

Diatom 4: 81-88 (英文)

加藤和弘: 付着珪藻に基づく生物指数の性質

Kazuhiro Kato : Biological indices based on epilithic diatom

#### Abstract

I surveyed the diatom assemblages in the River Asa-kawa from November 1986 to September 1987, and found several characteristics of biological indices based on diatom assemblages. Indices calculated from relative frequency of species show higher correlation to EC and COD than indices calculated from number of species in an assemblage. The former have a tendency to correspond to average water conditions, and in contrast, the latter have another tendency to suggest water conditions which appear most frequently. When we want to use these indices we have to know the list of ecological species groups. Several lists have been made. But there are some differences between these lists and it may affect the indices. So we should consider the criterion of selecting indicator species. In this study, "SI" (Pantle & Buck, 1955) using the list proposed by Kobayashi et al. (1985) shows the highest correlation to EC and COD in all biological indices. But the reason of this result seems to be that the River Asa-Kawa doesn't have neither highly polluted nor extremely clean parts, and if we want to survey waters including such extreme conditions, we had better use "DAIpo" proposed by Watanabe *et al.* (1986).

Key words: biological index, correlation to water conditions, diatom assemblage, criterion of selecting indicator species.