Bonamiasis

**Disease**
: Bonamiasis

**Causative Agent**
: *Bonamia ostreae* (protozoan parasite)

**Susceptible Species**
: *Ostrea edulis* (native oyster)

**Geographic Distribution**
: England, France, Ireland, Holland, Mediterranean, Spain & USA (Not Scotland)

**Significance**
: Serious threat to wild and cultivated native oyster stocks

Bonamiasis became a List II notifiable disease in Great Britain in January 1993 with the introduction of the Fish Health Regulations (1992).

**Pathogenic Effect**

*Bonamia ostreae* infects the granular blood cells (haemocytes) of the native oyster.

**Pathology**

Reports on the gross pathology of bonamiasis include non-specific gill lesions which appear as perforations, and a yellowing of the tissues.

Dense cellular accumulations, due to infiltration of haemocytes occur, especially in the gills, mantle and the connective tissue of the digestive gland. The parasite locates in the cytoplasm of these haemocytes although extracellular parasites can be seen in advanced infections. Mildly affected oysters display only occasional foci of infected haemocytes, whereas in heavily infected animals...
there is a massive infiltration of haemocytes and necrosis of visceral tissues.

**Diagnosis**

New infections with this parasite are normally associated with high mortalities, and the presence of the disease agent can be confirmed by microscopic examination of the oyster tissues. Diagnosis requires histopathological techniques.

The cells in molluscan body tissues are relatively small and difficult to study. There are seldom warning signs prior to the onset of disease and often the disease has run its course before it becomes apparent.

**Transmission**

It seems likely that transmission is between oysters through water contact or via a secondary host. Infective stages, which have not yet been seen, may simply be water-borne and taken up passively across the gills. Close proximity to infected oysters is believed to aid transmission.

**Significance**

Bonamiasis has had a severe affect on the commercial culture of native oysters due to mortalities of epizootic proportions wherever the disease has been detected and, once present, the disease is insidious.

**Control Measures**

Avoidance of the parasite is by far the most important control measure because there is no known treatment for the disease. Infected stocks should not be transferred to waters known to be free of the parasites.

From 1st January 1993, bonamasis became a notifiable disease in Great Britain under the Fish Health Regulations (1992). These regulations were introduced to implement EC Directive 91/67/EEC concerning animal health conditions governing the placing on the market of aquaculture animals and their products. The powers of these Regulations are used to prevent the spread of the disease to Approved Zones, by regulating movements of live native oysters from infected areas for relaying or depositing in waters known to be free of bonamiasis.

**Reference**