

PREDATOR-PREY RELATIONSHIPS INFERRED BY COPROLITE PHYTOLITH ANALYSIS FROM ARGENTINE PATAGONIA

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Knowing about past biological interactions is possible thanks to the study of coprolites found in archaeological sites. Evidence of herbivores consumption by omnivorous organisms was found in Patagonia through bone remains studies. With the aim to recognize the limitations and potentialities of the phytolith analysis to infer predator-prey relationships, a comparative analysis among the content of phytoliths obtained from omnivores and herbivores coprolites was performed. The coprolites were found in the archaeological site Cerro Casa de Piedra 5, Perito Moreno National Park, Patagonia, Argentina, in an archaeological layer dated to 7,402 cal BP. According to their morphological features and content, the coprolites were assigned to omnivores organisms and camelids. Samples were rehydrated, filtered, concentrated, dried, and mounted in immersion oil. Counting and identification of phytoliths were made under optical microscope. The results showed the dominance of phytolith association of the subfamily Pooideae in the omnivore and camelid coprolites suggesting that the grasses were part of the diet of these organisms. This result was even confirmed through pollen and plant remains analyze. Also, isolated and articulated phytoliths and preserved silicified cells within the producing plant tissue were observed in camelid coprolites, while in omnivore samples only isolated phytoliths were observed. The presence of isolated phytoliths in these last samples could indicate that the phytoliths consumed could have been subjected to alteration processes, such as chewing, food processing prior to consumption, digestion or were indirectly incorporated by the consumption of guanaco viscera, exposing phytoliths on more than one occasion to the alteration processes. Future studies on the qualitative and quantitative production of phytoliths in species linked to the diet of herbivores and omnivores as well as on the effects of taphonomic processes from the digestive systems of consumers may contribute to the knowledge of past biological interactions.

Keywords

Coprolites, Phytoliths, Argentina

Note/comment