**Determination of the death season by dental cementum analysis of horses *Equus ferus* (Boddaert, 1785) from the Upper Paleolithic site Kostenki 14 (Markina gora) (Voronezh region, Russia)**

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**Abstract**

The study of growth layers in dental cement is a well-established method of determining the season of death of mammals. The material for this study were the teeth of horses Equus ferus (Boddaert, 1785) found in the cultural layer IVa of the multilayered Upper Paleolithic site Kostenki 14 (Markina gora) (Voronezh Region, Russia). A big number of bone remains of horses was found in this layer IVa. Until now, the question whether these animals died at the same time or at different times remained open. This study analyezed 36 permanent buccal teeth belonging to 24 individuals. Those teeth were studied in thin sections and polished sections under transmitted, reflected and polarized light. The analysis of growth layers in dental cement showed different seasons of horses’ death. Seventeen individuals died in the spring-summer period, and seven – in the autumn-winter period. The results of this study support the hypothesis of the asynchronical death of these horses, that could die because of both natural causes and as a result of hunting for them by the ancient humans. The hypothesis of the asynchronical death of the animals is also consistent with earlier osteological data obtained during the determination of bone remains and based on the time of eruption of teeth and stitching epiphyses and diaphises.