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HANS HAUBEN

Fleet Strength at the Battle of Salamis (306 B. C.)*

The naval battle at Salamis is the most important *naumachia* ever fought between Diadochian fleets. Ptolemy's crushing defeat not only meant the loss of Cyprus, but also put a temporary end to his influence at sea. For the Antigonids Salamis inaugurated a period of almost unchallenged thalassocracy.

The most detailed description of the encounter is provided by Diodorus (20, 46, 5–47, 4 and 47, 7–52). More concise, though still comparatively extensive accounts are given by Plutarch (Demetr. 15–16) and Polyaeus (4, 7, 7). Brief mentions are made by Iustinus (15, 2, 6–9), Appian (Syr. 54), Pausanias (1, 6, 6) and the Marmor Parium (FGrHist 239 B 21). Alexis' text in Athenaeus (6, 254 a) contains only an allusion to Demetrius' victory. In modern scholarship the most comprehensive and most recent discussion is offered by J. SEIBERT in his 'Untersuchungen zur Geschichte Ptolemaios' I.' (Münchener Beiträge 56), 1969, 190–206.

One of the most thorny problems concerning this battle is the strength of the fleets involved. Not only do Diodorus, Plutarch and Polyaeus contradict each other, but even Diodorus' data are divergent among themselves and difficult to harmonize. Needless to say, the hypotheses formulated by modern scholars are even more numerous. A lucid survey is given by SEIBERT.¹

Ptolemy's fleet presents the fewest difficulties. It numbered 140² or 150³ men-of-war,⁴ plus 60 vessels in the port of Salamis.⁵ The latter were also fighting craft, for Ptolemy summoned them to battle. He thus had a total of 200 to 210 warships available. His fleet was accompanied by more than 200 transport vessels carrying at least 10,000 infantrymen.⁶ According to Diodorus, his fighting fleet consisted entirely of pentereis and tetrereis: τούτων δ' ἦν ἡ μεγίστη πεντήρης, ἢ δ' ἐλαχίστη τετρήρης,⁷ which in all probability means that the tetrereis were in the majority.⁸

* With thanks to Prof. Dr. E. VAN 'T DACK, who read an earlier draft of this paper, and to P. VAN DESSEL for the English translation. I am also indebted to Prof. Dr. H. H. SCHMITT for his interesting suggestions.

¹ O. c., 193–195 and 195 n. 5.

² Diod. 20, 49, 2; Polyaeus 4, 7, 7.

³ Plut. Demetr. 16, 1.

⁴ Diodorus speaks of ναῦς μακράς.

⁵ Diod. 20, 49, 3; Plut. Demetr. 16, 1; Polyaeus 4, 7, 7.

⁶ Diod. 20, 49, 2.

⁷ Diod. 20, 49, 2.

⁸ J. SEIBERT, o. c., 194.

This is the first and only time that Diodorus offers such information on the composition of a Ptolemaic fleet. This is presumably to be explained by the fact that most of it was captured by Demetrios, so that Antigonid court circles, to which Diodorus' source, Hieronymus, belonged, were able to form a precise picture of the various types of ship used by Ptolemy.

Seemingly insoluble are the problems concerning the numbers and the make-up of the Antigonid fleet. Still, a few proposals can be made which differ from what SEIBERT has written. Plutarch⁹ and Polyaeus¹⁰ can to a certain extent be reconciled. According to the former, Demetrios had 190 (180 + 10) ships; according to the latter, 170.

Diodorus, on the other hand, gives numbers in two places. First Demetrios is said to have crossed from Cilicia to Cyprus with the following fleet: more than 110 triremes, 53 βαρύτεραι στρατιωτίδες and an unspecified number of transport vessels to carry the cavalry and infantry.¹¹ Just before the battle, however, he is stated to have had 118 (108 + 10) ships,¹² excluding or including—σύν is ambiguous¹³—a number of craft from subjected Cypriot cities.¹⁴ The fleet consisted of heptereis (the largest type), hexereis, pentereis (the majority according to Diodorus), tetrereis and lighter vessels.¹⁵ Mentioned specifically are seven Phoenician heptereis, 30 Athenian tetrereis, 10 hexereis and 10 pentereis, which together formed the left wing.¹⁶ Likewise pentereis were the 10 ships that were ordered to blockade the entrance to the port of Salamis.¹⁷

How can all these data be somewhat reconciled? To begin with, the number 118 seems suspect. Considering 1) that in the late spring of 307 Demetrios must have left Ephesos with some 150 men-of-war;¹⁸ 2) that, in view of the confrontation

⁹ Demetr. 16, 1–2.

¹⁰ 4, 7, 7.

¹¹ 20, 47, 1.

¹² Diod. 20, 50, 1 and 2.

¹³ See LIDDELL-SCOTT, s. v., A 8 and 9. Cf. e. g. Diod. 20, 82, 4 and 96, 1, where σύν is also ambiguous. According to H. H. SCHMITT one could on the basis of τὰς ἀπάσας immediately conclude that σύν has inclusive force here. In my view, however, this argument cannot be regarded as decisive, even though it has much to commend it in the given context. For in 49,2 τὰς πάσας ναῦς μακρὰς also does not denote Ptolemy's entire fleet since reference is made immediately thereafter (in 49, 3) to the 60 ships at Salamis. Whatever the case, the question is of but secondary importance and, for that matter, the ensuing inquiry will show that σύν indeed has inclusive force in 50, 2.

¹⁴ Presumably Karpasia and Ourania (Diod. 20, 47, 2).

¹⁵ 20, 50, 2–4.

¹⁶ 20, 50, 3.

¹⁷ Diod. 20, 50, 1.

¹⁸ It can be deduced both from Diodorus (20, 45, 1) and Plutarch (Demetr. 8, 3) that the fleet with which Demetrios took to sea in 307 was, qualitatively and quantitatively, a strong one. But whether it numbered 250 ships, als Plutarch states, is quite another matter. This number is very high for the late 4th century and possibly encompasses the transport vessels (thus W. W. TARN, in Cambridge Ancient History VI², 1933, 497,

with Ptolemy, he took from Athens as many of his ships as possible; 3) that the Athenians themselves provided 30 ships¹⁹ and that he also recruited craft in Cilicia,²⁰ it is almost inconceivable that he would have arrived in Cyprus with no more than 118 vessels. In addition, it certainly looks like Ptolemy felt quantitatively inferior without the 60 Salaminian ships,²¹ which implies that Demetrios had more than 140 or 150 craft.²²

All this leads me to suppose that an error crept into Diod. 20,50,2 at some stage: $\delta\kappa\tau\acute{\omega}$ πλείους τῶν ἑκατόν.²³ BELOCH suggested that the ten's place might be missing.²⁴ I myself formerly thought of an interchange between units and tens: 108 in lieu of 180, a mistake that could have taken place, for example, when Hieronymus' work was excerpted. It is much simpler, however, to suppose, with Prof. T. REEKMANS – to whom I am most grateful for this «egg of Columbus» – that somewhere ρη (108) and ρπ (180) were confounded, a confusion which is paleographically easy to explain. We thus arrive at a total of 190 vessels (180 + 10), which is in agreement with Plutarch.

But there is more. Prof. H. H. SCHMITT suggested an interesting and equally plausible alternative to REEKMANS' explanation. According to SCHMITT σ' πλείους τῶν σ' (170) could have been the original wording, but what he calls «ein akrophonisches Mißverständnis» would have altered the text. In other words, at a certain moment in the tradition (e. g. between Hieronymus and Diodorus) the cipher σ' (70) was misinterpreted or, more likely, unconsciously read as the initial letter of δ (κτώ) (8). This then would mean that Demetrios actually went into battle not with 190, but with 180 (170 + 10) ships. This interpretation can to a certain extent be reconciled with the number of vessels given by Polyaeus (170), viz. if one accepts that in the latter the ten detached ships were not taken into account.

without further comment). The best point of contact is perhaps the expedition fleet of Polemaios-Medeios in 312. It numbered 150 men-of-war (expressly designated by Diodorus, 19, 77, 2, as ναῦς μακράς). Considering the exceptional importance of Demetrios' mission in 307, his fleet is likely to have at least equalled that of 312 in quality, and possibly even surpassed it. Unfortunately, the average ship strength of Medeios' formation is unknown, so that it is difficult to compare it to Demetrios' fleet. Yet it is reasonable to assume that, if the latter was *quantitatively* smaller than Medeios', the difference cannot have been very great. I intend to deal with this problem elsewhere in more detail.

¹⁹ Diod. 20, 50, 3. ²⁰ Diod. 20, 47, 1.

²¹ Otherwise J. SEIBERT, o. c., 195–196.

²² It is of course quite possible that Ptolemy felt qualitatively inferior with a quantitatively stronger fleet and that he tried to make up for his qualitative inferiority by increasing his numbers. But Diodorus does not mention this qualitative difference and only devotes attention to the numerical strength: ἤλπιζε γάρ, εἰ προσλάβοι ταύτας, ἔαδίως κρατήσῃν τῇ ναυμαχίᾳ, διακοσίοις σκάφεσιν ἀγωνιζόμενος (20, 49, 3). This leads to the supposition that Ptolemy, without those 60 ships, could throw fewer vessels into battle than could Demetrios.

²³ Such an exact number, for that matter, is unusual when indicating the *total* strength of a fleet, where round numbers are preferred. As to the 53 στρατιωτίδες, see n. 29 below.

²⁴ K. J. BELOCH, Griechische Geschichte IV² 1, Berlin-Leipzig 1925, 154–155 n. 1.

The question remains how to reconcile these 180 or 190 with the «more than 110 triremes» in 20, 47, 1. The solution probably lies in the 53 *στρατιωτίδες*, as NIETZOLD,²⁵ BELOCH²⁶ and CARY²⁷ rightly surmised.²⁸ These βαρύτεραι στρατιωτίδες are here not the usual troop transports, but warships of a larger type than tetrereis: therefore heptereis, hexereis, pentereis.²⁹ The tetrereis cannot have belonged to this group, since a total exceeding 53 would then have been reached. Of the 53 heavier ships, then, 37 are known. The remaining 16 were probably stationed on the right wing.³⁰ The rest of the fleet consisted of tetrereis and triereis, and perhaps some still smaller types. These must be implied in the «more than 110 triremes» in 20, 47, 1.³¹ Ἐπιπέριος indeed does not have the purely technical meaning of «trireme», but can also signify «warship» in general.³² Here the word would denote the types of ship *most common* at that time, which were gradually being surpassed, not in numbers but in importance, by heavier models.³³

With these interpretations in mind, the two disputed passages of Diodorus (47, 1 and 50, 2) can easily be harmonized: in 47, 1, en route from Cilicia to Cyprus, Demetrios had more than 163 warships (more than 110 + 53); according to 50, 2 he had 180 or 190 (170 or 180 + 10) immediately before the battle. The difference (less than 17 or 27) is explained by the levies in Cyprus. Σύν, therefore, has without any doubt inclusive force.

Diodorus' statement that the pentereis formed the largest group in Demetrios'

²⁵ W. NIETZOLD, *Die Überlieferung der Diadochengeschichte bis zur Schlacht von Ipsos*, diss. Dresden 1905, 15 n. 16.

²⁶ O. c., IV² 1, 154–155 n. 1.

²⁷ M. CARY, *A History of the Greek World from 323 to 146 B. C.*, London-New York 1963, 385–386; Appendix 4: «The Strengths of the Fleets at Salamis».

²⁸ Pace J. SEIBERT, o. c., 194 n. 4, and L. CASSON, *Ships and Seamanship in the Ancient World*, Princeton 1971, 90 n. 65 and 93 n. 83.

²⁹ Cf. M. CARY, o. c., 385: «The transport was provided by the πορεία τῶν ἱππέων καὶ πεζῶν. The στρατιωτίδες, being distinct from these, must therefore be warships, presumably with a large complement of marines». The number 53, for that matter, is much too exact to bear on transport vessels. It is typical for heavy warships, which are commonly indicated to the unit.

³⁰ Thus, rightly, K. J. BELOCH, loc. cit., who nonetheless confuses left and right wings in the relevant note.

³¹ Thus K. J. BELOCH, loc. cit.

³² So e. g. in Polyaeus 4, 7, 7 in connection with Demetrios' fleet off Salamis: ἐπιπέριον ἑβδομήκοντα. Cf. F. MILTNER, RE 7A (1939) 117; J. SEIBERT, o. c., 194–195.

³³ Up to that time the pentereis had been a rather exceptional type of ship. The first example was probably built by Dionysios of Syracuse in the early 4th century (Diod. 14, 41, 3; 42, 2; 44, 7). The first pentereis to appear in Athenian naval documents do not antedate 325/24 (IG II² 1629, l. 811). In the fleets of Alexander the Great they still played a comparatively small role: Cf. F. MILTNER, Pentere, RE 19 (1937) 534–537, esp. 534–535; L. CASSON, o. c., 97–98. It is therefore quite understandable that Hieronymus did not apply the term ἐπιπέριος to these, in his day still «unusual», types of ship. This was later to change: see e. g. Appian, Prooim. 10: ἐπιπέριος δὲ ἀπὸ ἡμιολίας μέχρι πεντήρους (in connection with Philadelphos' fleet).

navy is surely inaccurate.³⁴ But the inaccuracy is only relative: the pentereis were in all likelihood in the majority within the group of the larger ships, i. e. within the 53 βαρύτεραι στρατιωτίδες: indeed, among the 37 known vessels belonging to this category, we can already count 20 pentereis.

To conclude, let us compare the fleets of both antagonists. The average ship strength of the two fleets was just about equal. Ptolemy's ship quotient was somewhere between 4 and 4,50; Demetrius' between 3,68 and 4,42.³⁵ The latter, however, had the advantage in possessing heptereis and hexereis, types that Ptolemy lacked and that decided the outcome of the encounter. It may therefore be said that, all in all, the Antigonid fleet was qualitatively stronger than Ptolemy's. This was due to two factors: Antigonos' foresight in building these great ships in 315–314,³⁶ and his possession of Phoenicia, the provenance of the heptereis.

But quantitatively too, Ptolemy, contrary to the view of some scholars (among them SEIBERT), was also by far outclassed by the Antigonid, at least when the 60 Salaminian ships are not tallied. Demetrius adroitly managed to neutralize these vessels during the actual battle. For the rest, his achievement was not all that exceptional and Ptolemy's defeat not all that amazing.³⁷

³⁴ Cf. K. J. BELOCH, loc. cit.

³⁵ To calculate the average ship strength I have followed the same procedure as W. W. TARN, *Antigonos Gonatas*, Oxford 1913, 456–457. The quotients for the Antigonid fleet were obtained as follows:

$$1) \text{ Minimum quotient: } \frac{7 \times 7 + 6 \times 10 + 5 \times 20 + 5 \times 16 + 3 \times 127}{180} = 3,72 \text{ or}$$

$$\frac{7 \times 7 + 6 \times 10 + 5 \times 20 + 5 \times 16 + 3 \times 137}{190} = 3,68.$$

$$2) \text{ Maximum quotient: } \frac{7 \times 7 + 6 \times 10 + 5 \times 20 + 5 \times 16 + 4 \times 127}{180} = 4,42 \text{ or}$$

$$\frac{7 \times 7 + 6 \times 10 + 5 \times 20 + 5 \times 16 + 4 \times 137}{190} = 4,40.$$

In the first computation the 127 or 137 ships of the class under pentereis have been regarded as triereis. To be sure, we know there were at least 30 quadriremes in the fleet, but on the other hand the participation in the battle of ship types even smaller than triremes cannot be ruled out. In the second calculation the 127 or 137 ships were given the value 4. This is certainly too high, but it is possible that some of the 16 unspecified βαρύτεραι στρατιωτίδες were larger than pentereis.

³⁶ Diod. 19, 62, 8, where ἐννήρεις δὲ τρεῖς, δεκήμεῖς δὲ δέκα should presumably be replaced by ἐπτήρεις δὲ τρεῖς, ἐξήρεις δὲ δέκα. See W. W. TARN, *JHS* 59, 1939, 127–128.

³⁷ Demetrius' numerical superiority can perhaps also be deduced from the fact that he drew up his left wing in two lines, thus shrinking his front line. Had his number of ships been smaller than, or equal to, that of his opponent, he would in so doing have exposed his right wing to a *periplous*, at least if he had positioned his fleet parallel to the coast, as SEIBERT, unlike most historians, presumes (o. c., 197–199; see the maps 204–205). (If his battle line was perpendicular to the coast, his right wing was protected against a *periplous*.)

