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# THE MIDDLE AND UPPER PLEISTOCENE OF UKRAINE: A SYNOPSIS OF PALAEOLITHIC FINDS WITH SPECIAL REFERENCE TO PATTERNS OF PEOPLING AND CULTURAL DEVELOPMENT

BY

VADIM STEPANCHUK\*, IGOR SAPOZHNIKOV\*

**Keywords:** *Ukraine, Middle and Upper Pleistocene, Palaeolithic, patterns of peopling, cultural development.*

The proposed brief review is mainly focused – from the standpoint of currently available geostratigraphical, chronological and strictly archaeological data – on the most important cultural and colonization shifts that took place on the territory of today's Ukraine in course of the Middle and Upper Pleistocene.

As a geochronological frame, the official stratigraphical scheme of Quaternary deposits of Ukraine (URMSK 1993) based upon the works of M. F. Veklich and his team<sup>1</sup> is used in this paper. Nevertheless, it should be specially pointed out that the regional stratigraphical scheme is under active reconsideration at present, and this situation sometimes results in certain misunderstanding, as the same geostratigraphical terms are often used under different geochronological meanings (fig. 1). That is why the OIS sequence now appears to be the most suitable guide for the aim of consequent description of Palaeolithic development in the country. OIS 19 is regarded as the base of the Middle Pleistocene.

The proposed synopsis is based on a bulk of special publications dealing with various aspects of archaeological and natural science data, but constraints of the volume provide no room to refer directly to all used titles; therefore references cited have to be essentially limited. It should also be noticed that only stratified localities were taken into consideration for the present survey.

## CORRELATION OF PALEOCLIMATIC EVENTS AND ARCHAEOLOGICAL FINDS

Until now no proof of human presence dated to OIS 19–14 has been found on the territory of today's Ukraine. Culture-chronological complexes VIII and VII of Korolevo I, which are correlated with Günz and Günz-Mindel alluvium, respectively, are both localized in the Matuyama zone of inverse polarity<sup>2</sup> and therefore should be regarded as Lower Pleistocene records.

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\* Institute of Archaeology, National Academy of Sciences, Kiev, Ukraine.

<sup>1</sup> M. Veklich, Natalia Sirenko, O. Adamenko *et alii*, *Paleogeographical stages and detailed stratigraphical scheme of Pleistocene of Ukraine*, Kiev, 1984 (in Russian).

<sup>2</sup> V. Gladilin, V. Sitlivy, *Acheulean of Central Europe*, Kiev, 1990; P. Haesaerts, Larissa Koulakovska, *La sequence pedosedimentaire de Korolevo (Ukraine Transcarpatique): contexte chronostratigraphique et chronologique*, in *The European Middle Paleolithic*, Kiev, 2006, p. 21–37; Galina Levkovskaya, P. Haesaerts, O. Adamenko, *End of Matuyama and beginning of Brunhes epochs in Korolevo-I geoarchaeological region (Transcarpathia): isotope chronology and paleogeography of sediments and Palaeolithic layer VII*, in *Early Paleolithic of Eurasia: New discoveries*, Rostov-on-Don, 2008, p. 119–121.

### OIS 13

The only currently known assemblage reported for this interval is represented by culture-chronological complex VII of Korolevo I, west of the Carpathian range (fig. 2:1). This assemblage, uniting – as almost all assemblages known in Korolevo I – both materials recovered *in situ* and redeposited artifacts with the same degree of chemical weathering, is characterized by prevailing choppers, and also by proto-handaxes and handaxes, flake tools and individual forms.<sup>3</sup> Reliable localities are not reported for the following OIS 12.

### OIS 11

Statistically insignificant culture-chronological complex V-c of Korolevo I in Transcarpathia and, probably, isolated materials from Maly Rakovets IV are correlated with this interval.<sup>4</sup> For the first time, evidence of human presence is reported for the areas east of the Carpathian range (fig. 2:2). Medzhibozh and Maslovo should be mentioned; both located in the Basin of Southern Buh River but separated by several hundred kilometres. Isolated LP artifacts accompanied by poorly preserved fauna at Maslovo for the first time show high probability of human presence in the center of continental Ukraine in course of OIS 11.<sup>5</sup> The Medzhibozh assemblage, whose Holstein age is indicated by a series of biostratigraphical proofs – includes ca. 40 artefacts and is characterized by predomination of flake tools, presence of pebble tools, prevailing of siliceous raw materials, but also by probable usage of other rocks; there also are modified or damaged bone artefacts<sup>6</sup>. For the time being there are no data indicating the presence of population in course of stages OIS 10 to 8, although some materials from Maly Rakovets IV might be dated to OIS 9<sup>7</sup>.

### OIS 7

Population is indicated by finds from central and eastern parts of Ukraine, between Carpathian range and the Dnieper valley; there is no evidence of colonization of areas east of the Dnieper (fig. 2:3). Available assemblages associated with this oxygen stage are quite different. Transcarpathian culture-chronological complexes V-b and V-a of Korolevo I are characterized by handaxes and specific elongated bifacial foliates.<sup>8</sup> While Korolevo I: V-b and V-a are characterized by low indices of Levallois technique, the latter is rather characteristic of the Podolian site of Velyky Glybochok I: III but not characteristic of the industry of Bugliv V: I, also in Podolia.<sup>9</sup>

### OIS 6

Complex V of Korolevo I, characterized by centripetal, non-volumetric subparallel and Levallois knapping techniques, isolated choppers and handaxes and variable flake tools, is defined as transitional between Acheulean and Mousterian<sup>10</sup> (Gladilin & Sitlivy 1990), and it is probably correlated with the

<sup>3</sup> V. Gladilin, V. Sitlivy, *op. cit.*

<sup>4</sup> *Ibidem*; S. Ryzhov, Zhanna Matviishina, Anna Pudovkina, P. Levchuk, *Stratigraphical and planigraphical studies of Palaeolithic site Maly Rakovets IV in Transcarpathia*, in *Vita Antiqua*, p. 7–8, 2009.

<sup>5</sup> V. Stepanchuk, S. Ryzhov, Zhanna Matviishina, S. Karmazinenko, *New data on studies of early stages of colonization of East European Plain during the Palaeolithic*, *Kamiana Doba Ukrainy*, 11, 2009, p. 25–40 (In Ukrainian).

<sup>6</sup> V. Piasetskij, *Middle Acheulean locality of Medzhibozh*, *Vita Antiqua*, 3–4, 2001, p. 125–134 (In Russian); L. Rekovets, *Medzhybozh, the Mammal Fauna Locality and Multilayer Palaeolithic Site in Ukraine*, *Vestnik zoologii*, 35(6), 2001, p. 39–44 (In Russian); V. Stepanchuk, *Lower and Middle Palaeolithic of Ukraine*, Chernovtsy, 2006 (In Russian); L. Rekovets, A. Chepalyga, Vl. Povodyrenko, *Geology and mammalian fauna of the Middle Pleistocene site Medzhybozh, Ukraine*, *Quaternary International*, 2007, 160, p. 70–80.

<sup>7</sup> S. Ryzhov, Zhanna Matviishina, Anna Pudovkina, P. Levchuk, *Stratigraphical and planigraphical studies of Palaeolithic site Maly Rakovets IV in Transcarpathia*, *Vita Antiqua*, 7–8, 2009 (In Russian).

<sup>8</sup> V. Gladilin, V. Sitlivy, *Acheulean of Central Europe*, Kiev, 1990 (In Russian).

<sup>9</sup> O. Sytnyk, *Middle Palaeolithic of Podillia*, Lviv, 2000 (In Ukrainian).

<sup>10</sup> V. Gladilin, V. Sitlivy, *op. cit.*

beginning of that interval. The Levallois assemblage of layer III-B of Velyky Glybochok I<sup>11</sup> and, probably, the earliest assemblage of Zhitomirskaya<sup>12</sup> and similar assemblages with bifacial leafpoints near Netishin<sup>13</sup> may also be dated to that time span (fig. 2:4). It should be emphasized, however, that the latter assemblages are marked by a rather uneven stratigraphical position, and, therefore, they might be referred either to the preceding or the following more favourable climatic phase.

### OIS 5e

For the first time, presence of population is reported for the territories east of Dnieper valley (fig. 3:1). The following sites and localities are correlated with this interval, namely: isolated finds at Ketrosy and Korman' IV and Levallois-Mousterian blade of Ezupil: III (Dniester Basin); Levallois-Mousterian flake of Korolevo I: IV-a (Transcarpathia); assemblage with bifacial foliates of Crimean site Kabazi II: V/3–VI/17, isolated finds at GABO and Novy Svet bay, both in Crimea; Mukhovets (NE Ukraine); Korneev Yar (Donbass); Nechaevo III (Central Ukraine).<sup>14</sup>

### OIS 5d

Weakly definable assemblages of Korolevo I: IV and Maly Rakovets IV (Transcarpathia); assemblage with bifacial foliates of Kabazi II: III and, probably, assemblages with bifacial backed knives of Zaskalnaya V: VI and VII (Crimea); and assemblage with bifacial foliates of Osypka (Dniester) are correlated with this interval (Fig. 3:2)<sup>15</sup>.

### OIS 5c-5a

In comparison with the previous phase, sites and localities correlated with this interval demonstrate quantitatively and qualitatively (spatially) more expanded pattern of colonization of the terrain (fig. 3:3). The following standard sites should be mentioned: Levallois-Mousterian flake-oriented of Korolevo I: III in Transcarpathia, Molodova I: IV, V (and probably also III, II, and I), and Molodova V: 12a, 12, 11, Ketrosy, the main layer (Dniester area), Pronyatyn (Volhyno-Podolia); assemblages of Nechaevo III (S.Buh basin), bifacial assemblage of Ezupil: II and, probably, Osypka Осыпка (Dniester area); Velyky Glybochik I: III-A, II, Kolodiiv, Vanzhuliv I: III; Igovitsa I: II; and many other flake and bifacial industries in continental Ukraine and Crimea (fig. 5)<sup>16</sup>.

<sup>11</sup> O. Sytnyk, *op. cit.*

<sup>12</sup> Y. Koukhartchuk, *Acheulean assemblage of Zhitomir site*, in *Early Palaeolithic assemblages of Eurasia*, Novosibirsk, 1992, p. 93–111 (In Russian).

<sup>13</sup> A. Romanchuk, I. Cherniakov, *Acheulean site Spivak I in Volhynia*, *Carpathica*, 34, 2006, p. 4–19, (In Russian).

<sup>14</sup> N. Anisiutkin, *Mousterian epoch in the South-West of Russian plain*, St.Petersburg, 2001 (In Russian); O. Sytnyk, *op. cit.*; Larissa Koulakovskaya, *Mousterian cultures of Carpathian basin*, Kiev, 1989 (In Russian); V. Chabai, *The Middle Palaeolithic of the Crimea*, Simferopol, 2004 (in Russian); Y. Kolosov, V. Stepanchuk, V. Chabai, *Early Palaeolithic of Crimea*, Kiev, 1993 (In Russian); Y. Koukhartchuk, *Palaeolithic localities in Romny district*, Kamiana Doba Ukrainy, 1, 2002, p. 30–42 (In Ukrainian); A. Kolesnik, *The Middle Palaeolithic of Donbass*, Donetsk, 2003 (In Russian); V. Stepanchuk, S. Ryzhov, Zhanna Matviishina, S. Karmazinenko, *New data on studies of early stages of colonization of East European Plain during the Palaeolithic*, Kamiana Doba Ukrainy, 11, 2009, p. 25–40 (in Ukrainian).

<sup>15</sup> N. Anisiutkin, *op. cit.*; Larissa Koulakovskaya, *op. cit.*; V. Chabai, *op. cit.*; Y. Kolosov, *Ak-Kaya Mousterian culture*, Kiev, 1986 (In Russian); V. Stepanchuk, *Lower and Middle Palaeolithic of Ukraine*, Chernovtsy, 2006 (in Russian); S. Ryzhov, Zhanna Matviishina, Anna Pudovkina, P. Levchuk, *Stratigraphical and planigraphical studies of Palaeolithic site Maly Rakovets IV in Transcarpathia*, in *Vita Antiqua*, 2009, p. 7–8 (In Russian).

<sup>16</sup> N. Anisiutkin, *op. cit.*; idem, *Palaeolithic site of Stinka I and the problem of transition from Middle to Upper Palaeolithic in the South-West of Eastern Europe*, St.Petersburg, 2005 (in Russian); O. Sytnyk, *op. cit.*; Larissa Koulakovskaya, *op. cit.*; V. Chabai, *op. cit.*; Y. Kolosov, V. Stepanchuk, V. Chabai, *op. cit.*; Y. Koukhartchuk, *Palaeolithic localities in Romny district*, Kamiana Doba Ukrainy, 1, 2002, p. 30–42 (In Ukrainian); A. Kolesnik, *op. cit.*



### OIS 4

Not numerous Levallois-Mousterian, Micoquian and para-Micoquian (these latter are assemblages with bifacial leafpoints) and denticulate industries are known for this interval in Transcarpathia (Korolevo I: IIB, IIa, II; Maly Rakovets IV), Dniester basin (Stinka: Lower) Dniester-Dnieper interfluvial area (Nechaevo III), Donbass (Antonovka, Kurdiunovka, and Crimea (Kabazi II: III/1A–III/1, Kabazi V: III/1–III/3, Staroselye: 3 (fig. 3:4).

### OIS 3

This period is characterised by coexistence of Middle and Upper Palaeolithic industries. Between 40–32 ky BP MP occupations are well represented in Crimea by numerous both Micoquian – i.e. associated with bifacial backed knives (Zaskalnaya V: IV–I, Zaskalnaya VI (Kolosovskaya): III–II etc) – and Levallois-Mousterian (Kabazi II: II/8–1A, Alioshin Grot: II, I etc) assemblages (fig. 4:1). The latter probably survived in the Middle Dniester area as well<sup>17</sup>. Instead, assemblages known in continental Ukraine are either ambiguous (like Molodova V: 10a, b), or were recently proclaimed to be “MP to UP transitional” (Belokuzminovka, Stinka I: upper)<sup>18</sup>. The earliest, and seemingly not Aurignacian, Upper Palaeolithic occupations are known in Transcarpathia and dated to ca. 38 ky BP (Sokirnitsa) (USIK *et al.* 2004). Some of the UP industries are provisionally referred to Bohunician (Kulychivka) or Kostienki-Streletskaia on the Don (Vys’)<sup>19</sup>. Both Middle and Upper Palaeolithic population exploited basically similar areas with rich primary outcrops of qualitative raw materials and high level of productivity of bioresources in extreme south and west of the country. Worth pointing out is the spatial overlapping of areas settled by MP and UP population, though there is obvious concentration of MP sites in the Crimean foothills.

The interval between 32–28 ky BP is characterised by ongoing coexistence of MP and UP population (fig. 4:2). There is clear spatial dichotomy between MP and UP occupations: MP sites obviously gravitate toward the extreme south, whereas UP sites are more common in W, NW and N areas of continental Ukraine. Concentration of ultimate Middle Palaeolithic sites is reported for Crimea, where both Micoquian and Levallois-Mousterian industries still persisted<sup>20</sup>. It cannot be excluded that some MP population could have survived in NW Ukraine (Zhornov: 2)<sup>21</sup>. That interval is also characterised by coexistence of several varieties of UP assemblages, that is Aurignacian, Gravettian, and so-called Archaic or symbiotic industries representing a mixture of MP and UP technomorphological traits. Gravettian sites show clear concentration in the Middle Dniester area, whilst Aurignacian sites are reported in all areas.

The interval between 28–22 ky BP is characterized by still surviving though crucially decreased in number Micoquian and Levallois-Mousterian MP occupations in Crimea (Zaskalnaya VI (Kolosovskaya): I; Prolom II: I, Shaitan-Koba IV), isolated archaic UP and Aurignacian assemblages (Mira: I, probably Illinka, Zeleny Khutor, Siuren), and dramatically predominant Gravettian sites (Molodova 5, Mira: II/2, Mezhygirsy e.a)

<sup>17</sup> N. Anisiutkin, *op. cit.*; P. Haesaerts, I. Borziac, V. Chirica, F. Damblon, J. van der Plicht, *The East Carpathian loess record: a reference for the middle and late pleniglacial stratigraphy in central Europe*, Quaternaire, 14, 2003, 3, p. 163–188.

<sup>18</sup> A. Chernysh, *Standard Multilayered site of Molodova V. Archaeology*, in *Multilayered Palaeolithic site of Molodova V. People and environment* (eds. I. Ivanova, S. Tseitlin), Moscow, p. 7–93 (in Russian); Al. Kolesnik, *op. cit.*; N. Anisiutkin, *op. cit.*; V. Chirica, I. Borziac, *Gisements du Paléolithique inférieur et moyen entre le Dniestr et la Tissa*, Iași, 2005.

<sup>19</sup> A. E. Marks, Katrin Monigal, *The Middle to Upper Palaeolithic Interface in Crimea at Buran-Kaya III. In Neanderthals and modern humans – discussing the transition: Central and Eastern Europe from 50,000 – 30,000 B.P.*, (eds. J. Orschiedt, G.-Ch. Weniger) Mettmann, 2000, p. 212–226; V. Stepanchuk, V. Cohen, *Kremenician, Middle to Upper Palaeolithic transitional industry in the Western Ukraine*, Préhistoire Européenne, 16–17, 2000–2001, p. 75–100; Leonid Zaluzniak, Mykola Belenko, Petro Ozerov, *The Site of Vys’ and its Place in Late Palaeolithic of Ukraine*, Kamiana Doba Ukrainy, 11, 2009, p. 25–40, (In Ukrainian).

<sup>20</sup> V. Stepanchuk, M. Kovaliukh, J. van der Plicht, *The Radiocarbon age of the Late Pleistocene Palaeolithic sites of the Crimea*, Kamiana doba Ukrainy, 5, 2004, p. 34–61, (in Ukrainian); V. Stepanchuk, *Lower and Middle Palaeolithic of Ukraine*, Chernovtsy, 2006, (In Russian); V. Chabai, *op. cit.*

<sup>21</sup> V. Piasetski, *Mousterian cultural layer of Zhornov Palaeolithic locality and some questions of Palaeolithic stratigraphy*, in *Russian Archaeology*, 3, 1992, p. 113–126 (in Russian).

(fig. 4:3)<sup>22</sup>. Although there are certain – mainly radiochronological – data that point to probability of more recent age of some MP occupations in Crimea, until ca. 25 ky BP<sup>23</sup>, this evidence needs further confirmation. The generalised pattern of peopling shows further steps in the colonisation of open and forested landscapes.

## OIS 2

Pre-LGM, LGM, post-LGM, and final Pleistocene substages are characterised by substantially different environments and provide fairly different patterns of peopling and cultural development.

The pre-LGM substage, 22–19 ky BP, is characterised by coexistence of two main types of UP industries, namely epi-Gravettian and epi-Aurignacian BP (Molodova 5: 6; Buran-Kaya III: 6.5–3; Muralovka, Sagaidak, Anetovka 1 e.a.). Occupations of both industrial variants show compelling tendency to get localised within the area of dry steppe (fig. 4: 4). Another obvious tendency concerns the pattern of terrain colonisation: for the first time occupants leave low mountain areas and gravitate toward highlands of the Dniester-Dnieper interfluvial area, and to the Dnieper valley. That tendency probably reflects considerable improving of behavioural strategies involving basically different – in comparison with preceding periods – sources of lithic raw materials and less predictable bioresources. Surprisingly, there is no evidence of peopling of the Crimean foothills. The absence of population in northern regions of Ukraine might be plausibly explained in terms of presumably abrupt environmental changes<sup>24</sup>.

LGM substage, 19–18 ky BP, is characterised by the presence of the only type of UP industry, the so-called epi-Gravettian with Aurignacoïde features (e.g. Bolshaya Akkarzha, Vladimirovka: V, Anetovka II, Osokorovka IV e.a.). Practically all known sites again get localised within the area of dry steppe (fig. 4:5). The pattern of peopling is basically the same as the one manifest in the preceding period of 22–18 ky BP, and there still is predominant exploitation of flat areas and river valleys, as well as frequently re-deposited outcrops of lithic raw materials of continental Ukraine. There also are isolated instances of occupations localised within the tundra-steppe landscapes, but, including the interval between 22–18 ky BP, the exact chronological position of these sites is rather controversial.

All known assemblages of post-LGM time are defined as epi-Gravettian (e.g. Gontsy, Mezin, Govorukha, abri Skalisty e.a.) (fig. 4:6). It is possible, indeed, to recognise territorially and temporally more limited groups of sites within the epi-Gravettian entity.<sup>25</sup> The number of sites increased significantly after 18 ky BP. The quantitative rise of occupations coincided with broadening of colonised areas northward, eastward, and southward, if the core area taken into consideration is the dry steppe persistently inhabited in course of 22–18 ky BP. In fact, for the first time the territory of Ukraine was peopled throughout, as epi-Gravettian occupations are reported for low mountains, highlands, lowlands, and valleys of large rivers. Beginning with that time, such colonisation-restricting factors as lack of good quality raw materials, low rates of bioproductivity, and climatic constraints were overcome.

From the archaeological standpoint, the final Pleistocene substage, 13–10 ky BP, is characterised by diversification of cultural variability. Technomorphological uniformity of preceding substage was biased

<sup>22</sup> G. Goretski, S. Tseitlin (eds.), *Multilayered Palaeolithic site of Korman' IV*, Moscow, 1977 (in Russian); G. Goretski, Irina Ivanova (eds.), *Molodova I. Unique Mousterian settlement in Middle Dniester*, Moscow, 1982 (in Russian); Igor Sapozhnikov, *Palaeolithic of steppes of Lower Dniester area*, Odessa, 1994 (In Russian); idem, *Bolshaya Akkarzha: economy and culture of Upper Paleolithic of Steppe Ukraine*, Kiev, 2003 (In Russian); idem, *A Chronostratigraphic Basis for General and Regional Subdivisions of the Eurasian Upper Paleolithic*, in *Archeology, Ethnography and Anthropology of Eurasia*, 3, 2004, p. 2–11; V. Stepanchuk et al., *op. cit.*; idem, *The archaic to true Upper Paleolithic interface: the case of Mira in the Middle Dnieper area*, in *European Prehistory*, 3, 2005, 1, p. 23–41; François Djindjian, I. Sapozhnikov, V. Stepanchuk, Galina Sapozhnikova, *Upper Palaeolithic Chronology, Cultural Facies and Economic Complexes of the Northern Black Sea Area*, in *Cuenca mediterranea durante el Paleolitico Superior 38.000–10.000 anès* (eds. J.L. Sanchidrián Torti, A.M. Márquez Alcántara, J.M. Fullola i Pericot), Nerja, 2006, p. 46–59; Y. Demidenko, M. Otte, *Siuren-I (Crimea) in the context of a European Aurignacian*, *Prehistoire Européenne*, 16–17, 2000–2001, p. 133–146; V. Chabai, *op. cit.*

<sup>23</sup> V. Stepanchuk et alii, *op. cit.*

<sup>24</sup> Olexandra Krotova, *Chronostratigraphie du Paléolithique supérieur des steppes d'Azov et de la mer Noire*, in *PALEO-Supplement. Actes du Colloque de Miscolc*, Bordeaux, 1995, p. 227–233; I. Sapozhnikov, *op. cit.*; F. Djindjian et alii, *op. cit.*

<sup>25</sup> Liudmila Iakovleva, F. Djindjian, *Le site Paléolithique de Gontsy (Ukraine) at les sites a cabanes en os de Mammouths du Paléolithique supérieur récent d'Europe orientale*, Kiev, 2005.

toward deep diversification mirrored in broad coexistence of such cultural phenomena as Krasnoselye, Swiderian, Shan-Kobian, and so-called assemblages with big trapezes.<sup>26</sup> Association of tanged point cultures – Krasnoselye and Swiderian – with forested open woodland landscapes seems to be rather unequivocal. Contrariwise, the Azilian of Shan-Koba and assemblages with big trapezes are associated with Crimean low mountains, and the steppe area, respectively. Worthy of emphasis is a clear misbalance in population density, as mirrored by the quantity of known sites, between the NW territory of Ukraine and the above-mentioned areas<sup>27</sup>.

### THE MAIN TRENDS OF CULTURAL DYNAMICS AND THE PROCESSES OF COLONIZATION OF THE UKRAINIAN TERRITORY

Evidence of the first penetration of prehistoric population at the territory of today's Ukraine is provided by the earliest stratified assemblages discovered at Korolevo I, west of the Carpathian range, localized within a zone of Matuyama inverse polarity. Further evidence of early occupations, this time already belonging to the Brunhes age, is also known in the Central European segment of Ukraine, at Korolevo I, dated to OIS 13. The first reliable evidence of human presence in areas east of the Carpathian range is dated to OIS 11 and comes from Medzhibozh and Maslovo, both situated in the basin of the Southern Buh River; occupations are also known in Transcarpathia (Korolevo I; Maly Rakovets IV). There is an obvious tendency of the earliest sites to be associated with areas of low mountains. Paleogeographical data and spatial localization of the earliest sites in Ukraine and adjacent territories suggest that the ways of the initial peopling of the country may have passed through the Balkans, from Asia Minor (and Transcaucasia), across the land bridge between these territories. Another presumable way of initial penetration may have passed through the territory of Central Europe. Variability of lithic assemblages is a chronological indicator, as there is dichotomy between earlier pebble complexes and later complexes with handaxes.

Peopling of the territory in course of the Middle and the main portion of the Upper Pleistocene was likely characterized by repetitive pioneering colonization of areas with rich and predictable biological and mineral resources by small groups of population, with large chronological lacunas between isolated episodes of human dispersal. In any event, there are no grounds to suppose durable continuous occupation of the area, and, consequently, to suppose direct continuity of population and transmission of cultural traditions.

There is no evidence of human presence in the country during oxygen isotope stages 10, 9, and 8, but between OIS 7 and the very end of the Pleistocene, the territory of Ukraine shows permanent presence of population. That, however, did not mean that the colonization of the territory became stable and continuous. Rhythmic climatic fluctuations in the Pleistocene were accompanied by repeated landscape-climatic alterations and related changes of the resource base. Plurality of environmental changes affected the rhythmic nature of repeated colonization and consequent depopulation of the habitat. There is no room to suppose permanent population in the territory of Ukraine during the major portion of the Middle Palaeolithic. Instead, numerous affluxes and refluxes of population appear to be more adequate, as manifest in available archaeological finds. On the basis of data on localization of Middle Palaeolithic occupations through time and space, one can suppose a pulsing area pattern of peopling. Low mountains and elevations in the extreme south and west of Ukraine appeared to be more stably peopled due to richness and higher predictability of biological and mineral resources. It was those core areas that may have played a role of centers of repeated population under terms of demographic growth, and, contrariwise, they may have served as refuges during population decreases.

Durable presence of population, and, consequently, its probable continuity and continuous transmission of cultural traditions within the frameworks of stable colonized areas, might be supposed only for the late stage of the Middle Palaeolithic: beginning with Eem (or end of Riss) for Crimea, and, likely, somewhere during Ammesfort-Brörup for the Middle Dniester area and Donbass.

Beginning with OIS 7, due to availability of a series of statistically representative assemblages, there is a possibility to distinguish different techno-typological facies (fig. 5). The period between OIS 7 and OIS 5e is characterized by assemblages of flake Levallois-Mousterian, assemblages with bifacial leafpoints, and, probably, denticulate assemblages. Besides, industries with bifacial backed knives appeared towards the end of this interval.

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<sup>26</sup> L. Zalizniak, *Final Palaeolithic reindeer hunters of Ukrainian Polissia*, Kiev, 1989 (in Russian); idem, *Prehistory of Ukraine X–V ky BC*, Kiev, 1998 (in Ukrainian).

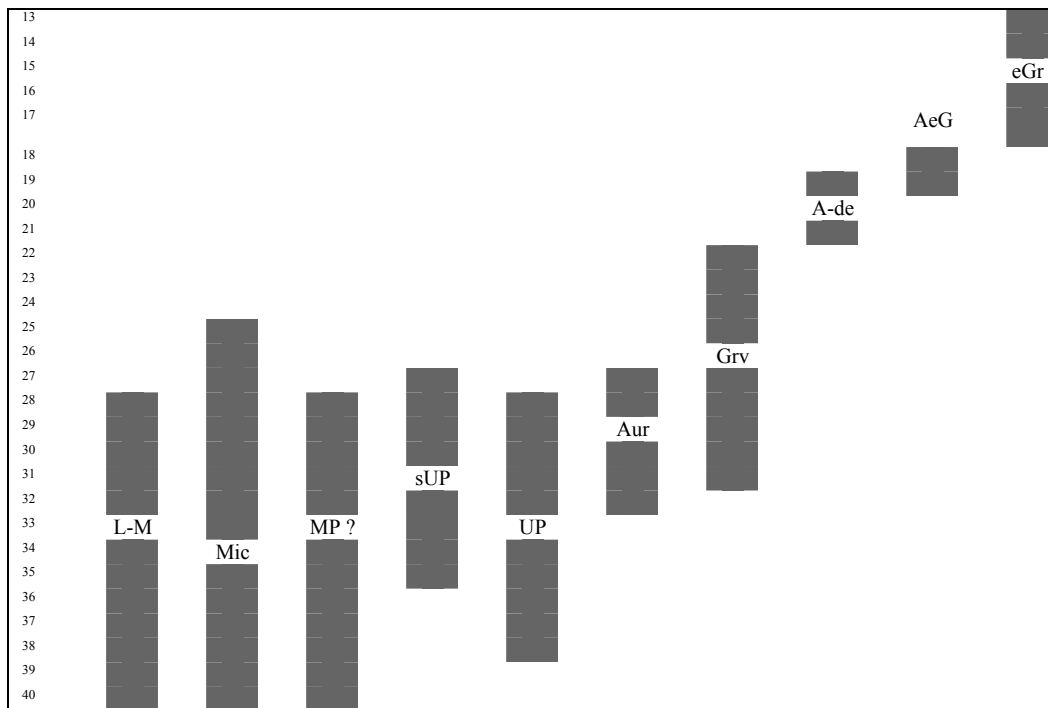
<sup>27</sup> *Ibidem*.

The period between OIS 5d and OIS 3 is still characterized by the presence of sites with Levallois-Mousterian, bifacial (either Micoquian or para-Micoquian) and denticulate industries. Levallois-Mousterian sites are reported for Transcarpathia, the Dniester area, Polessye, the Dnieper area, Donbass, and Crimea. Bifacial industries, most common in Crimea, are also known in other regions. Denticulate industries are isolated and known in Crimea and in Southern Buh valley. This stage is characterized by better recognizable differentiation of industries at the level of technocomplexes. So, one can distinguish industries with bifacial backed knives and more frequent industries with bifacial leafpoints. An expressive group is represented by blade-oriented Levallois-Mousterian industries, known for Crimea, Donbass, the Dnieper area, and Volhyno-Podolia.

The appearance of the first Upper Palaeolithic sites in Ukraine circa 40 ky BP (Transcarpathia) is under current discussion. More recent Upper Palaeolithic occupations are affiliated with Gravettian, Aurignacian, and “transitional” symbiotic industries. Gravettian sites became predominant between 28–22 ky BP (Table 1). There are certain grounds to suppose survival of Middle Palaeolithic industries in the extreme south of the country up until 25 ky BP, and, possibly, even later.

Table 1

General trends of industrial variability between 40/13 ky BP: L-M –Levallois-Mousterian, Mic – Micoquian, MP? – Middle Palaeolithic (?), sUP – symbiotic UP, UP – Upper Palaeolithic, Aur – Aurignacian, Grv – Gravettian, A-de – Aurignacoide industries, AeG – Aurignacoide epi-Gravettian, eGr - epi-Gravettian.



The period between 40–22 ky BP is characterized by principally the same strategy of colonization of the territory as during preceding periods: areas with mosaic landscapes and primary outcrops of lithic raw materials appear to have been the most stably peopled. Nevertheless, starting from somewhere around 32 ky BP the process of gradual colonization of open landscapes with lesser predictable bioresources and absence of primary outcrops began. The essential shift had occurred between 22–19 ky BP, when population was for the first time concentrated in the area of open steppe, while mountain areas, were possibly abandoned. Principally, a similar pattern of peopling is characteristic of the period of late glacial maximum too.

The strategy of colonization of the territory was abruptly changed after 18 ky BP. At that moment the territory of Ukraine was occupied permanently, stably, and continuously, and the pattern of colonization shows no archaeologically visible restrictions determined by the type of landscape, quantity and quality of biological and mineral resources. The traced transformation of the peopling pattern appears to have been even more essential, if we take into consideration the domination of the tundra-steppe landscape in that period. After 13 ky BP the strategy of colonization of the territory remains similar, but it is worth noting that there was evident concentration of population in northwest regions of the country.

Figure captions

	hi	cold	warm	Paleomagnetic scale	OIS column V28-238	Alpian scheme	Stratigraphical horizons of out-Glacial zone			
							after Veklich 1989	after Gozhik et al. 2001	after Gerasimenko 2004	
Pleistocene	Upper				1	post Würm	Holocene	Holocene	Holocene	
						Würm IV	Prichernomorie	Prichernomorie	Prichernomorie	
					2	Würm III		Dofinovka Buh	Dofinovka Buh	
					3	Würm II	Dofinovka	Vitachiv	Vitachiv	
							Buh			
						4	Würm I	Vitachiv	Udai	Udai
					5a	Udai		Priluki	Priluki	
					5c	Priluki		Tiasmin	Tiasmin	
					5d			Kaidaki	Kaidaki	
					5e			Riss-Würm	Dnieper	Dnieper
				6	Riss II	Tiasmin	Potiagailovka			
				7	Riss I-II	Kaidaki	Orel'			
				8	Riss I	Dnieper	Zavadovka	Zavadovka		
				9	Mindel-Riss	Potiagailovka		Zavadovka		
				10		Orel'				
				11		Zavadovka				
		Middle				12	Mindel II	Tiligul	Tiligul	Tiligul
						13	Mindel I-II	Lubny	Lubny	Lubny
						14	Mindel I	Sula	Sula	
				15	Sula	Sula		Sula		
				16	Sula					
					17	Günz-Mindel	Martonosha	Martonosha	Martonosha	
				18	Martonosha					
				19						

Fig. 1. Correlation of stratigraphical subdivisions of the Eopleistocene-Pleistocene (after Maxim F. Veklich, Andrej A. Velichko, Petr F. Gozhik, Andrej B. Bogutski, Natalia P. Gerasimenko *et alii*).

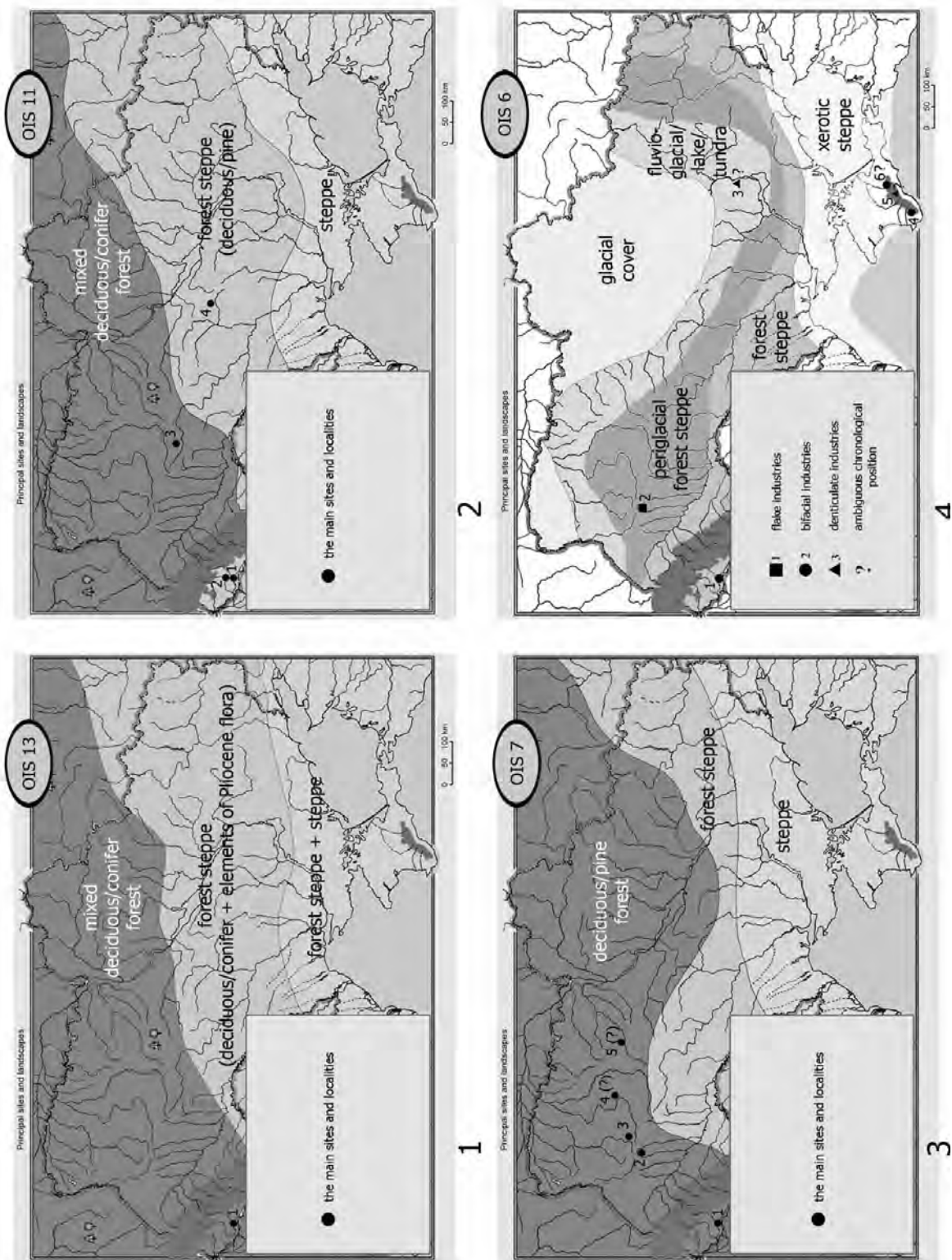


Fig. 2. Paleolandscapes and the main sites and localities. Environmental reconstruction after Melnichuk (2004) (maps 1–3) and Sirenko et alii (1990) (map 4), river system is modern.

1 – OIS 13. Key: 1 – Korolevo I; 2 – OIS 11. Key: 1 – Korolevo I, culture-chronological unit (further on: ccu) V; 2 – Velyky Glybochok I: III-B; 3 – Kruglik; 4 – Shary I-III; 5 – Kiik-Koba: VI; 6 – Zaskal'naya IX; 3 – OIS 7. Key: 1 – Korolevo I, ccu V; 2 – Velyky Glybochok I: III-B; 3 – Kruglik; 4 – Shary I-III; 5 – Kiik-Koba: VI; 6 – Zaskal'naya IX. 4 – OIS 6. Key: 1 – Korolevo I, ccu V; 2 – Velyky Glybochok I: III-B; 3 – Kruglik; 4 – Shary I-III; 5 – Kiik-Koba: VI; 6 – Zaskal'naya IX.

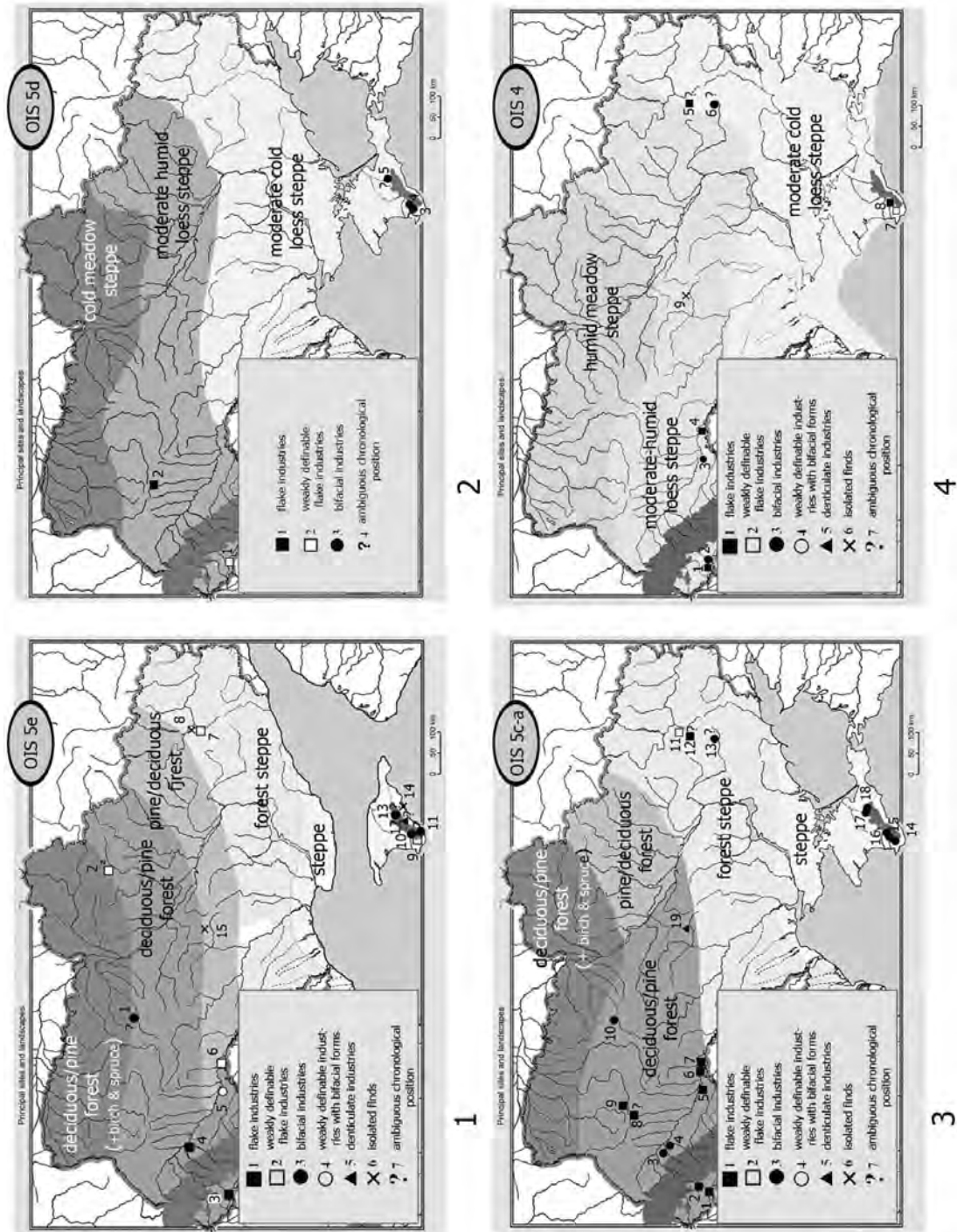


Fig. 3. Paleolandscapes and the main sites and localities. Environmental reconstruction after Sirenko *et alii* (1990) (maps 1–4), sea configuration after Lazukov (1981) (map 1) and van Andel & Tzedakis (1996) (map 4); river system is modern. 1 – OIS 5e. Key: 1 – Zhitomir, Acheulean assemblage; 2 – Mukhovets; 3 – Korolevo I, ccu IV-a; 4 – Ezupil’: III; 5 – Ketrosoy, alluvium; 6 – Korman’ IV, alluvium; 7 – Belokuz’minovka; 8 – Korneev Yar; 9 – GABO, alluvium; 10 – Kabazi II: V/3–VI/17; 11 – Shary I–III; 12 – Kiik–Koba: VI; 13 – Zaskal’naya IX; 14 – Novy Svet; 15 – Nechaevo III; 2 – OIS 5d. Key: 1 – Korolevo I, ccu IV; 2 – Proniatyn; 3 – GABO: 2; 4 – Kabazi II: III; 5 – Zaskal’naya I: VII and VI; 3 – OIS 5c–a. Key: 1 – Korolevo I, ccu III; 2 – Maly Rakovets IV; 3 – Kolodiiv; 4 – Ezupil’: II; 5 – Ketrosoy, the main layer; 6 – Molodova I: 12–11b; 7 – Molodova I: I, IV, III; 8 – Proniatyn; 9 Bugliv I: II; 10 – Zhitomir; 11 – Belokuz’minovka; 12 – Kurdiunovka; 13 – Antonovka I; 14 – GABO: 2, 1; 15 – Starosel’ye: 4; 16 – Kabazi II: III; 17 – Zaskal’naya I: VII and VI; 18 – Zaskal’naya VI (Kolosovskaya): V and IV; 19 – Nechaevo, Maslovo; 4 – OIS 4. Key: 1 – Korolevo I, ccu II; 2 – Korolevo I, ccu II-and; 3 – Stinka I, lower layer; 4 – Molodova I: II and I; 5 – Kurdiunovka, Udai assemblage; 6 – Antonovka II; 7 – Starosel’ye: 3; 8 – Kabazi II: IIA; 9 – Nechaevo, Maslovo.

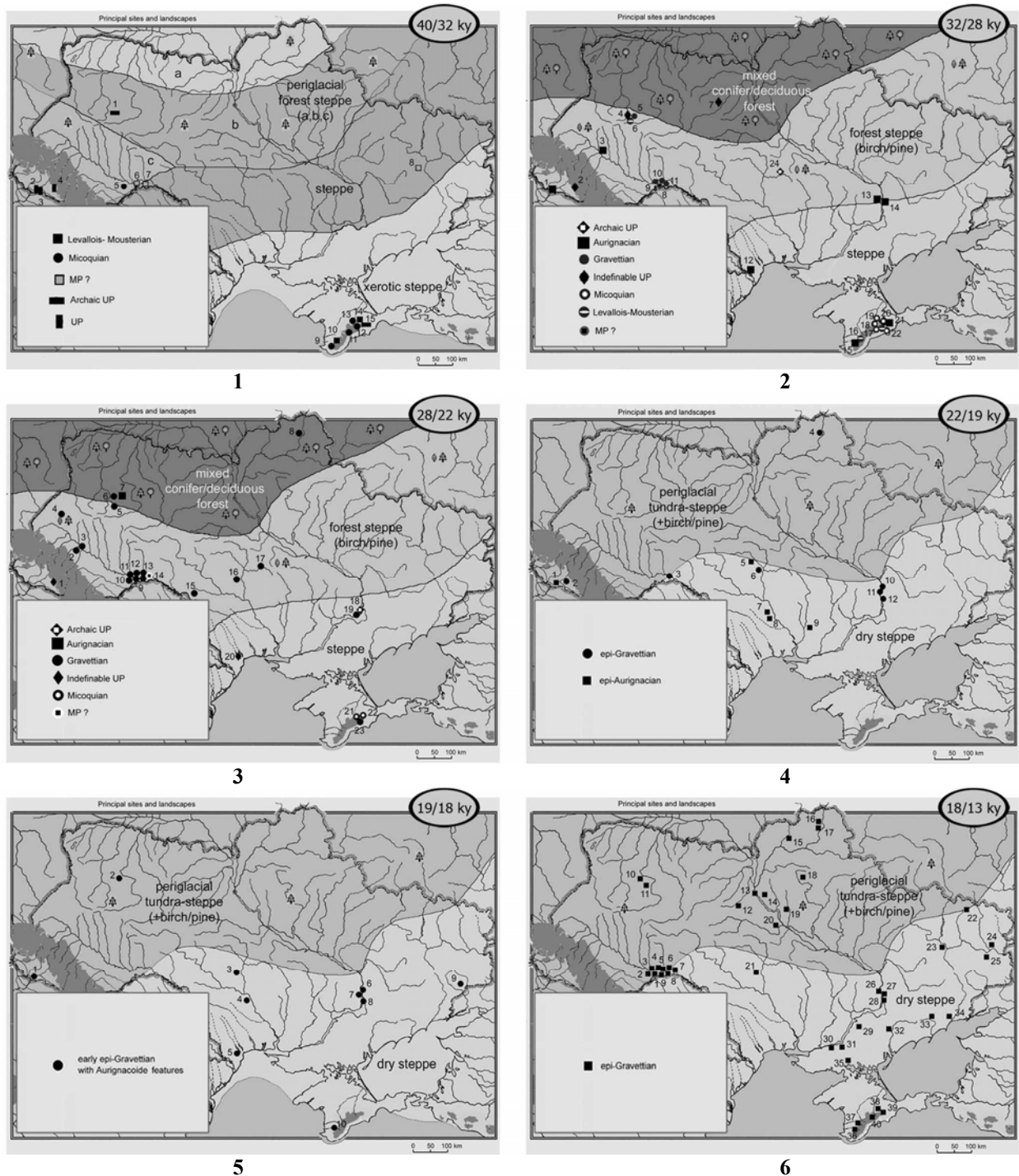


Fig. 4. Paleolandscapes and the main sites and localities in course of late OIS 3 and OIS 2.

Environmental reconstruction after Melnichuk (2004) (maps 1–6), river system is modern.

1 – 40/32 ky BP. Key: *Archaic UP*: 1 – Kulychivka: IV, III; 15 – ?Buran-Kaya: IIIC; *UP* 2: – Korolevo I: Ia; 3 – Korolevo II: II; Sokymytsya; *Micoquian*: 5 – Sinka I: upper; 9 – Starosel'ye: I; 11 – Kiik-Koba: IV; 12 – Prolom I: II; 13 – Zaskal'naya VI (Kolosovskaya): IIIa, III; *Levallois-Mousterian*: 10 – Kabazi II: IIA/1–II/A1; 14 – Alyoshin Grot: II; *MP*?: 6 – Molodova V: 10a, 10b; 7 – Korman' IV: 10; 8 – Belokuz'minovka.

2 – 32/28 ky BP. Key: *Archaic UP*: 2 – Shayan I: II; 4 – Zhornov: 1; 20 – Buran-Kaya: IIIC; 24 – Vys'; *Aurignacian*: 1 – Beregovo I; 3 – Mezhygirtsi: lower; 12 – Zeleny Khutor; 13 – Nenasytets III; 14 – Vorona III: lower; 15 – Siuren' I: FA-1-FB2, GA-GB2; 21 – Buran-Kaya III: 6/5–3; *Gravettian*: 5 – Zhornov: 2a; 9 – Molodova I: 3; 10 – Molodova V: 10, 9; 11 – Oselivka: 3, 2; *Indefinable UP*: 7 – Radomyshl'; *Micoquian* 17 – Prolom I: I; 18 – Zaskal'naya V: II, I; 19 – Zaskal'naya VI (Kolosovskaya): II; 22 – Buran-Kaya: B1; *Levallois-Mousterian*: 6 – Zhornov: 2; 16 – Kabazi II: II/1a; 23 – Alyoshin Grot: I; *MP*? 8 – ?Korman' IV: 10, 9.

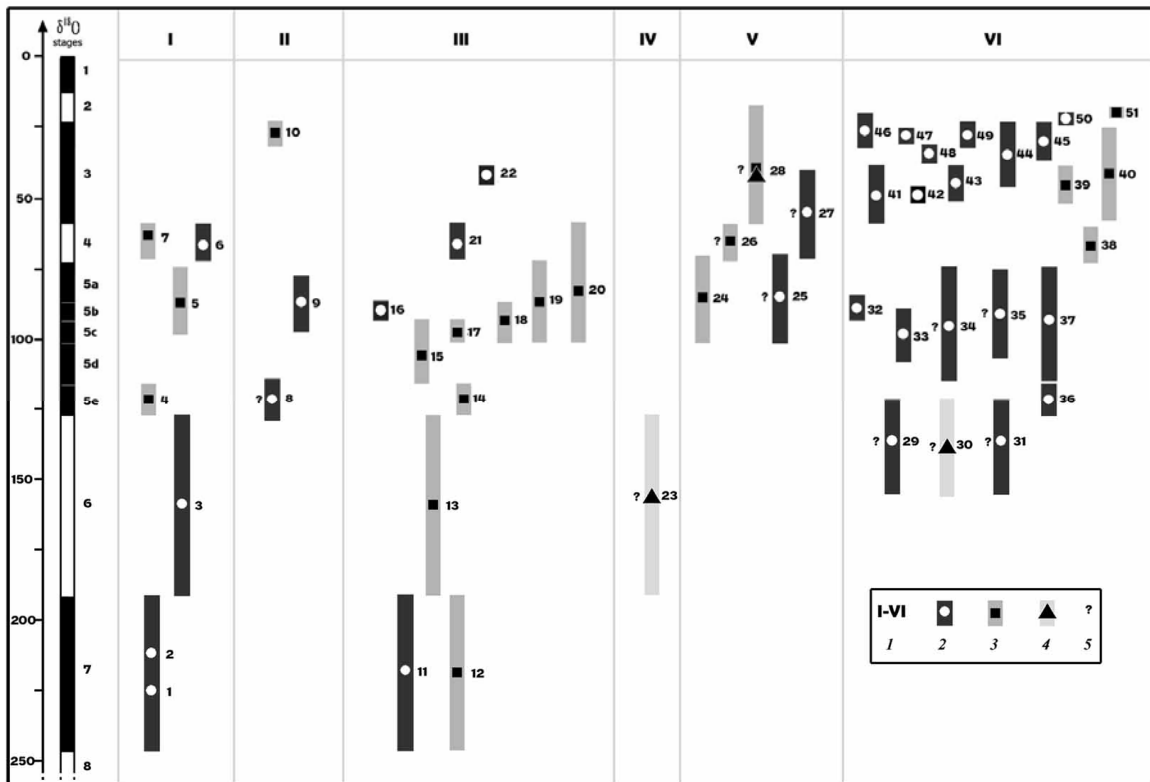


3 – 28/22 ky BP. *Key: Archaic UP: 2 – Shayan I: II; 18 – Mira: I; Aurignacian: 7 – Ivanichi; Gravettian: 2 – Galich I: I; 3 – Mezhygitsi: middle; 4 – Lviv VII: lower; 5 – Kulychivka: I; 6 – Lipa I; 8 – Pushkari I; 9 – Voronovitsa: lower; 10 – Oselivka I: 3, 2; 11 – Babyn I: 2, 1; 12 – Molodova V: 7, 6; 13 – Korman' IV: 7; 15 – Leski; 16 – Vladimirovka: VIII, VII; 17 – Troianovo 4; 19 – Mira: II/2; 23 – Buran-Kaya III: 6/2; Indefinable UP: 1 – Molochny Kamen'; 20 – Il'inka; Micoquian: 21 – Prolom II: II, I; 22 – Zaskal'naya VI (Kolosovskaya): I; MP?: 14 – ?Korman' IV: 10, 9.*

4 – 22/19 ky BP. *Key: epi-Gravettian: 2 – ?Shayan I: I; 3 – Korman' IV: V; 4 – Novgorod-Severski; 6 – Vladimirovka: VI; 10 – Osokorovka I: Va; 11 – ?Osokorovka IV; 12 – Pidporozhny; epi-Aurignacian: 1 – Berego I; 5 – Gordashovka; 7 – Ivashkovo VI; 8 – Anetovka I; 9 – Sagaidak I: lower.*

5 – 19/18 ky BP. *Key: epi-Gravettian with Aurignacoïde features: 1 – ?Shayan I: I; 2 – Lipa VI: V; 3 – Vladimirovka: V; 4 – Anetovka II; 5 – Bolshaya Akkarzha; 6 – Vorona III: upper; 7 – Kaistrova balka VI; 8 – ?Osokorovka IV; 9 – Amvrosievka; 10 – Siuren' I: middle.*

6 – 18/13 ky BP. *Key: epi-Gravettian: 1 – Ataki I: 4-2; 2 – Babyn I: 3; 3 – Vrublevtsi: upper; 4 – Molodova I: 2-0; 5 – Molodova V: 1-5; 6 – Oselivka I: 1; 7 – Oselivka III; 8 – Voronovitsa; upper; 9 – Korman' IV: 4-1, A; 10 – Lipa VI: 1-4; 11 – Barmaki; 12 – Fastov; 13 – Kirilovskaya; 14 – Semenovka I, II; 15 – Mezin; 16 – Chulatovo; 17 – Pogon; 18 – Gontsy; 19 – Dobranichevka; 20 – Mezhirichi; 21 – Vladimirovka: IV-I; 22 – Yamy; 23 – Min'evskiy Yar; 24 – Rogalik VII; 25 – Govorukha; 26 – Kaistrova balka IV; 27 – Dubova Balka; 28 – Osokorovka I: IIIv; 29 – Dmitrovka; 30 – Somova balka; 31 – Liubimovka I; 32 – Kashtaeva balka; 33 – Yanisol'; 34 – Fedorovka; 35 – Novovladimirovka; 36 – Skalisty: VII-IV; 37 – Siuren' I: upper; 38 – Vishennoye: A, B, V; 39 – Buran-Kaya III: 4; 40 – Adzhi-Koba: upper.*



**Fig. 5.** Variability of Ukrainian Middle Palaeolithic industries in chronological and geographic profiles. *Key:* 1 – territorial groupings of sites (I – Transcarpathia group, II – Polesse group, III – Dniester group, IV – Dnieper group, V – Donetsk group, VI – Crimean group), 2 – bifacial industries, 3 – flake industries, 4 – denticulate industries, 5 – ambiguous chronological position.

1 – Korolevo I, ccu V-b; 2 – Korolevo I, ccu V-a; 3 – Korolevo I, ccu V; 4 – Korolevo I, ccu IV-a; 5 – Korolevo I, ccu III; 6 – Korolevo I, ccu II-a; 7 – Korolevo I, ccu II; 8 – Zhitomir, Acheulean assemblage; 9 – Zhitomir, Mousterian assemblages; 10 – Zhornov; 11 – Velyky Glybochok I: III; 12 – Bugliv I: I; 13 – Velyky Glybochok I: III-B; 14 – Ezupil': III; 15 – Proniatyn; 16 – Ezupil': II; 17 – Bugliv I: II; 18 – Ketrosy, the main layer; 19 – Molodova I: 12-11b; 20 – Molodova I: I, IV, III, II, I; 21 – Stinka I, lower layer; 22 – Stinka I, upper layer; 23 – Kruglik; 24 – Kurdiymovka; 25 – Antonovka I; 26 Kurdiymovka, Udai assemblage; 27 – Antonovka II; 28 – Belokuz'minovka; 29 – Shary I-III; 30 – Kiik-Koba: VI; 31 – Zaskal'naya IX; 32 – Starosel'ye: 4; 33 – Site of G.A. Bonch-Osmolovskij: II, I; 34 – Zaskal'naya I: VII, VI; 35 – Zaskal'naya VI (Kolosovskaya): I, IV; 36 – Kabazi II: VI/17-V/3; 37 – Kabazi II: III; 38 Kabazi II: IIA; 39 – Alioshin Grot: II; 40 – Kabazi II: II; 41 Prolom II: III; 42 – Zaskal'naya I: III; 43 – Starosel'ye: 2, 1; 44 – Zaskal'naya VI (Kolosovskaya): IIIa, III, II; 45 – Prolom I: II, I; 46 – Prolom II: II, I; 47 – Buran-Kaya III: B1; 48 – Kiik-Koba: IV; 49 – Zaskal'naya I: II, Ia, I; 50 – Zaskal'naya VI (Kolosovskaya): I; 51 – Shaitan-Koba IV: II, I.