The Yaquina Bay neoplasma disease of the native oyster (Ostrea lurida) and the bay mussel (Mytilus edulis) was identified histologically by Austin Farley at the Bureau of Commercial Fisheries Biological Laboratory in Oxford, Maryland, in September 1966. Mr. Farley has published these findings in the Journal of the National Cancer Institute on two occasions. The first paper entitled "Sarcomatoid Proliferative Disease in a Wild Population of Blue Mussels (Mytilus edulis)" appeared in Volume 43 pages 509-516 in 1969. The reprint of the second paper dealing with the native oyster has not been received in this office.

Dr. Albert Sparks and his staff at the University of Washington recognized an abnormal condition in native oysters from Yaquina Bay in 1966 when samples were first sent there as part of Oregon's Oyster Mortality Study. Dr. Sparks was unable to identify this disorder, so terms such as "early cells" and "unusual cells" came into being. Since the early stages of the disease appear in late November and early December, the condition was termed "Yaquina Winter Disease". Dr. Sparks now concurs with Mr. Farley that the winter disease and the neoplasma are probably the same disorder.

Field observations in Yaquina Bay for the past 17 years indicate a seasonal cycle in native oyster mortality. Mortalities begin to appear in March, increase through April, and diminish in May. Mortality has been as high as 24% in 1961 and as low as 13% in 1968. This data may indicate that the neoplasma disease has been present in the native oyster population for many years.

Samples of live native oysters sent to the Oxford laboratory in October 1969 disclosed a 40% prevalence of the neoplastic disorder. The Fish Commission was advised that "the histopathology of these animals indicates that mortalities of 40% or higher could be expected in the ensuing winter months". A "total quarantine of the Yaquina Bay animals" was advised by the Oxford laboratory and a proposed plan of research was presented. This research includes experimental and field observations to help describe the etiology, seasonality, prevalence, and transmissibility of the disease. The Oregon Fish Commission is now conducting the field work of this study which includes: monthly mortality observations of native oysters in suspended trays and on natural oyster beds in order to obtain more epizootiological information; monthly sampling of native and Pacific oysters and bay mussels to be sent to the Oxford laboratory; and, an introduction of native oysters from Puget Sound, a supposedly neoplasma-free area, to determine the rate of transmission from native stocks in Yaquina Bay.

Laboratory work by the Oxford laboratory will include: description of the gross external pathology; histological diagnosis; electron microscopic examination of the fine structure of normal and neoplastic cells (electron microscope studies will screen the material for virus particles); development of a hypothesis describing the etiologic agent; and evaluation of the rate of
natural transmission to the introduced oysters. Live material will be used for: transplantation of the neoplastic cells to the same species under controlled laboratory conditions; transmission to other species of mollusks; and cell culture of the neoplastic cells so that an attempt can be made to induce a cytopathogenic effect in established fish and mammalian cell lines.

Mortality observations in the past three months (November-January) indicate no unusual or increased level of mortality of native oysters in Yaquina Bay. Mortality in suspended trays was 2.3% during October-December 1969. This compares to 0.9% in 1968, 1.0% in 1967 and 2.9% in 1966 during the same period. Observations on natural oyster grounds in November 1969 revealed only one recent mortality out of a random sample of 153 oysters. No recent mortalities were noted in January 1970 when a sample containing 187 native oysters was examined.

Native oysters were obtained from Puget Sound and introduced into Yaquina Bay in January 1970. Three trays, containing 500 oysters each were placed at three locations within the major native oyster producing grounds. Before the introduction, a base-line sample of the Puget Sound oysters was sent to the Oxford laboratory for examination along with live samples of oysters and mussels from Yaquina Bay. No results have been received from Oxford concerning these samples.

Early in December a preliminary meeting was held at the Marine Science Center in Newport to discuss this problem with Dr. Fryer and Dr. Pilcher, pathologists with Oregon State University, when it was learned that Dr. Sparks was leaving the University of Washington and the histological examinations of Oregon oysters would be discontinued. A research proposal is now being prepared by OSU for studying the neoplastic disease. At the meeting, Dr. Fryer suggested possible causative agents as: genetic; chemically induced (pulp mill); and virus-caused (sewage, Mytilicola vector, etc.).

The hope of containing information until more was known about this disease was diminished when an article appeared in the "FAO Fish Culture Bulletin", Volume II No. 1, October 1969. The article was entitled, "Major Infectious Fish Diseases in the United States". The Fish Disease Committee of the American Fisheries Society had met in San Francisco on July 7-8, 1969 and had prepared a list of infectious diseases which endangered fishery resources of North America. On this list of 10 diseases appeared, "molluscan neoplasm disease of Yaquina Bay, Oregon." This article further stated that "the above (list) are considered sufficiently serious to warrent immediate notification whenever their occurrence is suspected. It was recommended that any confirmed diagnosis of these diseases in North America should lead to strict quarantine and positive control". Since this bulletin is essentially a digest used by many people, as well as biologists, to keep easily informed on worldwide fish culture developments, it is only a matter of time until the news media will have this information. If not handled properly, this situation could result in another "cranberry or cyclamate scare" and virtually destroy the oyster industry in Yaquina Bay or even all of Oregon. These facts must be made clear to the public:

1. The disease has only been found in the native oyster and mussel and not in the major commercial species (Pacific and Kumamotto).
2. No evidence has been found that the disease can be transmitted to other species of clams or oysters. (or any animal)
3. Laboratory and field studies are being conducted to determine the cause and nature of the disease.