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Ship-Binding and the Roman *Corvus*

by Bryant Ahrenberg

Abstract: Polybius first described the Roman *corvus* (κόραξ) in 1.22 of his *Histories* and, to this day this device remains enigmatic. Its origins, purpose, description, and sudden disappearance from the narrative of the First Punic War have all proved to be fruitful topics that have spurred the investigative minds of historians in the millennia since. Like many aspects of the navy in Polybius, these questions have not come without controversy and speculation. What we can say is that it was a device that facilitated in the connection of one's ship to a hostile vessel. This article will offer a brief *status quaestionis* for the *corvus*, before offering a new interpretation. Rather than a short-lived innovation with a narrow function, it will argue that the *corvus* should be understood within the wider context of 'ship-binding' – or the long-standing practice, found across the Mediterranean, of linking ships together in both peaceful and military contexts. In short, the *corvus* likely represented a traditional technique used in an interesting way. It will also highlight how the *corvus* helped to shape the consistent "land-lubber" narrative for the Romans, i.e. Romans were amateurs at sea and sought to convert naval-battles into land-battles due to their inexperience.[1] Contrary to this, Rome's use of the *corvus* may have demonstrated a deep awareness of traditional naval practices and an ability to adapt these to new situations.

Keywords: Corvus, Romans, Roman Navy, Ship-binding, Naval Warfare, Punic Wars, Ancient Warfare, Mediterranean Connectivity

Polybius (1.22) introduced the *corvus* in the prelude to his history on the battle of Mylae (260 BCE) during the First Punic War (264 – 241 BCE). He wrote that the device was built around a raised pillar four *or-*

1 This narrative, and terminology, was popularized by Thiel in his 1954 work. It has since become commonplace in academic works to refer to this as the "land-lubber" argument, e.g.: J. H. Thiel, *A History of Roman Sea-Power Before the Second Punic War* (1954): 19; H. H. Scullard, "Carthage and Rome" *CAH VII* pt. 2 (1990): 548-549; Lionel Casson, "Landlubbers to Sea Lords," in *The Ancient Mariners* (2020) 143-156; J. F Lazenby, "Naval Warfare in the Ancient World: Myths and Realities," in *The International History Review* 9, no. 3 (1987): 447.

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gia (7m/24 ft) in length and three palms (29 cm/11.5 in) in diameter. Polybius described how the device functioned with a pully system at the top of this pillar which supported a ladder nailed together with angled timber that was four feet (ποδῶν)[2] wide and six *orgia* (11 m/36 ft) long. The structure was reportedly able to spin around with the oblong-shaped ladder jutting out from this pillar a distance of two *orgia* in length and had two knee-high (εἰς γόνυ τὸ βάθος) railings along each side. Finally, Polybius added, the end of this ladder was adorned by a sharpened, iron, pestle which could then be dropped and attach itself to the opposition's ship like a spike. This, in theory, would allow the Romans to use this device to quickly board enemy vessels by bridging the gap between the two ships. However, every aspect of this device has produced more questions than answers in the historiography.

While the Roman *corvus* (lit. 'crow')[3] had been discussed at great lengths before,[4] H. T. Wallinga offered a crucial re-examination of the device in his 1956 PhD dissertation under the supervision of J. H. Thiel. Wallinga took a practical approach to the topic, largely following the narrative of Polybius but countering some of his contemporary interpretations. Perhaps most crucially, he challenged Thiel's argument that the *corvus* itself was to blame for the loss of Roman fleets due to its cumbersome design.[5] Wallinga, with the assistance of J. W. Bonebakker,[6] showed that the device would not have been heavy enough to have a signifi-

2 All translations are mine unless otherwise noted.

3 Named so for the sharpened iron pestle which was said to resemble the beak of a raven or crow.

4 Earlier efforts largely dealt with trying to make sense of Polybius' description and the mechanics. See: Karl Haltaus, *Geschichte Rom sim Zeitalter der Punischen Krieg, aus den Quellen Geschöpft und Dargestellt*, Erster Band (1846): 607-609; B. G. Niebuhr, *The History of Rome Vol III,* trans. Smith and Schmitz (1851): 578; William Ihne, *History of Rome VII*, English Edition (1871): 56-58 and notes.

5 Wallinga, H. T, *The Boarding-Bridge of the Romans: Its Construction and its Function in the Naval Tactics of the First Punic War*, J. B. Wolters, 1956: 77-78; J. H. Tiel, *Roman Sea-Power*, 274; Cf: J. f. Lazenby, "Essays and Reflections: Naval Warfare in the Ancient World: Myths and Realities" *The International History Review* 9, no. 3 (1987): 451; Andrew Lambert, "Burning the Carthaginian Fleet," in *Seapower States* (2018): 87; Emile de Saint-Denis, "Une Machine de Guerre Maritime: Le Corbeau de Duilius," in *Latomus* 5, n. 3/4 (1946): 367, the latter speaking about how its cumbersome nature likely was the reason for its short lifespan and would have made it easier to counter once the Carthaginians grew familiar with it.

6 A professor of Naval Architecture (*Scheepsbouwkunde*) at Technische Universiteit Delft,

cant impact on the seaworthiness and manoeuvrability of the craft, backing up his argument with experimental archaeology.[7] Wallinga worked through Polybius' depictions applying a healthy level of scepticism that aimed to find practical reasons underpinning the details in the ancient author's narrative.

Wallinga's work helped to steady the historiography of the topic, with his more practical approach to the source material providing an importance balance against increasingly radical interpretations of Polybius' narrative. For instance, one common argument at that time, championed by W. W. Tarn, was that the *corvus* may have simply been a grappling hook.[8] Tarn wrote that Polybius' boarding-bridge was "pure myth" due to the weight concerns suggested by Thiel (and later challenged by Wallinga).[9] Emile de Saint-Denis countered that Tarn had confused the use of κόρακας by Appian (5.106) to refer to a bridge, but had been referring here to a boarding harpoon.[10] de Saint-Denis pointed towards a similar depiction in the *Deipnosophistae* (5.208d) where devices called κόρακες surrounded (κύκλῳ) ships, and, having been discharged (ἀφιέμενοι), latched on to enemy vessels. This description matches some elements of Polybius' *corvus* but differs in its description and implementation. Furthermore, Appian's use of ἔβαλλον (the act of throwing) in the depiction of his κόρακας, and the specificity of this being done from ships that were of noticeably differing heights, would support de Saint-Denis' conclusion.[11]

Additionally, Tarn argued that boarding-bridges were in use prior to this, pointing specifically to Diades of Pella (fourth century BCE), who was mentioned in Vitruvius' *De Architectura* as having described a "*corvum"* (13. 3). This device was said to be a "demolisher" (*demolitorem*) but – Vitruvius adds – Diades believed this siege weapon was meritless (*nullam habere virtutem*) (13.8)

1893-1989.

7 Wallinga, 77-78.

8 Cf. Brian Campbell, "Conquering the Mediterranean" in The Romans and their World: A Short Introduction (2011): 24; Wallinga, *Boarding Bridge,* 54-56.

9 W. W. Tarn, *Hellenistic Military & Naval Developments*, New York: Biblo and Tannen: (1966): 149.

10 de Saint-Denis, 365. "D'autre part, W. W. Tarn allègue un passage d'Appien (B.C., 5, 106)… désigne simplement des harpons d'abordage (pièces de bois armées d'un croc de fer);"

11 i.e., you would need relatively similarly sized vessels to use a boarding-bridge attached at your own mast, as it would be unable to extend below your own deck's horizon.

and therefore not worthy of a proper description beyond that.[12] The ambiguity of the passage might be enough on its own to dismiss this line of argument, but what we are given in-context also does not match up to other descriptions of the Roman *corvus*. Instead, the passage is most likely referring to a device for assaulting walls. The only connection between the two pieces of technology appears to be in the name, which does not appear sufficient to carry the argument that this was an earlier boarding-bridge. When you consider that animal names often appear for other siege machinery[13] and naval devices[14] then this can probably be called a coincidence, similar to that shown by de Saint-Dennis. Furthermore, as Lazenby argued, Polybius would not have mistaken a well-established tool like a grappling hook with something novel.[15]

Regarding its invention,[16] the first Polybian passage (1.22) discussing the *corvus* is vague in its wording but there are a few places can look for interpretation of Polybius' intent in this regard. First, he wrote that the construction was proposed (ὑποτίθεται) by an unnamed person. This phrasing does not necessarily indicate that they were the *first* to propose it, however, the next part of that passage is suggestive of that. Polybius added that the device was called a "crow" (κόρᾰξ) but only later was it given this name.[17] It is possible that the name was later altered to "*corvus*" from another earlier (and unknown) title. However, I believe that this passage suggests that Polybius may have considered the creation and the naming of this device to have been contemporaneous – the device not having been 'named' prior to his mention of it. This is further evidenced by the Carthaginians (according to Polybius) being puzzled (ἠπόρουν) and surprised by the "strange

12 "De corace nihil putavit scribendum, quod animadverteret eam machinam nullam habere virtutem."; Cf. Wallinga, 73-75.

13 "Onager" literally refers to a wild donkey; (battering) "rams" (κριός/ ariēs); "scorpions", etc.

14 Apart from the "crow" one can find the "dolphin" being used regularly as a defensive device.

15 J. F. Lazenby, "Essays and Reflections: Naval Warfare in the Ancient World: Myths and Realities" *The International History Review* 9, no. 3 (1987): 451.

16 See: Claudio Vacanti, *Guerra per la Sicilia e guerra della Sicilia. Il ruolo delle città siciliane nel primo conflitto romano-punico,* Jovene (2012): 70-72 for a detailed discussion on the historiography of the device's invention.

17 "ὄντων δὲ τῶν πλοίων φαύλων ταῖς κατασκευαῖς καὶ δυσκινήτων, ὑποτίθεταί τις αὐτοῖς βοήθημα πρὸς τὴν μάχην τοὺς ἐπικληθέντας μετὰ ταῦτα κόρακας ὧν συνέβαινε τὴν κατασκευὴν εἶναι τοιαύτην."

sight" (ξενιζόμενοι) when they first encountered the Romans using the device. Since Polybius had presented the Carthaginians as being *hegemon* of the sea just two chapters earlier it would not logically follow that they were completely unaware of the device unless it was a tool never before seen (at least, being used in this way). However, Polybius' claim that Romans invented the device has also been questioned in scholarship.

One theory has argued for a Sicilian – almost always in reference to Syracuse – genesis for the device.[18] Christa Steinby, while accepting the overall design of the boarding-bridge, argued that the *corvus* came via the addition of Syracusan "know-how" after their alliance with Rome in 263 BCE. She wrote that perhaps even Archimedes may have been involved in its invention.[19] Claudio Vacanti built upon this, proposing that if not Archimedes then it might be another inventor in his periphery.[20] Considering the naval aptitude of Sicilian fleets, particularly Syracuse, during this period it is not surprising that historians have considered what impact(s) they had on essentially every aspect of navies at this time. They are, after all, one of the potential inventors of the quinquereme itself (which may have been first invented in Carthage or evolved convergently in both)[21] and were consistently on the forefront of naval advancement and building projects which

18 Cf. Gaetano de Sanctis, *Storia dei Romani* III, pt. 1 (1916): 128; Wallinga, 2-5, 75-77; Tim Rood, "Thucydides, Sicily, and the Defeat at Athens," *Ktèma: Civilisations de l'Orient, de la Grèce et de Rome antiques* 42 (2017): 27; Vacanti (2012): 72.

19 Cf. Liv. 24.33-34; Christa Steinby, "The Roman Boarding-bridge in the First Punic War. A Study of Roman Tactics and Strategy," in *Arctos* 34 (2000): 198 (ft note 22); Steinby, The Roman Republican Navy from the Sixth Century to 167 B.C. (2007): 92; see: Michael M. Sage, *The Republican Roman Army: A Sourcebook* (2008): 286

20 "…o del suo *entourage*", Claudio Vacanti, "L'arte di copiare. Furti di tecnologia navale (e autorappresentazioni) durante la I guerra punica," in L'esercito romano in età repubblicana. Politica, economia e antropologia (509-100 a.C.), M. Balbo, M. Bellomo, and F. Biglino (Eds), Roma: Carocci (2026): 93-94; Cf. Vacanti, "Kind of Strategy: Carthage Facing Roman Soft Power During the First Punic War," in *The Practice of Strategy from Ancient Times to Today*," J. Black (Ed), Roma (2024): 87-106.

21 Diodorus (14.41-43) discussed the creation of the quinquereme as a Syracusan invention. Others (Chester G. Starr, "The Ancient Warship," Classical Philology 35, no. 4 (1940): 353-374 and W. W. Tarn, *Hellenistic Military & Naval Developments* (2010): 130-132) suggest it was invented by Carthage. Nicholas Sekunda and Philip de Souza argued in "Military Forces," from The C.H. of Greek and Roman Warfare: Vol. 1: *Greece, The Hellenistic World and the Rise of Rome*, (2008): 358 that both were likely independent creators (n.b. Sekunda and de Souza are both listed as authors of the chapter but place their names above their seemingly individual contributions).

brought shipwrights from across the western Mediterranean together.[22] However, crediting the more established naval power of Syracuse (in the historiography at least) falls into the same trope-based trap as arguing that Romans were inexperienced "land-lubbers". In fact, this is one of the few instances where Polybius actively credits the Romans' naval ability. Furthermore, it is difficult to believe that Syracuse, a longtime enemy of Carthage, had never deployed these before against their foes, which would both invalidate the Carthaginians being "puzzled" by them and the Carthaginians eventually becoming familiar with them (as they would have already been had that been the case). While it is not impossible, it does not solve the evidentiary issue.

A key feature in the modern narrative is that the Romans invented the *corvus* simply to avoid "traditional" naval warfare.[23] Polybius is believed to have implied this by highlighting that this created land battles (πεζομαχίας) at sea (1.23.6). However, I would suggest that Polybius was presenting the *corvus* as one of his first compliments to Roman intuition and naval ability and that this passage has been largely misunderstood. Before this brief mention, Polybius described Carthaginians being slaughtered or captured (and later fleeing), demonstrating Roman superiority in the battle through this mechanism. While the comparison to land battles fits well within Polybius narrative of the Roman navy, it does not match the persistent onslaught of denigration against the capabilities of the Romans like those found in passages like 1.20 that Polybius used when highlighting his "land-lubber" trope.[24] However, due to the emphasis Polybius placed on explaining Rome's naval ineptitude, it is not surprising that this passage, too, has heavily influenced the modern narrative. This is problematic for a few reasons. First, the *corvus* disappeared from Polybius' narrative almost as quickly as it appeared.[25] Despite this, there is no indication of any new technology[26] or tactical

22 Diod. 14.41-42.

23 See: L. Poznanski, "Encore le 'Corvus' de la Terre à la Mer," in *Latomus* T. 38 fasc. 3 (1979).

24 Compare, for example, 1.20 and 1.59-61.

25 See, in particular, Steinby's *Boarding Bridge*.

26 Even if we accept the story of reverse-engineering the Rhodian's ship as factual (I am sceptical), this would not represent new technology nor would it show the Romans as "land-lubbers" due to the intelligence, experience, and acumen required to learn from – and replicate – such a device. For comparison, if a flying saucer crashed in New Mexico, a bunch of farmers are unlikely to learn how to build their own version without at least some

plan to replace it. If the Romans were actively using the device to imitate land battles, then they evidently either changed their approach or suddenly became competent in the short timeframe between its introduction and removal.[27] This is even more questionable because, as Gabriele Brusa discussed, outside of Polybius' narrative (and those who later carried it) *corvi* play little-to-no role, pointing toward the lack of any definite evidence of it being mentioned in the victory inscription, nor in the *periocha* of Livy, or those that "follow the Livian tradition."[28]

Second, and most importantly, one would already need substantial naval skills to utilize a tool like the *corvus* – especially if we follow Polybius' schematics. Manoeuvring a vessel adjacent to another in order to deploy the *corvus* would already prove to be a challenge for any inexperienced crew.[29] When you consider that these were contested boardings that would have involved the opponent's ship actively avoiding the Roman vessel, and likely engaging in offensive actions against it, the difficulty increases tenfold.[30] Getting that close to a vessel also provides far easier options such as ramming or engaging in ranged attacks – especially with javelins, which were widely used by the Romans at this time. To drop an extended gangway from one vessel to another, on a moving ship, while simultaneously fighting each other with ranged attacks in an open body of water surrounded by countless others is simply the opposite of the 'easy way' to fight naval warfare. Christa Steinby stated it best in her 2000 article,[31] writing: "… the boarding-bridge was not invented merely to overcome the Carthaginian navy. It was an extra device in a well-rehearsed navy that worked according to a great plan."[32] She concluded that there was no significant difference in the battles where we know that *corvi* were involved and those where they do not appear to be. Furthermore, she added, the Carthaginians surely would have devised a

confident knowledge in aerodynamics, engineering, and so forth. The Romans would have had to have possessed a strong base-knowledge of building top of the line warships for this narrative to make sense.

27 cf. J. S. Morrison, "Sea Power in the Mediterranean: 3rd Century B.C" in *Greek and Roman Oared Warships* 399-30 B.C. (2016): 45.

28 Gabriele Brusa, "The *Corvi* of C. Duilius Once Again: A Cultural Approach," in *Ὅρμος - Ricerche di Storia Antica* n.s. 15 (2023): 43-44.

29 See the Battle of Rhium (Thuc. 2.84) in particular.

30 cf. Steinby, *Boarding-bridge*, 198-199.

31 Steinby, *Boarding-bridge*, 202.

32 Steinby, *Boarding-bridge*, 202.

counter to the *corvus* within the war, rightly suggesting the simple solution of higher gunwales.[33] This is an example of why, in order to understand the *corvus*, we need to fully grasp the world of "ship-binding" in this era, or the practice of connecting two ships together, so that we can discuss its practicalities and examine how ships were regularly linked together for various reasons – both in attack and defence. The next section will briefly discuss what we know about these tactics and techniques and then relate what they can tell us about the *corvus*.

II: Ship-binding in the Mediterranean

This study divides "ship-binding" into two groups: contested and uncontested. The latter refers to the practice of binding together allied, or same-fleet, vessels. The former describes what Polybius is referring to with his *corvus*, a ship latching itself to another without consent to gain some perceived advantage.

There is, perhaps surprisingly for those unaware of the practice, a significant amount of evidence for ship-binding in our ancient sources, including within Polybius' *Histories.* Often this would be done amongst allied vessels for the purpose of creating larger platforms for offensive weaponry and artillery.[34] However, this could also be done to create defensive traps,[35] and even for non-combative purposes.[36] While we have less direct evidence for this, it seems likely that these could have also facilitated in temporary bindings of vessels for the purpose of exchanges of goods (or persons) between two allied vessels while at sea.[37]

Starting with that last category, and admittedly the most speculative, the bringing together or two allied ships is often simply implied. Livy claimed (24.34) that the removal of the inner oars (*demptis interioribus remis*) allowed quinquereme hulls to be bound together (*ut latus lateri applicaretur*) for the creation of plat-

33 Steinby, *Boarding-bridge*, 210.

34 Polyb. 1-22-23, 8.6; c.f. Liv. 24.34; See also: David Whitehead and P. H. Blyth. *Athenaeus Mechanics, On Machines (Περι μηχανηματων) Translated with Introduction and Commentary.* Stuttgart: Franz Steiner Verlag (2004).

35 Most famously at Paxos (229 BCE): Polyb. 2.10.

36 E.g. Polyb. 3.46; Cas. Dio. 68.28; see also the fantastic evidence from Trajan's and M. Aurelius' columns, and a more lasting example at Arelate.

37 In addition to the use of smaller, attached, vessels that are well established as being used to complete the simplest forms of such tasks.

forms and siege towers. Polybius reported (8.4.1-2)[38] a similar interaction in his *Histories* when recording the construction of the *sambuca.* This device, meant to create a boarding-bridge between a ship and a hostile rampart,[39] required the binding of quinqueremes and the removal of oars from each ship at their points of connection. Knowing that these ships could be bound together in this way, one must question how these binding planks were placed between them and how the sailors constructing them would have travelled between both ships. The simplest answer is that they had bridging devices that could be temporarily hammered into place. Even if some ship-binding could be possible while beached, it does not seem to be the most reasonable method, especially when we consider that the *corvus* allowed for boarding mid-battle against opposition; surely, they would have mastered connecting with allied vessels in placid waters first. By examining ship-bridges we can see strategies for which these shipwrights and sailors could have passed between the vessels when making the connections necessary to make uncontested bindings.

Ship-bridges (pontōnēs)[40] are a fascinating aspect of ship-binding. It is clear that the Romans and their contemporaries knew how to build 'standard' bridges, so the decision to use ship-bridges instead of a more permanent solution creates its own questions. While it could be argued that their uses are often temporary, outside of examples like that in Arelate,[41] we know that the Romans were no strangers to building pile-driven bridges, even in temporary situations. For example, in both of Julius Caesar's crossings of the Rhine the bridges were built with piles embedded into the riverbed that were dismantled as soon as Caesar no longer required them.[42] However, Trajan, and Marcus Aurelius both opted instead for ship-bridges. These bridges used ships to form the base, or partial base, of the bridge itself. By joining the ships together, they could be filled with soil or have

38 see: F. W. Walbank, *A Historical Commentary on Polybius* vol III (1967): 71-73.

39 For defense of this machine see in particular: Josh Levithan, "The Republic," in *Roman Siege Warfare* (2013): 108-109.

40 While "pontoon" is derived from the Latin and may be used to describe similar devices I have opted to go with "ship-bridges" instead (due to the multiple modern meanings of the modern term) for clarity.

41 Arelate is somewhat of a hybrid example, having contained both standing bridge architecture with ship-bridging in the middle allowing for a multipurpose crossing that allowed both fluvial and land crossing similar to more modern examples.

42 Caes. *Gal*. 4.17, 6.9.

lumber directly added to them to create a bridge across the floating base.

They were evidently quite sturdy. There is one case found in Polybius where the plan was to transport elephants across a river. To do this, Polybius says that Hannibal ordered rafts (σχεδίας) joined together in sets of twos, creating a fifty-foot wide (πεντήκοντα πόδας) base, eventually expanding *in toto* to two-hundred feet.[43] Earth was then placed across the bound ships to serve as a solid base to walk upon. This bridge was perhaps a bit more technical due to the need to transport elephants and their perceived fear of water.[44] However, it can give us an idea of how more simple ship-bridges could have been constructed. Specifically, it tells us that ancient peoples considered the footing of those being transported to be important, in this case elephants who – they assumed – would prefer to walk on earth. But one can imagine that this would have proved to be above and beyond the norm, especially as just adding wooden planks would have taken significantly less time. Examining the iconographic evidence shows that this latter method would have likely been used when working with humans and lighter animals.

Trajan's Column features a scene from the First Dacian War depicting two ship-bridges, providing an iconographic glimpse into how an artist envisioned these bridges in terms of their appearance and function. Furthermore, we can assume some level of structural accuracy as the column's creation was overseen by Apollodorus of Damascus[45] who would later work as foreman of the permanent bridge in the same spot in 105 CE.

The scene shows two parallel crossings with wooden beams stretching across the closely-linked vessels. The tightly packed formation of these soldiers is also of note. While again, there is some artistic license at play, these bridges would have had to possess the ability for an entire unit to cross quickly and efficiently; if it were only small parties crossing at a time, it simply would have been easier to ferry them across in those very ships.[46] The later, permanent structure built

43 Polyb. 3.46.

44 Elephants are natural swimmers and those onboard the raft that fell off simply swam to the other side.

45 Apollodorus' architectural acumen is well demonstrated by his reputation and surviving creations. However, we still cannot remove the possibility of artistic license being employed when it came to the precise details of this construction project.

46 Cassius Dio (Cass. Dio 68.28.) reported that Trajan considered the use of ship-bridges

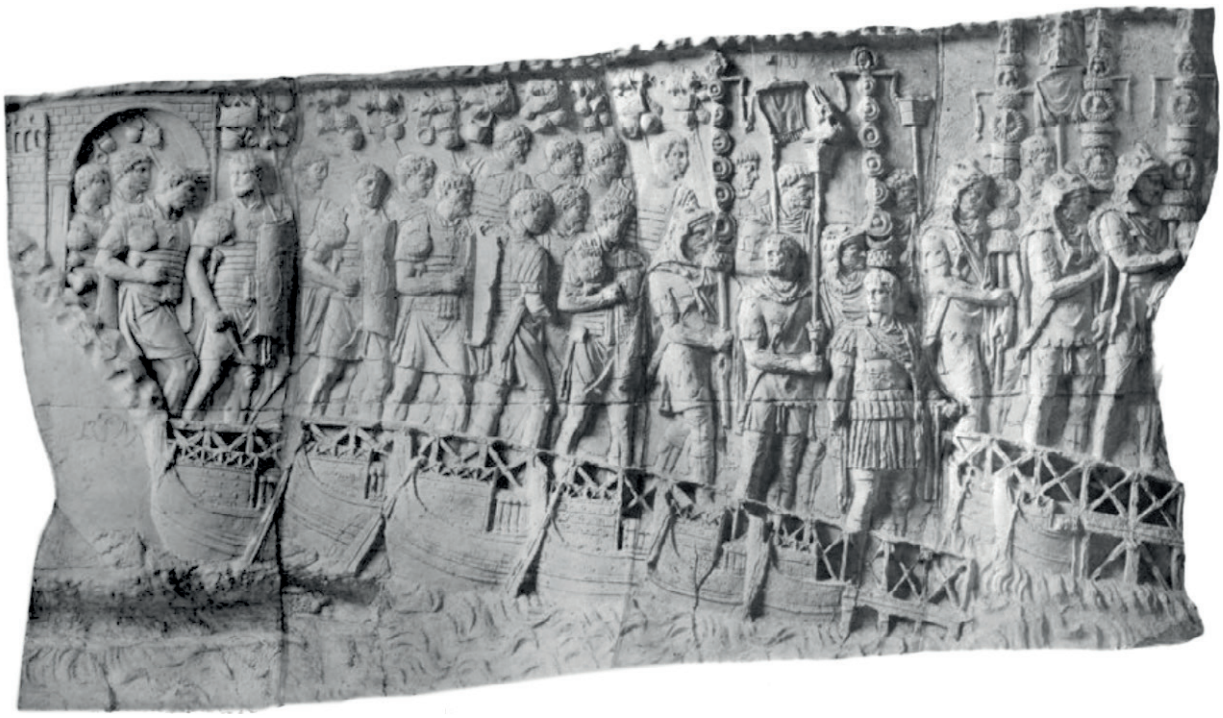

Fig. 1: Trajan's column, relief. From: C. Cichorius 1896-1900. *Die Reliefs der Traianssäule* Pl. VII.

during the second campaign, and the earlier bridge built by Caesar, shows that the Romans did not have to rely on ship-bridges. While there were surely pros-and-cons of both, their repeated use shows that they were capable of doing what was required.

Marcus Aurelius' column depicts a similar scene and demonstrates the continued use of this technology. The soldiers are once again packed closely together, now with the inclusion of cavalry, again demonstrating that the artist believed these could convey large amounts of troops and weight.

elsewhere, claiming that he had planned to build a bridge (γέφυραν) across the Tigris out of ships (πλοῖα) as part of a wider canal project connecting to the Euphrates.

Fig. 2: Marcus Aurelius Column Relief. From E. Petersen,
Die Marcus-Säule auf Piazza Colonna in Rom: Tafeln I – LXIV, 1896

Both bridges also possess a railing that has likely been minimized in the iconography, likely to allow for greater attention to be placed on the soldiers.[47] This is interesting as Polybius recorded that the *corvus* and the *sambuca* both had railings as well, further pointing to similarities. Polybius says that the railing (δρύφακτον) on the *corvus* was part of its defense, with shields turned sideways (πλαγίων) for extra protection.

While these ship-bridge examples obviously postdate the First Punic War, this technology would not have been unusual by that time, with Herodotus giving one of the clearest examples of how these could be built. Understanding that Herodotus discussion on Xerxes' crossing of the Hellespont (480 BCE) is not without controversy,[48] looking solely at Herodotus' description

47 Rather than some sort of dampener underneath the actual baseboards, especially as their feet appear to fall beneath them. Nor is this, I argue, simply the gunwale. While Trajan's column could be viewed in this way, Aurelius' clearly shows this rail stretching across the hulls at an intersecting line rather than being a part of the individual vessels.

48 Compare Aesch. *Pers.* 65; see in particular: N.G.L Hammond and L.J. Roseman, "The Construction of Xerxes' Bridge over the Hellespont," in *The Journal of Hellenic Studies* 116 (1996): 88-107.

(7.36)[49] of the bridge we can see that at a minimum he knew how these ship-bridges were constructed, what was generally required, and the basic elements that allowed for the passage of individuals across it. He recorded that they bound hundreds of penteconters and triremes together, put down wood (ὕλην) and covered that with earth for the animals to cross. This included a railing (φραγμόν) along the side, which Herodotus says was for the horses and other beasts but likely proved useful for all. This indicates that the Romans, and people of the region, knew the most efficient ways to walk across hulls and that this usually included wooden planks and rails. The *sambuca* not only had these elements, but it also existed in a neutral zone between contested and uncontested boarding. The device required the binding of different allied vessels to create a platform and (at least) one bridge which connected to an enemy's rampart.[50]

Polybius (8.4) described the *sambuca*'s construction through the binding two quinqueremes together in pairs, detaching the oars on the joining sides, and yoking them together in pairs. Then, when these joint-vessels were under the wall they would deploy the *sambuca* which Polybius says was named after the instrument of the same name. This was likely due to the cables appearing like musical strings and how the neck of the instrument juts out from the body like a bridge from a ship.[51] As for the bridge itself,[52] Polybius recorded that that it was made up of a ladder (κλίμακα) four feet (τετράπεδον) in width. It included railings (δρυφακτώσαντες) but also a roof (σκεπάσαντες) which is so far the only part absent from the descriptions of the *corvus*. Polybius continued, saying that pullies (τροχιλίαι) from the mast held the bridge with rope (κάλοις). The device would be raised up on the mast (lit. "the high spot") and then lowered down onto the rampart. From there, an advance unit would secure the landing spot and fasten the

49 Hammond and Roseman argued that the "bridges described in Herodotus were well within the capacity of the engineers of the day to design and build," 95.

50 It is highly unlikely that there were not multiple bridges. Firstly, considering the size of the platform it would not make sense to have a platform that big for one bridge. Even if it was packed full of troops, they would only be able to cross two-by-two. Secondly, due to the risk to reward calculations, it would not make sense to send multiple vessels in the hopes that one bridge operated properly or was not repelled. I propose that there was up to one bridge per vessel, depending on the rampart and the strategy required, and that the number of hulls needed could be cut down – and possibly added – depending.

51 As Polybius argued, 8.4.

52 Others, like Athenaeus Mechanicus opted to just say there was no need for a description because everyone knew what it was, 27.9-28.6.

device to the wall to allow the others to join them. This is the second part which is different than the *corvus*, but this is likely a matter of material as, while the spike of the corvus would work well with wood, it would not work well with masonry.

Regarding Polybius' depiction of the *corvus*, he wrote that it was placed on a pillar (στῦλος: likely a mast) on the prow, with a gangway four feet in width – the same as the *sambuca*. The difference again being the beak itself which broke through the ships' timber rather than using ropes. However, both devices are described as including a boarding party to establish their footing, highlighting how the railing (δρύφακτον; the same term used in reference to the *sambuca*) served as a resting place for their shields. This also matches with the *sambuca,* except for Polybius specifically noting that the shields of the *sambuca* were tied in place and had to be removed manually (παραλύσαντες) by the soldiers after contacting the rampart. I would suggest that Polybius implies the same thing when referring to the *sambuca*, at least to those following behind the initial two individuals who appear with shields at the ready. However, the text is notoriously vague. Nonetheless, there are a lot of similarities described here between the *corvus* and the *sambuca*. Both are similar in dimensions, purpose, and use with only a few minor differences. One of the biggest factors separating them is their recorded period of usage.

The *corvus*, absent the other references which have been argued in the previous section as referring to other devices entirely,[53] was first mentioned by Polybius before the battle of Mylae in 260 BCE (1.22) and last during the Siege of Aspis in 256 BCE (1.28.11). The *sambuca* was reported to be in use between the siege of Syracuse in 213 BCE (8.4) and a siege of Chios[54] which has been tentatively connected with that of Phillip V's attack on the city in 201 BCE.[55] This means that the *sambuca's* use occurs closer than the *corvus* to Polybius' own timeline (born c. 200 BCE); from this, two possibilities arise. Firstly, that Polybius is describing the *corvus* based on his understanding of the *sambuca*. They are, after all, similar devices. Boarding bridges, about four feet in width, designed to convey soldiers across a railed-platform from a vessel onto an enemy ship (or) rampart. If the *corvus* disappeared as quickly as Polybius suggested it did – which

53 See Section I.

54 Vitruvius 10.16.9; Athenaeus Mechanicus, 27.9-28.6.

55 Cf. David Whitehead and P. H. Blyth, *Athenaeus Mechanics, On Machines (Περι μηχανηματων): Translated with Introductory and Commentary* (2004): 139.

would make sense if Carthage discovered how to counter them by the time Polybius was born – the vast majority of those with detailed knowledge of it would have been dead. This would doubly be true when we consider the time before Polybius was taken to Rome. It would have therefore been understandable if the exact dimensions of the device were not recorded or well-known by that point. But the *sambuca*, on the other hand, would still have been known and potentially still in use. Afterall, its downsides largely came from mismeasuring the height of the ramparts – a comparably easy fix. A second possibility is that Polybius is showing that the *corvus* and the *sambuca* are both using the same basic parts just employed differently. I argue that both can be true. The *corvus*, as described by Polybius, was based off the *sambuca* but they were so easily described similarly because the part that made up both devices remained the same and continued in use throughout the next few centuries. The means of connecting vessels whether to construct allied platforms or to create a means to board enemy ships may have utilized the same key element.

III: Examining the Corvus and the Early Roman Navy in its Context

Next, we need to consider the possibility that the Roman *corvus* was novel in its usage during the First Punic War, and to some extent its construction, but made of parts and technologies already available to the Romans (and others) for purposefully connecting ships. Indeed, Polybius may have essentially told us so when introducing the creation of the device. Discussing the lead up to the battle, Polybius (1.22.1-3) noted:

> As the Romans drew near Sicily, hearing of the misfortune surrounding Gnaeus, they immediately sent messengers in all directions looking for Gaius Duilius who had been leading the infantry. Staying put [for his arrival], but also hearing that a confrontation was near, they began to make preparations for a fight at sea. With their ships being poorly equipped and difficult to manoeuvre, one proposed that they take their resources and use them for the preparation of battle by [constructing] what would later be called *corvi.*[56]

56 "οἱ δὲ Ῥωμαῖοι μετὰ ταῦτα συνεγγίσαντες τοῖς κατὰ τὴν Σικελίαν τόποις καὶ συνέντες τὸ γεγονὸς σύμπτωμα περὶ τὸν Γνάιον παραυτίκα μὲν διεπέμποντο πρὸς Γάιον Βίλιον τὸν ἡγούμενον τῆς πεζῆς δυνάμεως καὶ τοῦτον ἀνέμενον, [2] ἅμα δ᾽ ἀκούοντες οὐ μακρὰν εἶναι τὸν τῶν πολεμίων στόλον ἐγίνοντο πρὸς παρασκευὴν τοῦ ναυμαχεῖν. [3] ὄντων δὲ τῶν πλοίων φαύλων ταῖς κατασκευαῖς καὶ δυσκινήτων, ὑποτίθεταί τις αὐτοῖς βοήθημα πρὸς τὴν μάχην τοὺς ἐπικληθέντας μετὰ ταῦτα κόρακας ὧν συνέβαινε τὴν κατασκευὴν εἶναι τοιαύτην."

From this, we see that the Romans did not go and acquire extra materials nor seek additional advice to pursue a novel strategy or technology. Instead, they constructed the first *corvi* from what little they had onboard the seemingly ill-equipped ships they had with them.[57] We know that vessels should have been provided with certain essentials that allowed them to be used in whatever manner the commanding officers needed them for.[58] Considering the allied ship-binding was a common tactic used across the Mediterranean in a multitude of scenarios,[59] it seems likely that they would have had the tools necessary to achieve this if called upon. Therefore, I propose that the Romans repurposed the devices that allowed allied vessels to connect themselves for uncontested binding and turned them into offensive weapons for contested boarding.

This is not a unique concept in naval warfare. The *dolphin* (δελφῖς),[60] a device which Thucydides said were used by the Athenians to defend their ships at Syracuse,[61] appears to have been originally made by repurposing anchors. These weights would be raised up (likely on the yardarms) with a rope before being dropped onto an opposing ship that came within close enough proximity. The load would cause damage to the enemy vessel potentially making the deck less stable and causing casualties from those on it and the rowers below it. Certainly, the potential impact seems to have been threatening enough that the Syracusans stopped in their tracks rather than pursue the escaping Athenian ships after spotting them.[62]

The *corvus* being "invented" in this way would also explain all aspects of the Polybian narrative regarding its usage and disappearance. Firstly, as discussed above, it was created very quickly (and thus made from available materials). Second, it explains its efficiency despite being made from supplies on an ill-equipped ship, Finally, it would explain why it disappeared so quickly. The reality is that the Carthaginians would have had these binding devices as well. They could

57 Additionally, William Murray argued that the device would have been "cost effective", with its gains far outweighing the few resources needed to build it, see: Murray, *Hellenistic and Roman Republican Naval Warfare Technology* (2017): 474.

58 Athenian naval records show this as well as legal discussions of the trierarchy including Dem. 50.7; Dem. 47.20.

59 See Section II above.

60 de Sanctis (III, pt. 1, pp. 128) argued that the dolphin may have been the predecessor to the *corvus*, an idea rejected by Wallinga, 54-56.

61 Thuc. 7.41.2.

62 Thuc. 7.41.2.

study them, figure out if it was worthwhile to use them in this way themselves, or plan something to counter them entirely.[63] The Romans' ability to devise a novel use of a device known to their enemy and successfully employ it against them demonstrates a high level of maritime acumen.

The use of the *corvus* may then highlight the complexity of the Roman understanding of naval warfare. Instead of looking at it as an attempt to avoid learning how to fight at sea, and converting a naval battle into land battle, it should be seen as a sophisticated innovation within naval combat. On the spot, they repurposed a common naval tool and technique into a device that made an impact, albeit briefly. In order to deploy this device and technique, they needed a deep understanding of its original use as well as the ability to manoeuvre their ships into the appropriate position to deploy it. When their opponent learned of the technique, and likely found a way to counter it, they quickly abandoned it. What this tells us is that the Romans were already thinking ahead and familiar with naval strategy on a level equal to the Carthaginians. This is especially true when we consider the logistics of using a *corvus*.

One of the strongest arguments against the *corvus* being used as a means to avoid having to fight a "true" naval war against a superior naval power is that there is no aspect of the *corvus* that points towards a cessation of difficulty.[64] Rather, the *corvus* should be seen as proof of incredible naval precision: from the captains, to the helmsmen, to the individual rowers and the fighting forces onboard. To be able to bring a ship close enough to connect a bridge to another in a contested-boarding at sea, in the middle of a battlefield, with all offensive and defensive measures possible being taken against you to a specific spot on a vessel which would allow for a strong connection took an incredible amount of skill. There is no reason to believe that ramming would have proved harder, especially when Xenophon noted that the untrained[65] at Arginusae were able to adequately

63 See for example the Sicilian Expedition and the Syracusans being well aware of Athens' plan to use grappling hooks and how best to counter them. Steven Randles argues (I believe correctly) that this shows that information was likely being passed around by "malcontents" from the Athenian camp to the enemy. See: *The Athenian Expedition to Sicily – The Reasons for its Failure,* PhD Thesis, University of Liverpool (2023): 170; cf. de Sanctis, III, pt. 1 (1916): 128.

64 Cf. Wallinga, *Boarding Bridge,* 28, 50-52.

65 Xenophon (*Hel.* 1.6.24) wrote that this battle was opened up to those who would not have normally served as well as slaves hoping for an exchange of their freedom. While it is like-

perform this and other standard naval manoeuvres. Furthermore, boarding was common across the Mediterranean, regardless of maritime reputation.[66] The connections made by other historians that suggested that the *corvus* was actually a grappling hook, or some other device that predated the *corvus*, were made because we already knew of such creations and techniques. Even the aggrandized, classic, ramming warfare often resulted in one vessel stuck in the other leaving the marines (i.e. ἐπιβάτης, *armatus, miles, defensor*) on board to charge across and take the battle to the other with land-infantry tactics. This focus on Romans boarding, despite many other naval powers doing so, follows an interesting trope where Roman naval activity is often examined within a vacuum.

Another oft-discussed element is the shipwrecks of the First Punic War. As discussed above, this was blamed on the imbalance of the *corvus* initially in the historiography but has generally boiled-down to the Romans being unable to pilot in storms.[67] However, with any naval force, and any naval power (when a reasonable amount of evidence exists) one can find shipwrecks, naval disasters, and even moments of seemingly complete incompetence. Whether it was Darius' or Xerxes' Persian fleets crashing into the rocks in 492[68] and twice in 480[69] respectively, or the Athenians losing their stranglehold on the sea during (what was mostly) a land battle at Aegospotami (406).[70] Additionally, modern examples exists like the infamous Spanish Armada's failure after the battle of Gravelines (1558 CE),[71] and "Halsey's Typhoon" which devastated *US Task Force 38* in 1944 CE.[72]

These errors are made across the spectrum of naval skill and follow similar patterns in regard to "what ifs" and "how this could have been avoided." The main difference between these and that of the Roman navy in the historiography

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ly that some of these slaves would have had maritime experience (i.e. as captured prisoners) Xenophon does not say this and the wording of the passage mostly implies that these were a pale imitation of the normal Athenian crews.

66 E.g. Hdt. 8.90; Thuc. 7.70.5-6;

67 See Section I.

68 Hdt. 6.44.

69 Hdt. 7.188, 8.14.

70 Xen. *Hell.* 2.1.21-32.

71 Garrett Mattingly, *The Armada* (1959): 364-375.

72 Hans Christian Adamson and George Francis Kosco, *Halsey's Typhoons: A Firsthand Account of how two Typhoons, more powerful than the Japanese, dealt death and destruction to Admiral Halsey's Third Fleet,* (1967): xi-xv.

is that mainstream history has not once used these examples – or other similar ones – to suggest that the Persians, Athenians, Spaniards, or US Navy were inexperienced land-lubbers in the aftermath. However, when this happens to Romans the historiography has stuck with the Polybian narrative closely instead of weighing it against the conventional understanding and evidence of the function and reality of navies in the Mediterranean. If we take one small passage in Polybius and use it to examine every aspect of the Roman navy, then of course we are going to find ways to interpret it to fit under that lens.

IV: Troops and Tropes

We must also consider the way that Polybius placed the rise of Roman power within wider historiographical traditions. The rise of an emergent power in the naval realm, as a metaphor for their rise in power and prestige, appears in other areas of ancient history. Herodotus wrote of the Athenian navy's origins that:

> Thucydides then persuaded the Athenians to stop their distribution [of the windfall from the Laurion mines to the citizens] saying that they should instead use the profits to produce two-hundred ships towards the war effort against the Aeginetans. It was this endeavour for war then which saved Hellas by compelling the Athenians to enter the sea.[73]

While Herodotus then makes clear that the ships ended up being needed for the Persians instead,[74] we still see Athens going on to defeat a superior and experienced naval force in their first foray into the sea. This follows a familiar pattern in the narratives of the origins of ancient navies: a threat is established, a need acknowledged, and the state rises to meet the challenge.

When we compare that to Polybius' narrative, we see the same. The threat of Carthage is established, the need to build a navy is acknowledged, and the Romans go from 'underdogs' to *hegemon* of the sea. In fact, the only notable difference between the two is that a main protagonist is named in the Athenian version (i.e. Themistocles) while the details on the exact individual(s) is left up to inference for the Romans. And just like the Romans, not only do we have evidence

73 Hdt. 7.144.1-2; "… τότε Θεμιστοκλέης ἀνέγνωσε Ἀθηναίους τῆς διαιρέσιος ταύτης παυσαμένους νέας τούτων τῶν χρημάτων ποιήσασθαι διηκοσίας ἐς τὸν πόλεμον, τὸν πρὸς Αἰγινήτας λέγων. [2] οὗτος γὰρ ὁ πόλεμος συστὰς ἔσωσε ἐς τὸ τότε τὴν Ἑλλάδα, ἀναγκάσας θαλασσίους γενέσθαι Ἀθηναίους."

74 C.f. Plut. *Them.* 4.1-2.

of Athenian naval activity prior to this, the textual evidence also contains several notable naval manoeuvres, techniques, and strategies which not only make the Athenians capable of beating the hegemonic power but portray them as far from amateurs but well-established seamen.[75]

A similar notion is presented by Thucydides and the Spartans; the Spartans being perhaps the most relatable to the Romans as they are often imagined as "land-lubbers" in the modern historiography themselves. Not much is noted about the Spartans at sea prior to the late end of the Peloponnesian War(s) where the Persians help them to construct a larger fleet. Of course, we not only see the Spartans involved in, and leading,[76] the naval fight against Persia that Herodotus used to celebrate the origins of the Athenian navy, but we also saw them arrive by ship when first coming to aid the Athenians against their tyrants.[77]

The reason behind this narrative trope, I argue, is unfortunately simple: it makes for a better story. That is not to say that these events are all entirely fictional but rather that earlier naval activity is downplayed for the sake of a more triumphant arc. Focusing on the minor scuffles of the Athenians, or the minor mistakes of the Romans, is far less engaging than starting the focus at the point where they accomplished their greatest victory. Sparta is only left out as its part in the war against Xerxes was overshadowed by Athens' "origin" and therefore needed its own moment to shine in the narrative – a job Thucydides was more

75 Of course, one must consider that many of the sailors involved in all of these events are going to be mercenaries. However, that does not minimize the impact that these performances have; rather, it shows that these people would have been moving around the Mediterranean wherever the money beckoned them from. The same certainly must have been true for the Athenians and the Romans and thus they too would have become established sailors and would have been useful to the state.

76 Herodotus claimed (8.2) that the Spartans got the role due to distrust of Athenian leadership, but I believe the way this has been often read to indicate that the Spartans were only given the role because no one wanted Athens to be incorrect (was there no one else if that was the case??). While the Spartan navy at this point was relatively small, they were one of the few powers at the time to have the dedicated role of *nauarchos*. If we accept Herodotus' narrative of a new Athenian navy, then it makes even more sense that they would prefer someone with experience. But we also see Eurybiades, the Spartan *nauarcho*s, being willing to heard Themistocles' counsel (8.58), and he was similarly given the second opportunity to speak at the gathering of the *strategoi* (8.59), and his thread to abandon the allies and move Athens to Italy swayed Eurybiades and others. (8.62-63). Aristides and Pausanias the Regent's disputes are also worthy of examination in this way, which gained support among the allies due to the Athenian success during the war.

77 Hdt. 5.63-64. The second attempt was by land.

than happy to take on.

Polybius was not creating this style on his own, he was following a storied tradition which created heroic portrayals of the people. It showed how they could overcome the odds and become the masters. This essentially was an early form of propaganda.[78] And while this does not diminish Polybius' importance to us, nor should it make us question his overall trustworthiness, we also should not be terribly surprised by it. After all, when discussing the purpose of the work, he wrote:

> For is it simply possible that one can be so careless and indifferent that they may not wish to know which sort of citizens could rule over nearly all the inhabited regions, and how entirely within a span of fifty-three years all came to be ruled and controlled by the Romans? … Romans, truly at least, did not take but a portion, but rather nearly all inhabited regions have been made to obey them, *arising in a way that both cannot be surpassed by powers long gone, nor by those yet to come to prominence*.[79]

The *corvus* is simply another narrative tool deployed by Polybius to highlight the rise of Roman power. While certainly not a *MacGuffin* – the plot-device that moves a story along in the first act only to become unimportant shortly after – there are certainly similarities. Polybius' *corvus* allows the Romans to gain an advantage and it explains their increase in achievement and victory. In contrast to passage 1.20 it shows the Romans as cunning and possessing an inherent ability to master anything.[80] It is this enigmatic aspect of the *corvus* which has made it so fascinating over the millennia and in this regard, it pairs wonderfully with Polybius' narrative arc.

Whether the Romans were using something completely novel, or using something in a novel way, both possibilities point us towards a navy that was knowledgeable, experienced, and able to come up with top-of-the-line techniques or technologies which caught even Polybius' maritime "*hegemon*" off-guard. This

78 For more on intentionality, see: Elizabeth Eltze, "Intentionality: Affectation or Appropriate? (And Why Should We Care?)" in *Academia Letters* (2021): 1-8; Tim Crane, "On the Explanation of Intentionality," in *Australian Philosophical Review* 8 (2024): 5-19; Dominik Perler (ed.), *Ancient and Medieval Theories of Intentionality,* Brill 2001.

79 Polyb. 1.1-2, emphasis mine.

80 Cf. BNJ/ FGrHist 839, F1. See also: Ineditum Vaticanum, ed. H. von Arnim, "Ineditum Vaticanum," *Hermes* 27 (1892): 118–30.

should provoke historians to reconsider how much weight we should give to Polybius' "land-lubber" narrative and whether it might be more valuable to examine how the Romans performed at sea.

V: Conclusions

In summary, the *corvus* as described by Polybius both highlights the 'real' historical naval prowess of the Romans while also slotting nicely into the historiographical trope (of Polybius' own making) of the Romans being ill-experienced land-lubbers. While there are aspects of the *corvus* that may perhaps have been inspired by the *sambuca*, when evidence for the wider ship-binding techniques and uses in the Mediterranean are examined, we can see that the Romans did not need to invent a device when it came to attaching one's own ship to another. An appropriate 'tool' for connecting sea-borne vessels already existed and were in use across the Mediterranean. Rather than seeing the *corvus* as a completely novel Roman device, this paper argues that it should instead be viewed as an alternate use of already-existing uncontested-boarding devices. Furthermore, the ingenuity of the Romans to devise such a use and implement it successfully against their opponents demonstrates that the Romans were, in all probability, already very familiar with naval warfare and with advanced techniques in the early stages of the First Punic War.

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Busto di Pirro re dell'Epiro, Ercolano, da un originale del 290 a.C.
Ora al Museo Archeologico Nazionale di Napoli
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