



EVOLUZIONE

**BOOK OF  
ABSTRACTS**

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**Systematic revision of the genera *Pleurastrum* and *Chlorococcum* (Chlorophyta) based on molecular and climate data**

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A research work was started to characterize two green coccoid microalgal strains isolated from Terra Nova Bay, Victoria Land (Antarctica). The preliminary analyses carried out on the two isolates suggested their possible attribution to the genus *Pleurastrum* Chodat or the genus *Chlorococcum* Meneghini. The genus *Pleurastrum*, whose type species is *Pleurastrum insigne* Chodat, lives in soil, freshwater habitats, and as photobiont of lichens. It includes species that can show different growth forms depending on environmental conditions, with the coccoid form being the most reported. For its high polymorphism, the taxonomic history of this taxon has been confusing, with authors inquiring its monophyly and several taxonomic revisions during years. The genus *Chlorococcum* (Chlorophyta) Meneghini, with the type species *Chlorococcum infusionum* (Schrank) Meneghini, is a group found ubiquitously; it is reported from soil, freshwater, and marine environments, as well as from extreme habitats (e.g., hot springs and Antarctica). The simple morphology and the lack of unambiguous diagnostic characters make the identification of members of this genus very difficult. In order to better identify the Terra Nova Bay isolates and to throw light on the taxonomy of *Pleurastrum* and *Chlorococcum*, several reference strains of these genera were got from International culture collections and subject to molecular analyses. In particular, phylogenetic reconstructions were carried out based on the 18S rRNA, *rbcL*, *tufA* and ITS2 loci, with a focus on the ITS2 secondary structures. Besides giving a taxonomic position to the two Terra Nova Bay isolates, our results contribute to the circumscription of the genera *Pleurastrum* and *Chlorococcum* and to their revision, with the synonymization of different species. A correlation between lineages and climate zones has also been found and discussed.