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The article is devoted to the study of equestrian burials and horse equipment of the Scythian tribes that inhabited the basins of the Inhulets and Inhul rivers in the Northern Black Sea region. The burial rites associated with barrows are examined, and the structural features of their mounds are clarified. The presence of moats around the mounds, crepids, Scythian stone statues, and fire-related rituals is noted. The grave types include pits, catacombs, and wooden tombs. Horse burials, the types of horse graves, methods of laying the animals, and associated finds are analysed. The assemblage of horse equipment comprises bits, cheek-pieces, plates, frontlets, buckles, tubes, nahrapnyks, and whips. It has been established that only bronze bits are known in the region from the Early Scythian period. All currently identified mounds containing horse burials and bridle elements date to the 5th-4th centuries BC and belonged to male warriors. The presence of such burial mounds in the region indicates the spread of equestrian culture during the Scythian period. Horsemen formed the core of the Scythian army, while advanced sets of horse equipment and weapons ensured high mobility and a developed level of military skill.

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Echipamentul ecvestru al sciților din Preinhullia

Articolul este dedicat studiului înmormântărilor ecvestre și echipamentului ecvestru al triburilor scitice care au locuit în bazinele râurilor Inhulets și Inhul din nordul Mării Negre. Sunt examinate riturile funerare asociate cu tumuli și analizate caracteristicile structurale ale acestora. Se remarcă prezența șanțurilor în jurul tumulilor, a crepidelor, a stelelor antropomorfe din piatră și a ritualurilor legate de foc. Tipurile de morminte includ gropi, catacombe și construcții din lemn. Sunt analizate înmormântările cu depuneri de cai și tipurile acestora, metodele de așezare a animalelor și descoperirile asociate. Ansamblul de echipamente pentru cai cuprinde zăbale, bucale, plăci, fruntare, cataramă, tuburi, narapnici și bice. S-a stabilit că în regiune sunt cunoscute doar zăbale de bronz din perioada scitică timpurie. Toți tumulii identificați până în prezent care conțin înmormântări de cai și elemente de harnășament datează din secolele V-IV î.Chr. și au aparținut războinicilor de sex masculin. Prezența unor astfel de complexe funerare în regiune indică răspândirea culturii ecvestre în perioada scitică. Călăreții formau nucleul armatei scitice, în timp ce seturile avansate de echipament pentru cai și arme asigurau o mobilitate ridicată și un nivel dezvoltat de abilități militare.

The emergence of the Early Iron Age in southern Eastern Europe coincided with the development of nomadic culture in the region. This process involved not only the establishment of nomadic pastoralism in the steppes of the Northern Black Sea region, but also the active development of equestrian culture. Elements of the advanced material culture of the nomads were adopted by their sedentary neighbours. This is most clearly reflected in weaponry, horse equipment, and the visual art of the Cimmerians and Scythians.

One of the regions for the dissemination of Scythian culture in the steppes of the Northern Black Sea area is the basin of the Inhul and Inhulets rivers. The burial complexes of this region still require

comprehensive scholarly synthesis. The present study aims to characterise the equestrian complexes and bridle finds of the Scythian period in this area.

Source base

Eighteen sites with equestrian finds are known in the Inhul and Inhulets river basins (fig. 1). Two of these yielded non-complex finds, while the remainder derive from burials (tabl. 1). Within a sample of 238 analysed kurgan in the region, such complexes account for 6.7%. All burials were conducted under burial mounds. Moundless burial grounds, which are known in other regions of Steppe Scythia [Popandopulo 2004; Ostapenko 2007], have not yet been recorded here.

Place, mound (m), burial (b), find (f)	Height (h), diameter (d) of the mound, crepida (cr), shaft (sh), ditch (dit), tryzna (tr), statue (st), type of grave (g) (catacomb: cat, pit: p, wooden tomb: w/t), marquee-like construction (mk), burning (bur), ancient horizon: a/h	Horse burial, number and orientation of horse (h)		Bridle place, with horse(h), with deceased (d)	Bit (b), check-piece (ch)	Frontlet (f), plate (pl), buckles (b), tube (t), pendants (pen), nahrapnyk (n)	Date (c. BC), half (h), quarter (q)	Bibliography
		tomb, with deceased	separate grave, horse orientation					
Bobrynets museum, f					1 b		7-6 c BC	[Mogilov, Skorii 2026, fig. 3, 3]
Borysivka, f					1 b		7-6 c BC	[Mogilov, Skorii 2026, fig. 3, 4]
Inhulo-Kamianka, m 12, Taranova (Mala Ternova) Mohyla	h 5.5, d 60, cr, sh, dit, tr, st, g=w/t (a/h), mk: bur		g=a/h 2 h, E	h	1 b, 2 ch 1 b, 2 ch	1 f, 2 pl, 2 t 2 pl, 1 pen 1 clip	5 c BC	[Shevchenko 2012, 107-114; Blazhevych <i>et all.</i> 2007, fig. 12]
Bohdanivka, m 7, (Orlykova Mohyla)	h 3,1, d 30-32, cr, dit, tr, g=p			in cr/tr	3? ch	3 pl, 1 t, 1 n, 7 pen	430 s BC	[Skoryi <i>et all.</i> 2019, 165-172; Skoryi <i>et all.</i> 2022, 36-41]
Mederove, m	h 3.5-4, d 40, st, g=w/t (a/h), mk: bur	1 h, 1 skull and legs, NE		h	1 b, 2 ch	1 pen	5 c BC	[Bokii 1974, 264-270]
Novovasylivka (Vasylivka), m 9	h 1.5, d 22, cr, st, tr, g: p			cr		1 pl	2 h 5 c BC	[Shaposhnikova <i>et all.</i> 1975, 35-40, tab. 18-20, fig. 1, a; Grebennikov, Rebedailo 1991, 117-121; Polin 2014, 202].
Stanyshyne, m	“large”, d≈32, tr, st, g: p. with niches	1 h		h	2 ch? «munshtuk»		MSP	[Iastrebov 1889, 113-115; Ol'khovskii, Evdokimov 1994, 27]

Nedayvoda, m11, b1	h ?, d≈13.5, tr, g: cat			g, d		2 pl, 2 t	2-4 q 5 c BC	[Mel'nik, Steblina 2012, 306, fig. 194, 5, 11]
Pryshyb, m 21, b 2	h.1,2, d 30.5 g=cat		1 h without a skull, W	without a bridle			2-4 q 5 c BC	[Shaposhnikova 1984, 55-59]
Mykolaiv, m	h 10, d 70, g=cat	2 h, W		h	2?b, 4? ch,	≥2pl, 1n, ≥2t, ≥2b	3 q 4 c BC	[Nikitin, Chernenko 1967, 109-110]
Oleksandrivka, m 1, b 26	h 1, d 20, g=cat			g, d	1 b, 1 ch	1 b	4 c BC	[Elagina, Petrenko 1969, 252; Petrenko, Elagina 1968, 16-17; Grebennikov 2008, fig. 31, 7]
Novovasylivka (Vasylivka), m 50, b 2	h 1,2, d 25, cr, g =cat			g, d	1 ch		MSP-LSP	[Shaposhnikova <i>et al.</i> 1975, 184-185; Grebennikov 2008, 44, fig. 7, 4]
Pryshyb, m 46, b 3	h 1.8, d 23, cr, g=cat			g, d		1b	4 c BC	[Shaposhnikova 1984, 146-150]
Pryshyb, m 46, b 1	burial of horse		1 skull and legs, NE	h	1 b, 2 ch	2 b	4 c BC	[Shaposhnikova 1984, 146-150]
Pisky, m 3	h 3,9 , d 46, cr, dit, tr, g=cat			dit/tr		41 pl	2-3 q 4 c BC	[Grebennikov 1987, 148-150; Polin 2014, 482]
Pisky, m 9, b 1	h 2.5, d 35, cr, dit=tr , g=cat	1 skull		with a horse skull		1 b	3 or 4 q 4 c BC	[Grebennikov 1987, 152-156; Monakhov 1999, 428-430; Polin 2014, 482-483]
Peresadivka, m 2, b 3	h 0.4, d 17, g=cat			g	1 b		4? c BC	[Nikitin 2018, 61, fig. 23, 9]
Volodymyrivka, m 3, b 7	h 0.3, d 20, g=cat			g		2 pl	4 c BC	[Mel'nik, Steblina 2012, 365-366; fig. 226, 7-9]
Kryvyi Rih, Kharyna Mohyla group, m 3, horse burial	h ?, d 18. g=cat		1 h?	h		2 pl	4 c BC	[Mel'nik, Steblina 2012, 379; fig. 238, 7]

Tabl. 1. Horse burials and details of a bridle from Pryinhullia. (MSP – Middle Scythian period, LSP – Late Scythian period).

Chronology of burial mounds and bridle items

Of the 18 sites yielding bridle items, only two non-complex finds date to the Early Scythian period. The burial complexes date back to the Middle and Late Scythian periods. This generally corresponds to the chronological distribution of burials in Steppe Scythia, characterised by a small number of archaic complexes, an increase during the Middle Scythian period, and the dating of the vast majority to the 4th century BC [Chernenko *et al.* 1986, 345]. However, in the Inhul and Inhulets river basins, a more clearly defined group dating to the 5th century BC can be distinguished, which is also reflected in the assemblages of horse equipment.

Seven equestrian complexes (43.8%) date to the Middle Scythian period. These include six bridle burials and four horse burials (50% of all horse burials and 57.1% of Middle Scythian complexes). At the same time, only one animal burial lacked bridle equipment. In the Late Scythian period, the number of such complexes increased slightly to nine (56.3%). However, the proportion of horse burials, which again numbered four, decreased to 44.4%. One burial is dated broadly to the Middle and Late Scythian periods.

Thus, for the Early Scythian period in the region, only bronze stirrup-shaped bits with three protrusions on the stirrup base or with a central thickening are attested. The Middle Scythian period represents a kind of peak in the development of animal-style art, which is also reflected in bridle equipment. During this time, iron loop-shaped bits were in use, together with double-hole cheek-pieces. Their S-shaped and Γ-shaped variations with zoomorphic decoration are known, as well as Γ-shaped cheek-pieces with a short conical lateral protrusion. A precious fish-shaped frontlet originates from Inhulo-Kamianka, and a rhombic object is also attested. A wide range of plaques is represented, with shields shaped as a hand, a bird of prey's paw, an eagle's head, a lion's head, an ear,

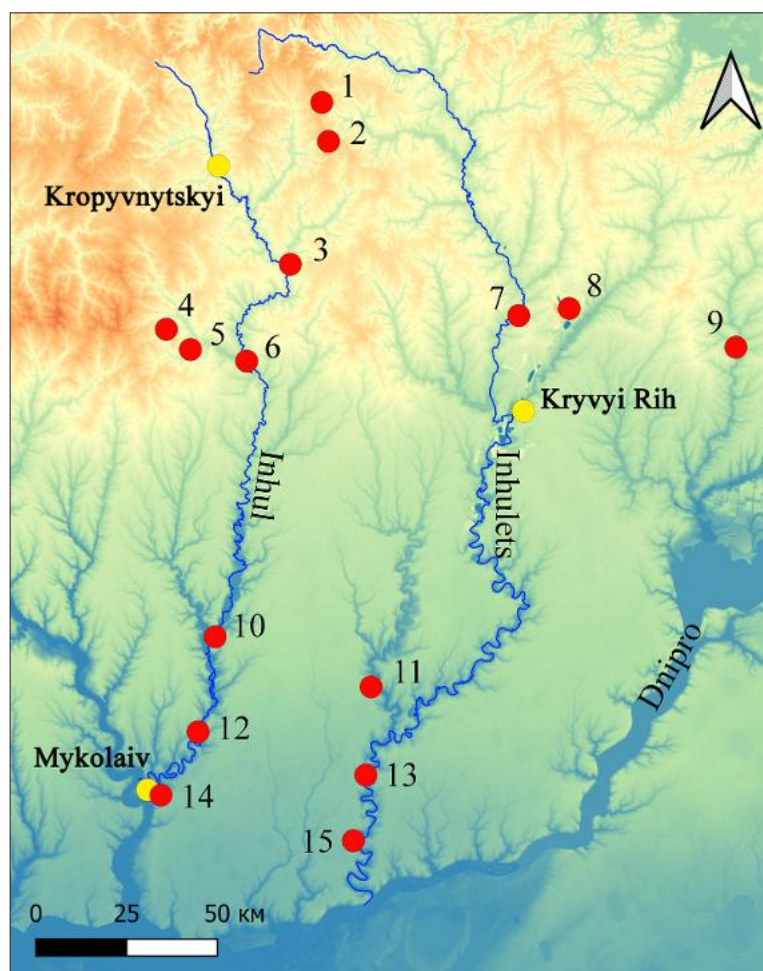


Fig. 1. Map showing the distribution of horse burials and bridle elements in the basins of the Inhul and Inhulets rivers. 1 – Stanyshyne; 2 – Mederove; 3 – Inhulo-Kamianka; 4 – Bohdanivka; 5 – Bobrynets; 6 – Boryshivka; 7 – Nedayvoda; 8 – Kryvyi Rih; 9 – Volodymyrivka; 10 – Pisky; 11 – Pryshyb; 12 – Peresadivka; 13 – Novovasylivka; 14 – Mykolaiv; 15 – Oleksandrivka.

or a wing. Bronze tubes are present, both faceted conical examples and smooth types with concave sides. Buckles are oval, with an additional protrusion and a fastening element. Lock-shaped pendants and a pendant made of a boar's fang with a zoomorphic image have been recorded. Bronze nahrapnyks and a clip have also been found.

In the 4th century BC, the diversity of bridle equipment decreased, and the emphasis appears to have shifted toward functionality. Nevertheless, items made of precious metals continued to occur in elite mounds. Iron loop-shaped bits in Pryinhullia date to this period. They were probably used together with iron rings, which, un-

like most cases, were not inserted into the outer loops but were placed nearby and were apparently connected by leather straps. Iron cheek-pieces are straight, sometimes with knobs at the ends. Bronze round plaques with a loop on the reverse or with perforations for sewing have been identified. A silver moon-shaped plate or pendant has also been found. Iron ring buckles are present, sometimes with a protruding fastener, as well as massive bronze buckles with protrusions around the perimeter. Tubes occur in the burials. An especially noteworthy find is a whip with silver coverings on the handle.

Burial Rites of the Complexes

Equestrian complexes were identified in burial mounds ranging from 0.3 to 10 m in height and 17-70 m in diameter, with barrows volumes (calculated as the volume of a spherical segment) between 45 and 19,765 m³. Middle Scythian kurgans generally measure 1.2-5.5 m in height and 22-60 m in diameter, with volumes of 286-7,862 m³. In the 4th century BC, these parameters show much greater variability, indicating the development of social stratification within Scythian society, including among horsemen. During this period, barrows heights range from 0.4 to 10 m, diameters from 17 to 70 m, and volumes from 45 to 20,540 m³.

Most burials are primary interments within Scythian mounds. However, four cases are recorded in which Scythian graves were inserted into earlier Bronze Age barrows. Only the Orlykova Mohyla mound is of Middle Scythian origin. The remaining examples – Volodymyrivka, Kryvyi Rih, and Oleksandrivka – date to the 4th century BC.

Among the architectural features of the mounds, stone ring crepids are documented in six cases (31.3%): Orlykova Mohyla; kurgan 9 at Novovasylivka; kurgan 46 near Pryshyb; and kurgans 3 and 9 near Pisky. Of these, two date to the Middle Scythian period and three to the Late Scythian period. At Stanyshyne, a stone armour is reported (6.3%). Moats surrounding burial mounds are recorded in three cases (18.8%): at Inhulo-Kamianka in the 5th century BC, and at kurgans 3 and 9 near Pisky in the 4th century BC.

A particularly noteworthy feature is the *stone rampart* that closely surrounded the burnt wood-

en tomb at Inhulo-Kamianka. This structure was subsequently covered by an earthen embankment. Such constructions are atypical for the Ukrainian steppe. A probable parallel is known from Vasyne, where the tomb was surrounded not by a rampart but by a conical radial structure made of tree trunks [Kozir *et al.* 2019, 301-303]. Stone ramparts encircling tombs in the Early Scythian period are also known from the Western Podillia group [Mogilov *et al.* 2016, 222-224], including examples associated with burnt wooden tombs. Comparable structures have been documented in Central Asia [Akishev, Kushaev 1963, 27-72].

A *marquee-like superstructure* above the grave was identified in Middle Scythian burial mounds at Inhulo-Kamianka and Mederove. Such constructions are interpreted as manifestations of nomadic, specifically Scythian, steppe burial traditions [Skoryi 2003, 52].

Stone statues dating to the Middle Scythian period are known from four burial mounds (25%): Stanyshyne, Mederove, Inhulo-Kamianka, and Vasylivka (barrow 9). They illustrate the tradition of their distribution in the northern part of the Right-Bank Steppe region during this period [Gorbul, Bokii 1987, 48-50].

Fire-related rituals are attested in four mounds (25%). During the Middle Scythian period, they are expressed by the burning of wooden tombs within the mounds at Mederove and Inhulo-Kamianka. It is possible that wooden constructions were also burned at Stanyshyne, where burnt layers were identified within the mound. Similar practices are known from the Dnipro Right-Bank Forest-Steppe region [Kovpanenko *et al.* 1989, 37, 39]. In the 4th century BC, another manifestation of this ritual is documented at the Mykolaiv mound, where a hearth was constructed in the entrance pit of a catacomb containing bridled horses.

Tryzna remains were recorded in five or six mounds (up to 37%). Typically, these deposits consist of animal bones and fragmented pottery; however, in three cases, elements of horse bridle equipment were also present. For the 5th century BC, examples are known from Orlykova Mohyla, Stanyshyne, and Nedayvoda. It remains unclear whether the plate from burial mound 9 near Vasylivka represents a remnant of a tryzna or an extramural deposit of inventory. Evidence

of funerary feasting from the 4th century BC is documented in mounds 3 and 9 at Pisky.

The *burial of two dogs* in the grave of the Middle Scythian kurgan at Stanyshyne should also be noted, a practice known from Scythian steppe complexes [Ol'khovski 1991, 160].

Among the grave types associated with equestrian complexes, catacombs predominate, accounting for 11 structures (68.8%). Wooden pillar tombs (fig. 2) and pits of complex shape with niches were each recorded twice (12.5%), while wide-proportioned pits were identified once (6.3%). The diversity of grave forms is characteristic exclusively of Middle Scythian burials. During this period, catacombs (28.6%), wooden pillar tombs (28.6%), wide-proportioned pits (14.3%), and pits of complex configuration (28.6%) are all represented. In the 4th century BC, only catacombs are attested (eight cases).

Sacrificial food for the deceased was placed in nine burials (56.3%). This usually consisted of animal meat, often accompanied by a knife, and in some cases placed on a wooden tray. Only in the Middle Scythian mound at Stanyshyne was a jug containing eggs discovered. The practice of depositing sacrificial meat is characteristic of both the Middle Scythian period and the 4th century BC.

The burial of horses is a characteristic feature of the funerary rites of Scythian tribes in the Northern Black Sea region and is also attested in the steppe zones of the Inhul and Inhulets river basins. In total, eight burial mounds containing horse burials, with 11 horses in all, are known: Stanyshyne, Inhulo-Kamianka, Mederove, Mykolaiv, Pryshyb (barrows 21 and 46), Pisky (mound 9), and Kryvyi Rih. Bridles were recorded in seven of these complexes; only in mound 21 near Pryshyb were they absent. Four of these horse-burial complexes date to the Middle and Late Scythian periods, while Early Scythian examples have not yet been identified.

The situation observed in the Inhul and Inhulets river basins is typical of the Northern Black Sea steppe region. No Early Scythian horse burials have been recorded here to date. In the forest-steppe zone of the Dnipro region, such burials are also rare [Kovpanenko 1981, 13, 14]. By contrast, in the North Caucasus, numerous Early Scythian horse burials accompanied by bridle equipment are well documented [Galanina 1997, 82].

During the Middle and Late Scythian periods, horse burials became widespread in both the steppe and forest-steppe zones of the Northern Black Sea region [Il'inskaia 1973; Mogilov, Bokii 2016, 36-39; Mogilov *et al.* 2021, 69-70; Daragan, Polin 2020]. A local distinction lies in the presence of a clearly defined group of 5th-century BC burials in the forest-steppe zone, followed by a decline in their number during the 4th century BC. In Steppe Scythia, by contrast, Middle Scythian complexes with horse burials were succeeded by more numerous burials, the elite segment of which includes the well-known horse burials from the barrows of Scythian chiefs and nobility.

Number of horses. In the Inhul and Inhulets basins, the burial of a single horse alongside the deceased was most common and is attested in five complexes: Stanyshyne; Pryshyb (kurgans 21 and 46); Pisky (mound 9); and Kryvyi Rih. Two horses were buried in three burial mounds: Mederove, Inhulo-Kamianka, and Mykolaiv. A clear tendency can be observed whereby a greater number of horses accompanied individuals of higher social status, as indicated by the size of the mound. Specifically, two horses were buried beneath mounds measuring 3.5-4 m to 10 m in height, whereas single horses were associated with mounds 1.2-2.5-2.8 m high.

This pattern is observable throughout the 5th-4th centuries BC. However, in the Middle Scythian period, no quantitative differentiation is evident: two complexes contained two horses, and two complexes contained four horses. Only in the 4th century BC did single-horse burials begin to dominate (four cases), while paired burials were restricted to the elite Mykolaiv barrow.

It is evident that within equestrian contexts, the burial of a horse together with bridle equipment represented a higher-status marker than the separate deposition of a bridle. Horse burials occur in barrows ranging from 1.2 to 10 m in height (mean 3.92 m), whereas burials containing only bridle elements are associated with mounds 0.3-3.1 m high (mean 1.53 m). The corresponding diameters are 23-70 m and 17-46 m (mean values of 41.5 m and 31.08 m, respectively). The volume of mounds containing horse burials ranges from 377 to 19765 m³ (mean 4729 m³). Even when excluding the exceptionally large Mykolaiv barrow, the mean value remains substantial at 2223 m³. By

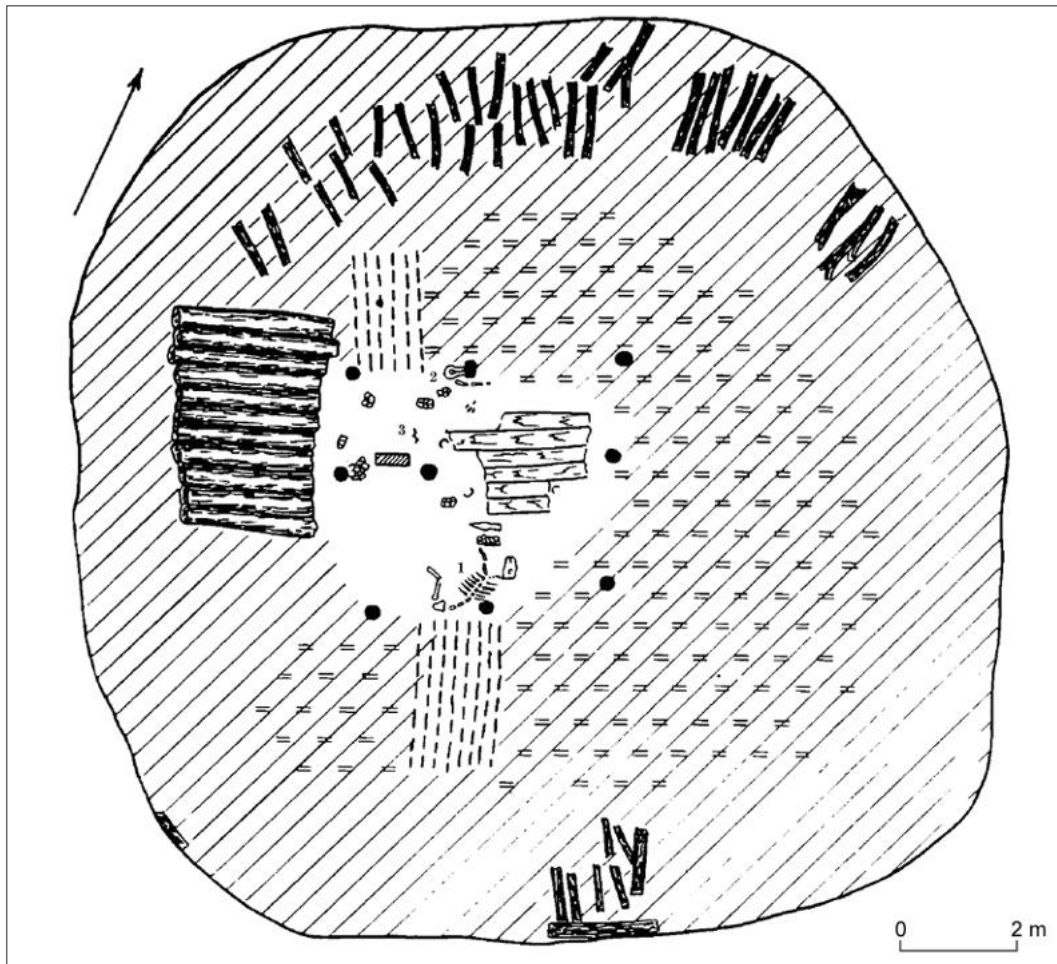


Fig. 2. Horse burials from the region. Mederove (1-2 – horse burials; 3 – bridle) [Bokii 1974].

comparison, mounds associated with bridle-only burials have volumes of 45-3281 m³ (mean 833 m³). Thus, complexes with horse burials exceed those with only bridle deposits by factors of 2.5, 1.3, and 5.6, respectively, across the parameters discussed above.

Types of Horse Burials. In Pryinhullia, as in Scythia more generally, horse burials took various forms, represented either by complete carcasses or by selected parts thereof. Four main types of horse burial can be distinguished in the region under consideration: A) burial of a complete carcass; B) burial of a carcass without the skull; C) separate burial of the skull; D) burial of the skull and limb bones, which may reflect the deposition of a skinned carcass with the head and legs retained. Such remains could have formed so-called “stuffed animals”. In addition, supplementary rituals may have been performed on the carcass, such as the dismemberment of the skeleton, as

observed at Inhulo-Kamianka. In most cases, only one type of horse burial occurs within a single mound; only at Mederove were both a complete animal and a “stuffed animal” deposited together.

A) *Burial of a complete carcass.* Complete horse carcasses were interred in five barrows (62.5%) and are represented by seven skeletons (63.6%): Inhulo-Kamianka, Mederove, Stanyshyne, Mykolaiv, and Kryvyi Rih. At Inhulo-Kamianka, traces of deliberate dismemberment of the carcasses were recorded. At Mykolaiv, a fire-related ritual was carried out in the entrance pit of the catacomb in which the animals were placed.

During the Middle Scythian period, the first three complexes were located in the northern part of the steppe zone. In the 4th century BC, the mounds at Mykolaiv and Kryvyi Rih were situated in the southern or central parts of the region. This form of horse burial is characteristic of elite complexes. The associated mounds generally measure

2.5-10 m in height and 32-70 m in diameter; only the heavily damaged mound at Kryvyi Rih was smaller.

B) *The burial of a carcass without a skull* is documented in barrow 21 near Pryshyb (12.5% of burials; 9.1% of horses). This is a small Middle Scythian mound 1.2 m high and 30.5 m in diameter. The absence of the skull is difficult to explain; it is possible that the head was removed for use in other ritual practices. In this context, it is worth recalling finds of horse skulls deposited in the ditches of Scythian burial mounds among traces of tryzna [Ol'khovski 1991, 130]. In Prynhullia, more than a dozen such skulls have been discovered in excavated sections of the ditch at the Hirka sanctuary [Mel'nik, Steblina 2012, 254-256]. Further north, near the forest-steppe boundary, horse skulls were identified in the ditch of the Melhunovsky barrow [Bokii, Mogilov 2014, 31-32]. It is also relevant to note the rare cases in which, in Scythian burials, the head of the deceased – possibly in connection with ancient cult practices – was replaced by an animal head [Mogilov, Bokii 2025, 268-270].

C) *The separate deposition of a horse skull* is attested in mound 9 near Pisky (12.5% of burials; 9.1% of horses), dated to the 4th century BC. Despite the moderate size of the mound (height 2.5 m; diameter 35 m), an exceptionally representative assemblage was recovered, including gold objects and imported silver tableware. This provides compelling evidence that the burial belongs to local nobility [Grebennikov 1987, 158]. The reasons for the separate placement of the skull may be similar to those outlined above.

D) *The deposition of the skull together with limb bones* may indicate that the horse skin was placed in the tomb after the removal of the entrails, with only the head and legs retained. When filled with organic material, such remains may have functioned as a form of “stuffed animal”. Herodotus describes the use of such symbolic representations of live animals in Scythian funerary rites [IV, 72]. Examples of this practice are known from the kurgans near Mederove and 46 near Pryshyb (25% of burials; 18.2% of horses). These complexes date to the Middle and Late Scythian periods and, within the present sample, belong to medium-sized and large monuments.

Thus, the evolution of horse burial practi-

es in the Inhul and Inhulets basins can be traced clearly. During the Middle Scythian period, the interment of complete carcasses predominated, documented in three elite complexes in the northern steppe zone (60%). Two horses were buried at Inhulo-Kamianka. At Mederove, this practice was complemented by the deposition of “stuffed animals”, while at kurgan 21 near Pryshyb, carcasses without skulls were placed.

In the 4th century BC, whole carcasses still accounted for approximately half of all horse burials. At Mykolaiv, the burial mound reflects the highest local nobility, whereas the mound at Kryvyi Rih is noticeably smaller and partially destroyed. The remaining two-thirds of horse burials comprise “stuffed animals” and separately interred skulls, as observed in barrow 46 near Pryshyb and mound 9 near Pisky.

In 50% of cases, the horse was placed directly in the tomb with the deceased (four complexes, 50%). During the Middle Scythian period, this practice is exemplified in the northern elite mounds at Mederove and Stanyshyne, where animals were placed within the burial chamber itself. In the other two 4th-century BC complexes, the horses were positioned in the entrance pit of the catacomb: Mykolaiv and barrow 9 near Pisky. In all instances, these burials correspond to above-average or elite-level mounds, ranging from 2.5-10 m in height.

Burials in separate graves also account for 50% of the cases. Middle Scythian examples include Inhulo-Kamianka and barrow 21 near Pryshyb, while 4th-century BC examples are found at Kryvyi Rih and mound 46 near Pryshyb. These barrows are generally smaller: diameters of 23-30.5 m and heights of 1.2-1.8 m. Only the mound at Inhulo-Kamianka, standing 5.5 m high, displays a notable monumentality.

In a situation where mounds containing separate horse graves are equal in number to complexes in which the horse was interred together with its owner, the Prynhullia monuments differ from most complexes in the neighboring Lower Dnipro region of the 5th-4th centuries BC. There, conversely, the most monumental mounds were those containing separate horse tombs.

The burial of horses within the chambers of burnt Middle Scythian wooden tombs provides important evidence for ethnocultural interpreta-

tions. Two such complexes were excavated in the northern part of the region, in the villages of Mederove and Stanyshyne. Similar tombs were found in Inhulo-Kamianka, where horses were buried separately. These represent a group of burials in wooden tombs, often with tented roofs, predominantly located in the northern steppe zone [Bokii 1974, 182; Bokii, Ol'khovski 1994, 151-152; Kozir *et al.* 2019, 300-303]. These tombs are frequently associated with Scythian stone steles, considered markers of nomadic ethnic identity [Ol'khovski, Evdokimov 1994, 45; Skoryi 2003, 64]. Similarly, moats around mounds, often associated with tryzna, reflect this cultural context. In the Ukrainian Right Bank region, the most significant concentration of such complexes is found in the upper reaches of the Inhul and Inhulets rivers, closer to the Dnipro. To the north, these tombs are adjacent to synchronous wooden tombs of the Tiasmynska subgroup [Kovpanenko *et al.* 1989, 37-39], which occasionally include cremations but typically lack stone statues.

Wooden pillar tombs are now recognized as a widespread phenomenon with potentially diverse origins [Skoryi 1990, 24]. Notably, during the Middle Scythian period, such structures were common in the Dnipro Right-Bank Forest-Steppe [Kovpanenko *et al.* 1989, 37-39], where early Scythian prototypes are documented [Il'inskaia 1975, 85-86; Kovpanenko 1981, 67-68].

However, these tomb types were less characteristic of the steppe Ukraine complexes of the same period [Skoryi 1997, 17-18]. Although excavated in several wealthy sites, they were mostly represented by simpler forms [Terenozhkin *et al.* 1973, 169; Mozolevskii 1980, 97-98]. This pattern may indicate that the northern Right Bank steppe population included not only Scythian steppe nomads but also forest-steppe indigenous groups. Together, they could have created funeral practices distinct from the more southern, classical Scythian steppe burials. The coexistence of these elements in certain tombs may further reflect a degree of population mixing.

The *placement of horse graves* relative to the primary burial – usually located near the center of the mound surface – was not strictly consistent. However, it is notable that horse burials tended to cluster in the northern half of the mound. Specific orientations to the west, northwest, northeast,

and east have been recorded only once, as seen in burials near Inhulo-Kamianka, Kryvyi Rih, and barrows 46 and 21 near Pryshyb.

The *shape of horse graves* in the region generally follows the standard Scythian pattern. They are narrow, elongated pits dug into the ground, rectangular in plan with rounded corners. One edge, at the head end, may be further narrowed, forming a step for the animal's head to rest on. Similar arrangements are found in the Middle Scythian barrow 21 near Pryshyb and the Late Scythian mounds 3 near Kryvyi Rih and 46 near Pryshyb. These graves measure approximately 1.85 m in length, up to 0.65 m in width (narrowing to 0.3-0.4 m near the head), and 0.61-0.8 m in depth.

The situation in Inhulo-Kamianka is unique. In the 5th century BC, horses were laid at the level of the ancient horizon, with a wooden ceiling above them. This suggests the presence of surrounding earthen structures, possibly intended as supports.

Position and orientation of the horse. In narrow graves, the only feasible position was for the horse to lie stretched on its stomach with bent legs, its head resting on the earthen step at the narrow end. In more spacious tombs, animals could be laid on their sides, as observed in Mederove.

The orientation of horse skeletons was not uniform. Known examples include west-facing burials (Mykolaiv, Pryshyb, mound 21) and east-facing burials (Inhulo-Kamianka). In 75% of the complexes, the animals' heads faced the owner's grave. Only in mound 46 near Pryshyb was a horse placed with its head to the northeast and hindquarters toward the central burial. This orientation of horses toward their owners is consistent with other Scythian barrows [Evdokimov *et al.* 2011, 108].

Placement of bridles. The position of bridles within the *burial mound* varied. In 7 of 16 cases (43.8%), bridles were placed in the grave with the deceased, while in 6 cases (37.5%), they were buried with the horse. The first group is represented in Nedayvoda, Mykolaiv, Oleksandrivka, Novovasylivka (mound 50), Pryshyb (barrow 46), Peresadvka, and Volodymyrivka. The second group occurs in Inhulo-Kamianka, Mederove, Stanyshyne, Pryshyb, Pisky (barrows 29 and 9), and Kryvyi Rih.

Bridle placement in the *crepida* area has been recorded in 2 cases (12.5%). In Orlykova

Mohyla, bridles were found among funeral offerings, while in burial mound 9 near Vasylivka, they may represent additional grave inventory. Similar examples are known in the Lower Dnipro region as early as the 5th century BC, such as the Kushugum barrow [Mogilov 2018, 299]. This practice reached its peak in the 4th century BC, particularly in elite mounds of the period [Alekseev *et al.* 1991, 68-69; Mozolevs'kii 1979, 23]. In a rare instance (6.3%), bridle plates were found in a ditch, as in Pisky (barrow 3).

Chronological distribution of bridle deposits. The custom of placing bridles with horses remained consistent in both the 5th and 4th centuries BC. Placing bridles in the grave with the deceased first appeared in the Middle Scythian period and became widespread during the Late Scythian period. Placement in the crepida is attested in the 5th century BC, while placement in ditches occurs in the 4th century BC.

Horse burials and the inclusion of bridles are traditional markers of male military graves. The burial mounds along the Inhul and Inhulets rivers support this interpretation. This association is primarily indicated by accompanying grave goods, especially weapons, and in several cases is further corroborated by anthropological analysis.

Typology of Horse Equipment

In total, at least 109 bridle items and one equestrian attribute, a whip, have been found in the region. These include 9 bits, 17 cheek-pieces, 1 or 2 frontlets, at least 57 plates and 5 buckles, 8 tubes, 2 nahrapnyks, and 9 pendants. We note the custom of damaging funeral offerings, recorded in Orlykova Mohyla [Skoryi *et al.* 2022].

The **bits** are of the *stirrup-shaped* and *loop-shaped* types.

Bronze stirrup-shaped bits with three protrusions on the stirrup foot (fig. 3,1-2), known from Borysivka and the Bobrynets Museum, have analogies in the early Scythian period (7th-1st half of the 6th century BC) [Mogilov 2008, 17]: burial mounds 524 in Zhabotyn, 453 near Makiyivka, 373 near Emchykha [Il'inskaia 1975, tab. IV; Galanina 1977, tab. 4, 7; 7, 4; 15, 7], Repyakovata Mohyla [Il'inskaia *et al.* 1981, fig. 4, 17].

Iron loop-shaped bits (fig. 3,3-4,7), known from Mederove, Inhulo-Kamianka, Mykolaiv, Oleksandrivka, Pryshyb, and Peresadivka, are the

most common type in northeastern Europe during the Scythian period. Appearing in the Kelermes stage, they existed until the end of the era (mid-7th-4th centuries BC) [Mogilov 2008, 19-31].

Iron rings (fig. 1,10-11) were attached to the outer loops of the bits, probably for attaching the reins. In Pryshyb (4th century BC), they were not inserted into the loops as usual [Mogilov 2008, 22], but were probably connected with leather straps. Although analogies are known from the Middle Scythian period, most of them date back to the 4th century BC.

Two-hole cheek-pieces of the bit belong to types with an octagonal extension around the holes and a narrowing in the center, designed to cover the loop of a bit (fig. 3,5-6,8-9,12-15).

A *bronze Γ -shaped two-hole cheek-piece with a conical side protrusion* is known from Orlykova Mohyla (fig. 3,12). Analogies are known from the basins of the Vorskla [Murzin *et al.* 1999, fig. 15: 5, 6], Siverskyi Donets [Bandurovskii, Buinov 2000, fig. 55, 2], and Tiasmyn [Mogilov 2021, fig. 5, 3-6]. They were found in Steppe Scythia [Grakov 1962, fig. 10, 2, 3; Mozolevskii 1980, tab. 36, 11]. These products date back to the Middle Scythian period [Mogilov 2008, 34].

Bronze Γ -shaped two-hole cheek-pieces with zoomorphic decoration on the edge date to the Middle Scythian period [Mogilov 2008, 33]. A shovel in the form of a bird's or animal's paw can be seen on artifacts from burial mounds 2 (1897-1898) near Vovkivtsi [Drevnosti Pridneprov'ia 1899, tab. XVI, 316], Romny region [Bobrinskoi 1901, tab. X, 12].

Bronze S-shaped two-hole cheek-pieces with zoomorphic decoration at the ends are also characteristic of the 5th century BC [Mogilov 2008, 35]. Highly artistic items with edges in the form of bird feet and hooves are known from burial mounds 4 near Vovkivtsi [Il'inskaia 1954, fig. 13, 2, 3] and 3 near Stebliv [Skoryi 1997, fig. 22, 1].

A *bronze S-shaped two-hole cheek-piece with balls at the ends* from Novovasylivka (burial mound 50) has analogies in complexes from the second half of the 5th-4th centuries BC [Mogilov 2008, 34]. They are known in Steppe Scythia [Mantsevich 1987, cat. 23; 24], Posullia [Drevnosti Pridneprov'ia 1899, tab. XXI, 410], Forest-Steppe Pobuzhzhya [Pokrovs'ka, Didenko 1970, fig. 16], and the Middle Don [Guliaev, Savchenko 2004, fig. 5, 20].

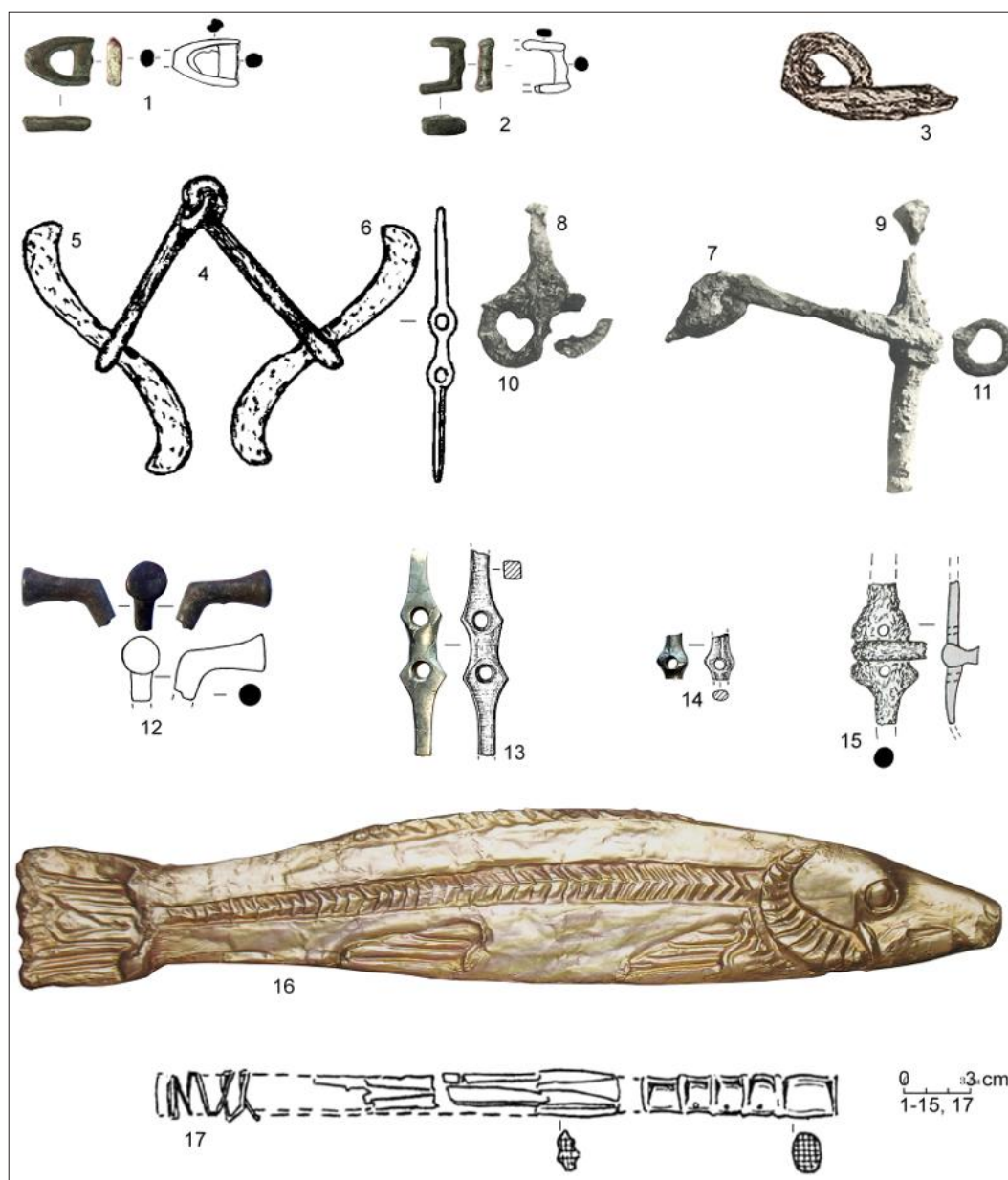


Fig. 3. Metal parts of a bridle and a whip. 1 – Bobrynets; 2 – Borysivka; 3 – Peresativka, mound 2; 4-6 – Mederove, mound; 7-11 – Pryshyb, mound 42; 12-14 – Orlykova Mohyla; 15 – Oleksandrivka, mound 1; 16 – Inhulo-Kamianka, mound 12; 17 – Pisky, mound 9; 1, 2, 12-14 – bronze; 3-11, 15 – iron; 16 – gold; 17 – wood and silver. Sources: 1, 2 – [Mogilov, Skorii 2026]; 3 – [Nikitin 2018]; 4-6 – [Bokii 1974]; 7-11 – [Shaposhnikova *et al.* 1984]; 12-14 – [Skoryi *et al.* 2022]; 15 – [Grebennikov 2008]; 16 – [L'Or des Rois Scythes 2001]; 17 – [Grebennikov 1987].

Iron straight two-hole cheek-pieces with balls at the ends (fig. 3,8-9) are among the most common. They are well known in the Eastern European Forest-Steppe, Steppe Scythia, and the North Caucasus. Such finds date back to the 5th-4th centuries BC [Mogilev 2008, 39, fig. 82, 2-15; 83, 1-26].

Iron S-shaped two-hole cheek-pieces with riveted edges (fig. 3,5-6), found in Mederove, show

similarities to artifacts from Posullia [Galanina 1977, tab. 17, 4], Povorsklia [Rolle *et al.* 2003, fig. 5, 10], the Tiasmyn subgroup [Bokii 1968, fig. 2, 14], and the North Caucasus [Gabuev, Erlikh 2001, fig. 7, 17]. Such products appeared as early as the second half of the 6th century BC and continued to be used in the Middle Scythian period [Mogilov 2008, 38]. Due to their discovery in early

complexes of this period, it is sometimes assumed that they existed only at the beginning of the specified time. However, the find from the Haymanova Mohyla [Bidzilia, Polin 2012, fig. 341] proves that some of them existed until the middle of the 4th century BC.

The *plates* are represented by types equipped either with a fastening loop or with perforations for sewing.

Bronze round plates with a convex shield and a loop on the reverse (fig. 4,6-10) are represented by four paired items from mounds near Volodymyrivka and Kryvyi Rih. Similar round plates are also mentioned from the Mykolaiv barrow. These finds date to the 4th century BC. An earlier specimen, dating to the 5th century BC, was recovered from Orlykova Mohyla. In southern Eastern Europe, where such plates constitute perhaps the most numerous type, they occur throughout the entire Scythian period [Mogilov 2008, 41].

Bronze round plates with three or four perforations along the perimeter for sewing (fig. 4,12-19) find close parallels in elite Scythian steppe barrows of the 4th century BC, including the Melitopolskyi [Terenozhkin, Mozolevs'kii 1988, fig. 107, 20], Haymanova Mohyla [Bidzilia, Polin 2012, fig. 373], Tovsta Mohyla [Mozolevs'kii 1979, fig. 101: 6-8], Chortomlyk [Alekseev, Murzin, Rolle 1991, cat. 24, 2], and Oleksandropil [Polin, Alekseev 2018, fig. 302].

A bronze oval plate decorated with a wavy ornament and perforations for sewing was discovered at Pisky (fig. 4,20). The artificially truncated ornamental motif may indicate that the plate was cut from a larger decorated badge. In the original publication, the find was attributed either to mound 3 or to burial 1 of barrow 9 [Grebennikov 1987, 149, 152, fig. 4, 5]. In a later monographic study, however, it is included among the decorations of the funeral cortege from mound 3 [Grebennikov 2008, 88, fig. 31, 4]. The badge finds close analogies in the Haymanova Mohyla [Bidzilia, Polin 2012, 254-255, fig. 375]. Similar ornamental motifs are also observed on plaques from the Tovsta Mohyla [Mozolevs'kii 1979, fig. 101, 11, 12]. These complexes date to the first-third quarters of the 4th century BC.

Bronze plates in the form of a hand from Inhulo-Kamianka belong to a distinct type that should be differentiated from a series of similar

items depicting an animal paw, which lack a clearly articulated thumb. Despite this morphological distinction, both types are chronologically close and date to the Middle Scythian period [Mogilov 2008, 56]. Steppe analogies are known from mound 1 of the Chastiye-2 group [Maksimenko et al. 2001, fig. 3, 6], barrow 7 near Nove Zaporizhzhia [Pleshivenko 1991, fig. 3, 5], and 3 of the group Shevchenko-3 [Zaraiskaia, Privalov 1992, fig. 2, 30, 31]. In the North Caucasus, such plates were found in the barrows of the Nartan-2 necropolis [Kerefov, Karmov 2009, fig. 3, 2] and 3 near Assinovskaya [Burkov, Maslov 2007, fig. 3, 1]. In the Ukrainian Forest-Steppe, comparable items have been recorded in mound 2 at the Staikin Verkh tract near Aksuyntsi [Il'inskaia 1968, tab. V, 19] and near Kryachkivka [Sidorenko 1964, fig. 6].

Bronze plates in the form of a bird of prey's head also belong to the Middle Scythian period [Mogilov 2008, 48-49]. Various objects of different sizes from the end of the 6th-5th centuries BC are known from many regions of southern Eastern Europe. They originate from the Forest-Steppe Right Bank [Petrenko 1967, tab. 27, 16, 21; Skoryi 1997, fig. 9, 5] and the Left Bank region [Galanina 1977, tab. 17, 5], the Middle Don [Puzikova 2001, fig. 16, 3]. Such items have been found in Steppe Scythia [Kovpanenko, Buniatian 1978, fig. 1, 38], in the North Caucasus [Batchaev 1985, tab. 53, 27-29].

A bronze plate in the shape of an animal's head is known from the burial mound in Inhulo-Kamianka barrow.

A bronze plate in the form of a bird of prey's leg with three toes from barrow 9 near Novosylvivka (fig. 4,1) has a broken upper part, which originally bore a fastening loop. The proportions of the image and the position of the loop indicate that this object does not represent a badge depicting only the lower part of the leg [Mogilov 2008, fig. 99, 16, 18], but rather a full-sized image with a characteristic thickening in the upper part. Comparable representations are known from mounds 48 of the Aktash burial ground [Bessonova, Skoryi 1986, fig. 6, 5, 6], 1 of the Nymphaeum necropolis (excavated in 1878) [Silant'eva 1959, fig. 47, 7], Panticapaeum [Kantorovich et al. 2019, fig. 2], Dmytrivka [Mogilov, Didenko 2010, fig. 3, 3], and I Zavadska Mohyla [Mozolevs'kii 1980, fig. 38, 3, 4], although the latter exhibit a distinctive stylis-



Fig. 4. Bridle elements from the burial mounds of the Inhul and Inhulets region and analogies before them. 1 – Novovasylivka, mound 9; 2, 10, 11, 26, 31-39 – Orlykova Mohyla; 3 – Berestnyahy, mound 4; 4, 5, 27, 28 – Nedayvoda, mound 11; 6-7 – Volodymyrivka, mound 3; 8-9 – Kryvyi Rih, mound 3; 12-21 – Pisky, mound 3; 22 – Pryshyb, mound 42; 23 – Oleksandrivka, mound 1; 24-25, 30 – Pisky, mound 9; 29 – Mederove, mound. Materials: 1-20, 24-28, 31-39 – bronze; 21 – silver; 22-23 – iron; 29-30 – bone. Sources: 1, 3 – illustrations by O. Mohylov; 2, 10-11, 26, 31-39 – [Skoryi *et al.* 2022]; 4, 5, 6-9, 27-28 – [Mel'nik, Steblina 2012]; 12-21, 24-25, 30 – [Grebennikov 1987; Shaposhnikova, Bochkarev 1972]; 22 – [Shaposhnikova *et al.* 1984]; 23 – [Grebennikov 2008]; 29 – [Bokii 1974].

tic treatment. The depiction of an eye on some of these plaques suggests that, when rotated through 90°, they resemble the head of an elk. It has been proposed that a plate from mound 5 near Berestniahy – whose broken lower part complicates attribution – should also be classified as belonging to this group [Mogilov, Didenko 2008, fig. 1, 8; Kantorovich *et al.* 2019, 16]. Such items date to the 5th century BC. Evidence for the later reuse of individual specimens is provided by a fragmentary object from a tryzna dated to 365-350 BC in the Haymanova Mohyla kurgan [Bidzilia, Polin 2012, fig. 305].

Bronze “ear-shaped” plates with a loop (fig. 4,4-5) are characterised by a protrusion rendered in the form of a three-petalled rosette. Two specimens from the Middle Scythian burial near Nedayvoda belong to the smaller variants of this series, comparable to finds from mound 52 of the Fars-Klady necropolis [Gabuev, Erlikh 2001, fig. 2, 12], burial 63 of the Lugovoy burial ground [Munchaev 1963, fig. 29: 13], and Crimea [Skoryi, Zimovets 2021, 230]. Larger analogies are also known; these are sometimes described as “wing-shaped” plates [Mogilov 2008, 50-51, fig. 101].

Such plates were in use during the 5th century BC [Mogilov 2023, fig. 50-51]. In the 4th century BC, the motif was elaborated by the addition of an eagle figure [Bandurovskii, Buinov 2000, fig. 3, 3]. At the same time, sheet cheek-guards made of precious metals bearing similar imagery are known from elite mounds, including Soloha [Mantsevich 1987, cat. 14, 15, 18, 19], 1 near Vovkivtsi [Drevnosti Pridneprov'ia 1899, tab. XXIII, 403], Berdianskyi [Murzin *et al.* 2017, 93, 102, fig. 20], and Chmyreva Mohyla [Otchet Arkheologicheskoi komissii 1901, fig. 37].

A massive bronze plate in the form of a forward-facing lion's head is known from Orlykova Mohyla (fig. 4,2). Close analogies originate from barrow 4 near Berestniahy (fig. 4,3) [Bobrinskoi 1901, fig. 45; Mogilov 2008, fig. 93, 13, 14]. These mounds are dated to the 530s BC and to the second quarter – middle of the 5th century BC [Onaiko 1966, 28, 61-62].

A silver moon-shaped plate with a central perforation was found in barrow 3 near Pisky (fig. 4,21). Comparable items made of non-ferrous metals and dating to the 4th century BC sometimes have a loop at the top for fastening,

while in other cases a perforation is also present in the body of the plaque. Bronze examples of this type are known from the Melitopol mound [Terenozhkin, Mozolevs'kii 1988, fig. 59, 5] and Babyna Mohyla [Mozolevskii, Polin 2005, fig. 70].

The rhombic or asymmetrically rhombic plate (fig. 4,11) from Orlykova Mohyla may have functioned as a frontlet. In ordinary rhombic cheek plates of the Scythian period, the fastening loop is usually transverse and broader [Mogilov 2008, fig. 90, 21-64; 91, 1-3]. It is therefore possible that this object represents an analogue of asymmetrical rhombic frontlets dating to the Middle Scythian period [Mogilov 2008, 59-60, fig. 114, 8, 10, 12].

A massive gold frontlet in the form of a fish, with the edges bent backward and perforations for fastening (fig. 3,16), is known from Inhulokamianka. Bronze bridle plates shaped as fish are attested in mounds of the 5th century BC; however, they are generally small in size. Examples include barrows 22 at Pereshchepyne [Murzin *et al.* 2002, fig. 49, 1], 4 near Reliivka (Slavne) [Koltukhov 2012, fig. 60, 12; 61, 2], and a find from the Kaniv district [Mogilov 2008, fig. 99, 22]. Closely comparable to the Inhulokamianka specimen is a gold frontlet from the Hermitage collection, whose exact provenance is unknown [Veselovskii 1913, 100, tab. III, 14, 15]. Judging by the presence of ear-shaped cheek plates in the assemblage, this set likely originates from one of the Northern Black Sea region mounds. Large precious-metal frontlets in the form of paired fish, also featuring a row of scales along the centre of the body, are known from horse burials in the main tomb of Soloha [Mantsevich 1987, cat. 13; 16]. This complex is currently dated either to the final decades of the 5th century BC [Alekseev 2003, 260-261] or to the turn of the 5th-4th centuries BC [Polin 2014, 244]. The frontlet from the mound near Vovkivtsi differs in that its entire surface is covered with scales [Drevnosti Pridneprov'ia 1899, tab. XXIII]. A similar design is observed on artifacts from Kukova Mogila in Bulgaria [Filov 1927, 33-34, fig. 14]. The object from the Illintsi barrow is distinguished by a high degree of stylisation [Farkovskii 1911, 54, tab. III]. The cheek plates from Haymanova Mohyla are likewise characterised by a transformed rendering of the image [Bidzilia, Polin 2012, fig. 209, 2, 3].

The **buckles** were made of bronze or iron.

Massive bronze ring-shaped buckles with protrusions around the perimeter, known from the Mykolaiv mound [Nikitin, Chernenko 1967, 110; Grebennikov 1987, 157; 2008, 87], date to the 4th century BC. In the region under consideration, a pair of similar items is known from barrow 9 near Pisky [Grebennikov 1987, fig. 4, 1]. However, judging by the archaeological context, these objects most likely originated from a sword belt or waist belt rather than from horse equipment. In burial 5 of mound 13 near Zolota Balka, a comparable object was interpreted as a bracelet [Polin 2013, 72, fig. 39, 4]. Nevertheless, it was found separately from the child's skeleton and could equally have formed part of a belt-fastening system. In the Right-Bank Forest-Steppe, paired analogies are known from barrow 9 near Prusy [Drevnosti Pridneprov'ia 1899, tab. XX, 323]. Such items were widespread during the 4th century BC.

Iron oval buckles with a lateral protrusion and an additional fastening element are well attested in both Forest-Steppe and Steppe Scythia [Mogilov 2008, 63, fig. 121, 1; 122, 1-8]. Analogous finds are known from mound 5 at Osniaky, necropolis B near Bilsk, as well as from the settlement of the same name in the Povorskia region [Shramko 1987, fig. 71, 16; Suprunenko 2006, fig. 6, 11], and from the Basivska citadel in the Sula river basin [Il'inskaia 1965, fig. 20, 5]. On the Middle Don, such buckles were recovered from barrows 19 near Ruskaya Trostianka and 20 near Durovka [Puzikova 2001, fig. 36, 8; 57, 5]. On the right bank of the Middle Dnipro, they are known from the Skifska Mohyla [Skoryi, Khokhorovski 2008, fig. 4, 4], while in the steppe zone they occur in the Strashna Mohyla mound [Terenozhkin *et al.* 1973, fig. 18, 1]. Most examples date to the 4th century BC; however, a find from the Skifska Mohyla indicates that this type was already in use in the second half of the 5th century BC.

Iron ring buckles (fig. 3,10-11) represent one of the most common types and occur throughout the entire Scythian period [Mogilov 2008, 62]. Analogies are known from the Dnipro Right-Bank region [Petrenko 1967, tab. 27, 52, 59], the Left-Bank Forest-Steppe region [Il'inskaia 1968, tab. LXVI, 15], the Middle Don region [Puzikova 2001, fig. 11, 2], and Steppe Scythia [Il'inskaia 1973, fig. 7, 8-11].

An iron rectangular buckle with a mushroom-shaped fastener, discovered in a barrow near Oleksandrivka [Grebennikov 2008, fig. 31, 7], has close analogies dated to the 4th century BC [Mogilov 2008, 62]. Such buckles are known from the Forest-Steppe of the Dnipro Right Bank [Petrenko 1967, tab. 25, 5], the Left-Bank region [Murzin *et al.* 1999, fig. 6, 2], and the Black Sea steppe zone [Mozolevskii, Polin 2005, fig. 21, 2].

Iron buckles with a protruding fastener (fig. 4,22), which may be mushroom-shaped or Γ-shaped, also find close parallels in mounds dating to the second half of the 5th-4th centuries BC [Mogilov 2008, 62]. They are documented in the Middle Don region [Puzikova 2001, fig. 18, 10], the Dnipro area [Mogilov 2008, 62], and in Steppe Scythia [Terenozhkin, Mozolevskii 1988, fig. 152, 10].

It is likely that an elongated bronze clip from Inhulo-Kamianka also functioned as a buckle.

Tubes (vorvorkas).

Bronze hexagonal conical tube from Inhulo-Kamianka is known from contexts dated to the second half of the 5th-4th centuries BC [Mogilov 2008, 78]. Analogous finds originate from various regions of the Northern Black Sea coast [Pokrovskaya 1970, fig. 1, 11; Il'inskaia 1973, fig. 8, 2].

Bronze concave-conical tubes (fig. 4,26-28) originate from Orlykova Mohyla and Nedayvoda. They belong to one of the most widespread types in southern Eastern Europe. The vast majority of such items date to the Middle Scythian period, with only a limited number of examples known from the 4th century BC [Mogilov 2008, 74-75].

The **pendants** used in horse harnesses could serve both decorative and functional purposes, being positioned at the intersections of the straps.

Bronze lock pendants from Orlykova Mohyla and Inhulo-Kamianka (fig. 4,31-37) are characteristic artifacts of the Middle Scythian period [Mogilov 2016, 74-77].

A zoomorphically ornamented pendant made from a boar's fang was discovered in the Mederove barrow (fig. 4,29). Within the region under study, pendants made of boar tusks (fig. 4,30) were also found in mound 9 near Pisky [Grebennikov 1987, fig. 3, 4]. In this case, however, they were most likely elements of a sword belt or waist belt rather than of horse harness. Similar items have parallels in the material culture of Forest-Steppe Scythia [Il'inskaia 1975, tab. IV, 6; Iakovenko 1969, fig. 1, 3].

Nahrapnyks dating to the 5th and 4th centuries BC are known from Orlykova Mohyla and Mykolaiv, respectively. From the earlier object, only the base with a circular perforation has been preserved (fig. 4,38). The broken relief head of a deer (fig. 4,39) from this complex was interpreted by the excavators as an element of a cheek-piece [Skoryi *et al.* 2022, 39]. However, given that the edges of most zoomorphic cheek-pieces from the Northern Black Sea region are rendered in a flattened manner (for exceptions, see: Kulatova, Suprunenko 2010, fig. 71; Bidzilia, Polin 2012, fig. 74, 1; Skoryi, Zimovets 2014, 68-69), an alternative interpretation cannot be excluded. Relief representations of does, deer, and elk are common among nahrapnyks [Mogilov 2008, fig. 164, 17, 19; 165, 1-11], suggesting that the find may instead have functioned as a decorative element of a nahrapnyk. The very thin broken edge does not contradict this hypothesis, as similar features are occasionally observed on nahrapnyks.

Bronze nahrapnyks decorated with a relief deer head are known from mound 2 in the Stai-kyn Verkh tract near Aksutyntsi [Il'inskaia 1968,

tab. V, 8] and from a barrow near Omelnyk [Bokii 1971, fig. 11]. These finds date to the Middle Scythian period [Mogilov 2008, 89].

Among the items associated with horse control, which also functioned as attributes of mounted warriors, is a **whip** from the elite mound 9 near Pisky (fig. 3,17). Its handle is wrapped with a silver spiral, while the lower end is covered with a shaped silver overlay. Scythian whips were often decorated with twisted metal strips, though these were usually broader than in the present case [Mogilov 2008, 93, fig. 180, 1-8]. Whips began to appear already in the Early Scythian period [Galanina 1997, cat. 125], while the majority of known examples date to the 4th century BC [Il'inskaia 1968, tab. XXII, 10; Mozolevs'kii 1979, fig. 52, 3]. A grooved metal edging on the handle is attested on a whip from a barrow near Kupievakha [Boiko, Berestnev 2001, fig. 9, 10].

The high frequency of horse burials and bridle equipment along the Inhul and Inhulets rivers during the Scythian period clearly reflects the advanced development of equestrian culture in this region.

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