

LIGHT AND ELECTRON MICROSCOPE OBSERVATIONS OF *NITZSCHIA OSSIFORMIS* IN THE NORTHEASTERN GULF OF MEXICO

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During a systematic investigation of the phytoplankton in the northeastern Gulf of Mexico in the aftermath of the Deepwater Horizon blowout we encountered a population of *Nitzschia ossiformis* (Taylor) Simonsen (= *Synedra ossiformis* Taylor) located about 75 km offshore and concentrated at a depth of 60-80 meters. The density of individuals in the population was sufficient to make detailed observations using light and electron microscopy. Cells are solitary or united into short ribbon-like colonies, although occasionally ribbon-like colonies partially separate to form zig-zag colonies. Individual cells have two plate-like plastids. The valves are linear, inflated at the center and at the poles, 60 to 100 μm long, 2.3 to 3.1 μm wide at the widest point in the center. The inflated poles have a distinct concavity, giving them an ossiform appearance. In SEM, the valves are clearly heteropolar: a transverse furrow can be seen in the exterior surface of one of the poles; the other pole lacks this furrow and instead has a small flap of silica that follows the outline of the valve end. The number of striae in 10 μm ranged from 21 to 24. Striae are formed by two rows of circular poroid areolae occluded by hymenes with a hexagonal array of small pores. An eccentric canal raphe is located along the margin, just visible in light microscopy, clearly evident in electron microscopy. The densities of fibulae and striae are approximately equal. The median fibulae are somewhat distant from each other, creating a central interspace. Internally, the two branches of the raphe meet in a small central nodule and end in small helictoglossae. No external terminal fissures were observed. In its general features, this species conforms most closely to the genus *Fragilariopsis*. However, the unique features present at the poles seem to warrant its placement in a separate genus.