The museification of archaeological-paleontological monuments in the Ukraine

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Abstract In this article, methods and principles of preservation and exhibition of archaeological-paleontological monuments in situ are considered. Classifications of paleontological locations and Paleolithic sites are given. New museum complexes – “archeoparks” of proper typology are grounded. The stages of monuments’ museification have been analyzed. Human dwellings that were constructed out of mammoth bones are utilized as concrete examples of archaeological-paleontological objects around which “archeoparks” and exhibitions are developed.

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Introduction
Since the second half of the 20th century, both Natural Science and Archaeological Museology have actively developed techniques for in situ exhibition of monuments from the Pleistocene (Quaternary) Age. This required the development of Paleontological and Archaeological-Paleontological open-air museums (parks). A tourist route of open-air museums in Ukraine, entitled “Journey to the Stone Age,” has been developed with the possible inclusion of Paleolithic monuments. (Kepin and Tytova 2015, 137–148). This article will focus on specific examples of the possible establishment and creation of open-air Archaeological-Paleontological museum-preservation in Ukraine.

Monument classification
There are different approaches to exhibiting and classifying Pleistocene monuments, which take into account the paleontological period or archaeological location. According to archaeological periodization, these monuments date to the Early, Middle and Late Paleolithic eras. Based upon the geographic locations of Ukrainian Neogene and Pleistocene (Quaternary) terrestrial vertebrates,
paleontologist G. A. Bachinsky suggests the following taxonomic classification, the last three of which are not divided by facies:

- **Caves** - grottoes and rock sheds; horizontally inclined caves; caves with entrances in steep cliffs; vertical wells and shafts.
- **Subaerial shallow watersheds** - contains facies of open watershed horizontal areas; gully thalwegs and gullies; slopes of gullies; ravines and river valleys.
- **Alluvial** - divided into floodplain, river and delta taxonomic facies.
- **Peaty**
- **Bituminous**
- **Coastal-marine** (Bachinsky, 1967)

Geologist, paleogeographer, and archaeologist B. T. Ridush proposed a more detailed taxonomic classification of cave types for fossil vertebrates (Ridush 2013).

The “On Natural-reserve Fund of Ukraine” law (1992) established the state’s natural heritage classification system, including the Paleontological reserves. The allocated territory of natural heritage reserves in Ukraine aims to preserve and recreate natural ecosystems or their components. Based on the opinions of archaeologists Gladkii, Lubin, Stepanchuk, and Sklennař, Ukraine’s immovable Paleolithic monuments are assigned to one of two groups: “open” (open-air) and “closed” (in natural shelters), based upon their location.

In turn, “open” objects are subdivided into the following types: locale; cult buildings; burials; production remains; petroglyphs; settlements; “kill sites” (“kostisha,” as a result of human activity), and others. Some can be further classified by types of monuments. For example, the cult buildings can be divided into objects of natural origin that were utilized as religious centers (in particular, the Kam’jana Mogyla), and objects created purposefully by ancient man. Note that monuments including the Kam’jana Mogyla can also be viewed within taxonomic divisions of “petroglyphs.” The remains can have the following varieties: workshops that processed stone of different varieties: flint, obsidian, and others; and workshops using bone (tusks). Rock art monuments (petroglyphs) are divided into cave sites (including of grottoes and rock shelters), and open air sites. The human settlements are split into the following classifications: long-term (base); seasonal camps (autumn-winter, spring-summer); short-term hunting sites; and others. An integral part of some long-standing “open” settlements of the Middle - Late Paleolithic were household complexes that included buildings constructed from mammoth-bones.

International documents by UNESCO and ICOMOS have proven essential for the preservation of archaeological and paleontological monuments. Among the legal requirements regulating aspects of Historical and Cultural Heritage, including archaeological monuments, it is necessary to mention Ukrainian regulations including “About Museums and Museum work” (1995), “On the protection of Cultural Heritage” (2000), and “On the protection of Archaeological Heritage” (2004).

The European Association for the Conservation of Geological Heritage (ProGEO), established in 1988, holds an important role in popularizing Paleonature heritage (after Nikitina; 1991, according to Stevanović) (Nikitina 2009; Maran 2008; Maran 2010; Stevanović 2014). It is recommended that certain protected areas with the mammoth bone dwellings be kept and exhibited in a “geopark.” Geoparks typically protect sites of geological significance, but the structure of geoparks can include
archaeological monuments, as well (Wimbledon et al. 2000; Grytsenko et al. 2001; Keever and Zouros 2009; Matsuj and Derevskaya 2011). Researchers also note that a special protected status is required for the sake of Paleolithic monuments of great scientific value with fossil fauna (Recoves 1994).

However, we believe that these new geoparks that serve as museum-reserves that have archaeological monuments, should instead be identified as natural-archaeological geoparks, which can have their own variants (scheme) and requirements. The term “geopark” can only be used for a territory that has special legal status, where the relevant natural monuments are located. It is a region within which Earth’s geological history, the formation of local landscapes of rocks and mineral deposits, is on view, where the fossil remains of prehistoric animals have been preserved in great numbers, as well.

Exhibiting monuments
Researchers divide the Middle and Upper (Late) Pleistocene in Ukraine into groups, taking into account the physio-geographical zoning and distribution of archaeological monuments (Gladilin, Gladkih, Stepanchuk). For the Middle Paleolithic, it is possible to discuss the concentration of monuments within the boundaries of the Zakarpattia (Carpathians), Polesie, Dnieper, Donetsk, Prichernomorie – Priazovia (North of Black-Sea-Azov), and the Crimean territorial groups. The Late Paleolithic is separated by such features as the location of monuments: Carpathians, Volynskaya, Srednednestrovskaya (the Middle Dniester), Nizhnednestrovskaya (the Middle Dnieper), Priazovskaya and Crimea groups.

No Paleontological or Archaeological-Paleontological parks currently exist in Ukraine. Despite the fact that the listed monuments have a reserved status, most have not been organized or managed in a museum-type setting. On the site of the Dobranichivka excavation (1970), which includes a dwelling partially built using mammoth bones, a special museum pavilion named the Archaeological Museum “Dobranichivka site” was opened in 1977 as a branch of the Yagotinsky State Historical Museum. A memorial placard on the pavilion’s façade was dedicated on April 7, 2006, to memorialize the 85th anniversary of Professor I. G. Shovkopylas (fig. 1 - 2).

Fig. 1. The Archaeological Museum “Dobranichivka site.” Photo 2006.

Fig. 2. The remains of dwelling Number 4 at the Archaeological Museum’s “Dobranichivka site.” Photo 2006.
The Pleistocene-era domestic dwelling and Annex No. 3, discovered in 1969, were transported as three distinct monoliths to the archaeological department at the Museum of Folk Architecture and Life of the Middle Dnepre, which is now part of the National Historical Ethnographic Reserve “Pereyaslav” (Pereyaslav-Khmelnitsky, Kyiv region). The reconstruction of a Siberian tent (“choom”) dwelling was carried out by Shovkoplyas, Gladkih, and Sikorsky (fig. 3-4) (Shovkoplyas, Pashkevich 2011; Kulakovska 2011; Gladkih 1972). The monument, according to Professor Gladkih, belongs to the Mezhirich archaeological culture: the Middle Dnieper Ethno-cultural province in Northern (Periglacial) development zones of the Late Paleolithic time period of Eastern Europe (Gladkih 1991, 25, 40).

The reconstruction of Chukot’s yarangas (tents), of dwellings No. 1 from Mizin and No. 1 from Mezhirich from Late Paleolithic settlements, were built in the 1960s by Academician I. G. Pidoplichko (1905 - 75), and are on display, as well as the small size mock-ups of 1 - 4 Mezhirich dwellings (fig. 5-6), at the Academician V. A. Topachevsky Paleontological Museum, which is a part of the National Museum of Natural History at the National Academy of Sciences of Ukraine.
In this museum, the paleontological material is exhibited by the geochronological principle in combination with the complex-thematic one. The sections of the Pleistocene-Early Holocene exhibition are represented by the mounted skeletons of extinct animals by the windows, in which the skulls and the bones of the postcranial skeleton of different mammoth and Holocene fauna species are kept, as well as a monolith from the excavation with a bison’s bones and hunting tools.

Illustrated material, including mock-ups, diorama, drawings, friezes, and paintings, are used. Among the exhibits are the skeletons of a cave bear from a cave dating from the Mousterian time (according to Zamyatnin, Gladkih) or the beginning of the Late Paleolithic (according to Sapozhnikov) Il’inka (Odesa Region). There is a mammoth skeleton (found near village Gatne, Kyiv Region, 1949), a copy of a baby mammoth from the Magadan region, and mammoth tusks from the Siberian permafrost, which are roughly about 13,200 years old, found in the village Kopachiv of Obukhiv District, Kyiv Region. The compositional window-stand “Amvrosijvka site,” made by I. G. Pidoplichko in 1949, is on display. It consists of a 1.5 square meter monolith with a soil excavation column, in which there are numerous Bison priscus bones with flint spears and darts used by primitive hunters. The skeleton of a large ungulate from the Late Pleistocene era is exhibited nearby (fig. 7).
Mammoth reconstructions are also exhibited in the Geological Museum of the National Museum of Natural History at the National Academy of Sciences of Ukraine, Kyiv, and the Geological Museum of the Geological Faculty of Kyiv of National Taras Shevchenko University (fig. 8-9). The latter exhibited a complete skeleton discovered in Kyiv in 1949 (Pidoplichko 1969; Nesin 2001; Rekovets and Nesin 2009; Krakhmalnaya 2009; Krakhmalnaya 2009a; Krakhmalnaya 2009b; Krakhmalnaya and Kepin 2010). In 2006, a Mizin settlement that was discovered in 1908 (Koropskiy District, Chernigov Region) was also included in the Mizin National Park. The settlement is 1,250 square meters, and was studied from 1954-61 under the guidance of G. Shovkoplyas and I. G. Pidoplichko.

On the periphery of the above-mentioned settlement, adjacent to the fifth domestic complex of dwellings and annexes, a glass pavilion ("cowl") resembling a pyramid was built in 2008. Near the pavilion there is a plate on which “The Archaeological monument of protection” is written (fig. 10). The same sign also is mounted on a different lot of the research settlement. Additional signage is located on the Late Paleolithic excavation site where six dwellings were uncovered in the 1950s-60s in the Zhitomir Region. The monument refers to the early stages of the Late Paleolithic era, and is a local variant of the Radomyshl’ development of the Late Paleolithic in Eastern Europe (Shevchenko and Shovkoplyas 1982, 32–35).
Among the famous Late Paleolithic monuments with dwellings constructed from Mammoth bones in the Middle Dnieper, the Mezhirich settlement is the most interesting (Kaniv District, Cherkasy Region). It was found in 1965, and excavated from 1966–1974 under the guidance of I. G. Pidoplichko. M. I. Gladkih and paleontologist N. I. Kornietz developed a methodology conserving the complex of dwellings and annexes at the Mezhirich settlement. A specially-built stationary pavilion was erected to protect the site in situ (Pidoplichko 1976; Gladkih and Kornietz 1979; Gladkih 1999; Gladkih 2003). Gladkih dates the site to 15,000 years ago (Gladkih and Kornietz, and Soffer 1984). The Cabinet of Ministers of Ukraine included the site on the State Register of monuments (No. 174). The settlement has the status of a monument of national importance, based on the Decree of the Cabinet of Ministers of Ukraine (N 928 (928-2009-P) from 03.09.2009), “for the logging of Historical monuments to the State Register of immovable monuments of Ukraine.” In 2010, a new frame structure with a gabled roof of zinc iron was built over the remains of the fourth dwelling. Research into the monument continues (Soffer et al 1997; Pean et Nuznyi 2004; Shydlovskij 2013).

In 1994, the State Historical and Cultural Reserve “Trakhtemyriv” (Kaniv District, Cherkasy Region) established an “archeodrom” for students and future archaeologists that included a reconstruction of a Late Paleolithic mammoth hunter’s dwelling, typical for the Forest-steppe Dnieper region (Gladkih and Ryzhov, and Suchovij 1997). The term “archeodrom” was introduced in the 1980s by French ethnologist and archaeologist Professor A. Leroi-Gourhan (1911-86) for “experimental settlements,” created on the basis of archaeological experiment data. In such museums, original objects are not exhibited, but reconstructions are shown in full-scale or on a creation scale. With the development of computer technology, the concept of virtual archeodroms appeared. The Trakhtemyriv Archeodrom’s introductory section is themed the “Paleo-ecology of ancient man,” revealing features of human interaction with the environment in the Pleistocene era, using examples from the Paleolithic sites investigated and taught in this region.

It is proposed that the museum’s design, the architectural and artistic outlook of the pavilion, tell visitors about its contents, and thus motivate viewers to visit and learn. The museum’s shape can resemble the mammoth-bone dwelling’s spherical or conical form. The exhibition’s first section can focus on “Anthropo-socio-genesis,” explaining the contemporary status of the problem of Human origin and evolution to visitors. When discussing features of human culture and development during the Paleolithic time, it is acceptable to use the Eco-Ethno-Archaeological approach.

The exhibition could be one of two types: for visitors who are differently abled, and for visitors who have no physical impairments. It is particularly important to use special methodologies to work with the blind and visually impaired visitors, directing them to tactile experiences in order to learn. The exhibition space can accommodate mock-up reconstructions of Late Paleolithic settlements, that
are built to a certain scale, as well as reconstructions and mannequins of fossils and humans. Displaying themes from the everyday life of ancient people can accompany Paleo-landscape dioramas characterizing the change in the Pleistocene’s natural environment, and be accompanied by a special soundtrack and color scheme. The museum can also serve as a training and experimental center, in addition to hosting exhibition space. The creation of such a complex would provide an opportunity to broaden the scope of museum pedagogy to work with audiences in popularizing the ancient past of the Middle Dnieper. This, in turn, will foster an attitude of respect for Paleo-natural and Archaeological Heritage.

In 1993, under the guidance of archaeology L. A. Iakovleva, research was renewed into the Late Paleolithic Magdalenian settlement on the right bank of the Udaj River in Ukraine’s Lubensky district in the Poltava region. The site was first discovered in 1871, and first excavated two years later in 1873. (Gladkkik and Iakovleva 2004; Iakovleva and Djindjian 2005; Iakovleva, Djindjian, and Egels 2016; Iakovleva 2015) In 1990, the area surrounding the village was declared a Poltava Regional Landscape Reserve. At this time, we foresee the museification of the area due to the discovery of five mammoth-bone dwellings. Excavations have already been conducted in three new portable pavilions.

**Conclusion**

With a view to include paleontological monuments, in particular the Quaternary, and archaeological-paleontological monuments in tourist routes, it is necessary prepare concepts for the creation of archaeoparks. The museification of paleontological locations with fossil fauna of the Pleistocene era requires technological processes consisting of field paleontological, geological, and engineering-geological research. Developing a conservation plan to manage fossil material for in situ display in specialized exhibition pavilions is important, as is establishing an appropriate infrastructure to serve the emerging park. Unlike the archaeological-paleontological monuments, museification of paleontological sites may be contrived because they may have a certain taxonomic (allochthonic) character.

The following types of exhibition display for paleontological parks with fossilized mammals from the Quaternary are possible:

1. Half-open (combined) exhibition: fossils remain in situ in open-air pavilions.
2. “Closed” exhibition (underground): paleontological remains located in caves, grottos, rock sheds, mines. Here the fossil material is displayed in specially-designed display cases.

During the museification of archaeological-paleontological monuments with remains of dwellings made from mammoth bones, a highly skilled paleontologist restorer and the use of a field (preferably stationary) paleontological laboratory are necessary. The conservation programs with ongoing responsibility for such monuments in situ should include an engineering-geological assessment (registration certificate) of the territory on which an object is located, and an assessment of the state of the material structure of the uncovered monument. The conservation methods, engineering and technical measures to protect the site, the protective gratings, the construction of pavilions, sheds, and other elements, are equally important for preserving these sites in the future.
References


**Illustrations**

Fig. 1. The Archaeological Museum “Dobranichivka site.” Photo 2006.

Fig. 2. The remains of dwelling Number 4 at the Archaeological Museum’s “Dobranichivka site.” Photo 2006.

Fig. 3. The pavilion over dwelling Number 3 (reconstruction) from the Dobranichivka settlement in the Museum of Folk Architecture and Life of the Middle Dnipro (Pereyaslav-Khmelnitsky, Kyiv region). Photo 2017.

Fig. 4. Mammoth-bone dwelling Number 3 (reconstruction) in the pavilion. Photo 2017.

Fig. 5. The reconstructed mammoth-bone dwelling Number 1 from Mizin, on display at the National Museum of Natural History at the National Academy of Science of Ukraine (Kyiv). Photo 2017.

Fig. 6. The reconstructed mammoth-bone dwelling Number 1 from Mezhirich, on display at the National Museum of Natural History at the National Academy of Science of Ukraine (Kyiv). Photo 2017.

Fig. 7. The compositional window-stand “Amvrosijvka site,” on display at the National Museum of Natural History at the National Academy of Science of Ukraine (Kyiv). Photo 2017.

Fig. 8. The reconstructed mammoth in the Geological Museum of the National Museum of Natural History at the National Academy of Science of Ukraine (Kyiv). Photo 2017.

Fig. 9. The reconstructed mammoth in the Geological Museum at the Geological Faculty of Kyiv National Taras Shevchenko University. Photo 2015.

Fig. 10. The glass pavilion over the Late Paleolithic Mizin settlement. Photo 2008.