

revenue from cool-storage charges at the usual rate of $\frac{1}{4}$ d. a pound would amount to £810, equal to a profit of £210 over working-expenses, interest, &c.; and there is no doubt that if properly worked the fish-oil and fertilizer plants would also be worked at a profit. The most important consideration, however, would be that this large fishery would be put on a solid footing with regard to its development, which would mean an important increase in the food-supply for a large section of the population and for export, and an increase in the number of people employed in the industry and in their earnings. I would therefore recommend that the Government should erect cool-storage and fish fertilizer works at Half-moon Bay, and when the success of these works has been demonstrated the erection of similar works in other suitable localities should be taken in hand.

5. The utilization of waste products is one of the remarkable features of the manufacturing world to-day, and in Europe, England, Canada, and United States of America a great deal of attention is now given to the question of turning to account the waste material and by-products yielded by the fish business. Along with the development of our fisheries should go the establishment of fish-oil and fish fertilizer factories, for which I consider there are important possibilities in this country. Besides utilizing the offal and waste fish from the fish-cleaning sheds, which in the large centres amounts to a considerable quantity, fishermen would find a payable market for all sharks, dogfish, and other coarse fish they could catch, and this would yield an important increase to their earnings, and at the same time rid the fishing-grounds of these enemies to our market fishes.

When in England three years ago I visited the large fish-oil and fertilizer-manufacturing works on the Humber. Two separate companies had erected factories, and were competing for the fish-offal and coarse fish from the Grimsby and Hull fish-markets. The price paid for the raw material at the time of my visit was 18s. 6d. a ton. Reporting on this question a few years ago, I recommended that the Government should give a bonus per ton for fertilizer of a standard analysis and also for the production of fish-oil. I am convinced that this is necessary in order to give the industry a start, and assist in getting it placed on a solid footing. The product from these factories is required in this country, the fertilizer by the farmer, and the oil in connection with certain industries.

In order to cope with the shark and dogfish plague on some of the principal fishing-grounds on the Atlantic coast of Canada, the Fisheries Department has erected fish-reduction works, where all the coarse fish brought in by fishermen are treated. These works have paid interest on the cost of erection, depreciation, and working-expenses, and the fishing-grounds have greatly improved as regards the supply of market fish.

6. In all animal-life nature arranges wisely the proper balance of the species; but whenever an unnatural agency is introduced which assists in the destruction of one or more of the species, the natural enemies of these at once gain the ascendancy, and the two together quickly reduce the number, and in time may even exterminate the species affected; and even should this unnatural agency be removed before extermination takes place, the natural enemies having gained the ascendancy are likely to maintain it for a considerable time. This principle has, I think, been clearly demonstrated with regard to some of the inshore fishing-grounds. On the arrival of the first settlers, our best market fishes were found in abundance everywhere. Catching for market has now been carried on vigorously on certain grounds for over fifty years, and in all that time the enemies of the market fish, in the form of sharks, &c., have been left alone. The balance of nature has thus been disturbed by the agency of man, and the result of this has been a reduction in the quantity of market fish on these grounds, and a predominance in the number of the enemies of these fish. Had a proportionate number of the enemies been killed off it is questionable whether the quantity of market fish taken by man's agency would have affected the supply to any great extent.

Sharks and dogfish have been very plentiful on many of the fishing-grounds of late years, and besides taking great quantities of our market fishes, have in other ways proved a great nuisance to fishermen; and I have no doubt that killing them off would soon result in an increase in the quantity of market fish on these grounds.

Whenever fish-oil and fertilizer factories are established there should be no necessity to give a bonus for the destruction of sharks, dogfish, and other enemies, as fishermen would find a ready market for them at these factories; but where no such factories exist, I think fishermen should be encouraged to kill them off.

7. Fresh fish being one of the most perishable of food products, one of the most important things required to ensure a plentiful supply being placed before the people in good condition is providing the quickest possible transport facilities from the fishing ports to the markets and distribution inland. Without this it is impossible to utilize to the best advantages the fish brought in by our fishermen. The transport of fresh fish by rail has a most important bearing on the development of the industry, and ensures the people of the Dominion getting a supply of this important food in the best possible condition. In England, as necessary, special vans and trains are provided. In Scotland special trains are run. In Ireland fair facilities are given by railway companies. In Canada cold-storage cars arranged from certain points, and *one-third of freight on inland consignments is paid by the Fisheries Department*. In South Africa fish is carried at a very much lower rate than other foodstuffs. In Victoria certain facilities are granted by railways, but they are not considered satisfactory. In New South Wales fish is forwarded by both passenger and freight trains. Half ordinary parcel rates is charged by passenger-trains, and 3d. per ton per mile for quantities of 2 cwt. and over, with a minimum of 1s. to be applied when cheaper than half parcel rates. In Queensland no special facilities; forwarded mostly by passenger-trains. In South Australia the railways carry fish in "louvre" vans at half-rates, attached to passenger-trains.

8. It is very necessary that a system of collecting fishery statistics suitable for this country should be planned and put into force as soon as possible. Attached to this report will be found information supplied by the fishery authorities in England, Scotland Ireland, Canada, South Africa, and the