

ORAL PRESENTATION

PRELIMINARY MOLECULAR PHYLOGENY OF THE CYMBELLALES (BACILLARYOPHYCEAE)

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As currently circumscribed, the order Cymbellales Mann (Bacillariophyceae) contains taxa that exhibit both isogamy (e.g. *Rhoicosphenia* Grunow) and physiological anisogamy (members of the Anomoeoneidaceae Mann, Cymbellaceae Greville and Gomphonemataceae Kutzing). The different modes of sexual reproduction in conjunction with the possible plesiomorphic state of chloroplast structure raises doubts over the monophyly of the order. Using molecular data from the nuclear and chloroplast genomes we test the monophyly of the Cymbellales and assess the relationships between some of the genera currently included of the order. Preliminary analyses indicate i) problems in identifying the sister group to the order, ii) basal position of *Rhoicosphenia* and *Anomoeoneis* and iii) unclear inter-generic relationships between *Cymbella*, *Gomphonema* and *Placoneis* due to moderate bootstrap support of higher nodes. The monophyly of the genera *Encyonema* and *Placoneis* is strongly supported whereas *Gomphonema* and *Cymbella* appear to be paraphyletic lineages containing species of *Gomphoneis* and *Cymbopleura*. We discuss the need for a more complete taxon sampling and inclusion of more molecular markers in inferring relationships within the Cymbellales.