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The 1983 Fishery for Short-finned Squid (*Illex illecebrosus*)
in the Newfoundland Area

by

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Abstract

Introduction

Inshore Newfoundland squid catches have been described by Mercer (MS 1973) for the period 1955-72. Information on biological characteristics of squid from inshore localities is also available for some years within the period 1965-73 (Mercer MS 1975). Such information has been provided for the period 1975-77 by Collins and Ennis (MS 1978). Since then catches and biological characteristics of squid from NAFO Subarea 3 have been documented annually for offshore as well as inshore areas (Hurley et al. 1979; Beck et al. MS 1980, MS 1981, MS 1982, MS 1983).

This paper reports on the 1983 fishery for *Illex illecebrosus* in the Newfoundland area (NAFO Subarea 3 and Div. 4R). Length and sex composition are presented for samples collected during an offshore research cruise in May-June within NAFO Divisions 3N, 3O, and 3P. No samples were available from the inshore commercial fishery.

Materials and Methods

Inshore catch statistics were obtained from the Economics and Intelligence Branch, Department of Fisheries and Oceans, Newfoundland Region. Offshore samples were collected aboard the Canadian research vessel 'Gadus Atlantica' during a May 27-June 13 survey on the southwest slope of the Grand Bank and St. Pierre Bank (Fig. 1). Sampling was carried out using an Engels 145 bottom trawl with a 1 1/8" knotless nylon codend liner. All but 11 squid caught were dissected, sexed, and measured in dorsal mantle length to the nearest 0.5 cm. Lengths were later grouped in 1 cm intervals.

Results and Discussion

Reported Catches

The 1983 inshore Newfoundland squid catch was 5.4 t, down from the 1982 catch of 11,160 t (Beck et al. MS 1983). There were no offshore catches reported for Subarea 3 in 1983. The yearly inshore Newfoundland catch level has declined steadily since 1979 (Fig. 2) and the 1983 catch represents the lowest on record, with the exception of 1968 when only 2 t was caught (Mercer MS 1973; Dawe 1981). Unusually, 87% of the 1983 catch was derived from the area of Port au Port on the west coast of Newfoundland (Fig. 3). Greatest squid catches usually occur in NAFO Division 3L, the region of the Avalon Peninsula (Fig. 3). However in 1982 largest catches occurred in more northern areas of insular Newfoundland (Beck et al. MS 1983). Since markets were quite favourable, the extremely low inshore catch for 1983 can only be attributed to a virtual absence of squid from inshore waters.

Low abundance was not obviously related to adverse inshore water temperature. Although temperature data from the Holyrood jigging ground was unavailable for most of the season, late-season temperatures were similar to those of other years (Fig. 4). Temperature exceeded 10°C for most of October and remained above 5°C until early December.

A low resource level was also apparent on the Grand Bank during May 27-June 13. In a research survey 100 squid were captured from 65 daytime survey sets using bottom trawl, a catch rate of 246 squid per 100 hrs trawling. Further, there were no reported catches from Subarea 3 offshore fishing areas throughout the commercial season.

Length and Sex Composition

Length distributions by sex are presented in Fig. 5 for samples collected during May and June from the Grand Bank and St. Pierre Bank. Sexes were approximately equal (57% males). As for other years, females were larger than males, with mean mantle lengths of 14.2 cm and 12.5 cm, respectively. This great size disparity is likely an artifact due to low sample size, since such differences due to sex were much less pronounced in other years (Beck et al. MS 1982). The mean size for females is comparable to those of May and early June samples collected during other years. Within that period of 1979-81, mean lengths of females sampled offshore ranged 13.6-16.8 cm (Beck et al. MS 1982). The mean length for males, (12.5 cm) however, was smaller than for those earlier years, when mean lengths ranged 13.3-16.5 cm (Beck et al. MS 1982). This unusually small size of males may be related to a much stronger presence of small (9-11 cm) male squid during spring 1983, but it may also be due to insufficient sample size.

Acknowledgements

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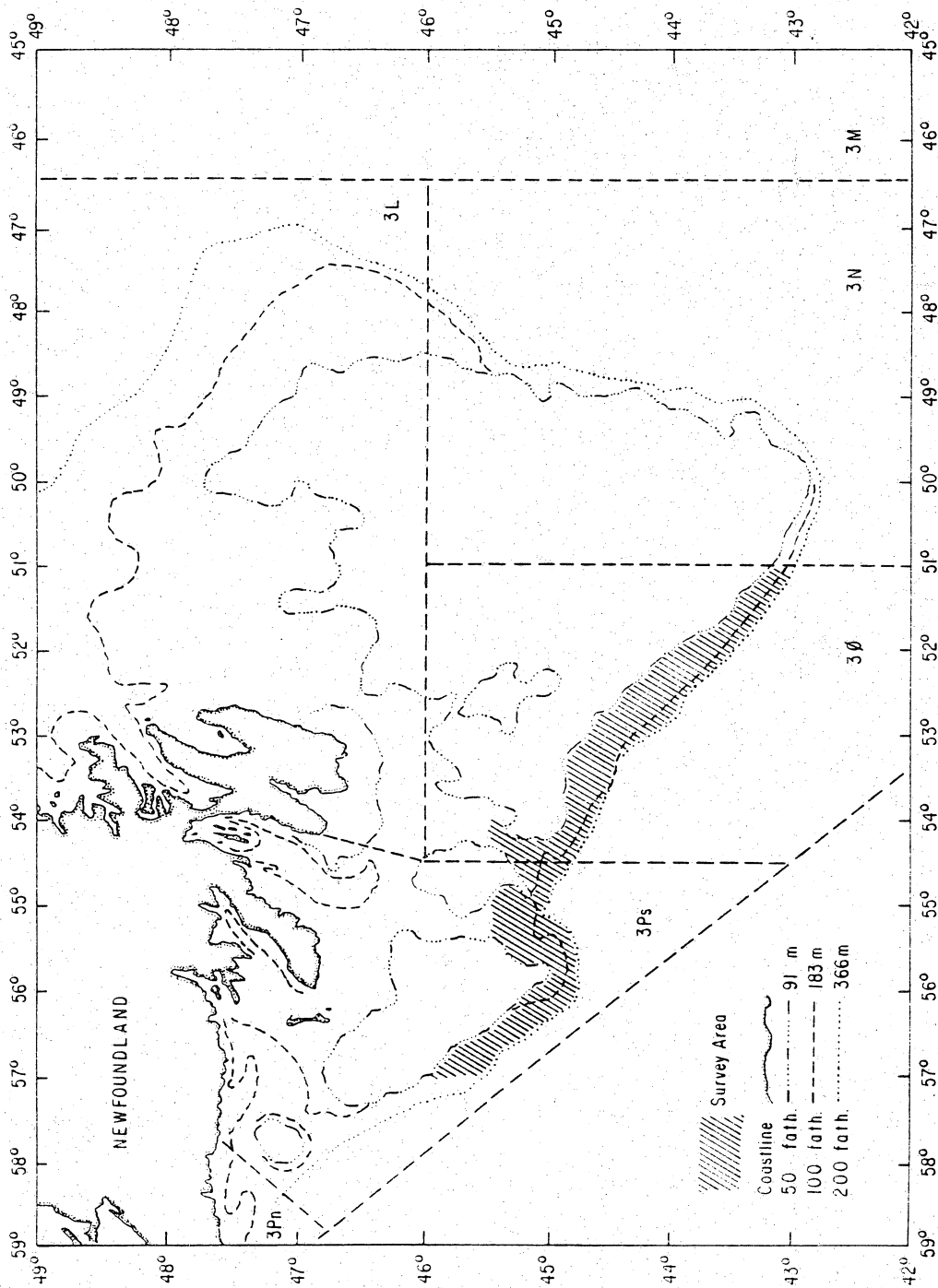


Fig. 1. Area surveyed on Gadus Atlantica Trip 79, May 27-June 13, 1982.

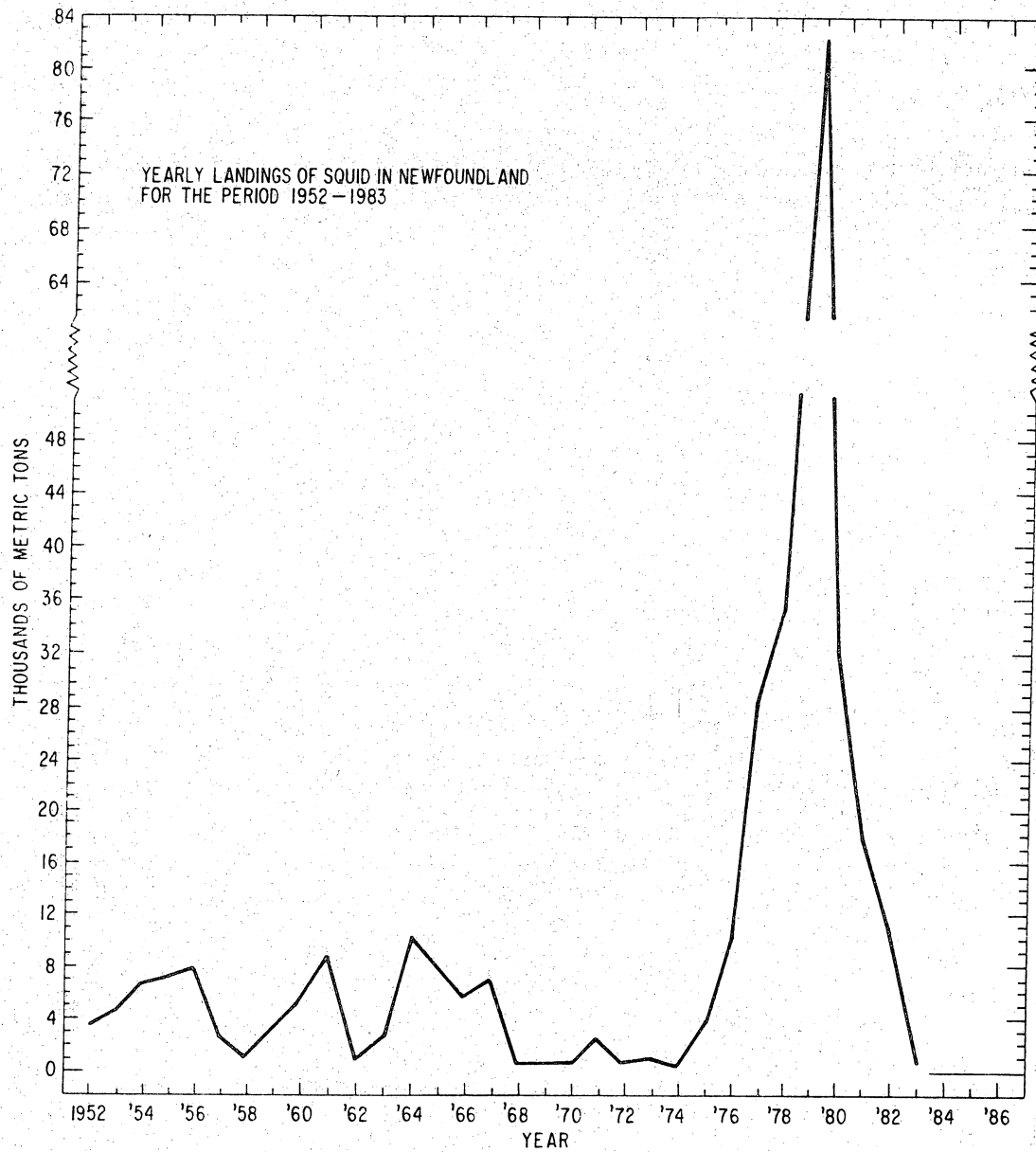


Fig. 2. Yearly catches of squid in Newfoundland for the period 1952-83.

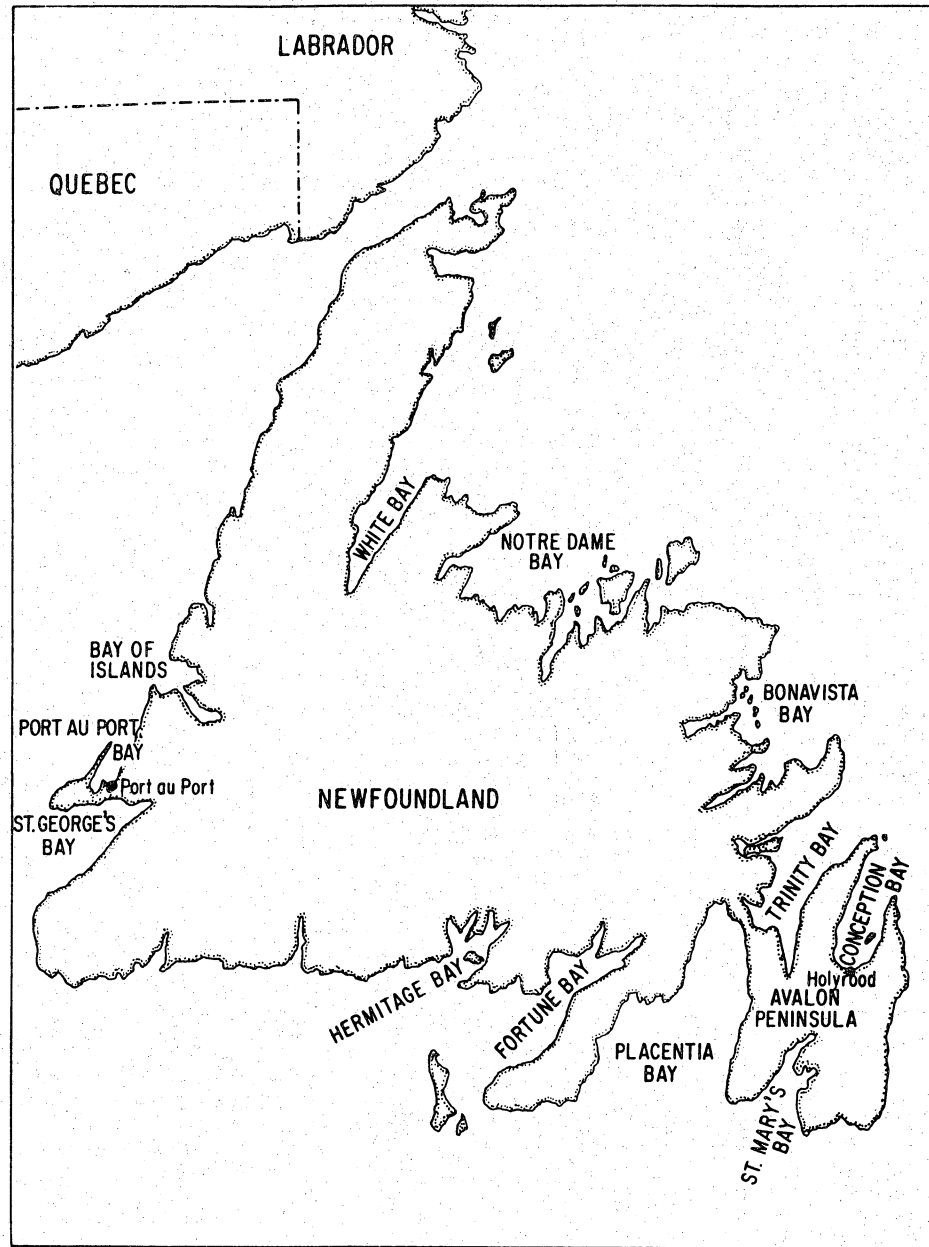


Fig. 3. Map of Newfoundland showing localities referred to in the text.

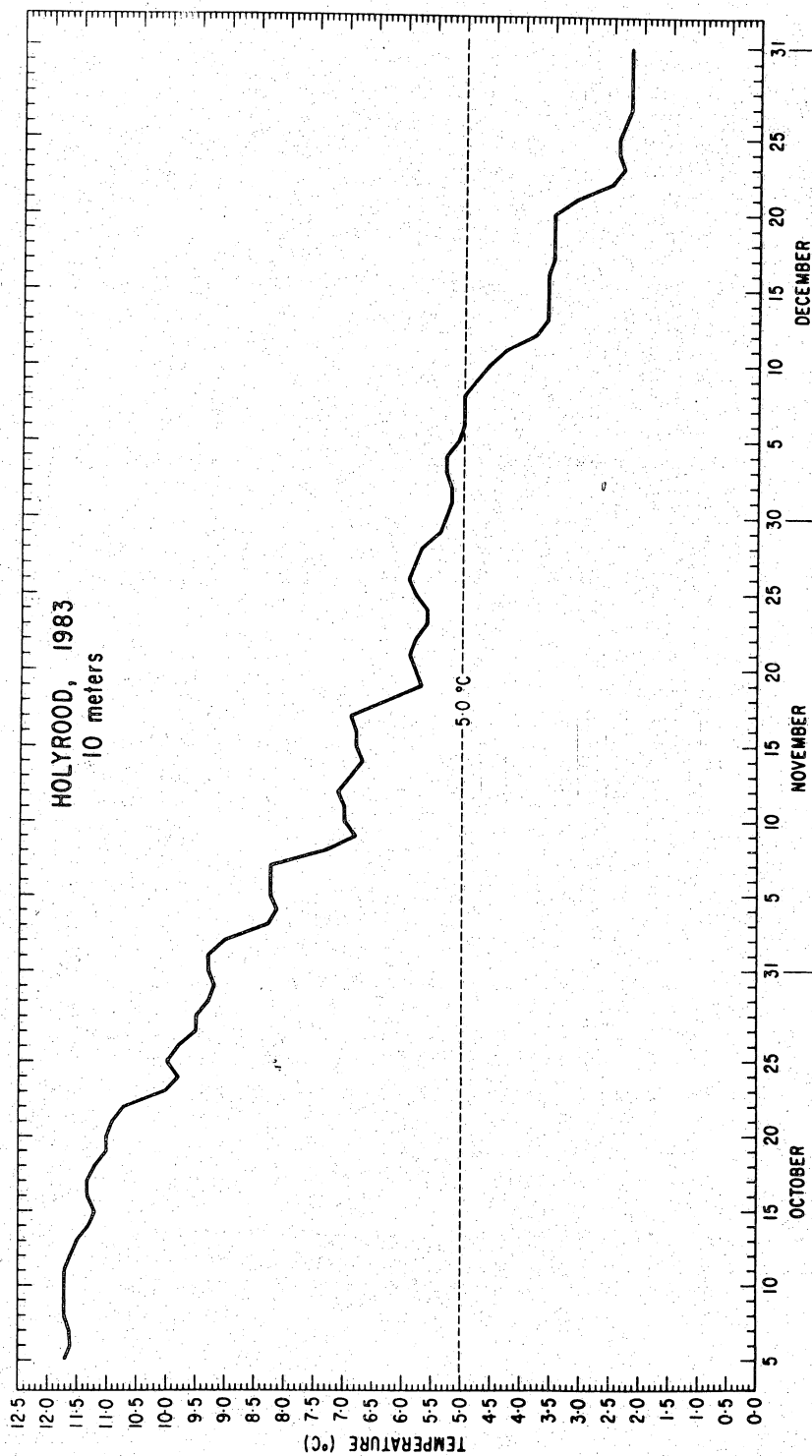


Fig. 4. Average daily temperature at Holyrood for October-December 1983.

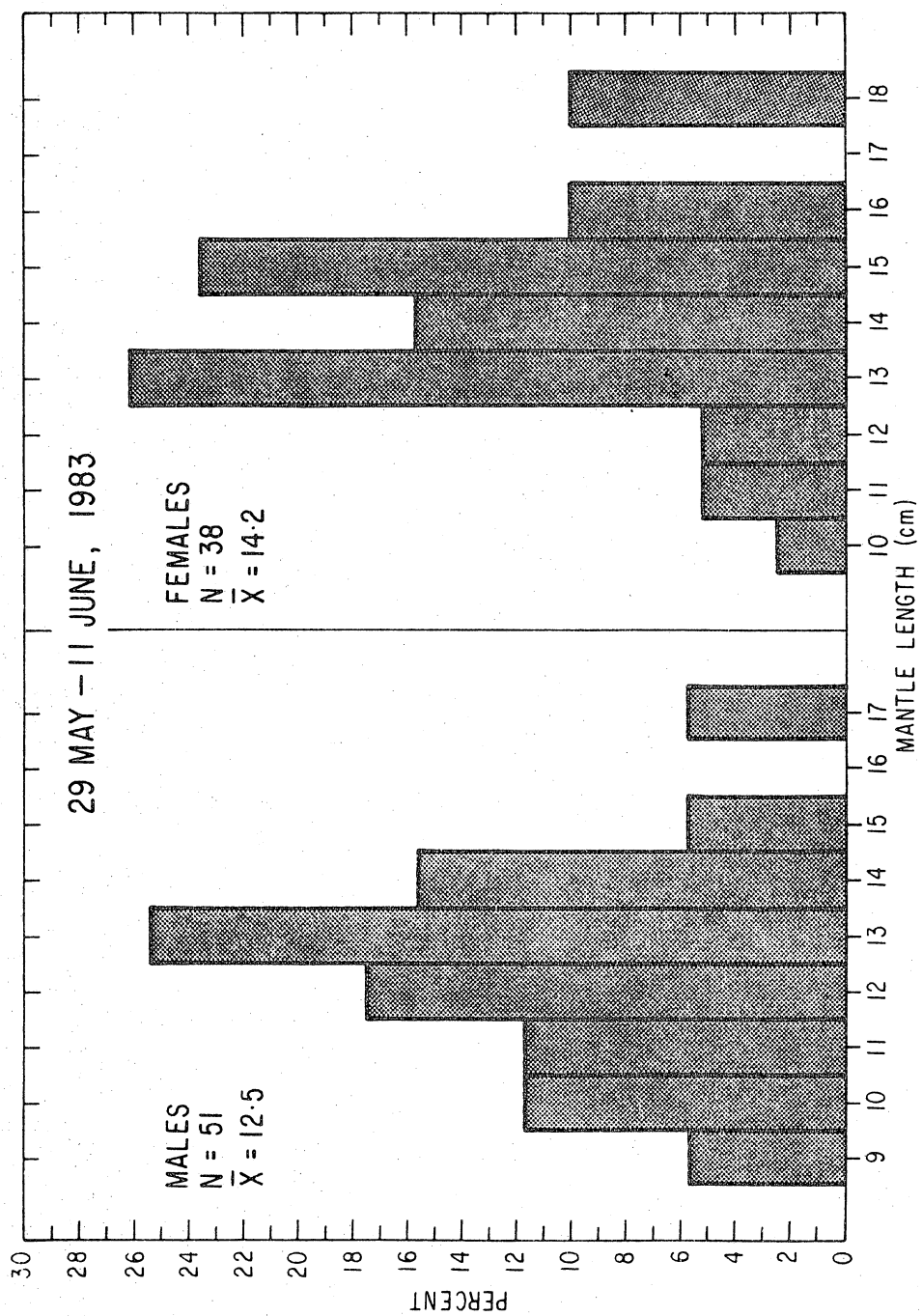


Fig. 5. Length frequency distributions for squid samples collected during spring on the Southwest Slope of the Grand Bank and St. Pierre Bank (11 unsexed specimens are not represented).

