

11.—NOTES ON AN IMPROVED FORM OF OYSTER TONGS.

BY HUGH M. SMITH.

(With plate XLIV.)

With the threatened exhaustion of the shoaler oyster beds in the Chesapeake, resulting in a greatly diminished yearly output, and a consequent diminution in the earnings of oystermen, especially those operating with tongs from small open boats, the introduction of an apparatus which will enable the fishermen to take oysters from the deepest waters of the Chesapeake basin must be a great boon to those dependent on the industry, and also the means of materially promoting the fishery interests of the region.

For a number of years it has been anticipated that the time would come when the oyster fishery with tongs on all natural beds would have to be discontinued in many portions of the Chesapeake, owing to overfishing and the eventual depletion of the grounds. In that event the only alternatives which had generally suggested themselves were the abandonment of the fishery or the allotment by the States interested of oyster lands in perpetuity to individual parties, as is done in other States, notably Connecticut.

Fortunately, as regards the first alternative at least, the invention of the apparatus to be described has apparently made the profitable continuance of the tong fishery possible for some time to come, and has temporarily relieved the States from the necessity for legal enactments in the direction indicated, which but for this could not have been much longer delayed.

It has long been known that vast oyster beds exist in the deeper portions of the Chesapeake and the rivers tributary thereto, which, owing to the greater and hitherto seemingly insurmountable difficulty in working them, have escaped the ravages of both tongs and dredgers. These have now become available through the use of the so called deep-water oyster tongs.

With the ordinary type of oyster tongs, provided as they are with wooden handles, the greatest depth at which oysters can be taken is only 25 or 30 feet, and even then the work is not satisfactory, and very arduous. A depth of water beyond 15 or 20 feet in which to employ tongs has never been much sought after by oystermen, while it is probable that the great bulk of the tonged oysters which find their way to market are taken from less than 15 feet of water.

With this explanation it can readily be seen that the use of the ordinary tongs is comparatively limited, in view of the fact that oysters often occur in the deepest waters of the inshore basins, along the middle and southern portions of the Atlantic seaboard.

In the new tongs, the long, cumbersome pole handles are done away with, and a single rope is substituted. This point of course overcomes the one great objection to the old tongs—that the latter are suited only for shallow water. The advantage of the new form shows itself in the next improvement, made necessary by the withdrawal of the lever-like action of the handles in approximating the two series of teeth. In order to compensate for the absence of leverage by handles, it was required that some modification should be made in the structure of the arms and teeth. This was brought about in the way indicated in the accompanying illustration, which exhibits a pair of deep-water tongs as they would appear when first reaching bottom.*

The new tongs consist of two curved iron bars so riveted together near the middle as to permit of free motion on each other, and attached on one extremity to the teeth and cradles, and on the other to the rope by which the apparatus is lowered and raised. Immediately beneath the crossing point of the two arms a weight is suspended, which plays an important part in the workings of the tongs. To the upper bar of one side, an iron link or loop is attached by means of a staple, and on the lower bar, just below the link, is a small iron peg or stud, over which the link fits when the teeth are separated to their greatest extent. When the oystering begins, the arms are "locked," as indicated, by means of the loop and peg, and lowered over the side of the boat or vessel until the bottom is reached. If it be ascertained by gently raising and lowering the apparatus that the bottom is probably covered with oysters, the tongs are suddenly dropped from the height of a few feet from the bottom, and by virtue of the presence of the weight referred to the loop slips off the pin and the teeth will then approach each other when the rope is hauled taut.

The weights on the ends of the arms, as shown in the figure, are not always present; and, under certain similar conditions, the middle line, running from the crossing point of the arms to the top of the bridle, and on up to the boat, can also be dispensed with. When these two adjuncts are employed, it is possible to operate the tongs without the aid of the middle weight and the loop-and-peg attachment.

In very shallow water, and where oysters are not plentiful, the middle weight is removed and the apparatus is lowered to the bottom by the use of the middle line, the tongs being kept open by the adjustable weights on the arms, without the intervention of the loop. In raising the tongs, the middle line is slackened and the teeth are brought together and kept closed by drawing on the rope that is attached to the upper part of the bridle.

Where the fishery is carried on in very deep water or oysters lie thickly on the bottom, both the middle line and arm weights are removed, and the middle weight and loop are alone employed. The tongs are locked in an open position and thrown overboard. When the apparatus strikes the bottom the link is automatically tripped or jolted off the pin, and the tongs are then closed by means of the single line going to the bridle.

The piece of iron in the center varies from 12 to 30 pounds in weight. The greater weight is employed in deep water and strong currents, while less is required in shallow and still water.

The great simplicity of this apparatus increases its value in no small degree.

* The figure shows the tongs rigged for both deep and shallow water, with weights on the arms and in the middle. The use of these is explained.

The only possible objection to it is that it is necessarily heavier than the ordinary tongs, and in very deep water requires the use of a small windlass attached to the mast or elsewhere on the boat from which it is being operated. With this adjunct it is said that even a small boy can manage it with ease.

These tongs were first employed in 1885-'86 from Solomon's Island, Maryland, where they came into general use during the season of 1887-'88, when it is estimated that two-thirds of the oystermen in that vicinity were provided with them. Up to the present time but few are employed elsewhere in the Chesapeake Bay, although it can be predicted that they will eventually become almost universally used throughout that region. The deep-water tongs can be readily operated in over 300 feet of water.

At St. George's Island, Maryland, near the mouth of the Potomac River, one of the few other localities in which the apparatus has been tested, one pair was operated in the fall of 1890 in water as deep as 120 feet with much success, the owner having no difficulty in stocking \$25 daily, whereas, with the old tongs, \$5 was considered very good remuneration for a day's work.

There are said to be large hitherto undisturbed beds in the middle of the Potomac River which are no doubt destined to yield handsome returns. Similar reports of the efficacy of the tongs and the opening up of new grounds come from other places in which the apparatus has been tried.

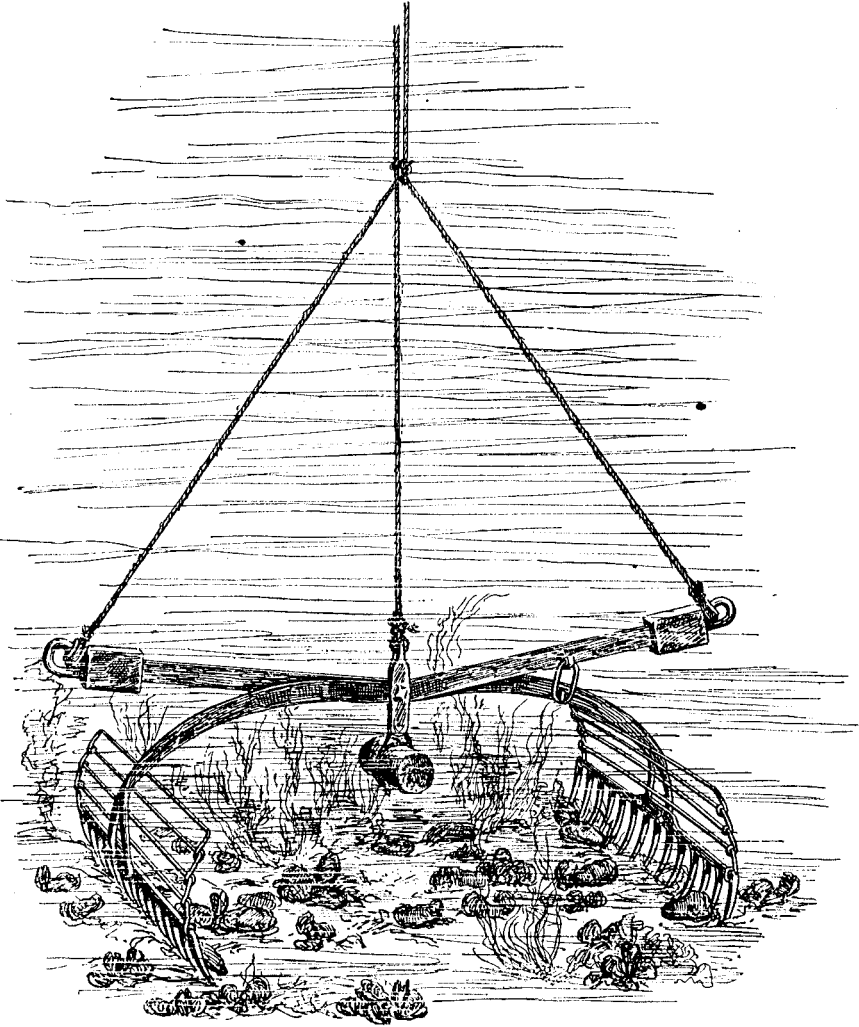
The following extract from a letter written by the inventor, Mr. Charles L. Marsh, of Solomon's Island, Maryland, dated September 18, 1890, will give some additional information concerning the advantages of his device:

The difference in the catch between my tongs and the old tongs is perfectly astonishing. On beds or bars where oysters are plentiful, from 3 pecks to a bushel of oysters can be gathered at each filling, and from 30 to 100 bushels caught per day. With the old tongs from 8 to 25 bushels per day is regarded to be a good catch.

I have manufactured, and licensed others to manufacture, about twelve hundred pairs of tongs since the issuing of letters patent to me, in December, 1887, an average of about four hundred pairs per year. The tongs, with the clamps, blocks, weights, and all necessary equipments, are worth \$16 per pair. My tongs are successfully operated where the old tongs, with handles, can not be used, viz., in any depth of water where oysters grow, *i. e.*, from 30 to 200 feet. Hence the value and advantage of my tongs over the old ones, in taking oysters in deep water where they could not be reached by tongmen before my invention. The greater the depth of water the greater the catch, from the fact that oysters in deep water have remained undisturbed for many years for the want of a proper machine like mine to reach them. Another advantage of my tongs is the cultivating and enlarging of the deep-water bars, whereby the oysters are becoming as profitable to the tongmen in deep water, as heretofore in the creeks and coves.

Information from other sources, some of which I have gathered in personal interviews with fishermen, so fully substantiates the above statements that there seems to be ample justification in quoting them, especially in view of the important beneficial influence the dissemination of these facts may have upon the shellfish fisheries.

The principle involved in these tongs is of wide application in the molluscan fisheries. In addition to being adapted to all deep-water beds of oysters, it is apparently admirably suited for scallop and clam fishing in deep water, where the present methods are unsatisfactory or impossible. Some modification in the teeth and carrying portion might be necessary in order to make the tongs suitable for the capture of other mollusks, although it is reported that the fishermen of Back River, Virginia, have found the apparatus, as already described, to be very efficacious in taking clams (*Venus mercenaria*) in water too deep for the ordinary tongs.



DEEP WATER OYSTER TONGS.

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