

THE CULTIVATION OF OYSTERS.

The usual method of studying oysters and the oyster trade is to swallow a dozen raw at a market stand., interview the wholesale dealer in regard to the number he handles and where he gets them, chat for half an hour, perhaps, with the master of an oyster sloop then clinch the whole with such information as may be gleaned from the nearest encyclopedia. This is the reporter's method. Much interesting knowledge is gained thereby; but, as we have already seen, more is missed. The most important feature of the business, the cultivation of oysters, is invariably overlooked.

Having seen that, so far from being unknown in this country, as commonly reported, oyster breeding is an industry at once extensive and very important, let us visit the oyster farmer at home, and study the methods of his business, their object, and the effect they have on the development of our much prized and most delicious product of Neptune's kingdom.

First, to the breeding ground.

To the casual visitor, sailing over an oyster plantation, it is the blankest of all cultivated areas. He sees but a waste of water, with here and there a protruding pole, and is but vaguely impressed when assured that as far as his eye can reach the ground is covered with crops in various stages of maturity. Strange farming, under twenty feet of brine! In the middle of a broad bay, perhaps a mile from shore, our tidy craft is put about, and our skipper says we are over a "patch" of twenty acres devoted to this year's spawn. For miles around the Sound is staked off for oyster beds, and hundreds, perhaps thousands, of acres, belonging to other oyster farmers, are in use as breeding grounds. As we drift across our twenty-acre field, a dredge is thrown over, and a moment after the quivering rope tells that the dredge is at work on the bottom. We drift a boat's length, and the catch is hauled in—a bushel or so of empty shells, half a dozen crabs, any quantity of amber-colored "gingles," and perhaps two or three oysters.

"Nothing here!" you are tempted to say; but look closer. Every one of those empty shells, every object that has not escaped through the meshes of the net, is covered with rough brown creatures the size of one's finger nail. They are oyster spat, that is, young oysters of this year's spawning, now three months old. They first become visible to the naked eye when about a week old. A gingle the size of a nickel coin carries half a dozen; a nodule of coral as large as a walnut bears twenty; on half an oyster shell you count fifty or sixty, perhaps a hundred or more, if you have patience to distinguish the little ones. Who can number the thousand on a square yard, the millions on an acre, every inch of which is sown with promises of future stews and fries?



OYSTER SPAT.

As we pass to other grounds, the dredge is cast on the gravelly shell-strewn bottom of a swift channel, in a quiet cove, in deep water and in shallow; each time the dredge is filled with rubbish interspersed with old oysters, clams, scallops, and other denizens of salt water. Here and there a bright shell, a pebble, or a bit of coal will show an oyster spat; but a whole dredge full of stuff will carry fewer than a single oyster shell from the breeding ground. It is the old story of Nature versus cultivation.

At spawning time last summer, the waters over the several areas were equally filled with microscopic oysters, millions of which were sent adrift by each prolific parent. They swarm free and independent, like other young people, for awhile; but the time soon came when they had to settle for life. At this critical stage of their existence, those on the breeding ground were plentifully provided with enticing resting places, in the shape of clean shells, gravel, and the like, and they settled in myriads. Those which had Nature for nurse had to take their chances, and on the uncultivated grounds the chances were relatively few, notwithstanding the season was an uncommonly favorable one for natural beds. The furnishing of clean stools for the young spat is thus a matter of

prime importance in oyster culture, and it is of equal importance that the stools are provided at the right time. The period of spawning varies with the position of the bed, the depth of the water, and other conditions, from June to August. The precise time for each bed must be discovered



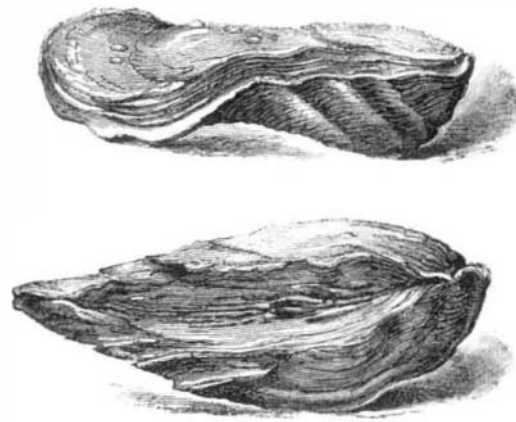
SEED OYSTERS—1, 2, AND 3 YEARS OLD.

in gunshot of each other, often those of different parts of the same bed. A novice can tell by its plumpness the cultivated from the natural oyster. Even when the latter has had the best of advantages, and has attained the rounded outline of the perfect oyster it invariably lacks the depth of body, the thickness of meat, which the cultivator strives to

"with the knife," that is to say, by dissecting the oysters. By this, which is purely an American method of breeding, it matters little how deep the water may be; shells and gravel will sink through a hundred feet as certainly as through ten. The shallow breeding places employed by the French would not answer at all in our climate, no more would their costly and clumsy contrivances for fixing the spawn. There the securing of a few hundred thousand spat is accounted a great achievement. Here it is the least of the oyster breeder's labors to obtain boat loads of them. The trouble is to defend them during the five years of their development.

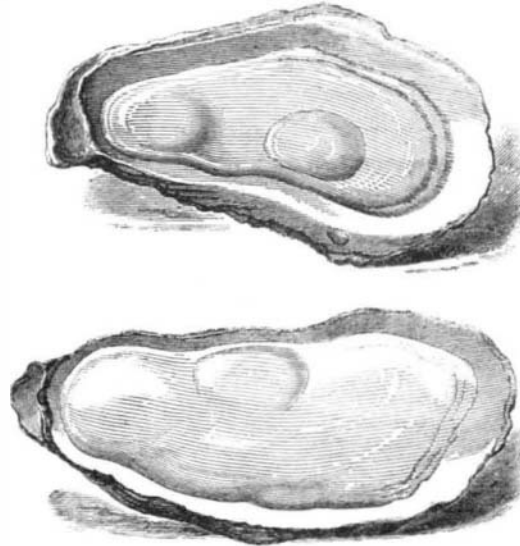
Examine one of the spat-laden stools. It is obvious that such a crowd of oysters cannot come to any size in so small a space. If left to themselves, few could survive the struggle for existence, and they would be pinched and meager. The oyster farmer does not permit such a waste of seed. Yonder sloop, which has been beating back and forth across our breeding ground, is nearly laden with a worthless-looking cargo, in reality a wealth of seed that would be a small fortune to a foreign breeder. The business of her crew is, primarily, to keep watch against invasion by starfish and other foes of the young oysters. Their coarse-meshed dredges bring up quantities of spat-covered shells which are kept for distribution on other grounds, quite as many spat as can thrive on the ground being attached to stools small enough to slip through the dredges. Next summer the year-old seed will be similarly thinned, the clusters broken up, and the surplus transplanted. The same process will be repeated the year after; the next year the entire crop will be lifted, it happening that the oysters thrive exceedingly well on this particular ground up to their third year, after which their growth is too slow for profit. Transplanted to more favorable ground they increase in size and thickness very rapidly.

By thus choosing grounds specially suited to the several stages of the oyster's development, the breeder is able to hasten the maturity of his crop, besides securing a higher average of size and quality in the product. On a firm gravelly bottom, for example, where a free circulation of water is maintained under and around the oysters, a crop will accom-



THE EFFECT OF TRANSPLANTING.

plish as much in four years as in five on mud, and the quality will be much superior. Our time is too short, however, to enter upon anything like a thorough study of oyster grounds and their effects upon the growing oysters. They vary as farm lands do on shore, the oystermen of any locality being able to recognize, at sight, the oysters of different beds with-



NATURAL AND CULTIVATED

in gunshot of each other, often those of different parts of the same bed. A novice can tell by its plumpness the cultivated from the natural oyster. Even when the latter has had the best of advantages, and has attained the rounded outline of the perfect oyster it invariably lacks the depth of body, the thickness of meat, which the cultivator strives to

attain. It will be very apt to lack, also, firmness of flesh and delicacy of flavor.

We shall return to this subject in our next issue.

THE COMMISSIONER OF PATENTS ON THE PATENT OFFICE TEA SET.

(UNITED STATES PATENT OFFICE,
Washington, December 19, 1874.)

MESSRS. MUNN & Co.:

Gentlemen:—I do not intend to take any notice of mere criticisms of myself or my official actions, which may appear in various newspapers. In the SCIENTIFIC AMERICAN, bearing date December 26th, 1874, however, there appears under the head of correspondence, on the 40th page, a charge so direct, that it passes beyond the domain of criticism, and becomes libelous. This charge in relation to my connection with the presentation of a tea set, to my predecessor, is an unmitigated falsehood. The facts are that the affair was originated and prosecuted without my knowledge, and during my absence from this city. I never signed the subscription paper for this set, and in fact never have seen it. If my name appears thereon, it has been put there by some one without my knowledge, and without authority from me.

Furthermore, I have not paid, or agreed to pay one single cent for this tea set for General Loggett, and I do not intend to make any payment for this purpose in the future.

I now demand that, in your next issue, you make a distinct and definite retraction of the libelous charge against me, in accordance with the facts in the case. I also demand that you will either compel your correspondent to make such retraction in a letter to be published in your paper, or furnish me the name of such correspondent, that I may make such demand upon him as the circumstances require.

I am prepared and determined to protect my good name and reputation from all libelous charges.

I am, Gentlemen, very respectfully yours,

J. M. THACHER, Commissioner of Patents.

Referring to the letter of our correspondent, page 404, last volume, we find it there stated that "the present Commissioner headed the list with \$50."

To any one acquainted with the exalted and honorable character of Commissioner Thacher, his mere assurance that this statement was an error would have been quite sufficient; but in compliance with his desire that we should make the correction very distinct and explicit, we have chosen to use his own vigorous language. No candid person, we think, can read his letter without exonerating him entirely from all connection with the affair to which it refers. By reference to another column, it will be seen that our correspondent also makes the *amende honorable*. Heretofore his information has always proved reliable; how he could have fallen into so palpable an error is to us unaccountable. We regret that the publication of our correspondent's letter should have done the Commissioner an injustice.

Having thus discharged a simple duty in the prompt correction of a matter personal to the Commissioner, it may not be out of place for us to add a few comments, naturally suggested by his letter.

In these degenerate days, when many of our public men are so forgetful of personal honor and integrity as to engage in violations of the law, winking at or concealing its infractions, or neglecting to execute its provisions: at such a time, it is refreshing to find one public officer at Washington, in the person of Commissioner Thacher, who appears to entertain a high and proper sense of his obligations. It is greatly to his credit that he resents with indignation, regarding it as a libel upon his character, the suggestion that he has been, either directly or indirectly, connected with the Patent Office Tea Set presentation. He recognizes the binding force of the statute provided for such cases, so far as he is personally concerned, and evidently desires that the law shall be respected. The statute in question, is as follows:—

"Be it enacted, etc.: That no officer or clerk in the United States Government employ shall at any time solicit contributions of other officials or employees in the Government service for a gift or present to those in a superior official position, nor shall any such officials or clerical superiors receive any gift or present offered or presented to them as the contribution of those in the Government employ receiving a less salary than themselves; nor shall any officer or clerk make any donation as a gift or present to any official superior. Any officer or clerk violating any of the provisions of this bill shall be summarily discharged from the Government employ."

If the erroneous charge of a misinformed correspondent, of infraction of this law, is considered by the Commissioner as a libelous reflection upon his character, as stated in his letter, we may readily imagine with what keen abhorrence he must regard those members of the Patent Office company, who were actually guilty of doing the forbidden thing: with whom he is not only compelled to associate day after day, but even to witness and assist their official actions. Nothing could be more galling than this to a highly sensitive and honorable nature like that of the Commissioner.

All appointments in the Patent Office, except five, are, under the law, made by the Commissioner and the Secretary of the Interior; hence it is the duty of one or both of these officers to see that the law above cited is carried out. But between them they have managed, somehow, up to the present time, to shirk the responsibility. There is a gross violation of duty somewhere. The Commissioner of Patents has at last spoken on the subject, and the legitimate inference from what he tells us is that he would be only too glad to execute the law if he had the power; but considers it not his business, but that of the Secretary of the Interior. We hope the Secretary will now give us his views of the matter. Congress may then be able to determine where the delinquency exists, and apply a suitable remedy.