

temporary reserves and fishing the areas on a system of alternation has been proved most effective in maintaining a permanent supply. If the system adopted on the rock-oyster beds of the north was applied to the Foveaux Strait and other beds it would certainly be the best safeguard for the future. Even a licensed fisherman is anxious to get all he can in as short a time as possible. The Department wisely limits each northern fisherman employed to three sacks per tide, and this limitation ensures an ample supply for the present demand, the picking of the best marketable-sized oysters, and the saving of the smaller and the breeding oysters, which thus maintain the future supply. The public certainly benefit by the present Government method of employing men at stated pay, and insisting upon the picking of good marketable oysters. The price charged is very reasonable—namely, 13s. 6d. per sack, containing on an average 90 to 100 dozen oysters, and in retail quantities equal to 3d. per dozen, as compared with the price for oysters of less delicate and delicious flavour in England—viz., 3s. to 5s. per dozen; in the United States, 1s. 6d. to 3s. per dozen; and in Canada, 1s. to 2s. per dozen.

Leases.—I cannot regard the leasing of oyster areas in New Zealand favourably, in view of the benefit to the public of the successful conservation on the North Island secured under present conditions. Leasing usually implies the granting to a company or to private individuals the right to take oysters on a definite area to the exclusion of everybody else. This is a private monopoly, and has not been found to work well in other countries. Canada has tried both leasing and annual licenses, and the result has been practically the destruction of the fine oyster-beds of Prince Edward Island, New Brunswick, and British Columbia. Endless conflict and complaint arose from the existence of leases, and the public got no benefit, as the oysters became more scarce and prices became almost prohibitive. I do not propose in this place to speak of the export of oysters; but London and New York and even some of the large Canadian cities such as Montreal would pay a high price for such oysters as New Zealand produces, and it might be worth while to experiment with various methods of keeping shell-oysters for long periods in cool conditions, or of preserving them in such a way as to maintain their full and appetizing appearance when placed on the table after being kept for many weeks or even months.

TOHEROA-BEDS.

This shell-fish, from which a most delicious soup is made, appears to be rather local in its occurrence, though there are many beds not generally known, some of which I visited during my tour. In view of the limited nature of these beds the question arises as to what is the best method of utilizing them in the public interest. It seems to me that if all the areas continue to be open to the public this delicious shell-fish will rapidly become exterminated. The best course, therefore, would be to lay off some of the recognized areas and lease them to parties prepared to erect a cannery and tin these valuable molluscs. There are one or two such canneries already in operation, and it would be a desirable step to grant a lease for nine or fifteen years covering an area of, say, five miles of shore from which all other firms should be excluded. Such a lease would justify the carrying-on of an up-to-date tinning establishment. More extensive leases either in area or time to single firms or parties would establish a monopoly, but it is quite feasible to leave certain areas open to the public and to lease areas to firms prepared to tin the toheroa. An essential part of a system of reserving for lessees and for the public definite beach areas is the laying-off annually of some portion of these areas for seeding purposes. I do not think that the life-history of this shell-fish has been studied; but it no doubt resembles *Mya arenaria*, a species of clam which is forming the subject of research at marine biological stations in Canada and the United States. The egg is no doubt cast out in the spawning-time into the sea, and develops into a swimming larva, which in a few weeks sinks from the surface waters into the shallow sandy areas, where it buries itself and grows into the adult stage. By-laying off areas which are fished alternately, and thus providing spawning reserves, the floating eggs and young are produced in immense quantities, and carried by the currents and tide over the whole shore. In this way a permanent supply of these shell-fish is secured, and at the same time areas are thrown open every season for utilization by the public or by lessees authorized by the Government.

WHITEBAIT INDUSTRY.

There is very little to be said in regard to the whitebait question, as the fish still come up in immense numbers season by season and form a delicious addition to the bill of fare in hotels and private homes. I examined some specimens of whitebait on the West Coast and found that they certainly were not what many parties supposed them to be—the young of the smelt. They appear indeed to be a species which reach an adult condition and spawn without being transformed into any of the larger recognized species. It may be that, like *Crystallogobius*, they are a transparent fish all through life. But, on the other hand, it is just possible that the life-history of this fish is a peculiar and interesting one, and that further studies may show it to have two breeding-stages—one an early stage which in other fishes would be regarded as immature, and at a second stage later in life it may develop into some well-known recognized species. Its movements are so peculiar, and so far as is known its habits so unusual, that the life-history of whitebait is well worth systematic study by some of the New Zealand biologists.

WHALING.

New Zealand has long had a reputation throughout the world for its splendid whaling resources; but I regret to find that these resources even now are being most wastefully handled. It was found necessary in Canada to require parties entering upon the whale industry to obey a system of regulations with a view to preventing the waste of valuable whale products and to prevent the industry being a nuisance in the localities in which it is carried on. No parties should be allowed to kill whales unless they are able to handle and properly use the creatures when captured. I have every evidence during