

96.—REPORT ON THE ABNORMAL APPEARANCE OF SHAD EGGS FROM A FISH KEPT IN CONFINEMENT AT HAVRE DE GRACE, MARYLAND.

By JOHN A. RYDER.

[From a letter to Prof. S. F. Baird.]

Mr. F. N. Clark yesterday sent me a shad with roe which was peculiarly affected; it was one of a lot which had been kept in confinement in the "pound" at Havre de Grace. I find the ovarian eggs in large part mature and ready to be emitted, but they present some singular and unusual abnormal appearances. Of these the most striking are the following:

The egg-membrane seems to be slightly fuller than when in the condition usually met with, and the germinal matter is frequently clotted and dead, with a peculiar tendency towards fluidity not to be observed in normal eggs. It seems to me as if the fish in holding the eggs for an abnormally long time had produced the effects noted. My own idea is that it is likely that confining an anadromous fish like the shad we will have just such a result. We know that confinement produces sterility in many animals, and it may be that this is one of the effects of such confinement in this particular instance. Nature will oftentimes revenge herself, so to speak, if too immoderately interfered with. The ripening process seems to have been normal in the ovary, but whether the influence of confinement had something to do with interfering with a perfect maturation of the eggs I am still unable to decide, as my investigations are not yet completed. I have therefore saved some material for this purpose, in the hope that I may get some more data upon this point. The vitellus in the eggs examined by me was much altered from the normal appearance which it ought to present. It looked, indeed, as if the germinal and deutoplasmic or yolk material had suffered admixture. Impregnation of such ova would evidently be out of the question.

WASHINGTON, D. C., *May 31, 1883.*

97.—CATCH OF SPAWNING SHAD IN THE POTOMAC ABOVE GEORGETOWN.

By J. T. LENNURT.

There are being taken daily at this place, by one fisherman on the Virginia side and two on the Maryland side of the Potomac River, from 30 to 40 enormous-bellied shad. The spawn flows freely from them as they come out of the water. A quart could often be taken in the spot where the fish lie on the rocks.

CHAIN BRIDGE, VA., *June 20, 1883.*