris formae*, as opposed to the quinqueremes, &c., *majoris formae* (37, 23; 36, 41), shews some well-marked distinction between the two other than mere size; no doubt the line of division is between the galleys with little oars rowed by one man and those with great oars rowed by several men, a distinction which to a spectator would be most conspicuous.