

# Prehistoric Life on Moldovan Stamps

Peter Voice<sup>1</sup> and Michael Kogan<sup>2</sup>

<sup>1</sup>Department of Geological and Environmental Sciences and Michigan Geological Survey, Western Michigan University

<sup>2</sup>Author of <http://www.paleophilatelie.eu/index.html> and Paleontology Editor for Biophilately

## Introduction

Moldova has a long history of publishing stamps that show prehistoric animals that lived in the country. This is actually fairly unique as many countries tend to focus on commonly known prehistoric animals instead of highlighting the unique fossils from their own country. Many collectors know that animals like the *Tyrannosaurus Rex* and the *Triceratops* are commonly found on stamps from a wide range of countries from Antigua-Barbuda to Vietnam – yet are only found as fossils in rocks of the western United States and Canada!

Moldova's geologic record extends from Archean rocks (the early Precambrian – at least 2.5 billion years ago) to the Miocene and Pliocene (23 to 5 million years ago) – unfortunately most of this rock record is covered up by younger Quaternary deposits from the last ice age to the present. Some Miocene and Pliocene rocks outcrop at the surface and have been studied extensively by Moldovan and Romanian paleontologists (and in the past, Soviet paleontologists). Much of the older rock record is only known from drilling wells and examining the rock materials intercepted during drilling. During the Miocene, southern and central Moldova were under water – flooded by a sea that filled in the foreland basin adjacent to the growing Carpathian Mountains. Northern Moldova was characterized by coastal environments (beaches) and a mix of riparian forests, swamps, and open grasslands with a diverse fauna of mammals. By the Pliocene, the foreland basin had filled in with sediment as part of the evolution of the modern Danube river system. During the lower Pliocene, Moldova was characterized by a mixed forest-steppe landscape. Roughly at the mid-point of the Pliocene, broad-leaved forests dominated the landscape. But with the cooling of the Earth into the Plio-Pleistocene glaciations, the forests retreated and were replaced by the modern steppe landscape (Matoshko et al. (2019) provide a very nice overview of this landscape evolution).

We will survey the Moldovan prehistoric life stamps in this article – describing the issues and providing information about the different species shown on the stamps.

## 1995 and 2014 Issues – Exhibits from the National Ethnographic Museum

Three stamps are in the 1995 issue, but only 1 includes both a reconstruction of the prehistoric animal, *Deinotherium* and a reconstruction of what the animal may have looked like in life. In addition, the 2014 National Museums of the Republic of Moldova issue shows the mounted skeleton of *Deinotherium* from the National Ethnographic Museum as one of the decorative elements in the central gutter of the sheet.



Figure 1: Moldova, 1995 semi-postal (SC# 162) showing a reconstruction of a *Deinotherium* on the left and a mounted skeleton of the animal on the right.

Deinotheres are a group of large herbivores closely related to modern elephants. They lived on the Earth from the Middle Miocene (approximately 16 million years ago) to the Early Pleistocene (approximately 2 million years ago). The remains of deinotheres have been found in southern Europe, southern western Russia, and as far southeast as southeast Asia. Some of the most recent deinotheres have been described from Eastern Africa where they are sometimes found associated with hominid remains. They were slightly larger than modern elephants, with an adult male *Deinotherium* having an average shoulder height of 4 meters (13 feet)! One of the unique characteristics that sets deinotheres apart from modern elephants is the orientation of the tusks – in deinotheres, the tusks tend to be shorter and point downwards. There is some debate as to how the tusks were used during eating. Hypotheses include that deinotheres used their tusks 1) to dig at and remove roots and tubers, 2.) pull branches down to break them and get at the leaves, or 3.) strip bark from trees to eat.

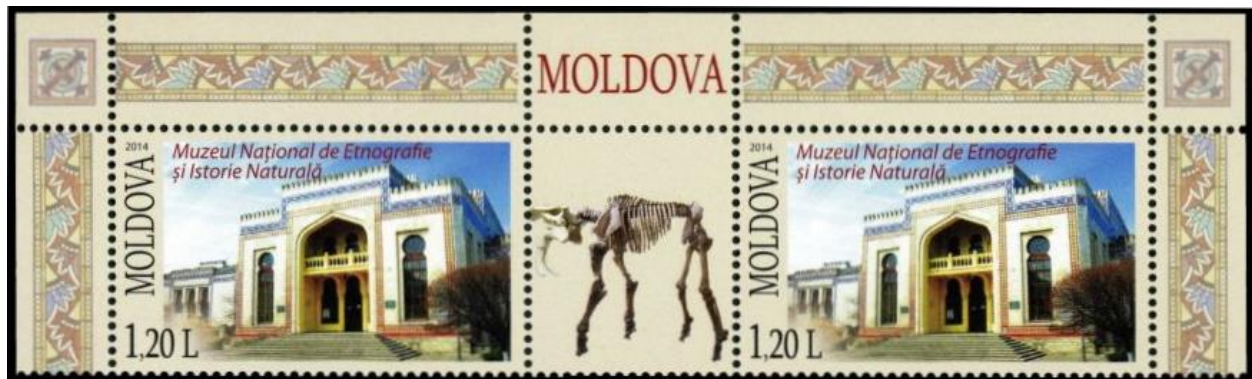


Figure 2: A portion of a sheet of the National Museums of Moldova 2014 issue (SC# 821) showing the National Museum of Ethnography and Natural History. Note the mounted skeleton of *Deinotherium* in the gutter.

### 2010 Issue – Prehistoric Animals

Eight stamps were issued in this set – with 4 stamps in a souvenir sheet. The set highlights a diverse set of mammals that lived during the Pleistocene in Moldova and adjacent regions. The stamps include the Mammoth *Mammuthus* (85 b), the cave bear *Ursus spelaeus* (1 L), *panthera leo spelaea* (1,20 L), bison (4,20 L), *Pontoceros* (1,20 L), *Anancus* (1,50 L), *Stephanorhinus* (5,40 L), and *Homotherium* (8.50 L).

The Mammoth (*Mammuthus primigenius*) and *Anancus* sp. are both relatives of modern Elephants. *Anancus* is traditionally classified within the Gompotheres – a group closely related to the family Elephantidae. Early Gompotheres were characterized by having 2 sets of tusks – one rooted in the upper jaw like most elephants and the second smaller pair rooted in the lower jaw. *Anancus* differs from earlier Gompotheres in having secondarily lost the lower set of tusks. Like other proboscideans, *Anancus* jaws are dominated by molars (save for one species *A. Kenyensis* which retained premolars in addition to the molars). The molars were large and unlike elephantids, characterized by cusps. The molars are tetralophodont to pentalophodont – meaning that when looking down on the top of the

molars, one would see either four or five ridges (Konidaris and Roussiakis, in press). The molars were quite large (8-10 cm in length). The tusks were long and straight – with one example from Pakistan being nearly 9 ft long (Khan et al. 2011). Most fossils of *Anancus* found in Moldova consist of isolated teeth and jaw fragments found in sediments interpreted to be coastal deposits.



Figure 3: Moldova 2010. On the left are SC#'s 689, *Mammuthus*; 690 *Ursus spelaeus*; 691 *Panthera leo spelaea*; 692 *Bison*. On the right are SC#'s 693a *Pontoceros*; 693b *Anancus*; 693c *Stepanorhinus*; and 693d *Homotherium*.

Fossil and sub-fossil material of the Cave Bear, *Ursus spelaeus*, are found in cave deposits of Late Pleistocene age across Europe and into Eurasia, including the Buzdueni I site in Moldova (Croitor and Burlacu, 2020). They are closely related to the modern brown bear (*Ursus arctos*) and polar bear (*Ursus maritimus*) and are thought to have had similar behaviors and lifestyles to the brown bear. These bears hibernated during the winter months – and due to that behavior had to prepare their bodies for long periods of fasting. Several groups have examined their teeth for micro-wear and stable isotope ratios of nitrogen and carbon isotopes. Micro-wear patterns are more like the omnivorous brown bears (Jones and DeSantis, 2016), while nitrogen isotopes suggest a diet rich in protein (Peigne, et al., 2009).

One of the carnivores shown in this set, is the cave or steppe lion, *Panthera leo spelaea*, a sub-species of the modern African Lion, *Panthera leo*. This sub-species is found in Late Pleistocene sediments across northern Eurasia and even in portions of Alaska and the Yukon Territory of North America (Diedrich, 2014; Stuart and Lister, 2011). Some specimens have been found preserved frozen in permafrost (<https://www.rferl.org/a/siberia-permafrost-thaw-mammoth/31342051.html>). Cave paintings and the specimens preserved in permafrost suggest that male cave lions did not have a mane or had a very reduced mane compared to the African members of the species. Cave lions were also slightly larger than modern lions. Stuart and Lister (2011) suggest on the basis of the larger size of these animals, that they could have preyed upon some of the larger herbivores that lived at the same time – horses, giant deer (*Megaloceros*), musk oxen, bison, and likely juvenile woolly rhinoceroses and mammoths. They also likely scavenged meat from other animal's kills including the prey of Spotted Hyena. A second felid is shown in the 2010 set, *Homotherium*. *Homotherium* is a type of large-bodied scimitar-toothed cat – they



were incredibly effective predators with large, saber-shaped, serrated canines. Barnett et al. (2020) suggest that these incredibly efficient predators likely died out as the larger prey animals died out in the Pleistocene Mega-fauna extinction events.

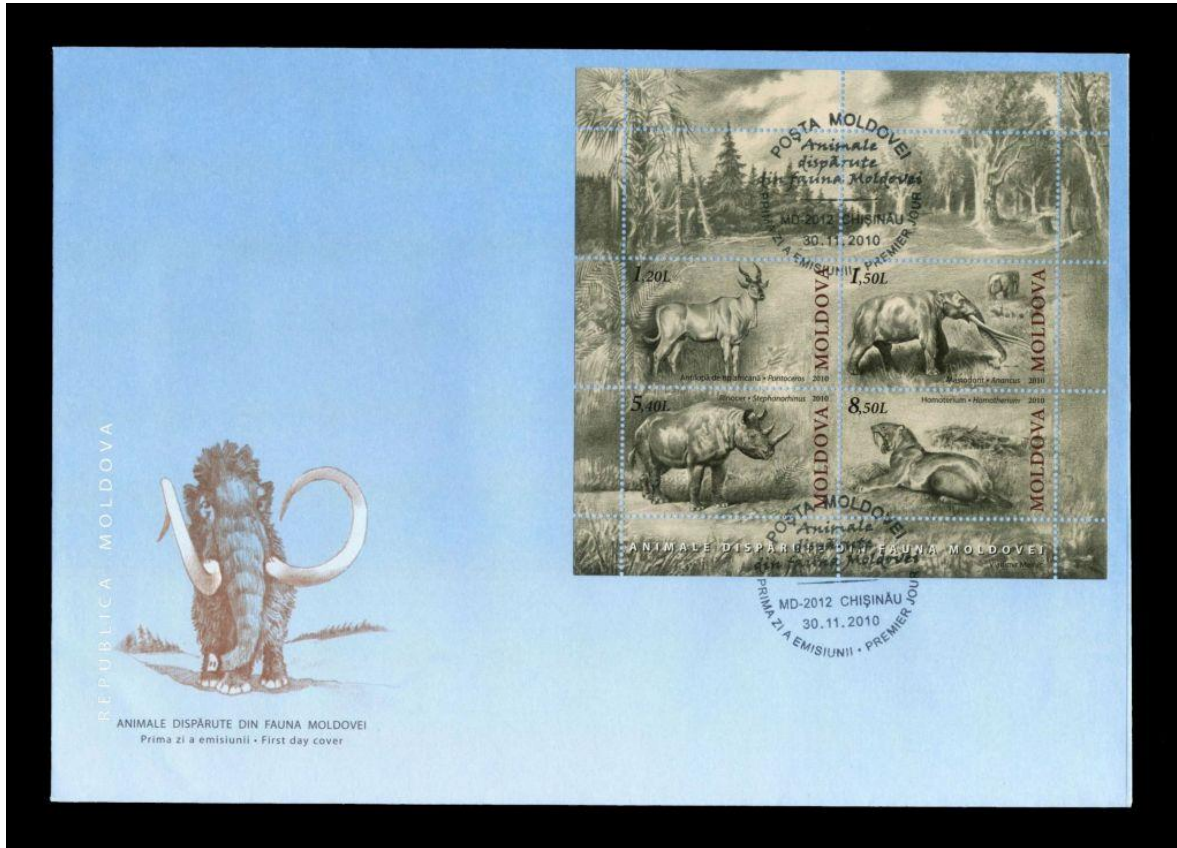


Figure 4: Official first day cover for issues 693a-d. Note the Mammoth in the cachet.

A pair of ungulates are shown on the 2010 issues – the bovids *Bison* and *Pontoceros* (spiral-horned antelopes). Both animals were large ruminants that lived in the open boreal environments where they browsed on plants (Vekua, 2012). Most fossils of *Pontoceros* found in Eurasia are limited to fragments of the horn cores and the portions of the skull where the horns attached. Bison fossils are also quite fragmentary (Croiter, 2016).

*Stepanorhinus* is the two-horned rhinoceros. It is known from 80 localities across Eurasia (though primarily in European Russia and Europe in middle Pleistocene sediments. Most of the fossils are fragmentary – though portions of the jaws and teeth and limb bones have been found at these sites (Lobachev et al., 2021). The Lobachev study showed that the shape and size of the teeth subdivide two groups of *Stepanorhinus* individuals – likely a sign of sexual dimorphism. They also performed micro-wear analysis and observed that the molars were broad and wide, with a relatively narrow jaw – all suggesting that the animals were browsers and more selective of what plants they ate.

### 2016 Issue – Extinct Animals

Five stamps were issued in this set – with 1 stamp in a souvenir sheet. The 2016 set continued the trend of highlighting recent fossil mammals from Moldova. The set includes *Tapirus* (1,20 L), *Dolichopithecus*

*ruscinensis* (1,75 L), *Crocuta Crocuta spelea* (4,00 L), *Paracamelus alexejevi* (5,75 L), and on the souvenir sheet, *Megaloceros giganteus* (15,50 L)



Figure 5: Moldova 2016 issues. Mini-sheet with the Giant Deer, *Megaloceros giganteus* (SC# - 928) on left. On right, SC#'s 924-927 – including the Tapir (924 – *Tapirus*), the monkey *Dolichopithecus* (925), the Spotted Hyena or Cave Hyena (926 - *Crocuta crocuta spelea*), and the Camelid *Paracamelus alexejevi* (927).

Tapirs are an interesting group of ungulates that appear almost simultaneously in Eocene deposits in North America and Eurasia. One hypothesis is that Tapirs evolved in Asia and migrated over an early phase of the Bering Sea Land Bridge during the Eocene (Smith et al., 2015). Later on, Tapirs migrated to South America when the isthmus of Panama formed in the Miocene. Tapirs today are known primarily from South America, though the largest living species is found in Malaysia and Sumatra. They are browsers that prefer leaves, twigs, and grass.

*Dolichopithecus* was a colobine monkey found in portions of the Balkans as well as in eastern Moldova (near Tiraspol – the capital of the disputed Transnistria region) and Ukraine in early to middle Pliocene fluvial deposits (Spassov and Geraads, 2007 and Maschenko and Marareskul, 2011). Spassov and Geraads (2007) analyzed the teeth of the jaw specimens from the Balkans and inferred that these animals were eating tough and abrasive vegetation that required much grinding by the molars.

The cave hyena (*Crocuta crocuta spelea*) is known from much of eastern Europe and European Russia – primarily from dens with both hyena remains and the remains of animals that the hyenas had preyed upon. Their prey included bovids, equids and suids – and even in a few exceptional cases, the remains (teeth and crushed long bones) of neandertals are also found (Diedrich, 2014). They also likely were opportunistic scavengers – as some dens include isolated bones of woolly rhinoceroses and even mammoths.





Figure 6: Examples of first Day Covers for the 2016 issue (on the left) and a pair of maxi-cards for the 2010 issue (on the right).

The Camelid *Paracamelus alexejavi* is found in early and middle Pliocene deposits of Romania and Moldova (Radulescu et al., 2003) – this genus likely evolved in North America and crossed the Bering Sea Land Bridge when it became passable for a short span of the Miocene.

*Megaloceros giganteus*, the Giant Deer, is found in Pleistocene and early Holocene sediments across Eurasia – with related species in eastern Asia. No specimens are found in northern Siberia – and hence *megaloceros* was unable to travel across the Bering Sea Land Bridge to North America (Lister and Stuart, 2019). Ancient humans may have been responsible for their extinction through over-hunting. Though careful age-dating with radiocarbon and measurement of body size show that megalocerids were progressively smaller in size in some portions of their geographic range in younger sediments – suggesting that their nutritional needs were also not being met. More information on the Giant Deer (which many older Americans might know as the “Irish Elk” can be found in this document that the authors prepared for Michael’s website:

[http://www.paleophilatelie.eu/articles/en/kogan/First\\_discoveries\\_Megaloceros.pdf](http://www.paleophilatelie.eu/articles/en/kogan/First_discoveries_Megaloceros.pdf)).

In addition to the formal stamps published by Posta Moldovei, the country of Moldova has had some upheavals since independence from the Soviet Union. A narrow strip of eastern Moldova along the Dniester River and border with Ukraine has had de facto independence since the early 1990s as an autonomous zone of Moldova – Transnistria. Transnistria is not recognized by the United Nations or the Universal Postal Union. It does issue stamps for local use (and are valid in Moldova proper). Several

issues have focused on prehistoric life – with a mix of animals that lived in Transnistria in the past as well as animals that lived in other parts of the world. Michael’s website has some resources devoted to Transnistria’s prehistoric stamps (<http://www.paleophilatelie.eu/country/transnistria.html>) and we encourage you to take a look at the stamps there so you can recognize these unofficial stamps that have been released by the Transnistrian government.

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The website of the Moldovan Ethnographic Museum: <https://www.visit.md/en/tour/national-museum-of-ethnography-and-natural-history/> (which highlights a skeleton of Deinotherium found in Moldova)

Information on Deinotherium:

<https://www.fossilguy.com/gallery/vert/mammal/land/deinotherium/index.htm> (includes pictures of a skeleton mounted in the Natural History Museum of Bucharest, Romania).

A discussion of sub-fossil material found preserved in permafrost of Siberia – including an exceptionally well-preserved cave lion cub: <https://www.rferl.org/a/siberia-permafrost-thaw-mammoth/31342051.html>).

Paleophilatelie.eu is the go-to resource on topical collecting of prehistoric life – the builder of the site, Michael Kogan also has pages for prehistoric life stamps from specific countries, including Moldova (<http://www.paleophilatelie.eu/country/moldova.html>). All images in this article are from paleophilatelie.eu.