

## SHORT NOTES

## KRÁTKÁ SDĚLENÍ

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### The last *Bos primigenius* survived in Bulgaria (Cetartiodactyla: Bovidae)

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**Abstract.** A horn-core of *Bos primigenius* excavated from the depth of 537.3–537.4 m in the late medieval deposits of the second half of the 17th century to the 1st half of the 18th century AD is reported. This record suggests that the aurochs survived in the Central Balkans a century later than the reported known date (1627) from northern Poland.

**Key words.** Last aurochs, extinct mammals, large bovids, subrecent Balkan fauna, archaeozoology.

The aurochs (*Bos primigenius* Bojanus, 1827) became an extinct species in 1627 (LUKASZEWICZ 1952, 1958). The globally accepted notion is that “This species was extirpated from the majority of its range by the 15th century and persisted only in the Jaktorowka Forest, Masovia, Poland, with the last wild individual reputed to have died in 1627” (TIKHONOV 2008). Its fossil and subfossil record (bones, teeth, horn-cores) is very abundant in many regions of Europe, Asia, and North Africa; its extensive former range was reconstructed thanks to numerous findings (VAN VUURE 2005).

The fossil (Pleistocene), subfossil (Holocene) and subrecent (late medieval to the modern epochs) records of the aurochs in Bulgaria are well documented for almost all parts of the country from over 60 localities since 150,000 years BP (BOEV 2016a, b, 2017, 2018, 2019, 2020, BOEV & BOEV 2018).

The first finding of the aurochs remains in Bulgaria was published by ŪRINIĆ (1891) from the Poliĉki Cave near DrĀnovo (central-northern Bulgaria). Data on ecology, external features, limb proportions, and skeletal morphology indicate that the aurochs was a forest-steppe mammal (SPASSOV 1992).

The examined specimen represents a horn-core of an adult individual of *Bos primigenius*. It was collected in 2020 during the salvage archaeological excavation within a three-year exploration of the site for the construction of a building in the center of Sofia (Exarch Joseph Street 35). The specimen is kept in the collection of the Department of Paleontology and Mineralogy, National Museum of Natural History, Bulgarian Academy of Sciences, Sofia.

According to the data provided by the archaeologist (leader of the excavations) Polina STOĀNOVA (Regional History Museum, Sofia), the aurochs horn-core was excavated in a layer of deposits of the second half of the 17th century to the first half of the 18th century AD. Its location in this layer suggests deposition of the find to the 18th century. The depth of the layer is 537.3–537.4 m.

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Only a proximal third of the horn-core is preserved (Fig. 1a). Its measurements are as follows: total length of the horn-core fragment – ca. 270 mm (Fig. 1a); large diameter of the basal section of horn-core – 100.6 mm; small diameter of the basal section of horn-core – 83.6 mm (Fig. 1b). It is well illustrated that the domestic cattle (*Bos taurus* Linnaeus, 1758) at that time had significantly smaller horn-cores. At that time the cattle breeds present in Bulgaria were of brachycerous type, dimensionally well distinguished from the wild aurochs. The compared skull fragment of *Bos taurus* (Fig. 1c) is typical for the sample of the coexisting domestic cattle in Sofia, excavated from the same layer/depth. After VAN VUURE (2005), the diameter of horn-cores of *Bos primigenius* is as follows: bulls 10–18 cm, cows 7–10 cm. The Sofia specimen of aurochs shows an intermediate value between both sexes. The identification of the finding is beyond doubt, as well as its dating (see above). The examined specimen bears tracks of a human impact – cutmarks of an axe at the base of the horn-core suggesting an intention to remove it from the skull (Fig. 1d).

The European aurochs is referred to belong to the nominotypical subspecies, *Bos primigenius primigenius* Bojanus, 1827 (ТИХОНОВ 2008). According to BOEV & BOEV (2018), the aurochs in Bulgaria preferred riverine plain forests. The bulk of the bone remains found originates from such habitats of the country. The latest finds come from hilly and foothill terrains, where the aurochs was gradually pushed out by man. Only there it could hide and survive. The rich and diverse nature of the Preslav Mountains (part of the Eastern Stara Planina Mts.) and the Vitoša, Plana, Verila, Lúlin, Viskâr, Mala, and Murgaš Mountains, enclosing the Sofiâ Valley (also the Sofiâ Kettle or Sofiâ Field), were the home to some of the last aurochs in the Balkans in the 15th and 16th centuries. The aurochs played an important role in the natural biocoenoses in the plains and occupied also an important place in the material and spiritual culture of the people. It

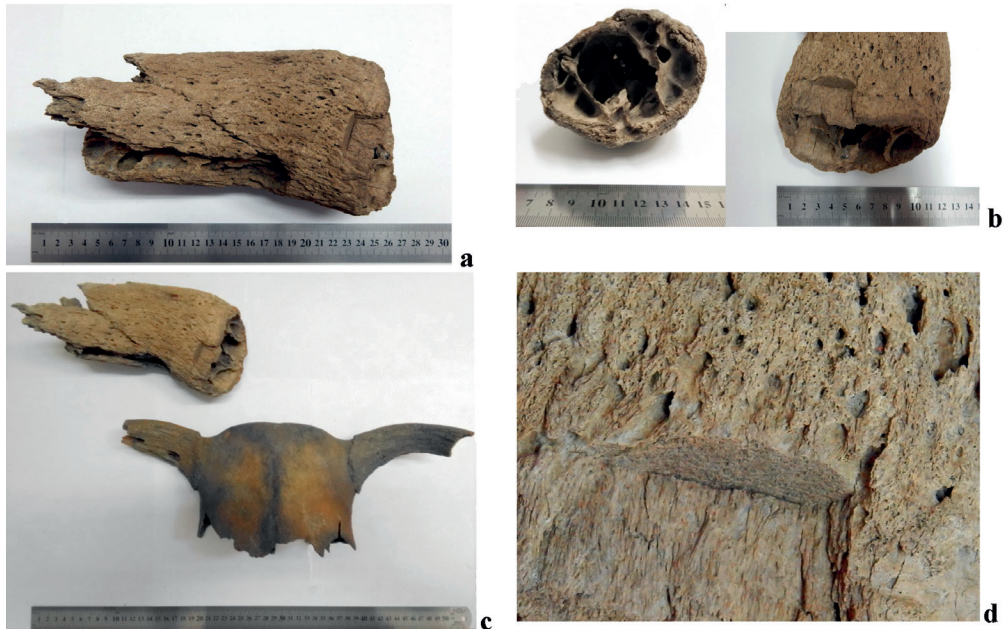


Fig. 1. Aurochs (*Bos primigenius*), horn-core (Collection of the Department of Palaeontology and Mineralogy, NMNHS-BAS). a – lateral view; b – view of the base, proximal end; c – comparison of horn-cores of *Bos primigenius* (top) and *Bos taurus* (bottom); d – cutmark in the proximal end of horn-core. Photos by Z. BOEV.

is expected that the archival documents from the Ottoman period in Bulgaria could help to find new and unknown information on the aurochs' distribution, habitats, hunting, etc. They still remain to be examined by the zoologists (BOEV & BOEV 2018).

So far, the archaeozoology data from Bulgaria have proven the occurrence of aurochs in the country until the 16th–17th centuries AD. The aurochs survived at least until the 16th century in the Preslav Mts. in central-eastern Bulgaria (IVANOV 1959) and until the 16th–18th century in the foothills of the mountains surrounding the Sofia Valley (BOEV 2016a, b, 2017, 2018). In Sofia proper, the presence of *Bos primigenius* was proved in two localities – the Forum Serdica (BOEV 2016a, b, 2017, 2018) and the Northern Fortification Walls of Serdica (BOEV 2019, 2020).

Although it seems surprising that in the alluvial woods of the mountains in the Balkans the aurochs survived until the 17th century (at least its second half), it is not quite improbable. At that time, this part of the Balkans (Sofia Region) and all Bulgarian lands were ruled by the Ottoman Empire. Sofia (also called Sredec) was a small town, much smaller than the contemporary Filibe (= Plovdiv) and Rusčuk (= Ruse). The mountains surrounding the Sofia Valley were still well forested and the mass deforestation begun first in the middle of the 19th century when the increasing population in a need of timber for the industry and construction purposes started extensive logging in the region. Dense forests were devastated also for the easier persecution of the Bulgarian haidouks by the Ottoman forces. Dense woods between Sofia and Slivnica were known in the Middle Ages as *Silva Magna Bulgarica* (Great Bulgarian forest). In a broader sense the name was used for the former “Bulgarian” forests between the today’s Belgrade in Serbia and Ihtiman in Bulgaria. This mountainous part of the country was not compactly populated and it is probable that some of the last aurochs might have survived a century longer than the “officially” known date of the species full extinction in the wild (1627) in Central Europe (northern Poland).

## A c k n o w l e d g e m e n t s

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## РЕЗЮМЕ

**Последните турове (*Bos primigenius*) са оцелели в България (Cetartiodactyla: Bovidae).** Съобщава се за рогов ствол от *Bos primigenius*, изкопан от дълбочина 537,3–537,4 m в късно-средновековните отложения от втората половина на XVII до първата половина на XVIII век сл. Хр. Това означава, че турът е оцелял в Централните Балкани около век по-късно от официално известната дата (1627 г.) от Полша.

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