166.—SOME OF THE DIFFICULTIES WHICH CONFRONT OYSTER BREEDERS.*

By H. H. PIERCE.

[From two letters to Prof. J. A. Ryder.]

At the suggestion of Mr. Eugene Blackford, of New York City, I take the liberty of addressing you a few lines regarding certain points relating to the oyster business.

The company of which I am treasurer have several beds of planted "seed," upon which last season's spawn set to a considerable extent. We have a quantity of shells near our oyster house also and are desirous of planting these shells at once, so as to catch the spat of this season. Our experience and practical knowledge in this direction is very limited. Can you assist us? To inform you definitely of what we want to know, it is perhaps well to ask the following questions:

1st. The bottom under and above the principal part of our beds being sand, covered by from 1 to 3 inches of mud, should we plant our shells before spawning takes place, or immediately after it commences?

2d. How can we tell from the appearance of the oyster when it is ready to emit its spat?

3d. After the spat is emitted how soon does it attach itself to its future home, and how long is it supposed to float before sinking to its resting-place?

4th. How long after becoming attached to its resting-place before it becomes sufficiently developed to be discernible to the naked eye?

5th. What is the general appearance of the young oyster when first large enough to be seen by the naked eye or by the aid of an ordinary magnifying glass?

6th. How can we secure Government assistance in the way of scientific investigation and experiment in Sinepuxent Bay?

SNOW HILL, WORCESTER CO., MD., *June* 7, 1883.

We have been almost daily planting shells since the 1st of June, in a small and experimental way, in close proximity to one of our beds of two-year-old oysters and upon which we find a considerable "set," varying in size from that of the diagram in your esteemed favor before us—supposed to represent the oyster about ten days after fixation—to about the size of a half dollar. So far, our operation seems to have been pretty nearly in line with what you have suggested.

We are anxious to make our business here as large as practicable, and to this end desire to avail ourselves of all the scientific assistance we

* These letters introduced the remarkable series of experiments conducted by Messrs. Pierce and Ryder at Stockton, and described in Bull. F. C. 1883, p. 281; 1884, p. 17 and p. 43.—C. W. S.

can get, and sincerely hope you may be able to visit and give us such advice and instruction as may seem best to you after examination of our grounds and work.

We may add that the oyster industry in these waters is rapidly becoming very large. It is claimed that there have been this season over 500,000 bushels of seed from the Chesapeake planted here. It seems to me that much may be done here towards raising our own seed. Thus far the shells which we planted early in this month do not appear to show any "set" of spawn, though they still remain pretty clean and free from muddy deposit.

If you can favor us with a visit, we shall be most happy to be initiated fully into your views and methods and do all in our power to assist you in your experiments.

STOCKTON, WORCESTER CO., MD., *June* 15, 1883.

167.—CAN HERRING LIVE AND INCREASE IN INCLOSED WATERS?*

By W. FINN.

The following contribution towards the solution of this interesting problem has been communicated to the editor of the Norwegian Journal of Fisheries:

About the end of May several barrels of salt "great herring" from Lofoden were received in Bergen. These fish had been caught during the first half of the month, and the person who received them forwarded some specimens to the editor for the purpose of investigation. The specimens which were examined showed the following dimensions:

	Length.	Height.	Breadth.
	*mm.**	*mm.*	*mm.*
No. 1. Spawner	338. 5	73	32
No. 2. Milter	354. 5	68	34
No. 3. Milter	349. 0	71	28
No. 4. Spawner	336. 0	73	32

* About 25 millimeters make 1 inch.

These herring were, therefore, of the same size as large spring herring and Iceland herring, or as the former so-called "great herring."

The examination of the sexual organs showed the following results:

	Length.	Height.	Weight.
	mm.	*mm.*	*Grams.**
No. 1. Spawner	165	34	45
No. 2. Milter	154	33. 5	49
No. 3. Milter	182	36	61
No. 4. Spawner	182	40	100

* About 28½ grams make 1 ounce.

* "*Kann der Häring in geschlossenen Gewässern leben und sich vermehren?*" From the *Deutsche Fischerei-Zeitung*, Vol. VI., No. 46, Stettin, Nov. 12, 1883. Translated from the German by HERMAN JACOBSON.