

bottom was found from 10 to 30 fathoms; but marketable fish were not taken in any quantity. On this portion of the coast, however, Poverty Bay proved itself an exception, and some good hauls of flat-fish were taken there.

Trawling from Poverty Bay to Tologa Bay is impossible inside of 10 fathoms owing to the rocky nature of the bottom; but outside of that line the bottom is soft and even, though the quantity of fish taken there was not encouraging.

From Tologa Bay to Hauraki Gulf very little work was done. Soundings were taken at a few places before reaching Tauranga Heads, and one haul of the net was made in Wangaparoa Roadstead, west of Cape Runaway. Both east and west of Tauranga Heads a considerable extent of sand bottom exists, but, as may be expected from the rocks marked on the chart, rough bottom may be met with in many places. From Tauranga to Cape Colville only one haul was made, but the quantity of fish taken at this season—at no point so far tested outside Poverty Bay—was sufficient to warrant its selection as a permanent trawling-ground.

Somewhat different experiences were realised in and around the Hauraki Gulf, where good hauls of marketable fish were made on almost every occasion. Especially was this the case in the Frith of Thames, where fish appear to be particularly plentiful and of good quality. Exhaustive tests were made in all parts of the gulf to the Great Barrier Island on one side, and along the coast to Whangarei on the other, the whole of the bottom proving suitable for trawling operations, and the hauls sufficiently encouraging except in Motuihi Channel, Whangaparapara Harbour, and the vicinity of Whangarei. In each of these places the hauls were poor, but it does not follow that at other seasons these conditions may not be reversed.

After testing the coast southwards of Whangarei, and finding good bottom for trawling but a scarcity of fish, the "Doto" left on the 15th March for Russell to coal, on her way to Kaipara, on the West Coast. In reversing her engines at the Russell Wharf her tail-shaft gave way, and operations had to be suspended until repairs were effected.

A fortnight after the accident the "Doto" was again put to work in Kaipara Harbour, which was fully explored, the hauls varying a great deal. In some localities very fair results were obtained, while in others they were very poor.

From Kaipara to Manukau good results were also obtained, and the bottom found very suitable for trawling operations.

Manukau Harbour was next tested, and, owing to bad weather outside, was more closely exploited than would otherwise have been deemed necessary, for the reason that in this inlet, as in Kaipara, the channels that are deep enough for trawling with a boat drawing 6 ft. 6 in. or over, are too narrow, and, although one or two fair results were obtained here, a much smaller boat and trawl-net would perhaps be more successful in operating in the channels, and perhaps over the mud-flats at high water.

Operations were continued south from Manukau to within ten miles of Cape Egmont Lighthouse, and the general character of the coast off shore was most suitable for trawling, except that opposite Waitara and Urenui, where, within six or seven miles of the shore, the bottom contains patches of rock. Along this stretch of coast-line a few fair hauls were made, and, though the fish were nowhere very numerous, they were well distributed, and included some of the best marketable species. "Bottom" oysters were found in the Kawhia Inlet. These are of very fine quality; but as the oyster area seems to be confined to the inlet the supply obtainable is a limited one, but of great value to residents as a food-supply.

Having exploited this part of the coast, the continued illness of Captain Nielsen rendered it necessary to allow the "Doto" to return to Nelson without renewing her charter for a further term.

Fishermen in Hawke's Bay asked that the ground outside the usual trawling areas should be prospected because of the disappearance of fish from those areas during autumn and winter, and complying with this request the steam-trawler "Rita," owned by Mr. J. Corry, of Napier, was chartered to test the places outside the known trawling-grounds. The "Rita" is a boat of 22 tons net register, and her trawling-gear consists of a 40 ft. beam trawl. Operations with her were commenced on the 13th May in 16 fathoms, half-way between Napier and the Kidnappers, and continued in deep water, but the results showed that the fish had not taken to deeper water, as was supposed.

The "Rita" was chartered for a week, and during that time the grounds were fairly well tested from Napier to the Mahia Peninsula, inshore off Mohaka, Wairoa, and Nuhaka, outside the usual trawling-grounds, and round the Coast to Bare Island. In the time available at this season it was impossible to thoroughly explore the whole of the Hawke's Bay inside a line from Kidnappers to Portland Island, but the results obtained were similar to what has been found when trawling round the coasts of both Islands—i.e., very few flat-fish were taken outside the 20-fathom line.

Summarising the results of the experiments, the list of fish taken shows that there is a wide distribution of fish round the coast, and that they exist in large numbers in certain places. The fact that they are not plentiful upon some first-class trawling-bottom is probably due to their migratory habit, which is influenced by the food-supply, and this in turn being influenced, too, by the state of the weather, tides, and currents so that before anything definite could be arrived at in regard to a permanent fish-supply from trawling; a series of experiments upon the same ground at stated intervals is a necessity. Upon this point Mr. A. Hamilton, of the Otago University, said, in his report last year, referring to one species only, "In this case, as in many others, it is desirable that returns of the kinds of fish taken on the same grounds should be available for each month in the year." And in my accompanying report I stated that, "As the migrations of fish are affected by temperatures, tides, and weather conditions, the extent of the fish-supply in any locality can only be ascertained correctly by having each locality fished at different seasons, so that areas mentioned