

BONAMIASIS IN AUSTRALIA

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Bonamia in Australia was first detected in the native flat *Ostrea angasi* in winter 1991, in samples from dying oysters under experimental culture in the state of Victoria, though mortalities were subsequently known to have occurred since the summer of 1991. (OIE Year Book, 1992). Surveys were subsequently undertaken throughout the natural range of *O. angasi*.

In Victoria, a year long follow up study commenced in January 1992 on two year old *O. angasi* oysters grown one metre above the sea floor in the two sites in which the infection had been initially detected. Mortalities continued throughout the study period. Infection was present at all sample times, though prevalence was lowest in winter. Prevalence in the second winter (July 1992) was considerably higher (60%) than in July 1991.

Surveys throughout southern Australia showed Bonamia infections without overt mortality in natural beds in Tasmania and Western Australia but not South Australia. In Tasmania, a survey of known *O. angasi* beds in the autumn of 1992 showed a prevalence ranging from zero to over 50%. The two most heavily infected sites were monitored for two years, with evidence for low level mortalities at one site. Sampling from Western Australia was more sporadic. In both these states infection declined to be non-detectable by mid-winter and was not again detectable until late spring or early summer.

In South Australia, *O. angasi* from 5 locations were examined for Bonamia infections in March 1992 and March 1993. No evidence of Bonamia infection was detected on histological examination of tissues from 1,606 oysters.

Though the severity of the lesions varied throughout this range, an unusual feature of all the Australian infections was the generally focal nature of the lesions. Focal lesions ranged from abscesses of the peri-gut or gonad region, in which large numbers of Bonamia organisms were often present, to small focal infiltrates in the of the gut or gill, in which a few intra-epithelial Bonamia were sometimes seen. Systemic infection with dispersed Bonamia laden haemocytes in vessels and interstitial tissue was seen only in Victorian beds experiencing mortality, plus occasionally as light systemic infection at the Tasmanian site with low level mortalities. However intense epithelial associated focal lesions were also present in these populations, and usually within the same oysters. In populations with heavy multi-focal lesions, infection could not be confirmed by smears of cardiac haemocytes

The pathological sequence and possible factors contributing to higher susceptibility of the Victorian populations will be discussed, plus historical evidence to suggest a possible long history of this Bonamia parasite in *O. angasi* in Australia, with relative balance of host and parasite in most stocks.