JUVENILE OYSTER DISEASE (JOD) IN AMERICAN OYSTERS, *CRASSOSTREA VIRGINICA*, REARED IN FRANCE. DETECTION OF ABNORMAL CALCIUM DEPOSITS IN GILL AND MANTLE TISSUES

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Progeny of *Crassostrea virginica* oysters, introduced into France in 1992, were reared during 1992 and 1993, to test their growth performances. These assays were performed to investigate the possible replacement of *Crassostrea gigas* with a non indigenous species, *Crassostrea virginica*. During the summer of 1993, sporadic mass mortalities (80-90%) occurred among young, *Crassostrea virginica*, oysters reared in the IFREMER nursery in La Tremblade (Charente Maritime). Deaths were associated with mantle retraction and the deposition of an abnormal conchiolin layer on the inner shell. At the height of the infection, the incidence of oysters with gross lesions exceeded 80 %. No obvious pathogen was identified in soft tissues by histology and transmission electron microscopy (TEM). However, the histological examinations showed the presence of abnormal basophilic round structures, 0.5 µm to 1.5 µm in diameter, in gill chitinous tissues and manlte connective tissues. These extracellular Feulgen negative structures reacted positively with the Von Kossa stain. TEM of mantle and gill tissues from diseased oysters showed that the basophilic bodies consisted of concentric deposits of an amorphous substance interpreted as containing calcium. These observations could indicate that the mineralization process in shells of the young oysters was disturbed without exact determination of the cause. Based on the similarities of the gross lesions to those reported in juvenile oysters in USA, we believe that the cause of the mortalities observed in IFERMER nursery was probably the Juvenile Oyster Disease (JOD). However, we report for the first time the detection of abnormal amorphous structures in gill and mantle tissues associated with mortalities and the deposition of an abnormal conchiolin layer on the inner shell among American oysters.

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