HISTOLOGY AND ULTRASTRUCTURE OF THE JELLIED CONDITION OF DOVER SOLE, *Microstomus pacificus* (Lockington)

by

Robert A. Fisher

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ABSTRACT

Muscle samples of "normal" and "jellied" Dover sole, Microstomus pacificus, were taken from fish on the fillet line at Eureka Fisheries, Inc., Eureka, California and from whole, live fish as they were brought on board a commercial fishing vessel out of Eureka, California. Muscle tissue samples were processed for percent moisture content and for histological and ultrastructural analyses. Percent moisture content for fish samples from the fillet-line ranged from 82.8 to 92.1 percent. Samples from the commercial dragger ranged from 84.3 to 89.2 percent moisture. Histologically, normal Dover sole muscle is typical vertebrate muscle. Jellied muscle was characterized by much intercellular space with a proliferation of connective tissue, loosely packed muscle cells resulting in spherically shaped cells in cross-section and severe waviness of cells in longitudinal-section, hypertrophic nuclei, and degraded muscle contractile elements. Occassionally, dystrophic-like characteristics such as internally positioned nuclei, myofibril fragmentation, and variations in fiber size were also observed. Ultrastructural examination of the jellied condition showed loosely packed, randomly spaced myofibrils with few myofibrils occupying the periphery of the cell. In the majority of samples observed, myofilaments were densely packed within myofibrils. Torn myofilaments and pyknotic appearing nuclei with oversized nuclear envelopes were observed. Three out of 100 fillets contained Kudoa

clupeidae cysts, suggesting that the jellied muscle condition is not likely a result of myxozoan infection.

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