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PARTHIAN WEAPONS AND MILITARY EQUIPMENT: SOME REMARKS*

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Many ancient authors suggest that the "Skythian", i.e., nomadic elements, greatly influenced Parthian military art and contributed to the political power of the Arsakid Empire.[1] The subjugation of Iran by the nomads under Arsakes I and his successors and the establishment of the Arsakid state were linked to substantial changes in the art of war in Parthian Iran and many regions of Western Asia. This development adopted the principle of relying on cavalry as the primary tactical arm, with a main focus on mounted archers and heavily armored horsemen wielding long spears. New combat arms, weapons, armor elements, and equipment were introduced. This breakthrough was noted by several scholars studying Parthia and ancient warfare.[2]

During the reign of the Arsakids, the Parthian Empire's primary fighting force consisted of mounted archers, cataphract cavalry (*kataphraktoi*), and mounted spear-bearers equipped with long spears (*kontophoroi*). Long spears were introduced for use by heavily armored and medium cavalry, while long swords were intended for combat from horseback. Additionally, powerful

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[1] For detailed assessments of "Skythian" factors in Parthia, see Olbrycht 1998a, 253-268; 1998b; 2003; Lerouge-Cohen 2010; Nikonorov 2010a; Olbrycht 2021a; 2022. However, some researchers question the reliability of these ancient sources and the significance of the steppe traditions in Parthia's history. See, e.g., Boyce 1994.

[2] Bivar 1972; Coulston 1985; Herrmann 1989; Nikonorov 1995; 2010a; James 2006; Olbrycht 2003; 2010a; 2010b; 2012; 2015; 2021b.

bows were incorporated into the Parthian arsenal, enabling effective attacks capable of piercing enemy armor. In areas dominated by the Arsakids or closely linked to Parthia, the establishment of Arsakid-style armed forces, which included cataphracts, lancers, and horse archers, occurred quickly during the 2nd and early 1st centuries B.C.[3]

The effective Parthian bow, wielded by mounted soldiers, was a highly powerful military asset that often determined the success of the Parthians in war. Despite the wealth of information available on the remarkable efficacy of the Parthian bow, there is a paucity of detailed accounts regarding the specific types of this weapon. A typical Skythian bow appears on coins of the early Arsakids in a scene with the figure of an archer. It is possible that the symbolic scene did not necessarily depict a bow used in battle but rather a traditional bow as a ritual symbol of power.[4] The bows of the Skythians of the Classical period (5th-4th centuries B.C.) were relatively small, typically measuring 60-80 cm in length.[5] The Skythian bow was whip-ended, and its depictions feature curled ears. Such bows were relatively weak in terms of striking power at long ranges.

As early as the 5th-4th centuries B.C., the peoples of Central Asia were using more effective bows than the common Skythian varieties. This is demonstrated by the effectiveness of the nomadic bow in the battle between Alexander's forces and the Saka on the Iaxartes (Syrdarya) in 329 B.C., in which hundreds of Macedonians were killed or wounded by the arrows of the Sakan mounted archers (*hippotoxotai*).[6] The effectiveness of the mounted archers of the Dahai proven in the battles against Alexander and later when they fought as an elite unit in Alexander's army (327-324 B.C.; a good example is the battle of the Hydaspes River in 326), long before the Arsakid state, must have resulted from the superior quality of their bows and their striking power.[7] The Sakan and Dahan weapons of Alexander's times likely differed significantly from standard Skythian bows. To increase their stiffness, these bows must have been reinforced with horn or bone laths. Various design modifications could have resulted in different types of composite bows, which were in use as early as the middle of the 1st millennium B.C. Evidence of such changes is provided by archaeology. A unique composite bow, measuring approximately 120 cm, was found in Subexi (Chinese Xinjiang, Central Asia) and dates to around 475-220 B.C. (Figure 1).[8]

[3] Olbrycht 2021b.

[4] Khazanov 2008, 76-77.

[5] Coulston (1985, 241) gives 75-100 cm, while Khazanov (2008, 77) gives 60-80 cm.

[6] Arr. 4.4.2-9; Curt. 7.8.8-7.9.16. See Olbrycht 2004, 131-132.

[7] Alexander's Hydaspes campaign: Olbrycht 2004, 158-170.

[8] The exhibition catalog describes this weapon as made of several layers of wood, ox hide, and bone or horn that were glued together ("Der Reflexbogen ist aus mehreren Schichten aufgebaut. Hierzu sind Holzleisten, Rindsleder und Knochen bzw. Horn zusammengeklebt"): Wieczorek / Lind 2007, 67. Cf. Dwyer 2003; Riesch / Rutschke 2009, 60-113.

This asymmetric bow is a variant developed from the smaller Skythian bow. Various Central Asian peoples, including the Dahai, must have used such bows from the 5th-4th centuries B.C.

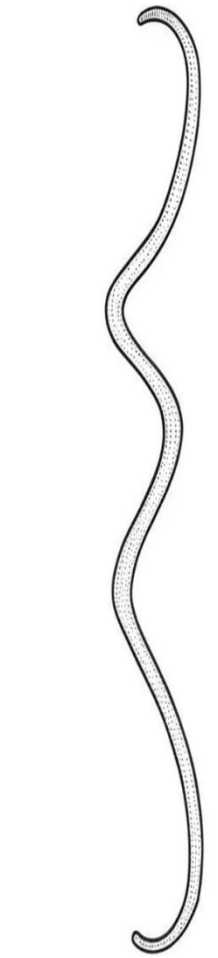

Figure 1. The bow from Subexi. Drawing after photos from Riesch / Rutschke 2009, 60-62.

Another variant is called the Qumdarya-type bow.[9] It is known from the discovery of the original bow dated to the 1st-2nd centuries A.D., at the Han China site at Loulan, at the mouth of the Qumdarya River (Xinjiang). The asymmetric Qumdarya bow (around 130-160 cm in length) had a wooden stave made of several pieces of wood. It was reinforced with horn or bone laths and tendons to stiffen parts of the bow (Figure 2).

[9] The term was introduced by G. Rausing in 1967.

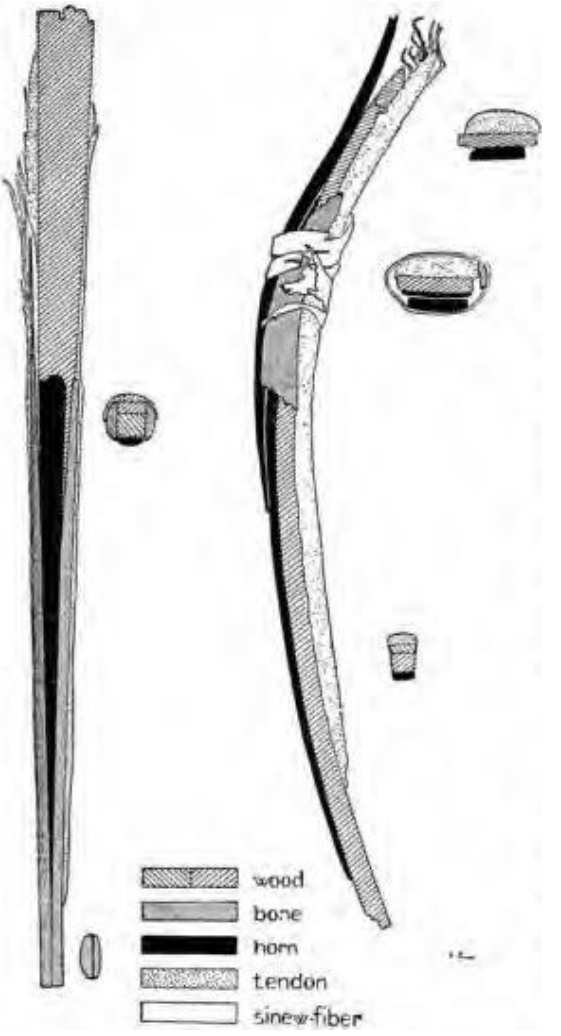

Figure 2. Qumdarya composite bow (tips A and B). After Bergmann 1939, p. 122, Fig. 30.

By and large, composite bows of various variants were used in eastern Central Asia in the second half of the 1st millennium B.C.[10] as improved solutions based on the traditional Skythian bow. These inventions rapidly circulated throughout the steppe regions up to the Caspian-Aral Basin. Thus, it is likely that the Dahai were familiar with composite reinforced bows before the Arsakid period, and this tradition was later developed. As a result, powerful weapons called "Sasanian" bows were created, which should, however, be referred to as Partho-Sasanian

[10] Nikonorov 2010b, 266-267 (he speaks of the "last centuries B.C."). Cf. Rausing 1967, 68-69, 110-111, 115-119, 122-128, 143-144, 150; Coulston 1985, 242-243.

bows. The Partho-Sasanian bow features set-back handles, short, curved working limbs, and long, stiff ears.[11] In some cases, the upper limb was longer than the lower. The ears were stiffened with laths.

J.C. Coulston rightly assesses that the Dahan Aparni/Parni employed composite bows and that "the use of ear laths was introduced by the Parni in the mid 3rd century B.C. because no laths appear in the Achaemenid contexts."[12] The earliest images of a Partho-Sasanian bow come from Central Asia and date to the 4th-2nd centuries B.C.; one of the earliest known depictions of such bows can be seen on a bone artifact from Kalaly Gyr 2 in Chorasmia[13] which is archaeologically dated to the 4th-2nd centuries B.C. Iconographic analysis of the depiction suggests the 2nd-1st centuries B.C.[14] There are depictions of Partho-Sasanian bows on the bone plates from Takht-e Sangin (Bactria) and Orlat (Sogdiana), whose exact dating is debatable but seems to fall within the 1st century B.C. and the 1st century A.D.[15] The most detailed depictions of such bows are found in Sasanian royal art on silver vessels.[16]

The Parthians likely used weapons known as Hunnic bows, which typically ranged from 120 to 150 cm in length. Some scholars refer to them as Hunnic-Parthian bows.[17]

The emergence of robust bows in Western and Central Asia was concomitant with the deployment of substantial cavalry forces.[18] During the 4th-3rd centuries B.C., the use of heavily armored cavalry increased in border regions such as Chorasmia and northern Iran. Employing new, robust bows and novel arrow types featuring iron arrowheads became imperative. The efficacy of strong composite bows in combat was demonstrated in distinct historical instances, against the infantry of the Hellenistic states and against Roman legions. In the history of Central and East Asia, the Xiongnu, along with the Arsakid Parthians, belong to the era of the dominance of mounted archers in warfare, according to recent historical classifications.[19]

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[11] A.M. Khazanov argues that the so-called "Sasanian" (or Partho-Sasanian) bow was developed based on an improved Skythian bow (Khazanov 2008, 85-86). For the Partho-Sasanian bow, see: Coulston 1985, 240. Cf. Rausing 1967, 105; Maenchen Helfen 1973, 228-32.

[12] Coulston 1985, 240.

[13] Nikonorov 2010a, 50; Vainberg et al. 2004, 185-187, Fig. 5/24.

[14] Ilyasov 2013; Olbrycht 2015, 341.

[15] Olbrycht 2015, Fig. 3, 4.

[16] Harper / Meyers 1981.

[17] Nikonorov 2010b, 266.

[18] Khazanov 2008, 83-84.

[19] Nefedov (2008, 256-296) writes about the age of horse archers, including the steppe Xiongnu, Parthians, and Sasanians. He emphasizes the importance of steppe traditions and the prominence of the bow in the art of warfare of the time, especially in Parthian Iran (Nefedov 2008, 283-287). Cf. Barfield 1994; Turchin et al. 2016.

Mounted archers formed elite units as the main military force among the nomads of Central Eurasia, and their combat value lay in their excellent training, superb horses, and – in some periods and regions – the outstanding quality of their composite bows. A comparable development of powerful armies of horse archers occurred among the Xiongnu in the steppes of eastern Central Asia in the second half of the 1st millennium B.C. The rulers of nomadic groups capitalized on new technologies to establish strong power bases in the steppe. One of the pivotal factors was composite bows which enhanced their armies of mounted warriors.[20]

Changes in cavalry armament and combat methods necessitated the development of a new type of saddle. In fact, during the Arsakid age, the four-horned saddle emerged, along with other pieces of military equipment.[21] In Achaemenid Persia and early Hellenistic states, the riders used soft blanket saddles. Some attempts were made to introduce saddles with rigid construction, but soft blankets continued to prevail.[22] The advent of advanced body armor for riders and armored trappers for horses must have necessitated modifications in saddlery. Consequently, the Chorasmians, the steppe peoples of the Caspian-Aral basin, and the Parthians introduced a novel type of equipment known as the four-horned saddle, which consisted of a wooden tree with four horns over which a leather cover was extended. The horns provided structural support, maintaining the rider's stability and enabling a wide range of mobility. For instance, he could use a spear with both hands or a bow and arrow.[23]

Early depictions of horned saddles dating to the 4th-3rd centuries B.C. have been discovered in Chorasmia and the Sarykamysh Delta (part of the Uzboi river system). Terracotta figurines depicting two horses from Koi-Krylgan-kala in Chorasmia feature four-horn saddles.[24] The same applies to the figurines of beasts from the Sakar-chaga 3 burial ground in the Sarykamysh Delta, on the borders of Chorasmia, dated to the 1st century B.C.-3rd century A.D. (an earlier date for these items is possible).[25] An early representation of a four-horned saddle comes

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[20] See Barfield 1994; Benjamin 2022; Miller 2024, 27 (he highlights the use of composite bows and metal bridles).

[21] Comprehensive scrutinies of Parthian saddles are provided by Herrmann 1989; Nikonorov 2002a; 2002b and Nikonorov / Arzhantseva 2021.

[22] Goldman 1984; 1993.

[23] Details in Herrmann 1989, 763-769; Nikonorov 2002a; 2002b. The primary rationale for the evolution of horned saddles was to address the pressing need for enhanced stability for heavily armored riders. This was driven by the fact that the Parthians did not utilize stirrups in their riding equipment (Herrmann 1989, 764). Incorrect information is provided by Mielczarek 1993, 61: „The rider who used a long spear sat in a low saddle with low saddle-bows that made it difficult to maintain balance." Mielczarek is unaware of the use of horned saddles in Parthia, which secured the horseman and granted him stability.

[24] Nikonorov / Arzhantseva 2021, Fig. 3, 1a-2b, 4, 1-3.

[25] Nikonorov / Arzhantseva 2021, Fig. 3, 3a, 3b, 4, 4-6.

from a graffito in the Square Hall Building of Old Nisa, dated to the 1st century B.C.[26] Four-horned saddles are depicted in the scenes from Kosika in the Lower Volga basin (first half of the 1st century B.C.).[27] Other artifacts and monuments from Parthia feature such saddles (Figure 3).[28] The four-horned saddle was likely an element of the cataphract equipment from the beginning of the Arsakid age. The Romans and Gauls used four-horned saddles as early as the 1st century B.C., but such saddles originated in Central Asia and Parthia.[29]

Figure 3. Terracotta plaque depicting a Parthian horse archer. The two "horns" of the saddle are visible. Berlin, Museum of Islamic Art. Inv. No. 1.3685. After Sarre 1922.

[26] Nikonorov 2010a, Fig. 4.1.

[27] Olbrycht 2015, Fig. 26.

[28] Herrmann 1989, Fig. 7, b, c, e, pl. V-VIII; Nikonorov 2010a, Fig. 4.4-6.

[29] According to Connolly / van Driel-Murray (1991), the Roman four-horned saddle (attested from the late 1st century B.C.) is most likely of Gallic/Celtic origin, but the evidence is circumstantial rather than conclusive, and alternative origins or parallel developments elsewhere cannot be entirely ruled out.

The primary offensive weapons used by the Parthian cataphracts and medium cavalry (*kontophoroi*) were the long and heavy spears, which may be termed pikes (in Greek *kontos*, Latin *contus*), with which they could penetrate the armor of the enemy soldiers (Plut. *Crass*. 27.2; Dio 40.22.3; Heliod. 9.15.6). Depictions of such pikes are known from Late Parthian monuments and artifacts in Iran (Bisotun, Tang-e Sarvak, Tang-e Ab near Firuzabad) and Mesopotamia (Figure 4).[30] Relevant elements of Macedonian warfare had a direct or indirect impact on late Achaemenid and post-Achaemenid tactics and weaponry in Central Asia. This phenomenon includes the use of long spears. The Achaemenid commanders of Darius III began to use such spears, influenced by the effectiveness of the Macedonian shafted weapons. Achaemenid soldiers received longer lances *(xysta*) and swords (*xyphoi*) because "it was believed that this was the reason for Alexander's advantage at Issos" (Diod. 17.53.1). The idea of using very long spears, borrowed from the Macedonians, was further developed in Central Asia in the border zone between the territories occupied by the Hellenistic states and those of the independent peoples. The zone included Chorasmia and neighboring areas dominated by the Dahai and Massagetai in the Caspian-Aral steppes.

As the Achaemenid Empire declined and fell, and in the decades that followed, some Asian peoples developed a trend toward improving and modifying weapons and armor. The most significant developments in heavily armored cavalry occurred in the borderlands of the Caspian-Aral Basin, particularly in Chorasmia, as well as in neighboring countries. This vast border region between Iran proper and Central Asia was home to the ancient steppe peoples of the Dahai and Massagetai. In this area, Spitamenes, with his formidable troops, operated in 329-328 B.C. The ancient accounts clearly reveal that Spitamenes' main assets were the equestrian nomadic units, including the famous cavalry of the Dahai, the Massagetan horsemen, and Bactrian and Sogdian mounted troops. He employed the tactics of combined fighting arms – horse archers, cavalry with long spears, and probably javelineers.[31]

In discussing Parthian warfare, it is worth recalling the opinions of renowned scholars who recognized the connections between Parthia and the steppe heritage. W.W. Tarn perfectly captured the essence of the changes in Parthian warfare and their impact in Western Asia in his assertion that the "Parthian re-organisation of Iran," based on steppe traditions and including the creation of the cataphracts, was

[30] See Nikonorov 2010a, Fig. 1, p. 56; Olbrycht 2015, 371-375.

[31] For an analysis of the remarkable victory of Spitamenes and his army over a Macedonian corps at the Polytimetos in Sogdiana, along with a comparison of the tactics used by Spitamenes and the Parthians, see Olbrycht 1998a, 36 and 262. Despite the evidence from sources, some scholars expressed critical assertions denying the existence of steppe elements in Spitamenes' warfare in Central Asia (329-328 B.C.). See Hauser 2006, 298. By downplaying the role of the nomads in Spitamenes' army, Hauser's claim distorts the picture provided by the sources and fails to provide archaeological evidence regarding Central Asian arms and armor.

accomplished by the 1st century B.C.[32] V.P. Nikonorov stresses the comprehensive impact of steppe traditions on the Parthian art of war.[33] J. Coulston speaks of the Partho-Sasanian tactical system, which was cavalry-based, including light horse archers supporting cataphract archers/lancers, and defines it as "essentially a steppe form successfully adopted to the Mesopotamian-Iranian ecological zone."[34] A.D.H. Bivar rightly assesses this phenomenon: "Throughout the period which has been studied here, the main sources of innovation in cavalry warfare were the nomad empires evolving in Central Asia."[35] Despite such evidence and well-founded insights, some researchers overlook the findings related to steppe traditions in Parthia and dismiss the significance of the new developments in Arsakid warfare.[36]

Figure 4. Early Sasanian combat relief depicting the use of long spears by heavily armored riders. Firuzabad: Tang-e Ab, Iran. Around AD 230. (Photo: M.J. Olbrycht ©)

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[32] Tarn 1930, 72: "The Parthian re-organisation of Iran cannot be dated, but doubtless it had some connection with the great nomad invasion; it cannot be later than the beginning of the first century B.C."

[33] Nikonorov 1995; 1997, vol. 1, 21-23, 50-51; 2010a.

[34] Coulston 1986, 71.

[35] Bivar 1972, 290.

[36] For example, one can point to S. Hauser's misconception in decisively "rebuffing" the claim that "the army of Surenas in the battle at Carrhae (53 B.C.) followed 'nomadic traditions' because it was mostly cavalry" (Hauser 2006, 298, with n. 14). This allegation is a typical straw man fallacy as it misrepresents evidence and fabricates an opponent's position to make it easier to attack or refute. Hauser fails to make a distinction between the tribal nomadic armies as contingents in Parthia and the steppe traditions of warfare and, in this way, invalidates his allegations. This applies in particular to the weaponry elements, which he ignores in silence.

In sum, there were mutual contacts and technological exchanges of types of weapons, armor, and horse equipment between the nomadic world of Central Eurasia and the Parthian Empire. The predominant position of the Parthian cavalry, including the heavily armored cataphracts and the mounted archers, can be primarily explained as a result of the persistence of steppe traditions in the Arsakid state and its interrelationship with the steppe world, which profoundly impacted the Parthian art of war.[37] The Parthians enhanced their combat skills and military equipment through close interaction with the steppe peoples of central Eurasia, as well as by adopting various traditions from Western Asia, including elements of the Macedonian art of warfare. The steppe heritage not only included the presence of nomadic troops in the Arsakid armies but also involved significant contributions from these nomads to the development of cavalry tactics, armor, weaponry, and equipment within the Arsakid Parthian military. Consequently, mounted archers, cataphracts, and spear-bearers emerged as the primary combat arms in the Arsakid Empire.

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[37] See Olbrycht 1998a, 262.

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Abstract

This article examines the evolution and distinctiveness of Parthian weapons and military equipment, emphasizing the deep influence of "Skythian" (nomadic steppe) traditions on Arsakid warfare. The study reconstructs the technological transitions that accompanied the Parthian conquest of Iran and the emergence of their unique military art. Special attention is given to the composite bow – its design, innovations, and strategic role – tracing its origins from Skythian prototypes to more advanced, horn-reinforced variants widely used by Parthian mounted archers. The article also analyzes the adoption and spread of the four-horned saddle, a significant development in cavalry equipment that afforded greater stability for heavily armored horsemen (cataphracts), and explores the integration of long spears (kontos) in Parthian tactics, showing direct and indirect borrowings from both nomadic and Hellenistic influences.

Drawing on ancient literary sources, archaeological finds, and modern scholarship, Olbrycht underscores how the predominance of cavalry – particularly elite mounted archers and heavily armored lancers – was rooted in ongoing technological, tactical, and cultural exchanges between the Parthians and Central Eurasian steppe peoples. The article provides a comprehensive synthesis of weapon types, armor, and equestrian equipment, situating Parthian military innovations within the broader context of steppe and Hellenistic warfare. Ultimately, Olbrycht argues that the distinctive character and long-lasting success of the Arsakid military rested on the creative adaptation of steppe traditions, culminating in the rise of the Parthian cataphract and mounted archer as the dominant arms of the Arsakid Empire's forces. Mounted warfare, which involved the extensive use of horse riders in military operations, revolutionized the art of war during ancient and early medieval times.