

In New South Wales, the Government having taken alarm at the decadence of their oyster fisheries, appointed a Royal Commission on oyster culture, which has reported to Parliament that, if the same reckless management of their oyster fisheries in that colony is continued, the supply will soon be insufficient for the demand. They show that great quantities of oysters, unfit for consumption owing to their being immature, are sold in Sydney for shipment to Melbourne; the effect being that "New South Wales oysters, which ought to be the finest in the world, not only get a bad name in the colony but also in Victoria." Thus, while the price will rise very much from the want of due precaution, and by over-dredging, which takes away all the old "scalps" from which a healthy fall of spat might be obtained, and the beds replenished, the oysters will diminish in size till they reach that lilliputian stage when the proportion of meat to shell, which in the best class of oysters is one-fourth, will be so trifling as barely to repay the trouble of opening. I am the more anxious to bring to your notice all the details in connection with the preservation of the natural oyster beds (though the recital may appear prolix), as I found that already, in the very infancy of the development of the oyster-fishery trade at Stewart Island, the same evils, resulting in the premature exhaustion of this industry, are in operation which have led to such disastrous results in the Home country and elsewhere. The Port Adventure beds in Stewart Island, though closed against dredgers since the 22nd July, 1872, do not show so healthy a recovery as might reasonably have been expected, while the deep sea bed lying along the shore from the north-east headland of Port William towards Saddle Point, which has been deserted for four years by the dredgers, owing to its infecundity, is still too poor to pay for working. I had it tried this year, and the report is that in three drafts only 12 dozen were obtained, when one good draft formerly realized from 25 to 30 dozen. The dredges, when pulled up, contained a far larger proportion of old shells and rubbish than of marketable scalps. The young oysters which should have been found adhering to the "culch" were by no means plentiful.

6. *Desirability of Stimulating the Culture.*—The advantage to New Zealand of stimulating her oyster culture, irrespective of local requirements, may be estimated by the opinion of Mr. Frank Buckland, expressed to a Parliamentary Committee in 1876—viz., "That the New Zealand oysters would shortly be sent in tins to England." In addition to this, the Australian market is easily reached and readily open, particularly to the import of Stewart Island oysters; for experience has shown that oysters properly cleaned and packed will live for six weeks without water. Melbourne is principally supplied with oysters by Sydney, but the demand is already far in excess of the supply, and the report above quoted shows that each year the supply is decreasing.

7. *Habit of the Oyster.*—Although the study of the oyster has for years received scientific investigation, no definite conclusion appears to have been obtained in regard to its habits, more particularly in the matter of its reproduction. Though most atoms will tell man something of their nature and habits, &c., the oyster is a perfect mute. Once only, in the earliest dawn of its existence, when leaving the parent shell, it launches its tiny boat on the ocean of time, and for a brief moment dances wildly on the stream of life, floating along, it realizes the joy of movement. That wild saturnalia passed with safety, and a resting place obtained, it settles down, possibly to moralize with calm impassibility on its six weeks' glimpse of the pomps and vanities of life, certainly to fatten for man's use. Its fitful dream of life is over, it is silent evermore. Violence may burst open the iron lips, but they will not whisper the story of its birth.

8. *Propagation.*—Sir Everard Home, after long investigation, has come to the conclusion that an oyster is purely hermaphrodite; that it will impregnate its own ova, as illustrated in the teredines and different kinds of eels, stating that in the case of "the oyster, which has no organs fitted for locomotion, and is consequently confined to the same spot, its propagation could not be otherwise carried on." Again he says, "The ovarium is not evanescent as soon as the breeding season is over; although to the naked eye it would appear so, for new ova very soon begin to form in it. The ovaria may be considered double, as in fishes having the liver separating them, one lying immediately under the membrane that lines the convex shell, the other immediately over the membrane covering the flat shell; the ova hang on pedicles attached to the membrane of the ovarium, and this membrane becomes thicker and more conspicuous as they increase in size. They are large enough to assume a distinct form in the month of March. When they have arrived at their full size, a white liquor of the consistence of cream is met with, in which they appear to float, probably secreted for their fecundation. This happens towards the end of June, and a tube has now become visible, although not before distinctly seen. It opens by one end in the edge between the two ovaria, and the orifice communicates with both of them. At this time the ova drop from their pedicles, and therefore have arrived at their full growth; and there can be no doubt of their impregnation having taken place in the ovaria, for those that are detected passing along this tube, which is the oviduct, have already acquired a shell, and each ovum is enclosed in a vesicle, so that the size of the ovum can no longer be ascertained; but the cell met with in the pearl, as I shall explain, must be an exact cast of it, when it completed its growth. The oviduct forms a sheath in which the intestine is enclosed, and terminates in an orifice between the lips at the mouth of the intestine, from which the young oysters pass out, mixed with a purple mucus intended for their nourishment. From this situation the opening and shutting of the shells of the parent oyster must throw out the young along with the salt water."

With this theory of hermaphrodite generation, Messrs. F. Buckland and most of the witnesses practically acquainted with the subject examined by the Committee concur. On the other hand, Mr. H. G. Austin, of Whitstable, states that after five or six years' minute study of the subject, with the aid of very powerful microscopes, he believes that the two sicknesses—the white and the black—are not emanations from the same oyster, as described by Sir Everard Home, but are distinct—the white sickness being the male oyster, the black the female, and that if these two sicknesses come together, the spat live. Mr. Austin explains that he had changed his former opinion, and has arrived at his present conclusion after the following experiment: He had oysters brought from the water and immediately put under the microscope, and he found that the oyster after being white sick does not become black sick, for he has kept it for a fortnight or three weeks "upon the shore in a large boat