

Later, in the warmer weather, the sperm may be pretty well run off and the reproductive organ contain mostly eggs. In this way the younger oysters, and the older oysters at the beginning of the season, may be physiologically males, while older oysters at the height of the breeding season may be physiologically females.

Oysters from Hammond Bay showed the same phenomena.

Upon finding an abundance of larger oysters on the surface at Nanoose Bay, I brought home a pail-full of picked specimens to serve as a convenient stock for observation and experiment. On July 16 I found a specimen with perhaps half a teaspoonful of eggs in various stages of segmentation, lying free in the lower valve—a mass of white granules. The ripe eggs ooze into the infra-branchial cavity and lie on and between the gills, *i. e.*, between the two folds of the mantle, where they are retained apparently without any retaining, sticky matrix. I suppose that it is here they first meet with ripe sperms from other individuals, for I do not believe that at this time the sperms of the same individual are physiologically capable. The whole oyster appears exhausted, the gills rent, the flesh collapsed, soft and parts of it almost rotten. On July 24 I opened one hundred of the stock supply and found six with eggs, embryos or conchiferous young, in the infra-branchial cavity. All the others were in process of spermatogenesis and oogenesis.

An experiment that has often seemed possible to me is to do the same with the European oyster, by way of artificial fertilization, as Brooks did with the American oyster. Now that I had an oyster essentially the same as the European I tried it, and with seeming success, but of course it is difficult to be sure that sperm from another had not already had access to the eggs. Unripe eggs are no good; eggs already freed from the gonad may have come in contact with sperm. This restricts one to finding a specimen just before but just on the point of