

the disease is not among the number of the parasites of man, and also because it is inevitably killed by cooking the crawfish.

In conclusion, I would add that according to Mr. Oscar Micha, who carries on both at Berlin and at Cologne a considerable trade in crawfish, a few very young crawfish are beginning to reappear in many of the streams where extermination was complete and where no attempt at restocking has yet been made. Now, as in these streams no adult crawfish was able to escape destruction—when, on the one hand, the immigration of individuals coming from uncontaminated localities seems improbable, and when, besides, we meet no specimen of an age capable of reproduction—we are led to think that the young crawfish which appear were born before the invasion of the epidemic, which they alone have been able to resist. In this case the immunity which they would have enjoyed should be attributed to the fact that the very young crawfish have the habit of burrowing and passing the first part of their existence at a great depth in the beds of the rivers. In their holes, where they often are more than a meter [yard] from the water, no doubt they can escape the action of certain noxious influences and of certain principles of disease carried by the water. Thus it could be explained how the epidemic, which could have brought about the disappearance of all the crawfish of a river, has nevertheless spared those crustaceans which were out of its reach under the protection of a thick layer of earth. New observations will doubtless permit it soon to be settled in this respect.

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#### 160.—FLOATS FOR THE SO-CALLED FATTENING OF OYSTERS.

By JOHN A. RYDER.

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

You have sent me some letters regarding Weems's floats for fattening oysters. What their structures are like I do not know, but doubtless some one has a patent on them.

The simplest and most practical structures of the kind which I have seen are the storage and fattening floats used by Mr. Conger, of Franklin City, Md., and now in use by all the shippers and planters in the vicinity of Chincoteague Bay. I have already described them briefly in my paper on the result of the work at Stockton, although I have been informed that similar structures, or rather structures serving similar purposes, are in use on the oyster-beds along the shore of Staten Island, New York.

It is probably a fact that in all of these contrivances they take advantage of the effect produced by fresher water upon oysters which have been taken from slightly saltier water. The planters of Chincoteague call this "plumping the oysters for market." It does not mean

that the oysters are augmented in volume by the addition of substantial matter, such as occurs during the actual appropriation of food, but only that the vascular spaces and vessels in the animals are filled with a larger relative amount of water due to endosmose. It is a dealer's trick to give his product a better appearance in the market, and as such I do not think deserves encouragement, but rather exposure.

Mr. Conger, who claims to have been the originator of the floats used in Chincoteague Bay, has actually resorted to warming fresh water to 60° F. in winter by steam pipes running underneath the wooden inclosure surrounding the "fattening" or "plumping" float. One good "drink," as he expressed himself to me, renders the animals fit for sale and of better appearance.

Conger's floats are simply a pair of windlasses supported by two pairs of piles driven into the bottom. Chains or ropes which wind upon the windlasses pass down to a pair of cross pieces, upon which the float rests, which has a perforated or strong slat bottom, and a rim 18 inches to 2 feet high. These floats I should think are about 8 feet wide and 16 feet long, perhaps 20. These structures are usually built alongside the wharfs of the packing and shipping houses and are really a great convenience in conducting the work.

WASHINGTON, D. C., *November 1, 1883.*

#### "WEEMS'S" FLOATS FOR FATTENING AND IMPROVING OYSTERS.

We have just commenced our business and have very flattering prospects of success. I inclose a letter received from one of our patrons, which I will be glad if you will kindly read and return to me.

On Saturday last I took a load on one of our floats (about 5 p. m.) and returned the oysters to the party's wharf Sunday afternoon. The oysters were shucked Monday morning. Before they were fattened, a tubful shucked 6 quarts "ordinary" and 2 quarts "selects"; after they were fattened the same quantity shucked 6 quarts "ordinary" and 4 quarts "selects." Besides the increased quantity, the party said the condition and flavor of all were much improved. The water is yet comparatively warm, but as soon as we have a good frost that will cool the water we are confident of getting much better results.

The process until now has been a monopoly (although the means used are greatly inferior to our float), controlled by Mr. D. D. Mallory and his successors, Messrs. A. Boot & Sons, who used their process with great satisfaction and profit. Messrs. H. F. Hemingway & Co., L. W. Counselman & Co., and William Taylor, esq., of this city, have had considerable experience in fattening oysters, and it will no doubt afford them pleasure to give you any information on the subject you may desire.—L. N. COX, *Manager.*

BALTIMORE, MD., *October 25, 1883.*

The result of our experience with your float, coupled with our thorough practical knowledge of oysters, enables us to pronounce your float a success, and we recommend its use to every oyster-packer in the country.

We think you can with safety prepare to do a large business in floating oysters, as a single practical test will demonstrate beyond a doubt the great advantage in the way of increased quantity and improved quality and condition of the oyster after floating to be gained by the use of your float. Your charge of 5 cents per bushel for the use of your floats is very moderate and reasonable.

If you can do the work, and will make it known that you are prepared to do it, we think that within three weeks you will be working for every packer of any consequence in the city, and that you will be taxed to your utmost to fill the demand that will be made upon you. After October 1 probably we will require two of your floats every day.—  
H. F. HEMINGWAY & Co.

BALTIMORE, MD., *September 24, 1883.*

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**161.—THE COLUMBIA RIVER SALMON—A HATCHERY NEEDED.**

**By E. C. HOLDEN, Secretary.**

The Astoria Chamber of Commerce respectfully asks for the establishment of a salmon hatchery, by the General Government, on the Columbia River or its tributaries.

It is expected that the railroad will be connected with the river, forming a continuous uninterrupted line across the continent before the month of August, 1883, and in time to distribute any spawn taken in that year.

The Columbia River salmon for distribution would be unequaled, while the restocking of the parent waters would be of great value. The catch on the Columbia in 1882 was not less than 1,600,000 fish, and surely so great an industry and consumption needs fostering. We exported from the Columbia River, in 1882, 540,000 cases, valued at \$2,900,000. There are 24 salmon canneries now at Astoria and 10 more within 30 miles, representing a permanently invested capital in ground, buildings, machinery, &c., of at least \$850,000. No other river in the United States produces so fine a quality of salmon (*quinnat*); it is preferred in every market of the world, has more oil and a finer color and flavor, and commands an average of 15 per cent in price over the product of any other river.

ASTORIA, OREG., *December 29, 1882.*