

Nicholas Wernick

# Slings in the Ancient Near East with Reference to the Egyptian Material

**Summary:** A survey of the sling's composition, ammo and capabilities has not been completed despite this weapon has been known to have been used in ancient warfare contexts in the ancient Near East. By utilizing the three extant examples from the pharaonic period in Egypt, the reader will gain a better understanding of the weapon's construction and usage. In addition, a brief analysis of the variety of sling-shot artefacts will be performed, including the torpedo-shaped shot from the fortress of Buhen. After an examination of the physical remains, the capabilities of the range of this weapon will be assessed.

**Keywords:** Beni Hassan – Buhen – sling – weapon – war

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Although the sling has been utilized in the ancient Near East since the Neolithic (c. 10,000 BCE) and has experienced a wide distribution over a wide geographic area, the direct material evidence for this weapon is very sparse<sup>1</sup>. This is due primarily in that slings were con-

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<sup>1</sup> Vega, M. and Craig, N., "New Experimental Data on the Distance of Sling Projectiles", *Journal of Archaeological Science* 39, 2009, 1264; Burke, A., *Walled Up to Heaven. The Evolution of Middle Bronze Age Fortification Strategies in the Levant*, Winona Lake/Indiana 2008, 32; Vutriopoulos, N. "The Sling in the Aegean Bronze Age", *Antiquity* 65, 1991, 279; Yadin, Y., *The Art of Warfare in Biblical Lands*, London 1963, 83. Yadin's statement that the sling wasn't developed until the 20th Dynasty is not tenable given the physical remains and even the artistic scene of slingers from a tomb from Beni Hassan (Decker, W. and Herb, M., *Bildatlas zum Sport im alten Ägypten. Corpus der bildlichen Quellen zu Leibesübungen, Spiel, Jagd, Tanz und verwandten Themen*, HdO I.14, Leiden u. a. 1994, Vol. 2, Faltafel D and E (L18, L19); Newberry, P., Beni Hasan, Vol. 2, ASE 2, London 1893, pl. 5, 15) that date much earlier (discussed later on). This is a strange statement given that one of the slingers from the aforementioned artistic siege-scene from Beni Hassan (dating to the 12th Dynasty) is actually portrayed on page 10 in Yadin's book!

structed of organic materials and do not survive readily in the archeological record<sup>2</sup>. Furthermore, the sling-shot ammo (and even the sling itself) is not easily recognized in archaeological contexts<sup>3</sup>. As Korfmann has noted, this has led to a number of studies that have completely overlooked this weapon as having a military application<sup>4</sup>. Indeed, some recent publications of weaponry in the Late Bronze Age fail to notice this weapon entirely<sup>5</sup>.

The sling's construction consists of a central pouch and two radiating strings called "arms". One of the arms usually has a small loop tied at one end and is referred to as the "release arm". The slinger, when utilizing this weapon, places a piece of ammo within the pouch and, while holding both strings in one hand, usually in a clenched fist, begins to generate centripetal force by swinging the pouch in a circular direction. When enough force has been generated, the slinger straightens the finger that has the loop on it and the release arm unfolds the pouch, discharging the ammo toward an intended target.

The dry conditions of Egypt are exceptional in that they preserve organic materials that would have otherwise degraded. We are fortunate that a few slings have been preserved<sup>6</sup>. The slings represent a wide span of time but are of a similar construction technique and mea-

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This statement was recited by Dohrenwend (Dohrenwend, R., "The Sling: Forgotten Firepower of Antiquity", *Journal of Asian Martial Arts* 11-2, 2002, 30) based on Yadin's data.

<sup>2</sup> Sellers, O., "Sling Stones of Biblical Times", *Biblical Archaeology* 2-4, 1939, 42.

<sup>3</sup> Vutriopoulos 1991, 282; Mixter, J., "Man's first long-range missile weapon, the sling was a deadly military asset in skilled hands", *Military History* 18-3, 2001, 12.

<sup>4</sup> Korfmann, M., "The Sling as a Weapon", *Scientific American* 229-4, 1973, 38.

<sup>5</sup> Cotterell, B. and Kamminga, J., *Mechanics of Pre-Industrial Technology. An Introduction to the Mechanics of Ancient and Traditional Material Culture*, Cambridge, New York 1990; Healy, M., *Armies of the Pharaohs*, Oxford 1992; Gilbert, G., *Weapons, Warriors and Warfare in Early Egypt*, BAR-IS 1208, Oxford 2004; Spalinger, A., *War in Ancient Egypt. The New Kingdom*, Malden/MA 2005.

<sup>6</sup> Contra Mixter 2001, 12; Gonon, R., *Weapons and Warfare in Ancient Times*, Minneapolis 1975, 42 who claims that no ancient slings have survived.



**Fig. 1:** The 'Manchester Sling', 12th Dynasty, Kahun. Pouch,  $5.1 \times 15.2$  cm, loop – 2.5 cm diameter, arm length 63.5 cm (Manchester Museum no. 103 – Image courtesy of The Manchester Museum, University of Manchester).

surements suggesting that, at least in Egypt, variation in the basic manufacture did not differ widely<sup>7</sup>. The earliest extant sling, the Kahun or Manchester Sling, dates to the 12th Dynasty and is entirely constructed of plant fiber (fig. 1)<sup>8</sup>. The sling consists of a braided pouch ( $5.1 \times 15.2$  cm) and two arms (63.5 cm from the end of the pouch). Although listed as a "toy" on the museum entry, Campbell Price, the curator for the Manchester Museum's Egyptian Collection, has recently measured the loop on the release arm (1.9 cm) and has confirmed that this loop could have accommodated an adult finger<sup>9</sup>. A pair of similarly constructed slings, but braided out of linen, were found in the tomb of Tutankhamun (fig. 2)<sup>10</sup>. As to illustrate the difficulty in identifying slings in the archaeolo-

gical record, Carter's initial entry had suggested that they were some form of belt<sup>11</sup>. Petrie's discovery of a sling at Lahun (fig. 3), dating to the 22nd Dynasty, demonstrates that similar dimensions for this weapon were kept relatively consistent in comparison of the Kahun Sling<sup>12</sup>.

The ammo, or sling-shot, of the slinger is very difficult to identify in the archaeological record and it is presumed that uniform shapes of sling-shot were not consistent. Some archaeological and modern ethnographic researchers have noted that ammo can be of an expedient nature. Sometimes a found-stone would do for the slinger<sup>13</sup>. However, the ammo of a sling has the benefit of preserving in the archaeological record, albeit very difficult to identify. At the fortress of Buhen, circular and "torpedo" shapes (sometimes called 'biconical' from other authors, see below), made from either clay or stone, were noted by Emery to have been identified by excavators as sling-shot (fig. 4 and 5)<sup>14</sup>. Emery suggests that the association of round sling-shot being found in

<sup>7</sup> It should be noted that with a sample size so small that other construction techniques (methods of braiding, material, etc.) are indeed possible but does not specifically impact their overall dimensions and possible use.

<sup>8</sup> Manchester Museum, Acc. No. 103.

<sup>9</sup> Personal communication, 21-Mar-2012. Given the long arms of this sling, it is problematic for this item to be viewed as a child's 'toy'.

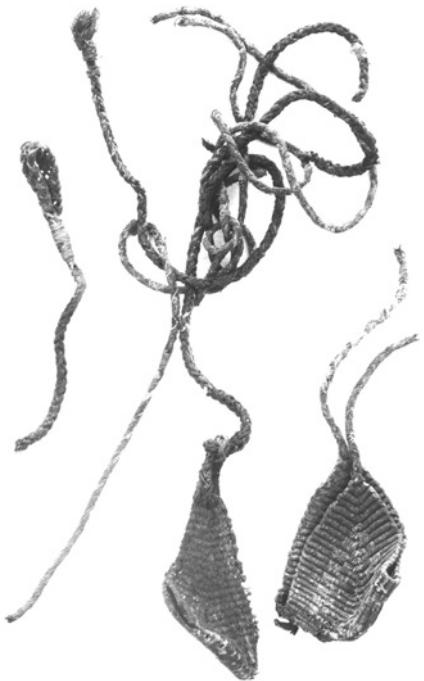
<sup>10</sup> Cairo Museum No. JE 61572, 61573. Tutankhamun Handlist Card: Carter No. 585y, Burton Photo No. p1324 (please note the two images of Burton [No. P0087 and P0086] are depicting the same box contents [No. 21]). It is interesting to note that these slings were found in association with archery arm-guards.

<sup>11</sup> Tutankhamun Handlist Card: Carter No. 021kk.

<sup>12</sup> Petrie Museum No. UC6921. The pouch measures  $7 \times 11$  cm and the preserved release arm measures 60 cm long.

<sup>13</sup> Vega and Craig 2009, 1266; Burke 2008, 32; Gonen 1975, 42; Korfmann 1973, 32; Yadin 1963, 10.

<sup>14</sup> Emery, W., Millard, A. and Smith, H., The Fortress of Buhen. The Archaeological Report, EM 49, London 1979, 130–131 for both types of objects, Emery notes that many were found but not recorded.



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**Fig. 2:** Pair of slings from the tomb of Tutankhamun, 18th Dynasty (Carter Handlist 585y – Image copyright of the Griffith Institute, University of Oxford).

connection with the West Gates of both the inner and outer fortification walls indicate that it might have been fired during a military incursion and defense of the fortress<sup>15</sup>. In connection with sling-shot deposition, Burke also notes that stockpiles of sling-shot were found at Tell es-Sweyhat in adjacent areas of the western wall<sup>16</sup>. This suggests that this shot was available to slingers in defense of the wall<sup>17</sup>. In addition, concentrations of sling-shot were also discovered at Mari amongst the excavated areas of the ramparts<sup>18</sup>. It is tempting to draw a connection between sling-shot and fortifications but we must concede that this might be circumstantial as researchers might be looking in these areas specifically for these objects (and that many others have gone unrecorded in the

cataloging of other remains from a variety of sites and contexts).

The shape of sling-shot found in archaeological contexts represents variety in the size and material. The round shot found at Buhen ranges in diameter from 3.2–5 cm<sup>19</sup>. In comparison, three round sling-shot stones found in association with the Kahun Sling were much smaller, about 2 cm in diameter<sup>20</sup>. The size of round sling-shot found at Lachish measured on the larger end of the scale at 5 cm in diameter and was found in association with the site's rampart<sup>21</sup>. Another possible form of sling-shot, which Emery dubs "torpedo-shaped", comes from Buhen. These baked and unbaked clay shapes have an elliptical profile and a circular mid-section<sup>22</sup>. It is unclear if these were meant to be utilized by slingers but it is interesting that they were found in large numbers (59 in total) in Square J8 and, by Emery's suggestion, might have been associated with the storerooms of that area. In addition, remains of these torpedo-shaped items, very similar to the context of the round-stone forms, were found "scattered around the walls of the Inner Fortification" at Buhen<sup>23</sup>. An examination of these objects reveals that they were much larger than their round-form counterparts; averaging about 10 cm long by 3.5 cm in diameter<sup>24</sup>. Harrison makes the statement that torpedo and ovoid shaped projectiles in slings would have been superior to the spherical shape as it would have increased the sling's range as the ovoid shapes would have had less air friction due to their flight relied on a traverse rotation (like an American football or bullet)<sup>25</sup>. The suggestion that the Buhen torpedo-shaped objects were projectiles meant to be powered by a sling

<sup>19</sup> Comparable to an example found at Tell el-Farain (3.74 cm – BM 40662).

<sup>20</sup> The smaller size might indicate a size more appropriate for hunting purposes (possibly small fowl) as the collision force would not have needed to have been as high as cause injury (as opposed to the intended targeted being a human).

<sup>21</sup> Manchester Museum, Acc. No. 1980.644.

<sup>22</sup> Emery et al., 1979, 131.

<sup>23</sup> Emery et al., 1979, 131.

<sup>24</sup> Three examples from Buhen, measuring 11.4 cm long × 3.5 cm in diameter, are currently on display in the British Museum: British Museum No. EA 65751, 65752, 65754. It should be noted that with the admission of Emery that many sling-shot was not recorded and discarded; statistical analysis of size and shapes would be inherently flawed as it would omit many samples from the dataset.

<sup>25</sup> Harrison, C., "The Sling in Medieval Europe", *Bulletin of Primitive Technology* 31, 2006, 75; Korfmann 1973, 38–39. The impact of the torpedo shaped sling-shot on a much more focused area, presumably, would have focus the collision impact to a much smaller area as well (resulting in greater damage).

<sup>15</sup> Emery et al., 1979, 130.

<sup>16</sup> Burke 2008, 32 citing Stout 1977.

<sup>17</sup> Macqueen, J., *The Hittites and Their Contemporaries in Asia Minor*, New York 1996, 17 has noted a similar sentiment about Mersin in Cilicia, during the Early Bronze Age, as having piles of sling-shot available for immediate defense of the fortification walls.

<sup>18</sup> Burke 2008, 32 citing Margueron 1982, 30; Vutriopoulos 1991, 282 notes that sling-stones found at 'destruction horizons' at the end of Neolithic and Chalcolithic settlements might also indicate a very early military deposition.



**Fig. 3:** The ‘Lahun Sling’, 22nd Dynasty, along with a modern replica (left). Pouch 7 × 11 cm, total length of arms, 60 cm (Petrie Museum no. UC 6921 – Image copyright of the Petrie Museum of Egyptian Archaeology, UCL).



**Fig. 4:** Conical slingstones from Buhen, c. 3 × 11 cm (BM 65751, 65752, 65754, Author’s image).



**Fig. 5:** Conical slingstone from Buhen, profile view (BM 65754, Author’s image).



**Fig. 6:** Lead slingstone from Qasr Ibrim, Nubia, 3.5 × 1.9 cm, 52 grams (BM 71843, Author’s image).

mainly comes from the inference to associate them with the later almond-shaped, lead shot of the Late Period (747–336 BCE) (fig. 6).<sup>26</sup> We must note that these later examples are much smaller in dimensions (averaging 3.3 × 1.80 cm).<sup>27</sup> When compared to “Classical” lead sling-shot, the Buhen torpedo-shaped objects seem very large. On the other hand, when conducting a recent ethnographic experiment on slingers and their projectile distance, Vega and Craig noted that when the Peruvian slingers chose an expedient stone to sling with, it was usually rectangular shaped and ranging from 4–9 cm long and 2.5–4.5 cm wide.<sup>28</sup> Therefore, although not direct evidence of these items being used in slings, we should recognize that the weight and size is roughly comparable to that study. However, we must ask, what impact would the size of the sling-shot have? Burke and Dohrenwend have made the suggestion that slingers could have selected a variety of stones based on the re-

<sup>26</sup> Petrie Museum No. UC 63360, UC 63362 (4 examples) and BM 71843 similar in shape to examples from Knossos (Vutiropulos 1991, fig. 3-1). Vutiropulos notes that this shape is not a late-period development as some middle Neolithic sites have attested to (I.c., 280–281; see also British Museum No. 128648 and 128645, dating to 5000–4000 BCE) but rather, the use of lead as a material for sling-shot ammo is a later development. Mixter 2001, 12 suggests that this experiment in shape, c. 4000 BCE, was to enhance the capability of a sling-shot’s penetration power. For more “classical” examples, see Korfmann’s illustrations (Korfmann 1973, 40).

<sup>27</sup> Mixter 2001, 12 suggests that being composed of lead was directly proportional to their reduced size; the same amount of collision force could be generated as a clay object of larger size. Vutiropulos 1991, 284 echoes this sentiment. Sellers 1939, 43.

<sup>28</sup> Vega and Craig 2009, 1266.

quirement needed; a larger stone would have sacrificed the speed and accuracy of the projectile, but the sling-stone would have a much higher collision impact upon a human target<sup>29</sup>. Harrison has also asserted that the torpedo-shape might have also been more deadly than arrows against leather armour as the impact of the stone was not penetration but the impact itself<sup>30</sup>.

The capability of a sling's effective distance has been given various figures by different authors. As Harrison has pointed out, that this may be based on the difficulty researchers have had trying to find people who have been well-habituated to using a sling<sup>31</sup>. This opinion is also voiced by Vega and Craig in their statement that, "Novice slingers do not sling as far or as effectively as those who are raised with slinging, and thus are a poor proxy of the past"<sup>32</sup>. The experimental data from Vega and Craig reviewed the current literature and found that slings were said to be effective from anywhere from 27 meters to an astounding 500 meters<sup>33</sup>. The idea of the higher-range of the sling seems to have been influenced primarily from classical literature in that the sling's effective distance was said to be farther than that of the bow. Specifically, the statement of Xenophon stating that, once he had recruited highly-skilled Rhodian slingers from his own ranks to counter assaults by Persian missile-fire, that his army could rest much easier. This statement has seemed to have influenced modern scholars in their assessments of the sling's effective range<sup>34</sup>.

In more recent research, the sling has been said to have a much farther range than the bow based on art scenes of the Neo-Assyrians. This opinion about the sling's range was made by Korfmann about the placement of Assyrian slingers being behind archers<sup>35</sup>. This

has been taken to imply that the range of slingers being greater than the bow as well<sup>36</sup>. However, in Korfmann's example he is basing this on a scene that is deliberately showing Assyrian slingers behind auxiliary bowmen<sup>37</sup>. Without going into a comprehensive analysis of the technological capacity of 'fringe'/subjugated zones of the Neo-Assyrian empire, it has been argued that the composite bow's manufacturing process involved a level of industrial capacity of a civilization/culture that was not attained at the time of the raising of these auxiliary troops within these fringe zones<sup>38</sup>. Therefore, if we are to perceive these auxiliary-archers as using the self-bow, which, by most accounts, the range was much shorter than the composite bow, we could expect the Assyrian slingers to out-range them. Furthermore, considering that there are some Neo-Assyrian scenes that depict a range of other troops behind slingers in combat (such as mounted archers, charioteers, etc.), we should conclude that basing our opinion of an ancient slingers range on their placement in certain scenes from Assyria does not constitute scientific proof of the weapon's capabilities in comparison to the bow<sup>39</sup>. It should be noted that in the remains of the Assyrian siege of Lachish, excavations uncovered 123 slingstones compared to 859 arrowheads, suggesting that although slings were used, their use might have been to supplement archers<sup>40</sup>.

<sup>29</sup> Burke 2008, 32; Dohrenwend 2002, 36.

<sup>30</sup> Harrison 2006; Mixter, 2001, 12; Korfmann 1973, 40 points out that the writings of Vegetius indicate that internal injuries caused by a slinger's ovoid projectiles were capable of inflicting a fatal wound.

<sup>31</sup> Harrison 2006.

<sup>32</sup> Vega and Craig 2009, 1264 point out that the experiment performed by Finney (Finney, Middle Iron Age Warfare of the Hillfort Dominated Zone c. 400 B.C. to 150 B.C., BAR-BS 423, Oxford 2006) as not being a good demonstration of an experimental model as the slinger for the test was a novice.

<sup>33</sup> Vega and Craig 2009, 1265 Table 1 – a highly useful referenced table with the contrasting claims of a sling's effective distance.

<sup>34</sup> Anabasis III.3 and 4: "For the Rhodians (slingers) could reach further than the Persian 16 slingers, or, indeed, than most of the bowmen." Vutriopoulos 1991, 279, 284; Mixter 2001, 16; Keeley 1996, 51; Gonen 1975, 43

<sup>35</sup> Korfmann 1973, 36.

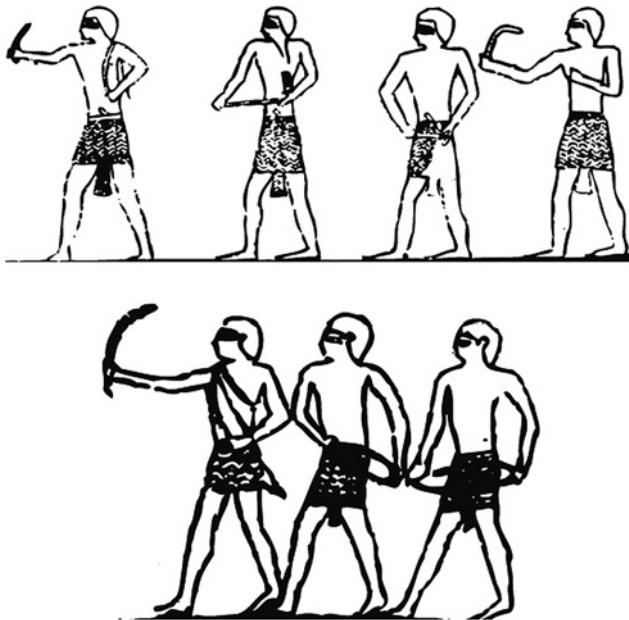
<sup>36</sup> Burke 2008, 33.

<sup>37</sup> Reade, J., "The Neo-Assyrian Court and Army: Evidence from the Sculptures", Iraq 34-2, 1972, 101–102 indicates that the presence of the pointed helmets on soldiers identifies them with Assyrians as opposed to auxiliaries of archers (soldiers from other areas in the Empire) which wear headbands and regional dress that is clearly delineated from Assyrian forms (See Pl. XXXVIIb, XXXVIII). This is the case in Korfmann's example.

<sup>38</sup> Hulit, T., Late Bronze Age Scale Armour in the Near East, Diss. Durham 2002, 16; Zutterman, C., "The Bow in the Ancient Near East. A re-evaluation of archery from the late 2nd millennium to the end of the Achaemenid period", Iranica Antiqua 38, 2003, 145; Vidal, J., "Sutean Warfare in the Amarna Letters", in: id. (ed.), Studies on War in the Ancient Near East. Collected essays on military history, AOAT 372, Münster 2010, 99.

<sup>39</sup> Curtis, J. and Reade, J., Art and Empire. Treasures from Assyria in the British Museum, New York 1995, 67 no. 16.

<sup>40</sup> Sass, B. and Ussishkin, D., "Section B: Spears, Armour Scales and Slingstones", in: G. Bachi, D. Ussishkin (eds.), The Renewed Archaeological Excavations at Lachish (1973–1994), Vol. 4, Tel Aviv 2004, 1980, Table 27.20 and 27.21; D. Ussishkin, (ed.), The Renewed Archaeological Excavations at Lachish (1973–1994), Vol. 2, Tel Aviv 2004, 736–738 it is possible that some slingstones might have been overlooked or buried so an exact number is elusive. Average weight of the Lachish slingstones was 253.67 grams.



**Fig. 7:** Egyptian depictions of slingers in siege scenes from two tombs at Beni Hassan, Middle Kingdom. Top, Group of slingers (BHT 17) (Newberry 1893, Part 2, Pl. 15). Bottom, Group of slingers (BHT 15) (Newberry 1893, Part 2, Pl. 5).

To test these claims, Vega and Craig's recent experimental test of habituated slingers in Puno, Peru represents the first structured attempt to test the distance of how far slingers could cast projectiles. From their study, of varying ages and sexes of slingers, the data shows that slingers of the study could cast stones between 30 and 130 meters with an average of 78 m for male slingers<sup>41</sup>. We should consider that in most of the trials of this study were conducted along a relatively horizontal plane and that, if the slingers were situated in a higher-ground location (such as a hilltop or a parapet of a wall), the distance achieved could have been much further. The informal experiment of Stout at Tell es-Sweyhat suggested that the ammo could also influence the effective range of a slinger as well<sup>42</sup>. Although, it is clear that the sling was an effective weapon, more experimental tests need to be conducted before the claim that ancient slingers had a more effective range than bowmen can be refuted.

It must be mentioned though, that if the sling was so effective in LBA sieges and field battles, why were they not mentioned or depicted in art scenes more? Currently, there are only three artistic compositions that depict slingers from pharaonic Egypt, the tomb of Baqt (BH15) and Khety (BH17), both from the early Middle Kingdom and at Beni Hassan (fig. 7)<sup>43</sup>. This group occurs within a military siege-scene and not in the context of a hunting scene. However, the two depictions do not explain the lack of slingers from pharaonic art. A third artistic depiction can be seen in the naval battle of the Sea Peoples at Medinet Habu in which slingers are shown in the Egyptian ship's crownsnest<sup>44</sup>. Later examples, such as the Tell Halaf orthostat (9th century BCE) and various depictions from the orthostats of Neo-Assyrian military activity (specifically from the reigns of Sennacherib and Ashurbanipal) at least indicate that the weapon had some sort of continued use in a military role (fig. 8)<sup>45</sup>. It



**Fig. 8:** The slinger orthostat, Kapara's palace (Iron Age c. 900 BCE), Tel Halaf (BM 117103, Author's image).

<sup>41</sup> Vega and Craig 2009, Table 2, 3.

<sup>42</sup> Burke 2008, 32 citing Stout (1977, 65) claims that 100 m. could be achieved by the slinger using clay projectiles as opposed to stones that had a range of around 200 m.

<sup>43</sup> Newberry 1893, Vol. 2, Pl. 5, 15 (third register from the bottom, right of the besieged fortress). Shaw has noted that the similar composition might indicate that this was an attempt to copy the earlier tomb (personal communication). Please note the Burke's reference (Burke 2008, 32) is in error (it only points out the tomb of Khety and claims that the scene is depicted on pl. 16).

<sup>44</sup> Yadin 1963, 252 top; Epigraphic survey, University of Chicago. Medinet Habu 1: Early Historical Records of Ramesses III. OIP 8. Chicago 1930. Pl. 37.

<sup>45</sup> Earliest known depiction of a slinger is from an Akkadian cylinder seal currently in the British Museum (No. 89137) which is dated to c. 2300 BCE. Tell Halaf relief from the palace of Kapara (British

is tempting to suggest that slingers were largely ignored in artistic scenes because the weapon has been often associated with shepherds and thus, the lower classes of society. Considering that the sling was relatively easy to produce and made from readily available materials, perhaps it was not seen as a prestigious item to be depicted

in battle scenes.<sup>46</sup> It is clear from the evidence that the sling was used in conflicts of the ancient eastern Mediterranean. However, the extent that slingers took part in battles, whether in sieges or pitched-field conflicts, remains a point of discussion.

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Museum No. ME 117103): Yadin 1963, 364; Gonen 1975, 42. Assyrian scenes of slingers: British Museum No. 124904 (Siege of Lachish) [in Yadin 1963, 430–431], Louvre No. AO 19909 [in Yadin 1963, 452, 458]. See also British Museum Reg. No. 1772,0320.266 which depicts a Greek soldier-slinger from 460–450 BCE.

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**46** As opposed to the khepesh swords in the hands of soldiers at Medinat Habu which might have tacitly conveyed a sense of splendor and wealth of the king furnishing his military with high-value weaponry (The University of Chicago, The Earlier Historical records of Ramesses III, OIP 8, Chicago/Ill. 1930, Pl. 16, 17, 29).

# CORRIGENDUM

Wernick, N. 2014. "Slings in the Ancient Near East with Reference to the Egyptian Material", *ZÄS* 141-1: 97 – 103

Please note that the 2<sup>nd</sup> paragraph on page 97 should read:

"The sling's construction consists of a central pouch and two radiating strings called "arms". One of the arms usually has a small loop tied at one end and is referred to as the "anchor arm". The slinger, when utilizing this weapon, places a piece of ammo within the pouch and, while holding both strings in one hand, usually in a clenched fist, begins to generate centripetal force by swinging the pouch in a circular direction. When enough force has been generated, the slinger frees the "release arm", resulting in the unfolding of the pouch and discharging the ammunition toward an intended target."