

Confidential: Not to be quoted without reference to the Laboratory.

CRUISE REPORT

F.R.S. "SCOTIA"

10th-23rd February, 1959

The main purposes of this cruise were (a) to study the occurrence and distribution of larval nematodes in cod and codling from Scottish coastal waters (b) to tag haddock and whiting (c) to carry out the routine survey of the Nephrops stocks of the Firth of Forth.

Although severe gales hampered fishing operations on most northern grounds during February, "Scotia" worked in the lee of the east coast without interruption and the programme was completed from the Farne Islands northwards to the southern shore of the Moray Firth.

Some good catches of codling were obtained. Disregarding small fish of less than 30 centimetres (1 ft), none of which was found to be parasitized by nematodes on this occasion, the following table gives the numbers of marketable codling examined in four areas, together with the numbers of fish with worms in their flesh.

	<u>No. of Cod examined</u>	<u>No. infested</u>	<u>%</u>
Moray Firth, off Lossiemouth	116	8	7
Wee Bankie and east of May Island	39	12	31
Firth of Forth west of May Island	75	5	7
Off Berwick and in Farne Deepes	15	6	40
Totals	245	31	13

These figures show a surprisingly large number of parasitized cod. Fortunately the degree of infestation demonstrated by the method employed in these investigations, of filleting and cross sectioning each fillet, is, as yet, light. Of the 31 cod affected 23 (74%) contained only 1 worm, 5 (16%) contained at least 2 worms and 3 (10%) contained 5 or more worms. At the same time it should be mentioned that individual codling have recently been received from the Moray Firth and from the coast of Angus, so badly parasitized by these worms as to be quite unfit for human consumption. This and the relatively high proportion of ^{affected} fish on the present cruise are unusual features from the east coast of Scotland.

Over the whole area in which, with the exception of the Firth of Forth, trawling was carried on outside the three mile limit, worms were found in 13% of the codling of marketable size. This is in close agreement with the 15% infestation in cod caught in more northerly waters outwith territorial waters but west of 1°W longitude at the end of 1958 (see "Explorer" report for 26th October to 15th November).

The Moray Firth records are interesting in that they confirm observations by the manager of the filleting station at Buckie (reported by Mr. Noble) indicating a 5% infestation from a position to the eastwards of where "Scotia" worked.

Adult stages of the worm in cod have been found in most of the seals examined at the Laboratory, and it now seems fairly certain that the increase in worm infestation of cod is connected with the increase in the number of seals.

Haddock were extremely scarce on all grounds and only three were tagged during the cruise. Whiting were more numerous and 116 were tagged at positions between the Moray Firth and the Farne Deeps.

Mr. Gamble's new device for lowering tagged whiting and haddock to the bottom before releasing them was tried out. The idea seems to be a good one but the material used in its construction was too heavy and rough and, furthermore, in a moderate swell fish were lost through the pumping action within the funnel of netting. Alterations will be made to the gear in the light of the experience gained.

The routine survey of the Nephrops stocks both inside and outside the Firth of Forth was completed. On this occasion two cod-ends of different mesh sizes were used and all Nephrops were measured. The best results were obtained off Fidra.

Catches throughout the cruise were dealt with according to standing instructions.

Two concentrations of seiners were observed during the cruise - one in the Bell Rock/Wee Bankie area on February 17th and the other, a very large one comprising at least 30 vessels, off St. Abbs on 18th.

BENNET B. RAE.
10th March, 1959.

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