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**TRIPOLYE — "PASTORAL" CONTACTS.  
FACTS AND CHARACTER  
OF THE INTERACTIONS: 4800–3200 BC**

Many archaeologists were interested in questions of interaction between the population of the Tripolye culture and their Eastern ("steppe") neighbors [Gimbutas 1974; Movsha 1961, 1984, 1988, 1993; Danilenko 1974; Dergachev 1980, 1986; Tzvek 1989; Koško 1991; Mallory 1977 and many others]. It is generally accepted that Pontic pastoralists played an important role in the history of Europe in the Copper Age. But when and how did they appear? When did nomadism and pastoralism appear as branches of stock-breeding? The critical study of archaeological sources from the territory of the Ukraine show us the possibility that it was later than the Copper Age [Shnirelman 1980: 89-90, 240-243]. We consider the question about Pontic migrations into Danube basin and other European areas in Chalcolithic period to still be open. It is a large field of research.

Tripolye culture was on the borders of European civilization with the "steppe" world for a long period of time — close to 1600 years (Fig. 1-3). We shall write here about only two main problems:

- Tripolye and the spread of the food-producing economy in the Northern Pontic zone;
- Tripolye protocities and the "steppe tribes".

**1. ABSOLUTE CHRONOLOGY AND CULTURES  
IN THE NORTHERN PONTIC AREA IN THE COPPER AGE**

All chronology of this period is connected with periodization and chronology of Tripolye-Cucuteni. We have many types of such periodization and chronology [Passek 1949; Chernysh 1982: 171-175, Tab. 8-10; Telegin 1985c, 1991; Patokova et

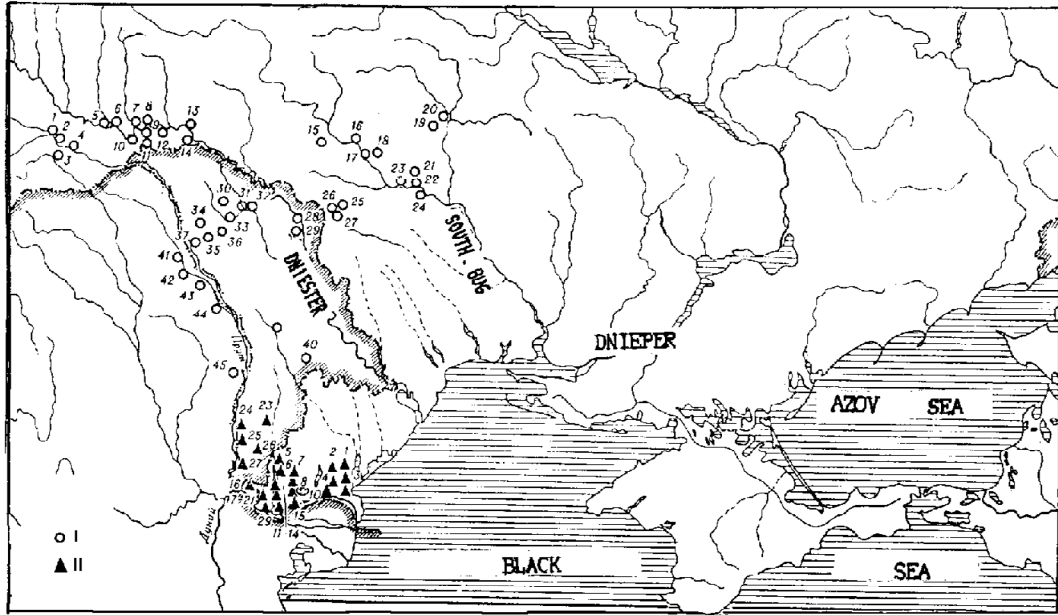


Fig. 1. Copper Age cultures: I — Tripolye A, II — Gumelnița (Bolgrad-Aldeni type). After Arkheologiya 1985: Map 5.

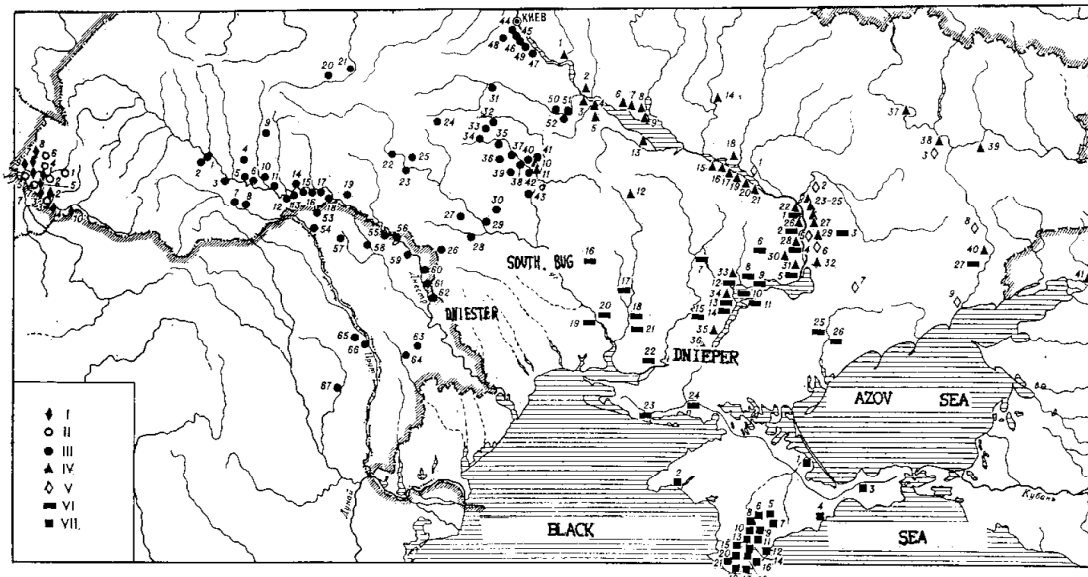


Fig. 2. Copper Age cultures: I — Polgar, II — Baden, III — Tripolye, IV-V — Sredny Stog Unity; VI — Nizhnemikhailovka culture; VII — Copper Age of Crimea. After Arkheologiya 1985: Map 6.

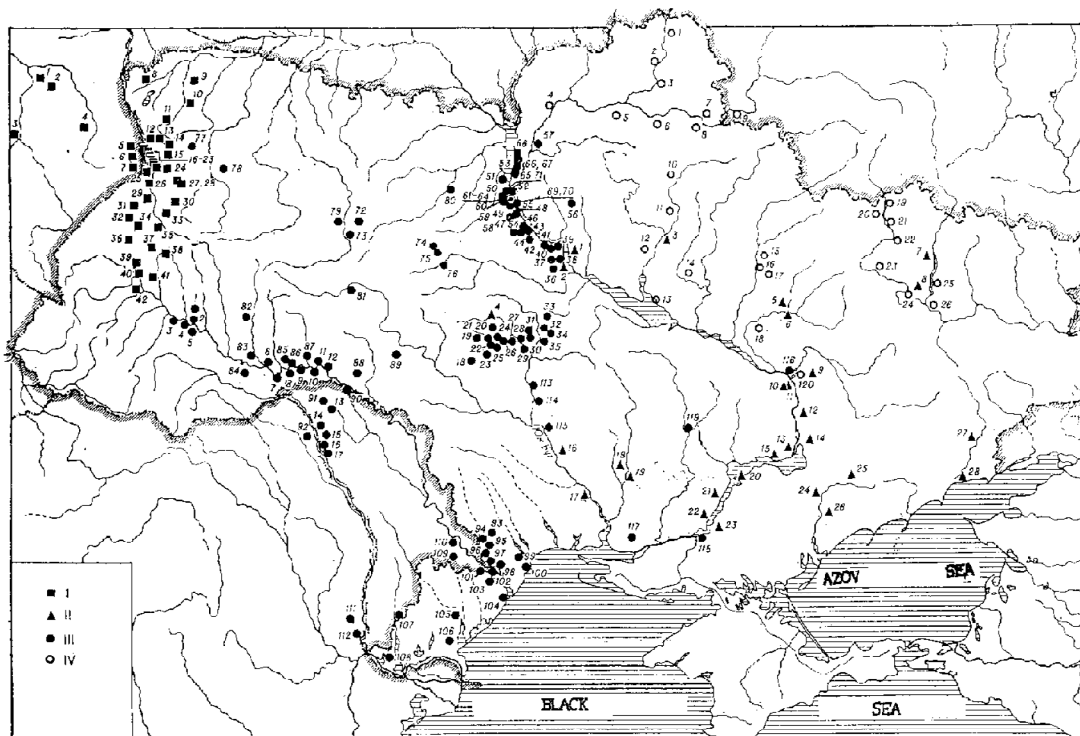


Fig. 3. Copper Age cultures: I — Funnel Beaker culture; II — early Yamnaya culture; III — Tripolye C-I and C-II; IV — Pit- and Comb-Pottery culture. After Arkheologiya 1985: Map 7, changed by Author. Tripolye C-I and C-II: 1-5 Koshlyovcy-type (end C-I); 6-17 — Zhvanec (Brynzeny) type (C-II); 18-35 — Tomashivka type(C-I): 18 — Teplik, 19 — Popudnia, 20 — Mankivka, 21 — Dmitrushki, 22 — Uman (Pankivka), 23 — Tomashivka\*, 24 — Stary Babany, 25 — Sushkivka \*, 26 — Dobrovody \*, 27 — Talyanki \*, 28 — Talne-1, 29 — Maydanetskoye \*, 30 — Kolodiste \*, 31 — Rozsokhuvatka \*, 32 — Chichirkozivka \*, 33 — Stara Buda, 34 — Vasilkove \*, 35 — Kaytanivka; 36-39 — Kanev type (C-I); 40-51 — Kolomiyshchyna type (C-I); 52-57 — Lukashi type (end C-I); 58-71 — Sofievka type; 72-76 — Troyanov type; 77-92 — Gorodsk type; 93-112 — Usatovo type; 113-120 — Tripolye materials in mound burials (C-II): 113 — Yermolayevka, 114 — Olshanka, 115 — Serezlievka, 116 — Zhivotilivka, 117 — Bilozirka, 118 — Libimivka, 119 — Krivyi Rig, 120 — Sokolivka

\* - Tripolye protocities

al. 1989]. In this paper we use periodization, as created by T. Passek, with verifications of N. Vinogradova [1983], and with its connections with Cucuteni periodization [Chernysh 1982: 175, tab.10].

#### Absolute chronology of Tripolye-Cucuteni:

Tripolye A — Precucuteni I,II,III:	4800–4500 BC
Tripolye B-I — Cucuteni A (1-4):	4500–4200 BC
Tripolye B-I/II — Cucuteni A-B (1-2):	4200–4000 BC
Tripolye B-II and C-I — Cucuteni B(1-3):	4000–3500 BC
Tripolye C-II:	3500–3200 BC

The Gumelnița (Bolgrad-Aldeni type) was contemporary with Tripolye A and partly

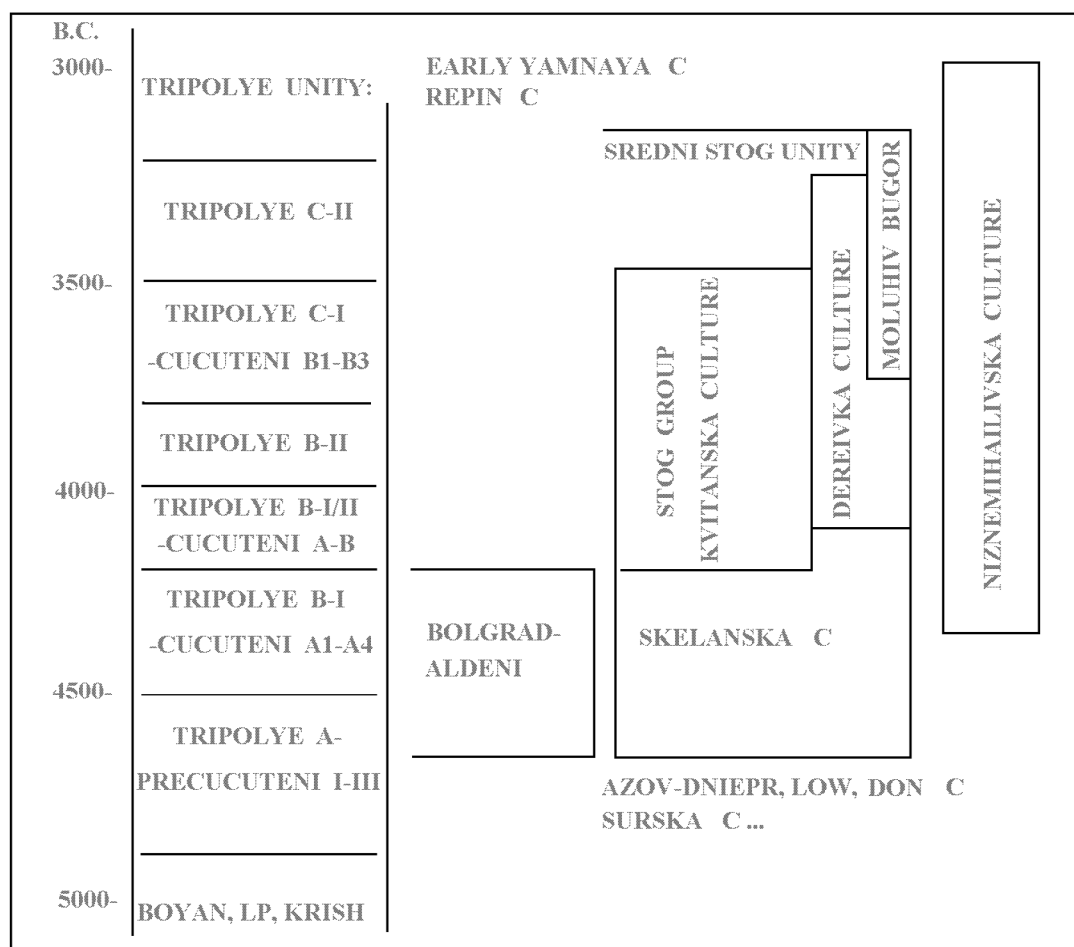


Fig. 4. Synchronization of Tripolye and "steppe" chalcolithic cultures.

with B-I [Subbotin 1983: 130, tab.11]. The "steppe pastoralists" were represented by (Fig. 4):

1. The Sredny Stog Unity — former Sredny Stog culture, which is now divided into: Skelanska culture — in the steppe and forest-steppe, in the river valleys of Dnieper and Don (contemporary with the end of Tripolye A — Tripolye B-I); Kvitanska culture — in steppe and partly — forest-steppe areas near the Dnieper; Stog group — in the steppe part of the Dnieper area (contemporary with Tripolye B-I/II — B-II); Dereivka culture — in the forest-steppe part of the Dnieper basin, on Northern Donets and Oskol rivers; Molukhiv Bugor type — in the forest-steppe, on the right bank of the Dnieper, near the borders of the Tripolye Kosenivka-type, including the former Pivikha type (contemporary with Tripolye C-I (?) and C-II). All types and cultures are connected with one another by their origin [Rassamakin 1993].

2. Nizhnemikhailovka culture, on the Dnieper and in the Azov region (contemporary with Tripolye B-I(?) — C-II) [Shaposhnikova 1987; Rassamakin 1993].

There were other "steppe" cultures at different times on the Don and in the East Azov region: Azov-Dnieper, Donets, Khvalynsk, Kuban, Konstantinovka, and Repin cultures, which were more connected with the Caucasus than with the Western areas.

## 2. TRIPOLYE AND SPREAD OF THE FOOD PRODUCING ECONOMY IN THE NORTHERN PONTIC AREA

The first elements of husbandry appeared there a long time before the Tripolye culture, at the end of the Late Palaeolithic period or Mesolithic period. Among thousands of flint implements at the site of the Late Mesolithic settlement Mirnoye (Odessa region), G.F. Korobkova singled out 16 tools for harvesting [Korobkova 1989: 63-76].

The first Neolithic agricultural population was connected with the cultures of Kriş and Linear Pottery, which spread between 6000–5000 BC in the Moldova and Ukraine territories. Under the influence of this European Neolithic culture, some features of husbandry appeared in the economic systems of Bug-Dniester and Dnieper-Donets culture populations, but the foundation of this system was based on hunting, fishing and gathering [Pashkevich 1991; Korobkova 1987: 151-169, 1989: 70-73].

When the first Tripolye population appeared to the East of the Romanian Carpathians (around 4800–4700 BC), limited tribes of the Bug-Dniester culture lived on the Southern Bug (phase Savran), in settlements where Tripolye imported pottery was discovered [Shaposhnikova, Tovkailo 1987; Burdo 1993b]. It is interesting to note that these settlements are in the river valley, but also in the steppe region (Fig. 1).

The emergence of Tripolye A (Precucuteni I-III) was connected with the Neolithic Boian culture (phase Boian-Giuleşti) and influenced by Kriş, Linear Pottery and other cultures [Zbenovich 1989: 171-186]. The food producing economy of the Boian culture was based on developed agriculture (*Triticum mon.*, *Triticum dic.*, *Hordeum vulg.*, *Vicia*, stone or antler mattock) and cattle-breeding (cattle up to 80% of herd) [Comşa 1974: 53-58]. The emergence and spread of Tripolye-Precucuteni took place during the dry Holocene subperiod [Petrenko 1992: Fig.1], when the ecological situation in the foothills was unfavorable. When the Tripolye A culture appeared on the Southern Bug, its area increased. This was the territory of the forest-steppe zone with grasslands, cereal-partigrass steppes on watersheds, and

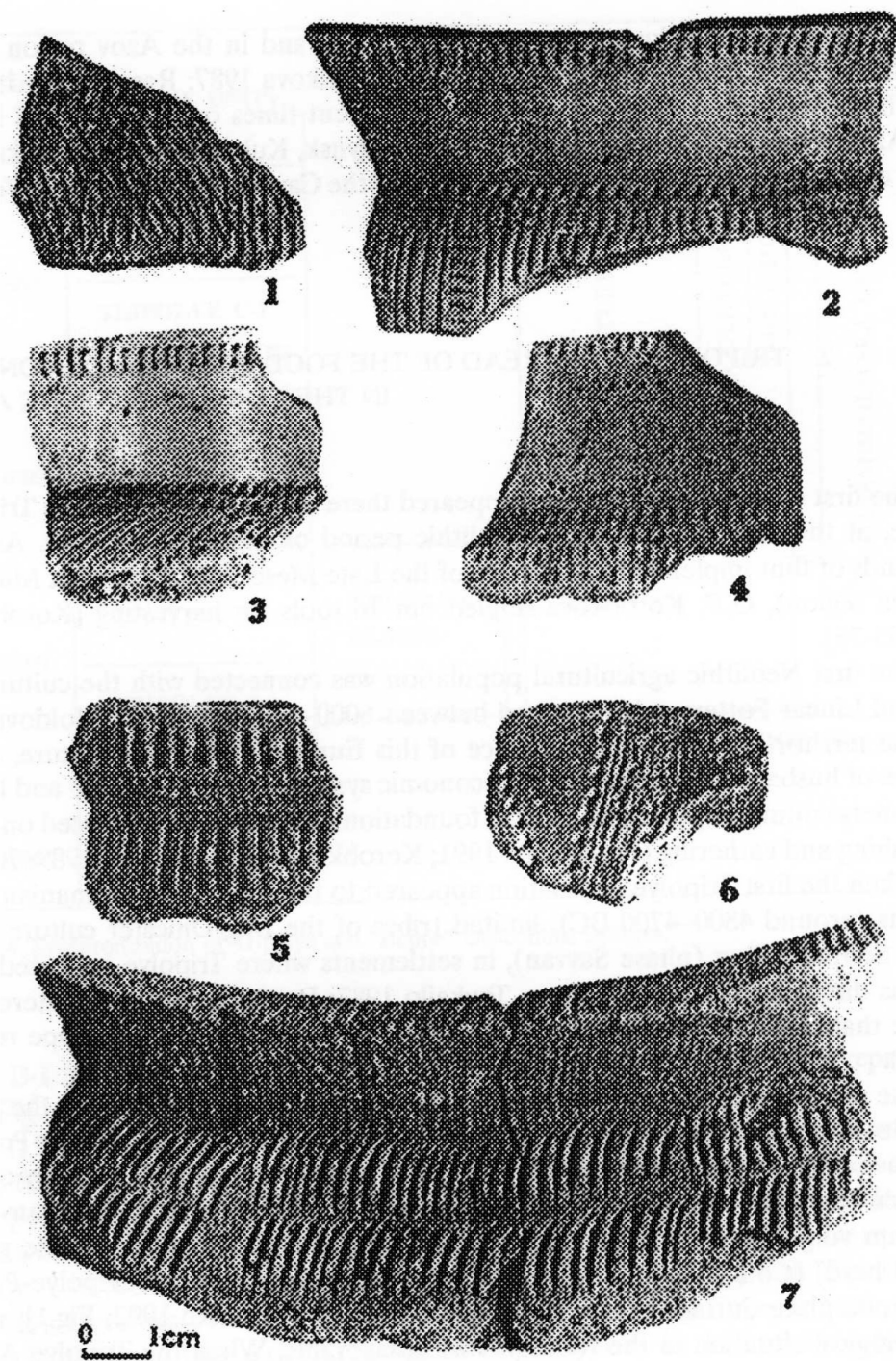


Fig. 5. Skelanska culture pottery from: 1-4 — Solonchey-II, 5-6 — Kadievcy, 7 — Florești (Zagotzerno). After T. Movsha.

groves of trees (lime-tree, oak, hazel, hornbeam, birch) [Kremenetski 1991: 80, 111-112].

Tripolye A agriculture was similar to the Boian system. Only one new type of tool appeared, for example the antler "ploughs" — one was discovered in Khrenbenikiv Yar, to the East of the Southern Bug (excavations of N.B. Burdo), and more in Moldova, which they dated to the end of Tripolye A or Tripolye BI/II — Cucuteni A-B [Burdo 1993b; Sorokin 1991: 108-111, 145]. The position of hunting in meat production increased — from 34.1% in Traian — Dealul Viei (Precucuteni I) to 59.2% at Bernashivka (Precucuteni II) — on the Dniester and 48.8% at Sabatinivka II on the Bug [Zbenovich 1989: 152]. Environmental conditions in the new areas were so favorable for the foraging economy that Tripolye, with its old food producing economy traditions, had some features similar to the Bug-Dniester or Dnieper-Donets cultures' economic systems.

The next period, i.e. Tripolye B — Cucuteni A and A-B, was more favorable for the producing economy because it coincided with the humid phase of Holocen [Petrovko 1992]. The Tripolye culture population appeared on the Middle Dnieper and formed a local group between the Southern Bug and Dnieper, which is now known as the East Tripolye culture [Tzvek 1985, 1989]. Other local groups, Soloncheny and Zaleshchyky, were in the Western areas between the Southern Bug and Prut rivers (Fig. 2) [Vinogradova 1983]. All the forest-steppe areas to the West of the Dnieper were divided between Tripolye chiefdoms and tribes, which corresponded with this local group type [Chernysh 1982: 236-238].

The first evidence of interactions between the Tripolye and the "steppe" Chalcolithic communities appears at the end of Tripolye A (Precucuteni III). It is a fragment of pot from Luka Vriblivecka, similar to the pottery of the Skelanska culture (or the period Ib of Sredny Stog) — it is an import or a sign of influence of the previous culture (Fig. 4) and two fragments with broken shell in clay [Burdo 1993a: 28, Fig. 3:7]. During the period of Tripolye B-I/ Cucuteni A3-A4, their quantity increased. At first, there were lower parts of the Skelanska culture pottery and some other fragments from the Tripolye-culture settlements Soloncheny, Florești-Zagotzerno, Kadiievtsy, Vasilivka, Drăgușeni, Novye Ruseshty-1 and other (Fig. 5) [Movsha 1961, Fig.2:5; Zbenovich, Shumova 1989: Fig. 2:15,16,17; Crișmaru 1977: Fig. 42:1,2]. All these settlements are from the West Tripolye areas. There are some imports in the East-Tripolye culture in the Tripolye B-I period: in Berezivka, Krasnostavka, Chizsovka, Sabatinivka-I, Pechera, Cherniavka, Onoprievka, also connected with the Skelanska culture (Fig. 6) [Danilenko 1974: Fig. 68:3,10,11; Tzvek 1989: 111-112, Fig. 4:4]. We must note that such "steppe" features as the broken shell in clay pottery were also present in the Neolithic cultures of Boian and Sredny Stog [Danilenko 1969; Comșa 1974]; a long time before the Sredny Stog cultural unity appeared, so the shell is not only a "steppe" tradition.

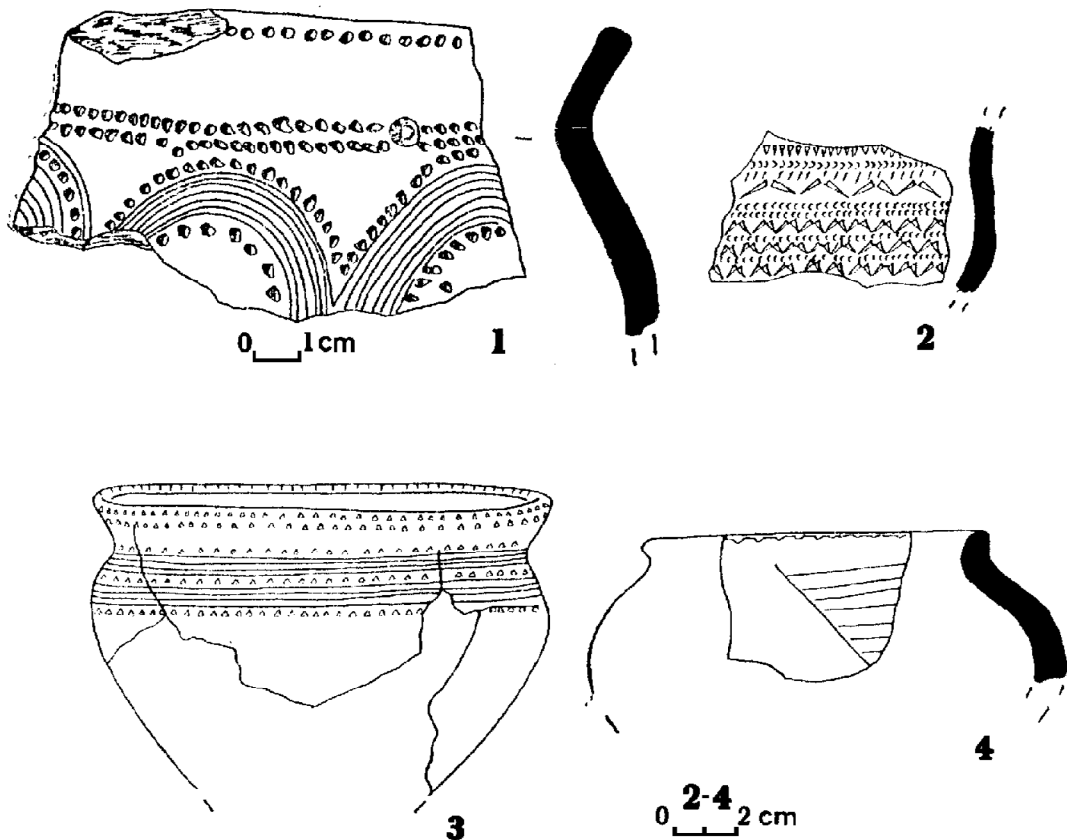


Fig. 6. Skelanska culture pottery from Tripolye settlements: 1 — Krasnostavka; 2-4 — Sabatinivka-I. After O.Tzvek and V.Danilenko.

We have real imports from the Skelanska culture in only a short period — from the end of Tripolye A-Precucuteni III to the beginning of Tripolye B-I/II — Cucuteni A-B1 (around 4600–4300 BC). Only some features of this pottery became part of the Tripolye pottery-making tradition from the period of Tripolye B-I/II (Fig. 7). The clay with the broken shell admixture was used for production of the Tripolye pottery forms: pear-like vessels, hat-like lids and other types. According to V.N. Danilenko, the spread of the "steppe" pottery in Tripolye was connected with the spread of milk-husbandry under a nomadic influence [Danilenko 1974: 104]. It is interesting to note that ceramic types connected with milk-husbandry, such as different strainers and jars, are also known in Tripolye A — Precucuteni I-III [Zbenovich 1989: Fig. 47, 45:16, 69:3]. So the question about the direction of influence is open.

The next problem is one of horse domestication. The great quantity of horse bones at the "steppe" settlements, the stone horse-head sceptres, and bone cheek-pieces created the theory that this process was connected only with the "steppe"



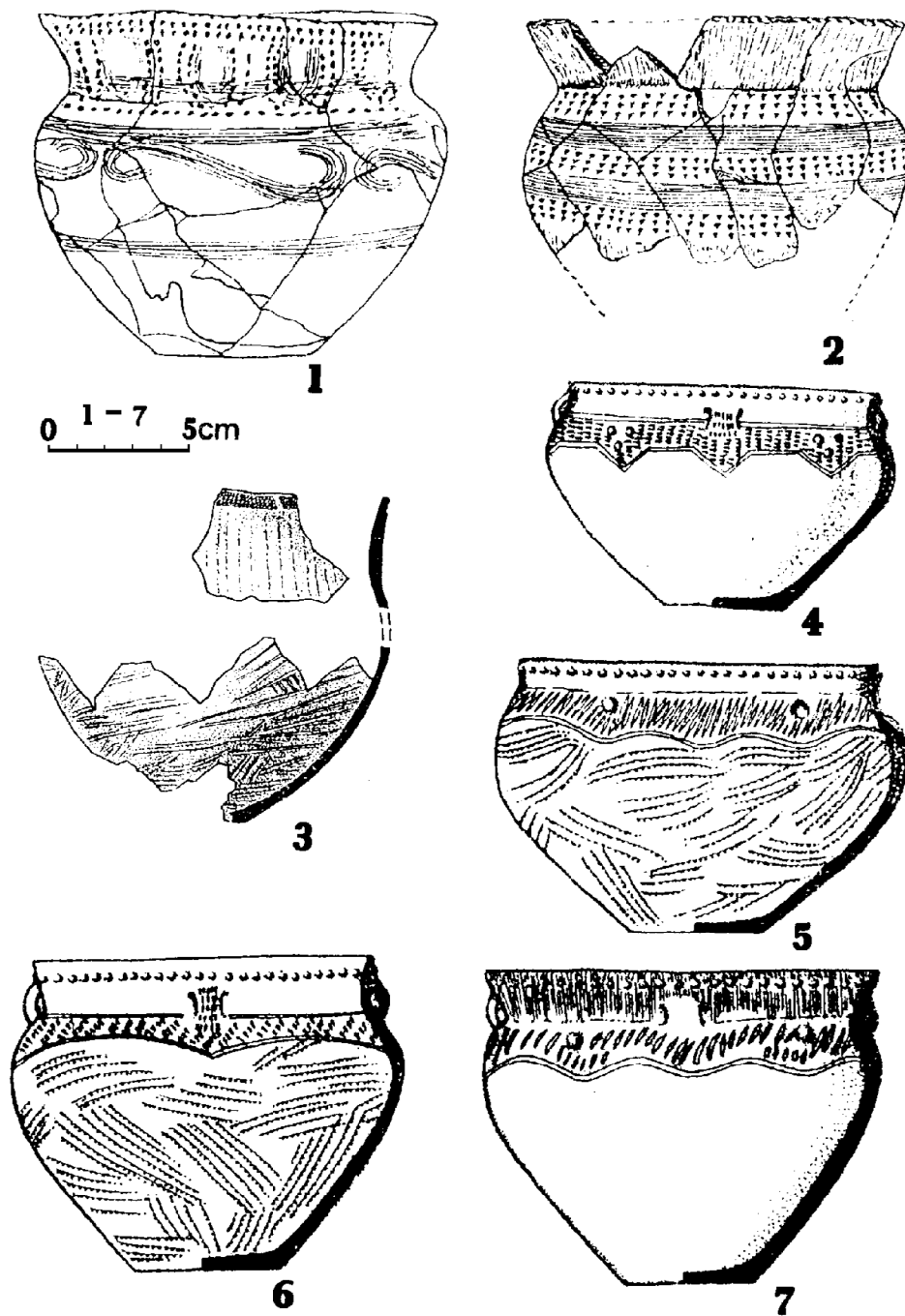


Fig. 7. "Steppe" imports from: 1-2 — Cucuteni A-B settlement Draguseni; 3 — from Gumelnița (Bolgrad-Aldeni type) settlement Taraklia; Tripolye BI/II pottery with some "steppe" features: 4-7 — Klisciv. After A.Crișmaru, S.Ryzhov and I.Zayets, I.Manzura and V.Sorokin.

communities (Danilenko 1974; Telegin 1973; Anthony, Telegin, Brown 1991 and others).

The beginning of this process is dated by the stone sceptres from the Chalcolithic burial mounds of the Northern Pontic zone (Alexeyeva 1992: Fig. 3:1,4). Similar sceptres were discovered at the Tripolye-Cucuteni settlements of Berezivka, Verhna Zsora, Obrisheni, Fedelesheni [Danilenko, Shmaglij 1972: 7, Fig. 2:4; Dergachev 1986: 73], which are dated to the periods of Cucuteni A3 — Cucuteni A4 (around 4500–4300 BC). In the region of interaction between the Tripolye and Sredny Stog Unity, most of the sceptres were discovered at the Tripolye — Cucuteni settlements. Only two were in the "steppe" burials: Suvorovo and Kasimcha, which are near the territory of the agricultural communities [Dergachev 1986: 59]. The tradition and technology of production of the polished stone articles was unknown to the population of the Skelanska culture, but well known to the Copper Age population of the Balkan-Carpathian region. According to investigations carried out by V.F.Petrun, the sceptres from Beresivka (on the Southern Bug) were produced from the local raw material. The highest percentage of horse bones was in Dereivka — 55% [Telegin 1973: 133, tab. VII], which is dated now to the period of Tripolye C-II [Movsha 1993: 47] — around 3500 BC. In the earliest settlement — Sredny Stog II, which was contemporary with the Tripolye B-I/II: 4300–4100 BC (after the end of the epoch of sceptres) this percentage was no more than 15% [Telegin 1973: tab. VII]. Before this time, the horse was common in the Tripolye and Gumelnița population herds of the Northern Pontic region: Tripolye A — from 2.5% to 8%, Gumelnița (the Bolgrad-Aldeni type) — from 3.2% to 16.8% [Subbotin 1983: 95, tabl.8].

The most interesting situation was in the region of the lower Danube and Dniester, which was occupied by the Bolgrad-Aldeni population (Fig. 2). The ecological situation here, at around 4600–4300 BC, was favorable for stock-breeding and agriculture [Kremenetski 1991:137] and close to 27 settlements appeared to the east of the Lower Danube — on the banks of the liman lakes and small rivers in the steppe zone [Subbotin 1983: 6-8, Fig.2]. The economic system of the Bolgrad-type population was based on developed agriculture and stock-breeding. The most important animals in the herd were cattle (26-58%) — up to 81.5% of the meat production, the percentage of sheep was sometimes up to 45.7%, but it was not more than 7-10% of the total meat produced. The horse was well-known: at the early settlement of Kokora 1 — 16.8%, at the late period settlement Bolgrad I — 15.4% [Subbotin 1983: 94-97]. The Bolgrad-Aldeni type gave the earliest and the first real example of the food-producing economy in the steppe zone of the Northern Pontic region during the Copper Age. This population had different contacts with the "steppe" population.

At the settlement of Taraklia (Moldova) a pot was found, it may be a "steppe" import (Fig. 7:3), in Bolgrad I — shell beads [Manzura, Sorokin 1990: Fig.1:9;

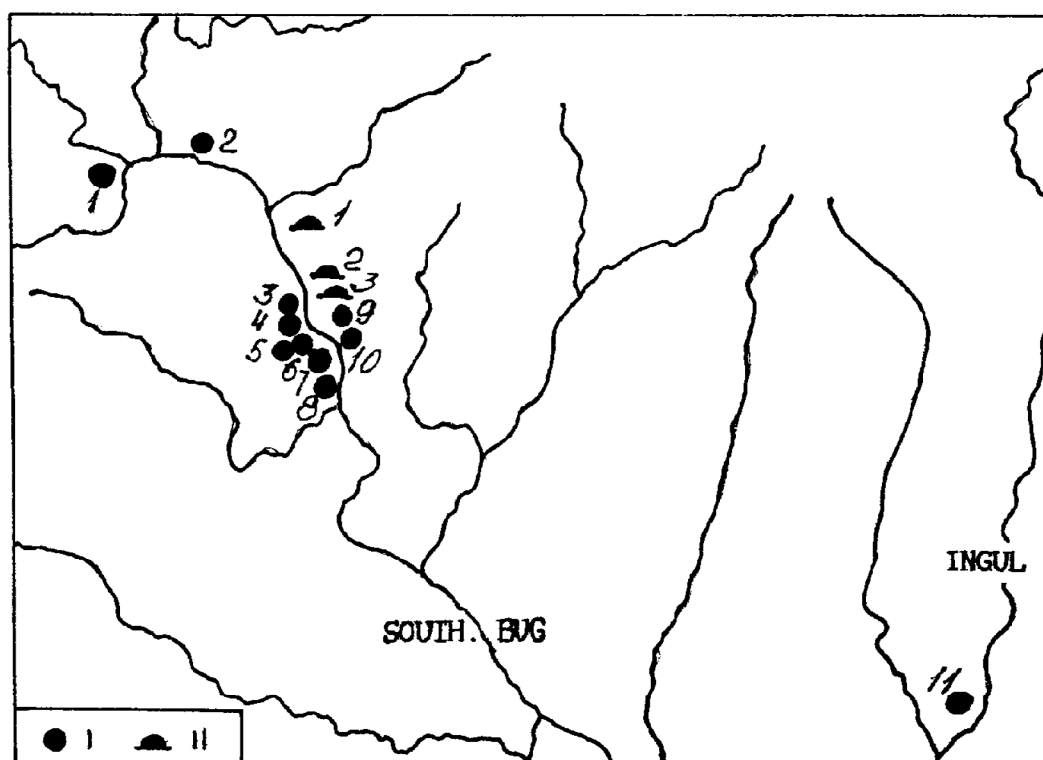


Fig. 8. Settlements and mound burials with Tripolye B-II and C-I pottery. I — settlements: 1 — Konecpol, 2 — Grushivka-Ostriv, 3 — Bogdanivka, 4-5 — Gard 1,3, 6-7 — Gard 4, 8 — L.Gard, 9-10 — Pugach, 11 — Novorozanivka; II — mound burials: 1 — Konstantinivka 2, m.1, b.23, 2 — Kovalivka, m.4, b.32, 3 — Serezlievka, m.4.

Subbotin 1983: 131]. Copper and gold articles from the Balkanian centers were discovered in burials of the Skelanska culture [Rassamakin 1993]. Some burials of this culture were near the of the Bolgrad-Aldeni type, among them the burial with the stone scepter from Suvorovo.

The early Tripolye may have been the second center of horse domestication in the first half of the 5th millennium BC. In Tripolye we have horse bones: from period A — Precucuteni I-III (before the "steppe" horseback-riders of the Sredny Stog Unity appeared), clay and stone sculpture, and painting with horse images. The process of domestication may have taken place in the forest zone of Europe, beginning with the aboriginal, large forest horse. We can see, in this process, the development of the domestication experience in societies with stable and old traditions of the stock-breeding [Bibikov 1953: 244-247]. The first evidence of horseback-riding was found in Dereivka (the Dereivka culture, or Sredny Stog-IIa) which dates 600–700 years later than Tripolye A and the Bolgrad-Aldeni type.

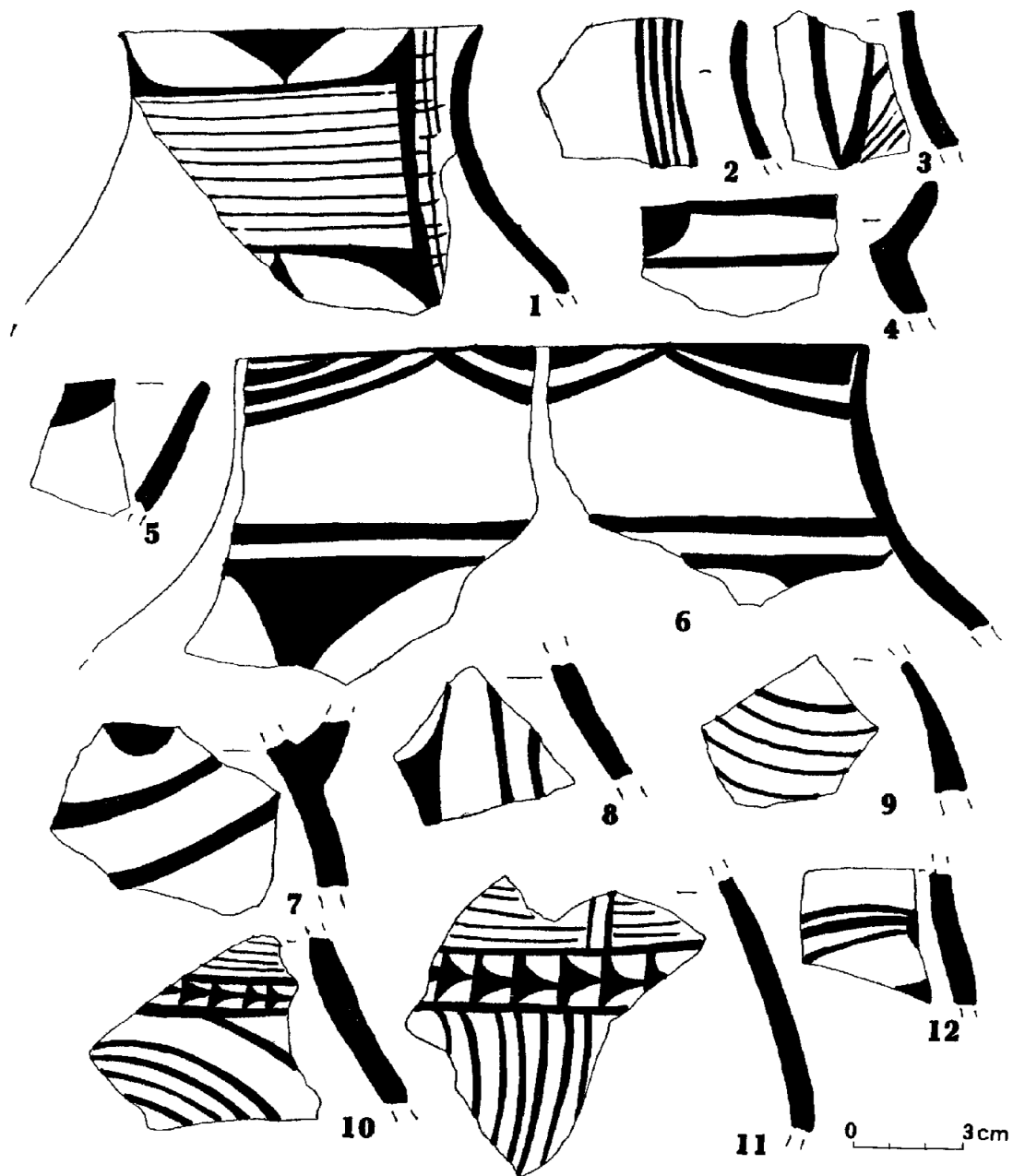


Fig. 9. Tripolye B-II period pottery from Novorozanivka settlement on Ingul-river.

The next period was more favorable for the spread of the Tripolye-culture population in the steppe zone, at first in the valley of the Southern Bug (Fig. 8). More than ten settlements with painted pottery of the Tripolye BII-CI periods were found there: Gard, Gard-3, Gard-4, Vinogradny Sad, Tashlyk-4, Novorozanivka (on

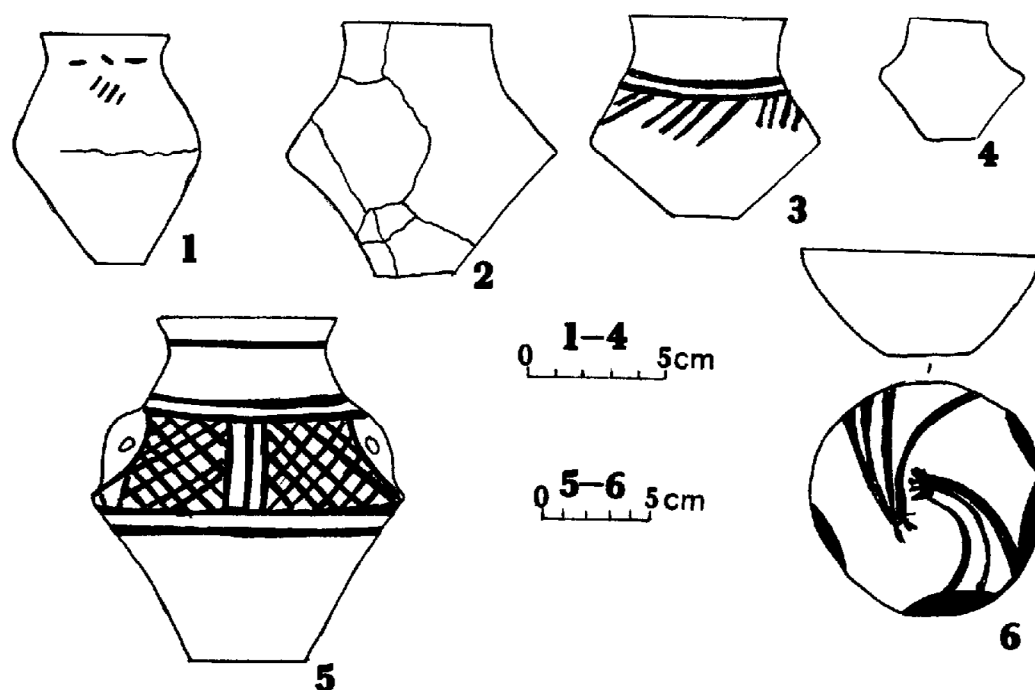


Fig. 10. Tripolye B-II and C-I periods pottery from "steppe" burials: 1 — Koshary (Odessa reg.) b.20, 2 — Khadzhide (Odessa reg.), m.6,b.4, 3 — Igren-8 (Dnepropetrovsk reg.), 4 — Rotmistrivka (Cherkassy reg.), 5 — Novo-Kotovsk (Odessa reg.), m.1, b.8, 6 — Igren-8. After S.Agulnikov, V.Petrenko, T.Movsha.

the Ingul river), and others [Movsha 1993: 41, Zbenovich 1974: 64]. In the cultural layer of these settlements pottery of the Sredny Stog Unity and painted pottery of Tripolye culture, and local groups Nebelivka and Tomashovka, were found (Fig. 9). According to O.G. Shaposhnikova, they were a new type of Tripolye settlement, connected with the mobile stock-breeding in the steppe zone [Shaposhnikova 1989: 7]. V. Kruts wrote about them as places of exchange, winter settlements of the herdsmen who belonged to the "steppe" population [Kruts 1989: 131-132]. According to T.G. Movsha, they were connected with the settling of the Tripolye population, which produced corn and cattle for exchange with the "steppe" communities and they were attempts of territorial expansion of the Tripolye in the steppe region [Movsha 1993: 40-41]. But this "expansion" was connected only with the river valleys and the character of the settlements is different than in the forest-steppe. Whether or not these settlements were Tripolyan is the problem which must be investigated.

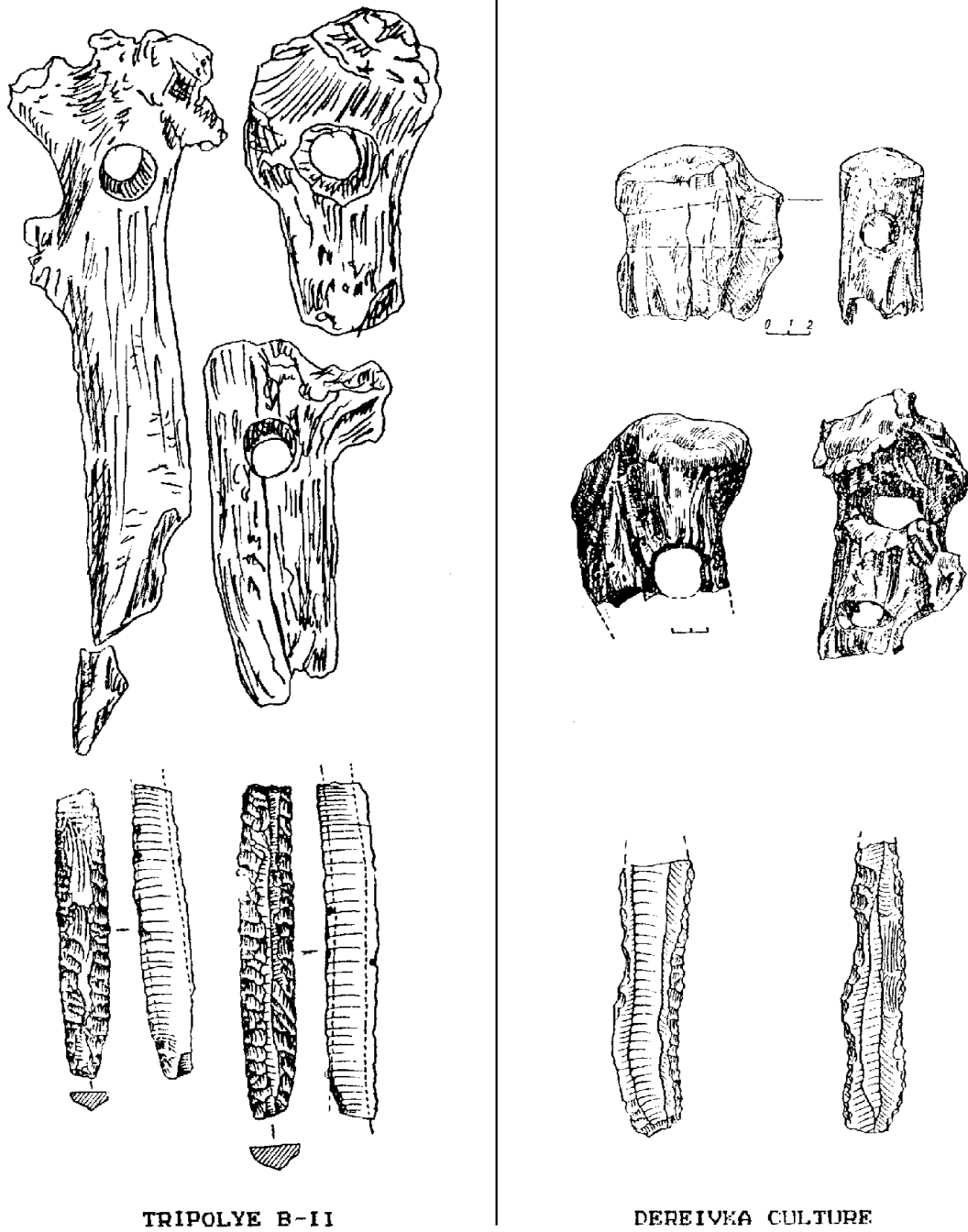
Painted Tripolye pottery of the C-I period was found in the burial mounds in the Southern Bug region: Serezlievka (mound 4), Bogdanivka (mound 1), Konstantinovka and Pribugske. These burials belong to the Niznemihailovka culture [Movsha 1993; Rassamakin 1993]. It was the beginning of a tradition of putting the

prestigious Tripolye pottery into the "steppe" graves, a tradition which flourished after 3500 BC (Fig. 10).

The river valleys were, at first, places for hunting, fishing and gathering of stone and raw flint for all populations — Tripolye and "steppe". All settlements were situated near fords and crossing-places [Movsha 1993: 42]. The period between 4000–3500 BC was the time when we had some "steppe" imports in the Tripolye settlements of the forest-steppe zone. It may have been a period of spread of the Tripolye influence to its neighbors. When V. Danilenko wrote about the antagonistic relations between the "steppe, stock-breeding" and the Tripolyan agricultural population, he considered it to be based on a division of labour between the populations which lived in different ecological conditions (steppe and forest-steppe). But he wrote in his book only about sceptres and pottery — archaeological evidence of interactions [Danilenko 1974: 92, 94-106]. N. Merpert had another view. In his opinion there was a long period of influence of societies with a producing economy in the Northern Pontic area on the cultures of hunters-fishers, especially in the forest-steppe(!) zone [Merpert 1982: 322-323].

The majority of the Sredny Stog Unity settlements were situated in the forest-steppe [Telegin 1973: 131]. Settlements of the Nizhnemihailovka culture and Pivikha (or Molukhiv Bugor) type were in similar locations. We have little data about the agriculture of these communities. At the Molukhiv Bugor settlement (Cherkassy region) some imprints on pottery were found: *Triticum monococcum*, *Hordeum vulgare* and *Panicum miliaceum*; at Lysa Gora (Poltava region) — *Triticum dicoccum*, *Panicum miliaceum*, *Vicia ervilia*; at Prisyia (Poltava region) — *Panicum miliaceum*; at Mihailovka (Kherson region), in the lower layer — imprints of *Triticum dicoccum*, *Hordeum vulgare*, *Panicum miliaceum* [Pashkevich 1991: 14-16]. *Triticum monococcum* and *dicoccum*, *Hordeum vulgare* were the main cereals in Tripolye culture from the earliest periods and unknown for the population of the neolithic cultures on the Dnieper before the spread of the Tripolye to the East [Pashkevich 1991: 26-27].

The tools connected with agriculture are also not numerous. Antler hoes were found in Dereivka and Molukhiv Bugor [Telegin 1973: 74-75]. Flint sickles were produced in large blades [Telegin 1973: 69, Fig. 36:2]. The antler hoes are similar to Tripolye culture tools which were found in settlements in areas between the Southern Bug and Dnieper, for example — at the Vladimirovka settlement of the Tripolye B-II period [Passek 1949: Fig. 47] (Fig. 11). The sickles on large blades are also typical of the Tripolye culture B-II period [Korobkova 1987: Fig.47; Passek 1949: Fig. 58:2,6]. There are some flint sickles of the Karanovo-type, which were typical of the Tripolye culture of previous periods among the materials of the "steppe" settlements. So we can say that agricultural spread in the forest-steppe zone (in Sredny Stog Unity and other cultural types) was connected with the Tri-



TRIPOLYE B-II

DEREIVKA CULTURE

Fig. 11. Agriculture tools from Tripolye and Dereivka cultures (Tripolye — from Vladimirovka and Polivaniv Yar; Dereivka — from Dereivka). After T.Passek and D.Telegin.

polye influence or population. It took place in a period not before Tripolye B-II — after 4000 BC.

More complex is the question about the spread of stock-breeding. Some authors considered it to be before the spread of agriculture [Danilenko 1969, 1974: 25-29; Telegin 1971b: 21], others — to be connected with Western cultural influences [Shnirelman 1980: 89-91]. The earliest cultures of the Sredny Stog Unity dated near 4500–4300 BC (on the evidence of Tripolye A or B-I periods pottery imports), were closely connected with Tripolye-Cucuteni and Bolgrad-Aldeni (Gumelnița) cultures. So the Western influence was connected, at first, with these cultures (except the region of the Don, where the influence of the Caucasus was predominant). The herds of the Sredny Stog Unity (except for the high percentage of horses) is similar to Tripolye data [Telegin 1973: 133; Zbenovich 1989: 152]. The Dereivka settlement represented the end of the creation of stock-breeding husbandry in the forest-steppe zone [Telegin 1986]. Dereivka was contemporary not with Tripolye C-I, but with C-II [Movsha 1993: 47], so it was the period after 3500 BC. The Dereivka culture was formed (according to N. Kotova) on the base of the Stog group, Kvitanska culture, Dnieper-Donets culture, late Tripolye and Funnel Beaker cultures only in the forest-steppe, because the steppe zone at this period was occupied by the Repin culture (connected with the origin of Yamnaya culture), which was under Caucasian influence. The forest-steppe cultures marked only the beginning of the history of real steppe unities, which were probably connected with mobile forms of stock-breeding [Merpert 1982: 325]. So the beginning of pastoralism and nomadism in the Pontic steppes can be dated after 3200–3000 BC and was connected with the global aridisation of climate at the end of the Atlantic/beginning of Subboreal. In the Copper Age, other pre-conditions of this process appeared: horse domestication, wheeled transport, and developed stock-breeding. The first semi-nomadic traditions were closely connected with the centers of the high civilizations, Sumer at Near East and Vinča in Europe [Nikolayeva 1991:85]. But the neighbors of the pastoralists' ancestors were Tripolye and Bolgrad-Aldeni, not Vinča, as we show in this article.

### 3. THE TRIPOLYE PROTOCITIES AND THE "STEPPE" TRIBES

In the second half of the 5th millennium BC, on the territories between the Southern Bug and Dnieper, large settlements of Tripolye culture appeared. At first, they had near 20-60 square hectares, as in Tsciszovka or Onoprievka (Tripolye B-I), then they increased to 150-200 ha, as in Vesoly Kut or Miropolye (Tripolye B-I/II)



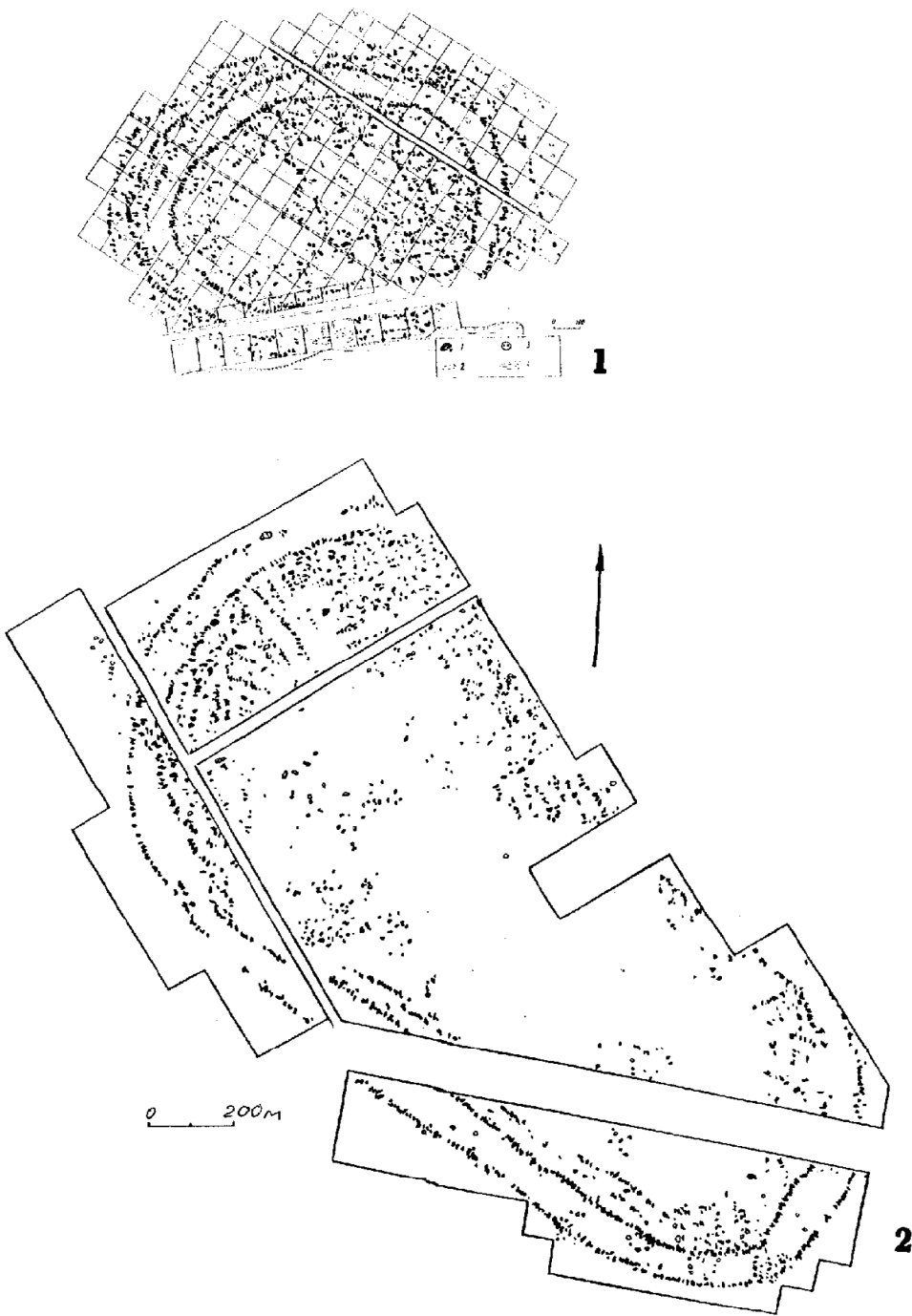


Fig. 12. Plans of Tripolye proto-cities (after V.Dudkin): 1 — Maydanetskoye, 2 — Talyanki.

[Tzvek 1980: 175-180]. Around 4200–4000 BC, such settlements appeared in other Tripolye areas — in Moldova and Podolye [Markevich 1973; Videiko 1993]. The period between 4200–3500 BC was the time of the largest Tripolye protocities, such as Talyanki (450 ha, up to 2800 buildings, population near 14,000), Maydanetskoye (200 ha, up to 2000 buildings, population near 10,000; Fig. 12) in the areas between the Dnieper and Southern Bug [Kruts 1989; Shmaglij, Videiko 1993]. They had powerful fortifications of two-story buildings (Fig. 12,13) and large public buildings. Near the large settlements, within 4-7 km, were small villages (2-9 square ha) — from 10 to 120 buildings (Fig.14) [Shmaglij, Videiko 1993].

Part of these large settlements were situated near the steppe border (Fig. 8). The economy of the large settlements was based on extensive agriculture and stock-breeding, some craft specialization appeared. They were the entire economic, public, political, military and cult centers which formed the complex structures of Ancient-East *nomus* type in order to control the surrounding territories [Videiko 1992:11-19; Shmaglij, Videiko 1993: 63].

V. Kruts regards such settlements as unreasonable from an economic point of view, and says their existence was connected with the political situation on the steppe [Kruts 1989: 121]. Some years earlier, E. Chernysh voiced a supposition that the large settlements appeared in connection with the opposition against the "steppe" [Chernysh 1977: 18-21]. The threat of war came from the type of steppe tribe economy, because they were forced to enter the forest-steppe areas for stock-breeding and, at the same time, plundered the Tripolye settlements. According to V. Kruts, the steppe population was connected with cultures of the Sredny Stog, Niznemikhailovka and eneolithic inhumations in the supine position [Kruts 1989: 121,127,129-130, Fig. 5]. All this is similar to the hypothesis, which was critiqued by V. Titov [Titov 1982: 90-91,137-138], about the rural people of the Pontic steppes, who destroyed the civilizations of the Copper and Bronze Age in Europe and built their burial mounds on the territory of the agricultural settlements [Bona 1961; Gimbutas 1974: 129,131].

The large Tripolye settlements appeared in the B-I/II period, when their "steppe" neighbors were tribes of the Sredny Stog Unity, who lived in the forest-steppe zone on the Dnieper and the steppe zone on the Dnieper, Don, Donets and smaller rivers (Fig. 3). Their economy (in the opinion of D.Y. Telegin) was based on developed stock-breeding. Agriculture, hunting, and fishing were secondary [Telegin 1973: 162]. According to our calculations, the meat from horses and cattle comprised up to 91% of the total, as in the Bolgrad-Aldeni culture. If the horse was the object of hunting, the herd may be, in reality, to be similar to the Tripolye, with the cattle as the primary meat source. Nomadism is not possible with such a number of cattle. The Sredny Stog population was settled [Shnirelman 1980: 241-242]. The image of the warlike Sredny Stog horseback riders was also based on the facts

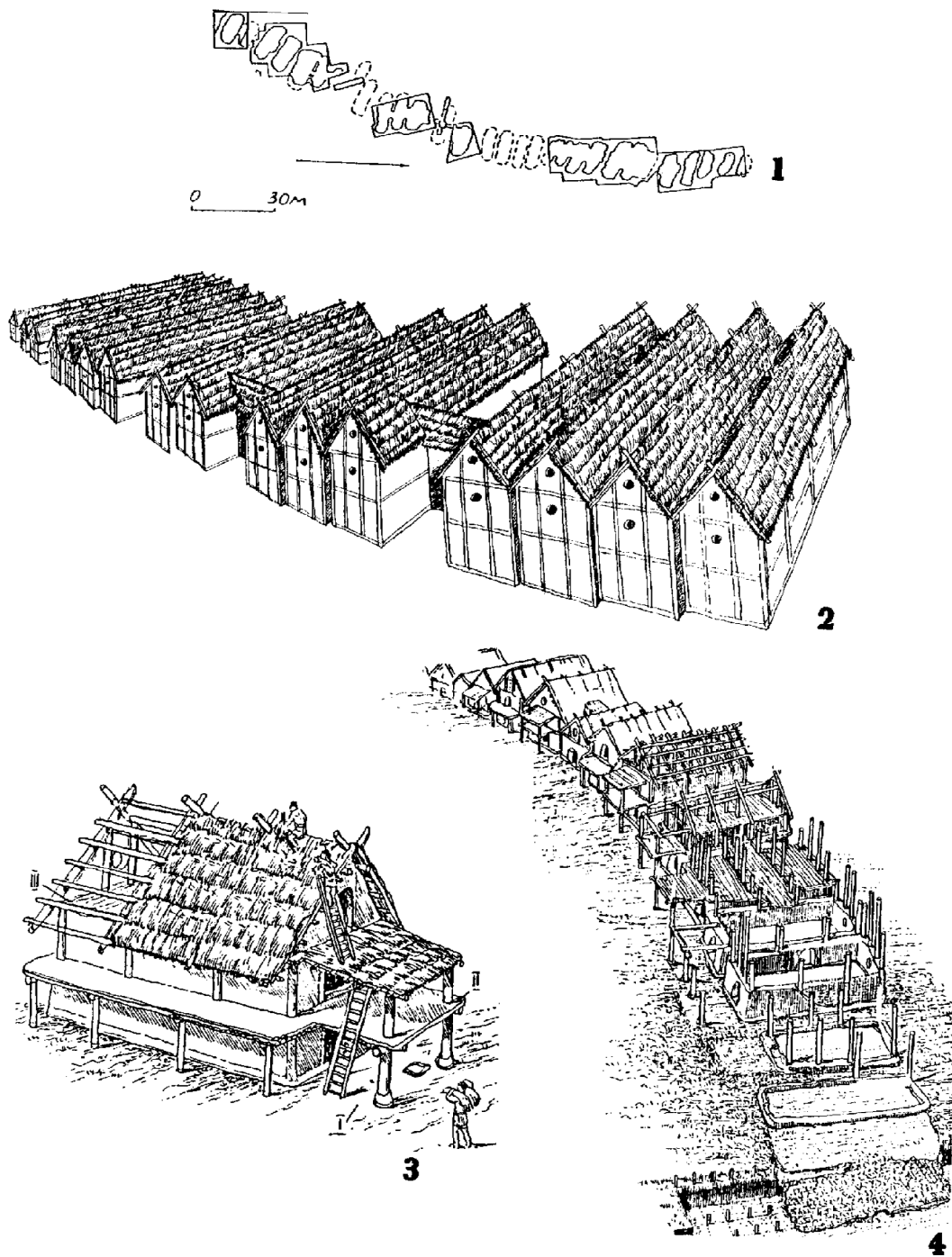


Fig. 13. Tripolye C-I period protocity Maydanetskoye: reconstructions of buildings and fortifications: 1 — part, excavated in 1987–1991; 2 — reconstruction of this part; 3-4 — reconstructions of buildings (Pictures by Y.Bakhmach and P.Kornienko).

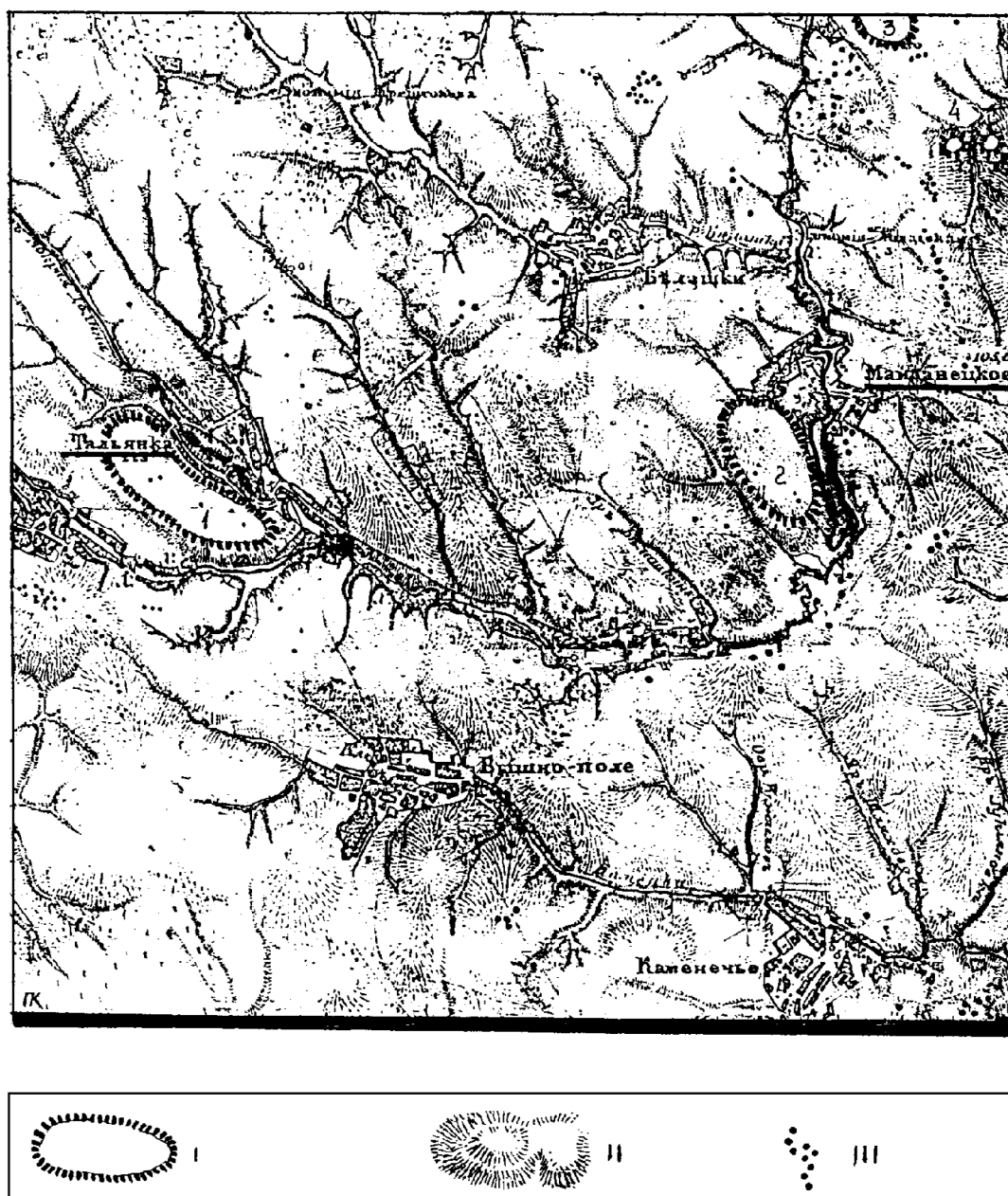


Fig. 14. Region of Talyanki and Maydanetskoye protocities: I — settlements; II — relief; III — mounds. 1 — Talyanki, 2 — Maydanetskoye, 3 — Talne-1, 4 — Talne-2, 5 — Talne-3.

of the archaeological finds: so called bone cheekpieces and traces on horse teeth [Anthony, Telegin, Brown 1991: 96-97]. But whether the investigated horse bones belonged to the Copper Age is a problem, because in Dereivka, layers of the Middle Bronze (with circular bone cheekpieces) and the Iron Age were also discovered.

If this horse really belonged to the Chalcolithic layer, the possibility of horseback riding is not the same as the possibility of their use in war [Shnirelman 1980: 231-232]. The existence of the Sredny Stog cavalry, armed with bone hammer-axes, spears with flint heads, and bows and arrows [Telegin 1973: 143] is problematical. Tripolye armament was more perfect: stone and copper hammer-axes, flint and copper daggers and knives were unknown to the "steppe" population at this time [Zbenovich 1975]. The large settlements had strong fortification systems [Shmaglij, Videiko 1993: 54-55; Fig. 1:3]. The Tripolye population of only one local unity, the Tomashovka group, was near 25,000-34,000 in some periods [Videiko 1992: 11]. The population of the entire Tripolye was near 410,000 during the middle period (near 4200–3900 BC), and at the beginning of the late Tripolye (3900–3500 BC) — 100,000 to 120,000 people [Kruts 1993: 33]. The number of the Steppe population in the Early Bronze Age in the entire (!) Northern Pontic area — from the Don to the Danube — was near 50,000 in the period of the Catacomb Unity [see the article by S.Z. Pustovalov in this volume of *B-PS*]. The Sredny Stog Unity was only a cultural unity, but not a military organization like the Catacomb Unity under the rule of Ingul leaders.

There is some data about the war conflicts between "steppe" tribes and Tripolye. The spreading of mounds on the territory of Tripolye protocities is connected with the Early Bronze Age period. In mound 1, on the territory of Maydanetskoye (Cherkassy region), were 6 burials, 5 of which belonged to the Yamnaya culture [Shmaglij, Videiko 1988]. The main burial was excavated from a level of black soil (up to 20 cm), which covered the Tripolye fortifications. Pottery from other burials (3 and 6) is similar to the pottery of the upper layer of the Mikhailovka settlement on the Dnieper (Tripolye pottery of C-II period was found in the middle layer, Maydanetskoye was dated to period C-I). So this mound, like many others, appeared a long time after the Tripolye culture disappeared [Shmaglij, Videiko 1991]. At the beginning of the C-II period in this region, the Tripolye population of the Kosenivka-type built protocities and had contact with the population of the Molukhiv Bugor type, whose pottery was found during our 1993 excavations of a large settlement (180 ha), Olkhovets (Cherkassy region), not far from the Sredny Stog Unity (Fig. 15).

These materials help to establish the dates of the Molukhiv Bugor-type close to 3500 BC. The Kosenivka-type (the largest settlements) are contemporary with the Sofievka-type cemeteries in the Kiev region. According to V. Kruts, the territory of the Kolomyishchyna-type (Tripolye C-I) on the Middle Dnieper was partly covered by materials of the "steppe" Molukhiv Bugor-type. This process led to a migration of the Tripolye population to the North and the appearance of Chapayevka and later local groups on the Dnieper, with "steppe" features in their pottery [Kruts 1977: 149-156]. It is based on a synchronization of Molukhiv Bugor (by V. Dani-

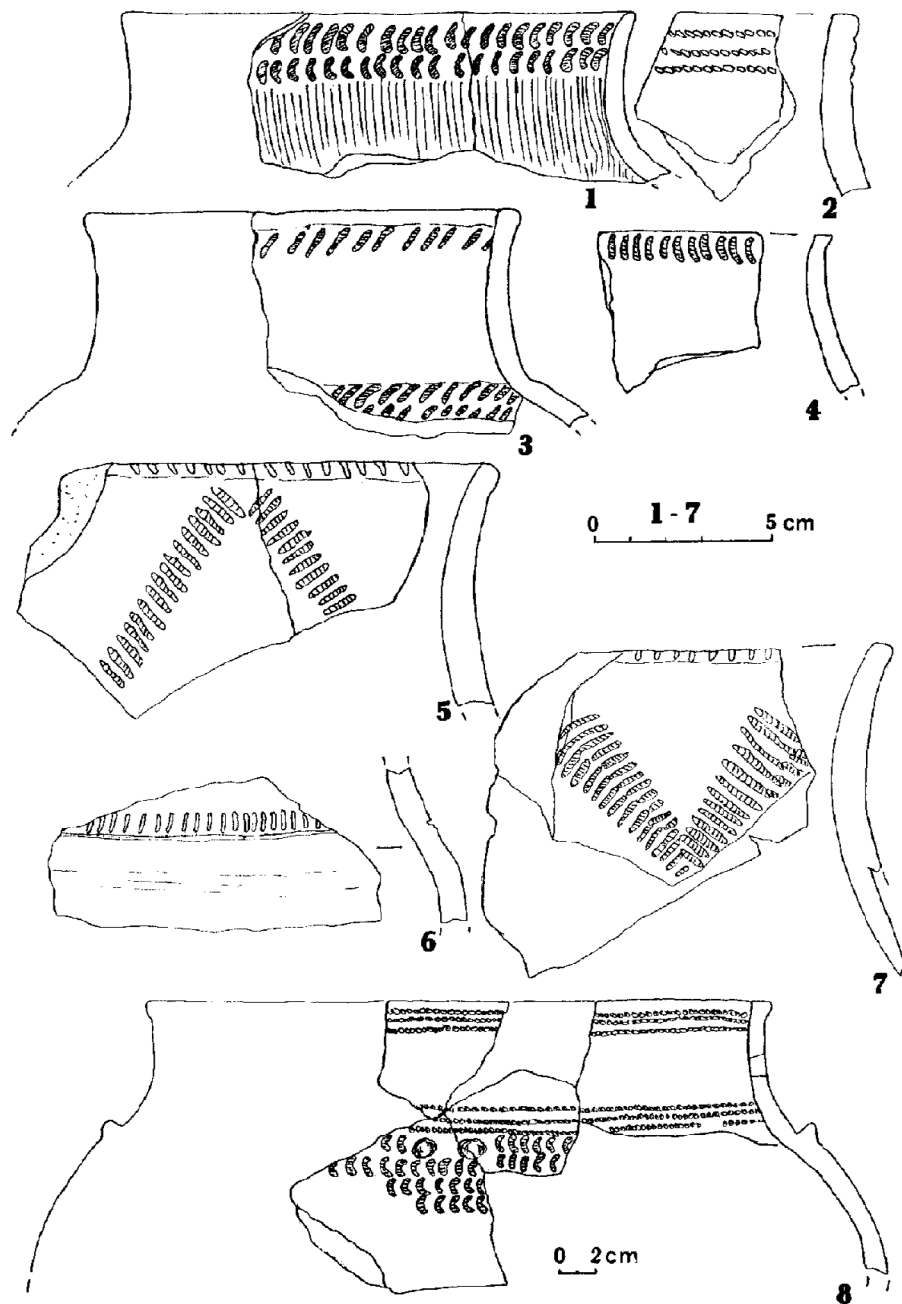


Fig. 15. Tripolye C-II period settlement Olkhovets: pottery with Molukhiv-Bugor type features.

lenko) with Tripolye C-I. In reality, this type was dated as later and its connection with the Tripolye migrations is disputable. All the "steppe" features, in reality Tripo-

lyan features in Molukhiv Bugor pottery, appeared under the influence of Tripolye traditions. The economy of Molukhiv Bugor was based more on hunting than on stock-breeding [Telegin 1973: 131].

There were some economic, military and political pre-conditions of the "steppe aggression" against the "peaceful" Tripolye population of the forest-steppe zone in times when the protocities existed. Protocities disappeared long before forces more powerful than Tripolye chiefdoms appeared in the steppe. Tripolye protocities appeared as a reaction to the economic and political situation in the Tripolye-Cucuteni Unity (population growth, military conflicts between tribes, migrations). Through the example of large Tripolye settlements, we can see the beginning of the urbanization process, which was similar to the prehistory of Sumer cities in Mesopotamia between 4000–3000 BC [Videiko 1992: 15-19].

## CONCLUSIONS

Elements of the producing economy in the steppe zone appeared very early — in the Late Mesolithic and Neolithic periods. But the husbandry of the steppe population, which was limited for a long time, was based primarily on hunting and fishing. Cultures of these periods were connected with the valleys of large rivers, not with the open steppe. We can see the same picture in the forest-steppe, except for some regions where the population of the Kriş and Linear Pottery cultures lived.

The wide spread of the producing economy between the Lower Danube and Dnieper was connected with the Tripolye-Cucuteni and Gumelniţa cultures (Bolgrad-Aldeni type). Bolgrad-Aldeni was the first culture with developed stock-breeding in the steppe zone of the Northern Pontic area. Horse domestication may also be connected with the Tripolye and Bolgrad-Aldeni, where the horse appeared before it spread to the Sredny Stog Unity. The complex producing economy, similar to Tripolye and Bolgrad-Aldeni husbandry systems, was first established among the Sredny Stog Unity population in forest-steppe zone, near the Tripolye borders. The end of this process is dated between 3500–3200 BC. It was the foundation of real mobile forms of stock-breeding in the steppe zone. The spread of these forms, after 3000 BC, was connected to the end of the Atlantic and the beginning of the Subboreal periods. At the same time, it was the end of the Tripolye-type complex economy and the end of Tripolye culture.

The wide spread of the "steppe" influences around 4500 BC (pottery, sceptres(?), beads) was connected not with the migration of the Sredny Stog Unity

population to the West, but with the copper trade with the Balkans. After the disintegration of the Gumelnița metalwork center, all "steppe" influences disappeared. Instead, Carpathian features appeared in "steppe" materials — after the change of copper trade directions in about 4200 BC. This was also the time when the Tripolye husbandry model interested the forest-steppe population of the Sredny Stog Unity. This process was connected with the spread of prestigious metal articles (gold and copper) among the leaders of this population — previous husbandry systems were not enough for their new requirements. At the same time, the steppe zone became the object of Tripolye expansion, when settlements with Tripolye materials appeared on the Southern Bug (periods B-II and C-I). Tripolye proto-cities appeared near 4000 BC in different territories (not only on the borders with the steppe). They were the centers of numerous Tripolye chiefdoms which were in a state of permanent internecine war. The cause lay in the expansive character of agriculture — after 40-70 years, settlements were built near the new fields, but the territory of the forest-steppe was limited. There were some economic, political and military pre-conditions to "steppe" aggression against Tripolye proto-cities and there is some archaeological evidence of such conflicts. Disintegration of the Tripolye husbandry and cultural type was connected with the change in the environment after 3500 BC. These changes led to the spread of a producing economy in the steppe zone. Interactions between Tripolye and Sredny Stog Unity created the pre-conditions for this process. After 3500 BC, some groups of Tripolye population took part in the creation of new cultural types in the steppes — like the Usatovo culture and others. Only after these events did the steppe pastoralists appear. There were some pastoralists between 4800–3200 BC in the Northern Pontic area. The billiard ball model [Koško 1990: 310-312] must take into consideration the internal causes of Tripolye culture migrations, change of environment, which were more powerful forces than the minor tribes of the Sredny Stog Unity. They only began agriculture and stock-breeding for themselves with the help of the Tripolye culture and Bolgrad-Aldeni type. Tripolye and Bolgrad-Aldeni played the part of higher civilizations in the creation of the European semi-nomadic tradition.

*Translated by Mihailo Y. Videiko and Karen Laun*