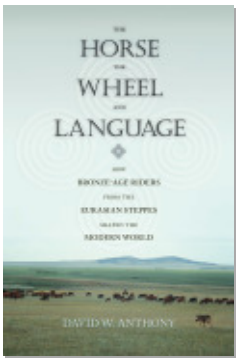
The Horse, the Wheel, and Language

David W. Anthony



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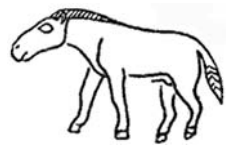
Chapter Nine



Cows, Copper, and Chiefs

The Proto-Indo-European vocabulary contained a compound word (**weik-potis*) that referred to a village chief, an individual who held power within a residential group; another root (**reǵ-*) referred to another kind of powerful officer. This second root was later used for *king* in Italic (*rēx*), Celtic (*rīx*), and Old Indic (*raj-*), but it might originally have referred to an official more like a priest, literally a "*reg*ulator" (from the same root) or "one who makes things *right*" (again the same root), possibly connected with drawing "cor*rect*" (same root) boundaries. The speakers of Proto-Indo-European had institutionalized offices of power and social ranks, and presumably showed deference to the people who held them, and these powerful people, in return, sponsored feasts at which food and gifts were distributed.[1] When did a hierarchy of social power first appear in the Pontic-Caspian region? How was it expressed? And who were these powerful people?

Chiefs first appeared in the archaeological record of the Pontic-Caspian steppes when domesticated cattle, sheep, and goats first became widespread, after about 5200–5000 BCE.[2] An interesting aspect of the spread of animal keeping in the steppes was the concurrent rapid rise of chiefs who wore multiple belts and strings of polished shell beads, bone beads, beaver-tooth and horse-tooth beads, boars tusk pendants, boars-tusk caps, boars-tusk plates sewed to their clothing, pendants of crystal and porphyry, polished stone bracelets, and gleaming copper rings. Their ornaments must have clacked and rustled when they walked. Older chiefs carried maces with polished stone mace-heads. Their funerals were accompanied by the sacrifice of sheep, goats, cattle, and horses, with most of the meat and bones distributed to the celebrants so only a few symbolic lower leg pieces and an occasional skull, perhaps attached to a hide, remained in the grave. No such ostentatious leaders had existed in the old hunting and gathering bands of the Neolithic. What made their sudden rise even more intriguing is that the nitrogen levels in their bones suggest that more than 50% of

their meat diet continued to come from fish. In the Volga region the bones of horses, the preferred wild prey of the earlier hunters, still outnumbered cattle and sheep in kitchen trash. The domesticated cattle and sheep that played such a large ritual role were eaten only infrequently, particularly in the east.

What seems at first to be the spread of a new food economy on second look appears to be deeply interwined in new rituals, new values associated with them, and new institutions of social power. People who did not accept the new animal currency, who remained foragers, did not even use formal cemeteries, much less sponsor such aggrandizing public funeral feasts. Their dead still were buried simply, in plain clothing, in their old camping places. The cultural gap widened between those who tended domesticated animals, including foreign sheep and goats, and those who hunted native wild animals.

The northern frontier of the new economy coincided with the ecological divide between the forests in the north and the steppes in the south. The northern hunters and fishers refused to be shackled to domesticated animals for another two thousand years. Even in the intervening zone of forest-steppe the percentage of domesticated animal bones declined and the importance of hunted game increased. In contrast, the eastern frontier of the new economy did not coincide with an ecotone but instead ran along the Ural River, which drained the southern flanks of the Ural Mountains and flowed south through the Caspian Depression into the Caspian Sea. East of the Ural River, in the steppes of northern Kazakhstan, steppe foragers of the Atbasar type continued to live by hunting wild horses, deer, and aurochs. They lived in camps sheltered by grassy bluffs on low river terraces or on the marshy margins of lakes in the steppes. Their rejection of the new western economy possibly was rooted in ethnic and linguistic differences that had sharpened during the millennia between 14,000 and 9,000 BCE, when the Khvalynian Sea had divided the societies of the Kazakh and the Russian steppes. Regardless of its cause, the Ural valley became a persistent frontier dividing western steppe societies that accepted domesticated animals from eastern steppe societies that rejected them.

Copper ornaments were among the gifts and baubles traded eastward across the steppes from the Danube valley to the Volga-Ural region with the first domesticated animals. The regular, widespread appearance of copper in the Pontic-Caspian steppes signals the beginning of the Eneolithic. The copper was Balkan in origin and probably was obtained with the animals through the same trade networks. From this time forward Pontic-Caspian steppe cultures were drawn into increasingly complicated social,

political, and economic relations with the cultures of the Balkans and the lower Danube valley. The gulf between them, however, only intensified. By 4400–4200 BCE, when the Old European cultures were at their peak of economic productivity, population size, and stability, their frontier with the Pontic-Caspian herding cultures was the most pronounced cultural divide in prehistoric Europe, an even starker contrast than that between the northern forest hunters and the steppe herders. The Neolithic and Eneolithic cultures of the Balkans, Carpathians, and middle and lower Danube valley had more productive farming economies in an age when that really mattered, their towns and houses were much more substantial, and their craft techniques, decorative aesthetics, and metallurgy were more sophisticated than those of the steppes. The Early Eneolithic herding cultures of the steppes certainly were aware of the richly ornamented and colorfully decorated people of Old Europe, but steppe societies developed in a different direction.[3]

The Early Copper Age in Old Europe

There is an overall rhythm to the Eneolithic over most of southeastern Europe: a rise to a new level of social and technological complexity, its flourishing, and its subsequent disintegration into smaller-scale, more mobile, and technologically simpler communities at the opening of the Bronze Age. But it began, developed, and ended differently in different places. Its beginning is set at about 5200–5000 BCE in Bulgaria, which was in many ways the heart and center of Old Europe. Pontic-Caspian steppe societies were pulled into the Old European copper-trade network at least as early as 4600 BCE, more than six hundred years before copper was regularly used in Germany, Austria, or Poland.[4]

The scattered farming hamlets of Bulgaria and southern Romania, about 5200–5000 BCE, blossomed into increasingly large and solidly built agricultural villages of large multiroomed timber and mud-plaster houses, often two-storied, set in cleared and cultivated landscapes surrounded by herds of cattle, pigs, and sheep. Cattle pulled ards, primitive scratch-plows, across the fields.[5] In the Balkans and the fertile plains of the lower Danube valley, villages were rebuilt on the same spot generation after generation, creating stratified tells that grew to heights of 30–50 feet, lifting the village above its surrounding fields. Marija Gimbutas has made Old Europe famous for the ubiquity and variety of its goddesses. Household cults symbolized by broad-hipped female figurines were practiced everywhere. Marks incised on figurines and pots suggest the appearance of a

notation system.[6] Fragments of colored plaster suggest that house walls were painted with the same swirling, curvilinear designs that appeared on decorated pottery. Potters invented kilns that reached temperatures of 800–1100°C. They used a low-oxygen reducing atmosphere to create a black ceramic surface that was painted with graphite to make silver designs; or a bellows-aided high-oxygen atmosphere to create a red or orange surface, intricately painted in white ribbons bordered with black and red.

Pottery kilns led to metallurgy. Copper was extracted from stone by mixing powdered green-blue azurite or malachite minerals (possibly used for pigments) with powdered charcoal and baking the mixture in a bellows-aided kiln, perhaps accidentally at first. At 800°C the copper separated from the powdered ore in tiny shining beads. It could then be tapped out, reheated, forged, welded, annealed, and hammered into a wide variety of tools (hooks, awls, blades) and ornaments (beads, rings, and other pendants). Ornaments of gold (probably mined in Transylvania and coastal Thrace) began to circulate in the same trade networks. The early phase of copper working began before 5000 BCE.

Balkan smiths, about 4800–4600 BCE, learned to fashion molds that withstood the heat of molten copper, and began to make cast copper tools and weapons, a complicated process requiring a temperature of 1,083°C to liquefy copper metal. Molten copper must be stirred, skimmed, and poured correctly or it cools into a brittle object full of imperfections. Well-made cast copper tools were used and exchanged across southeastern Europe by about 4600–4500 BCE in eastern Hungary with the Tiszapolgar culture; in Serbia with the Vinča D culture; in Bulgaria at Varna and in the Karanovo VI tell settlements; in Romania with the Gumelnitsa culture; and in Moldova and eastern Romania with the Cucuteni-Tripolye culture. Metallurgy was a new and different kind of craft. It was obvious to anyone that pots were made of clay, but even after being told that a shiny copper ring was made from a green-stained rock, it was difficult to see how. The magical aspect of copperworking set metalworkers apart, and the demand for copper objects increased trade. Prospecting, mining, and long-distance trade for ore and finished products introduced a new era in inter-regional politics and interdependence that quickly reached deep into the steppes as far as the Volga.[7]

Kilns and smelters for pottery and copper consumed the forests, as did two-storied timber houses and the bristling palisade walls that protected many Old European settlements, particularly in northeastern Bulgaria. At Durankulak and Sabla Ezerec in northeastern Bulgaria and at Tîrpeşti in Romania, pollen cores taken near settlements show significant reductions

in local forest cover.[8] The earth's climate reached its post-glacial thermal maximum, the Atlantic period, about 6000–4000 BCE, and was at its warmest during the late Atlantic (paleoclimatic zone A3), beginning about 5200 BCE. Riverine forests in the steppe river valleys contracted because of increased warmth and dryness, and grasslands expanded. In the forest-steppe uplands majestic forests of elm, oak, and lime trees spread from the Carpathians to the Urals by 5000 BCE. Wild honeybees, which preferred lime and oak trees for nests, spread with them.[9]

The Cucuteni-Tripolye Culture

The Cucuteni-Tripolye culture occupied the frontier between Old Europe and the Pontic-Caspian cultures. More than twenty-seven hundred Cucuteni-Tripolye sites have now been discovered and examined with small excavations, and a few have been entirely excavated (figure 9.1). The Cucuteni-Tripolye culture first appeared around 5200–5000 BCE and survived a thousand years longer than any other part of the Old European world. Tripolye people were still creating large houses and villages, advanced pottery and metals, and female figurines as late as 3000 BCE. They were the sophisticated western neighbors of the steppe people who probably spoke Proto-Indo-European.

Cucuteni-Tripolye is named after two archaeological sites: Cucuteni, discovered in eastern Romania in 1909, and Tripolye, discovered in central Ukraine in 1899. Romanian archaeologists use the name Cucuteni and Ukrainians use Tripolye, each with its own system of internal chronological divisions, so we must use cumbersome labels like Pre-Cucuteni III/Tripolye A to refer to a single prehistoric culture. There is a Borges-like dreaminess to the Cucuteni pottery sequence: one phase (Cucuteni C) is not a phase at all but rather a type of pottery probably made outside the Cucuteni-Tripolye culture; another phase (Cucuteni A1) was defined before it was found, and never was found; still another (Cucteni A5) was created in 1963 as a challenge for future scholars, and is now largely forgotten; and the whole sequence was first defined on the assumption, later proved wrong, that the Cucuteni A phase was the oldest, so later archaeologists had to invent the Pre-Cucuteni phases I, II, and III, one of which (Pre-Cucuteni I) might not exist. The positive side of this obsession with pottery types and phases is that the pottery is known and studied in minute detail.[10]

The Cucuteni-Tripolye culture is defined most clearly by its decorated pottery, female figurines, and houses. They first appeared about 5200–5000 BCE in the East Carpathian piedmont. The late Linear Pottery

Figure 9.1 Early Eneolithic sites in the Pontic-Caspian region.

people of the East Carpathians acquired these new traditions from the late Boian-Giuleşti and late Hamangia cultures of the lower Danube valley. They adopted Boian and Hamangia design motifs in pottery, Boian-style female figurines, and some aspects of Boian house architecture (a clay floor fired before the walls were raised, called a *ploshchadka* floor in Russian). They acquired objects made of Balkan copper and Dobrujan flint, again from the Danube valley. The borrowed customs were core aspects of any tribal farming culture—domestic pottery production, domestic architecture, and domestic female-centered rituals—and so it seems likely that at least some Boian people migrated up into the steep, thickly forested valleys at the peakline of the East Carpathians. Their appearance defined the

beginning of the Cucuteni-Tripolye culture—phases Pre-Cucuteni I (?) and II (about 5200–4900 BCE).

The first places that showed the new styles were clustered near high Carpathian passes, and perhaps attracted migrants partly because they controlled passage through the mountains. From these high Carpathian valleys the new styles and domestic rituals spread quickly northeastward to Pre-Cucuteni II settlements located as far east as the Dniester valley. As the culture developed (during pre-Cucteni III/Tripolye A) it was carried across the Dniester, erasing a cultural frontier that had existed for six hundred to eight hundred years, and into the South Bug River valley in Ukraine. Bug-Dniester sites disappeared. Tripolye A villages occupied the South Bug valley from about 4900–4800 BCE to about 4300–4200 BCE.

The Cucuteni-Tripolye culture made a visible mark on the forest-steppe environment, reducing the forest and creating pastures and cultivated fields over wider areas. At Floreşti, on a tributary of the Seret River, the remains of a late Linear Pottery homestead, radiocarbon dated about 5200–5100 BCE, consisted of a single house with associated garbage pits, set in a clearing in an oak-elm forest—tree pollen was 43% of all pollen. Stratified above it was a late Pre-Cucuteni III village, dated about 4300 BCE, with at least ten houses set in a much more open landscape—tree pollen was only 23%.[11]

Very few Bug-Dniester traits can be detected in early Cucuteni-Tripolye artifacts. The late Bug-Dniester culture was absorbed or driven away, removing the buffer culture that had mediated interchanges on the frontier.[12] The frontier shifted eastward to the uplands between the Southern Bug and Dnieper rivers. This soon became the most clearly defined, high-contrast cultural frontier in all of Europe.

The Early Cucuteni-Tripolye Village at Bernashevka

A good example of an early Cucuteni-Tripolye farming village on that moving frontier is the site of Bernashevka, wholly excavated by V. G. Zbenovich between 1972 and 1975.[13] On a terrace overlooking the Dniester River floodplain six houses were built in a circle around one large structure (figure 9.2). The central building, 12 by 8 m, had a foundation of horizontal wooden beams, or sleeper beams, probably with vertical wall posts morticed into them. The walls were wattle-and-daub, the roof thatched, and the floor made of smooth fired clay 8–17 cm thick on a subfloor of timber beams (a *ploshchadka*). The door had a flat stone threshold, and inside was the only domed clay oven in the settlement—perhaps a

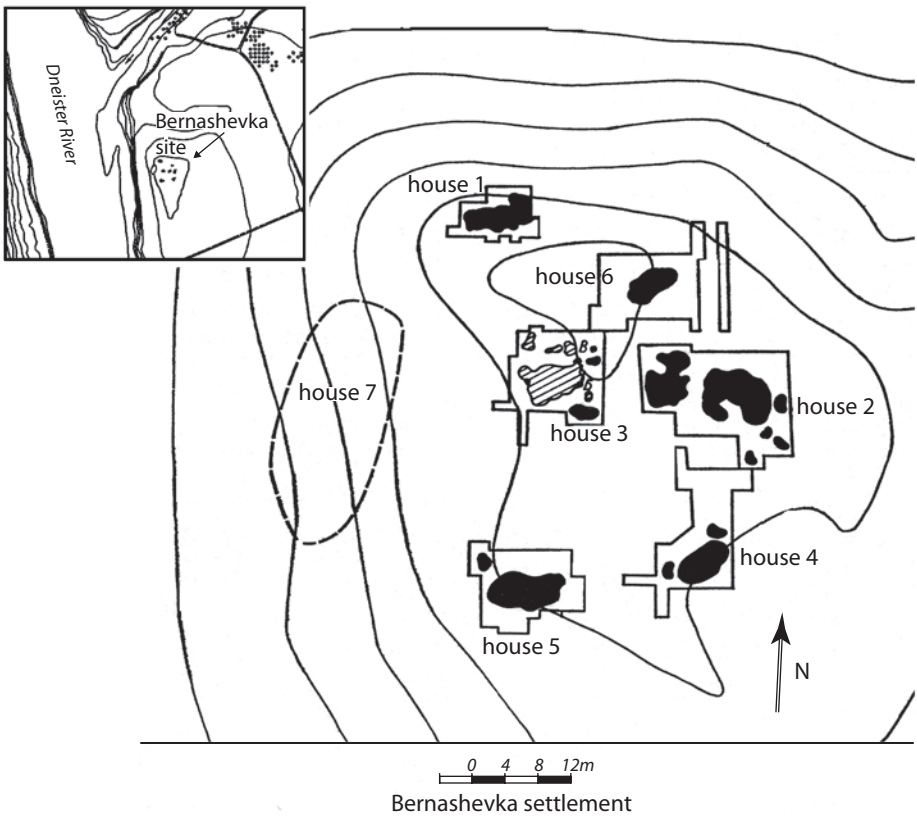


Figure 9.2 Bernashevka settlement on the Dniester River. After Zbenovich 1980, figure 3.

central bakery and work building for the village. The houses ranged from 30 m^2 to 150 m^2 in floor area. The population of the village probably was forty to sixty people. Two radiocarbon dates (5500–5300 BCE) seem two hundred years too old (table 9.1), perhaps because the dated wood fragments were from burned heartwood that had died centuries before the village was occupied.

No cemetery was found at Bernashevka or at any other Cucuteni-Tripolye village. Like the Criş people, the Cucuteni-Tripolye people did not ordinarily bury their dead. Parts of human skeletons are occasionally found in ritual deposits beneath house floors, human teeth were used occasionally as beads, and at Drăguşeni (Cucuteni A4, about 4300–4000 BCE) loose human bones were found in the litter between houses. Perhaps

Table 9.1
Early Eneolithic Radiocarbon Dates

Lab Number	*BP Date*	*Sample*	*Calibrated Date*
1. Pre-Cucuteni II Settlements			
Bernashevka			
Ki-6670	6440±60	?	5490–5300 BCE
Ki-6681	6510±55	?	5620–5360 BCE
Okopi			
Ki-6671	6330±65	?	5470–5210 BCE
2. Tripolye A Settlements			
Sabatinovka 2			
Ki-6680	6075±60	?	5060–4850 BCE
Ki-6737	6100±55	?	5210–4850 BCE
Luka Vrublevetskaya			
Ki-6684	5905±60	?	4850–4710 BCE
Ki-6685	5845±50	?	4780–4610 BCE
Grenovka			
Ki-6683	5860±45	?	4790–4620 BCE
Ki-6682	5800±50	?	4720–4550 BCE
3. Dnieper-Donets II Cemeteries (average $^{15}N = 11.8$, average offset 228±30 too old)			
Osipovka cemetery		*Skeleton #*	
OxA6168	7675±70	skeleton 20, bone (invalid?)*	6590–6440 BCE
Ki 517	6075±125	skeleton 53	5210–4800 BCE
Ki 519	5940±420	skeleton 53	5350–4350 BCE
Nikol'skoe cemetery		*Grave Pit, Skeleton #*	
OxA 5029	6300±80	E, skeleton 125	5370–5080 BCE
OxA 6155	6225±75	Z, skeleton 94	5300–5060 BCE
Ki 6603	6160±70	E, skeleton 125	5230–4990 BCE
OxA 5052	6145±70	Z, skeleton 137	5210–4950 BCE
Ki 523	5640±400	skeleton ?	4950–4000 BCE
Ki 3125	5560±30	Z, bone	4460–4350 BCE

Table 9.1 (*continued*)

Lab Number	*BP Date*	*Sample*	*Calibrated Date*
Ki 3575	5560±30	B, skeleton 1	4460–4350 BCE
Ki 3283	5460±40	E, skeleton 125 (invalid?)	4450–4355 BCE
Ki 5159	5340±50	Z, skeleton 105 (invalid?)	4250–4040 BCE
Ki 3158	5230±40	Z, bone (invalid?)	4220–3970 BCE
Ki 3284	5200±30	E, skeleton 115 (invalid?)	4040–3970 BCE
Ki 3410	5200±30	D, skeleton 79a (invalid?)	4040–3970 BCE
Yasinovatka cemetery			
OxA 6163	6465±60	skeleton 5	5480–5360 BCE
OxA 6165	6370±70	skeleton 19	5470–5290 BCE
Ki-6788	6310±85	skeleton 19	5470–5080 BCE
OxA 6164	6360±60	skeleton 45	5470–5290 BCE
Ki-6791	6305±80	skeleton 45	5370–5080 BCE
Ki-6789	6295±70	skeleton 21	5370–5080 BCE
OxA 5057	6260±180	skeleton 36	5470–4990 BCE
Ki-1171	5800±70	skeleton 36	4770–4550 BCE
OxA 6167	6255±55	skeleton 18	5310–5080 BCE
Ki-3032	5900±90	skeleton 18	4910–4620 BCE
Ki-6790	5860±75	skeleton 39	4840–4610 BCE
Ki-3160	5730±40	skeleton 15	4670–4490 BCE
Dereivka 1 cemetery			
OxA 6159	6200±60	skeleton 42	5260–5050 BCE
OxA 6162	6175±60	skeleton 33	5260–5000 BCE
Ki-6728	6145±55	skeleton 11	5210–4960 BCE
4. Rakushechni Yar Settlement, Lower Don River			
Bln 704	6070±100	level 8, charcoal	5210–4900 BCE
Ki-955	5790±100	level 5, shell	4790–4530 BCE
Ki-3545	5150±70	level 4, ?	4040–3800 BCE
Bln 1177	4360±100	level 3, ?	3310–2880 BCE
5. Khvalynsk Cemetery (average $^{15}N = 14.8$, average offset 408±52 too old)			
AA12571	6200±85	cemetery II, grave 30	5250–5050 BCE
AA12572	5985±85	cemetery II, grave 18	5040–4780 BCE
OxA 4310	6040±80	cemetery II, ?	5040–4800 BCE

Table 9.1 (*continued*)

Lab Number	*BP Date*	*Sample*	*Calibrated Date*
OxA 4314	6015±85	cemetery II, grave 18	5060–4790 BCE
OxA 4313	5920±80	cemetery II, grave 34	4940–4720 BCE
OxA 4312	5830±80	cemetery II, grave 24	4840–4580 BCE
OxA 4311	5790±80	cemetery II, grave 10	4780–4570 BCE
UPI119	5903±72	cemetery I, grave 4	4900–4720 BCE
UPI120	5808±79	cemetery I, grave 26	4790–4580 BCE
UPI132	6085±193	cemetery I, grave 13	5242–4780 BCE
6. Lower Volga Cultures			
Varfolomievka settlement, North Caspian			
Lu2642	6400±230	level 2B, unknown material	5570–5070 BCE
Lu2620	6090±160	level 2B, "	5220–4840 BCE
Ki-3589	5430±60	level 2A, "	4350–4170 BCE
Ki-3595	5390±60	level 2A, "	4340–4050 BCE
Kombak-Te, Khvalynsk hunting camp in the North Caspian			
GIN 6226	6000±150	?	5210–4710 BCE
Kara-Khuduk, Khvalynsk hunting camp in the North Caspian			
UPI 431	5110±45	?	3800–3970 BCE

*"Invalid" means the date was contradicted by stratigraphy or by another date.

bodies were exposed and permitted to return to the birds somewhere near the village. As Gimbutas noted, some Tripolye female figurines seem to be wearing bird masks.

Half the pottery at Bernashevka was coarse ware: thick-walled, relatively crude vessels tempered with sand, quartz, and grog (crushed ceramic sherds) decorated with rows of stabbed impressions or shallow channels impressed with a spatula in swirling patterns (figure 9.3). Some of these were perforated strainers, perhaps used for making cheese or yogurt. Another 30% were thin-walled, fine-tempered jugs, lidded bowls, and ladles. The last 20% were very fine, thin-walled, quite beautiful lidded jugs and bowls (probably for individual servings of food), ladles (for serving), and hollow-pedestaled "fruit-stands" (perhaps for food presentation), elaborately decorated over the entire surface with stamped, incised, and channeled motifs, some enhanced with white paint against the orange clay.

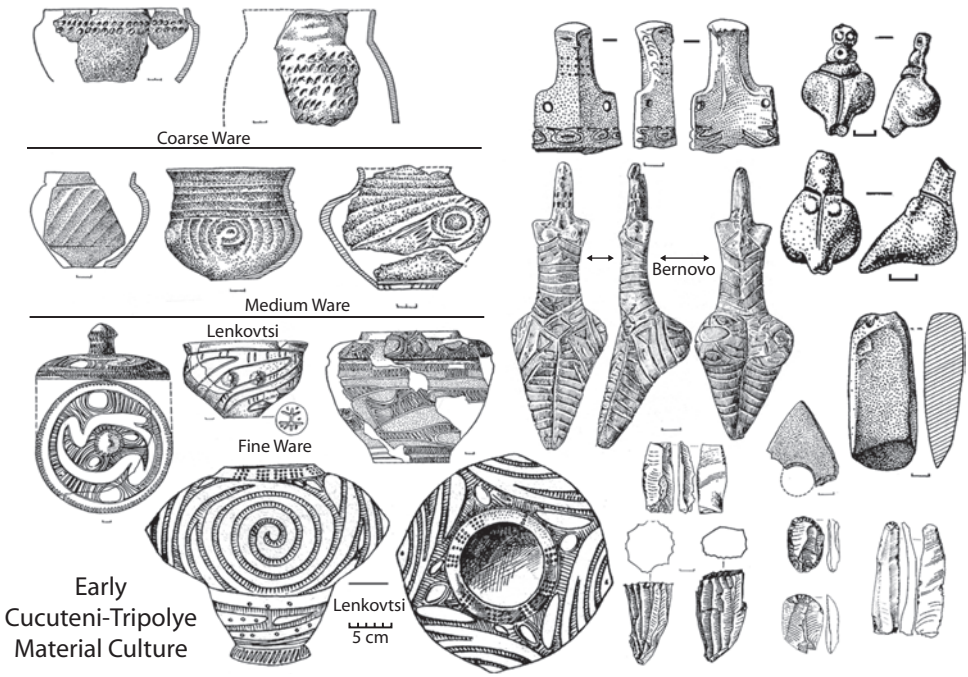


Figure 9.3 Artifacts of the Pre-Cucuteni II/III-Tripolye A period from the sites of Bernashevka (most), Bernovo (labeled), and Lenkovtsi (labeled). After Zbenovich 1980, figures 55, 57, 61, 69, 71, 75, 79; and Zbenovich 1989, figure 65, 74.

Lidded bowls and jugs imply that food was served in individual containers at some distance from the hearth where it was cooked, and their careful decoration implies that the presentation of food involved an element of social theater, an unveiling.

Every house at Bernashevka contained fragmented ceramic female figurines with joined legs, exaggerated hips and buttocks, and schematic rod-like heads, about 10 cm long (figure 9.3). Simple incisions indicated the pubis and a girdle or waistband. Figurines were found at various places on the house floors; there was no obvious domestic shrine or altar. The number of figurines per house ranged from one to twenty-one, but four houses had nine or more. Almost two thousand similar figurines have been found in other Pre-Cucuteni II-III/Tripolye A sites, occasionally arranged in groups seated in chairs. At the Tripolye A site of Luka-Vrublevetskaya on the Dniester, they were made of clay tempered with a mixture of wheat,

barley, and millet grains—all the grains cultivated in the village—and with finely ground flour. These, at least, seem to have symbolized the generative fertility of cultivated grain. But they were only one aspect of domestic cults. Under every house at Bernashevka was the skull of a domesticated cow or bull. One house also had wild animal symbols: the skull of a wild aurochs and the antlers of a red deer. Preconstruction foundation deposits of cattle horns and skulls, and occasionally of human skulls, are found in many Tripolye A villages. Bovine and female spirit powers were central to domestic household cults.

The Bernashevka farmers cultivated emmer and spelt wheats, with some barley and millet. Fields were prepared with mattocks made of antler (nineteen examples were found) and polished slate (twenty examples); some of these might have been attached to ards, which were primitive plows. The grain was harvested with flint blades of the Karanovo type (figure 9.3).

The animal bones from Bernashevka are the largest sample from any early Cucuteni-Tripolye site: 12,657 identifiable bones from a minimum of 804 animals. About 50% of the bones (60% of the individuals) were from wild animals, principally red deer (*Cervus elaphus*) and wild pig. Roe deer (*Capreolus capreolus*) and the wild aurochs (*Bos primigenius*) were hunted occasionally. Many early Cucuteni-Tripolye sites have about 50% wild animal bones. Like Bernashevka, most were frontier settlements established in places not previously cleared or farmed. In contrast, at the long-settled locale of Tirpeşti the Pre-Cucuteni III settlement produced 95% domesticated animal bones. And even in frontier settlements like Bernashevka, about 50% of all animal bones were from cattle, sheep/goat, and pigs. Cattle and pigs were more important in heavily forested areas like Bernashevka, where cattle constituted 75% of the domesticated animal bones, whereas sheep and goats were more important in villages closer to the steppe border.

Pre-Cucuteni II Bernashevka was abandoned before copper tools and ornaments became common enough to lose casually; no copper artifacts were left in the settlement. But only a few centuries later small copper artifacts became common. At Tripolye A Luka-Vrublevetskaya, probably occupied about 4800–4600 BCE, 12 copper objects (awls, fishhooks, a bead, a ring) were found among seven houses in piles of discarded shellfish, animal bones, and broken crockery. At Karbuna, near the steppe boundary, probably occupied about 4500–4400 BCE, a spectacular hoard of 444 copper objects was buried in a fine late Tripolye A pot closed with a Tripolye A bowl (figure 9.4). The hoard contained two cast copper hammer-axes 13–14 cm long, hundreds of copper beads, and dozens of flat

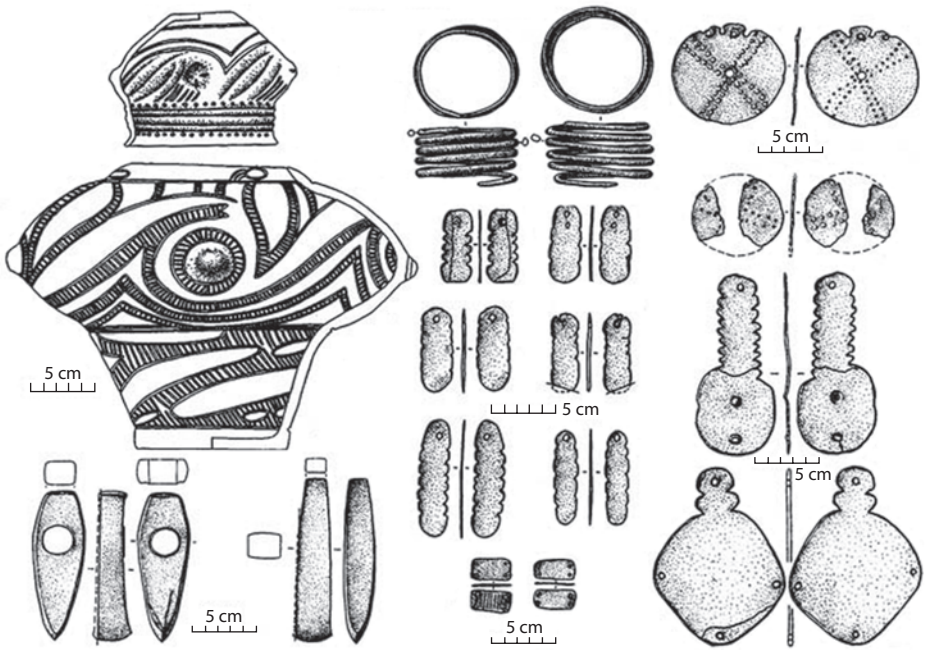


Figure 9.4 Part of the Karbuna hoard with the Tripolye A pot and bowl-lid in which it was found. All illustrated objects except the pot and lid are copper, and all are the same scale. After Dergachev 1998.

"idols," or wide-bottomed pendants made of flat sheet copper; two hammer-axes of marble and slate with drilled shaft-holes for the handle; 127 drilled beads made of red deer teeth; 1 drilled human tooth; and 254 beads, plaques, or bracelets made of *Spondylus* shell, an Aegean shell used for ornaments continuously from the first Greek Neolithic through the Old European Eneolithic. The Karbuna copper came from Balkan ores, and the Aegean shell was traded from the same direction, probably through the tell towns of the lower Danube valley. By about 4500 BCE social prestige had become closely linked to the accumulation of exotic commodities, including copper.[14]

As Cucuteni-Tripolye farmers moved eastward out of the East Carpathian piedmont they began to enter a more open, gently rolling, drier landscape. East of the Dniester River annual precipitation declined and the forests thinned. The already-old cultural frontier moved to the Southern Bug river valley. The Tripolye A town of Mogil'noe IV, among the first established in the South Bug valley, had more than a hundred buildings and

covered 15–20 hectares, with a population of perhaps between four hundred and seven hundred. East of the Southern Bug, in the Dnieper valley, were people of a very different cultural tradition: the Dnieper-Donets II culture.

The Dnieper-Donets II Culture

Dimitri Telegin defined the Dnieper-Donets II culture based on a series of excavated cemeteries and settlement sites in the Dnieper valley, in the steppes north of the Sea of Azov, and in the Donets valley. Dnieper-Donets II societies created large, elaborate cemeteries, made no female figurines, had open fires rather than kilns or ovens in their homes, lived in bark-covered huts rather than in large houses with fired clay floors, had no towns, cultivated little or no grain, and their pottery was very different in appearance and technology from Tripolye ceramics. The trajectory of the Cucuteni-Tripolye culture led back to the Neolithic societies of Old Europe, and that of Dnieper-Donets II led to the local Mesolithic foragers. They were fundamentally different people and almost certainly spoke different languages. But around 5200 BCE, the foragers living around the Dnieper Rapids began to keep cattle and sheep.

The bands of fishers and hunters whose cemeteries had overlooked the Rapids since the Early Mesolithic might have been feeling the pinch of growing populations. Living by the rich resources of the Rapids they might have become relatively sedentary, and women, when they live a settled life, generally have more children. They controlled a well-known, strategic area in a productive territory. Their decision to adopt cattle and sheep herding could have opened the way for many others in the Pontic-Caspian steppes. In the following two or three centuries domesticated cattle, sheep, and goats were walked and traded from the Dnieper valley eastward to the Volga-Ural steppes, where they had arrived by about 4700–4600 BCE. The evidence for any cereal cultivation east of the Dnieper before about 4200 BCE is thin to absent, so the initial innovation seems to have involved animals and animal herding.

Dating the Shift to Herding

The traditional Neolithic/Eneolithic chronology of the Dnieper valley is based on several sites near the Dnieper Rapids; the important ones are Igren 8, Pokhili, and Vovchok, where a repeated stratigraphic sequence was found. At the bottom were Surskii-type Neolithic pots and microlithic flint tools associated with the bones of hunted wild animals, principally red

deer, wild pigs, and fish. These assemblages defined the Early Neolithic (dated about 6200–5700 BCE). Above them were Dnieper-Donets phase I occupations with comb-impressed and vegetal-tempered pottery, still associated with wild fauna; they defined the Middle Neolithic (probably about 5700–5400 BCE, contemporary with the Bug-Dniester culture). Stratified above these deposits were layers with Dnieper-Donets II pottery, sand-tempered with "pricked" or comb-stamped designs, and large flint blade tools, associated with the bones of domesticated cattle and sheep. These DDII assemblages represented the beginning of the Early Eneolithic and the beginning of herding economies east of the Dnieper River.[15]

Unlike the dates from DDI and Surskii, most DDII radiocarbon dates were measured on human bone from cemeteries. The average level of ^{15}N in DDII human bones from the Dnieper valley is 11.8%, suggesting a meat diet of about 50% fish. Correcting the radiocarbon dates for this level of ^{15}N, I obtained an age range of 5200–5000 BCE for the oldest DDII graves at the Yasinovatka and Dereivka cemeteries near the Dnieper Rapids. This is probably about when the DDII culture began. Imported pots of the late Tripolye A^2 Borisovka type have been found in DDII settlements at Grini, Piliava, and Stril'cha Skelia in the Dnieper valley, and sherds from three Tripolye A pots were found at the DDII Nikol'skoe cemetery. Tripolye A^2 is dated about 4500–4200 BCE by good dates (not on human bone) in the Tripolye heartland, and late DDII radiocarbon dates (when corrected for ^{15}N) agree with this range. The DDII period began about 5200–5000 BCE and lasted until about 4400–4200 BCE. Contact with Tripolye A people seems to have intensified after about 4500 BCE.[16]

The Evidence for Stockbreeding and Grain Cultivation

Four Dnieper-Donets II settlement sites in the Dnieper valley have been studied by zoologists—Surskii, Sredni Stog 1, and Sobachki in the steppe zone near the Rapids; and Buz'ki in the moister forest-steppe to the north (table 9.2). Domesticated cattle, sheep/goat, and pig accounted for 30–75% of the animal bones in these settlements. Sheep/goat contributed more than 50% of the bones at Sredni Stog 1 and 26% at Sobachki. Sheep finally were accepted into the meat diet in the steppes. Perhaps they were already being plucked for felt making; the vocabulary for wool might have first appeared among Pre-Proto-Indo-European speakers at about this time. Wild horses were the most important game (?) animal at Sredni Stog 1 and Sobachki, whereas red deer, roe deer, wild pig, and beaver were hunted in the more forested parts of the river at Buz'ki and Surskii 2–4.

Table 9.2
Dnieper–Donets II Animal Bones from Settlements

	Sobachki	*Sredni Stog 1*	*Buz'ki*
Mammal Bones		*(Bones / MNI)**	
Cattle	56/5	23/2	42/3
Sheep/goat	54/8	35/4	3/1
Pig	10/3	1/1	4/1
Dog	9/3	12/1	8/2
Horse	48/4	8/1	—
Onager	1/1	—	—
Aurochs	2/1	—	—
Red deer	16/3	12/1	16/3
Roe deer	—	—	28/4
Wild pig	3/1	—	27/4
Beaver	—	—	34/5
Other mammal	8/4	—	7/4
Domestic	129 bones / 62%	74 bones / 78%	57 bones / 31%
Wild	78 bones / 38%	20 bones / 22%	126 bones / 69%

*MNI = minimum number of individuals

Fishing net weights and hooks suggest that fish remained important. This is confirmed by levels of ^{15}N in the bones of people who lived on the Dnieper Rapids, which indicate a meat diet containing more than 50% fish. Domesticated cattle, pig, and sheep bones occurred in all DDII settlements and in several cemeteries, and constituted more than half the bones at two settlement sites (Sredni Stog I and Sobachki) in the steppe zone. Domesticated animals seem indeed to have been an important addition to the diet around the Dnieper Rapids.[17]

Flint blades with sickle gloss attest to the harvesting of cereals at DDII settlements. But they could have been wild seed plants like *Chenopodium* or *Amaranthus*. If cultivated cereals were harvested there was very little evidence found. Two impressions of barley (*Hordeum vulgare*) were recovered on a potsherd from a DDII settlement site at Vita Litovskaya, near Kiev, west of the Dnieper. In the forests northwest of Kiev, near the Pripet marshes, there were sites with pottery that somewhat resembled DDII pottery but there were no elaborate cemeteries or other traits of the DDII

culture. Some of these settlements (Krushniki, Novosilki, Obolon') had pottery with a few seed impressions of wheat (*T. monococcum and T. dicoccum*) and millet (*Panicum sativum*). These sites probably should be dated before 4500 BCE, since Lengyel-related cultures replaced them in Volhynia and the Polish borderlands after about that date. Some forest-zone farming seems to have been practiced in the southern Pripet forests west of the Dnieper. But in steppe-zone DDII cemeteries east of the Dnieper, Malcolm Lillie recorded almost no dental caries, suggesting that the DDII people ate a low-carbohydrate diet similar to that of the Mesolithic. No cultivated cereal imprints have been found east of the Dnieper River in pots dated before about 4000 BCE.[18]

Pottery and Settlement Types

Pottery was more abundant in DDII living sites than it had been in DDI, and appeared for the first time in cemeteries (figure 9.5). The growing importance of pottery perhaps implies a more sedentary lifestyle, but shelters were still lightly built and settlements left only faint footprints. A typical DDII settlement on the Dnieper River was Buz'ki. It consisted of five hearths and two large heaps of discarded shellfish and animal bones. No structures were detected, although some kind of shelter probably did exist.[19] Pots here and in other DDII sites were made in larger sizes (30–40 cm in diameter) with flat bottoms (pots seen in DDI sites had mainly pointed or rounded bottoms) and an applied collar around the rim. Decoration usually covered the entire outside of the vessel, made by pricking the surface with a stick, stamping designs with a small comb-stamp, or incising thin lines in horizontal-linear and zig-zag motifs—quite different from the spirals and swirls of Tripolye A potters. The application of a "collar" to thicken the rim was a popular innovation, widely adopted across the Pontic-Caspian steppes about 4800 BCE.

Polished (not chipped) stone axes now became common tools, perhaps for felling forests, and long unifacial flint blades (5–15 cm long) also became increasingly common, perhaps as a standardized part of a trade or gift package, since they appeared in graves and in small hoards in settlements.

Dnieper-Donets II Funeral Rituals

DDII funerals were quite different from those of the Mesolithic or Neolithic. The dead usually were exposed, their bones were collected, and they were finally buried in layers in communal pits. Some individuals were

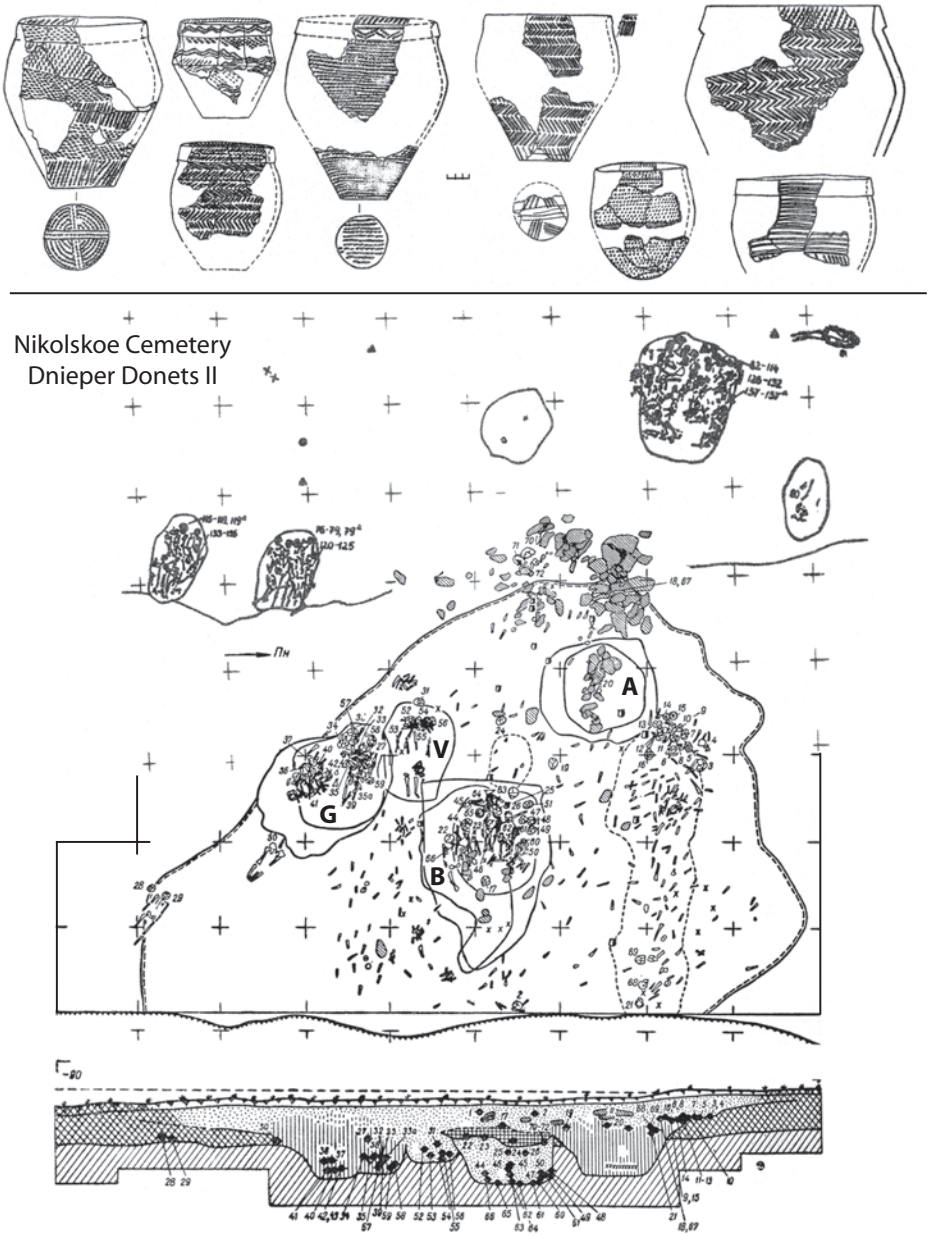


Figure 9.5 Dnieper-Donets II cemetery at Nikol'skoe with funerary ceramics. Pits A,B,G, and V were in an area deeply stained with red ochre. The other five burial pits were on a slightly higher elevation. Broken pots and animal bones were found near the cluster of rocks in the center. After Telegin 1991, figures 10, 20; and Telegin 1968, figure 27.

buried in the flesh, without exposure. This communal pit type of cemetery, with several treatments of the body in one pit, spread to other steppe regions. The thirty known DDII communal cemeteries were concentrated around the Dnieper Rapids but occurred also in other parts of the Dnieper valley and in the steppes north of the Sea of Azov. The largest cemeteries were three times larger than those of any earlier era, with 173 bodies at Dereivka, 137 at Nikol'skoe, 130 at Vovigny II, 124 at Mariupol, 68 at Yasinovatka, 50 at Vilnyanka, and so on. Pits contained up to four layers of burials, some whole and in an extended supine position, others consisting of only skulls. Cemeteries contained up to nine communal burial pits. Traces of burned structures, perhaps charnel houses built to expose dead bodies, were detected near the pits at Mariupol and Nikol'skoe. At some cemeteries, including Nikol'skoe (figure 9.5), loose human bones were widely scattered around the burial pits.

At Nikol'skoe and Dereivka some layers in the pits contained only skulls, without mandibles, indicating that some bodies were cleaned to the bone long before final burial. Other individuals were buried in the flesh, but the pose suggests that they were tightly wrapped in some kind of shroud. The first and last graves in the Nikol'skoe pits were whole skeletons. The standard burial posture for a body buried in the flesh was extended and supine, with the hands by the sides. Red ochre was densely strewn over the entire ritual area, inside and outside the grave pits, and pots and animal bones were broken and discarded near the graves.[20]

The funerals at DDII cemeteries were complex events that had several phases. Some bodies were exposed, and sometimes just their skulls were buried. In other cases whole bodies were buried. Both variants were placed together in the same multilayered pits, strewn with powdered red ochre. The remains of graveside feasts—cattle and horse bones—were thrown in the red-stained soil at Nikol'skoe, and cattle bones were found in grave 38, pit A, at Vilnyanka.[21] At Nikol'skoe almost three thousand sherds of pottery, including three Tripolye A cups, were found among the animal bones and red ochre deposited over the graves.

Power and Politics

The people of the DDII culture looked different than people of earlier periods in two significant respects: the profusion of new decorations for the human body and the clear inequality in their distribution. The old fisher-gatherers of the Dnieper Rapids were buried wearing, at most, a few beads of deer or fish teeth. But in DDII cemeteries a few individuals were

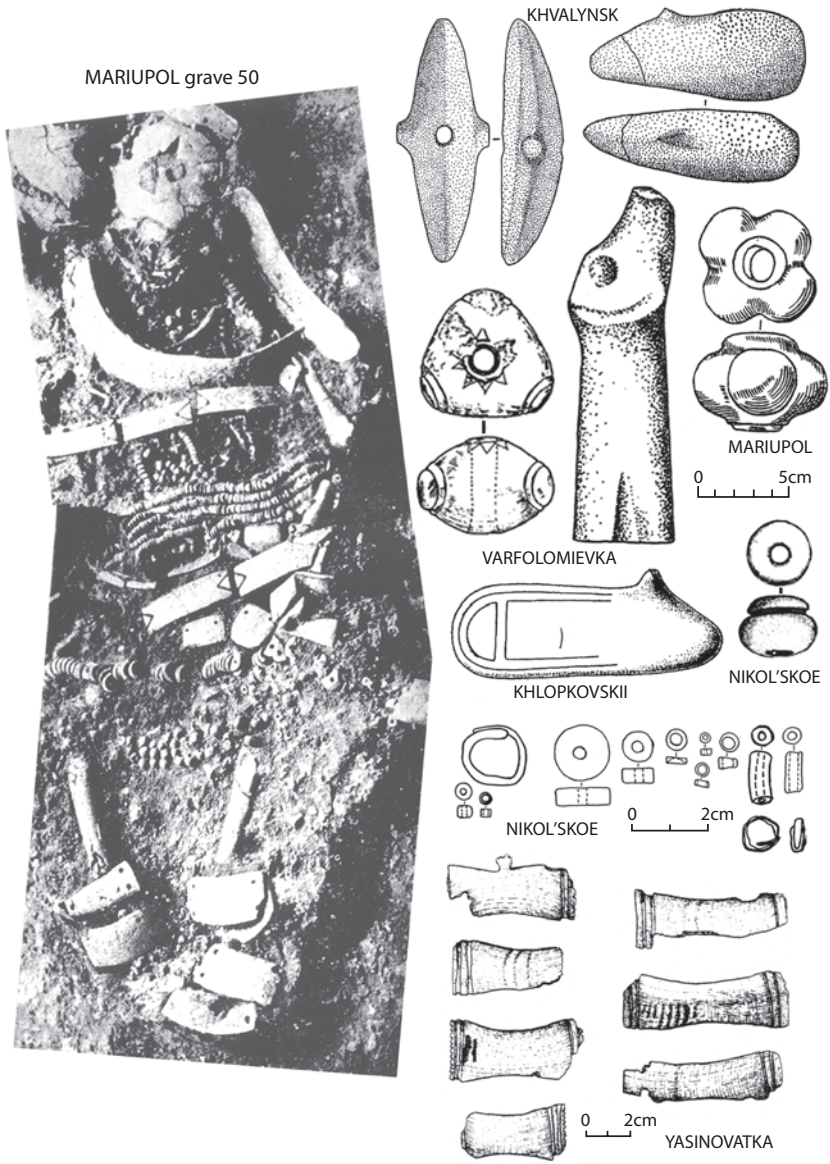


Figure 9.6 Ornaments and symbols of power in the Early Eneolithic, from Dnieper-Donets II graves, Khvalynsk, and Varfolomievka. The photo of grave 50 at Mariupol, skull at the top, is adapted from Gimbutas 1956, plate 8. The beads from Nikol'skoe include two copper beads and a copper ring on the left, and a gold ring on the lower right. The other beads are polished and drilled stone. The maces from Mariupol and Nikol'skoe, and beads from Nikol'skoe are after Telegin 1991, figures 29, 38; and Telegin and Potekhina 1987, figure 39.

buried with thousands of shell beads, copper and gold ornaments, imported crystal and porphyry ornaments, polished stone maces, bird-bone tubes, and ornamental plaques made of boar's tusk (figure 9.6). Boar's-tusk plaques were restricted to very few individuals. The tusks were cut into rectangular flat pieces (not an easy thing to do), polished smooth, and pierced or incised for attachment to clothing. They may have been meant to emulate Tripolye A copper and *Spondylus*-shell plaques, but DDII chiefs found their own symbols of power in the tusks of wild boars.

At the Mariupol cemetery 310 (70%) of the 429 boar's-tusk plaques accompanied just 10 (8%) of the 124 individuals. The richest individual (gr. 8) was buried wearing forty boars-tusk plaques sewn to his thighs and shirt, and numerous belts made of hundreds of shell and mother-of-pearl beads. He also had a polished porphyry four-knobbed mace head (figure 9.6), a bull figurine carved from bone, and seven bird-bone tubes. At Yasinovatka, only one of sixty-eight graves had boars-tusk plaques: an adult male wore nine plaques in grave 45. At Nikol'skoe, a pair of adults (gr. 25 and 26) was laid atop a grave pit (B) equipped with a single boar's-tusk plaque, a polished serpentine mace head, four copper beads, a copper wire ring, a gold ring, polished slate and jet beads, several flint tools, and an imported Tripolye A pot. The copper contained trace elements that identify it as Balkan in origin. Surprisingly few children were buried at Mariupol (11 of 124 individuals), suggesting that a selection was made—not all children who died were buried here. But one was among the richest of all the graves: he or she (sex is indeterminate in immature skeletons) wore forty-one boar's-tusk plaques, as well as a cap armored with eleven whole boar's tusks, and was profusely ornamented with strings of shell and bone beads. The selection of only a few children, including some who were very richly ornamented, implies the inheritance of status and wealth. Power was becoming institutionalized in families that publicly advertised their elevated status at funerals.

The valuables that signaled status were copper, shell, and imported stone beads and ornaments; boars-tusk plaques; polished stone maceheads; and bird-bone tubes (function unknown). Status also might have been expressed through the treatment of the body after death (exposed, burial of the skull/not exposed, burial of the whole body); and by the

Figure 9.6 (*continued*) The Varfolomievka mace (or pestle?) is after Yudin 1988, figure 2; Khvalynsk maces are after Agapov, Vasliev, and Pestrikova 1990, figure 24. Boars-tusk plaques, at the bottom, are after Telegin 1991, figure 38.

public sacrifice of domesticated animals, particularly cattle. Similar markers of status were adopted across the Pontic-Caspian steppes, from the Dnieper to the Volga. Boars-tusk plaques with exactly the same flower-like projection on the upper edge (figure 9.6, top plaque from Yasinovatka) were found at Yasinovatka in the Dnieper valley and in a grave at S'yezzhe in the Samara valley, 400 km to the east. Ornaments made of Balkan copper were traded across the Dnieper and appeared on the Volga. Polished stone mace-heads had different forms in the Dnieper valley (Nikol'skoe), the middle Volga (Khvalynsk), and the North Caspian region (Varfolomievka), but a mace is a weapon, and its wide adoption as a symbol of status suggests a change in the politics of power.

The Khvalynsk Culture on the Volga

The initial spread of stockbreeding in the Pontic-Caspian steppes was notable for the various responses it provoked. The DDII culture, where the shift began, incorporated domesticated animals not just as a ritual currency but also as an important part of the daily diet. Other people reacted in quite different ways, but they were all clearly interacting, perhaps even competing, with one another. A key regional variant was the Khvalynsk culture.

A prehistoric cemetery was discovered at Khvalynsk in 1977 on the west bank of the middle Volga. Threatened by the water impounded behind a Volga dam, it was excavated by teams led by Igor Vasiliev of Samara (figure 9.7). Its location has since been completely destroyed by bank erosion. Sites of the Khvalynsk type are now known from the Samara region southward along the banks of the Volga into the Caspian Depression and the Ryn Peski desert in the south. The characteristic pottery included open bowls and bag-like, round-bottomed pots, thick-walled and shell-tempered, with very distinctive sharply everted thick "collars" around the rims. They were densely embellished with bands of pricked and comb-stamped decoration that often covered the entire exterior surface. Early Khvalynsk, well documented at the Khvalynsk cemetery, began around 4700–4600 BCE in the middle Volga region (after adjusting the dates downward for the ^{15}N content of the humnan bones on which the dates were measured). Late Khvalynsk on the lower Volga is dated 3900–3800 BCE at the site of Kara-Khuduk but probably survived even longer than this on the lower Volga.[22]

The first excavation at the Khvalynsk cemetery, in 1977–79 (excavation I), uncovered 158 graves; the second excavation in 1980–85 (excavation II) recovered, I have been told, 43 additional graves.[23] Only Khvalynsk I has

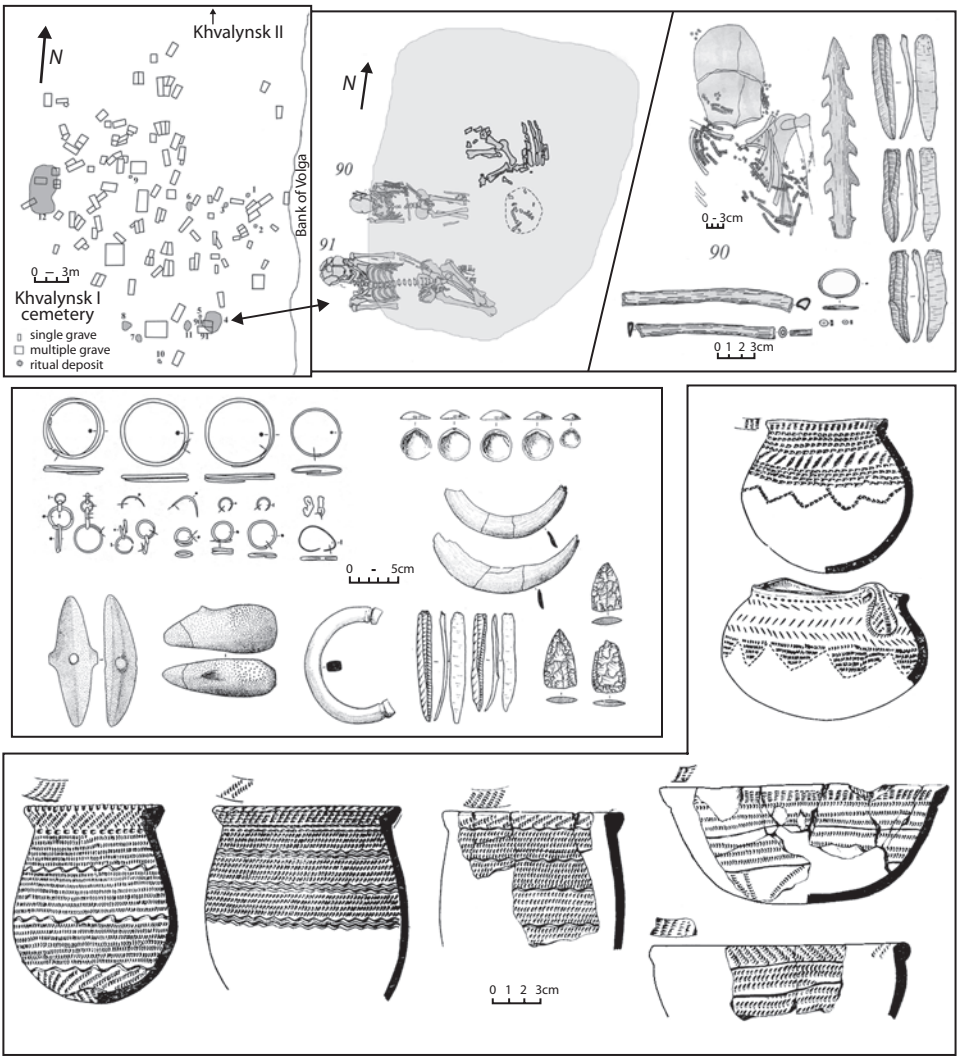


Figure 9.7 Khvalynsk cemetery and grave gifts. Grave 90 contained copper beads and rings, a harpoon, flint blades, and a bird-bone tube. Both graves (90 and 91) were partly covered by Sacrificial Deposit 4 with the bones from a horse, a sheep, and a cow.
Center: grave goods from the Khvalynsk cemetery—copper rings and bracelets, polished stone mace heads, polished stone bracelet, Cardium shell ornaments, boars tusk chest ornaments, flint blades, and bifacial projectile points.
Bottom: shell-tempered pottery from the Khvalynsk cemetery. After Agapov, Vasiliev, and Pestrikova 1990; and Ryndina 1998, Figure 31.

been published, so all statistics here are based on the first 158 graves (figure 9.7). Khvalynsk was by far the largest excavated Khvalynsk-type cemetery; most others had fewer than 10 graves. At Khvalynsk most of the deceased were layered in group pits, somewhat like DDII graves, but the groups were much smaller, containing only two to six individuals (perhaps families) buried on top of one another. One-third of the graves were single graves, a move away from the communal DDII custom. Only mature males, aged thirty to fifty, were exposed and disarticulated prior to burial, probably an expression of enhanced male status, associated with the introduction of herding economies elsewhere in the world.[24] Few children were buried in the cemetery (13 of 158), but those who were included some of the most profusely ornamented individuals, again possibly indicating that status was inherited. The standard burial posture was on the back with the knees raised, a distinctive pose. Most had their heads to the north and east, a consistent orientation that was absent in DDII cemeteries. Both the peculiar posture and the standard orientation later became widespread in steppe funeral customs.

Khvalynsk had many more animal sacrifices than any DDII cemetery: 52 (or 70) sheep/goat, 23 cattle, and 11 horses, to accompany the burials of 158 humans. (The published reports are inconsistent on the number of sheep/goat.) The head-and-hoof form of sacrifice appeared for the first time: at least 17 sheep/goat and 9 cattle were slaughtered and only the skull and lower leg bones were buried, probably still attached to the animal's hide. In later steppe funerals the custom of hanging a hide containing the head and hooves over the grave or burying it in the grave was very common. The head and hide symbolized a gift to the gods, and the flesh was doled out to guests at the funeral feast. Parts of domesticated animals were offered in all phases of the funerals at Khvalynsk: on the grave floor, in the grave fill, at the edge of the grave, and in twelve special sacrificial deposits stained with red ochre, found above the graves (figure 9.7). The distribution of animal sacrifices was unequal: 22 graves of 158 (14 percent) had animal sacrifices in the grave or above it, and enough animals were sacrificed to supply about half of the graves were they distributed equally. Only 4 graves (100, 127, 139, and 55–57) contained multiple species (cattle and sheep, sheep and horse, etc.) and all four of those also were covered by ochre-stained ritual deposits above the grave, with additional sacrifices. About one in five people had sacrificed domestic animals, and one in forty had multiple domestic animals.

The role of the horse in the Khvalynsk sacrifices is intriguing. The only animals sacrificed at Khvalysnk I were domesticated sheep/goat, domesticated cattle, and horses. Horse leg parts occurred by themselves, without

other animal bones, in eight graves. They were included with a sheep/goat head-and-hoof offering in grave 127, and were included with sheep/goat and cattle remains in sacrificial deposit 4 (figure 9.7). It is not possible to measure the bones—they were discarded long ago—but horses certainly were treated symbolically like domesticated animals at Khvalynsk: they were grouped with cattle and sheep/goat in human funeral rituals that excluded obviously wild animals. Carved images of horses were found at other cemeteries dated to this same period (see below). Horses certainly had a new ritual and symbolic importance at Khvalynsk. If they were domesticated, they would represent the oldest domesticated horses.[25]

There is much more copper at Khvalynsk than is known from the entire DDII culture, and the copper objects there are truly remarkable (figure 9.7). Unfortunately most of it, an astonishing 286 objects, came from the 43 (?) graves of the Khvalynsk II excavation, still unpublished though analyses of some of the objects have been published by Natalya Ryndina. The Khvalynsk I excavation yielded 34 copper objects found in 11 of the 158 published graves. The copper from excavations I and II showed the same trace elements and technology, the former characteristic of Balkan copper. Ryndina's study of 30 objects revealed three technological groups: 14 objects made at 300–500°C, 11 made at 600–800°C, and 5 made at 900–1,000°C. The quality of welding and forging was uniformly low in the first two groups, indicating local manufacture, but was strongly influenced by the methods of the Tripolye A culture. The third group, which included two thin rings and three massive spiral rings, was technically identical to Old European status objects from the cemeteries of Varna and Durankulak in Bulgaria. These objects were made in Old Europe and were traded in finished form to the Volga. In the 158 graves of Khvalynsk I, adult males had the most copper objects, but the number of graves with *some* copper was about equal between the sexes, five adult male graves and four adult female graves. An adolescent (gr. 90 in figure 9.7) and a child were also buried with copper rings and beads.[26]

Polished stone mace-heads and polished serpentine and steatite stone bracelets appeared with copper as status symbols. Two polished stone maces occurred in one adult male grave (gr. 108) and one in another (gr. 57) at Khvalynsk. Grave 108 also contained a polished steatite bracelet. Similar bracelets and mace-heads were found in other Khvalynsk-culture cemeteries on the Volga, for example, at Krivoluchie (Samara oblast) and Khlopkovskii (Saratov oblast). Some mace heads were given "ears" that made them seem vaguely zoomorphic, and some observers have seen horse heads in them. A clearly zoomorphic polished stone mace head appeared

at Varfolomievka, part of a different culture group on the lower Volga. Maces, copper, and elaborate decoration of the body appeared with domesticated animals, not before.[27]

Khvalynsk settlements have been found at Gundurovka and Lebyazhinka I on the Sok River, north of the Samara. But the Khvalynsk artifacts and pottery are mixed with artifacts of other cultures and ages, making it difficult to isolate features or animal bones that can be ascribed to the Khvalynsk period alone. We do know from the bones of the Khvalynsk people themselves that they ate a lot of fish; with an average ^{15}N measurement of 14.8%, fish probably represented 70% of their meat diet. Pure Khvalynsk camps have been found on the lower Volga in the Ryn Peski desert, but these were specialized hunters' camps where onagers and saiga antelope were the quarry, comprising 80–90 percent of the animal bones. Even here, at Kara Khuduk I, we find a few sheep/goat and cattle bones (6–9 %), perhaps provisions carried by Khvalynsk hunters.

In garbage dumps found at sites of other steppe cultures of the same period east of the Don (see below), horse bones usually made up more than half the bones found, and the percentage of cattle and sheep was usually under 40%. In the east, cattle and sheep were more important in ritual sacrifices than in the diet, as if they were initially regarded as a kind of ritual currency used for occasional (seasonal?) sanctified meals and funeral feasts. They certainly were associated with new rituals at funerals, and probably with other new religious beliefs and myths as well. The set of cults that spread with the first domesticated animals was at the root of the Proto-Indo-European conception of the universe as described at the beginning of chapter 8.

Nalchik and North Caucasian Cultures

Many archaeologists have wondered if domesticated cattle and sheep might have entered the steppes through the Eneolithic farmers of the Caucasus as well as from Old Europe.[28] Farming cultures had spread from the Near East into the southern Caucasus Mountains (Shulaveri, Arukhlo, and Shengavit) by 5800–5600 BCE. But these earliest farming communities in the Caucasus were not widespread; they remained concentrated in a few river-bottom locations in the upper Kura and Araxes River valleys. No bridging sites linked them to the distant European steppes, more than 500 km to the north and west. The permanently glaciated North Caucasus Mountains, the highest and most impassable mountain range in Europe, stood between them and the steppes. The bread wheats (*Triticum aestivum*) preferred in the

Caucasus were less tolerant of drought conditions than the hulled wheats (emmer, einkorn) preferred by Criş, Linear Pottery, and Bug-Dniester cultivators. The botanist Zoya Yanushevich observed that the cultivated cereals that appeared in Bug-Dniester sites and later in the Pontic-Caspian steppe river valleys were a Balkan/Danubian crop suite, not a Caucasian crop suite.[29] Nor is there an obvious stylistic connection between the pottery or artifacts of the earliest Caucasian farmers at Shulaveri and those of the earliest herders in the steppes off to the north. If I had to guess at the linguistic identity of the first Eneolithic farmers at Shulaveri, I would link them with the ancestors of the Kartvelian language family.

The Northwest Caucasian languages, however, are quite unlike Kartvelian. Northwest Caucasian seems to be an isolate, a survival of some unique language stock native to the northern slopes of the North Caucasus Mountains. In the western part of the North Caucasian piedmont, overlooking the steppes, the few documented Eneolithic communities had stone tools and pottery somewhat like those of their northern steppe neighbors; these communities were southern participants in the steppe world, not northern extensions of Shulaveri-type Caucasian farmers. I would guess they spoke languages ancestral to Northwest Caucasian, but only a few early sites are published. The most important is the cemetery at Nalchik.

Near Nalchik, in the center of the North Caucasus piedmont, was a cemetery containing 147 graves with contracted skeletons lying on their sides in red ochre–stained pits in groups of two or three under stone cairns. Females lay in a contracted pose on the left side and males on their right.[30] A few copper ornaments, beads made of deer and cattle teeth, and polished stone bracelets (like those found in grave 108 at Khvalynsk and at Krivoluchie) accompanied them. One grave yielded a date on human bone of 5000–4800 BCE (possibly too old by a hundred to five hundred years, if the dated sample was contaminated by old carbon in fish). Five graves in the same region at Staronizhesteblievsk were provided with boars-tusk plaques of the DDII Mariupol type, animal-tooth beads, and flint blades that seem at home in the Early Eneolithic.[31] An undated cave occupation in the Kuban valley at Kamennomost Cave, level 2, which could be of the same date, has yielded sheep/goat and cattle bones stratified beneath a later level with Maikop-culture materials. Carved stone bracelets and ornamental stones from the Caucasus—black jet, rock crystal, and porphyry—were traded into Khvalynsk and Dnieper-Donets II sites, perhaps from people like those at Nal'chik and Kamennomost Cave 2. The Nalchik-era sites clearly represent a community that had at least a few domesticated cattle and sheep/goats, and was in contact with Khvalynsk.

They probably got their domesticated animals from the Dnieper, as the Khvalynsk people did.

The Lower Don and North Caspian Steppes

In the steppes between Nalchik and Khvalynsk many more sites, of different kinds, are dated to this period. Rakushechni Yar on the lower Don, near the Sea of Azov, is a deeply stratified settlement site with a cluster of six graves at the edge of the settlement area. The lowest cultural levels, with shell-tempered pottery lightly decorated with incised linear motifs and impressions made with a triangular-ended stick, probably dated about 5200–4800 BCE, contained the bones of sheep/goat and cattle. But in the interior steppes, away from the major river valleys, equid hunting was still the focus of the economy. In the North Caspian Depression the forager camp of Dzhangar, also dated 5200 BCE (on animal bone) and with pottery similar to Rakushechni Yar, yielded only the bones of wild horses and onagers.[32]

On the eastern side of the lower Volga, sites such as Varfolomievka were interspersed with Khvalynsk hunters' camps such as Kara Khuduk I.[33] The settlement at Varfolomievka is stratified and well dated by radiocarbon, and clearly shows the transition from foraging to herding in the North Caspian Depression. Varfolomievka was first occupied around 5800–5600 BCE by pottery-making foragers who hunted onagers and horses (level 3). The site was reoccupied twice more (levels 2B and 2A). In level 2B, dated about 5200–4800 BCE, people constructed three pit-houses. They used copper (one copper awl and some amorphous lumps of copper were found) and kept domesticated sheep/goats, though "almost half" the animal bones at Varfolomievka were of horses. Bone plaques were carved in the shape of horses, and horse metacarpals were incised with geometric decorations. Three polished stone mace-head fragments were found here. One was carved into an animal head at one end, perhaps a horse (figure 9.6). Four graves were dug rather casually into abandoned house depressions at Varfolomievka, like the similar group of graves at the edge of Rakushechni Yar. Hundreds of beads made of drilled and polished horse teeth were deposited in ochre-stained sacrificial deposits near the human graves. There were also a few deer teeth, several kinds of shell beads, and whole boars' tusk ornaments.

These sites in the southern steppes, from the lower Don to the lower Volga, are dated 5200–4600 BCE and exhibit the bones of sheep/goat and occasionally cattle, small objects of copper, and casual disposal of the dead. Small settlements provide most of the data, unlike the cemetery-based archaeological record for Khvalynsk. Pots were shell-tempered and

decorated with designs incised or pricked with a triangular-ended stick. Motifs included diamond-like lozenges and, rarely, incised meanders filled with pricked ornament. Most rims were simple but some were thickened on the inside. A. Yudin has grouped these sites together under the name of the Orlovka culture, after the settlement of Orlovka, excavated in 1974, on the Volga. Nalchik seems to have existed at the southern fringe of this network.[34]

The Forest Frontier: The Samara Culture

One other culture interacted with northern Khvalynsk in the middle Volga region, along the forest-steppe boundary (see figure 9.1). The Samara Neolithic culture, distinguished by its own variety of "collared" pots covered with pricked, incised, and rocker-stamped motifs, developed at the northern edge of the steppe zone along the Samara River. The pottery, tempered with sand and crushed plants, was similar to that made on the middle Don River. Dwellings at Gundurovka near Samara had dug-out floors, 20 m by 8 m, with multiple hearths and storage pits in the floors (this settlement also contained Khvalynsk pottery). Domesticated sheep/goat (13% of 3,602 bones) and cattle (21%) were identified at Ivanovskaya on the upper Samara River, although 66% of the bones were of horses. The settlement of Vilovatoe on the Samara River yielded 552 identifiable bones, of which 28.3% were horse, 19.4% were sheep/goat, and 6.3% were cattle, in addition to beaver (31.8%) and red deer (12.9%). The Samara culture showed some forest-culture traits: it had large polished stone adzes like those of forest foragers to the north.

Samara people created formal cemeteries (figure 9.8). The cemetery at S'yezzhe (see-YOZH-yay) contained nine burials in an extended position on their backs, different from the Khvalynsk position and more like that of DDII. Above the graves at the level of the original ground surface was a ritual deposit of red ochre, broken pottery, shell beads, a bone harpoon, and the skulls and lower leg bones (astragali and phalanges) of two horses—funeral-feast deposits like the above-grave deposits at Khvalynsk. S'yezzhe had the oldest horse head-and-hoof deposit in the steppes. Near the horse head-and-hoof deposit, but outside the area of ochre-stained soil, were two figurines of horses carved on flat pieces of bone, similar to others found at Varfolomievka, and one bone figurine of a bull. The S'yezzhe people wore boar's-tusk plaques like those of the Dnieper-Donets II culture, one of which was shaped exactly like one found at the DDII cemetery of Yasinovatka in the Dnieper valley.[35]

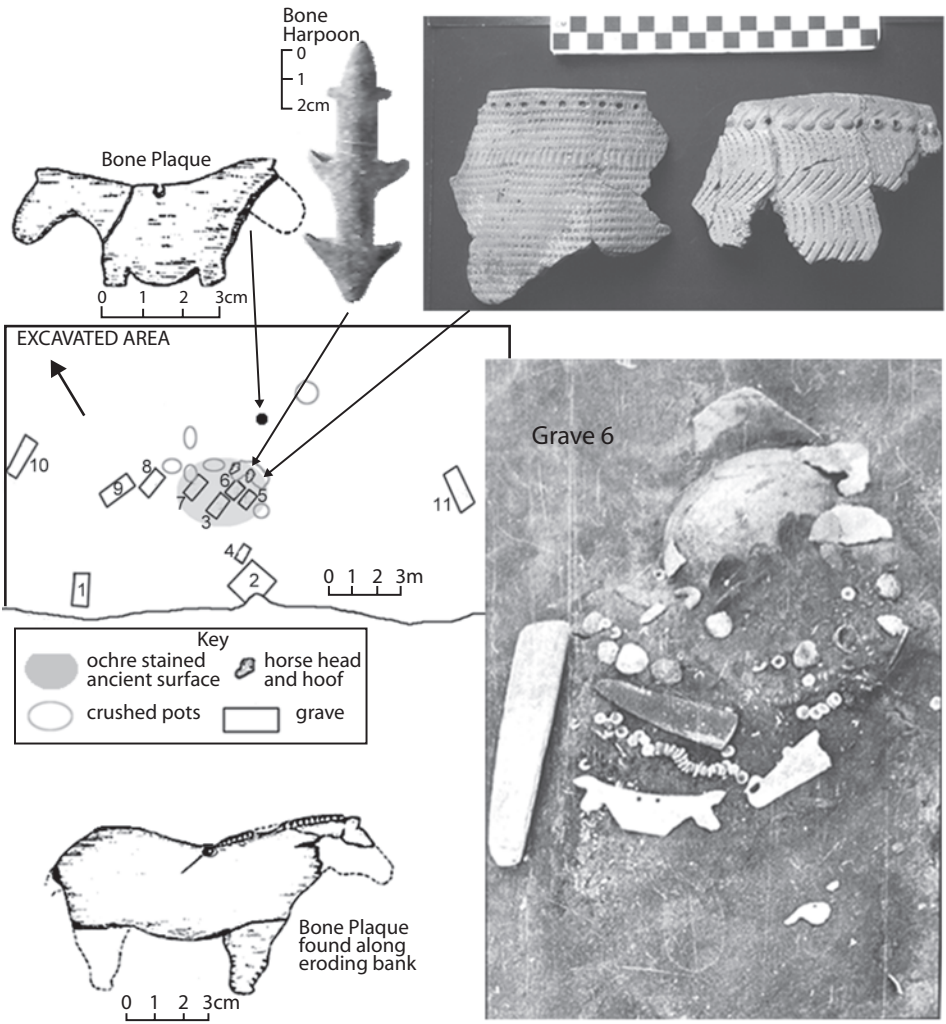


Figure 9.8 S'yezzhe cemetery, Samara oblast. Graves 1–9 were a cemetery of the Samara culture, Early Eneolithic. Graves 10 and 11 were later. After Vasiliev and Matveeva 1979.

Cows, Social Power, and the Emergence of Tribes

It is impossible to say how much the people buried at Khvalynsk really *knew* of the societies of Old Europe, but they certainly were connected by a trade network of impressive reach. Cemeteries across the Pontic-Caspian steppes (DDII, Khvalynsk, S'yezzhe, Nalchik) became larger or appeared for the first time, suggesting the growth of larger, more stable communities.

Cattle and sheep were important in the diet at some DDII settlements on the Dnieper River, but farther east they seem initially to have been more important in funeral rituals than in the daily diet, which was still dominated by horse meat. In the east, domesticated cattle and sheep seem to have served as a kind of currency in a new set of rituals and religious beliefs.

Participation in long-distance trade, gift exchange, and a new set of cults requiring public sacrifices and feasting became the foundation for a new kind of social power. Stockbreeding is by nature a volatile economy. Herders who lose animals always borrow from those who still have them. The social obligations associated with these loans are institutionalized among the world's pastoralists as the basis for a fluid system of status distinctions. Those who loaned animals acquired power over those who borrowed them, and those who sponsored feasts obligated their guests. Early Proto-Indo-European included a vocabulary about verbal contracts bound by oaths (**h*$_1$*óitos-*), used in later religious rituals to specify the obligations between the weak (humans) and the strong (gods). Reflexes of this root were preserved in Celtic, Germanic, Greek, and Tocharian. The model of political relations it references probably began in the Eneolithic. Only a few Eneolithic steppe people wore the elaborate costumes of tusks, plaques, beads, and rings or carried the stone maces that symbolized power, but children were included in this exceptional group, suggesting that the rich animal loaners at least tried to see that their children inherited their status. Status competition between regional leaders, **weik-potis* or **reǵ-* in later Proto-Indo-European, resulted in a surprisingly widespread set of shared status symbols. As leaders acquired followers, political networks emerged around them—and this was the basis for tribes.

Societies that did not accept the new herding economy became increasingly different from those that did. The people of the northern forest zone remained foragers, as did those who lived in the steppes east of the Ural Mountains. These frontiers probably were linguistic as well as economic, given their persistence and clarity. The Pre-Proto-Indo-European language family probably expanded with the new economy during the Early Eneolithic in the western steppes. Its sister-to-sister linguistic links may well have facilitated the spread of stockbreeding and the beliefs that went with it.

One notable aspect of the Pontic-Caspian Early Eneolithic is the importance of horses, in both diet and funeral symbolism. Horse meat was a major part of the meat diet. Images of horses were carved on bone plaques at Varfolomievka and S'yezzhe. At Khvalynsk, horses were included with

cattle and sheep in funeral rituals that excluded obviously wild animals. But, zoologically, we cannot say whether they looked very different from wild horses—the bones no longer exist. The domestication of the horse, an enormously important event in human history, is not at all well understood. Recently, however, a new kind of evidence has been obtained straight from the horse's mouth.