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NEW MATERIALS ON SACRIFICIAL ANIMALS IN YANGLANG CULTURE BURIALS OF THE 5TH — 3RD CC. BCE (CHINA)*

This article focuses on the analysis of the sacrificial animals remains in burials of the 5th — 3rd cc. BCE of the Yanglang Culture Wangdahu burial ground identified with the Western Rongs who lived on the Qin kingdom western borders. As a rule, Eurasia Cattle breeders placed one or two parts or livestock carcasses in ordinary burials. In contrast to them, in the Yanglang Culture in one person ordinary burial up to 30, 50 or more skulls of all major livestock species (horses, cattle, sheep and goats) could be placed. In the analysis of sacrificial animals from the Yanglang Culture burial grounds detailed description, the authors came to the conclusion that in a number of burials the composition of animal species and their ratio fully correspond to the Central Asia nomads' herd averaged data. Apparently, the burial grounds organizers were sent real herd to the other world with the dead people or recruited animals for slaughter keeping the proportions known to them. The proportion of horses is much higher in the chariot warriors` burials which is associated with the deceased special status. As it turned out, even 1—3 years old children could have such status during burial in Wangdahu. Foals and votive weapons full set were placed in such burials. All of this suggests the chariot warrior's high status which was established in the funeral rite. The maintenance and training of chariot horses large number, the horses and chariot warriors equipment manufacturing required the state structures participation. It is no coincidence that the number of chariots served as a state power yardstick in ancient China. All these preliminary observations and conclusions are consistent with indirect information from Chinese historical sources about the developed horse breeding among the Western Rongs, their special relationship with the Qin kingdom and possibly the early state formation existence among them.

Key words: Northern China, Scythian time, Yanglang Culture, Western rong, burial rite, sacrificial animals, nomads' herd composition, burials of chariot warriors.

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НОВЫЕ МАТЕРИАЛЫ ПО ЖЕРТВЕННЫМ ЖИВОТНЫМ В ПОГРЕБЕНИЯХ КУЛЬТУРЫ ЯНЛАН V—III ВВ. ДО Н.Э. (КИТАЙ)

Статья посвящена анализу останков жертвенных животных в захоронениях V—III вв. до н.э. могильника Вандаху культуры янлан, идентифицируемой с западными жунами, обитавшими на

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западных границах царства Цинь. Скотоводы Евразии, как правило, помещали в рядовые захоронения части или туши одной-двух особей домашнего скота. В отличие от них, в культуре янлан в рядовом захоронении одного человека могли размещать до 30, 50 и более черепов всех основных видов скота: лошадей, крупнорогатого скота, овец и коз. В ходе анализа детального описания жертвенных животных из могильников культуры янлан, авторы пришли к заключению, что в ряде захоронений состав видов животных и их соотношение полностью соответствуют усреднённым данным по стаду кочевников Центральной Азии. По всей видимости, устроители погребений отправляли с умершими людьми в мир иной реальное стадо или набирали для забоя животных, сохраняя известные им пропорции. В погребениях воинов-колесничих доля лошадей значительно выше, что связано с особым статусом умерших. Как оказалось, в Вандаху этот статус при погребении могли иметь даже дети 1—3 лет, с которыми помещали жеребят и полный комплект вотивного оружия. Всё это указывает на высокий статус воинов-колесничих, утвердившийся и в погребальном обряде. Содержание и выучка большого количества колесничных лошадей, изготовление снаряжения лошади и воинов-колесничих, требовало участия государственных структур. Не случайно количество колесниц служило в Древнем Китае мерилом мощи государства. Все эти предварительные наблюдения и выводы согласуются с косвенными сведениями китайских исторических источников о развитом коневодстве у западных жунов, их особых отношениях с царством Цинь, а возможно, и существованием у них раннегосударственного образования.

Ключевые слова: Северный Китай, скифское время, культура янлан, западные жуны, погребальный обряд, жертвенные животные, состав стада кочевников, захоронения воинов-колесничих.

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Introduction

All pastoralist burial rites on Ancient China kingdoms western and northern borders in the 7th — 3rd cc. BCE suggested sacrificial animals and dead people shared burial. As a rule, animal remains are represented by skulls sometimes accompanied by a few leg bones. The northern cultures Yuhuangmiao rituals (7th — 6th centuries BCE) (fig. 1: *1, 4*) and the Maoqinggou Culture derived from it (6th — 3rd cc. BCE) (fig. 1: *1, 5*) was approximately the same. The dead were buried one at a time in narrow graves, on their backs, in an extended position with their heads to the east. The skulls of animals (horses, cows, sheep, goats and dogs) were located several pieces above people heads (sometimes alongside the deceased) in graves filling with incisors (muzzle) in the eastern direction (fig. 1: *4, 5*). These cultures burial grounds could be up to 69 (Maoqinggou) (Tian Guangjin, Guo Suxin 1986: 231, fig. 2) and even up to 400 graves (Yuhuangmiao[1]) (Shulga 2015a: fig. 3—5). The burials were located close to each other and did not have a significant grave structure which is typical for sedentary population burial grounds.

The Yanglang Culture area was located in Ningxia-Hui Autonomous Region southern part and in Gansu province adjacent areas, approximately 500—600 km southwest of Maoqinggou culture burial grounds (fig. 1: *1, 2*).

[1] For more information: (Beijing City Institute of Cultural Heritage 2007).

Body

In the north, the so-called "Western Rongs" carriers of Yanglang Culture (Institute of Archeology and Cultural Heritage 2016: 623) contacted Ordos and Central Mongolia nomads, in the west — the Shajing Culture that existed in the 7th — 4rd cc. BCE in the Gansu corridor (fig. 1). In the east, the Western Rongs coexisted with the Qin kingdom for several centuries. Despite the remoteness and peculiarities of its origin, the funeral rite in the Yanglang-type sites had much in common with Yuhuangmiao and Maoqinggou northern cultures rituals (fig. 1: *4, 5*). It is believed that Western Rongs retained their independence from the Qin kingdom until the 3rd century BCE in the area of modern Guyuan (the central part of the Yanglang Culture area) and in the adjacent territory. By 272 BCE, the Qin kingdom expanded its possessions in the west and established control over the Yanglang Culture area main part (Institute of Archeology and Cultural Heritage 2016: 739—741). Nevertheless, this culture has survived in that area. Moreover, it was at this time that the "princely" burial mounds of the 3rd — 2nd cc. BCE in Majiayuan 150 km south of Guyuan were built (Institute of Archeology and Material Culture 2014). Rich burials of local elite representatives presumably belonging to the Qin aristocracy were discovered there for the first time (Wu Xiaolong 2013). China's direct power over the territory in Guyuan and Zhongwei cities area was established only during the Han Empire strengthening after the victories of the Emperor Wu-di over the Xiongnu in 114 BCE. Accordingly, it can be assumed that the Yanglang Culture existed on Ningxia-Hui AR territory and the adjacent Gansu region until the middle of the 2nd c. BCE, while maintaining the pastoral orientation of the economy. In this regard, the Yanglang Culture is the only formation that existed on Ancient China borders for such a long time — from the 6th (7th?) to the 2nd c. BCE. The Yanglang Culture carriers' special fate was largely associated with the geographic location and natural conditions that favoured cattle breeding and farming. The location between the Chinese kingdoms, the northern nomads and the going westward Gansu corridor presupposed the inclusion of the western Rong into the developing trade relations.

Local population economy basis in the 5th — 3rd cc. BCE there was cattle breeding as in the aforementioned Yuhuangmiao and Maoqinggou northern cultures. Livestock skulls (horses, cattle, goats and sheep) were also placed in Yanglang Culture burials. The Yanglang Culture important feature is the only animal skulls presence in the burials, their large number and the absence of dog bones. So, in Wangdahu burial ground graves there were up to 20—30 skulls and in the Zhongzhuang burial ground M1 grave — 49. This number of feral animals is comparable to a small herd while in other cultures, as a rule, individual animals were present.

To date, Yanglang Culture burials have been found in more than 40 places including Ningxia-Hui Autonomous Region southern part (fig. 1: *2*). Specialized work on sacrificial animals` bones study was carried out on materials from Wangdahu, Zhongzhuang and Jiulongshan burial grounds in Guyuan area (Institute of Archeology and Cultural Heritage 2016). These materials are of particular interest since they are the first experience of large number of animals skulls detailed analysis sacrificed by Chinese borderlands pastoralists in the 5th — 3rd cc. BCE. Such a thorough fixation of the sacrificial animals bones location has not been carried out before.

Wangdahu burial ground. It was located near Wangdahu village in Pengyang County 5—7 km southeast of Guyuan (fig. 1, *2*). The burial ground study was carried out after peasants` reports about accidental finds. The burials were found in cultivated fields in one of the flattened uplands separated by deep ravines upper part (fig. 1, 3). In total, 15 burials were identified 8 of which were completely destroyed, including in the course of agricultural activities. Eight burials were located along the north-south line and a slope at a distance of about 84 m. Six of them (M1 and M9, M2 and M3, M5 and M6) were arranged in pairs parallel to each other at a distance of 0.5—3 m.

Approximately 30 m grave M4 was discovered to the west of the main chain. To the northeast of this grave there was another destroyed burials pair one of which is marked as M8 (fig. 1, *3*).

Seven undisturbed burials of people with sacrificial animals were investigated and published. The funeral rite of burials in Wangdahu is typical for most Yanglang Culture burial grounds. Initially, rectangular entrance pit about 1.5—2 × 1.5—2 m in size up to 0.5—1.5 m deep was dug. In the entrance pit eastern (northeastern) wall a gradually lowering narrow catacomb (sometimes an undercut grave) up to 2—2.5 m in length was built. In Wangdahu, the catacombs had an unusually greater inclination to the east (up to 20—45 degrees) as a result of which the head of the deceased was significantly lower than the legs (fig. 2: *1*, 3: *1*, 4: *1*). One deceased was placed on his back, elongated, with his head in the northeastern sector. A relatively rich inventory set was placed there including weapons, horse equipment, jewelry and other items made of bronze, iron and horn. Ceramic vessels were rarely placed in burials. After burial the catacomb was filled up and sacrificial animals` skulls were placed at the bottom of the entrance pit. More often they were located in the eastern (northeastern) part of the entrance pit where the catacomb was located (fig. 2: *2, 3*, 5: *2, 3*). At the same time, horses and cattle skulls were been turned mainly with incisors (muzzle) into the northeastern sector where the undercut grave with the deceased was located. The small cattle[2] skulls could be oriented in different directions (fig. 2: *2, 3*, 5: *2*). In some burials the skulls were laid over the entire area of the entrance pit or in several layers. As a rule, the inventory didn`t fit into the entrance pit with animal bones, but sometimes there were harness sets in the layers with horses` skulls, and in the grave M4 from Wangdahu — the tip of an iron spear (fig. 5: *9*).

Cattle, goats, sheep and horses` skulls, as well as a small number of other bones, were found in seven graves of the Wangdahu burial ground. Their zoo archaeological study was carried out in order to find out the age and belonging to one or another species. In total, at the Wangdahu burial ground 158 animal skulls were measured and identified, the number of individuals and their age were determined. The sacrificial animals` remains number and location in different burials varied significantly depending on the sex, age and status of the deceased.

Grave M1 contained the undisturbed burial of a 40—45 year old chariot warrior. The accompanying items were located in the undercut burial chamber on the sides of the deceased (fig. 2: *1*). Among them there were four horses` bridles details of which two bridles had distinctive chariot cheek pieces. The warrior was girded with a wonderful decorated with badges belt on which a dagger in the same sheath with a knife was suspended. In addition, he was armed with a long handle spear ge and a bow with arrows, probably attached to a chariot (Shulga, Shulga 2019).

A total of 25 animal skulls were found in the grave M1 entrance pit (14 horses, 2 cattle, 4 goat skulls, 7 sheep)[3]. оригина The lower layer consisted of five adult horses` skulls (with lower jaws), laid on the base in a row along the eastern wall of the grave with incisors (muzzles) in the eastern direction. To the west behind them there were the skulls of a foal (no. 12) and a goat. Closer to the entrance pit western wall there were two sheep skulls and a horse skull (no. 22) with incisors to the east (fig. 2: *3*). The upper layer skulls were placed directly on the underlying ones almost everywhere. In the central part and at the western wall of the pit there were three horse skulls, including the one placed directly on skull No. 22. Three goats and three sheep skulls were laid on the middle line. The skulls of horses No. 1 and No. 3 were placed at the eastern wall the last with incisors to the north and east, as well as the cattle skull with incisors in the eastern sector. Another cow skull was placed against the western wall (fig. 2: *2*).

[2] Russian-speaking term «мелкий рогатый скот» (or Chenese 羊) does not have an approved equivalent in English, that's why we use one of the options, «small cattle» in the meaning of «small livestock», «sheep and goats», domesticated members of the Caprinae family.

[3] The number of animal skulls in this and other graves in sections of the publication публикации (Institute of Archeology and Cultural Heritage 2016) sometimes differs by several numbers.

Grave 2 contained a 2—3 years old child (boy?) burial (fig. 3: *1*). On the belt of the deceased there were a bronze belt badge and a full-size knife with a votive dagger 14.8 cm long (fig. 3: *3, 5, 6*). At the head were a bronze spear 10 cm long (fig. 3: *4*) and harness details in the form of 15 full-size bronze badges and a bell (fig. 3: *7, 8*). Thus, the child was buried as a chariot warrior with full-length belt parts and harness but with weapons replica. 7 animal skulls (5 horses and 2 cattle) were found in the entrance pit (fig. 3: *2*). Horses are represented by lying in the center skulls of four colts laid in pairs (chariot quartet) and a separately lying skull of an old individual covered by the adult cattle skull.

Grave 3 was located next to grave M2. It contained 1.5 years old child (boy?) burial (fig. 4: *1*). He was also accompanied by warrior-charioteer votive bronze weapons set: a dagger 15 cm long, a spear 10 cm long, a celt 3.2 cm long, as well as an awl and other small items (fig. 4: *3—5*). Belt badges, a similar full-size harness badges set and a bell were also found there (fig. 4: *6—8*). In the entrance pit, 11 poorly preserved animal skulls (4 horses, 3 cattle, 4 goats and sheep) laid in one layer were recorded (fig. 4: *2*). Horses are represented by the skulls of three foals No. 7—9, laid at the eastern wall above the entrance to the catacomb and an adult individual skull No. 5 at the western wall.

Grave M4 contained 40—45 years old chariot warrior burial (fig. 5: *1*). In the catacomb, next to the deceased there were a bimetallic sword, a bronze celt and some other items (fig. 5: *7, 10*). Almost all of the horse equipment was located among the horse skulls accumulation in the entrance pit (fig. 5: *2*). There, among the animals bones a bronze adze was found (fig. 5: *8*), a link of iron bits and an iron spearhead 23.4 cm long (fig. 5: *4, 9*). The presence of two iron bits and several double-hole cheek pieces suggests that grave M4, as well as grave M1, contained four horses` team parts.

In the entrance pit, 24 animal skulls were found (7 horses, 3 cattle, 14 goats and sheep). Some horse skulls had adjacent cervical vertebrae — atlas. During the sacrifice, all the skulls were placed on a horizontal platform in 2—3 layers. At the catacomb mouth, seven horse skulls were located below (fig. 5: *3*). Four of them were laid on the bases in a row with incisors to the east. Right behind them to the west there were two horse skulls on which two cattle skulls were placed with incisors to the east (fig. 5: *2*). In the western part, there was a cluster of 14 skulls of goats and sheep in disarray (fig. 5: *2*). Horses are represented by one foal, eight middle-aged individuals and one old individual.

Grave M5 contained the burial of a 35—40 year old man. There was a bow with horny end plates, a reduced bronze dagger (length 20.4 cm) and a votive coinage (length 4.8 cm), belt fittings and one harness badge. There were no horse skulls. The entrance pit contained 23 animal skulls arranged in three layers (4 cattle skulls and 19 skulls of goats and sheep). The skulls in the lower layer were located at the eastern wall mainly above the catacomb. Next to the deceased, two deliberately laid hyoid cattle bones were found.

Grave M6 contained the burial of a 12—13 year old male teenager. The deceased was accompanied by a reduced bronze dagger (length 21.7 cm), a flat lightweight ax (length 13.8 cm) and a votive celt (length 4.4 cm). There were also bronze and horn socketed points, an awl and belt fittings as well as horn chariot cheek pieces and distributors and bronze badges. 25 skulls were found in the entrance pit: 4 horse skulls (3 foals and an adult), 2 cattle skulls (a calf and an adult); five goat skulls (3 small goals, 2 adults); 14 sheep skulls (including 9 lambs, 3 middle-aged individuals, 1 old individual).

Grave M7. Burial of a 25—35 year old woman. Next to the deceased a lot of inventory was found including three bronze knives, awls, needles, a tube and a ceramic vessel. Separately at the feet were parts of a belt set and doe hollow figures which have four holes in the base for attaching to some kind of wooden (?) base. In general, they are similar to the doe hollow figurines which were found with the harness details in Zhongzhuang burial ground M1 grave. In the entrance pit, 31 animal skulls were found, including 5 cattle (1 calf and 4 middle-aged individuals) and 26 small cattles including. 14 goats (7 small goats, 1 young individual, 5 middle-aged individuals; 1 individual is defined either as old or as an adult) and 11 sheep (4 lambs, 4 middle-aged individuals, 3 old individuals).

List of the animals. The bones of 158 domestic animals were found in the Wangdahu burial ground: 38 horses (24%), 21 cattle (13.3%) and 99 small cattle (62.7%) (33 goats and, presumably, 66 sheep). Almost all of them are represented by skulls usually found together with the lower jaws. There are few other bones. Basically, these are the first Atlas vertebrae remaining with the sculls.

Unusual wear traces on the teeth of horses and cattle studies are of great interest. There are clear signs of bit use on some horses upper and lower jaw teeth. Of the 37 horse skulls found in five Wangdahu graves, in seven cases, teeth marks from bits were found, including five adult horses from grave M4 (No. 2, 3, 4, 9, 23) (fig. 5: *3*) and one in M1 (skull No. 6) (fig. 2: *2, 3*). On the plan of the grave M4 it is clearly seen that the skulls with bit traces (No. 2, 3, 4, 23) are located in a row above the entrance to the charioteer catacomb. Skull No. 9 is located and turned by incisors in the opposite direction — to the west. Perhaps it was a spare horse. As we can see, in the richest burial with a 40—45 years old chariot real (working) four chariot horses were placed. This is the first case of such significant demonstration of the correspondence between warrior specialization and horses buried for him.

Similar results were obtained in single burials at the Xiaohecun and Zhongzhuang burial grounds. So, at the Xiaohecun burial ground, a horse skull and a cattle skull were found, on whose teeth traces from a bit in the form of a significant anomalous wear of some teeth were recorded by Chinese experts. According to their conclusion, the cattle skulls finds in burials from Xiaohecun and Zhongzhuang show that not only horses but also cattle were used as transport (Institute of Archeology and Cultural Heritage 2016: 616—617). The conclusion about the use of cattle as a draft animal is confirmed by data on the Mongols and other peoples economic life (Markov 1976: 53).

Location and number of skulls in burials

The sacrificed animals composition and location pattern in the entrance pit largely depended on the deceased status. Five of seven burials with horse skulls investigated in Wangdakh (M1, M2, M3, M4, M6) can be attributed to the burials of real (M1, M4) or conditional (M2, M3, M6) chariot warriors. Two burials (M5 and M7) without horse skulls are not included as such.

Burials of chariot warriors. In the graves of children (M2, M3) and a teenager (M6), horses and cattle are represented in nearly the same quantity: 5, 4, 4 horse skulls and 2, 3, 2 cattle skulls. In adult charioteers graves M1 and M4, there were 14, 10 horse skulls and 2, 3 cattle skulls correspondingly. A certain order can be traced in the arrangement of animal skulls. It was observed most fully in the high status people burials — adult chariot warriors in graves M1 and M4. After the deceased was buried in the catacomb and backfilled with soil, over the entrance to the catacomb, the horses` skulls were laid out with incisors (muzzles) in the eastern sector (usually to the northeast) where the deceased person was also turned his head. This most significant first row also contained the skulls of five adult horses with bit marks on their teeth — four in M4 and one in M1 (fig. 5: *3*, 2: *3*). Behind them, in M4, chariot equipment parts were also found (fig. 5: *2*). It is noteworthy that, despite the supposed significant difference in time between the graves M1 (5^{th} — 4^{th} cc. BCE) and M4 (4^{th} — 3^{rd} cc. BCE) they had not only the typologically similar equipment of the four chariot horses but there were five horse skulls in the first row. This indicates both this ritual feature preservation and this feature significance in real life. Perhaps, this is due to the total number of horses in the chariot. Above the indicated first lower row, several more horses`, cattle and small livestock skulls could be placed. However, most of them were stored in the entrance pit central and western parts. The most ordered arrangement of the rest of the skulls is observed in M4 grave the entrance pit. In the second row were placed the skulls of more significant animals — two horses (including skull No. 9 with bit traces) and two cattle skulls laid on them facing the eastern sector with their muzzles (fig. 5: *2, 3*). The skulls of goats and sheep were folded to the west in no particular order (fig. 4: *2*). In the earlier grave M1 and in child “charioteer” burial in M3, horses` and cattle skulls

were also placed in the entrance pit western part (fig. 2: *2, 3*). At the same time, 2—3 large adult cattle skulls of all burials were placed in the upper layer. We also note the burial M2 with the child "charioteer". There, at the center of the entrance pit, four foals (chariot quartet) were folded in two pairs, and at the northern wall it was the old horses` skull covered by cattle skull (fig. 3: *2*).

Burials M5 and M7 without horse skulls. In these graves entrance pits, animals` skulls were located differently. In warrior—"archer" grave M5, cattle, goats and sheep skulls (4 individuals) were located in three amorphous clusters without a certain order and oriented in different directions. Only with this warrior there were the bow with horn end plates and combat bronze arrowheads. There was also an inlaid belt but the weapons (dagger, ax and celt) were reduced in size. Horse harness is represented by a single concave badge typical for a chariot harness. It is possible that archer warrior from a chariot burial is marked in this way. In the woman burial in M7 with a rich inventory, the largest number of cattle skulls (5 pieces) and small cattle ones (27 pieces) placed in a certain but unusual order were found. Most of the small cattle skulls were lined up within the rhombus formed by the cattle skulls.

The Wangdahu burial ground materials are substantially enriched by the data on the M1 burial from Zhongzhuang burial ground investigated about 35—40 km northeast of the county town of Pengyang. The burial structure construction is similar to those considered in the Wangdahu burial ground. Initially, rectangular entrance pit with a depth of slightly more than 1 m was dug. Then an inclined catacomb was built under its eastern wall in a northeastern direction. The 35—45 years old deceased (female —?) was laid on his back stretched out with his head to the northeast. Nearby were a bronze knife, belt fittings, corrugated tubes and an accumulation of concave harness badges with eight hollow doe figures. The weapon was missing. It should be noted that the inventory complex, in general, corresponds not to a military one, but to that found with a woman from M7 at the Wangdahu burial ground. According to all these data, a woman with horse skulls and a chariot harness was buried in M1. A total of 63 individuals were buried in this grave including 4 horses` skulls, 7 cattle skulls and 38 small livestock skulls. In general, they were located approximately according to the scheme traced in the rich charioteer burial M4 from Wangdahu (fig. 5: *2, 3*). Above the entrance to the catacomb there were three horse skulls laid in a row also turned by their incisors towards a person. The fourth horse skull was located lower in the catacomb along with the small cattle skulls. As in Wangdahu (M4), behind the horse skulls there were no skulls but horny tubular harness details laid in a row. Almost all of seven cattle skulls were on top of the other animals` skulls. Small cattle skulls lay without visible order with incisors in different directions. Cattle No. 21 skull located on the top in cluster northern part had well marked traces from the bits use on the teeth.

The composition of the herd

Osteological material from burials is traditionally used to reconstruct ancient population economy and the composition of the pastoralists` herd. In Wangdahu and Zhongzhuang burial grounds all the main pastoralists` domestic animals are represented in significant numbers: horses, cattle, sheep and goats. Bones of pigs, dogs and other domestic and wild animals are missing.

In Scythian world burials sacrificial animals are commonly represented by only one or two species in accordance with rite norms. Usually it is a part (less often a carcass) of a sheep or horse. There are more species in the yuhuangmiao and maoqinggou cultures but even there we see animals set that reflects only the herd composition (fig. 1: *4, 5*).

In this respect, the Yanglang Culture is an exception, although the animals composition and ratio in the altars there could vary significantly depending on the deceased status. Thus, in adult male charioteers burials M1 and M4 from Wangdahu, all domestic animals (horses, cattle, sheep and goats) skulls were

found but the horse skulls proportion is clearly overestimated. There the horse skulls made 35% and 52%, cattle — 7% and 10%, small skulls — 41% and 55% of the skulls total number respectively. A similar animals in a herd ratio sometimes developed among Northern China nomads due to special circumstances (Yang Jianhua 2004: 127; Zheng Junlei 2003: 10—14), but in this case it is clearly distorted by including chariot and other horses. It is obvious that in Wangdahu and at some other Yanglan Culture burial grounds horse skulls presence in the burial first of all demonstrated the deceased high status. For example, out of 166 domestic animals skulls at the nearby Jiulongshan burial ground there were only four horse skulls which were in one burial (Institute of Archeology and Cultural Heritage AR 2016: 616).

The animals ratio in burials without horses is much closer to the real one. In the warrior-archer burials (M5, 25 animals) and a woman (M7, 32 animals) where were no horse bones other animals ratio turned out to be the same: cattle — 16% each, small cattle — 84% each accordingly. It is interesting that almost the same cattle and small cattle excluding horses ratio in the woman burial from Zhongzhuang burial ground — 16% and 84% accordingly. If we count all 49 skulls shares from this burial in Zhongzhuang horses will account for 7% (4 individuals), cattle — 13% (7 individuals) and small livestock — 78% (38 individuals). Surprisingly, this ratio is fully in line with the numerous ethnographic data on the nomads` herd composition in Central Asia according to which "Approximately 15—20% of the herd were horses and cattle. Sheep, in general, accounted for 50—60%. The rest were goats and camels" (if the latter were present in the herd) (Kradin 2001). Approximately the same ratio between cattle and small cattle at the Jiulongshan burial ground where out of 166 individuals there were 4 horses, 18 cattle (11%) and 144 small cattle (87%). The skulls presence in the altars allowed Chinese researchers to establish that most of them are sheep and goats. In burials with good bone preservation with a single exception (M7) the sheep number is twice as large as that of goats. Usually goats share in nomads` herd is lower but in the mountainous areas near the Liupanshan Ridge this could be justified by the ability of goats to feed on steep slopes.

Conclusion

The almost complete cattle and small cattle ratio at three burial grounds suggests that the burials organizers were sent real herd to another world with the dead people or recruited animals for slaughter keeping the proportions known to them. The horses share in local population herd is not determined based on altars materials but the very fact that there were 4—5 horses even with children aged 1—3 years clearly indicates a large number of them. All this is consistent with the Chinese historical sources information that Western peoples, Qiang and Rong, (obviously, including Yanglang Culture carriers) were "horse breeders" (Kryukov et al. 1978: 175). It is important to note that in Wangdahu as in other Yanglang Culture burial grounds there is not a single reliable detail from saddles but there are a significant number of items related to a chariot or chariot harness. In nobility burials of the 3rd — 2nd cc. BCE in the Yanglang Culture Majiayuan burial ground only richly decorated chariots made in five modifications for different types of activities from a ceremonial drive to hunting were found (Wu Xiaolong 2013).

In addition, DNA analysis of sacrificial animals from the above-mentioned Yanglang Culture burial grounds was made by Chinese researchers performed. It was concluded that livestock raised in Northern China different regions has a genetic succession from late Neolithic and Early Bronze Age to the Eastern Zhou era (Chunqiu, Zhanguo). In some cases, connections can be traced even with modern samples. The horses remains from these burial grounds are genetically close to the Bronze Age horses from Chifeng region (Inner Mongolia Autonomous Region) where the "Upper Xiajiadian" Scythian culture monuments were studied (fig. 1: *1*) (Institute of Archeology and Cultural Heritage 2016). That is a very important conclusion confirming pastoralists traditional

meridional connections and migrations within North China and adjacent Mongolia regions. Some of the Yanglang Culture ancient horses genotypes have survived to the present day. A similar situation can be seen in cattle and sheep study. The animal species trade (exchange) system was different. It was found that horses, cattle and sheep in northern China different regions during the Eastern Zhou period often had the same haplotypes since these animals types were the main trade (exchange) objects between different population groups. The goat DNA showed a different picture. The goats from Yanglang Culture Ningxia (including Wangdahu) genotype has nothing to do with Inner Mongolia ancient goats. This genetic difference probably indicates that goats were not the main trade (exchange) objects for North China ancient population and the adjacent part of the Central Plain (Institute of Archeology and Cultural Heritage 2016).

Sacrificial animals bones in Wandahu burial ground undisturbed burials characteristics, composition, location and DNA detailed analysis made it possible to make decisive progress in solving issues of a different level. Firstly, issued detailed data on sacrificial animals number, their species and age make it possible to judge the herd composition among the Yanglang Culture population with a high degree of certainty. Horse breeding was of particular importance. At the same time, some of the horses, apparently, were kept separately from the main herds and were used as draft horses including in chariots. The nature of horse skulls connection including skulls with wear signs from a bit, with harness details and a certain weapons set in the burials of adult warriors and children indicates the charioteer cult existence in the Yanglang Culture. The large number of chariot horses maintenance and training, expensive equipment for horses and chariot warriors manufacture as well as their weapons in ancient China were provided by state structures. In conjunction with other materials on the Yanglang Culture, one can assume the significant number of chariots existence in that society that served as states power measure including the semi-barbarian Zhongshan. Elite burials with chariots made according to the Yanglang Culture rite but mounted under Qin presence in Majiayuan confirms the thesis of "proto-state" formations among the Western Rongs existence (Kryukov et al. 1978: 177—178).

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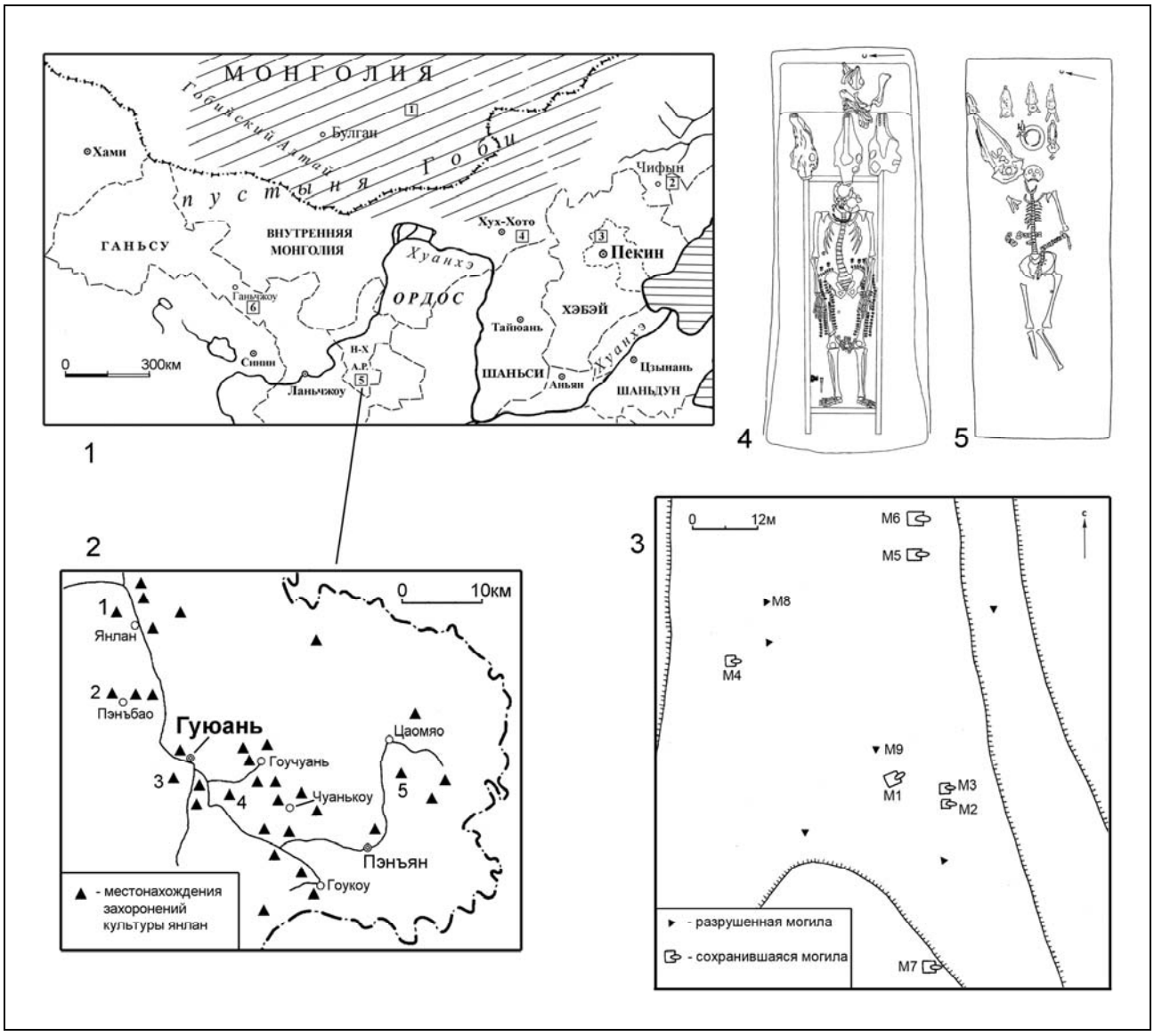

Fig. 1. *1* — map of the Scythian-like cultures location in Northern China and Mongolia (*1* — the slab graves culture; *2* — the "Xiajiadian upper layer" Culture; *3* — the Yuhuangmiao Culture; *4* — the Maoqinggou Culture, *5* — the Yanglang Culture; *6* — the Shajing Culture); *2* — a map of the Yanglang Culture burials locations in the southern part of the Ningxia Hui Autonomous Region (*1* — Mazhuang; *2* — Yujiazhuang; *3* — Jiulongshan; *4* — Wangdahu; *5* — Zhongzhuang), *3* — Wangdahu burial ground plan; *4* — Yuhuangmiao Culture burial; *5* — Maoqinggou Culture burial.

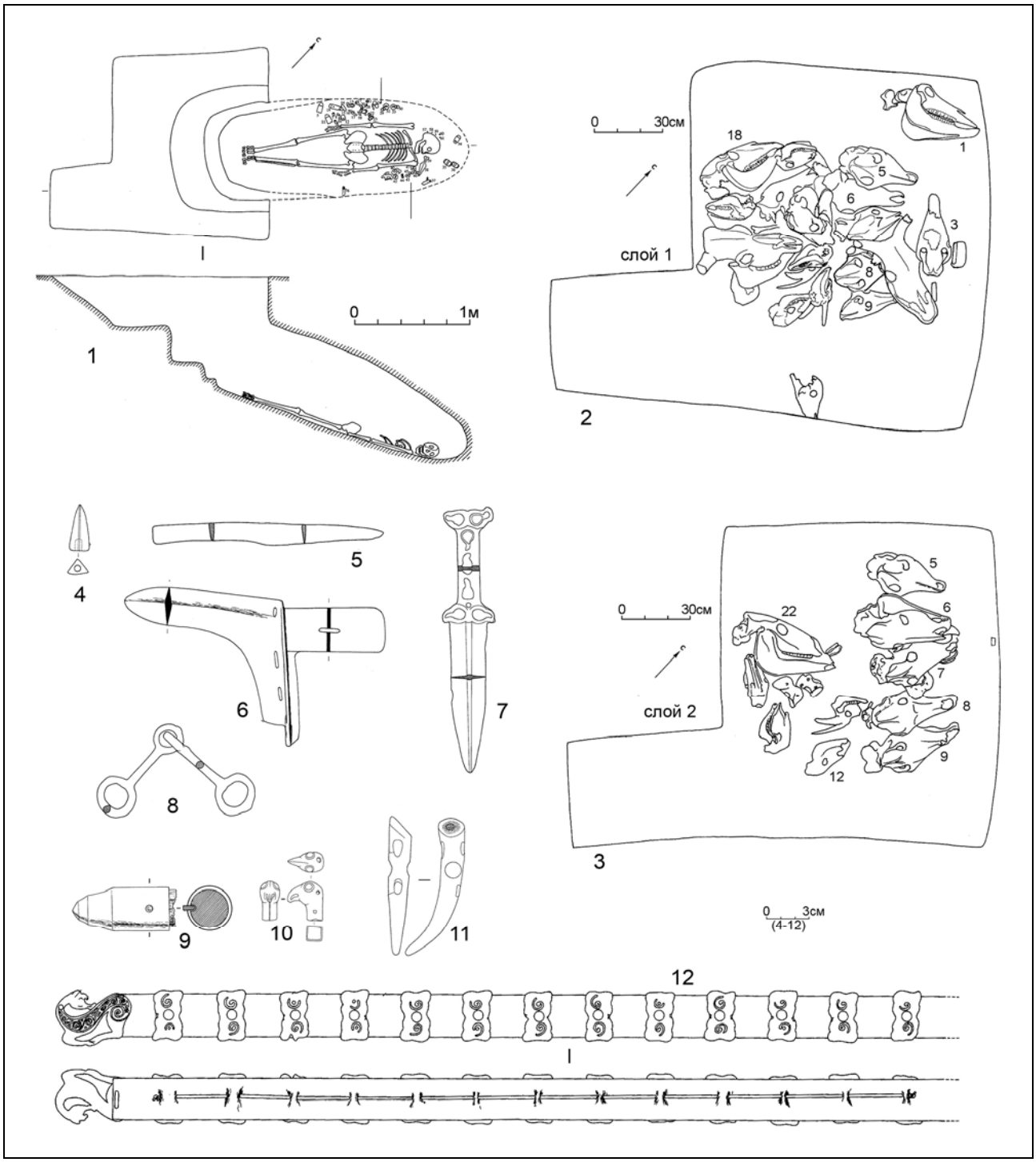

Fig. 2. Wangdahu burial ground, grave M1. *1* — plan and section of the grave; *2, 3* — plans for the location of the sacrificial animals` skulls in layers 1 and 2; *1—7* — warrior's weapons; *8, 11* — bits and cheekpieces; *9, 10* — details of the chariot; *12* — a belt with badges. Bronze — *5—10*; bronze, leather — *12*; bone (horn) — *4, 11*.

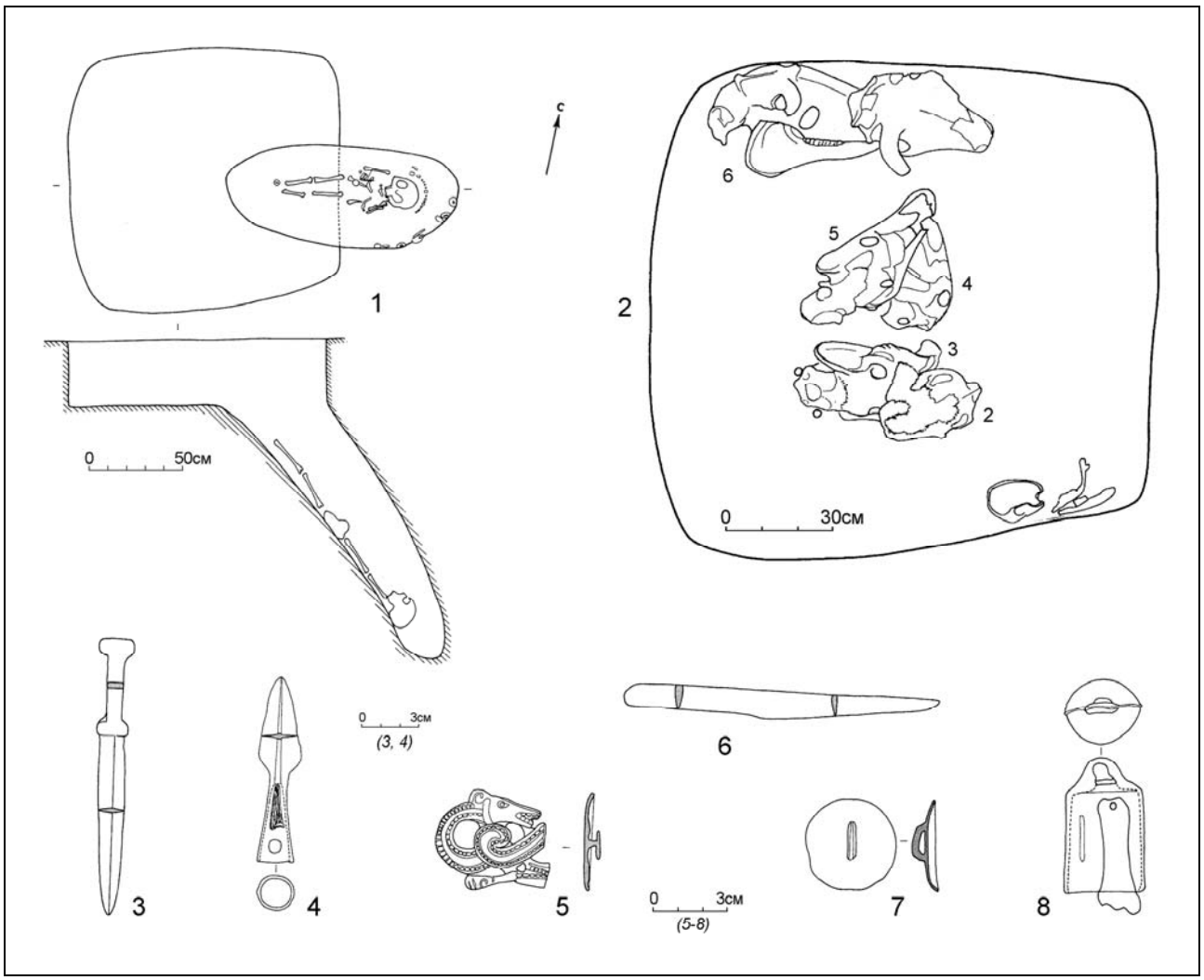

Fig. 3. Wangdahu burial ground, grave M2: *1, 2* — plan and section of the grave, plan of the location of the sacrificial animals` skulls; *3—8* — bronze weapons (*3, 4*); knife (*6*); belt badge (*5*), harness fittings (*7, 8*).

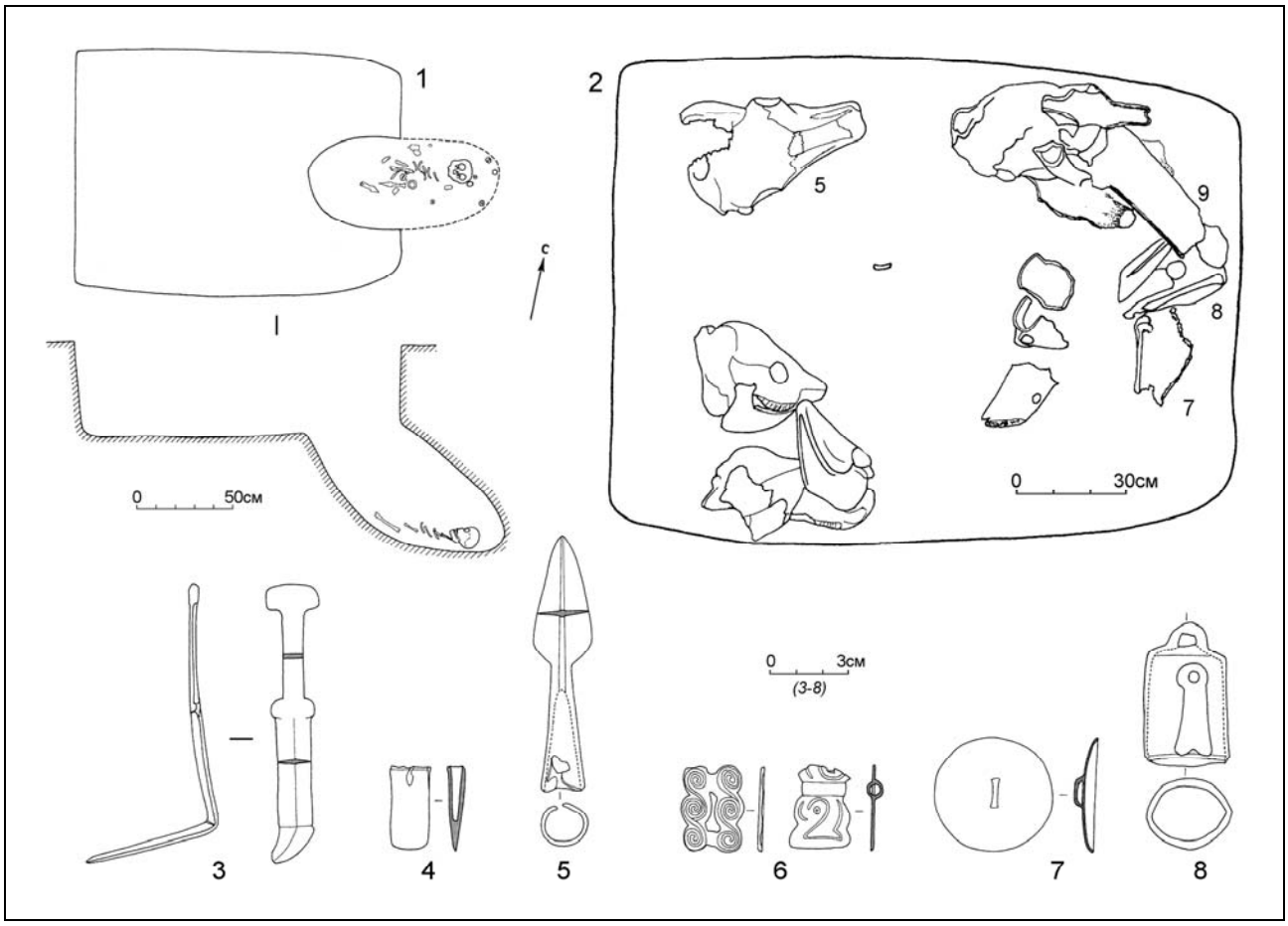

Fig. 4. Wangdahu burial ground, grave M3: *1, 2* — plan and section of the grave, plan of the location of the sacrificial animals` skulls; *3—8* — bronze weapons (*3—5*); belt badges (*6*); harness fittings (*7, 8*).

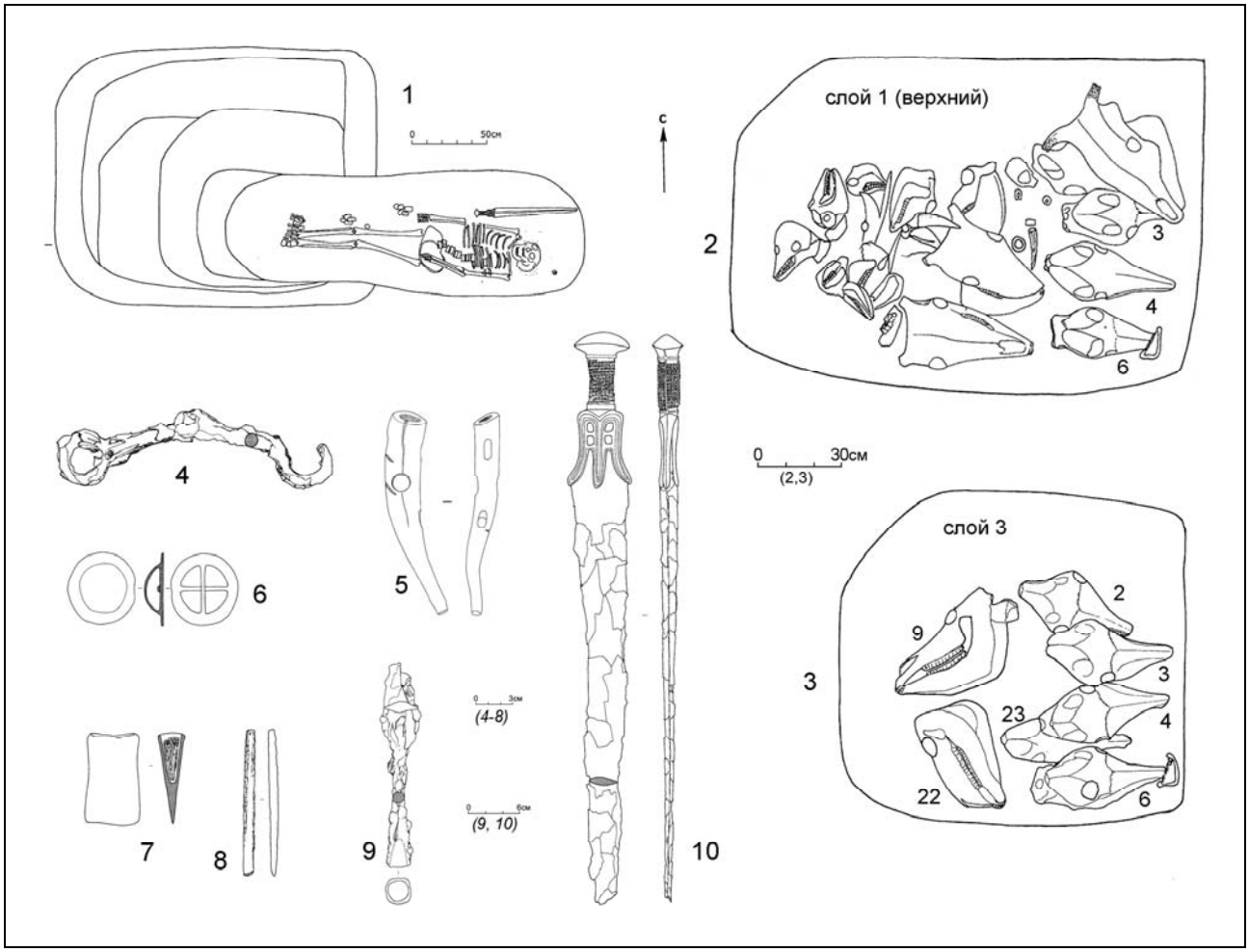

Fig. 5. Wangdahu burial ground, grave M4: *1—3* — plan of the grave, plan of the location of the sacrificial animals` skulls; *4—10* — weapons (*7, 9, 10*); harness fittings (*4—6*). Bronze — *6—8*; bronze, iron — *10*; iron — *4, 9*; horn — *5*.