Observations on the morphological diversity and distribution of two siliceous nannoplankton genera, Hyalolithus and Petasaria

Scale-bearing siliceous nannoplankton are occasionally encountered in surface seawater samples, but are rarely identified or illustrated. In this study, the morphological diversity of the haptophyte Hyalolithus neolepis and the enigmatic Petasaria heterolepis are investigated in scanning and transmission electron microscopes using materials from around the world. Results show that H. neolepis scales exhibit variation in the width of the marginal hyaline area, but intermediate specimens make separation of the two morphologies difficult. Petasaria heterolepis scales also show differences, in the presence of tubercle rows in the hyaline area and degree of hyaline areal coverage, but separation into discrete varieties is difficult at present. However, specimens with scales bearing a protuberance are considered to be distinct enough to warrant the erection of a new species, Petasaria protuberans Jordan, Malinverno, Šupraha, Thomsen et Young sp. nov.

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