

Diatom 19: 23-31 (英文)

Sheue-Duan Lai, Jiang-Ping Wang, Jaan-Tyng Yeh and Horng-Wei Tsay : Ecology of *Cyclotella* spp. from Chia-Nan stream (Taiwan)

#### Abstract

The ecology of dominant *Cyclotella* spp. were studied at four sampling sites during 2000-2001, and eight sampling sites during 2002, in southwestern Taiwan. During the study in 2000-2001, the cell density of *Cyclotella* was compared with the variation of environmental factors by Pearson correlation analysis. The result showed significant positive correlation with nitrate ( $r=0.37$ ,  $p=0.01$ ) and negative correlation with water temperature ( $r=-0.255$ ,  $p=0.05$ ). Whereas, other factors such as ammonium, nitrite, orthophosphate, organic phosphate, dissolved oxygen concentration, pH, conductivity and salinity did not reveal any significant correlation. However, the especially high cell density of *Cyclotella* occurring in 2000-2001 could not be explained solely by nitrate and water temperature. Hence, further study was carried out at eight sampling sites during 2002. The result showed that high cell density correlated significantly with electric conductivity ( $r=-0.45$ ,  $p=0.01$ ). It was presumed that electric conductivity was a more important factor reflecting the cell density of *Cyclotella*. Apart from ecological studies, this paper also investigated the morphology of the dominant *Cyclotella* spp. and confirmed by using scanning electron microscopy that the local species are mainly *Cyclotalla meneghiniana* Kütz. mixed with *Cyclotella* sp.

Key index words : brackish water, *Cyclotella*, diatom, ecology