

Pathological Survey on the Manila clam,
Ruditapes philippinarum, in Ariake Sound, Japan

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Pathological conditions of Manila clam *Ruditapes philippinarum* distributed in Midorigawa (MD), Araogawa (AO) and Kikuchigawa (KG) in Ariake Sound, Kyushu, Japan were investigated from clam populations collected during June 2004. *Perkinsus* infection determined by the Ray's fluid thioglycollate medium (FTM) method showed that the prevalence was 96.7% in MD, 20.2% in AO and 86.7 % in KG, respectively. Average infection intensity in terms of the number of *Perkinsus* cells per gram tissue wet weight determined by NaOH lysis method was 3,382 in AO, 107,612 in MD and 322,035 in KG. Brown ring disease (BRD) syndrome was detected from only in the clams from KG, and 14/45 (31.11%) clams showed conchiolin deposits in inner shell margin. PCR assay and 16S rRNA sequence analysis showed that BRD was caused by *Vibrio tapetis* which is associated with mass mortality of the Manila clam from Europe and Korea. In histological observation, unidentified sporocysts and cercaria of Trematode were detected in the gonad of 4/40 (10%) clams from MD, 4/20 (20%) clams from AO and 1/14 (7.1%) clams from KG. Metacestoda was found in foot and digestive gland of 21/40 (52.5%) clams from MD, 6/20 (30.0%) clams from AO and 2/14 (14.3%) clams from KG. Copepoda was found in a clam from MD. The clams infected with these parasites showed drastic decrease of gonad tissues caused by parasitic castration. Our study suggests that current decline of Manila clam production in Ariake Sound is in part attributed to parasitic infection.