

Diatom 23: 71-81 (英文)

加 三千宣¹・吉川周作²・槻木(加) 玲美³: 過去 40 万年間における琵琶湖の *Stephanodiscus* 属の種遷移と殻の形態変化

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Michinobu Kuwae, Shusaku Yoshikawa and Narumi K. Tsugeki : Long-term species and morphological changes for *Stephanodiscus* in Lake Biwa for the last 400 ka

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Abstract

In order to explore the origin and evolution of an endemic diatom species, *Stephanodiscus suzukii* Tuji & Kociolek, living in Lake Biwa, species and morphological changes of *Stephanodiscus* spp. for the last 400 ka were elucidated using samples from a 140 m-long core. The first appearance of *S. suzukii* like-species was approximately 390 ka, close to the timing of the onset of Lake Biwa basin formation. However, their dominance started at about 170 ka. Since their first appearance, changes in dominance from *S. sp. D* to *S. suzukii* can be recognized. During periods of transition, transitional forms of the two species were present in the populations. Morphological changes are apparent in the location of interrupted areolae fascicles, the number of areolae per fascicle and number of fascicles per 10 μm near the margin. The existence of individuals with transitional forms and slow morphological changes during the transition period suggest that *S. sp. D*, and *S. suzukii* are identical species. The changes in morphology of *S. suzukii* are related to shifts in global climates and local crustal movements, suggesting they are survival strategies against severe climate and limnetic changes.

Key index words : endemic species, Lake Biwa, mid-Pleistocene to Holocene, *Stephanodiscus*, valve morphology