

# STEPPE FINDINGS AS AN IMPORTANT SOURCE OF INFORMATION ON THE BEGINNINGS OF FIGHTING VEHICLES

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The steppe is considered to be an area of innovation when it comes to the use of combat vehicles at the turn of the middle and late Bronze Age. The origin of this idea and its use in earlier periods is still an open question. It is based on the analysis of both the construction and context of the findings.

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Wagons of the Eurasian steppe have a long history of usage and they are dated to periods such as the early Bronze Age. Since the first discoveries, there were many interpretations of this phenomenon that had existed in literature in the field of vehicle usage. These hypotheses are quite diverse – which is caused by the amount and technological differentiation of findings. During the Bronze Age, from its beginning until the late phase of said era, both four- and two-wheeled vehicles were known, and among them, some technological innovations were recognized (Anthony, 2007, p. 397). They come from all across the steppe area: it looks like it was a well-known tradition for steppe societies to use them as grave goods, although it occurred quite rarely. Since the knowledge about Sintashta chariots is widespread, a big question appears about carts' combat utility and if this area might have been the source of innovation in this field. To improve our understanding, grave inventory, technology and sex/age structure should be analyzed.

The practice of depositing wheeled carts or their parts in graves can be found in cemeteries of the Yamnaya culture. Different sources quote at least 46 examples of wagon graves (all collections have been analyzed by the author). They were found all over the Yamnaya "core" territory, from the Danube to the Ural rivers, with some spots of concentration. The type of rite used there was, however, substantially unified. Usually, the wheels of the wagon were placed in corners of the grave pit and the cart's body was situated on the bottom of the grave or at its cover (as in Plachidol I in

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Dobrich region, Bulgaria) (Panajotov and Dergačev, 1984, p. 109). It would appear that these wagons were built in one type that can be compared to today's vehicles like the *kibitka*: with four wheels, often solid and made of three segments and in some cases with covered a body (Luk'yanivka I, Dnipro region) (Mel'nyk and Ser'dyukova, 1988, p. 119). The way they were made wouldn't suggest their purpose was to be used in combat, it would rather seem they were used for transportation of people and their goods.

As for the other grave goods, only 8 findings can be classified as weapons. They are not very diverse in types: there were 5 knives-daggers, one flat axe, one spearhead and 2 arrowheads that got stuck between the bones of the deceased's body (eg. Kholmskoe 2/17, Odessa region) (Gudkova and Chernyakov, 1981, p. 43). Some of these objects could be used in both domestic and combat circumstances. There were no traces of mace heads or axe-hammers and only the knife-daggers were made of bronze. Skeletons from these graves were identified as adults, but their gender was able to be determined in just two cases.

There is a lot of discourse on what kind of knife-dagger should be recognised as a weapon. Some scholars suggested that only daggers above some length (13 or 20 cm) were useful in combat, like today's hunting knife (Nelin, 2000, p. 100). Bronze daggers are rare at this time, also in wagon graves. They were often leaf-shaped and had no middle rib, which makes them similar to early Bronze Age daggers from Central and Northern Europe (Gedl, 1980, tab. 11:86, 87). Some researchers considered them as only ritual objects (Skak-Nielsen, 2008, p. 352), but reading some other papers lead to the conclusion, that the traces on the blade's surface are similar to those that would appear during combat (Horn, 2014, p. 516). For now, there's no reason to claim that communities who made up the Yamnaya culture fought in large battles, but some conflicts have occurred – mostly personal or between minor groups. Traces of wounds, as mentioned above, would also need to be highlighted.

The situation seems to be way more complicated in the middle Bronze age when the Catacomb culture developed. The findings from the Northern Pontic Steppe area and the Northern Caucasus were quite diverse structurally. Previously known types, such as four-wheeled kibitkas-like vehicles were still in use (like Ulan IV 4/15, Rostov region) (Shishlina, Kovalev and Ibragimova, 2013, p. 119), and new types were invented: four-wheeled but with different proportions: smaller bodies, looking like they were made just for ritual purposes (eg. Great Ipatovo Kurgan, grave

168) (Belinskij and Kalmykov, 2004, p. 205), as well as first two-wheeled carts (eg. Great Ipatovo Kurgan grave 32 or Izhevka 1/5) (Belinskij and Kalmykov, 2004, p. 210; Pustovalov, 2005, p. 80) that were found in catacomb graves. Spokes were not known at this time; all wheels were heavy and made usually as a three-segmented wooden disc.

The typology of weapons in these graves, of which 45 were collected, was more complex than before, in the early Bronze Age. The weaponry set from this collection, found in 17 graves, included 4 axe-hammers, 4 flataxes, arrowheads (one time in set, and two singulars, of which one got stuck between deceased's bones). Hooks were also found for the first time (Andreeva, 2014, p. 80). They are usually classified as tools, but some researchers recognized the possibility of a hook's usage in combat (Novozhenov, 2012, p. 252). There were also many knives-daggers, but their context is way more complicated than before. They occurred in 27 of 46 graves. They seem to be very popular metal objects in catacomb cemeteries – they were found in graves of men, women and children, often in a set with an awl (71 %). Finding just a pair of knives is considered quite rare (less than 2 %) (Andreeva, 2014, pp. 101–102). For these reasons, knives are classified more like tools or ritual objects at this time. Because of the total amount of weapons and no traces of graves of “fighters”, there's no reason to differentiate a special ingroup including only warriors, but the fact, that wagons were developed towards features like two wheels, and the fact that they were lighter and faster is worth considering. At least one of the graves with two-wheeled vehicles, which add up to 5, contained a weapon (Izhevka 5/1, flataxe, although it's a universal tool) (Kaiser, 2010, p. 143).

The turn of the middle and late Bronze Age brought important changes to technology and the way of usage in wheeled transport of the Eurasian steppe. Vehicles with two spoked wheels and drawn with a pair of horses appeared for the first time. This is exactly the definition of a “battle chariot”. The oldest findings came from the area of the Southern Urals – today's Northern Kazakhstan, from sites of the Sintashta-Petrovka culture (app. 25). They were found in graves, with wheels recessed in pits in the ground of the burial chamber (Gening, Zdanovich and Gening, 1992 p. 124). A large amount of various weaponry types were found in the same context, in at least 15 graves. This collection contained a hammer-axe, maces, arrowheads, spearheads, daggers, maybe hooks and also disc-shaped cheekpieces used for vehicles drawn by horses - probably the earliest tools of this type in the Eurasian steppe. Only men were bur-

ied in individual graves; the age/sex ratio was mixed in collective graves. This is a prime example of a society, where a complete “warrior set” was found, with carts characterized by suitable technology and weaponry (Berseneva, 2013, pp. 39–41).

Therefore, there’s little evidence for wagons being used in combat before the turn of the middle and late Bronze Age, although the fact that this exact idea and technological innovations came exactly from the steppe is thought-provoking. Traces of technology that were later used in chariots were known before they arose as vehicles that matched the strict definition. There were also changes in approach to weaponry. Four-wheeled or heavy vehicles could be used in battle, and we can find an example of this in the 3rd millennium BC in the Middle East, where wagons drawn by equids called *kunga* were featured in the art of this period (Oates, Molleson and Sołtysiak, 2008, p. 390). There’s still a possibility that the origin of the chariot could be in the steppe, and not borrowed from somewhere else, especially considering that most innovations were directly connected to this area.

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