

MORPHOLOGICAL HAIR ANALYSIS OF BRAZILIAN XENARTHRA

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RESUMO

Trichological studies have been described since the beginning of the 20th century. The resistance and the specific differences in the microstructures that compound the hair enable its wide applicability in science, being commonly used in studies of food ecology, paleontology, forensics, taxonomy and systematics and others. As mammals, Xenarthra have hairs responsible for different biological functions, such as maintaining temperature, protection and communication. The identification of Xenarthra species is carried out using different direct or indirect parameters, such as genetic techniques, morphometry, hair morphological analysis, use of photos and videos of camera traps, as well as trails and burrows. Some species present high morphological similarity, making their separation difficult. Considering the difficulties in the recognition of some species and the possibility of using the hair for this purpose, the aim of this study was to characterize the morphological patterns of the guard hairs in the Xenarthras of Brazil. The hair samples were obtained from different scientific collections and projects. The used method consisted of the elaboration of slides for cuticular observation, by printing the hairs in gelatinous media. We also made the preparation of slides for the observation of the marrow cellular elements, with the clarifying of the hairs in hydrogen peroxide. Manual transverse cuts of hair were also made using a metal blade. All slides were permanently prepared and analyzed under a microscope and photographed. A total of 246 hair samples from 18 Brazilian species of Xenarthra were analyzed. For both Cingulata and Pilosa orders, a predominance of a wavy cuticular pattern was observed, in addition to a predominance in the form of overlapping of the scales identified as pavement. In both orders, species with an overlapping pattern described as foliaceous were also identified. The cuticular analysis allowed the separation of the orders Pilosa and Cingulata through the observation of the apex of the hair, worn to Cingulata and with scales present in Pilosa, a characteristic probably resulting from the different life way of these orders. The cuticular pattern was similar between species within the same genus, which may represent difficulties in separating the species. Therefore, the incorporation of the transversal cuts allowed to complement the diagnosis of the species, making it necessary for its description in the hair morphology. The medullary material did not result in characteristics that would assist in the diagnosis for most species. With the incorporation of transverse sections, it was possible to observe the presence of bone marrow, a characteristic described as absent in the literature when analyzing the hair morphology. The marrow was present

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for the species of the order Pilosa and found in a few species of the order Cingulata. In Xenarthra, the presence of bone marrow in some species is difficult to visualize, requiring attention for detection during analysis. With the combination of the characteristics of microstructures of hair, it was possible to recognize at a specific level, allowing the elaboration of an identification key as a tool for the identification in the Xenarthrans of Brazil.

PALAVRAS-CHAVE: Cingulata, Cuticle, Medulla, Pilosa,