

THE PEDIASTRUM OF THE
UPPER HACKENSACK RIVER ESTUARY

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Pediastrum is a ubiquitous, colonial planktonic green alga. Although Pediastrum spp. are freshwater organisms, they are able to withstand the salinity of the Hackensack River environment. A previous study has determined that the salinity of the river fluctuates between 40 and approximately 4000 ppm chloride at this study's collection site (Hazen and Isquith, 1975).

Biweekly samples were made from a footbridge on the Teaneck-Hackensack campus of Fairleigh Dickinson University from August, 1975 to July, 1976. Five species of Pediastrum were found during this period: P. simplex var. duodenarium (Bailey) Rabenhorst, P. boryanum (Turpin) Meneghini, P. tetras var. tetraodon (Corda) Hansgirg, P. duplex var. clathratum (A. Braun) Langerheim, P. duplex var. gracillimum W. & G.S. West. Identifications were confirmed using a number of sources including Bourelly (1968), Collins (1928), Pascher (1913), Smith (1920) and Whitford and Schumacker (1973).

P. simplex var. duodenarium (Bailey) Rabenhorst

Coenobia of 16 or 32 cells found with one tapering spine projecting from the marginal cells and large, often irregular, spaces between the cells.

A most abundant species in the Hackensack River and the only species collected during February, 1976.

P. boryanum (Turpin) Meneghini

Coenobia entire without perforations. Marginal cells have two projections but inner cells do not vary markedly from them.

This species was collected in low numbers August, September and October, 1975 and June and July, 1976.

P. tetras var. tetraodon (Corda) Hansgirg

This species is characterized by very regular coenobia in a 7 + 1 arrangement. All cells have a deep cleft.

A very rare form, it was collected in low numbers in August and September, 1975 and July, 1976.

P. duplex var. clathratum (A. Braun) Langerheim

Coenobia had 8-64 cells with very small perforations between them. The marginal cells often bore a hyaline seta.

An extremely plentiful species, it was collected every month except February, 1976 often in numbers greater than P. simplex, the other abundant species.

P. duplex var. gracillimum W. & G.S. West

This variety is distinguished by large coenobial perforations and very slender cells. The marginal cells have slightly convex sides.

This alga was collected on a few occasions. Smith (1920) noted that it is difficult to distinguish variety gracillimum from variety clathratum and that the two often intergrade.

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