

THE TRANSPLANTATION OF SHELLFISH.

FOR the past three years an interesting series of experiments has been carried out on the Lancashire coast by the officials of the Lancashire and Western Sea Fisheries Joint Committee with the object of improving the condition of the public shell fisheries. It has for some time been felt that the



FIG. 1.—An overcrowded Morecambe mussel bed.

introduction of restrictive legislation has not removed all the difficulties incident to the successful protection of cockle and mussel beds where the beds do not form part of a several fishery, that is to say, are under private ownership. Restrictive methods such as the abolition of destructive implements of fishing and the prevention of the removal of cockles and mussels under a certain size, no doubt do protect beds from excessive depletion, but there are various factors which require other treatment for their solution. In some districts, notably at Morecambe, beds have become overcrowded, so that thinning is an absolute necessity. In one instance the present writer counted 116 small mussels adhering to an area of one square inch. In other cases there is the danger that the molluscs may become smothered by sand, or that the "spat" has struck too near the high-water mark for the mussels to develop to the size at which they may legally be taken by the fishermen. Three years ago the scientific sub-committee of the Lancashire Sea Fisheries District expended a small sum of money in order to try the experiment of thinning the Morecambe mussel beds. The shellfish that were removed were transplanted to other suitable areas nearly or entirely bare of shellfish.

Samples of the mussels were taken before and at frequent intervals after transplantation. It was found that the experiment was successful, and in the following year (1904) the work was extended to other districts on the Lancashire coast, and attention was not only directed to mussels, but cockles were transplanted from overcrowded beds in the neighbourhood of Southport. This year the experiment has been proceeded

with still further. Cockles have been transplanted successfully at Lytham and Southport, and mussels at Morecambe, Flookburgh, and in the Wyre and Lune estuaries. The work is carried out under the superintendence of the committee's bailiffs, and the shellfish gatherers are paid per tide for the work involved as well as for hire of boats. The mussels are generally removed at the commencement of the close season—which lasts in this district from April to August inclusive—so that the fish have a chance of accommodating themselves to their new environment without disturbance. Care is also taken to remove shellfish under the legal size so that their growth can be tested before they become "sizeable" fish for the market. The renewed growth which takes place in old cockles and mussels which had previous to removal not grown for years is remarkable.

The amount of shellfish transplanted is in the aggregate considerable, as may be seen from the following. In four days at Morecambe alone 152 tons 11 cwt. of mussels were re-deposited in localities favourable for their vigorous growth. At Lytham undersized cockles were removed from places where they were left dry too long by the receding tide, as a consequence of which their growth was checked, to more suitable ground where their growth was likely to be facilitated.

This work is rendered possible by the Sea Fisheries (Shell Fish) Regulation Act of 1894, which *inter alia* provides that a local fisheries committee shall have power to stock or re-stock any public fishery for shellfish, and for that purpose to incur such expenses as may be sanctioned by the Board of Agriculture



FIG. 2.—At work with the "Craam."

and Fisheries. The fishermen themselves, who may invariably be trusted to express their criticism of any work undertaken by the committee in a frank and outspoken manner, in this case express their appreciation of the efforts of the committee to improve and maintain the shellfish industry on the Lancashire coast. The value of the cockle industry to the Lancashire cocklers is approximately 20,000*l.* per annum.