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Ecological distinction of hipparionine taxa distributed synpatric in single locality - detected differential patterns of

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More than two morphologically distinct hipparionine horses (Equidae) were recognized in single mammalian faunas from single locality of late Miocene in Eurasia. They differ from each other on their size and proportion of body, and morphology of skull. The dental morphology observed on wearing surface of cheek teeth that had been previously utilized for their taxonomy has very little and limited taxonomic value. The mesowear analysis on dental battery of cheek teeth shows differentiation in those hipparionines on ecology and feed habitats in single locality. When more than two morpho-types are found from a single locality collection, we need to recognize the correspondence relationships among cranial and postcranial grouping based on above-mentioned morphology. The differences in postcranial bones of those sympatric forms are shown in both size and proportions, or/and only proportions. There are cases that nearly five sympatric hipparionine taxa are found from single locality (from a bed). That wide variation of cranial, dental, and postcranial morphologies among the sympatric horses suggests they separately utilized their environments in narrow and limited geographical space, in widely diverse vegetation and landscape. The methods of such utilization are highly variable in different localities in Eurasia. More derived Pliocene-typed hipparionine taxa than late Miocene forms are recognized in late Miocene Pikermian fauna in the central Asia. These data provides new data for study on origin of derived Pliocene mammalian faunal assemblages in Eurasia, and possibility of fine biostratigraphic correlations of their localities in Eurasia.

Keywords: Miocene, Paleoecology, Hipparion, Morphology, Paleoenvironment