

BRILL'S COMPANION TO WAR IN THE  
**ANCIENT IRANIAN EMPIRES**

(eds. John Hyland and Khodadad Rezakhani [In Press, Brill])

**CHAPTER 2: LIKE A RAINING CLOUD:  
ARCHERY AS THE PILLAR OF ELAMITE WARFARE**

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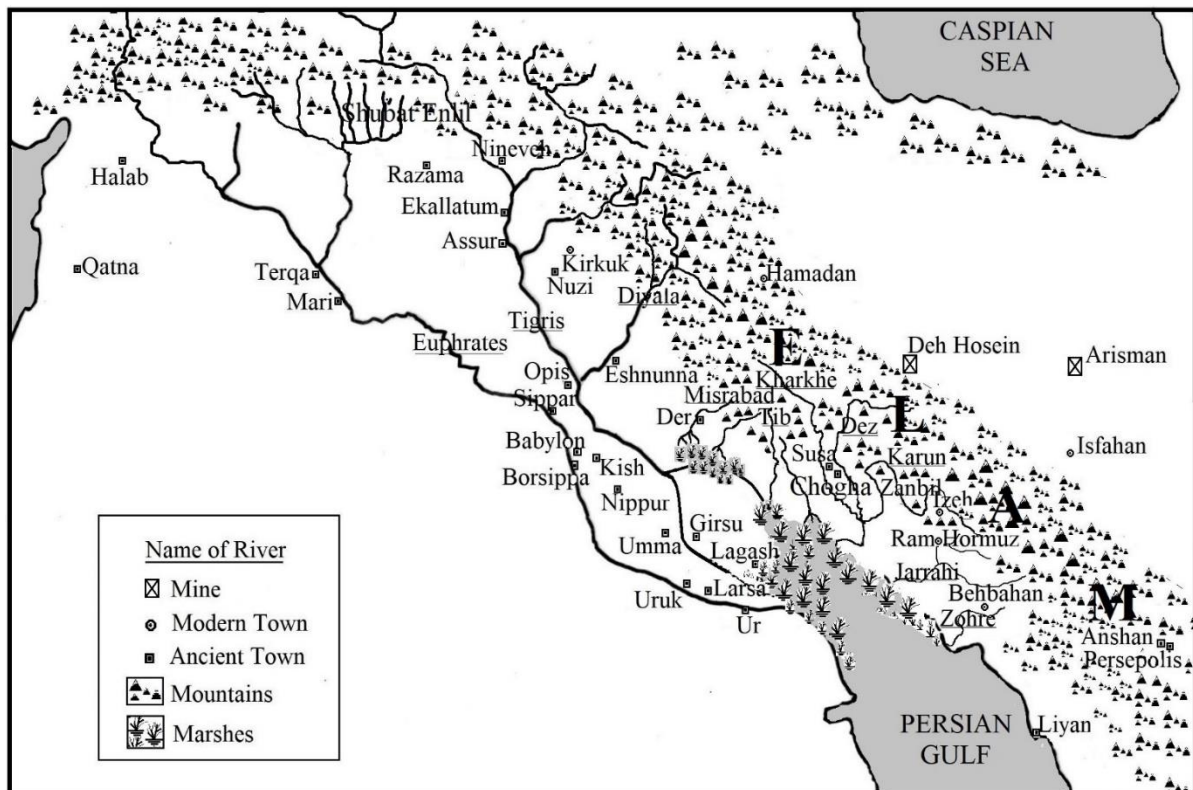
His bow was nocked to let the arrows fly  
But we ourselves, we did not know how to grasp a quiver  
Elam overwhelmed our sacred localities

Babylonian Temple Rituals,  
Reign of Nabu-kudurri-usur I (Nebuchadnezzar I), ca. 1100 BCE

Elam, an ancient polity with a territorial configuration of lowlands and highlands roughly equating to today's southwest Iran, was a major, yet often overlooked, political player of the ancient Near East. In recent years an increasing body of academic publications have suggested that the legacy of Elam was more considerable and long-lasting than previously estimated. A recognition of this fact must now be regarded as essential for any scholar interested in Near Eastern military history, and in the genesis and development of Achaemenid Persia and later Iranian empires.<sup>1</sup> Elam boasted a remarkable longevity that hinged on the strategic possibilities and resources afforded by its geographical composition, political dynamism, astute diplomacy, and, as this chapter will demonstrate, a military renowned for its archery finesse, particularly with the composite bow, and a large-scale state production of archery paraphernalia. This investigation, which draws together archaeological, iconographic and textual evidence for archery in Elam, commences in the late Neolithic when lowland settlement sites on the Susiana plain close to Mesopotamia began to exhibit signs of the persistent threat of warfare, and travels into the historical era up to the rise of the Persian Empire, whose rulers perpetuated the Elamite cultural ideology surrounding archery. Though historical sources are lacking for Elam's political and military activities on its east and south borders, it will become clear that a strong tradition of archery played a key role in historic Elamite victories that changed the political trajectories of its western neighbours [Fig. 2.1].

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<sup>1</sup> For general recent syntheses of Elamite history, archaeology and art see Potts (2016); Álvarez-Mon, Basello and Wicks (2018); and Álvarez-Mon (2020).



*Fig. 2.1. General map with sites mentioned in text (J. Álvarez-Mon © 2021)*

## **WARFARE IN ELAMITE PREHISTORY (ca. 4200-2700 BCE): THE CRITICAL INVENTION OF THE COMPOSITE BOW**

The origins of Elam's lowland culture can be traced back to the foundation Susa on the Susiana plain in ca. 4200 BCE. Here the threat of warfare and the early military potential of the local populations were manifested in the form of defensive city walls and an array of weaponry: short-range weapons including limestone maces<sup>2</sup> and polished stone or primitive copper axes,<sup>3</sup> and long-range weapons including javelin/spearheads,<sup>4</sup> arrowheads and ovoid-shaped sundried clay sling missiles,<sup>5</sup> which were widely deployed as weapons in the ancient Near East and probably appear in a rare early depiction of warfare at a fortified city in a glyptic image (ca. 3800-3100 BCE) from the nearby site of Chogha Mish [Fig. 2.4e].<sup>6</sup> Much of the archaeological evidence for archery—bows, quivers, and protective hand and arm-gear—was made in organic materials and has perished through time, leaving us only with arrowheads, which are defined

<sup>2</sup> Morgan (1912) 13, figs. 36-39, 18, figs. 87-93; Le Brun (1978) fig. 39.

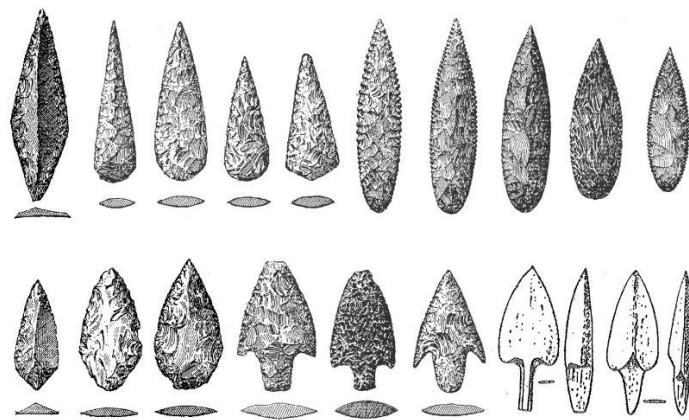
<sup>3</sup> Morgan (1912) 11, figs. 27-28; Tallon (1987a) 312, fig. 49.

<sup>4</sup> E.g. copper/copper alloy spearheads in Le Brun (1971) fig. 67: 1; Tallon (1987a) 139-40; (1987b) no. 197.

<sup>5</sup> Note, however, that weapons (except perhaps mace-heads) were also deployed in hunting and other activities, so martial use is rarely assured (Hamblin (2006) 15).

<sup>6</sup> Delougaz and Kantor (1996) 146-47; Pl. 151C. Sling missiles are common finds at Neolithic and Chalcolithic sites in Iran (Potts (2020) 19-20), including Elamite areas: Susa, where missiles mixed with architectural decoration may result from enemy offensives (Steve and Gasche (1971) 31, 143, 167-68, Pls. 28.25, 59.2; 60:1-2; additional missiles in Le Brun (1971) 187; (1978) 84). Chogha Mish (Alizadeh (2008) 33, 42; Delougaz and Kantor (1996) 108, n. 42, 147, 253, Pl. 65L); Tall-i Ghazir (Alizadeh (2014) 23, 50); and Tell-e Bakun in the highlands (Alizadeh (2006) 79, fig. 63K-N)

as projectile points of less than 7/8 cm length,<sup>7</sup> made in flint, metal and occasionally bone.<sup>8</sup> Arrowheads cut from variously coloured flint, and occasionally obsidian were widespread in the earliest layers of Susa. They varied in form and in finish, with some retouched or carefully denticulated [Fig 2.2]. Finely worked lanceolate-shaped forms were most abundant, and of these the early director of the French archaeological mission at Susa, Jacques de Morgan, wrote: ‘flint was never fashioned with more perfection’.<sup>9</sup> In contrast to hand-to-hand combat weapons, which were sometimes deposited with the dead, arrowheads are conspicuously absent from burial assemblages of the two main excavated late Neolithic cemeteries in the Acropole mound at Susa and at Chogha Sofla on the Behbahan plain,<sup>10</sup> suggesting that they played no role yet in funerary ideology. Further into the highlands at Bakun A in Fars, which exhibits cultural links to sites in Susiana, and at other contemporary settlements in the area, which would become part of the Elamite political and cultural sphere by the end of the third millennium BCE, projectile points were absent from the flint industry.<sup>11</sup> Nevertheless, use of projectile points made of organic materials, such as wood and bone, cannot be excluded.



**Fig. 2.2.** Flint arrowheads from Susa (after Morgan 1912: 17, figs. 60-73)



**Fig. 2.3.** Archers from Susiana (ca. 4200-3800 BCE) [a] painted bowl from Susa; [b] painted pottery sherd from Djowi (photographs © J. Álvarez-Mon)

<sup>7</sup> Gernez (2018) 69.

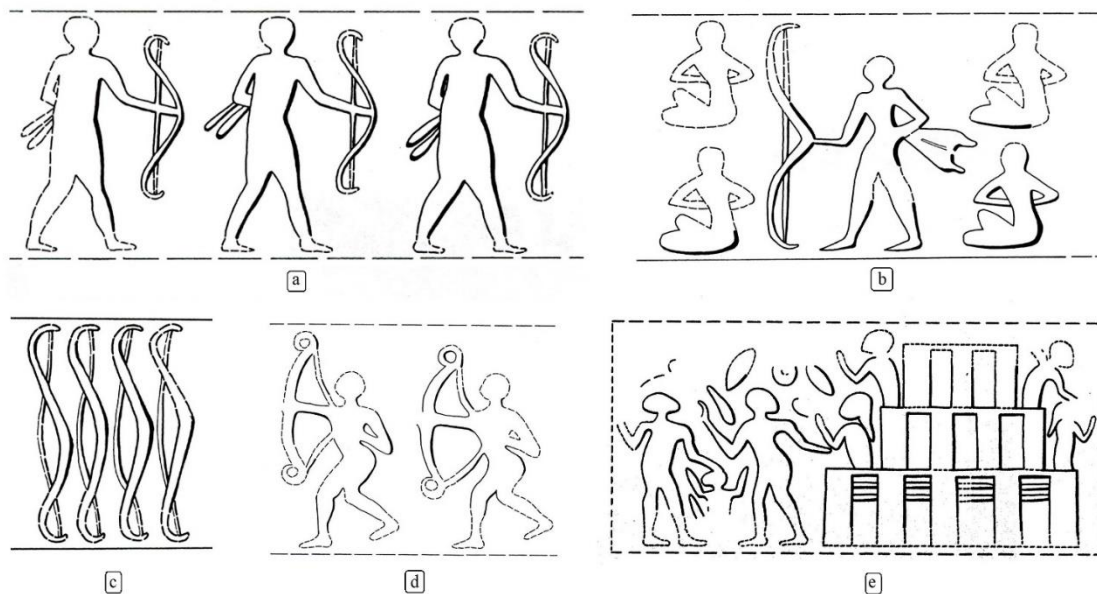
<sup>8</sup> Mecquenem (1936) 2; (1937) 2; (1938) 6.

<sup>9</sup> Morgan (1912) 17, figs. 60-73.

<sup>10</sup> See Moghaddam (2020). At Tal-e Ghazir on the neighbouring Ram Hormuz plain, chipped stone objects were rarely collected by archaeologists (Alizadeh (2014) 50).

<sup>11</sup> Crowfoot in Langsdorff and McCown (1942) 76, fn. 19.

The late 5<sup>th</sup>/early 4<sup>th</sup> millennium BCE artistic record offers only very limited evidence for the bow, and the context of its use is unclear. One schematic human figure preserved on a painted pottery sherd is shown frontally with W-shaped arms holding a bow in one hand [Fig. 2.3b]. Another is depicted inside a painted bowl, this time in profile, holding (aiming?) a bow and arrow [Fig. 2.3a].<sup>12</sup> In both images the bows appear to be of the single-stave type (the all-wood or self-bow), which was the earliest and simplest to manufacture of the two main bow categories attested in the ancient Near East, the other being the composite reflexed bow.



**Fig. 2.4.** Composite bows in Chogha Mish sealings (ca. 3800-3100 BCE) [a] line of bow-bearers, [b] oversized bow; [c] four bows; [d] two archers; [e] depiction of warfare at a fortified city (line drawings after Delougaz and Kantor 1996: Pls. 150-151)

An evolution from the simple single-stave type, the composite reflexed bow represents a *tour de force* of engineering, requiring access to specific materials, skilled craftsmen and knowledge derived from an established tradition of archery. Essential material components of the composite bow are a non-resinous wooden core fixed with an adhesive to a sinew backing to resist tension, a layer of horn facing the belly to resist compression, and bone tips.<sup>13</sup> Production of a composite bow was time consuming: each layer of material had to thoroughly cure and bond together before the next could be added, a process that could last between one and five years.<sup>14</sup> An extremely effective weapon in skilled hands, the composite bow boasts up to twice the power of a simple wooden bow of the same draw weight, allowing far greater penetration and range, and use of heavier arrows.<sup>15</sup> Classical and Islamic sources, supported by modern experiments, indicate that it could be fired quite accurately up to a distance of about 60 metres, with an effective range extending as far as perhaps 200 m, but factors such as the structure and size of the bow, arrowhead type, skill of the archer, terrain and climate all

<sup>12</sup> Álvarez-Mon (2020) Pl. 14a, f.

<sup>13</sup> Based on composite bows preserved in the tomb of Tutankhamun in Egypt (McLeod (1970) 31).

<sup>14</sup> Álvarez-Mon 2023.

<sup>15</sup> Klopsteg (1947) 90; Moorey (1986) 208-210; Miller, McEwen, and Bergman (1986) 182-87; Lorenz and Schrakamp (2011) 137; Genz (2013) 98.

introduce variation into the equation.<sup>16</sup> The composite bow's smaller size and weight, and high capacity to withstand tensile and compressive forces without damage to the limb made it more transportable, more reliable, and able to be braced at the ready for long periods without losing strength.

Composite reflexed bows are notoriously difficult to study. They are seldom preserved in the archaeological record,<sup>17</sup> and while Mesopotamian texts mention bows (Sumerian GIŠ.BAN, Akkadian *qaštum*) from the mid-third millennium, they do not clearly discriminate between self-bows and composite bows.<sup>18</sup> This leaves only iconography, which can demonstrate the presence of composite bows in Susiana by the late 4<sup>th</sup> millennium BCE<sup>19</sup> through the combined evidence of a double-concave (or B-shape) profile when drawn [Fig. 2.5b]<sup>20</sup> and arms curving away from the string when braced but not drawn [Figs. 2.4a-c, 5a].<sup>21</sup> Glyptic from Chogha Mish and Susa dated to ca. 3800-3100 BCE displays bows alone in groups of four [Fig. 2.4c], bows held by striding individuals in a strung but disengaged position [Fig. 2.4a], and bows put to use in hunting [Fig. 2.5b]. Bows appearing alone have a reflexed body and bowstring secured to sharply curved terminals.<sup>22</sup> Under drawback tension the terminals are sometimes shown in an exaggerated circular form [Fig. 2.4d]. Where humans are present to give an idea of scale, the bows reach from the top of the head to about the knee [Fig. 2.4a, d],<sup>23</sup> though size is sometimes deliberately overstated [Fig. 2.4b].

From the depictions of groups of disengaged composite bows at Chogha Mish, P. Delougaz and H. Kantor inferred the presence of an armoury.<sup>24</sup> The military application of a composite bow in a glyptic image from Susa dating to ca. 3800-3200 BCE illuminates a revolution in the history of weaponry and warfare. The image shows a 'priest-king' standing outside a monumental horned building aiming his drawn bow towards three naked figures who have been hit by his arrows [Fig. 2.5c].<sup>25</sup> This first image of warfare,<sup>26</sup> accompanied by an outburst of glyptic scenes of manufacture, processing, management, and storage of goods at Susa, must be contextualised within the rise of urbanism and social complexity, increased control of wealth by elites and religious institutions, and Susiana's participation in the Uruk-centred economic network.<sup>27</sup> It cannot go unnoticed that a similar 'priest-king' archer is shown hunting on a relief-carved boulder from Uruk (bow type undiscernible);<sup>28</sup> however, the direction of transfer of the iconography is unclear.<sup>29</sup> While a rich body of imagery indicates the manufacture and use of the composite bow by the late 4<sup>th</sup> millennium in Susiana, bows were still rarely depicted well into the third millennium in Mesopotamia, and there are no obvious

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<sup>16</sup> McLeod (1965) 8; Lorenz and Schrakamp (2011) 144.

<sup>17</sup> Álvarez-Mon 2023.

<sup>18</sup> Civil (2003) 51; Schrakamp with refs. (2010) 154.

<sup>19</sup> Delougaz and Kantor (1996) 146; Potts (2016) 64; and adopting a more precise methodology, Randall (2016) 55.

<sup>20</sup> With the caveat that there is, as noted by Collon (1983, 53): 'a sufficient degree of recurvature, i.e. more than that which can be imparted by steam bending', since single-piece wooden bow can also be given a curved or reflexed form by exposing (curing) it to steam/heat and soaking it in water; a practice perhaps attested later in texts from Mari (Wilke (1991)).

<sup>21</sup> When unbraced, the composite reflexed bow bends in the opposite direction. Recognition of the composite bow variously informed by comments in McLeod (1958) 396; Yadin (1963) 8; Zutterman (2003) 121.

<sup>22</sup> Amiet (1972) nos. 684, 687, 688, 689; Delougaz and Kantor (1996) Pls. 33H, 150A.

<sup>23</sup> Amiet (1972) nos. 600-602, 606; Le Brun (1971) fig. 44, no. 2.

<sup>24</sup> Delougaz and Kantor (1996) 146; Álvarez-Mon (2020) 43, Pl. 18.

<sup>25</sup> Amiet (1972) no. 695; Álvarez-Mon (2020) 44, Pl. 19.

<sup>26</sup> Another warfare-related scene from Chogha Mish depicts a large-scale ruler (?) returning by boat from a military expedition with two prisoners (Álvarez-Mon (2020) 41, Pl. 17b).

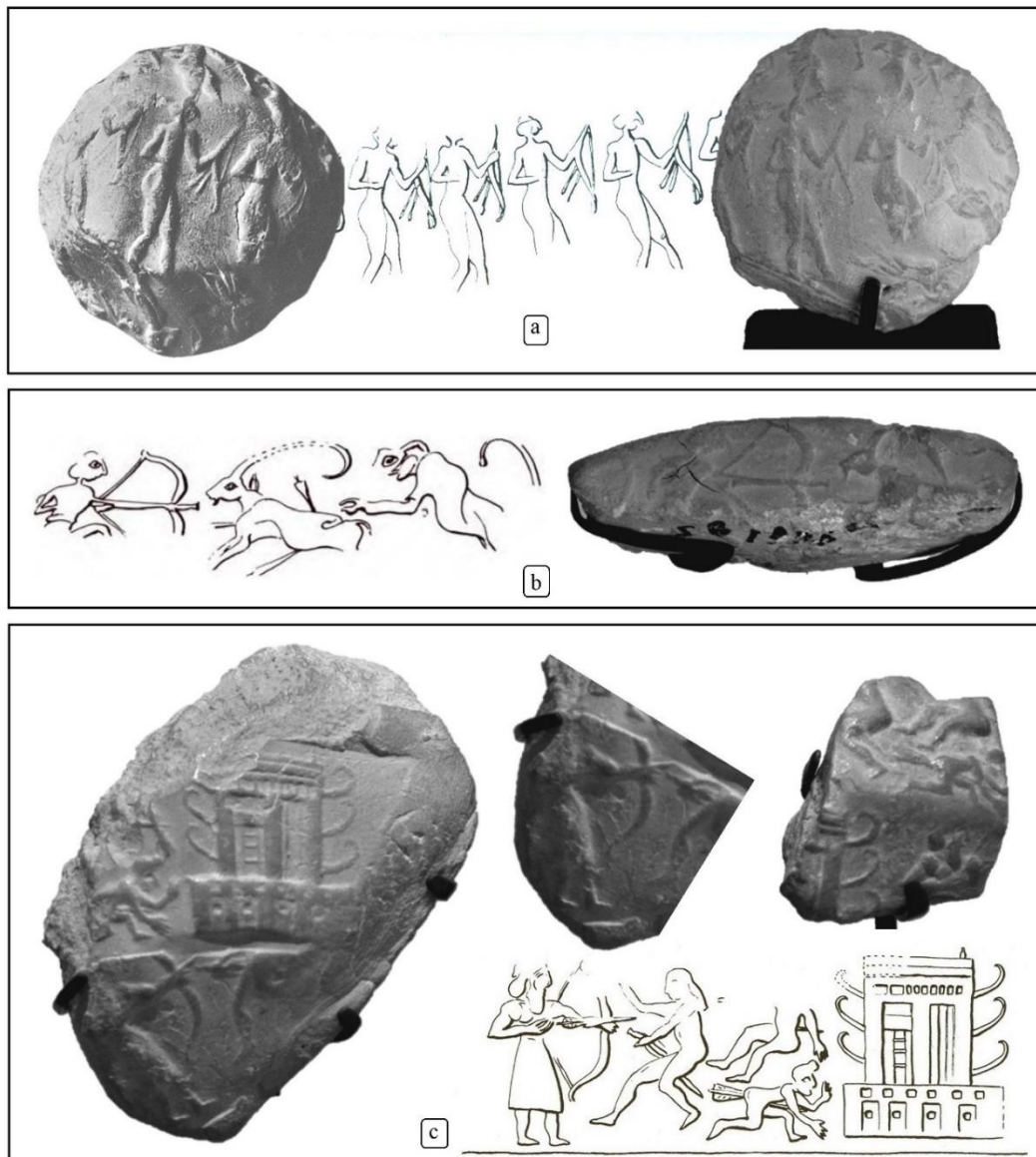
<sup>27</sup> For which see Potts (2016) 64-66; Álvarez-Mon (2020) 34-58.

<sup>28</sup> Image in Collon (2008) fig. 3.

<sup>29</sup> Álvarez-Mon (2020) 45.



examples of the composite type.<sup>30</sup> This inevitably raises the question of whether the composite bow had initially diffused from the highlands or foothill fringes of Susiana, or was even invented in Susiana thanks to its populations' access to quality bow-making materials.



**Fig. 2.5.** Composite bows in Susa sealing (ca. 3800-3100 BCE) [a] row of archers; [b] hunter with drawn bow; [c] 'priest king' (photographs © J. Álvarez-Mon; line drawings after P. Amiet)

Following the collapse of the Uruk organization around 3100 BCE, changes in material culture and a new 'Proto-Elamite' written language attest to the rise of an entity that was asserting itself from Susa through the Iranian highlands and plateau. Now a wider array of weapons are attested: a biconical clay sling bullet type alongside the typical ovoid form,<sup>31</sup> copper/copper alloy projectile points for spears<sup>32</sup> and arrows with elongated triangular blades<sup>33</sup>

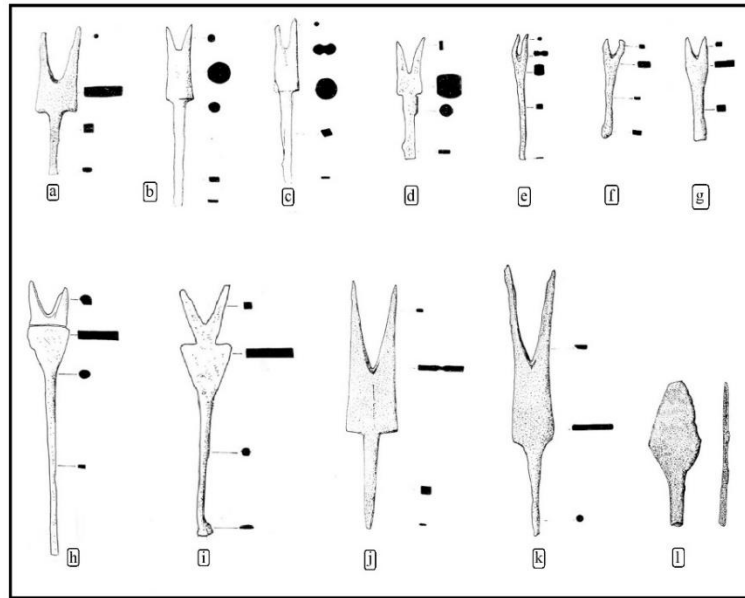
<sup>30</sup> Collon (2008, 95), however, perceives them in Mesopotamian art already in the Uruk period.

<sup>31</sup> Le Brun (1971) 195.

<sup>32</sup> Le Brun (1971) fig. 67.2-3.

<sup>33</sup> Tallon (1987a) 148; (1987b) nos. 222-24.

or bifid points, which became popular through the third millennium [Fig. 2.6], flat axes,<sup>34</sup> elongated triangular spearheads, and new forms such as javelin heads, daggers, and knives with curved blades.<sup>35</sup> The diversity of weapons in copper and copper alloys must have been closely linked to exploitation of metal sources on the western central Iranian plateau at Arisman, which reached a high point of copper production on an industrial scale at around 3000 BCE [location in Fig. 2.1].<sup>36</sup>



**Fig. 2.6.** Third millennium BCE bifid copper/copper alloy arrowheads (after Tallon 1987b [a] no. 347; [b] no. 360; [c] no. 359; [d] no. 357; [e] no. 319; [f] no. 308; [g] no. 313; [h] no. 336; [i] no. 337; [j] no. 352; [k] no. 353; [l] no. 218)

### WARS BETWEEN EAST AND WEST (ca. 2700-2004 BCE)

A literary-mythical composition known as the Sumerian King List (SKL) highlights Elam's involvement from around 2675 BCE in a millennia-long historically documented pattern of antagonism, exchanges, and alliances between polities of Mesopotamia and Susiana, and various other Zagros entities associated with Elam.<sup>37</sup> Experience with the bow, particularly its more developed composite version, and the technology and access to materials to make it, surely aided Elam in both its defensive and offensive military activities. Iconography suggests that onager or oxen-pulled carts or chariots must have been used for transport of people and weapons, shock attacks, and presumably high-platform projectile throwing.<sup>38</sup> Four wooden chariot wheels preserved in a grave at Susa (Donjon B280),<sup>39</sup> are close in construction to ED II (ca. 2700 BCE) chariots in burials at Kish,<sup>40</sup> suggesting shared technological know-how and

<sup>34</sup> Tallon (1987b) nos. 426-33, 442.

<sup>35</sup> Le Brun (1971) fig. 67.1, 2, 3, 6; Tallon (1987a) 320, fig. 51.

<sup>36</sup> Helwing (2011) 529-31.

<sup>37</sup> See Schrakamp (2010) for a comprehensive analysis of third millennium Mesopotamian warfare. Fragments of SKL copies from Susa published by V. Scheil (1939) 16-29. Discussion of the relationship between Susa and the highland polities can be found in Steinkeller (2018).

<sup>38</sup> Moorey (1986); Littauer and Crowel (2002).

<sup>39</sup> Made from three pieces of wood held together by two transversal boards and copper nails around the rims (Mecquenem (1943) 122, figs. 89.1-4, Pl. X; Tallon (1987a) 297-301, figs. 42-43; (1987b) 335, nos. 1290-1303).

<sup>40</sup> Watelin and Langdon (1934) 30, fig. 3.

elite warrior ideology at the time of the SKL events. The buried individual may have enjoyed a high military status, going by the vehicle and weapons in the grave: a lead hatchet, copper knife, cleaver, two axes, and two arsenical copper arrowheads of an unusual bifid form with a triangular base with V-shaped extension and very long tang found only at Susa [Fig. 2.6i].<sup>41</sup> Flint arrowheads had not been altogether discarded in favour of metal ones, going by a remarkable collection of flint arrowheads in a similarly dated burial from the same mound.<sup>42</sup>

Some scholars believe that the composite bow had accompanied the appearance of carts in Mesopotamian warfare. A siege warfare scene engraved on an Early Dynastic III plaque from the palace of Mari [Fig. 2.7],<sup>43</sup> the earliest depiction of its kind known from Mesopotamia,<sup>44</sup> shows a pair of helmeted soldiers, one holding a spear and a large shield, the other standing behind him about to engage a composite bow with the double-curved stave and reflexed tips and bowstring familiar from much earlier depictions in Susiana. With its long firing range, this bow type, which here appears ready to shoot a flaming arrow,<sup>45</sup> had potential to play a particularly key role in the execution of sieges, which depend heavily on long-range weapons on both the offensive and defensive sides.<sup>46</sup> As the plaque demonstrates, archery was most effective in warfare when units of spearmen and close-quarters infantry protected the archers and followed through after the arrow showers.<sup>47</sup>



*Fig. 2.7. Plaque from Mari (photograph after Voués à Ishtar, Syrie, Janvier 1934, André Parrot découvre Mari. Exposition au musée de l'Institut du monde arabe, 23 January-4 May 2014. Paris 2014, pg.125, III.6)*

Bows are still conspicuously absent, however, from the military equipment of the heavily armed Sumerian infantry on the Standard of Ur (ca. 2550 BCE) and the Stele of the Vultures from Lagash (ca. 2525 BCE). The latter's fragmentary inscription, which commemorates a (second) victory of Eanatum of Lagash (ca. 2450 BCE) over Umma during a

<sup>41</sup> Mecquenem (1943) fig. 73.3; Tallon (1987a) 152, type A 2.

<sup>42</sup> Mecquenem (1939) 9, Pl. 29, burial at -9.6 to -11 m.

<sup>43</sup> Parrot (1971) 269, Pl. XIV, fig. 4.

<sup>44</sup> Yadin (1963) 91-92.

<sup>45</sup> Miller, McEwan and Bergman (1986) fig. 3, 191 perceive a fire arrow.

<sup>46</sup> Genz (2020) 25, after Korfmann (1986) 144.

<sup>47</sup> Yadin (1963) 91-92.



border dispute, presents survival of an arrow wound as a motif of heroic character: ‘towards Enatum; a man shot an arrow; He was penetrated by the arrow; but he broke it off(?)...’.<sup>48</sup> The arrow is presumed to have been fired from the side of Umma, even if the list of adversaries ‘obliterated by Lagash’ was extensive, reaching as far afield as Susa, Elam, Mari and Subartu. Even the later Sumerian armies of Urukagina of Lagash (ca. 2350 BCE) and Lugalzageshi of Umma (ca. 2358-2334 BCE) did not privilege the bow, being instead composed primarily of civilian conscripts (farmers, fishermen, etc.) allocated lances or single or double-edged shaft-hole axes and shields. Bows are only known to have been used by a small contingent of elite (professional?) ‘arrow people’ at Lagash who were directly answerable, it seems, to the palace.<sup>49</sup>

Immediately striking from the archaeological evidence is that Elam produced a far greater quantity of metal arrowheads than its adversaries who, insofar as the scant evidence suggests, must have used arrowheads made of organic materials such as bone and wood, and flint forms that are difficult to identify as arrowheads (e.g. transverse arrowheads).<sup>50</sup> In a database of metal weaponry from 48 sites in and around the Near East collated by G. Gernez, 35% of the arrowheads dating to ca. 2600-1800 BCE come from Susa; a site that also showed a comparatively low ratio of spearheads to arrowheads.<sup>51</sup> From this a higher reliance on archery at Susa can be inferred. Copper arrowheads are advantageous in that, despite requiring more expensive materials, they are quicker to produce than flint arrowheads and can be made with a very thin tang facilitating easier fitting to the shaft.<sup>52</sup> A range of mainly bifid copper/copper alloy arrowheads appear around 3000 BCE and remained in use across the third millennium at Susa, often simultaneously [Fig. 2.6]. The bifid types, which are concentrated in the middle of the millennium, include a common short, flat, tanged version that disappeared in the early Akkadian period,<sup>53</sup> and two other distinct types: the abovementioned type unique to Susa, characterised by a triangular base with V-shaped extension and long tang of circular or quadrangular section [Fig. 2.6i];<sup>54</sup> the other with a rectangular base extending into two points and short quadrangular-section tang [Fig. 2.6a-d, j-k].<sup>55</sup> Except for a single tin-bronze example of the rectangular-base type, all bifid arrowheads subject to chemical composition analyses were made of arsenical copper.<sup>56</sup> A rarer arrowhead form, which may also have originated in Iran, has a lozenge-shaped head, in one case with a slightly rhomboidal in section, and a thick, flat tang that tapers towards the end [Fig. 2.6l].<sup>57</sup> As R. Miller, E. McEwen and C. Bergman highlight, different styles of arrowhead were probably more a matter of taste than function, whereas variations in weight were linked to suitability for different bow types and to different tactics. A single military archer could carry arrowheads of different weights to enable powerful close shots with a heavier arrow and longer distance shots with lighter arrow to harass the enemy.<sup>58</sup>

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<sup>48</sup> Translation: composite text, 155-157:

[https://cdli.ucla.edu/search/search\\_results.php?CompositeNumber=Q001056](https://cdli.ucla.edu/search/search_results.php?CompositeNumber=Q001056) (accessed 6/4/2021).

<sup>49</sup> Schrakamp (2010) 9, 11.

<sup>50</sup> Collon (2008) 94; Genz (2020) 27-29.

<sup>51</sup> Gernez (2007) 415-16.

<sup>52</sup> Gernez (2007) 403; (2018) 69.

<sup>53</sup> Tallon (1987a) 151-54, nos. 300-328, bifid type A 1.

<sup>54</sup> Tallon (1987a) 151-54, nos. 329-337, bifid type A 2.

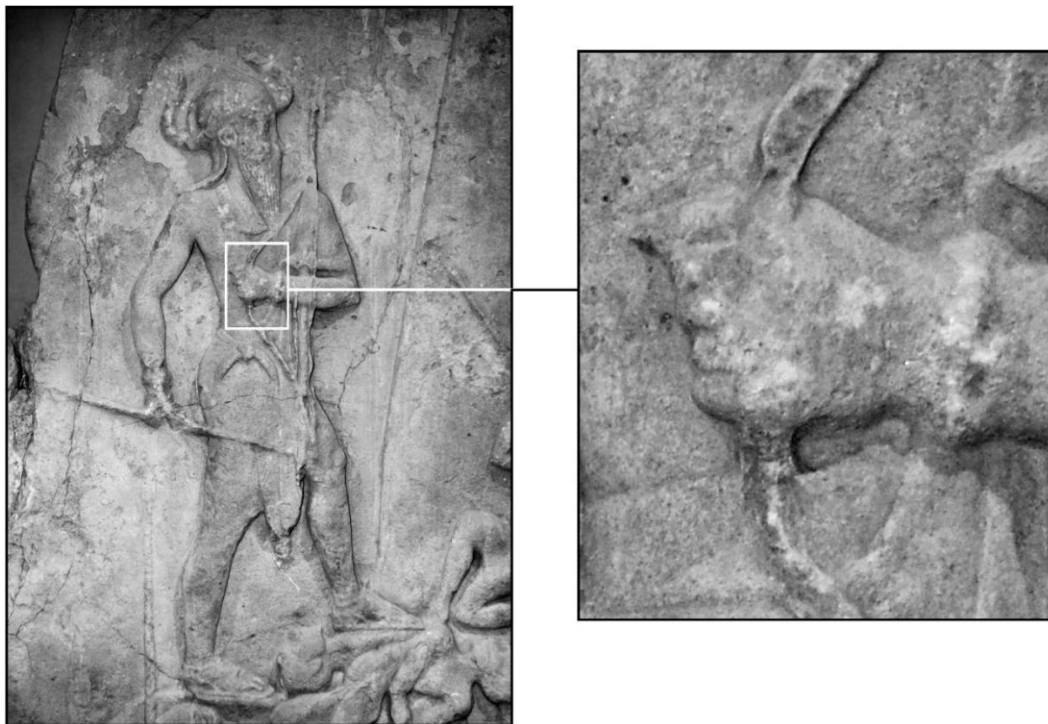
<sup>55</sup> Tallon (1987a) 151-54, nos. 338-354, bifid type A 3.

<sup>56</sup> Tallon (1987b) 37-40.

<sup>57</sup> Tallon (1987b) no. 218-21, type A 1 a.

<sup>58</sup> Miller, McEwen, and Bergman (1986) 189. A text from Mari records a single order of bronze arrows of three different weights for use in a siege: 50 x 40 g (heavy); 50 x 24 g, 100 x 16 g; 200 x 8 g (ultralight) (Dalley and Postgate (1984) 63; ARM 18 54).

When south-western Iran came under the geopolitical control of Sargon of Akkad (2335-2279 BCE), a confederacy of Awanite/Elamite powers held the western part of the Iranian plateau as far as Anshan and Marhashi.<sup>59</sup> The possibility that archery played a critical role in Akkadian military success has been raised based on an increased presence of the bow in inventories of military equipment, and the appearance of a composite bow with a straight grip and double-curved limb in Naram-Sin's left hand in his famous victory stele [Fig. 2.8].<sup>60</sup> However, neither iconographic nor textual evidence point to a large contingent of archers in the Sargonic armies. Rather, the bulk of the non-professional army used lances, and sometimes axes, and were perhaps supported by an elite group of soldiers (*nisqū*) with archery skills under the command of a 'general of the archers'.<sup>61</sup> Inventory texts from Susa dated to the classic Sargonic period (late Naram-Sin to Sharkalisharri) refer to battle equipment assigned to a group of Akkadian military officers (NU-bànda) including bows, arrows and quivers,<sup>62</sup> as well as copper spears, axes, helmets in cowhide and bronze, helmets with silver bird decoration, and protective (textile) clothing,<sup>63</sup> which may have equipped an army of similar composition. However, it is not known whether Susa's socio-economic structures were comparable with those of the centres of southern Mesopotamia, and hence whether the makeup of the troops was the same.<sup>64</sup>



**Fig. 2.8.** *Depiction of Naram-Sin as archer in his victory stele; detail of left hand and bow (photographs © J. Álvarez-Mon)*

<sup>59</sup> Potts (2016) 92-101. Awan likely described roughly the same geographical area and even the same political organism as Elam at this time (Steinkeller (2018) 177).

<sup>60</sup> Discussion in Schrakamp (2010) 3-4 n. 46-47. Below Naram-Sin, a quiver-bearing soldier holds a similar bow. Collon (2008, 96, fig. 8) identifies more composite bows on a fragmentary victory stele of Manishtusu (2269-2255 BCE) from Tello.

<sup>61</sup> Evidence for this remains inconclusive (Abrahami (2008) 7, 14, and n. 67; Schrakamp (2010) 14).

<sup>62</sup> Quivers at this time held 30 arrows each (Abrahami (2008) 12).

<sup>63</sup> Legrain (1913) nos. 85, 86; Scheil (1912). Recent translations and comments on the texts in Schrakamp (2010) 344-52; Sallaberger and Schrakamp (2015) 5, table 1.

<sup>64</sup> Schrakamp (2010) 351.

After the collapse of the Sargonic state rose the enigmatic leader Puzur-Inshushinak (ca. 2100 BCE), the ‘first native ruler to unite most of Iran’ and ‘creator of the first Iranian empire’.<sup>65</sup> He sought to control the route, later referred to as the Great Khorasan road, connecting southern Babylonia to the Iranian Plateau and claims to have conquered 81 towns or regions over a large territory of Iran, incorporating Elam’s two future capital cities, Susa and Anshan, into the Awanite kingdom. The extent of his conquests can be inferred from a text of Ur-Nammu (ca. 2112–2095 BCE), who confronted him and took over a number of towns in the Jebel Hamrin, Diyala and central Tigris, including Eshnunna (Tell Asmar) and Akkad, which Puzur-Inshushinak had held for at least eight years.<sup>66</sup> After his reign, Susiana returned to the Mesopotamian political orbit under Ur-Nammu, founder of the Ur III dynasty, whose successors sought alliances with the eastern rulers, sometimes via dynastic marriages.<sup>67</sup> But in 2004 BCE, the dynasty fell to the highland Elamite-Shimashki power that had been consolidating in the east. In both Mesopotamia and Elam this event marked a turning point: for the former, the end of the Sumerian renaissance; for the latter, the beginning of a long-lasting union between lowlands and highlands.

It is clear that the military use and symbolism of the bow and arrow had become increasingly important in the last quarter of the third millennium BCE,<sup>68</sup> and the persistence of the king as archer motif is demonstrated by a text in which Shulgi (ca. 2094-2046 BCE) boasts of acquiring the skill of archery at Dabrum and hunting wild boars with barbed arrowheads ‘let free as a spitting snake’,<sup>69</sup> a metaphor that brings to mind more vividly the popular bifid arrowheads of the third millennium [Fig. 2.6]. Various interactions between Elam and Mesopotamia are known to have resulted in the transfer of the ‘Elamite (Anshanite) bow’. An ‘Elamite Bow’ appears in Ur III period administrative records documenting an arsenal at Puzrish-Dagan (modern Drehem) near Nippur,<sup>70</sup> and the Epic of Gilgamesh presents the hero of Uruk as an archer using the ‘Anshan-style’ bow, implying that the Elamite highland city of Anshan was a reputed centre of military expertise and craftsmanship during the Ur III period.<sup>71</sup> Considering that the composite bow was probably still rare in Mesopotamia, one could speculate that this ‘Elamite (Anshanite) bow’ was in fact a composite bow.

### **THE FALL OF UR AND ELAMITE SIEGE WARFARE (2004-1760s BCE)**

The dramatic fall of the Ur III empire in ca. 2004 BCE and subsequent Elamite occupation of Mesopotamia effected by Kindattu, the sixth ruler of the Shimashkian dynasty, ushered in one of Elam’s most conspicuous apogees of power. From the Sumerian literary account of events, *The Lamentation over the Destruction of Sumer and Ur*, we can gather that in the last years of the Ur III period, Ibbi-Sin (ca. 2028-2004 BCE) declined to confront the Elamite military in open battle—instead placing his faith in the defensive capacity of the city walls of Ur. Thus Elam’s success rested on skill in planning and implementing siege warfare in order to starve

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<sup>65</sup> Steinkeller (2018) 192.

<sup>66</sup> Potts (2016) 112-14, 116.

<sup>67</sup> Shulgi (2094-2047 BCE) and Shu-Sin (ca. 2037-2029 BCE) each married a daughter to an Anshanite ruler, and Ibbi-Sin (ca. 2028-2004 BCE) married Tukin-hatti-migrisha, daughter of the governor of Zabshali (considered ‘nuclear’ Elamite territory; Potts (2016) 127, table 5.1).

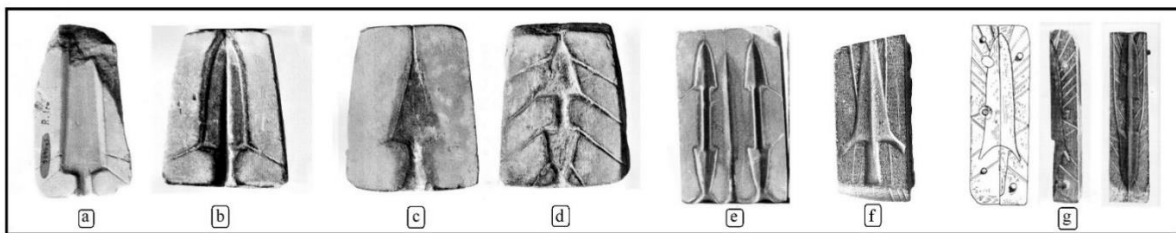
<sup>68</sup> Schrakamp (2010) 166.

<sup>69</sup> Vermaak (1993) 13-15; for the location of Dabrum on the Tigris, northeast of Umma, see Powell (1980) 51.

<sup>70</sup> Louvre Museum, TCL 02, 5488; trans. Schrakamp (2010) 163.

<sup>71</sup> Fleming and Milstein (2010) 148, Col. VI. 240-242. The text dates to the early second millennium BCE, but has Ur III roots (Vanstiphout (2003) 1; Michalowski (2003). In the early versions, the journey to the ‘cedar’ forest passes through Anshan and Aratta suggesting an acquaintance with these eastern locations (Tigay (2002) 12, n. 40; Fleming and Milstein (2010) 9).

out the inhabitants and capture Ibbi-Sin.<sup>72</sup> An Elamite ‘storm’ gathered outside the city wall, ready ‘to strike like a flood’. ‘Large axes were sharpened in front of Ur, the spears, the arms of battle, were being launched, the large bows, javelin, and siege-shield gather together to strike, the barbed arrows covered its outer side like a raining cloud, large stones, one after another, fell with great thuds’.<sup>73</sup> Employment of slingers in conjunction with archers became a typical strategy of Near Eastern warfare,<sup>74</sup> and here the latter use ‘large’, presumably composite, bows capable of powerful far-reaching shots, and barbed arrows, moulds for which are known from early second millennium BCE contexts at Susa [Fig. 2.9f, g]. Though certainly manufactured at Susa, just one has been documented in its archaeological record.<sup>75</sup> The 70-plus late third/early second millennium copper/copper alloy arrowheads from Susa kept in the Louvre Museum are mainly typified by a squat or more elongated triangular blade and a flat tang [Fig. 2.10].<sup>76</sup> Chlorite and sandstone moulds (mostly bivalve) for these arrowheads are also attested at Susa [Fig. 2.9a-e].<sup>77</sup>



**Fig. 2.9.** Chlorite and sandstone arrowhead moulds (early second millennium BCE) from Susa. [a-e] triangular blade, ranging from squat to elongated, and a flat tang; [f, g] barbed arrows (after Tallon 1987b [a] pg. 345, II; [b] pg. 346, VI; [c] pg. 346, IIIa; [d] pg. 346, IIIb; [e] pg. 350, XVI; [f] pg. 348, XI; [g] pg. 347, VIII)

An increasing reliance on tin-bronze rather than arsenical copper is demonstrated by composition analyses of a sample of 33 of these arrowheads: 23 contained more than 1% tin, and almost half are certainly deliberate copper-tin alloys with an average of 10% tin.<sup>78</sup> A recently discovered tin-copper mine at Deh-Hosein on the northeast border of Luristan may have played a critical role in the supply of tin for weapons and other objects at this time and later [location in Fig. 2.1].<sup>79</sup> The significant number of metal arrowheads at Susa contrasts with Mesopotamia, where they were still quite rare.<sup>80</sup> Some were collected from terracotta coffin burials, several of which included other weapons such as daggers and shaft-hole axes, perhaps marking a military office linked to socio-economic status.<sup>81</sup>

<sup>72</sup> In *The Lament for Sumer and Urim*, Ibbi-Sin is taken to Anshan in fetters and never returns (<https://etcsl.orinst.ox.ac.uk/cgi-bin/etcsl.cgi?text=t.2.2.3#>, accessed 19/03/2021).

<sup>73</sup> After Michalowski (1989) lines 382-86.

<sup>74</sup> Genz (2020) 26.

<sup>75</sup> Tallon (1987a) 149, variant A 2 d.

<sup>76</sup> Tallon (1987a) 148-49, variants A 2 a-c; (1987b) nos. 225-99. Almost 93% of the corpus of these arrowheads in the Louvre Museum is from Susa.

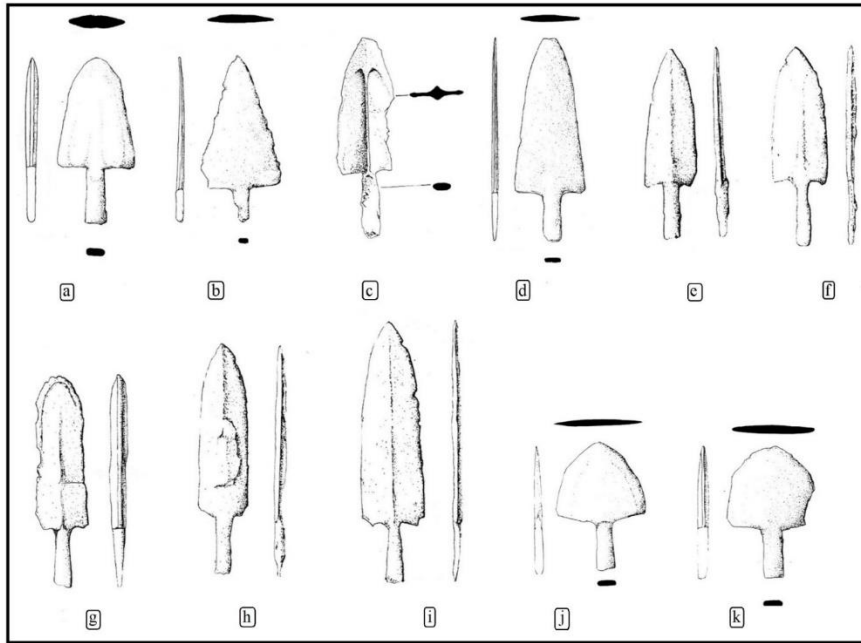
<sup>77</sup> Tallon (1987a) 151; (1987b) 132-33, II, IV-XIII, XV-XVI.

<sup>78</sup> Tallon (1987a) 149.

<sup>79</sup> Weeks (2008) 336; Nezafati, Pernicka and Momenzadeh (2009).

<sup>80</sup> Flint arrowheads were predominant until 1700-1600 BCE (Gernez (2018) 69).

<sup>81</sup> Donjon A14, A16, B70 (Mecquenem (1943) 77, 112); Ville Royale B VI (Ghirshman (1968) 7-8; Gasche (2000) 209-12, S. 179).



**Fig. 2.10.** Arrowheads (second millennium BCE) from Susa (after Tallon 1987b [a] no. 255; [b] no. 256; [c] no. 290; [d] no. 271; [e] no. 292; [f] no. 294, bottom (left to right); [g] no. 296; [h] no. 297; [i] no. 298; [j] no. 230; [k] no. 233)

Siege warfare continued into the second millennium as the strategy par excellence. Prolonged sieges were time and resource demanding, and their success relied on the effective blockade and assault of the city's defensive walls, beginning with the construction of a packed-earth siege ramp rising towards the top of the city wall. This initial phase required 'headpad' troops to move baskets of earth. Freestanding timber siege towers were then erected in-situ atop the ramp for use as firing platforms, providing a vantage point from which to fire down upon defending soldiers on the city's battlements. Fire-proofing would have been a necessary step if fire arrows were used.<sup>82</sup> Since an important element of siege success was the ability to shower opponents with missiles,<sup>83</sup> archers would have played a leading role, positioned on and/or behind the towers, and Elam must have gained an edge from its access to metal sources to quickly produce large numbers of arrows. Undoubtedly a strong contingent of archers and archery equipment was key to the military strategy that enabled Elam to capture Ur, followed closely by conquests of Eridu, Girsu, Kish, Lagash, Uruk and Nippur, and to occupy part of lower Mesopotamia for several years.<sup>84</sup> The available sources lack information on Elam's recruitment of archers, but since use of the bow and in particular the powerful composite bow required several years of training and experience,<sup>85</sup> they may have been semi-professionals, or conscripts from the citizenry whose archery skills were part of their education or way of life, such as shepherds who needed to protect their flocks, as is attested in Mesopotamia.<sup>86</sup>

Snippets of documentation illustrate Elam's continued involvement in Mesopotamian affairs over the next century or so. Interactions alternated between marriage alliances with, and

<sup>82</sup> Fire arrows could be used to set alight buildings and fuel sources (Miller, McEwan, and Bergman (1986) 183, 190-91).

<sup>83</sup> Genz (2020) 29.

<sup>84</sup> Steinkeller (2018) 196 estimates 'some 20 years'.

<sup>85</sup> E.g. Lorenz and Schrakamp (2011) 137.

<sup>86</sup> Patterson (2018) 315-18.



attacks on, Elam's highland capital of Anshan,<sup>87</sup> and around 1835 BCE a new ruling dynasty of Elamite origin was established at Larsa by Kudur-mabuk (ca. 1850-1830 BCE).<sup>88</sup> Elam's continued military capacity is evidenced by a letter of 1785 BCE documenting the commitment of a remarkable 12,000 troops by the Elamite *Sukkalmah*, Siruktuh, to an alliance between Elam, Assyria, Eshnunna and perhaps the Turukkeans from the Zagros to fight the Gutians.<sup>89</sup> The Mari archives document an eventful period of Elamite relations with its western neighbours between 1771 and 1764 BCE, unveiling the authority of the Elamite *Sukkalmah* above any other ruler, including Zimri-Lim of Mari (ca. 1775-1762) and Hammurabi of Babylon (1792-1750 BCE).<sup>90</sup> He appears as orchestrator of diplomacy between Ashur, Babylon, Eshnunna, Larsa, Mari, Halab (Aleppo) and Qatna—seven kingdoms of rapidly shifting alliances who shared power in the wake of the death of Shamshi-Adad of Assyria. Under Siwe-palar-huppak (Akkadian Sheplarpak)—‘king of Anshan,’ ‘Great King,’ *Sukkalmah* ‘Grand Vizier’, and *Sukkal* of Elam—a viceroy named Kutu-zulush (Akkadian Kudushulush) was placed to manage the western lowland territories. This imperial pattern of political power has elicited comparisons with the Persian Empire and fostered recognition of the Elamite ruler as an ‘emperor’.<sup>91</sup> In the context of Elamite diplomacy the bow enjoyed a preeminent symbolic role; for example, one letter reports that the Elamite emperor had agreed to present a bow as a votive gift to the god Addu (Adad) of Aleppo as a symbol of the establishment of his alliance with the western kingdom of Yahmad.<sup>92</sup>

The political strategy of the Elamite emperor consisted in exploiting regional divisions and engaging proxy rulers and armies of vassal states for its military campaigns. His success was facilitated by access to the abundant resources of the Iranian plateau and control of trade routes, including those supplying tin, enabling him to choke Mesopotamian tin-bronze production at will.<sup>93</sup> In 1765 BCE, the Elamite emperor commanded troops from Mari and Babylon to lay siege to Eshnunna, then the strongest kingdom in Mesopotamia.<sup>94</sup> Tactical information can be gleaned from a letter ordering Hammurabi to secure the ‘troops of the headpad’ to raise an assault ramp. Conquest of Eshnunna opened the door to the west and the Elamite expeditionary forces were divided into a northern army and a southern army. This capacity to act simultaneously on two fronts unveils both the extent of the emperor's ambitions and his ability to muster substantial troops.

The northern Elamite army, headed by a general named Kunnam and bolstered by newly acquired vassal troops from Eshnunna and Gutium, laid siege to and conquered Subat-Enlil, former capital of Shamshi-Adad and capital of the kingdom of Apum [location Fig. 2.1]. Another successful siege at Ramaza, the capital of the kingdom of Yussan on the plain to the east of the Sinjar Mountains,<sup>95</sup> was led by Atamrum, king of Allahad and Andarig, backed by troops from Elam and Eshnunna. Details of the siege have been differently translated and interpreted, but include the ‘heaping up’ of a ramp reaching the base of the wall of the lower

<sup>87</sup> Partnership with Isin, now a dominant power in southern Mesopotamia, is hinted at by the king of Anshan's marriage to Matumniatum, daughter of the king of Isin, Iddin-Dagan (ca. 1974–1954 BCE) (reconstructed after year names of kings of Lagash, [http://cdli.ox.ac.uk/wiki/doku.php?id=year\\_names](http://cdli.ox.ac.uk/wiki/doku.php?id=year_names), accessed 26/10/2019). Guginum of Larsa (ca. 1932-1906 BCE) claims to have destroyed Anshan in ca. 1927 BCE.

<sup>88</sup> Sulaiman and Dalley (2012) 155. Both Rim-Sin and his father, Shemti-Shilhak, bore Elamite names.

<sup>89</sup> Laessoe (1965) 194-95; Eidem (1985) 90.

<sup>90</sup> Abrahams (1997); Charpin (2012) 44-53.

<sup>91</sup> Charpin and Durand (1991) 66.

<sup>92</sup> Charpin (2013) 349-51.

<sup>93</sup> A short supply of tin, over which Elam exerted its control, directly impacted military equipment production, as exemplified by a text of Shamshi-Adad reducing an order of 10,000 bronze arrowheads to 5,000 due to a bronze shortage (Durand (1998) 393-94, no. 663).

<sup>94</sup> Elam's dominance over the ruler Ishme-Dagan, son of Shamshi-Adad, is also attested (Charpin (1986) 133, A.428: 21-28; Charpin and Ziegler (2003) 247, 3.7. Annex I; Heimpel (2003) Appendix 6).

<sup>95</sup> Heimpel (2003) 32, n. 99.

city and surprise exit attacks by defenders who breached or tunnelled under the city walls and captured soldiers armed with bronze lances and shields.<sup>96</sup> Elam's swift conquest over the northern Mesopotamian regional powers that had emerged after the death of Shamshi-Adad brought the flourishing Old Assyrian-Anatolian trade network under Elamite control.<sup>97</sup> As the Elamite army 'devoured' all of Shubartum (i.e., north-eastern Mesopotamia between the Tigris and the Habur triangle) and several of the kingdoms in the region became Elamite vassals, Mari's independence hung in the balance.<sup>98</sup>

Meanwhile, the southern army had plotted its way towards Babylon, laying siege to and capturing Upi (Opis), a strategic border fortress near the confluence of the Diyala and Tigris rivers that Hammurabi had annexed upon Eshnunna's defeat [location Fig. 2.1]. In 1764 BCE, about 40,000 troops were on the march towards Babylon, but their advance was blocked at the fortress of Hiritum on the Irnina channel linking the Tigris and Euphrates rivers. The Elamites laid siege to the garrison, raising a packed-earth assault ramp for two siege towers, but they lost the first tower to fire (suggesting involvement of fire arrows) and abandoned the effort when one side of the ramp started to wash away preventing the second assault tower from reaching the city wall.<sup>99</sup> The Sukkal of Elam called the assault to a halt, gathered the army and headed upstream along the Tigris to Mankisum but, for reasons unknown, turned around towards Eshnunna, looted it, and concluded the campaign. Elam then withdrew from direct involvement in the affairs of Mesopotamia, leaving the geo-political field open to Hammurabi's ambitions, and diplomatic relations between the two powers were swiftly re-established.<sup>100</sup> Afterwards, there are mere snapshots of individuals from Elamite backgrounds in the military corps of Sippar in Hammurabi's last years (ca. 1750 BCE) and a possible military clash between Elam and Babylon in ca. 1706-5 BCE at the time of Hammurabi's grandson, Abieshuh, involving the Sukkalmah Kutir Nahhunte I, second successor of Siwe-palar-huppak.<sup>101</sup> Elamite mercenaries are later recorded serving under the last Amorite ruler, Samsu-ditana (1625–1595 BCE), but there are no signs of direct involvement of the Elamite state.<sup>102</sup>

### **CHARIOT REVOLUTION AND RENEWED ELAMITE HEGEMONY (ca. 1760s-1100 BCE)**

Texts from the Mari archive clearly attest for the first time to the manufacture of the composite bow (*tilpānu*) as distinct from the straight bow (*qashtum*), the former distinguished by the inclusion of bone in its construction (wood, glue, and tendons are common to both).<sup>103</sup> Soon after, archery, and in particular the composite bow and metal arrowheads,<sup>104</sup> assumed a preeminent role in Late Bronze Age Near Eastern warfare. These changes can be seen in conjunction with the rise of the light, two-wheeled, horse-drawn chariot with spoked wheels, which revolutionised warfare upon its introduction into Near Eastern armies around 1700

<sup>96</sup> Charpin and Ziegler (2003) 216; Heimpel (2003) 65.

<sup>97</sup> Larsen (2015).

<sup>98</sup> Charpin and Ziegler (2003) 217. For S(h)ubartu(m) see Bryce (2009) 663-64.

<sup>99</sup> Lacambre (1997).

<sup>100</sup> Heimpel (2003) 108, 460-61, nos. 27 149, 27 150.

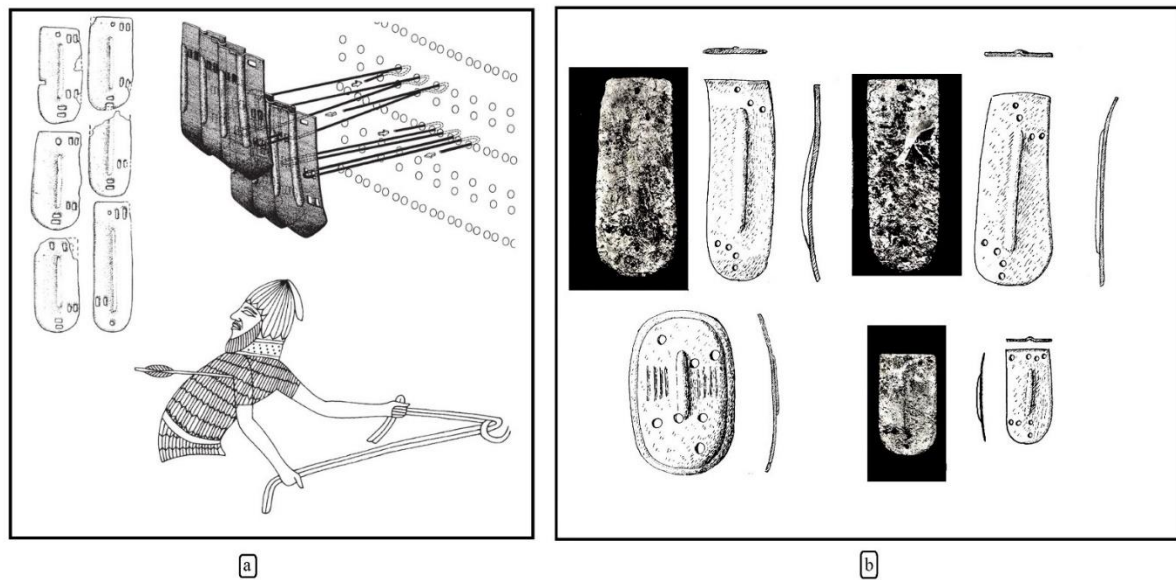
<sup>101</sup> Scheil (1932) 75-76; van Koppen (2013) 380-81.

<sup>102</sup> Lambert (2007) 25, 144; Beaulieu (2018) 118.

<sup>103</sup> Abrahams (1997); Durand (1998) 387-93; Arkhipov (2012) 105-106; but see cautionary remarks by Wilke (1991). Schrakamp (2010, 165, fn. 1062) argues for earlier attestations of the composite bow in the 'artisan archives' at Isin (reigns of Ishbi-Erra 2017-1985 BCE and Shu-Ilshu 1984-1975 BCE) based on the use of glue in their production; however, the critical element of bone is missing.

<sup>104</sup> Lorenz and Schrakamp (2011) 137; Genz (2013) 98. Note, however, that flint arrowheads still appear in mid/late second millennium Elamite contexts at Tell-i Ghazir (in a grave), Bard-e Kargar (in a sanctuary) (Alizadeh (2014) 18) and Chogha Zanbil (various locations/contexts) (Ghirshman 1966, Pls. LXVI, G.T.Z.58, LXXII, G.T.Z.373; 1968, Pl. LXXVII, G.T.Z.952, LXXXVII, G.T.Z.737).

BCE.<sup>105</sup> Put to action as a military vehicle, the chariot offered a dynamic mobile firing platform for archers, and therefore armies competent with the composite bow were well-positioned to further enhance their formidable fire-power.<sup>106</sup> The powerful composite bow gave archers two options: to deliver a lightweight projectile over a long distance or a projectile of greater weight at short range with the capacity to pierce armour.<sup>107</sup> The invention of scale armour, which offered the highest level of protection for chariot-borne archers while still offering flexibility for movement of the arms, was closely associated with the light chariot and chariot tactics [Fig. 2.11a].<sup>108</sup>



**Fig. 11.** Scale armour [a] armour reconstruction (line drawings after Lorenz and Schrakamp 2011: 129, figs. 1-3); [b] bronze scale armour from Chogha Zanbil (photographs after Ghirshman 1966, Pl. 55.4a,c, Pl. 93 GTZ213, 214)

Besides critical reliance on archers skilled in the use of the composite-bow, chariot warfare was expensive and time-consuming, necessitating substantial resources and technological knowhow to build vehicles, breed and train teams of horses and drivers, and manufacture protective gear.<sup>109</sup> Therefore, even if Elam's political status within the Near East in the mid-second millennium BCE is still poorly understood, the maintenance of its military capacity is known from administrative texts from Kabnak (modern Haft Tepe) near Susa attesting to an on-site production and storage of military vehicles and military equipment in ca. 1400 BCE.<sup>110</sup> The texts list archery paraphernalia including bows, arrows and quivers with capacities of 20 and 30 arrows, and excavations at the site have yielded metal arrowheads in

<sup>105</sup> Littauer and Crouwel (1979) 74-81; Moorey (1986) 197. Early second millennium copper/bronze tyre segments attest to wheeled vehicles at Susa (Mecquenem (1943) 89-90, fig. 74, Pl. X; (1922b) 137-38, fig. 14), but they probably belonged to much heavier wooden single-piece or tripartite disk wheels. Comparable tyres appear in 'royal' burials at Gonur Depe (ca. 2200-1700 BCE) in Turkmenistan (Sarianidi (2005) 240, fig. 99; Lamberg-Karlovsky (2013) 21, 33, fig. 9a), perhaps native territory of the Shimashki (Potts (2008)).

<sup>106</sup> Moorey (1986) 209-10; Drews (1993) 119-26; Genz (2013). The bow was the primary weapon of the elite Hurrian *maryannu* chariot warriors (Dezsö (2002) 195), and Nuzi's chariot crews were equipped with bows, quivers and arrows, as well as whips, helmets, body armour and swords (Kendall (1975) 210-13).

<sup>107</sup> McEwen (1978) 189.

<sup>108</sup> Kendall (1975) 276-77; Dezsö (2002) 195-96.

<sup>109</sup> Dezsö (2002); Genz (2013) 97, 101.

<sup>110</sup> Álvarez-Mon and Wicks (2021).

lanceolate and triangular forms with projecting midribs [Fig. 2.14b].<sup>111</sup> Scale armour plates (*kurzindu*) also appear in the texts,<sup>112</sup> and although none have been found at Haft Tepe itself, a small ca. fourteenth-thirteenth century BCE sample came from neighbouring Chogha Zanbil [Fig. 2.11].<sup>113</sup> This production can be seen in context with external threats around 1400 BCE implied by a year name of the Elamite Kidinuid dynast, Tepti-Ahar, signalling that he had repelled an invasion from Babylonia.

Pahhir-Ishshan, son of the subsequent dynasty's founder, Igi-halki, married the eldest daughter of the Middle-Babylonian Kassite king Kurigalzu I (ca. 1400-1369 BCE) ushering in an era of diplomatic marriages between Elamite princes and Kassite princesses. Yet despite these unions—or perhaps because of them—animosity flared up between the Elamite and Kassite ruling houses, as documented by at least one episode of hostility during the time of Untash-Napirisha (1340-1300 BCE).<sup>114</sup> The leitmotif of Elamite interventionism in Mesopotamia truly returned to the fore under Kiddin-Hutran II (ca. 1240-1210 BCE). Believed to be the author of the so-called 'Berlin letter', and hence a descendant of Kurigalzu with a perceived claim over the Babylonian throne, he inaugurated a century of unremitting invasions into territories to Elam's west.<sup>115</sup> Assyrian ambitions in the south were not extraneous to Elamite-Babylonian dynamics. Indeed Kiddin-Hutran's first attested campaign may have been a response to Tukulti-Ninurta I's (1240-1205 BCE) overthrow of the Kassite king Kashtiliashu IV (1232-1225 BCE) and installation of a puppet ruler, Enlil-nadin-shumi (1224 BCE).<sup>116</sup> Kiddin-Hutran removed Enlil-nadin-shumi and captured Der and Nippur, and in a second campaign destroyed Isin and Marad (west of Nippur) and overthrew another Assyrian appointee, Adad-shuma-iddina (1222-1217 BCE). His military strategy is not clarified by the source on these campaigns, the Babylonian Chronicle P;<sup>117</sup> but if the Berlin letter is correctly assigned to him, attacks on settlements rather than battlefield encounters can be inferred: 'I will demolish your cities, destroy your ramparts, I will fill in your moats, [I will uproot] your orchards, [I will fix (?)] locks in the mouths of your canals'.<sup>118</sup>

Elamite military hegemony over Mesopotamia was consolidated through conquests of a considerable number of cities by the first three rulers of the subsequent Shutrukid House, Shutruk-Nahhunte (ca. 1184-1155 BCE) and his sons Kutir-Nahhunte (ca. 1155-1150 BCE) and Shilhak-Inshushinak (ca. 1150-1120 BCE). The success of the Shutrukids' western campaigns, which encroached into Assyrian territory, suggests an unrivalled military capacity. Fragments of one or more inscribed stela recovered from Susa seem to speak of Shutruk-Nahhunte's conquest of hundreds of towns,<sup>119</sup> and a short-lived period of Elamite control of Babylonia ensued in 1158 BCE when, according to a Neo-Assyrian copy of a text attributed to Nebuchadnezzar I, Shutruk-Nahhunte 'be[stowed royal authority] upon his eldest son' Kutir-Nahhunte (ca. 1155-1150 BCE).<sup>120</sup>

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<sup>111</sup> Copper and tin-bronze arrowheads have been identified (Oudbashi et al. (2019), table 2).

<sup>112</sup> Herrero and Glassner (1990) nos. 67, 68, 69.

<sup>113</sup> Ghirshman (1966) Pl. 55.4a,c, Pl. 93 GTZ213, 214.

<sup>114</sup> Paulus (2013) 439.

<sup>115</sup> Potts (2016) 224, table 7.6 and Roaf (2017) 183, 189., sources 2, 3 and 6.

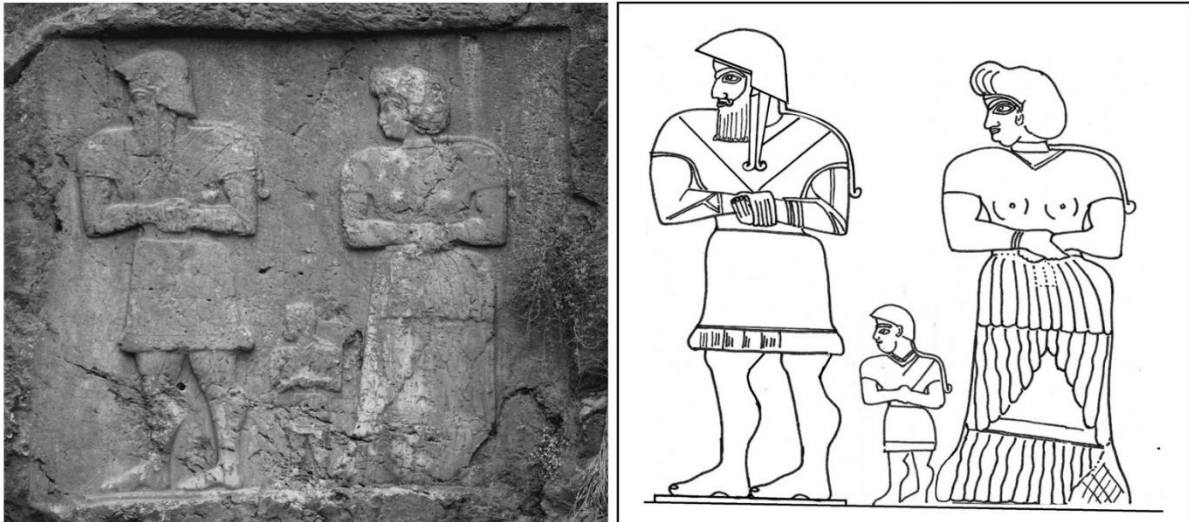
<sup>116</sup> Paulus (2013) 437; Potts (2016) 224.

<sup>117</sup> Grayson (1975) 56.

<sup>118</sup> After Roaf (2017) 185.

<sup>119</sup> Scheil (1911) 17-20, No. XCI, fragments A-E; EKI 28.

<sup>120</sup> Tablet K.2660, translation after Foster (1996) 295, line 2. Tadmor (1958, 138-39, obv. line 3) translates: '[handed] over [the reign] to his first-born Kudur-nanhundi'. The status of Babylon remains uncertain, but Tadmor restored a later line in the text (obv. line 14) as '[He installed a governor,] not of Babylonian descent, an enemy [of Marduk]'; Foster avoids restoration and suggests '[ ] not of Babylonian descent, hostile [to Marduk]'.



*Fig. 2.12. Elamite royal family at Shekft-e Salman II (photograph and line drawing © J. Álvarez-Mon)*

In the year he succeeded his father, Kutir-Nahhunte, who repeated Kiddin-Hutran II's earlier claims to the Babylonian throne, immediately launched his own successful Mesopotamian campaign(s).<sup>121</sup> Tactically, the only information we have is the swift movement of troops on chariots to launch attacks on cities including Nippur and Borsippa and the capture of Babylon and the Esagila: '[...] he sent like the deluge, all the cult centers of Akkad and their sanctuaries he burned [with fi]re'.<sup>122</sup> Kutir-Nahhunte deported Enlil-nadin-ahi and the Marduk statue of Esagila to Elam, toppling the three-centuries-old Kassite dynasty and ensuring his own infamy in Babylonian memory. A remarkable fragmentary tablet of much later date preserves details of a ritual performed in the temple of Ishtar of Babylon, which commenced with a petition to Shamash describing an Elamite attack, probably at the end of the Kassite period.<sup>123</sup> It emphasises the Babylonians' helplessness against Elam's archers: 'The foe captured us. His bow was nocked to let the arrows fly. But we ourselves, we did not know how to grasp a quiver. Elam overwhelmed our sacred localities'.<sup>124</sup>

Elamite forces may have occupied parts of Mesopotamia for some time afterwards,<sup>125</sup> but mentions of campaigning against Babylon (Karintash), Akkad, Sippar and Nippur by Kutir-Nahhunte's successor and brother, Shilhak-Inshushinak (1150-1120 BCE), imply that these areas presented ongoing challenges to Elamite control. A series of Shilhak-Inshushinak's inscriptions highlight a reign dedicated to a strategic expansion of the Elamite geo-political frontier, first consolidating the gains made by his father and brother in central Mesopotamia and to the north in the Zagros, then expanding into northern Mesopotamia all the way to Nuzi and Arrapha (Kirkuk) and into the heart of Assyria where he may have clashed with the Assyrian king Ashur-dan I (1179-1134 BCE) [location Fig. 2.1].<sup>126</sup> One inscription enumerates

<sup>121</sup> Foster (1996) 284.

<sup>122</sup> Lambert (1994) 67; Foster (1996) 283-88.

<sup>123</sup> George (2000) 272, 278.

<sup>124</sup> The continued reputation of Elamite archers is also suggested by slightly earlier documents of ca. 1220 BCE (reign of Tukulti-Ninurta I) from Tell Chuera in North Syria listing rations for Elamite bowmen and their families (Jakob (2009) nos. 40, 46, and possibly 64, 69, 70-73, 77; Postgate (2013) 19-20, 87-89).

<sup>125</sup> Brinkman (1968) 466; Beaulieu (2018) 154.

<sup>126</sup> Various inscriptions on stele fragments from Susa probably refer to campaigns of this king (Scheil (1904) nos. 72 = EKI 51, 73 = EKI 54b, 74 = EKI 54a, 75 = EKI 68 [author less certain] and 76 = EKI 49; Scheil (1911) no. 92 = EKI 54). Additional unpublished inscriptions on stone door-sockets mention his campaigns in Akkad, Sippar, Nippur, the Kirkuk area and the Lower Zab (Steve, Gasche and De Meyer (1980) 80-82; Steve, Vallat, and Gasche (2002) 466).



a series of perhaps 250 or more conquered settlements (up to half of the toponyms illegible),<sup>127</sup> structured into eight sections, which might reflect either a sequence of military campaigns or an administrative division of the conquered settlements into zones or vassal provinces.<sup>128</sup>



*Fig. 2.13. Seals and sealings from Chogha Zanbil (photograph © J. Álvarez-Mon)*

Elamite confrontation with Mesopotamia continued under Hutelutush-Inshushinak (ca. 1120-? BCE), bringing the first evidence for a Shutrukid clash in the open battlefield. A tablet from Nineveh recounts a failed military foray into Susiana, probably by the Babylonian king Nebuchadnezzar I (1121-1100 BCE). The ruler waited with his troops ‘at the head(?) of the Uqnu-river’ seeking to confront the Elamite army, but plague overtook his warriors and horses, forcing his retreat upon the Elamites’ advance.<sup>129</sup> An inscription on a kudurru of Nebuchadnezzar I (known as the Shitti-Marduk stele) from Sippar<sup>130</sup> and a text from Babylon<sup>131</sup> appear to describe the same event, but place it on the ‘bank of the Ulai river’ instead of the Uqnu.<sup>132</sup> The kudurru details the launch of a Babylonian surprise attack against Elam in the month of Tammuz (June-July), the height of summer, taking advantage of the legendary scorching heat of Khuzestan to take the Elamites off-guard. Together with the chariot commander Shitti-Marduk, the king charged from Der in the direction of the river Ulai on a journey said to have taken 30 double hours.<sup>133</sup> Hutelutush-Inshushinak’s defensive strategy relied on the guarding of watering places, presumably with strategically positioned infantry, and avoiding any delays, Nebuchadnezzar pushed his troops forward ‘by night (and) d[ay]’ via waterless routes renouncing rest: ‘I did not give (them) water to drink or allow them (time) to recover from their fatigue’.<sup>134</sup> The armies clashed on the riverbank: ‘fire ignited between them. The sun’s face was obscured by their dust’.<sup>135</sup> Hutelutush-Inshushinak is said to have retreated and vanished, and Nebuchadnezzar I claims to have ‘seized Elam and looted its property’ and retrieved a statue of Marduk from Susa. Most commentators therefore assume that he must

<sup>127</sup> See Scheil (1911) 21-57, no. 92; EKI 54. Two stelae fragments published by Scheil may belong to this or similar stelae (Scheil (1904) nos. 73, 74). See also Potts (2016) 235-38; Table 7:11.

<sup>128</sup> Labat (1975) 489. Middle Assyrian texts from Ashur-dan I’s successor, Ninurta-tukul-Ashur (1133 BCE), attest to production of composite bows using sinew, glue, *kisanû* woods (poplar, ash or maple?) and ibex horns (Frahm (2002) 75-80).

<sup>129</sup> Foster (1996) 296, tablet K. 2660.

<sup>130</sup> Nielsen (2018) 27, e.

<sup>131</sup> Nielsen (2018) 29, f; Foster (1996) 386.

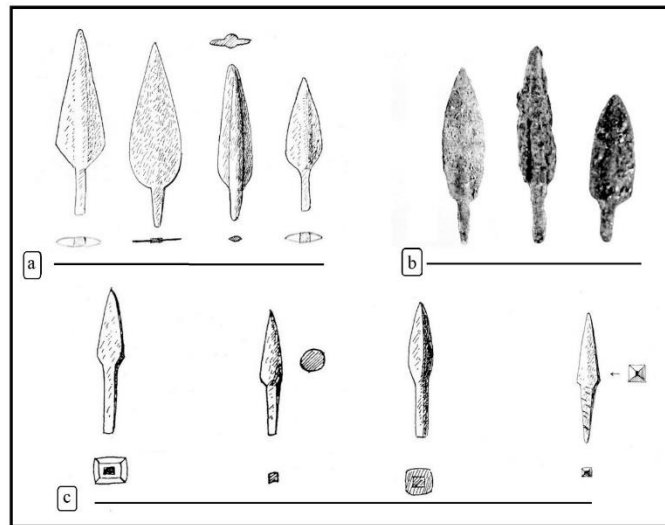
<sup>132</sup> Identification of the location(s) of the Uqnu and/or Ulai rivers is fraught with difficulties, in no small part due to meandering river behaviour, fluvial processes, and intertidal coastal and marshland fluctuations of fresh and salt water. The Uqnu has been identified variously with the Karkhe (Foster (1996) 296); the lower Karun (Bagg (2000) 65; Cole and Gasche (2007) 7); the eastern branch of the Tigris in Khuzestan (Fuchs (1994) 459; Lipinski (2000) 434; Potts (2016) 253); and as another name for the Ulai, resulting in the united streams of the Karkhe, Dez and Karun rivers as they merged in the vicinity of Ahwaz (Cole and Gasche (2007) 30).

<sup>133</sup> The distance between Der (Tell Aqar) and Susa in a straight line is about 250 km.

<sup>134</sup> Bloch (2017) 511-12.

<sup>135</sup> Translation after Cooley (2006); see also Beaulieu (2018) 160; Nielsen (2018) 54-55, 161.

have conquered the Elamite capital,<sup>136</sup> however, there is no evidence of a twelfth-century destruction of the site or any long-term Babylonian control.<sup>137</sup>



**Fig. 2.14.** Bronze arrowheads [a] and [c] from Chogha Zanbil (after Ghirshman 1966, Pl. XCIII, G.T.Z.204-211; 1968, Pls. LXXXV, G.T.Z.736, XC, G.T.Z.838, G.T.Z.996); [b] Haft Tepe (after Negahban 1991, Pl. 30, No. 209)

We know little of the role of archery in enabling the Shutrukids to achieve their political ends, but the (composite) bow and arrow did go hand-in-hand with chariot warfare, and the language of archery deployed in a stele inscription of Shilhak-Inshushinak provides a quintessential metaphor for peace and prosperity: The quiver is laid down (held down), may the country harvest be brought in, may peacetime be, may abundance of blessings spread.<sup>138</sup> The ideology of the worshipping ruler as archer also appears to have been integrated into Shutrukid propaganda going by the forearm-guard straps (or bracers)—probably accoutrements related to archery—depicted on the twelfth-century Elamite ruler in a relief (no. II) in the open-air sanctuary of Shekaft-e Salman in Izeh in the Elamite highlands [Fig. 2.12].<sup>139</sup> Some centuries later, a bronze plaque from the Acropole at Susa dating to ca. ninth-eighth century BCE shows seven divine composite bow-carrying warriors with a similar series of straps wrapped around the left arm and wrist and a large thumb, probably also representing protective devices [Fig. 2.15].<sup>140</sup>

In the lowlands, small (composite?) bows with bent terminals are depicted in cultic and hunting contexts on Middle-Elamite glyptic at Chogha Zanbil [Fig. 2.13],<sup>141</sup> where archaeological investigations have uncovered deposits of copper/bronze arrows in a range of different types, including lanceolate and pyramidal forms, together with other military equipment in the temple of Kiririsha East and in the so-called ‘hypogeum palace’ tomb complex [Fig. 2.14a, c].<sup>142</sup> A similar range of copper/bronze arrowheads were recovered at Susa amongst the Middle Elamite ‘Inshushinak Temple Hoard’ in the Acropole mound.<sup>143</sup>

<sup>136</sup> Nielsen (2018) 64.

<sup>137</sup> Miroschedji (1981) 36-37; Stolper (1984) 43.

<sup>138</sup> EKI 54, §15, §72.

<sup>139</sup> Álvarez-Mon (2019) 37, Pl. 22.

<sup>140</sup> Álvarez-Mon (2015).

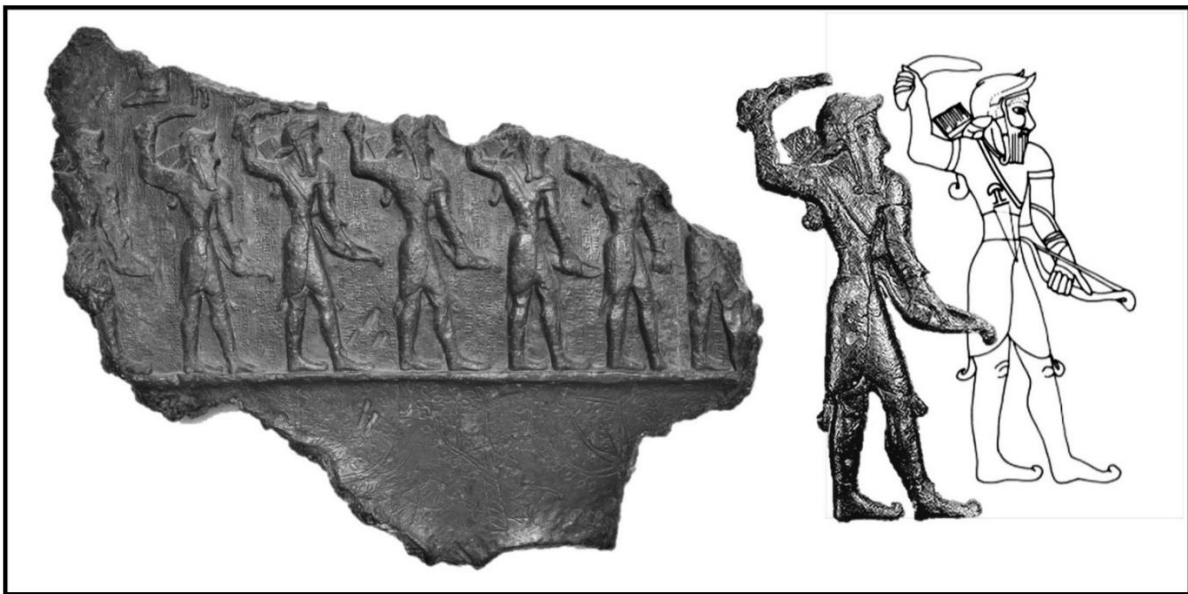
<sup>141</sup> Álvarez-Mon (2020) Pl. 124a, e, f.

<sup>142</sup> Ghirshman (1966) Pl. XCIII, G.T.Z.204-211; (1968) Pls. LXXXV, G.T.Z.736, XC, G.T.Z.838, G.T.Z.996.

<sup>143</sup> Mecquenem (1905) 81-83. A typical late third/early second millennium BCE triangular arrowhead also made its way into the deposit (Mecquenem (1905) fig. 192).

## CONTESTED RELATIONS (ca. 1100-525 BCE)

Late second and early first millennium Elamite military and political history is shrouded by a dearth of written sources and identifiable archaeological remains, and when Elam re-emerges as a force around the mid-eighth century BCE, our view of it is shaped by biased and often contradictory Assyrian and Babylonian reports. Nevertheless, it is clear that Elamite rulers were actively engaged in developing strategies to protect, and possibly even expand, their political and economic interests. They maintained the military capacity to oppose Assyrian expansionistic ambitions in the south and in the Zagros, to harass and conquer Assyrian garrisons, to lay siege to pro-Assyrian towns, to neutralise and frustrate territorial gains, and to directly confront, and even defeat, Assyrian armies in pitched battles. Archers and archery come to the fore in external references to Elam as a critical aspect of the Elamite military, demonstrating that its military continued to lean on well-trained archers supported by cutting-edge archery equipment.



*Fig. 2.15. Bronze plaque from Susa depicting Elamite divine warriors (ca. 9th-8th century BCE)  
(photographs and line drawing © J. Álvarez-Mon)*

Already in 814 BCE Elamite military forces are recorded with Babylonian, Chaldean, Aramean and Kassite allies executing an operation to rescue inhabitants of hundreds of cities of ‘the land of Akkad’ sheltering from the Assyrian king Shamshi-Adad V (824-811 BCE) in the island city Dur-Papsukkal on the Diyala river. Assyrian records report a defeat of the alliance, tallying 5,000 deaths and the capture of 2,000 troops, 200 cavalry and 100 chariots.<sup>144</sup> The next year, the Assyrians besieged and captured the strategic city of Der, situated in a contested buffer zone of intersecting Assyrian-Babylonian-Elamite interests that frequently hosted military conflicts. A peace treaty between Babylon and Adad-ninari III (811-783 BCE) attempted to address persistent tensions over this zone by reaching a mutual agreement on a suitable boundary line,<sup>145</sup> but any efficacy it may have had was short-lived. The documented presence of an Elamite ambassador in the Nimrud court in 784 BCE and the manufacture of

<sup>144</sup> Grayson (1996) 188, v 31-45. Also <http://oracc.museum.upenn.edu/riao/pager/>, accessed 27/05/2020.

<sup>145</sup> Grayson (1975) 169; Synchronistic-History iv: 15-22, Chronicle 21.

the ‘Elamite bow’ (distinguished from the ‘Assyrian bow’) for Assyrian troops may be an outcome of this treaty.<sup>146</sup>



**Fig. 2.16.** Elamite weapon-bearers [a] Kul-e Farah IV (ca. 9<sup>th</sup>-8<sup>th</sup> century BCE); [b] Kul-e Farah VI (ca. 7<sup>th</sup>-6<sup>th</sup> century BCE); [c] Kul-e Farah I (ca. 7<sup>th</sup>-6<sup>th</sup> century BCE) (line drawings © J. Álvarez-Mon)

Frequent external references to the ‘bow of Elam’/‘Elamite bow’ and deployment of sometimes staggering (though undoubtedly exaggerated) numbers of Elamite archers imply an organised, large-scale production of archery equipment.<sup>147</sup> Locally, a new sculptural program in the highland Izeh valley depicting the Elamite ruler surrounded by elites participating in communal rituals highlights the centrality of the bow in Elamite political, military and sociocultural life. The earliest of the series of relief carvings at the open-air sanctuary of Kul-e Farah (relief IV), carved on a cliff-face sometime around the ninth-eighth centuries BCE, illustrates no less than 141 individuals partaking in the ritual consumption of food. It incorporates two groups of archers: one group, shown in a register directly below the king, is composed of two archers holding small composite bows in the left hand and, in front of them, a weapon-bearer/chief archer with a bow, quiver and sword [Fig. 2.16a]; the second group is composed of seven unevenly distributed archers holding small composite bows with bent terminals in the left hand. Besides the weapon-bearer’s sword, the bows and arrows are privileged as the only weapons in the scene. Another weapon-bearer with archery equipment and a long-sword was carved around a century or so later on a nearby boulder (relief VI). He stands behind a large-scale ruler carried atop a platform, holding a bow with backwards-arched limb to his chest with his left hand, and carrying a quiver with decorative horizontal bands and projecting arrow feathers [Fig. 2.16b]. Dating to approximately the same time as the first relief is the bronze plaque from Susa showing seven fearsome divine warriors with protective arm-gear. All carry arrow-filled quivers and small bows with duck-head terminals [Fig. 2.15]. This is the earliest known local attestation of the composite ‘duck-headed bow’, which is considered an Elamite form. Initially the duck heads were purely decorative and the string was attached

<sup>146</sup> Dalley and Postgate (1984) 256, no. 145. iii.12-13; Zadok (1994) 47.

<sup>147</sup> Exaggerated numbers of troops, cities conquered, booty, dead enemies and prisoners, etc., was a literary device used by the Assyrian scribes to amplify the scope of the task and enhance the heroic nature of the Assyrian victory (see De Odorico (1995) and Frahm (2003), 146, with refs.).

below them, but they assumed a functional aspect from the late eighth century when the string was placed around them.<sup>148</sup>

The long reign of the Elamite king Humban-nikash I (743-716 BCE) overlapped with those of the Assyrian rulers Tiglath-pileser III (745–727 BCE), Shalmaneser V (726-722 BCE) and Sargon II (722–705 BCE). By 731 BCE we know that he was actively protecting Elamite interests in the contested Transtigradian/Diyala region where Tiglath-pileser had been attempting to annex territories of Aramean tribes, and lending his support to secure a Chaldean leader, Nabu-Mukin-zeri, on the Babylonian throne.<sup>149</sup> Intelligence letters report movements of Humban-nikash and his army around the Assyrian garrison at Der and his conquest of Borsippa, just 17 km from Babylon.<sup>150</sup> He still presided over Elam in 722 BCE when Sargon II and the Chaldean ‘king of the Sealand’ Merodach-Baladan (Marduk-apla-iddina) II, respectively, assumed power in Assyria and Babylonia, and he thwarted an early attempt by Sargon to seize the Babylonian throne in 720 BCE, intercepting him outside Der. No details exist about what must have been a formidable pitched battle, fought alone by the Elamites on behalf of their Babylonian allies who arrived too late to participate, but clues as to the composition of the armies the Elamites faced can be obtained from the ideal ratio of a provincial Assyrian army at this time, namely, 1 chariot to 10 cavalry to 200 infantry, the latter composed of 2 archers to 1 spear/shield bearer. Sargon’s attested deployment elsewhere of 20,000 archers in this ratio highlights the potential numerical weight of archers involved.<sup>151</sup> There is no indication that Humban-nikash seized the garrison after the battle, but Sargon’s claim to victory lacks credibility in view of Babylonian reports claiming an Elamite triumph,<sup>152</sup> Merodach-Baladan’s continuation on the throne, and the expansion of Elamite presence in the area with the capture of the border fortresses of Bit-Ha’iri and Rasa.<sup>153</sup>

The subsequent Elamite ruler Shutruk-Nahhunte II (716-699 BCE) spent the initial years of his reign reinforcing the region of Yadburu, an Aramean tribal area in the buffer zone east of Babylonia. But in 710 BCE he faced a more calculated campaign by Sargon to remove Merodach-Baladan from the Babylonian throne and temporarily lost Yadburu and its Elamite garrisons.<sup>154</sup> Shutruk-Nahhunte sheltered Merodach-Baladan when he afterwards escaped Sargon’s two-year siege of his hometown Dur-Yakin in the Chaldean heartland. By 707 BCE Shutruk-Nahhunte was at the Elamite Zagros border garrison of Bit-Burnakka co-ordinating resources to support his involvement in a succession dispute in the wake of the death of king Dalta of Ellipi, the highland kingdom bordering on Elam and Media. While mobilising additional troops from regions such as Parsumash,<sup>155</sup> he sent 4,500 Elamite bowmen on ahead to assist Dalta’s son Nibe. Though the course of events is unknown, the Assyrians seized the capital of Ellipi, Murubisu, and installed Dalta’s brother Ashpabara. Another campaign of Shutruk-Nahhunte involving a successful siege of the Assyrian border town Malaku and a possible campaign against Der can be inferred from undated correspondence of the time of Sargon.<sup>156</sup>

Nervous letters from Assyrian fortress commanders written between 704 and 693 BCE reveal continued Elamite incursions in the Der area. One undated letter reported that ‘the Palace Herald (field marshal) and entire army of Upper Elam’ (counterpart to an army of Lower

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<sup>148</sup> Zutterman (2003) 128-29.

<sup>149</sup> Tadmor and Yamada (2011) 18.

<sup>150</sup> Luukko (2012) nos. 127, 133.

<sup>151</sup> Fuchs (2011) 388.

<sup>152</sup> Grayson (1975) 73, i 33-37; Glassner (2004) 195; Beaulieu (2018) 198.

<sup>153</sup> Grayson (1965) 340-41; Grayson and Novotny (2012) 153; Sen. 18: iv.7'-17'.

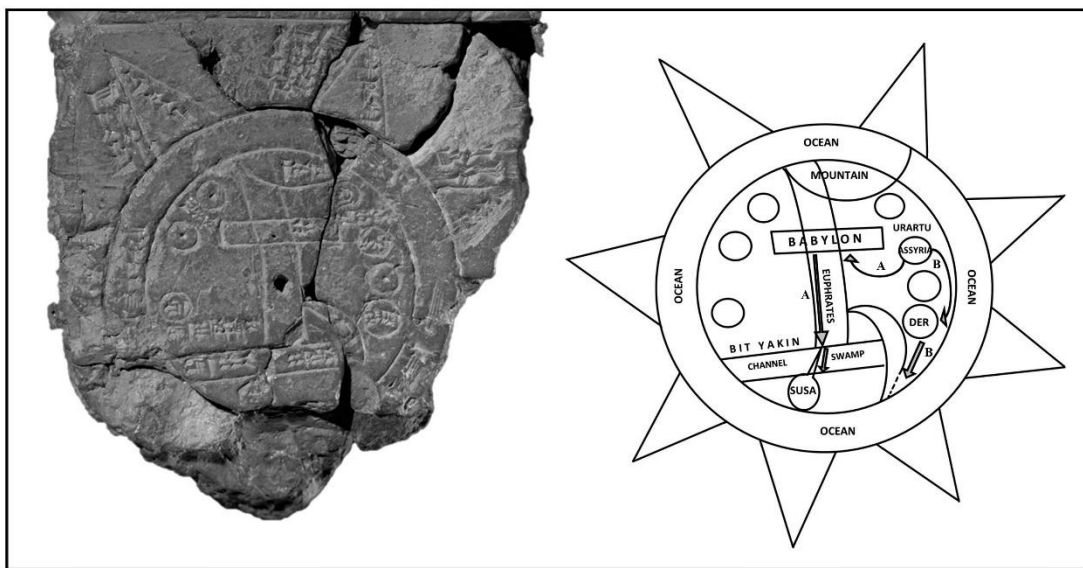
<sup>154</sup> Luckenbill (1927) no. 41; Fuchs and Parpola (2001) XXXV.

<sup>155</sup> Fuchs and Parpola (2001) no. 111, 129. For the debates on the distinction between Parsumash and Parsuash see Potts (2016) 264-66.

<sup>156</sup> Fuchs and Parpola (2001) XXXV.



Elam?) were stationed east of Der at the fortress of Bit-Imbiya ready to cross the river.<sup>157</sup> In 703 BCE an immense army including Merodach-Baladan and his southern Babylonian-Aramean-Chaldean alliance gathered under the Elamite banner of Shutruk-Nahhunte to quell increasing Assyrian military intervention under Sennacherib (705-680 BCE). Substantial resources and coordination would have been required to plan, mobilise, equip, and deploy the 80,000 archers (and) spearmen, 12,200 horses and 850 wagons, divided in cohorts, probably in a regular organisation of 8,000 soldiers, overseen by ten commanders ‘who did not know fear of death’. These commanders were answerable to ‘second in command’/‘third man’ named Tannanu and headed by a field-marshal (*turtan*) named Imbappa who took direct orders from the king.<sup>158</sup> The theatre of war lay within 35 km of Babylon, between Kutha and Kish, and it appears that three separate clashes took place on the plain, at Kutha and at Kish.<sup>159</sup> Sennacherib emerged the victor, placing a puppet king, Bel-ibni, on the throne of Babylon; however, three years later Bel-ibni rebelled, ‘having listened to the Elamites and Merodach-Baladan’, and Sennacherib placed his own son, Ashur-nadin-shumi, on the southern throne.<sup>160</sup>



**Fig. 2.17.** Babylonian ‘map of the world’ (ca. 7<sup>th</sup>/6<sup>th</sup> century BCE) showing how two main invasion routes into Elamite territory must have been envisaged [a] maritime route via Babylon; [b] in-land route via Der (photograph courtesy of © The Trustees of the British Museum; line drawing © J. Álvarez-Mon)

A new Elamite king named Hallutush-Inshushinak came to the throne in 700/699 BCE, after, according to the Babylonian Chronicle, he seized his brother Shutruk-Nahhunte and ‘shut the door in his face’, an intriguing Elamite idiom(?) understood to mean imprisonment.<sup>161</sup> He still reigned in 694 BCE when Elam was invaded by Sennacherib, who claimed to have sought the Chaldean asylum seekers living in its territories.<sup>162</sup> He sent a massive fleet to storm the Ulai shoreline, suggesting that his ultimate target was to penetrate deep into Elamite heartland using a traditional fluvial and commercial route [the Babylonian ‘map of the world’ gives a

<sup>157</sup> Dietrich (2003) nos. 120, 136.

<sup>158</sup> Brinkman (1968) 43; Frahm (2003); Grayson and Novotny (2012), Sen. 1.8-9.

<sup>159</sup> Grayson and Novotny (2012), Sen. 1.19-29.

<sup>160</sup> Grayson and Novotny (2012) 98-105, Sen.15 v 2b-9.

<sup>161</sup> Grayson and Novotny (2012) 26, ii 32-35.

<sup>162</sup> Grayson and Novotny (2012) 12-13.

fascinating insight into how the two main invasion routes into Elamite territory must have been envisaged, see Fig. 2.17].<sup>163</sup> The Chaldeans and Elamites had gathered tens of thousands of archers, as well as wagons, horses and mules, and formed a battle line at the mouth of the Ulai river. Sennacherib claimed that his troops swarmed ‘like locusts’ out of the boats, defeated the defenders, and captured ‘30,500 archers (and) 20,200 shield bearers and added (them) to my royal [contingent].’<sup>164</sup> Nonetheless, his strategy ended in disaster: taking advantage of the engagement of the Assyrian troops at the Ulai River, Hallutush-Inshushinak marched with his army into northern Babylonia, conquered Sippar and captured the Assyrian crown prince Ashur-nadin-shumi, who then vanished from history, and sat Nergal-ushezib of the Gahal tribe, a relative of the Elamite royal family, on the throne, if only for a short period before he was removed again by Sennacherib.<sup>165</sup>

An anti-Assyrian Elamite policy seems to have prevailed into the reign of Hubanmenana III (692-689 BCE), who mustered the armies of ‘Elam and Akkad’ and highland troops of Parsuash, Anzan, Pasheru and Ellipi, and lowland Babylonians, Aramean and Chaldeans to attack Assyria at Halule, located somewhere on the Tigris near Baghdad and the Diyala.<sup>166</sup> The alliance formed a battle line, with the river at their backs, blocking access to water sources. In an all-too-familiar scenario, the accounts of the outcome are conflicting: Sennacherib claims he enacted a heroic chariot charge forcing the enemy to retreat, killing 150,000 fighters and capturing chariots, wagons and royal tents, whereas the Babylonian Chronicle records an Elamite victory—a more likely scenario given that the Babylonian king Mushezib-Marduk held his throne for the two subsequent years.<sup>167</sup>

In 675, a shift in Elamite-Assyrian relations was induced by the signing of a peace treaty between the Elamite king Urtak (675-664 BCE) and the Assyrian king Esarhaddon (681-669 BCE) who somewhat owed his throne to the Elamites’ earlier removal of Ashur-nadin-shumi. Peace endured into the reign of his son Ashurbanipal (669-631 BCE) and was broken only in 664 BCE when Urtak allied with the Aramean Gambulu tribe and a governor of Nippur to attack Babylonia.<sup>168</sup> Within a year Urtak had died and the Elamite throne came into the hands of his in-law, Teumman (664-653 BCE), who sent the princes of the Houses of Urtak and Humban-haltash II (Urtak’s brother and predecessor) into flight to Assyria with ‘sixty of the royal family, countless bowmen, and free Elamites’. Urtak’s sons may be the three Elamites represented in a relief in the North Palace at Nineveh laying five duck-headed bows at Ashurbanipal’s feet.<sup>169</sup> The duck-headed bow was Ashurbanipal’s own bow of choice and frequently appears in the hands of Elamite archers in late Neo-Assyrian palace reliefs.<sup>170</sup> The reliefs demonstrate two different methods of bracing these bows: one involves pulling the extremities of the limb using both hands and pinning down the centre with one knee while a second person pulls the looped end of the bowstring to the terminal; the second method, requiring just one person, is to bend the limb by kneeling on one end and pulling the other towards the body, using the free hand to secure the bowstring [Fig. 2.18].<sup>171</sup>

<sup>163</sup> Ur III documents attest to direct maritime trade between Lagash and Susa (Sigrist (1986) 55-58). Shoreline geography discussed in Cole and Gasche (2007), Heyvaert, Verkinderen, and Walstra (2013); Gorris (2019).

<sup>164</sup> Grayson and Novotny (2014) 83-84, Sen. 46 v 81b-106a.

<sup>165</sup> Grayson (1975) Chronicle 1: ii.36-ii. 45

<sup>166</sup> Potts (2016) 266.

<sup>167</sup> Grayson and Novotny (2012), Sen. 18 cols. v-vi 15; Sen. 22 cols. v-vi 35; Sen. 23 cols. v-vi 30; Sen 34 44b-55a. The account of the battle of Halule is a remarkable piece of propaganda whose literary erudition and sophisticated intertextual borrowing from epics and myths is discussed by Pongratz-Leisten (2015) 307-308.

<sup>168</sup> Frame (2007) 83.

<sup>169</sup> Álvarez-Mon (2009) 136-38, n. 11.

<sup>170</sup> Potts (2016) 338.

<sup>171</sup> Barnett (1976) Plate XVI, Room C and North East Wall.



Fig. 2.18. Elamite bowman bracing a duck-headed bow (after Barnett 1976: Pl. XVI, Room C and Northeast Wall)

Taking up the cause of Urtak's sons, Ashurbanipal sent an army from Der with the eldest, Humban-nikash, to engage Teumman.<sup>172</sup> Adopting the conventional defensive strategy, Teumman's troops were positioned beside the Ulai river on a prominent hill barring access to the river. The Southwest and North Palaces at Nineveh illustrate the final episode of the battle: Elamite archers flee with horsemen toward the river while a vastly superior Assyrian cavalry aided by Chaldean archers chases them down. The Elamite royal chariot, a typical low-platform, mule-drawn Elamite vehicle, tumbles over, and Teumman is decapitated. A caption next to Ituni, the Elamite *rab qašti* 'bow commander/chief', demonstrates a symbolic act of Elamite surrender: 'with his own hand he drew the iron dagger from his belt and cut his bow, the sign of his strength',<sup>173</sup> thus answering Ashurbanipal's plea to Ishtar to 'break the bow of Te'umman'.<sup>174</sup> Ashurbanipal later placed a bow over the severed head of Teumman in an offering ceremony and dedicated it to Ishtar of Arbela.<sup>175</sup> This 'breaking the bow' motif is by no means applied solely to Elamites, but it *is* applied to them with special emphasis,<sup>176</sup> and the defeat, humiliation and execution of Elamite archers<sup>177</sup> and their 'bow commanders', *rab qašti*,<sup>178</sup> who belonged exclusively to Elamite aristocracy and royalty, feature heavily in Ashurbanipal's propaganda.

Only a year after Ashurbanipal had restored the House of Urtak by placing its princes Humban-nikash II and Tammaritu on two Elamite thrones at Madaktu and Susa (creating a kind of co-regency?), the former defected, joining an alliance with Ashurbanipal's brother, Shamash-shum-ukin (668-648 BCE) the king of Babylon, and the inhabitants of Akkad, Chaldea (now ruled by Merodach-Baladan's grandson), Arameans, and rulers of Gutium, Amurru (to the West, including Arabs) and Meluhha (Ethiopia).<sup>179</sup> In a pitched battle at Hiritu,

<sup>172</sup> Waters (2002) 82.

<sup>173</sup> Barnett (1976) Pl. XXIV; and Barnett, Bleibtreu, and Turner (1998) Pl. 295; Russell (1999) 182.

<sup>174</sup> Borger (1996) 103, lines 44-54.

<sup>175</sup> Weissert (1997) 350.

<sup>176</sup> The motif also occurs in Esarhaddon's treaties (Parpola and Watanabe (1988) nos. 4:20-21, 6:453, 573).

<sup>177</sup> For a prominent example see the installation of Humban-nikash II in Madaktu exhibited in the Southwest Palace of Sennacherib, in Nimrud (Barnett et al. (1998) Pls. 286, 301-309 and 313; Room XXXIII).

<sup>178</sup> Waters (2000) 49, 54, n. 79, 69-71.

<sup>179</sup> Beaulieu (2018) 214.

the strategic fortress in the Irnina channel, Ashurbanipal triumphed over the alliance—Ashur ‘smashed the [bo]ws of Elam, and strengthened your (Ashurbanipal’s) bow’—and then lay siege to Babylon for around two years (650-648 BCE).<sup>180</sup> Afterwards, the Assyrian army marched into Elam seeking retribution, destroying dozens of Elamite cities in its path as the Elamite king retreated to the highlands. Ashurbanipal’s capture of the Elamite city Hamanu is illustrated in both his palaces. In one, Elamite archers are using duck-headed composite bows to defend a riverside city surrounded by walls incorporating fifteen towers; in the other, the city is burning on a hilltop.

Internal power disputes and Assyria’s punitive invasion in 647 BCE weakened Elamite military capacity but did not bring the Elamite kingdom to an end. And while the role of Elam in Babylonian military alliances and expansionism, the fall of Assyria, and the emergence of Persia as a military superpower are obscure, Nabopolassar’s revolt against Assyria in 626 BCE, followed by his restoration of Elamite gods to Susa, and the rebellion of Der against Assyria in 623 BCE, suggest a continuation of the long-standing Elamite-Babylonian (Chaldean, Aramean) alliance.<sup>181</sup> The documentation in a “ration list” of a military squadron of 713 Elamites at Babylon in c. 592 BCE under the command of a Babylonian officer endorses the view of a close association.<sup>182</sup>

Archery as the pillar of Elam’s military success is memorialised in the oracle of Yahweh in the Bible (Jeremiah 49:35): ‘Behold, I will break the bow of Elam, the mainstay of their might’.<sup>183</sup> Dated to as late as 586 BCE, this oracle is approximately contemporary with the Elamite royal archive (ca. 590-555 BCE) excavated in the Acropole mound at Susa.<sup>184</sup> Composed of 299 Elamite cuneiform documents belonging to a central administrative system managed from Susa, it preserves names of about 600 individuals and its geographic scope embraces much of Khuzestan and Fars, extending to Mesopotamia and the Persian Gulf shore. It records transfers of primarily (military?) clothing and weapons, including a significant amount of archery equipment,<sup>185</sup> suggesting management of a central military arsenal.<sup>186</sup> At least 67 tablets preserve mentions of bows, 50 list reed-arrows, 20 list arrowheads and 28 list quivers. Bows are variously described as *rashmi*, *kakpin* and *parzimak*, which may refer to either the specific characteristics,<sup>187</sup> or the types of bows.<sup>188</sup> There are also possible references to Egyptian and Assyrian bows,<sup>189</sup> and five bows perhaps made of bronze, calling to mind two votive bronze bows (ca. 65 cm long) excavated in undated find-contexts in the Acropole.<sup>190</sup> A large number of bows were notably transferred to/from Zari, situated in the historically problematic Elamite-Babylonian border region. The texts provide information on the material in which the arrowheads were manufactured. For example, one records bronze for production of arrowheads,<sup>191</sup> and another more precisely records that two pounds of iron had been forged into 65 arrowheads. Assuming they were equally sized, each arrowhead weighed around 15

<sup>180</sup> <http://oracc.museum.upenn.edu/saa0/corpus> (retrieved 31/05/15); Potts (2016) 275.

<sup>181</sup> Potts (2016) 283.

<sup>182</sup> Moukarzel (2014) 144, n. 60.

<sup>183</sup> Isaiah 22:6 also has Elam ‘taking up the quiver’ to proceed into battle.

<sup>184</sup> Date based on the historical background covered in Jeremiah (ca. 627-586 BCE).

<sup>185</sup> Basello (2018) 232-33. It is impossible to estimate the total count of items, as the number 1 can also be read as 60 in the sexagesimal system and, furthermore, items may have been counted as packages (Gian Pietro Basello, pers. comm.).

<sup>186</sup> Scheil (1907) 15, n. 1.

<sup>187</sup> Scheil (1907) 37.

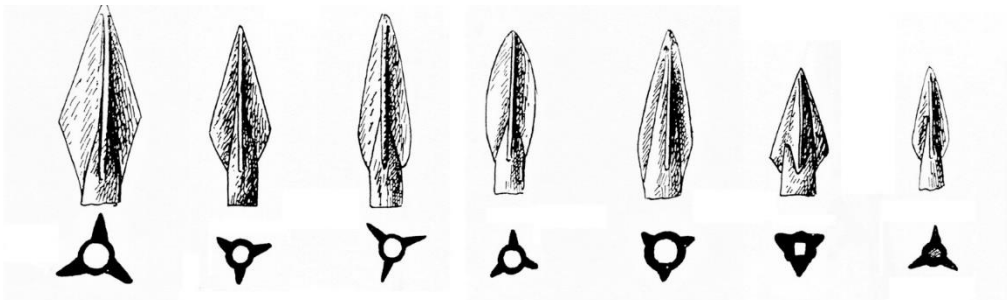
<sup>188</sup> Hinz and Koch (1987) 162, *kakpin* (qa-am-ban); (1987) 405, 178, *parzimak* (bar-zí-ma-ak-k[a4?]).

<sup>189</sup> Relevant tablets, references and discussion in Álvarez-Mon (2023).

<sup>190</sup> Lampre (1900) 107, 151, fig. 170, size based on image scale of 2/15. A number of gods receive weapons in the tablets (Basello (2017)).

<sup>191</sup> Scheil (1907) 29 [= MDP 9, no. 24: 11]; Hinz and Koch (1987) 459, GIŠ.GI.lg.

grams.<sup>192</sup> Burials of the seventh and early sixth century BCE at Susa have also preserved limited evidence of iron and occasionally stone arrowheads.<sup>193</sup> ‘Median’ socketed trilobate bronze arrowheads of a type attested since 612 BCE and considered standard equipment of Achaemenid bowmen have also been excavated at Susa [Fig. 2.19].<sup>194</sup>



**Fig. 2.19.** Sample of bronze trilobate arrowheads from Susa (ca. 6<sup>th</sup> century BCE or slightly later) (after Ghirshman 1954: 31-32, Pls. 43-44)

Also belonging to the seventh-sixth centuries BCE is the last relief (no. I) carved in the sanctuary of Kul-e Farah in Izeh, which carries a long inscription of Hanni, *kutur* of Aiapir and vassal of the Elamite king Shutur-Nahhunte (EKI 75-76). Hanni is shown presiding over an animal sacrifice with two high officials behind him. One is identified as Shutruru, Hanni’s *ragipal* and *gilira*.<sup>195</sup> He carries a quiver with small rectangular sections at the top indicating arrows and in his left hand holds a duck-headed bow braced in the later fashion with the string around the terminals [Fig. 2.16c]. In a similarly-dated stone pedestal from Susa (Sb 5) showing the aftermath of the capture of a city-fortress, possibly celebrating a victory by an Elamite ruler over a town located in the highlands, one of the victors carries a quiver and holds a weapon in the right hand and a small duck-headed bow in the left hand.<sup>196</sup> The small size of this bow and the bows on the Kul-e Farah reliefs may indicate use of short bows in both the highlands and lowlands of Elam.

### LEGACY OF ELAMITE ARCHERY

This outline of military history unveils the bow as the quintessential weapon that enabled the political independence and longevity of the Elamite polity, whose state authorities commissioned industrial-scale manufacture of quality composite bows and metal arrows necessitating high-level technical skills and access to significant material resources. Throughout the millennia, bow, quiver and arrow emerged as visual symbols of power which, wrapped in metaphorical language of war and peace, elevated archery to a prestigious and noble activity defining the Elamite elites. Depictions of the Achaemenid Persian ruler Darius I (522-486 BCE) as archer on his Bisotun relief, tomb façade [Fig. 2.20a], and in coins (inaugurating the portrayal of the royal persona on coinage) [Fig. 2.20b];<sup>197</sup> and the depiction of his bow-

<sup>192</sup> Scheil (1907) 88 [= MDP 9, no. 98:4]; Hinz and Koch (1987) 1058, sa-h.

<sup>193</sup> Since none are shown or described, the forms of the arrowheads are unknown. It is possible that the early to mid-first millennium BCE forms at Susa were similar to those well-attested in contemporary graveyards in the Pusht-e Kuh region of Luristan (organised typologically by Overlaet (2003) 172-79, Iron Age I-II; Haerinck and Overlaet (2004) 41-42, Iron Age III).

<sup>194</sup> Ghirshman 1954: 31-32, Pls. 43-44. Examples also found at Nineveh (Pickworth (2005)) and Pasargadae (Stronach (1978) 218-19, Pl. 165a-c).

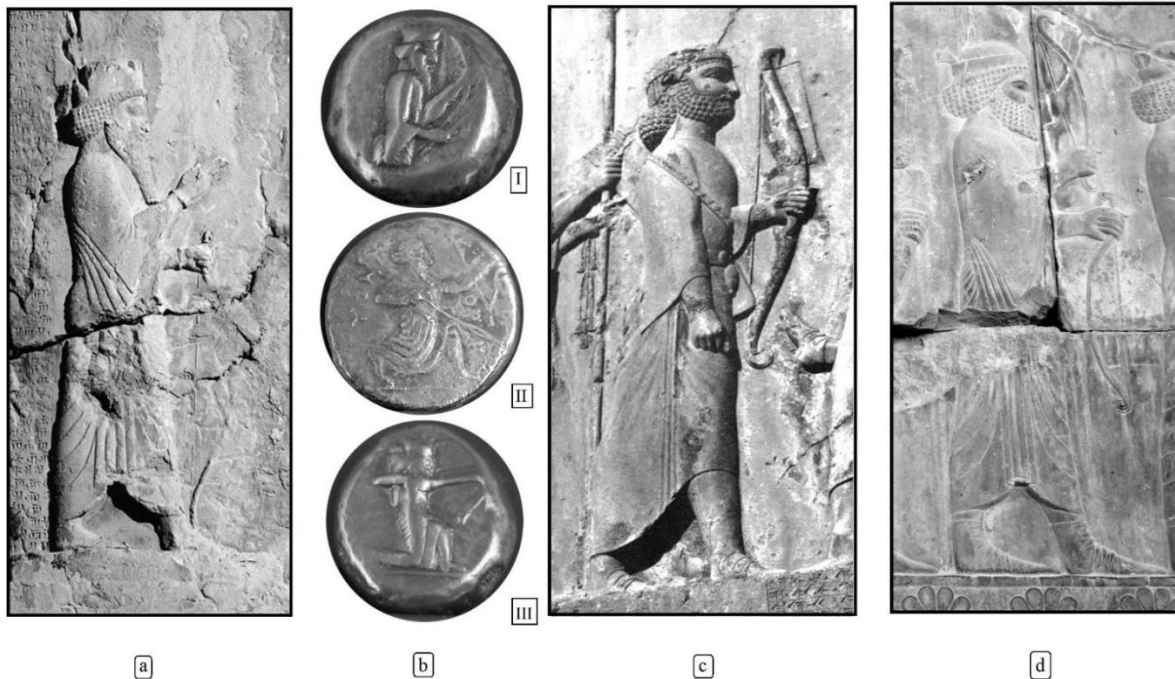
<sup>195</sup> EKI 75B, EKI 76:12; Henkelman (2008) 22.

<sup>196</sup> Álvarez-Mon (2020), Pl. 191.

<sup>197</sup> Stronach (1989); Root (1989) 46.



bearer at Bisotun [Fig. 2.20c] reveal that Elam bequeathed its ideology of bowmanship upon its successors.<sup>198</sup> Darius and his bow-bearer carry none other than the esteemed Elamite duck-headed bow, which is shown being delivered by Elamites in the Persepolis reliefs [Fig. 2.20d]. Indeed, Darius' acceptance of bows exclusively from Elamite gift-bearers highlights his veneration of the Elamite tradition,<sup>199</sup> and a tradition of excellence in bowmanship would persevere in this area of the Zagros Mountains even beyond the Persian Empire.<sup>200</sup>



**Fig. 2.20.** Representations of [a] Darius I depicted on his tomb at Naqsh-e Rostam; [b] royal archer coins of Darius (Louvre Museum), types I, II, and IIIa; [c] bow-bearer of Darius I at Bisotun; [d] Elamite tributary carrying Elamite duck-headed bow from the Apadana staircase at Persepolis (photographs © J. Álvarez-Mon).

Strikingly, the Chinese philosopher and educator Confucius (551-479 BCE), a contemporary of Darius I, believed that virtue could be taught via the bow, and articulated an ethical apparatus defining personal qualities and exemplary behaviour based on analogies with the art of archery.<sup>201</sup> This ethos invites reflection on the teaching and practice of archery as instrumental in defining key aspects of Elamite political and individual identities, flowing through into Achaemenid Persia and later Iranian culture and religion. Indeed, Herodotus encapsulated the significance of this heritage in his description of Persian education: ‘Their sons are carefully instructed from their fifth to their twentieth year in three things alone – to ride, to draw the bow, and to speak the truth’.<sup>202</sup>

<sup>198</sup> Elam also provides a different lens through which to examine the symbolism of the bow and arrow in the Hebrew Bible, particularly in the hands of Yahweh (Bonfiglio (2012)).

<sup>199</sup> Root (2010) 433 observes that no other gift-bearers are shown with bows.

<sup>200</sup> Potts (2016) 370, 375.

<sup>201</sup> Yu (2007); Behuniak (2010).

<sup>202</sup> Herodotus 1.136.



## ABBREVIATIONS

EKI	Die elamischen Königsinschriften. F.W. König (Graz 1965)
MDP	<i>Mémoires de la Délégation en Perse</i> Series: <i>Mémoires de la Délégation en Perse</i> , vols. 1-13 (1900-12); <i>Mémoires de la Mission archéologique de Susiane</i> vol. 14 (1913); <i>Mémoires de la Mission archéologiques de Perse - Mission de Susiane</i> , vols. 16-28 (1921-39); <i>Mémoires de la Mission archéologiques en Iran - Mission de Susiane</i> , vol. 29-38 (1943-65); <i>Mémoires de la Délégation archéologiques en Iran - Mission de Susiane</i> , vols. 39-52 (1966-92).

## BIBLIOGRAPHY

- Abrahami, P. (1997) 'L'armée à Mari', PhD Dissertation, Université de Paris I.
- Abrahami, P. (2008) 'Le char de guerre en Syrie et Palestine au bronze récent', in Abrahami and Battini (eds.) (2008) 57-70.
- Abrahami, P. and Battini, L. (eds.) (2008) *Les armées du Proche-Orient ancien: IIIe-Ier mill. av. J.-C. Actes du Colloque International Organisé à Lyon (les 1er et 2 décembre 2006), Maison de l'Orient et de la Méditerranée*. BAR International Series. London.
- Alizadeh, A. (2006) *The Origins of State Organizations in Prehistoric Highland Fars, Southern Iran Excavations at Tall-e Bakun*. Chicago.
- Alizadeh, A. (2008) *Chogha Mish, Volume II. The Development of a Prehistoric Regional Center in Lowland Susiana, Southwestern Iran: Final Report on the Last Six Seasons of Excavations, 1972–1978*. Chicago.
- Alizadeh, A. (2014) *Ancient settlement systems and cultures in the Ram Hormuz plain, southwestern Iran*. Chicago.
- Álvarez-Mon, J. (2009) 'Ashurbanipal's Feast: A View from Elam', *IrAnt* 44: 131-80.
- Álvarez-Mon, J. (2015) 'A Highland Elamite Archer from Kūl-e Farah IV, CI:4', *IrAnt* 50: 251-78.
- Álvarez-Mon, J. (2019) *The Monumental Reliefs of the Elamite Highlands: A Complete Inventory and Analysis (from the Seventeenth to the Sixth Century BC)*. Pennsylvania.
- Álvarez-Mon, J. (2020) *The Art of Elam ca. 4200–525 BC*. London.
- Álvarez-Mon, J. (2023) 'The Bow of Elam: Mainstay of their Might', in De Graef, Tavernier and Gorris (2023) 259-98.
- Álvarez-Mon, J. and Garrison, M.B. (eds.) (2011) *Elam and Persia*. Winona Lake.
- Álvarez-Mon, J. and Wicks, Y. (2021) 'Elamite War Chariots and Military Equipment at Ancient Kabnak (ca. 1400 BCE)', *Journal of Cuneiform Studies* 73.
- Álvarez-Mon, J., Wicks, Y., and Basello, G.P. (eds.) (2018) *The Elamite World*. London.
- Amiet, P. (1972) *Glyptique Susienne*. MDP 43. Paris.
- Arkhipov, I. (2012) *Le vocabulaire de la métallurgie et la nomenclature des objets en métal dans les textes de Mari*. Archives Royales de Mari 32. Leuven.
- Bács, T.A. (ed.) *A Tribute to Excellence, Studies offered in Honor of Erno Gaal, Ulrich Luft and Laszlo Torok*. Budapest.
- Bagg, A.M. (2020) 'The unconquerable country: the Babylonian marshes in the Neo-Assyrian sources', *Water History* 12: 57–73.
- Barnett, R.D. (1976) *Sculptures from the North Palace of Ashurbanipal (668-627 B.C.)*. London.
- Barnett, R.D., Bleibtreu, E., and Turner, G. (1998) *Sculptures from the Southwest Palace of Sennacherib at Nineveh*. London.
- Baruchi-Unna, A., Forti, T.L., Ahituv, S., Eph'al, I., and Tigay, J.H. (eds.) (2017) "Now It

- Happened in Those Days” Studies in Biblical, Assyrian, and Other Ancient Near Eastern Historiography Presented to Mordechai Cogan on His 75th Birthday*, ii. Winona Lake.
- Bartelmus, A. and Sternitzke, K. (eds.) (2017) *Karduniaš. Babylonia Under the Kassites. The Proceedings of the Symposium Held in Munich (30 June to 2 July 2011)*. Berlin.
- Basello, G.P. (2017) ‘Of Gods and Men in the Persepolis Bronze Plaque’, in Henkelman and Redard (eds.) (2017) 347-83.
- Basello, G.P. (2018) ‘Administrative Topography in Comparison: Overlapping Jurisdiction between the Susa Acropole Tablets and the Persepolis Fortification Tablets’, in Tavernier, Gorris, Abraham, and Boschloos (eds.) (2018) 217-65.
- Beaulieu, P.A. (2018) *A History of Babylon, 2200BC-AD 75*. London.
- Behuniak, Jr., J. (2010) ‘Hitting the Mark: Archery and Ethics in Early Confucianism’, *Journal of Chinese Philosophy* 37: 588-604.
- Bloch, Y. (2017) ‘A Letter of Nebuchadnezzar I to the Babylonians: Literary and Historical Considerations’, in Baruchi-Unna, Forti, Ahituv, Eph’al, and Tigay (eds.) (2017) 493-524.
- Blum, S.W.E., Efe, T., Kienlin, T.L., and Pernicka, E. (eds.) (2020) *From Past to Present: Studies in Memory of Manfred O. Korfmann*. Studia Troica Monographien 11. Bonn.
- Bonfiglio, R. (2012) ‘Archer Imagery in Zechariah 9:11-17 in Light of Achaemenid Iconography’, *Journ. Bib. Lit.* 131: 507-27.
- Borger, R. (1996) *Beiträge zum Inschriftenwerk Assurbanipals*. Wiesbaden.
- Brinkman, J.A. (1968) *A Political History of Post-Kassite Babylonia, 1158–722 B.C.* Rome.
- Bromiley, G.W. (ed.) (1988) *The International Standard Bible Encyclopedia*, iv. Oxford.
- Bryce, T. (2009) *The Routledge Handbook of the Peoples and Places of Ancient Western Asia*. London.
- Carter, E. and Stolper, M.W. (1984) *Elam, Surveys of Political History and Archaeology*. Berkeley.
- Charpin, D. (1986) ‘Les Elamites à Subat-Enlil’, in Meyer, Gasche, and Vallat (eds.) (1986) 129-38.
- Charpin, D. (2003; repr. 2012) *Hammurabi of Babylon*. New York.
- Charpin, D. (2013) ‘«Ainsi parle l’empereur» À propos de la correspondance des sukkalmah’, *MDP* 58: 341-53.
- Charpin, D. and Durand, J.-M. (1991) ‘La Suzeraineté de l’empereur (Sukkalmaḥ) d’Elam sur la Mésopotamie et le ‘Nationalisme’ Amorrite’, *Actes 26<sup>ème</sup> Rencontre Assyriologique Internationale* 59-66.
- Charpin, D. and Ziegler, N. (2003) *Mari et le Proche-Orient à l’époque Amorrite: essai d’histoire politique*. Mémoires de N.A.B.U. 6. Florilegium marianum V. Paris.
- Chavalas, M.W. (ed.) (2006) *Ancient Near East: Historical Sources in Translation*. London.
- Civil, M. (2003) ‘Of Bows and Arrows’, *JCS* 55: 49-54.
- Cole, S. and Gasche, H. (2007) ‘Documentary and Other Archaeological and Environmental Evidence Bearing on the Identification and Location of the Rivers of Lower Khuzestan and the Position of the Head of the Persian Gulf ca. 1200 BC-200 AD’, *Akkadica* 128: 5-72.
- Collon, D. (1983) ‘Hunting and Shooting’, *Anat. St.* 33: 51-56.
- Collon, D. (2008) ‘Le développement de l’arc en Mésopotamie’, in Abrahami and Battini (eds.) (2008) 93-112.
- Cooley, J.L. (2006) ‘The Shitti-Marduk Stele’, in Chavalas (2006) 160-64.
- Dalley, S. and Postgate, J.N. (1984) *The Tablets from Fort Shalmaneser*, iii, Cuneiform Tablets from Nimrud. London.
- Delougaz, P. and Kantor, H. (1996) *Chogha Mish, Volume I: The First Five Seasons of*

- Excavations, 1961–1971*. Chicago.
- De Graef, K. and Tavernier, J. (eds.) (2013) *Susa and Elam. Archaeological, Philological, Historical and Geographical Perspectives: Proceedings of the International Congress Held at Ghent University, December 14-17, 2009*. MDP 58.
- De Graef, K., Tavernier, J., and Gorris, E. (eds.) (forthcoming) *Susa and Elam II. History, Language, Religion and Culture: Proceedings of the Second Susa and Elam Conference Held at Université Catholique de Louvain, July 6-9, 2015*. Leiden.
- Denwood, P. (ed.) (1978) *Arts of the Eurasian Steppelands*. London.
- De Odorico, M. (1995) *The Use of Numbers and Quantifications in the Assyrian Royal Inscriptions* (SAAS 3). Helsinki.
- Dezső, T. (2002) ‘Scale Armour of the 2nd Millennium B.C’, in Bács (ed.) (2002) 195-216.
- Dietrich, M. (2003) *The Babylonian Correspondence of Sargon and Sennacherib*. State Archives of Assyria 17. Helsinki.
- Drews, R. (1993) *The End of the Bronze Age: Changes in Warfare and the Catastrophe ca. 1200 B.C*. Princeton.
- Durand, J.-M. (1998) *Documents épistolaires du palais de Mari, II*. Paris.
- Edwards, I., Gadd, C., Hammon, N., and Sollberger, E. (eds.) (1975) *The Cambridge Ancient History*, ii. 3rd ed. Cambridge.
- Eidem, J. (1985) ‘News from the Eastern Front: The Evidence from Tell Shemshāra’, *Iraq* 47: 83-107.
- Fleming, D.E. and Milstein, S.J. (2010) *The Buried Foundation of the Gilgamesh Epic, The Akkadian Huwawa Narrative*. Leiden.
- Foster, B.R. (1996) *Before the Muses: An Anthology of Akkadian Literature*. Bethesda.
- Frame, G. (2007) *Babylonia 689-627 B.C. A Political History*. Publications de l'Institut historique et archéologique néerlandais de Stamboul 69. Leiden.
- Frahm, E. (2002) ‘Assur 2001: Die Schriftfunde’, *Mitteilungen der Deutschen Orient-Gesellschaft* 134: 47-86.
- Frahm, E. (2003) ‘New Sources for Sennacherib’s “First Campaign”’, *ISIMU: Revista sobre Oriente Próximo y Egipto en la antigüedad* 6: 129-64.
- Fuchs, A. (1994) *Die Inschriften Sargons II. aus Khorsabad*. Göttingen.
- Fuchs, A. (2011) ‘Das Osttigrisgebiet von Agum II. bis zu Darius I’, in Miglus and Mühl (eds.) (2011) 229-320.
- Fuchs, A. and Parpola, S. (2001) *The correspondence of Sargon II, part III: Letters from Babylonia and the Eastern Provinces*. State Archives of Assyria 15. Helsinki.
- Gasche, H. (2000) ‘Tell Ed-Der (Sippar-Amnanum) et Suse. Les tombes et les coutumes funéraires au 2<sup>e</sup> millénaire av. notre ère’, PhD Dissertation, École Pratiques des Hautes Études.
- Gasche, H., Tanret, M., Janssen, C., and Degraeve, A. (eds.) (1994) *Cinquante-deux Réflexions sur le proche-orient ancien: offertes en hommage à Léon De Meyer*. Ghent.
- Geller, M.J. (ed.) (2014) *Melammu: The Ancient World in an Age of Globalization*. Berlin.
- Genz, H. (2013) ‘The Introduction of the Light, Horse-Drawn Chariot and the Role of Archery in the Near East at the Transition from the Middle to the Late Bronze Ages: is there a Connection?’, in Veldmeijer and Ikram (eds.) (2013) 95-105.
- Genz, H. (2020) ‘Attacking and Defending Fortified Sites in the Early Bronze Age Levant: The Role of Archery’, in Blum, Efe, Kienlin, and Pernicka (eds.) (2020) 25-32.
- Genz, H. and Mielke, D.P. (eds.) (2011) *Insights into Hittite History and Archaeology*. Leuven.
- George, A.R. (2000) ‘Four Temple Rituals from Babylon: 2. Simanu’, in Lambert, George, and Finkel (eds.) (2000) 270-80.

- Gernez, G. (2007) 'L'armement en métal au Proche et Moyen-Orient : des origines à 1750 av. J.-C', PhD Dissertation, Sciences de l'Homme et Société, Université Panthéon Sorbonne - Paris I.
- Gernez, G. (2018) Metal Weapons. In M. Lebeau (ed.), *ARCANE Interregional 2: Artefacts Turnhout: Brepols* (2018) 39–76.
- Ghirshman, R. (1954) *Village perse-achéménide*, MDP 36, Paris.
- Ghirshman, R. (1966) *Tchogha Zanbil (Dur-Untash) Volume I : La Ziggurat*. MDP 39. Paris.
- Ghirshman, R. (1968) 'Suse au tournant du IIIe au IIe millénaire avant notre ère', *Arts asiatiques* 17: 3-44.
- Glassner, J.-J. (2004) *Mesopotamian Chronicles*. Atlanta.
- Gorris, E. (2019) 'The Harbour(s) of Nagitu: Mesopotamian Mooring Places, Elamite Garrisons and Aramean Settlements', *IrAnt* 54: 59-82.
- Grayson, A.K. (1965) 'Problematical Battles in Mesopotamian History', in Güterbock (ed.) (1965) 337-42.
- Grayson, A.K. (1975) *Assyrian and Babylonian Chronicles* (report. 2000). Winona Lake.
- Grayson, A.K. (1996) *Assyrian Rulers of the Early First Millennium BC, II (858-745 BC)*. The Royal Inscriptions of Mesopotamia 3. Toronto.
- Grayson, A.K. and Novotny, J. (2012) *The Royal Inscriptions of Sennacherib, King of Assyria (704–681BC), Part I*. Winona Lake.
- Güterbock, H.G. (ed.) (1965) *Studies in Honor of Benno Landsberger on His Seventy-Fifth Birthday, April 21, 1965*. Chicago.
- Haerinck, E. and Overlaet, B. (2004) *The Iron Age III Graveyard at War Kabud Posht-e Kuh, Lorestān. Luristan Excavation Documents 5*. AI 42. Leuven.
- Hamblin, W.J. (2006) *Warfare in the Ancient Near East to 1600 BC. Holy Warriors at the Dawn of History*. London.
- Helwing, B. (2011) 'The Arisman Copper Production in a Wider Context', in Vatandoust, Parzinger, and Helwing (eds.) (2011) 523-31.
- Heimpel, W. (2003) *Letters to the King of Mari. A New Translation, with Historical Introduction, Notes, and Commentary*. Winona Lake.
- Henkelman, W.F.M. (2008) *The Other Gods Who Are, Studies in Elamite Iranian Acculturation based on the Persepolis Fortification Texts*. Leiden.
- Henkelman, W.F.M. and Redard, C. (eds.) (2017) *Persian Religion in the Achaemenid Period*. Wiesbaden.
- Herrero, P. and Glassner, J. J. (1990) 'Haft-Tépé: choix de textes I', *IrAnt* 25: 1-45.
- Heyvaert, M. A., Verkinderen, P. and Walstra, J. (2013) 'Geoarchaeological Research in Lower Khuzestan: State of the Art', in De Graef and Tavernier (eds.) (2013) 493-534.
- Hinz, W. and Koch, H. (1987) *Elamisches Wörterbuch*, i. Berlin.
- Hinz, W. and Koch, H. (1987) *Elamisches Wörterbuch*, ii. Berlin.
- Hoffmeier, J.K. (1988) 'Weapons of War', in Bromiley (ed.) (1988) 1033-43.
- Jakob, S. (2009) *Die mittelassyrischen Texte aus Tell Chuera in Nordost-Syrien*. Wiesbaden.
- Kendall, T. (1975) 'Warfare and Military Matters in the Nuzi Tablets', PhD Dissertation, Brandeis University.
- Klopsteg, P.E. (1947) *Turkish Archery and the Composite Bow: A Review of an Old Chapter in the Chronicles of Archery and a Modern Interpretation*. Illinois.
- Korfmann, M. (1986) 'Die Waffe Davids. Ein Beitrag zur Geschichte der Fernwaffen und zu den Anfängen organisierten kriegerischen Verhaltens', *Saeculum* 37: 129-49.
- Labat, R. (1975) 'Elam, c. 1600-1200 BC', in Edwards, Gadd, Hammond, and Sollberger (eds.) (1975) 379-416.
- Lacambre, D. (1997) 'La Bataille de Hiritum', *Mari* 8: 431-54.
- Laessoe, J. (1965) 'IM 62100: A Letter from Tell Shemshara', in Güterbock (ed.) (1965) 189-

- Lamberg-Karlovsky, C.C. (2013) 'The Oxus Civilization', *Cuadernos de Prehistoria y Arqueología, Universidad de Autónoma de Madrid* 39: 21-63.
- Lambert, W.G. (1994) 'The Fall of the Cassite Dynasty to the Elamites: An Historical Epic', in Gasche, Tanret, Janssen, and Degraeve (eds.) (1994) 67-72.
- Lambert, W.G. (2007) *Babylonian Oracle Questions*. Winona Lake.
- Lambert W.G., George, A.R., and Finkel, I.L. (eds.) (2000) *Wisdom, Gods and literature: Studies in Assyriology in honour of W.G. Lambert*. Winona Lake.
- Lampre, G. (1900) 'Travaux de l'hiver 1897-1898, tranchées nos. 7 et 7a', *MDP* 1: 100-10.
- Lansdorff, A. and McCown, D.E. (1942) *Tall-I Bakun A: Season 1932*. Chicago.
- Larsen, M.T. (2015) *Ancient Kanesh: a Merchant Colony in Bronze Age Anatolia*. Cambridge.
- Le Brun, A. (1971) 'Recherches stratigraphiques à l'Acropole de Suse (1969-1971)', *Cahiers de la Délégation archéologique française en Iran* 1: 163-216.
- Le Brun, A. (1978) 'Le niveau 17B de l'Acropole de Suse (campagne de 1972)', *Cahiers de la Délégation archéologique française en Iran* 9: 57-156.
- Legrain, L. (1913) 'Tablettes de comptabilité, etc. de l'époque de la dynastie d'Agadé', *MDP* 14: 62-126.
- Lipinski, E. (2000) *The Arameans, Their Ancient History, Culture, Religion*. Leuven.
- Littauer, M.A. and Crowel, J.H. (1979) *Wheeled Vehicles and Ridden Animals in the Ancient Near East*. Leiden.
- Littauer, M.A. and Crowel, J.H. (1980; repr. 2002) 'Kamfwagen B. Archäologisch', in Raulwing (ed.) (2002) 26-37.
- Lorenz, J. and Schrakamp, I. (2011) 'Hittite Military and Warfare', in Genz and Mielke (eds.) (2011) 125-52.
- Luckenbill, D.D. (1927; repr. 1989) *Ancient Records of Assyria and Babylonia*, i. London.
- Luckenbill, D.D. (1927; repr. 1989) *Ancient Records of Assyria and Babylonia*, ii. London.
- Luukko, M. (2012) *The Correspondence of Tiglath-pileser III and Sargon II from Calah/Nimrud*. State Archives of Assyria 19. Helsinki.
- McEwen, E. (1978) 'Nomadic archery: some observations on composite bow design and Construction', in Denwood (ed.) (1978) 188-202.
- McLeod, W. (1958) 'An Unpublished Egyptian Composite Bow in the Brooklyn Museum', *AJA* 62: 397-401.
- McLeod, W. (1965) 'The Range of the Ancient Bow', *Phoenix* 19: 1-14.
- McLeod, W. (1970) *Composite Bows from the Tomb of Tutankhamun*. Oxford.
- Mecquenem, R. de (1905) 'Offrandes de fondation du Temple de Chouchinak', *MDP* 7: 71-130.
- Mecquenem, R. de (1922) 'Fouilles de Suse: Campagnes 1914-1921-1922', *Revue d'Assyriologie et d'Archéologie Orientale* 19: 109-40.
- Mecquenem, R. de, 'Ministère de l'éducation nationale', *Roland de Mecquenem Archives de Suse 1912-1939* (1936), <http://www.mom.fr/mecquenem/index/rapports>, accessed 1 Jun. 2016.
- Mecquenem, R. de, 'I<sup>ère</sup> partie: travaux de fouilles', *Roland de Mecquenem Archives de Suse 1912-1939* (1937), <http://www.mom.fr/mecquenem/index/rapports>, accessed 1 Jun. 2016.
- Mecquenem, R. de, 'Fouilles de archéologiques de l'Iran. Mission de Susiane. Campagne de Fouilles 1938. Rapport de Mission', *Roland de Mecquenem Archives de Suse 1912-1939* (1938), <http://www.mom.fr/mecquenem/index/rapports>, accessed 1 Jun. 2016.
- Mecquenem, R. de, 'Fouilles de archéologiques de l'Iran. Mission de Susiane. Campagne de Fouilles 1939. Rapport de Mission', *Roland de Mecquenem Archives de*

- Suse 1912-1939* (1939), <http://www.mom.fr/mecquenem/index/rapports>, accessed 1 Jun. 2016.
- Mecquenem, R. de (1943) 'Fouilles de Suse 1933-1939', *MDP* 29: 3-161.
- Meyer, L. de, Gasche, H., and Vallat, F. (eds.) (1986) *Fragmenta Historiae Elamicae, mélanges offerts à M. J. Steve*. Paris.
- Michalowski, P. (1989) *The Lamentation over the Destruction of Sumer and Ur*. Winona Lake.
- Miglus, P.A. and Mühl, S. (eds.) (2011) *Between the Cultures. The Central Tigris Region from the 3rd to the 1st Millennium BC (Conference at Heidelberg January 22nd–24th, 2009)*. Heidelberger Studien zum alten Orient 14. Heidelberg.
- Miller, R., McEwen, E., and Bergman, C. (1986) 'Experimental Approaches to Ancient Near Eastern Archery', *World Archaeology* 18: 178-95.
- Miroschedji, P. de (1981) 'Fouilles du chantier Ville Royale II à Suse (1975-1977). Les niveaux élamites', *Cahiers de la Délégation archéologique française en Iran* 12: 9-136.
- Moghaddam, A. (2020) *A Sanctuary at Tol-e Chega Sofla, the Third Season of Excavation*. Archaeological Report Monograph Series 2, No. 1. Tehran.
- Moorey, P.R.S. (1986) 'The Emergence of the Light, Horse-Drawn Chariot in the Near East c. 2000- 1500 B.C.', *World Archaeology* 18: 196-215.
- Morgan, J. de (1912) 'Observations sur les couches profondes de l'Acropole de Suse', *MDP* 13: 1-25.
- Moukarzel, K. (2014) 'Some Observations about "Foreigners" in Babylonia during the VI Century BCE', in Geller (ed.) (2014) 129-55.
- Nezafati, N., Pernicka, E., and Momenzadeh, M. (eds.) (2009) 'Introduction of the Deh Hosein Ancient Tin-Copper Mine, Western Iran: Evidence from Geology, Archaeology, Geochemistry and Lead Isotope Data', *TÜBA-AR* 12: 223-36.
- Nielsen, J.P. (2018) *The Reign of Nebuchadnezzar I in Historical Memory*. London.
- Oudbashi, O., Agha-Aligol, D., Mishmastnehi, M., and Barnoos, V. (2019) 'The Elamite Metalworkers: Multianalytical Study on Copper Objects and Ingots from Second Millennium BCE of Southwestern Iran'. *Archaeological and Anthropological Sciences* 11: 2059-72.
- Overlaet, B. (2003) *The Early Iron Age in the Posht-e Kuh, Lorestān. Luristan Excavation Documents IV*. AI 40. Leuven.
- Parpola, S. and Watanabe, K. (1988) *Neo-Assyrian Treaties and Loyalty Oaths*. State Archives of Assyria 2. Helsinki.
- Parpola, S. and Whiting, R.M. (eds.) (1997) *Assyria 1995*. Helsinki.
- Parrot, A. (1971) 'Les fouilles de Mari, XIXe campagne (Printemps, 1971)', *Syria* 48: 253-70.
- Patterson, D. (2018) 'Elements of the Neo-Sumerian Military', PhD Dissertation, University of Pennsylvania.
- Paulus, S. (2013) 'Beziehungen zweier Großmächte - Elam und Babylonien in der 2. Hälfte des 2. Jt. v. Chr. Ein Beitrag zur internen Chronologie', in De Graef and Tavernier (eds.) (2013) 429-49.
- Pickworth, D. (2005) Excavations at Nineveh: The Halzi Gate. *Iraq* 67: 295-316.
- Pongratz-Leisten, B. (2015) *Religion and Ideology in Assyria*. Berlin.
- Postgate, J.N. (2013) *Bronze Age Bureaucracy, Writing and the Practice of Government in Assyria*. Cambridge.
- Potts, D.T. (2008) 'Puzur-Inšušinak and the Oxus Civilization (BMAC): Reflections on Šimaški and the geo-political landscape of Iran and Central Asia in the Ur III period', *Zeitschrift für Assyriologie* 98: 165-94.



- Potts, D.T. (2016) *The Archaeology of Elam: Formation and Transformation of an Ancient Iranian State*. 3rd edn. New York.
- Potts, D.T. (2020) 'Slings and slingers in ancient Iran', in Blum, Efe, Kienlin, and Pernicka, (eds.) (2020) 17-24.
- Powell, M.A. (1980) 'Karkar, Dabrum, and Tall Gidr: An Unresolved Geographical Problem', *JNES* 39: 47-52.
- Randall, K.C. (2016) 'Origins and Comparative Performance of the Composite Bow', PhD Dissertation. University of South Africa.
- Raulwing, P. (ed.) (2002), *Selected Writings on Chariots and other Early Vehicles, Riding and Harness*. Leiden.
- Roaf, M. (2017) 'Kassite and Elamite Kings', in Bartelmus and Sternitzke (eds.) (2017) 166-95.
- Root, M.C. (1989) 'The Persian archer at Persepolis: aspects of chronology, style and Symbolism', *REA* 91: 33-50.
- Root, M.C. (2010) 'Elam in the Imperial Imagination: From Nineveh to Persepolis', in Álvarez-Mon and Garrison (eds.) (2010) 419-74.
- Russell, J.M. (1999) *The Writing on the Wall, Studies in the Architectural Context of Late Assyrian Palace Inscriptions*. Mesopotamian Civilizations 9. Winona Lake.
- Sarianidi, V. (2005) *Gonur Depe, City of Kings and Gods*. Aşgabat.
- Scheil, V. (1904) *Textes élamites-anzanites, deuxième série*. MDP 5. Paris.
- Scheil, V. (1907) 'Traduction et commentaire du texte de la statue de Manistusu', in *Comptes rendus des séances de l'Académie des Inscriptions et Belles-Lettres*, 51<sup>e</sup> année 7: 413-15.
- Scheil, V. (1911) *Textes élamites-anzanites, (IV) quatrième série*. MDP 11. Paris.
- Scheil, V. (1912) 'L'armure de Narâm Sin, d'après une tablette de comptabilité trouvée à Suse', *Comptes rendus des séances de l'Académie des Inscriptions et Belles-Lettres*, 56<sup>e</sup> année 4: 296-301.
- Scheil, V. (1932) *Actes Juridiques Susiens*. MDP 23. Paris.
- Scheil, V. (1939) *Mélanges Épigraphiques*. MDP 28. Paris.
- Steinkeller, P. (2018) 'The Birth of Elam in History', in Álvarez-Mon, Wicks, and Basello (eds.) (2018) 177-202.
- Sulaiman, M. and Dalley, S. (2012) 'Seven Naptanum-texts from the Reign of Rim-Sin I of Larsa', *Iraq* 74: 153-65.
- Sallaberger, W. and Schrakamp, I. (eds.) (2015) *ARCANE III. Associated Regional Chronologies for the Ancient Near East and the Eastern Mediterranean. History and Philology*. Turnhout.
- Sallaberger, W. and Schrakamp, I. (2015) 'Part I: Philological Data for a Historical Chronology of Mesopotamia in the 3<sup>rd</sup> Millennium', in Sallaberger and Schrakamp (eds.) 1-135.
- Schrakamp, I. (2010) 'Krieger und Waffen im frühen Mesopotamien: Organisation und Bewaffnung des Militärs im frödynastischer und sargonischer Zeit', PhD Dissertation, Philipps-Universität Marburg.
- Sigrist (1986) 'Les courriers de Lagaš', in Meyer, Gasche, and Vallat (eds.) (1986) 51-63.
- Steve, M.-J. and Gasche, H. (1971) *l'Acropole de Suse*. MDP 46. Paris.
- Steve, M.-J., Gasche, H., and Meyer, L. de (1980) 'La Susiane au deuxième millénaire: à propos d'une interpretation des fouilles de Suse', *IrAnt* 15: 49-154.
- Steve, M.-J., Vallat, H., and Gasche, H. (2002) 'Suse', *Supplément au Dictionnaire de la Bible* 73: 360-511.
- Stolper, M. (1984) 'Part I. Political History', in Carter and Stolper (1984) 3-102.
- Stronach, D. (1978) *Pasargadae*. Oxford.

- Stronach, D. (1989) 'Early Achaemenid Coinage, Perspectives from the Homeland', *IrAnt* 24: 255-83.
- Tadmor, H. (1958) 'Historical Implications of the Correct Rendering of Akkadian *dâku*', *JNES* 17: 129-41.
- Tadmor, H. and Yamada, S. (2011) *The Royal Inscriptions of Tiglath-pileser III (744–727 BC) and Shalmaneser V (726–722 BC), Kings of Assyria*. Royal Inscriptions of the Neo-Assyrian Period 1. Winona Lake.
- Tallon, F. (1987a) *Métallurgie susienne: De la fondation de Suse au 18eme siècle avant J.-C.*, i. Paris.
- Tallon, F. (1987b) *Métallurgie susienne: De la fondation de Suse au 18eme siècle avant J.-C.*, ii. Paris.
- Tavernier, J., Gorris, E., Abraham, K., and Boschloos, V. (eds.) *Topography and Toponymy in the Ancient Near East*. Louvain-la-neuve.
- Tigay, J.H. (1982; repr. 2002) *The Evolution of the Gilgamesh Epic*. Pennsylvania.
- Van Koppen, F. (2013) 'Abieshu, Elam and Ashurbanipal: New Evidence from old Babylonian Sippar', in De Graef and Tavernier (eds.) (2013) 377-97.
- Vanstiphout, H. (2003) *Epics of Sumerian Kings: The Matter of Aratta*. Atlanta.
- Vatandoust, A., Parzinger, H., and Helwing, B. (eds.) (2011) *Early Mining and Metallurgy on the Western Central Iranian Plateau*. Mainz.
- Veldmeijer, A.J. and Ikram, S. (eds.) (2013) *Chasing Chariots. Proceedings of the first international chariot conference (Cairo 2012)*. Leiden.
- Vermaak, P.S. (1993) 'Shulgi as sportsman in the Sumerian self-laudatory royal hymns', *Nikephoros* 6: 7-21.
- Watelin, L. and Langdon, S. (1934) *Excavations at Kish Volume 4 (1925-30)*. Paris.
- Waters, M.W. (2000) *A Survey of Neo-Elamite History*. State Archives of Assyria Studies 12. Helsinki.
- Waters, M.W. (2002) 'A Letter from Ashurbanipal to the Elders of Elam (BM 132980)', *Journal of Cuneiform Studies* 54: 79-86.
- Waters, M.W. (2011) 'Parsumaš, Anšan, and Cyrus', in Álvarez-Mon and Garrison (eds.) (2011) 285–96.
- Weeks, L. (2008) 'The 2007 Early Iranian Metallurgy Workshop at The University of Nottingham', *Iran* 46: 335-45.
- Weissert, E. (1997) 'Royal Hunt and Royal Triumph in a Prism Fragment of Ashurbanipal (82-5-22,2)', in Parpola and Whiting (eds.) (1997) 339-58.
- Wilke, C. (1991) Zur Herstellung von Reflexbögen. *NABU* 1991, no. 17.
- Yadin, Y. (1963) *The Art of Warfare in Biblical Lands in Light of Archaeological Discovery*. London.
- Yu, J. (2007) *The Ethics of Confucius and Aristotle: Mirrors of Virtue*. London.
- Zadok, R. (1994) 'Elamites and other peoples from Iran and the Persian Gulf Region in Early Mesopotamian Sources', *Iran* 32: 31-51.
- Zutterman, C. (2003) 'The Bow in the Ancient Near East: A Re-evaluation of Archery from the Late 2nd Millennium to the end of the Achaemenid Period', *IrAnt* 38: 119-65.