

## Effects of dietary difference in sympatric environment on mesowear analysis

YAMADA, Eisuke<sup>1\*</sup>, NAKAYA, Hideo<sup>1</sup>

<sup>1</sup>Dept. Earth & Environ. Sci., Kagoshima U

Mesowear analysis is one of the methods for reconstructing diets based on facet development on the occlusal surface of cheek teeth. It has been applied mainly to reconstruct the food habit of extinct species and paleoenvironments they live in. However, there was little knowledge about the effect of paleodiet difference in sympatric environment. This limitation cause troublesome when apply this method to fossil assemblage. The aim of this study was to determine the sensitivity of mesowear analysis.

Intraspecific comparison was conducted by using the wild population of sika deer (*Cervus nippon*) in the Kinkazan Island, northern Japan. Then, there were significant differences between the sex (Fisher's exact test (FET):  $P < 0.05$ ) and hierarchical cluster analysis (HCA) with other the reference data classified doe deer into mixed feeders and stag deer into grazers.

Interspecific comparison was conducted by using the wild populations of the Japanese serow (*Capricornis crispus*) and the sika deer in Nikko National Park, central Japan. Mesowear variables frequencies of them were also significantly different (FET:  $P < 0.05$ ), and the population of Japanese serow was classified into browsers and the population of sika deer was classified into mixed feeders by HCA.

As previous ecological surveys well supported these results, we concluded that mesowear analysis detected dietary difference in sympatric area with high precision.

Keywords: paleodiet, *Cervus nippon*, *Capricornis crispus*, teeth, mesowear analysis