it, than the two preceding, but it is of equal importance, being not less constant and discriminative. If you observe the position of the dorsal or back fin of the herring, and suppose a line drawn perpendicularly downwards from its foremost portion where it enters the back, you will find that such line will invariably fall *in advance* of the ventral or belly fin beneath it. But if you draw a similar line from the front portion of a garvie's dorsal fin, it will invariably drop *behind* the insertion of the ventral fin.

"4th. The fourth character of distinction results from or is connected with the character just mentioned. There is a shorter space and fewer divisional lines between the pectoral or breast-fin, and the ventral fin in the garvie than in the herring, so that the anterior portion of the body is less elongated.

"5th. The divisional plates, or segments, which occupy the lower space between the pectoral and ventral fins, are larger in size and fewer in number in the garvie than in the herring, there being about fifteen in the former, and about twenty in the latter. In conformity with this distinction in the outer aspect, the number of ribs is different, being considerably smaller in amount in the garvie than in the herring.

"Many other distinctions of a minuter kind are known to naturalists, but I think the preceding will suffice for the object you have in view, viz.: that the difference between the sprat or garvie, and the fry of the true herring, may be ascertained with ease and accuracy by all who desire to do so."

By order of the Honorable the Commissioners.

THOMAS DICK LAUDER,
Secretary Board of Fisheries.

Royal Institution, 26th June, 1845.

(No. 7.)

IMPROVED MODE OF PREPARING COD-OIL.

The apparatus for the manufacture of this oil is not expensive; it is very easy to make; the whole consists of a box made of common boards, which may be lined with tin as being more easy to wash; a cloth is laid inside the box, and upon it the cod-livers are placed; the box is provided with a closely fitted solid cover. A pot holding 40 to 50 gallons, with a close wooden lid is placed some feet from the box, and a wooden pipe or tube leads obliquely from the lid and communicates with the box in which the livers are; 25 or 30 gallons of water are put into the pot, and the steam entering the box eliminates the oil and water resulting from the contents; a barrel is placed beneath the centre of the box, in which a hole is pierced to allow the oil to escape. After the steam has been allowed to remain in the box for two or three hours the cover is removed, the livers stirred up, and a little salt thrown in to precipitate the strong parts of the liver; the contents are allowed to settle for five minutes, after which the oil which comes to the surface is removed; the box is then closed again, and the process repeated