MORPHOLOGICAL AND MOLECULAR APPROACHES TO SPECIES IDENTIFICATION IN EQUID CHEEK TEETH FROM GODIN: TERMINOLOGY, TAXONOMY, AND FURTHER IMPLICATIONS

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ABSTRACT

The study discussed herein concerns modern Eurasian equids; for the moment, the horse, the donkey, and the onager. These equids are represented in a specific archaeological context (Godin, Iran) by their lower cheekteeth, or premolars and molars. Using morphological techniques developed by Eisenmann (1986), eligible cheekteeth were assigned to one of the three relevant species (horse, donkey, or onager) based on occlusal morphology (specifically, the shape of the linguaflexid and the depth of the ectoflexid). Teeth assigned to species using this morphological technique were subjected to molecular analysis. A region of the mitochondrial D-loop variable amongst the three species was targeted and said sequence was compared to species-known controls for each tooth with a tentative species identification. The initial objective of this study was to compare morphological and molecular techniques for determining species from an archaeological assemblage. However, this study also involved a significant struggle with both terminology and taxonomy, leading to epistemological questions about the relationship between the biological reality of the natural world and human cultural understanding of that world.