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Preliminary results of herring tagging in  
southwestern Newfoundland, March 1970

by

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The comparison of certain biological characteristics in herring samples taken at Magdalen Islands and along southwestern Newfoundland during the 1969 autumn purse seine fishery supports the hypothesis that the winter fishery along southwestern Newfoundland is largely dependent on herring concentrations which migrate eastward from the southern part of the Gulf of St. Lawrence (Hodder, 1969; Hodder and Parsons, MS, 1970). In order to provide more direct evidence on the seasonal movements of herring in the Gulf of St. Lawrence-Newfoundland area, the first phase of an extensive herring tagging program was instituted in March 1970.

During March 3-13, 1970 25,000 stainless steel tags were inserted into the body cavities of herring. The tags, obtained from Bergen-Nautik, were 19 mm long, 4 mm wide and 1 mm thick with rounded ends. They were coded in lots of 100 and the lots used contained the codes L101 to L350. The 25,000 herring tagged were caught and released in LaPoile Bay and vicinity. The water temperature ranged between 1 and 3°C in the upper 150 m and air temperatures were -5 to +5°C during the period of tagging.

Before the tagging operation ended tag recoveries were reported at the reduction plant at Isle aux Morts, Newfoundland, and up to the duration of the herring fishery along southwestern Newfoundland (April 15) tags were recovered from the magnets daily following the landings of herring taken by purse seine between LaPoile Bay and Cape Anguille. Tags were also recovered from the magnets of reduction plants at Burgeo, Nfld., and at Pubnico, N.S. Herring, utilized at the latter plant, were caught in Newfoundland waters. During the 5-week interval 392 tags were returned to us from the landings of herring caught along southwestern Newfoundland.

Immediately following the cessation of the Newfoundland fishery (April 15) the seiner fleet began fishing in the area between St. Paul Island, off Cape Breton, and Magdalen Islands. During the first 3 weeks of this fishery (April 16 to about May 5) 62 tags were returned to us. Most of them were recovered at Isle aux Morts, but 7 were recovered in a reduction plant at Caraquet, N.B. from about 1000 tons of herring caught between St. Paul Island and Magdalen Islands.

In all, approximately 1.8 percent of the tagged herring were returned to us within 8 weeks from the commencement of tagging. The pattern of tag returns from the reduction plants involved together with preliminary tests on the efficiency of the recovery facilities at two plants indicate that the overall efficiency of recovery was probably considerably less than 50 percent.

The fact that more than 14 percent of the 454 tags, reported to date, were recovered following the landings of herring caught at Magdalen Islands and vicinity after the cessation of the Newfoundland fishery tends to confirm the hypothesis mentioned in the first paragraph of this report.

#### References

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