

Mesowear analysis of fossil ungulate cheek teeth and reconstruction of the Late Miocene paleoenvironments

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The mesowear analysis is a new approach of reconstructing fossil ungulate diets and their paleoenvironments. Mesowear was recorded by examination of the buccal (cheek side) apices of cheek tooth (molar and premolar tooth) cusps. Apices were characterized as sharp, rounded, or blunt, and the valleys between them either high or low. We analyzed mesowear of Hipparion and bovid upper and lower cheek teeth (P4-M3) from the Late Miocene hominoids (great ape) sites of Northern Kenya and Northern Iran for reconstruction of paleoenvironments. Geographical distance between both areas in Northern Kenya is very close. The distance of the both areas is only 50 or 60 kilometers. Geochronological age and Mammalian fossil assemblage from both Kenyan sites suggest the early Late Miocene in age. In the results of mesowear analysis between both Kenyan sites may suggest woodland environments in a rich hominoids site and more open environments in another poor hominoid site. Mesowear analysis of the hominoids site from Northern Iran also suggests woodland environments.

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