

## NOTES AND DISCUSSIONS

### BUTTONS AND WOODEN SWORDS: POLYBIUS 10.20.3, LIVY 26.51, AND THE *RUDIS*

After his pivotal capture of Carthago Nova in the spring following his arrival in Spain, Scipio organized a rigorous training regimen for his men.<sup>1</sup> A key part of these exercises was mock combat between soldiers using wooden swords. Both Polybius and Livy provide an account of these training events but, though Livy clearly derived his version from that of Polybius, his description of the swords used differs from what Polybius had written. Polybius explains that in order to render the mock combats less dangerous, the wooden swords and javelins used by the soldiers were blunted with buttons (10.20.3):

τῇ δὲ (ἡμέρᾳ) μετὰ ταύτην τοὺς μὲν μαχαιομαχεῖν ξυλίναις ἐσκυτωμέναις μετ' ἐπισφαιρῶν μαχαίραις, τοὺς δὲ τοῖς ἐσφαιρωμένοις γρόσφοις ἀκοντίζειν . . .

on the next day after this one, he ordered some to sword-fight with wooden swords covered in leather with buttons, and others to throw buttoned javelins . . .

Livy also observes that the javelins were blunted with buttons, but with respect to the swords, he writes only that *rudes* were used and says nothing about additional padding (26.51.4):

tertio die rudibus inter se in modum iustae pugnae concurrerunt praepilatisque missilibus iaculati sunt . . .

on the third day they fought among themselves with *rudes* in the manner of actual combat and threw buttoned javelins . . .

Clearly Polybius and Livy agree that these mock combats were structured in such a way that the fighting might be as realistic as possible but without the mortal danger that would have accompanied the use of real weapons. Because of the danger inherent in the use of real swords in mock combat drills, the Romans generally used

1. According to Polybius and Livy, who both describe these military exercises, the soldiers drilled on a four-day cycle, though the two authors differ in the details. Polybius says that the first day involved a forced march of thirty stades, the second, attention to weapons and armour, the third, rest, and the fourth, mock combats. Livy, however, presents what is a more logical order and inverts the activities of the third and fourth day, assigning the mock combats to the third day and rest to the fourth. Thus, the day of rest on the last day would then precede the distance march, when the cycle was repeated starting the next day. Schultze (1868, 430–31) long ago noticed that Livy's version is preferable and even argued that we should alter Polybius' text to reflect this order, since Polybius was the obvious source for Livy: specifically, Polybius' description of the mock combats should be moved to the third day, and the day of rest to the fourth. Others have agreed with him: Walbank (1967, ad loc.); Horsmann (1991, p. 140, n. 123); and Rance (2000, 262). For Livy's clearly having used Polybius as his source for the events at Carthago Nova, see Rance 2000, 262. Cf. Sil. *Pun.* 8.546–60 for Scipio's reputation as a military innovator.

wooden swords—*rudes*—for these exercises. It is not known when this practice was introduced, though it was probably a long-standing tradition. Why risk the lives of new recruits and soldiers by training them in mock combat with real weapons?<sup>2</sup> What is curious is Polybius' description of the practice swords used by Scipio's men: why should they have required so much extra padding? And why does Livy fail to mention it?

Polybius' description of the swords has been translated—and so interpreted—in different ways. In his essential commentary on Polybius' *Historiae*, F. W. Walbank understood the phrase, ξυλίναις ἐσκυτωμέναις μετ' ἐπισφαιρῶν μαχαίραις, to mean literally wooden swords "covered with leather and fitted with buttons," clearly believing that two separate ideas (leather sheathing and buttons) were presented here. But he offered no further explanation.<sup>3</sup> Most other translations similarly present us with both leather coverings and buttons.<sup>4</sup> But not all. The German translation of Hans Drexler states only that Polybius' wooden swords had a leather button (*Lederball*), with no mention of leather sheathing.<sup>5</sup> Moreover, most Roman military historians who comment also mention only (leather) buttons and ignore any reference to leather sheathing: Roy Davies, Gerhard Horsmann, and I. P. Stephenson all understand only that "leather buttons" were fitted to the swords, not leather sheathing.<sup>6</sup> Indeed, it is difficult to see why a wooden sword would have needed leather sheathing on the edges: there was no danger of a cut from the edge of a wooden sword. Yet, it is believable that such a practice weapon could have required a button on the tip to deaden a thrusting strike, especially given the importance of the thrust in Roman combat tactics (see below).

Nevertheless, on the surface, the understanding of the phrase by Walbank and others seems intuitively correct. Since the perfect passive participle ἐσκυτωμέναις, from the verb σκυτέειν, is in agreement with μαχαίραις, it would seem to refer to the entire sword, not just the tip, and would mean that the whole sword was "covered with leather." The prepositional phrase μετ' ἐπισφαιρῶν would then simply express

2. See especially Horsmann 1991, 133–35; Coulston 1998, 3–5; and Davies 1989 for a summary of the main primary sources. Davies (1989, 81–83) has suggested that such a practice weapon may have been adopted from the gladiatorial *ludus* in the late second century B.C.E., when, following the massive Roman defeat by the Cimbri at Arausio, the consul P. Rutilius Rufus brought in gladiatorial *doctores* to refine the combat abilities of Roman soldiers (105 B.C.E.). Valerius Maximus (2.3.2) is our main source for this, though it must be said that he does not mention the use of *rudes*, only gladiatorial instructors. It is just as likely that the gladiatorial *ludus* had adopted the *rudis* from the army: certainly Scipio's army was using the wooden practice sword as early as the Second Punic War. Cf. Ville 1969; and Baltrusch 1988 for the relationship between the army and the *ludus*.

3. Walbank 1967, ad loc.

4. For example, Foulon 1990, Shuckburgh 1962, and Paton 1925 similarly present us with leather coverings and buttons: "... le lendemain, d'exerciser les uns à battre à l'épée, avec des épées de bois recouvertes de cuir et pourvues de mouches ..." (Foulon); "... on the fourth to have a sham fight, some with wooden swords covered with leather and with a button on the end ..." (Shuckburgh); "On the following day they were to practise, some of them fighting with wooden swords covered with leather and with a button on the point. ..." (Paton).

5. Drexler 1961, ad loc. "Für den Tag darauf wurden Übungen im Fechten mit hölzernen Schwertern, die an der Spitze mit einem Lederball versehen waren. ..."

6. Davies 1989, 82 ("... some were ordered to practice sword-fighting with wooden foils tipped with a leather button ..."); Horsmann 1991, 141 ("Bei Polybios ist das hölzerne Übungsschwert zusätzlich mit einer an der Spitze angebrachten Lederkugel versehen ..."); and Stephenson 1997, 311 (though Stephenson does observe that we cannot be entirely clear from what Polybius says: see below). Keppie (1984, 29), however, says both leather sheathing and buttons, though he does not attempt to explain this reference.

accompaniment and mean literally “with buttons.” Thus Polybius would seem to be saying that the edges of the blade were covered with leather and the tip was covered with a button. But Polybius’ Greek is notoriously verbose and can often admit a variety of usages. Jules-Albert de Foucault has shown that, rather than simply expressing accompaniment, the preposition μετά in Polybius has already begun to be used to express means and instrument, a usage that it would more commonly have in later antiquity.<sup>7</sup> In this case Polybius’ phrase could be interpreted as “wooden swords covered with leather *by means of* buttons,” the prepositional μετ’ ἐπισφαιρῶν representing the instrument with the perfect passive participle ἐσφυρμέναις. Given that this translation is not only grammatically possible, but also more reasonable, I would argue that it ought to be adopted.

This translation of Polybius’ description of the wooden practice swords with buttons used by Scipio’s men draws our attention to the tip (*mucro*) of the weapons. The nouns σφαῖραι and ἐπίσφαιρα, as well as the participle ἐσφαιρωμένος, referred to padded boxing gloves used by Greek pugilists in practice,<sup>8</sup> and when applied to a sword or spear tip, they served to blunt the weapon. Xenophon had described a cavalry drill in which one rider chased another with ἐσφαιρωμένα ἄκόντια: “buttoned spears” (*Eq. Mag.* 8.10). This must also be the significance of the (dative) ἐσφαιρωμένοις γρόσφοις described by Polybius at Carthago Nova. Livy translates this phrase as *praepilatis missilibus*, and he might well have thought also of Caesar, who employed *pila praepilata* in training his men where to strike elephants (*B Afr.* 72.6).<sup>9</sup> Horsmann argued that such a button on the tip (*an der Spitze*) was necessary even for a wooden sword because of the importance of the thrust (vs. the “barbarian” cut) in Roman combat tactics and ideology, as Vegetius, the fourth-century C.E. writer on military science, and others famously explained.<sup>10</sup> Even though made of wood, such foils could be dangerous enough, especially since the soldiers were thrusting and stabbing at their opponents. A wooden sword might not have been able to penetrate the flesh of an opponent as easily as a sharp iron weapon, but a hard jab with such a wooden weapon could have caused deep, internal bruising and bleeding, if not actual stab wounds. Livy’s observation that mock combats with *rudes* could result in *multa vulnera* is perhaps significant (40.6.5–6). A button on the tip would therefore have

7. Foucault 1972, 119–20. Foucault provides as examples Polyb. 8.12.2, 8.14.9, 8.7.3, 2.52.8, and 4.79.5. For comments on Polybius’ use of Greek by one who knows it best, see, e.g., Walbank 1975, 29.

8. Poliakoff 1987, 73. In his *Lexicon* to Polybius, Foucault defines ἐπίσφαιρα as “boutons”: see Foucault 1972, 349.

9. Pliny (*HN* 8.17) later mentions the use of *hastae praepilatae*.

10. Horsmann 1991, 141; Veg. *Mil.* 1.12: *Praeterea non caesim sed punctim ferire discebant. Nam caesim pugnantes non solum facile vicere sed etiam derisere Romani. Caesa enim, quovis impetu veniat, non frequenter interficit, cum et armis vitalia defendantur et ossibus; at contra puncta duas uncias adacta mortalis est; necesse est enim, ut vitalia penetret quicquid immergitur. Deinde, dum caesa infertur, brachium dextrum latusque nudatur; puncta autem tecto corpore infertur et adversarium sauciat, antequam videat* (“Moreover, they [sc. recruits] learned to strike not by cutting, but by stabbing. For the Romans not only easily conquered those who fought by cutting, but even ridiculed them. For the cut, even delivered with force, does not frequently kill, since the vitals are protected by equipment and bone. But a point driven in two inches is fatal; for it necessarily penetrates those vital parts, whatever it is immersed into. Additionally, when a cut is delivered, the right arm and side are exposed. The point, however, is delivered with the body covered and wounds the enemy before he sees it”). See also Polyb. 2.33.2–6 (on the Battle of Telamon in 225 B.C.E.); and for Titus Manlius’ famous single combat against the enormous Gallic warrior in c. 361 B.C.E., see Liv. 7.10.9–10 and Aul. Gell. *NA* 9.13.14, both derived from Claudius Quadrigarius Frag. 10b. Assigning the *gladius hispaniensis* to this combat is anachronistic, however.

helped to prevent these injuries or to limit their extent. Stephenson adds another observation. Though he too reads “leather buttons,” he states that it is unclear from Polybius whether the button covered just the tip or the whole sword.<sup>11</sup> Stephenson proposes that such a button (especially one covering the whole sword) might have brought the weight of the wooden sword closer to that of a real one. It is doubtful, however, that it could have made the wooden practice sword heavier than a real one, as many ancient writers prescribed. If the button was indeed meant in part to add weight to the sword, it would be best that this weight were not concentrated at the tip (which would have unbalanced the sword), but added along the length of the blade or at the hilt.<sup>12</sup>

But while both Horsmann and Stephenson present plausible explanations for Polybius’ buttoned wooden swords, neither addresses the fact that Livy says nothing about these leather buttons on the swords in his version of Scipio’s training program—and this even though he was careful enough to repeat Polybius’ assertion that the spears used were buttoned. The problem, however, has been recently, though briefly, considered by Philip Rance. He proposes that the translations of μετ’ ἐπισφαιρῶν (“with buttons”) and ἐσφαιρωμένους (“rounded off,” usually understood as “buttoned”) are possibly overly literal and perhaps reflect “nineteenth-century lexical entries that explicitly refer to modern fencing foils.”<sup>13</sup> Rance therefore considers Polybius’ description to be simply a periphrastic allusion to blunted wooden foils (*rudes*). While this argument has certain attractions, especially as it would most readily seem to explain why Livy says nothing about buttons on the *rudes*, there are, I believe, difficulties with it. That the participle ἐσφαιρωμένους (from the verb, σφαιρόειν) could refer to actual “buttons” may be inferred from its use by other authors. Cassius Dio describes the use of blunted swords by gladiators fighting in Rome under the eyes of the Emperor Marcus Aurelius. According to Dio, Marcus was so kindhearted that he did not even like to see gladiators killed in the arena, and so they were given blunted swords instead of sharp ones (72.29.3):

Μάρκος γε μὴν οὕτω τι φόνους οὐκ ἔχαιρεν ὥστε καὶ τοὺς μονομάχους ἐν τῇ Ῥώμῃ ὥσπερ ἀθλητὰς ἀκινδύνως ἑώρα μαχομένους· σιδήριον γὰρ οὐδέποτε οὐδενὶ αὐτῶν ὀξὺ ἔδωκεν, ἀλλὰ καὶ ἀμβλέειν, ὥσπερ ἐσφαιρωμένοις, πάντες ἐμάχοντο.

Marcus so disliked slaughter that he even used to watch gladiators in Rome fighting without danger just like athletes, for he never gave any of them a sharp weapon, but they all fought with weapons blunted as if “sphered/buttoned.”

The participle ἐσφαιρωμένοις here cannot simply or periphrastically have meant “blunt,” to Dio at least, because Dio already said that the swords were blunt

11. Stephenson 1997, 311.

12. Vegetius, *Mil.* 1.12: . . . *dupli autem ponderis illa cratis et clava ideo dabantur, ut, cum vera et leviora tiro arma sumpsisset, velut graviore pondere liberatus securior alacriorque pugnaret* (“They [i.e. *tirones* or recruits] are given, however, that double-weight shield frame and weapon, so that when the recruit takes up real, lighter weapons, as if freed from the heavier weight, he fights more safely and quickly”). Gladiators too trained with heavier practice weapons: Sen. *Controv.* 9 *praef.* 4: *gladiatores gravioribus armis discunt quam pugnant*. Davies (1989, 82), however, believes that the mock combats at Carthago Nova seem to have been with normally-weighted foils. C. W. Marshall points out to me that weight on the tip in practice could help a swordsman learn to keep the tip up, invaluable in combat, since one would have wanted to keep the sword pointed at an opponent.

13. Rance 2000, p. 262, n. 93. He also includes the Latin *praepilatus* in this.

(ἀμβλέειν). Instead, Dio is telling his (Greek) readers that Marcus gave swords that had no point: they were blunt *as if* they had been buttoned. He thus continues his athletic metaphor. The idea of buttoning a weapon's tip to render it harmless seems to have been something familiar or comprehensible to his readers. Since the possibility that swords could be fitted with buttons was real enough to Dio and his readers (albeit in the late second century C.E.), it seems reasonable to accept that Polybius' text refers to actual buttons.

Why then does Livy omit them from his account of the swords? It is doubtful that Livy could have misunderstood Polybius' description of the buttoned, wooden practice swords: he did understand and record Polybius' reference to the buttoned javelins. And if he understood the buttoned javelins, why not the buttoned swords? A possible solution may be found in *our* understanding of what a *rudis* was. The *rudis* is typically thought to be a blunt sword (usually wooden), that was used in training both against the *palus* (a post) and for mock combats between sparring partners in training.<sup>14</sup> It might have been against the *palus* in particular (rather than against an opponent) that the double weight sword was used, in which case an iron weapon could readily have been made heavier than a regular battle sword.<sup>15</sup> That the sword was usually made of wood may be gleaned from the remarks of authors such as Cicero or Tacitus, both of whom compare oratorical training to mock combats with the *rudis*, while actual forensic oratory is compared to real combat—with iron. Cicero's remarks are typical: *non enim in acie versatur nec ferro, sed quasi rudibus eius eludit oratio* ("for his oratory does not take part in battle nor does it use iron, but it plays as if with *rudes*," *De optimo genere oratorum* 17).<sup>16</sup> The metaphor seems quite common: one trains or plays with blunt weapons, but "fights" (in whatever medium) with sharp ones. So Ovid can present Cupid playing (or practicing) with *rudes*, then drawing sharp arrows from his quiver for the real combat.<sup>17</sup> Here, indeed, the *rudes* are not even blunt, wooden swords, but blunt play arrows. What is important about a *rudis* is the fact that it is blunt and for play or practice.

While practicing against a wooden post is one thing, it is quite something else to spar with an opponent, even with a wooden sword. As Horsmann noted, soldiers stabbing at each other in the chest and stomach, even with wooden swords, could have done much damage to one another in mock combats. In order to train effectively, the weapons should be used in mock combat in the same way that they would be in actual battle. Given that the sword of the army, the *gladius*, was both a cutting and thrusting weapon, the training techniques that Livy would have been familiar with

14. Against the *palus*: Juv. 6.247–48: . . . *quis non vidit vulnera pali / quem cavat adsiduis rudibus scutoque lacessit?* ("... who has not seen the wounds of the *palus*, which she hollows out with her ceaseless *rudes* and which she tears with her shield"?). Cf. Veg. *Mil.* 1.11, Mart. 7.32.8, and Lucian *Dem.* 38. For *rudes* used in mock combats, see below and the discussions by Davies (1989); and Rance (2000).

15. Pliny (*HN* 34.170) does refer to iron *rudes*, though these are used for mixing chemicals. Juvenal's macho female gladiators are said to carve out the *palus* (6.247–48); this seems a difficult feat with a wooden sword, but less so if the practice *rudes* they were using against the *palus* were iron. It is doubtful that such heavy iron *rudes* would be used against an opponent in training, though Cicero (*Att.* 1.16) does refer to a *plumbeus gladius* (a leaded *gladius*), presumably a sword made heavier for practice.

16. Cf. Cic. *De or.* 3.86; and Tac. *Dial.* 34.5. Seneca too compares oratorical practice to arms training: see, e.g., *Controv.* 3 *praef.* 13.

17. Cf. Ovid *Ars am.* 3.515–16: *sic ubi prolusit, rudibus puer ille relictis / spicula de pharetra promit acuta sua* ("After that boy [sc. Cupid] has played so, *rudes* having been put away, he draws from his quiver the sharp arrows").

would necessarily have simulated the movements and attacks required of combat with such a weapon.<sup>18</sup> Roman combat training was harsh and realistic: Josephus, for example, famously said that their manoeuvres were bloodless battles and their battles bloody manoeuvres (*BJ* 3.75). Bloodless battles, not fatal ones. Padded, spherical, leather buttons (*pilae* in Latin) on the tips could have prevented many serious injuries.

But while no other reference to wooden practice swords explicitly states that they required any extra padding,<sup>19</sup> Quintilian, drawing on the familiar metaphor comparing oratorical training with practice combats, does refer to mock combats “with buttoned (swords)”: *declamationes quibus ad pugnam forensem velut praepilatis exerceri solebamus* (“declamations with which we were accustomed to practice with buttoned [swords] before battle in the courts,” 5.12.17).<sup>20</sup> Here, *praepilatis* is used in place of the expected *rudibus*, and this substitution is easily understood if we assume that the *rudes* used in mock combats were regularly fitted with buttons to render them blunt and so safe enough for such training exercises. And if indeed blunting a *rudis* with a button was a regular and expected feature of mock combats among Roman soldiers, then there would have been generally little need to mention it. So, when Livy read Polybius’ explicit statement that wooden swords had been fitted with leather buttons for the training exercises, he simply stated that they fought with *rudes*, *inter se in modum iustae pugnae concurrerunt*. That the *rudes* were also buttoned for such combats was obvious to him and his readers.

#### CONCLUSION

Polybius’ reference to the use of wooden swords fitted with leather buttons is puzzling for many reasons. First, his description is not at all clear and has led some quite easily to believe that the entire sword was covered with leather and had a button fitted on the end. This, however, is improbable, and given that Polybius sometimes used the preposition *μετά* to express means or instrument, it is likely that he meant that the swords were covered in leather by means of a leather button. Secondly, his reference to buttons did not make it into Livy’s version of the same events, even though Livy seems to have been following Polybius quite closely here. That buttons were known certainly for javelins and also for iron swords may be inferred from Dio’s description of Marcus’ gladiatorial shows in Rome. It is always difficult to explain why an author

18. Though giving an anachronistic description of the *gladius hispaniensis* in a combat that may never have taken place, Livy’s portrayal of the fight between Titus Manlius and the enormous Gallic warrior illustrates Roman combat ideals (7.10.9–10): evading the downward cut of the Gaul (*vanum caesim . . . ensem deiecit*), Manlius used his shield to push aside the Gaul’s shield, forced his way in close, and with his sword point turned up (*mucone subrecto*) stabbed him with two quick thrusts into the belly and groin (*uno alteroque subinde ictu ventrem atque inguina hausit*). Cf. Tac. *Agr.* 36.

19. For example, the first-century tactician Onasander (10.4) says that a commander should drill his men in mock combat (ἀσκήσῃ μάχῃ [ironless battle]) “having given out staves or spear shafts” (νάρθηκας ἢ στύρακας ἀκοντίων ἀναδιδούς). Both Horsmann (1991, 142) and Rance (2000, 241) consider Onasander’s Greek phrase to be standard and equivalent to Livy’s *rudes* and *hasta praepilatae*. The use of such staves or wooden swords (νάρθηκες) for military training was also known to Xenophon, who famously describes Cyrus’ interest in mock combats (*Cyr.* 2.3.17–20). Vegetius repeatedly refers to the use of a practice sword, though he never says that they required any extra padding. He never calls it a *rudis*, however; instead, he describes it variously as a *clava lignea* (*Mil.* 1.11 and 1.12), as a *sudis* (“*sudibus*,” *Mil.* 2.23), and as a *vectis* (“*vectes pro similitudine gladiatorum*,” *Mil.* 3.4). Schenk (1930) argued that Vegetius used different sources for his different books with the result that he employs varying vocabulary. (I thank the anonymous referee for this observation.)

20. See Grodde 1997, 17 for discussion.

does not say something, and in this case, we will never know for certain why Livy avoided mention of Polybius' leather buttons. But if wooden *rudes* were regularly fitted with buttons (*praepilati*) for mock combat—regularly enough that Quintilian could substitute *praepilati* for the expected *rudes* in a common metaphor—then it is possible that Livy could have thought it unnecessary to mention them in his discussion of Scipio's training program at Carthago Nova, where the soldiers practiced with wooden swords in mock combat.<sup>21</sup>

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#### APPENDIX

##### TRAINING FOR THE *GLADIUS HISPANIENSIS*?

According to both Polybius and Livy, Scipio captured an enormous cache of weapons at Carthago Nova. Moreover, of all the townsmen captured when Scipio's troops stormed the city only the craftsmen were enslaved: they were set to work creating new weapons, with freedom the promised reward for their diligence and productivity (Liv. 26.47.2 and 26.51.7). These men were to create both weapons for training (presumably the wooden swords) and weapons for real warfare.<sup>22</sup> Polybius quotes Xenophon and calls the city "a workshop of war" (10.20.7).<sup>23</sup> Given this influx of new weapons and the intensive training program connected with them, it is tempting to see this as the time of the adoption of the *gladius hispaniensis*.<sup>24</sup> Until recently, the Spanish origin of this weapon has proven elusive. But Fernando Quesada Sanz has now argued persuasively that the model for the *gladius hispaniensis* was a modified La Tène sword.<sup>25</sup> He further suggests that we should locate the adoption of this sword sometime between Cannae (216) and the fall of Carthago Nova in 209.<sup>26</sup> Scipio, a known innovator both in military tactics and also in the use of new weapons, may well have been the one to introduce the Spanish sword to the Roman army—and the training techniques to go along with it.<sup>27</sup>

21. K. M. Coleman has kindly drawn my attention to Stat. *Silv.* 4 *praef.* 30–32, where there is a reference to *sphaeromachia*, which perhaps ought to be considered mock combat with buttoned swords, rather than practice boxing matches. Cf. also Sen. *Ep.* 80.1–2.

22. Polyb. 10.20.4: ἵνα δὲ μήτε τῶν πρὸς τὰς μελέτας ὅπλων μήτε τῶν πρὸς τὴν ἀλήθειαν μηδὲν ἐλλείπη, τὴν πλείστην ἐποιεῖτο σπουδὴν πρὸς τοὺς χειροτέχνας ("So that there should be a lack neither of weapons for training nor of those for real warfare, he paid special attention to the craftsmen"). Cf. Horsmann 1991, 141.

23. The reference is to Xen. *Ages.* 1.26 and *Hell.* 3.4.17.

24. So Scullard 1970, 64–66. Rance (2000, 261) notes other contemporary military developments, especially the *velites*, light-armed troops equipped with throwing spears. Cf. Walbank (1967, ad loc.), who understands the Polybian "γρόσφοις" as "*hastae velitares*."

25. Quesada Sanz 1997; his arguments won the approval of Connolly (1997, 56).

26. Quesada Sanz 1997, 268 and passim for discussion. The sword used by the Romans at the battle of Telamon (c. 225 B.C.E.), as described by Polybius (2.30–33), seems to have been a purely stabbing weapon, like a Greek ξίφος. Livy (31.34) specifically identifies the sword used by the Romans to such horrendous effect against the Macedonians in c. 200 B.C.E. as the *gladius hispaniensis*.

27. A brief version of this paper was presented at the Annual Meeting of the *Classical Association of Canada*, in Banff, Alberta, in May, 2005. The author wishes to thank those who commented upon the paper there, especially Kathleen Coleman and Christopher Marshall.

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