Epiphytic algae on the bulrush (*Scirpus californicus* (Mey) Steud) in the Río de la Plata (Argentina): structure and architecture

N. Gómez¹, M. Licursi¹ and P. R. Hualde¹

With 9 figures and 2 tables in the text

**Abstract:** The objective of this study is to determine which are the characteristic algal communities coating the stems of *Scirpus californicus* (Mey) Steud in the Río de la Plata. Taxonomic composition, disposition of the algae in the biofilm, spatial patterns of abundance and species diversity and life-form strategies were analysed. Samples of periphyton were taken in winter and spring 1999 and summer and autumn 2000, at five sampling sites. Physical-chemical characteristics were measured in summer and autumn 2000. Ten stems of the bulrush were cut randomly and the bottom 15 cm kept and put into a flask with distilled water. The biofilm was removed by brushing, integrating the material collected in each sampling site. The algae that comprised the biofilm analysed showed a simple architecture consisting of a layer dominated mainly by biraphid diatoms, with planktonic diatoms and/or filamentous chlorophytes entrapped in the surface film. The matrix analysed in this study corresponds to early stages of succession characterized by R-selected taxa, considered to be pioneer species and good colonizers in a disturbed system. During spring, winter and autumn, diatoms were dominant, but with different species compositions, while in summer green algae were abundant. The epiphyton of the bulrushes studied was characterized by a low proportion of epiphytic specimens sensu strictu (adnate, stalked and erect forms) exhibiting a high proportion of immigrants from the benthos and plankton.

**Introduction**

Periphyton of large rivers is much less well known than their phytoplankton, which may be because the phytoplankton is more important in terms of primary production (Vannote et al. 1980). Furthermore, the methodology for investigation of phytoplankton is much simpler (Ács & Kí 1991).

The architecture of the periphyton is complicated, and depends on many factors, including: type of substrate, light conditions, grazing, nutrient supply, current

¹ **Authors' address:** Instituto de Limnología “Dr. R. A. Ringuete”, CONICET-UNLP, CC 712, 1900 La Plata, Buenos Aires, Argentina; E-mail: nora@ilpla.edu.ar

Contribution Number: 731.