TESTING THE GENERIC LIMITS OF THE BIDDULPHIACEAE (BACILLARIOPHYCEAE): REVISITING ROSS & SIMS (1971) WITH MOLECULAR DATA

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The ocellate and pseudocellate diatoms in the Biddulphiaceae are distinctive and have a rich fossil history, making them common components of marine coring studies and good candidates for molecular dating work. Also, these diatoms are important to understanding the phylogeny of the diatoms as a whole, since the distinction between the araphid pennate and multipolar centric diatoms has become blurred by the increased use of molecular markers. However, the convoluted taxonomic history of these groups has the potential to disrupt both types of studies, as many taxa still have multiple generic designations that are commonly used in the literature. In 1971, Ross and Sims used scanning electron microscopy to examine valve characters of several ocellate and pseudocellate diatoms and came up with a scheme of morphological characters that could define these genera. In this study, we used molecular characters (nuclear-encoded SSU rRNA and plastid-encoded *rbc*L and *psb*C) to test if Ross and Sims' morphological characters are synapomorphic with respect to the diatom molecular phylogeny. While some morphological characters do indeed appear to be synapomorphic, others do not.