

Northwest Atlantic Fisheries Organization



Serial No. N975

NAFO SCR DOC. 85/25

SCIENTIFIC COUNCIL MEETING - JUNE 1985

The 1984 Fishery for Short-finned Squid (Illex illecebrosus)
in the Newfoundland Area

by

H. J. Drew, E. G. Dawe, and P. C. Beck

Department of Fisheries and Oceans, Fisheries Research Branch
P. O. Box 5667, St. John's, Newfoundland, Canada A1C 5X1

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; Drew et al. MS 1984).

This paper reports on the 1984 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 Div. 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 'E.E. PRINCE' during a June 15-29 survey on the southwest slope of the Grand Bank and St. Pierre Bank

(Fig. 1). Sampling was carried out using a Yankee 36 bottom trawl with a 1 1/8" knotless nylon codend liner. All squid caught were dissected, sexed, and measured in dorsal mantle length to the nearest 0.5 cm. For males, maturity stage was also assessed.

Results and Discussion

Reported Catches

The 1984 inshore Newfoundland reported squid catch was 368 t. While that was higher than the 1983 catch of 5.4 t (Drew et al. MS 1984) it also reflected a very low level of inshore abundance relative to the very high catches during 1975-80 (Fig. 2). Greatest catches came from Trinity and Bonavista Bays (Fig. 3), especially during September and October. The 368 t is an underestimate of the total catch since in such years of low abundance much of the catch is unreported as fishermen commonly keep squid for their own use as bait. The size of the unreported squid catch is unknown.

Low abundance was not obviously related to adverse inshore water temperature. Temperature at Holyrood reached about 16°C in late August and remained above 5°C throughout August to November (Fig. 4).

A low resource level was also apparent on the Grand Bank during June 15-29. In a research survey only 135 squid were captured from 78 daytime survey sets using bottom trawl, a catch rate of 346 squid per 100 hr trawling. Throughout the commercial season there were no reported catches from Subarea 3 offshore fishing areas.

Length and Sex Composition

Length distributions by sex are presented in Figure 5 for samples collected during June on the Grand Bank and St. Pierre Bank. Sexes were approximately equal (49% males) and all males were immature. Squid were quite small relative to those caught from spring surveys in other years, despite the later time of sampling during 1984. Squid ranged from 9 to 14 cm in mantle length with mean lengths of 12.0 cm for males and 11.0 cm for females. Females in particular were small which is unusual since during surveys in other years they were consistently larger than

males (Beck et al. MS 1981, MS 1982, MS 1983; Drew et al. MS 1984). Mean lengths for males during surveys in June of the previous four years have ranged 12.5-16.5 cm, all larger than the 1984 mean length. Similarly, females were larger during all spring surveys in 1980-83 with mean lengths ranging 13.6-16.8 cm (Beck et al. MS 1981, MS 1982, MS 1983; Drew et al. MS 1984).

Acknowledgements

The authors would like to thank M. Hynes who assisted in the preparation of the manuscript.

References

Beck, P. C., E. G. Dawe, J. Drew. MS 1980. Breakdown of squid catches in NAFO Subarea 3 and Div. 4R, 1979 with length and sex composition from offshore and Newfoundland inshore commercial samples. NAFO SCR Doc. 80/II/17, Ser. No. 65, 15 p.

MS 1981. Breakdown of squid (Illex illecebrosus) catches in NAFO Subarea 3 and Division 4R, with length and sex composition from Newfoundland inshore commercial samples and early season offshore area. NAFO SCR Doc. 81/VI/27, Ser. No. 36, 17 p.

MS 1982. Breakdown of short finned squid catches in NAFO Subarea 3 and Division 4R 1981 and biological characteristics for Newfoundland inshore commercial samples and early season offshore areas. NAFO SCR Doc. 82/VI/27, Ser. No. 515, 16 p.

MS 1983. Breakdown for 1982 squid (Illex illecebrosus) catches in NAFO Subarea 3 and Division 2J and 4R, with length and sex composition from Newfoundland inshore samples and early season offshore samples. NAFO SCR Doc. 83/VI/21, Ser. No. N670, 15 p.

Collins, P. W. and G. P. Ennis. 1978. Breakdown of inshore Newfoundland squid catches, 1975-1977 with length and sex composition from commercial samples. ICNAF Res. Doc. 78/II/16, Ser. No. 5158, 13 p.

Dawe, E. G. 1981. Development of the Newfoundland squid (Illex illecebrosus) fishery and management of the resource. J. Shellfish Res. 1(2): 137-142.

Drew, H. J., E. G. Dawe, and P. C. Beck. MS 1984. The 1983 Fishery for Short-finned Squid (Illex illecebrosus) in the Newfoundland Area. NAFO SCR Doc. 84/VI/68, Ser. No. N857, 7 p.

Hurley, G. V., P. C. Beck, and J. Drew. MS 1979. Breakdown of squid catches in ICNAF Subarea 3, 1978, with length and sex composition from offshore and Newfoundland inshore samples. ICNAF Res. Doc. 79/II/27, Ser. No. 5353, 13 p.

Mercer, M. C. MS 1973. Nominal catch of squid in Canadian Atlantic waters (Subareas 2-4) 1920-68. ICNAF Redbook 1973, Part III: 154-161.

MS 1975. Size and maturity of the ommastrephid squid, Illex illecebrosus (LeSueur) at Newfoundland. ICES C.M.1975/K:50, 28 p.

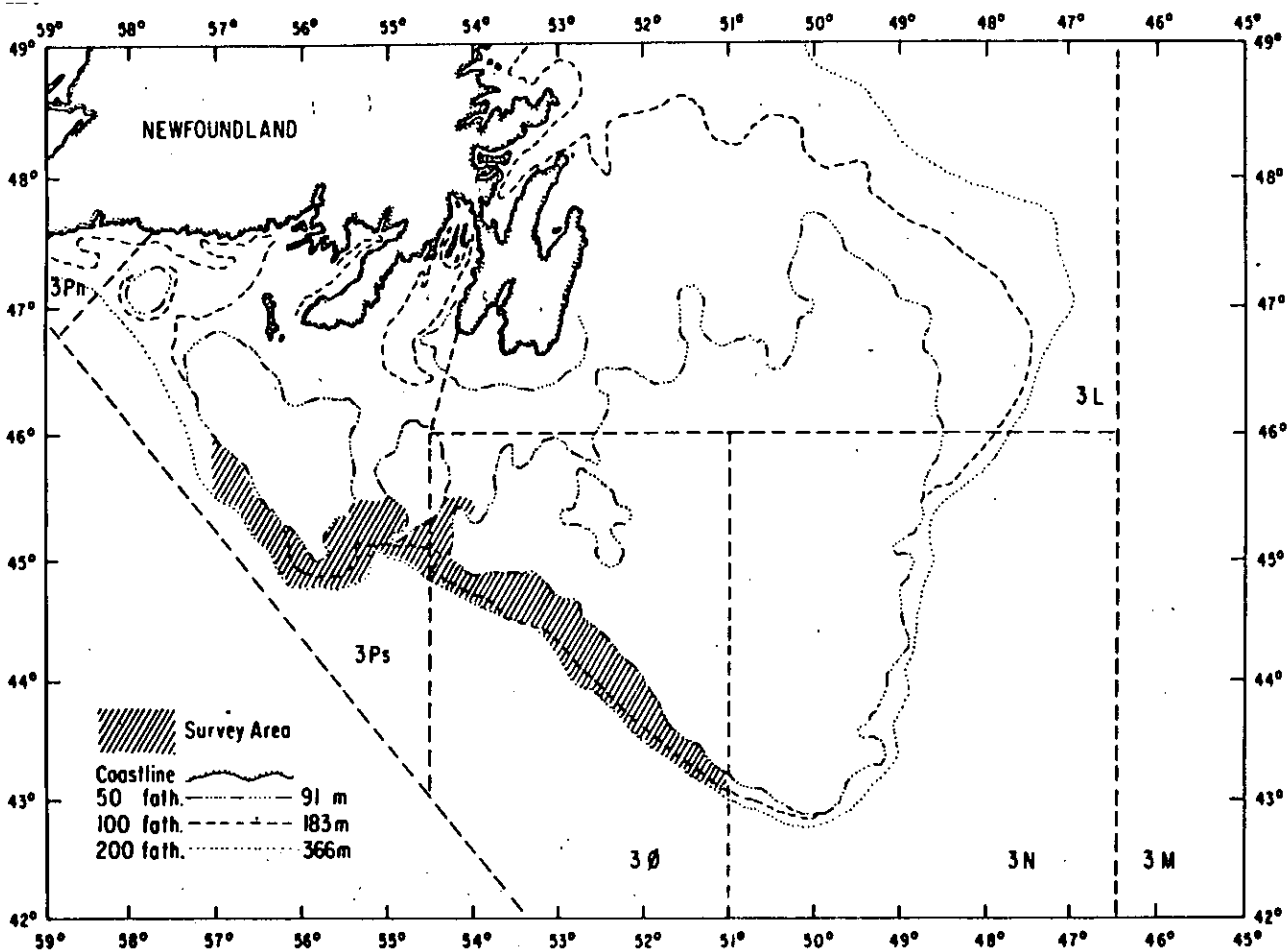


Fig. 1. Area surveyed on E. E. PRINCE, June 15-29, 1984.

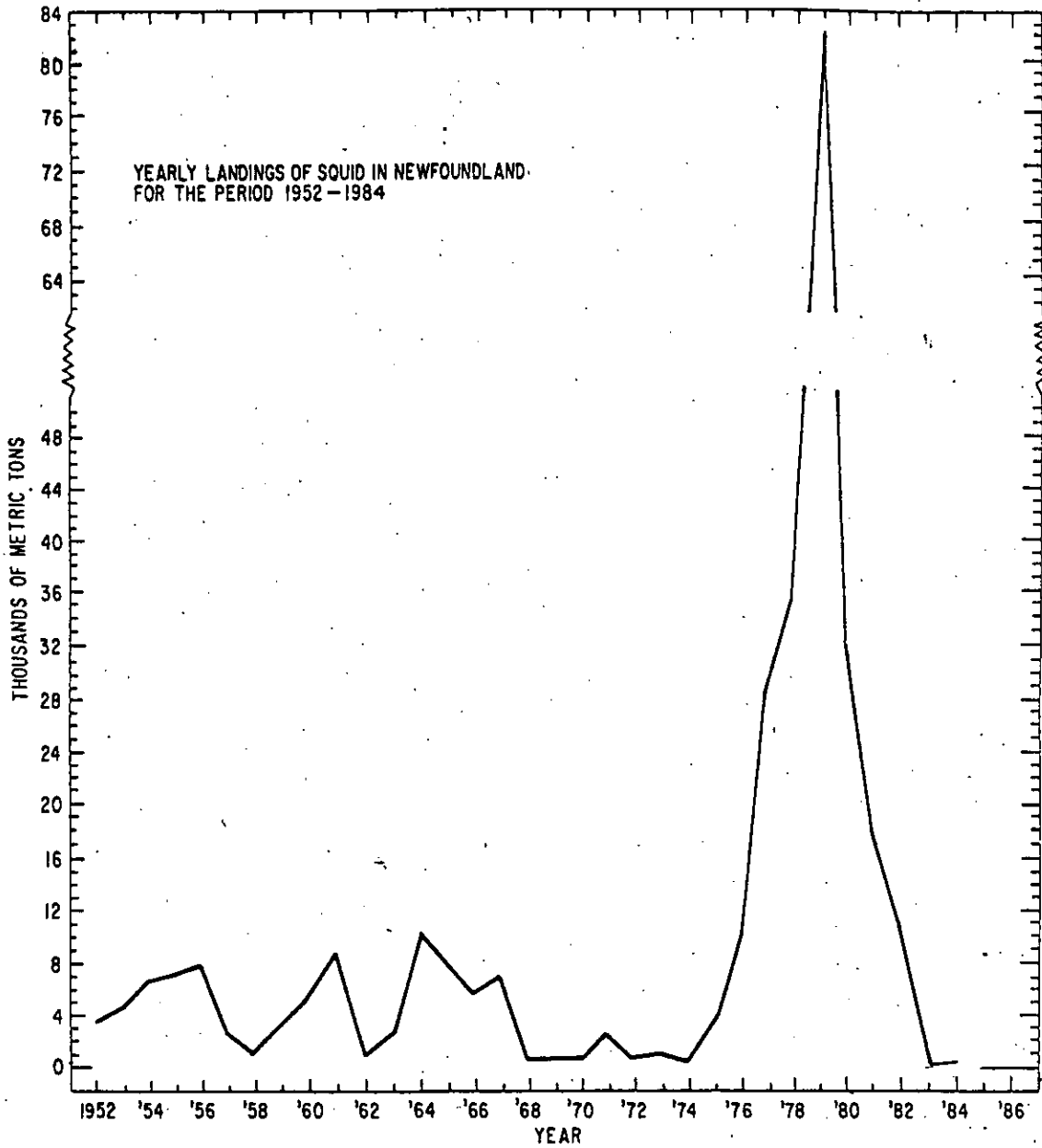


Fig. 2. Yearly catches of squid in Newfoundland for the period 1952-84.

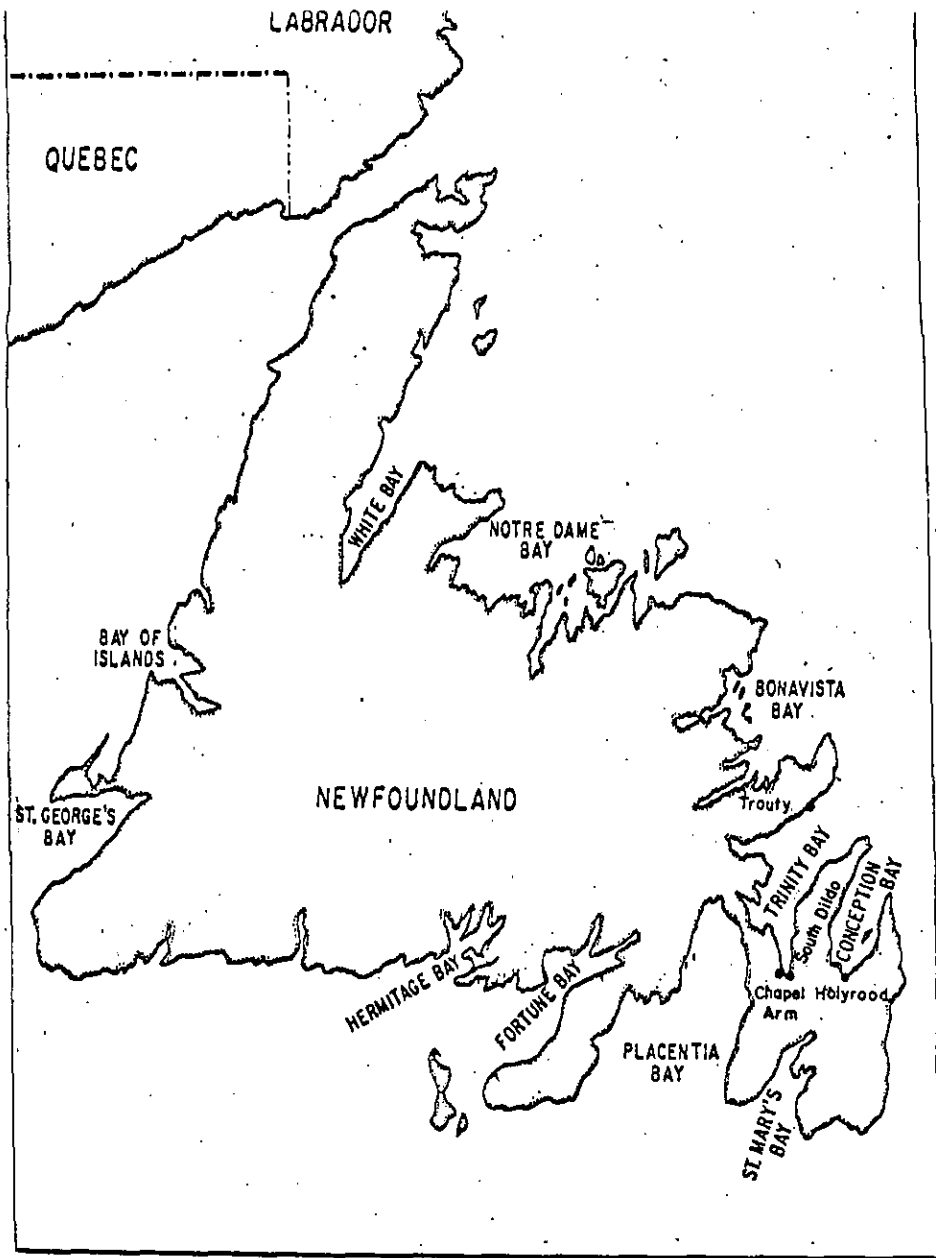


Fig. 3. Map of Newfoundland showing localities referred to in the text.

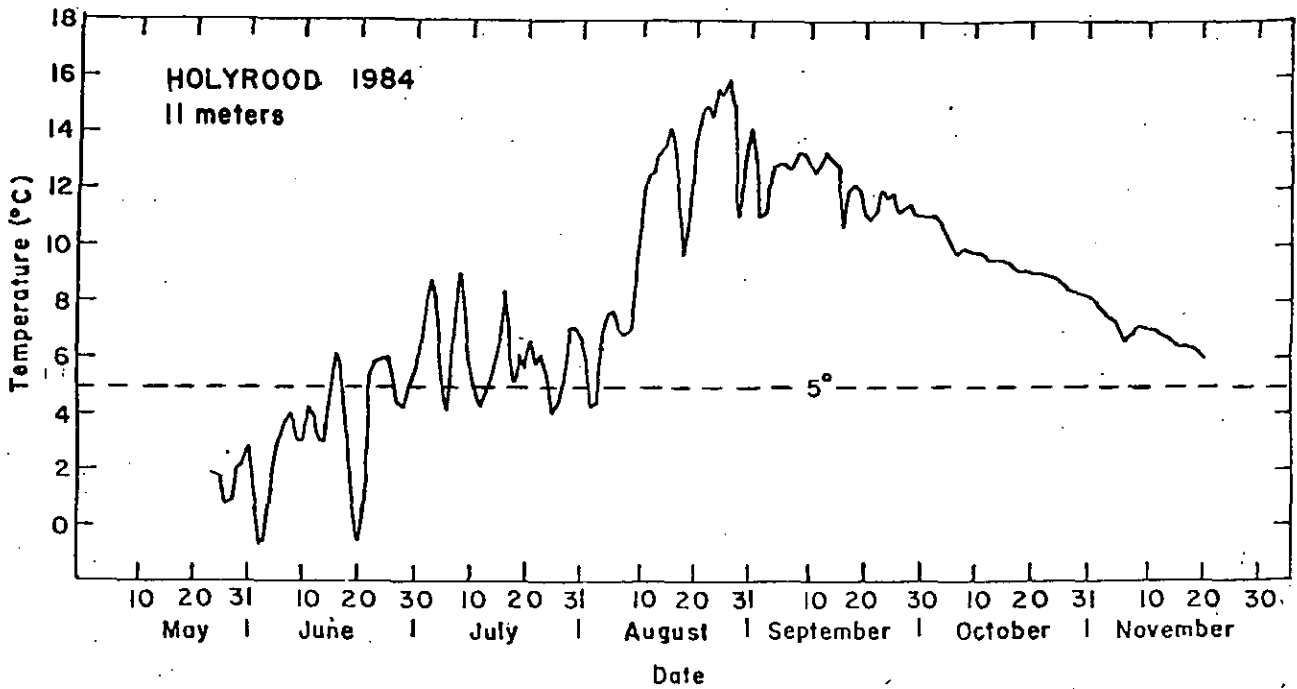


Fig. 4. Average daily temperature at Holyrood for May-November, 1984.

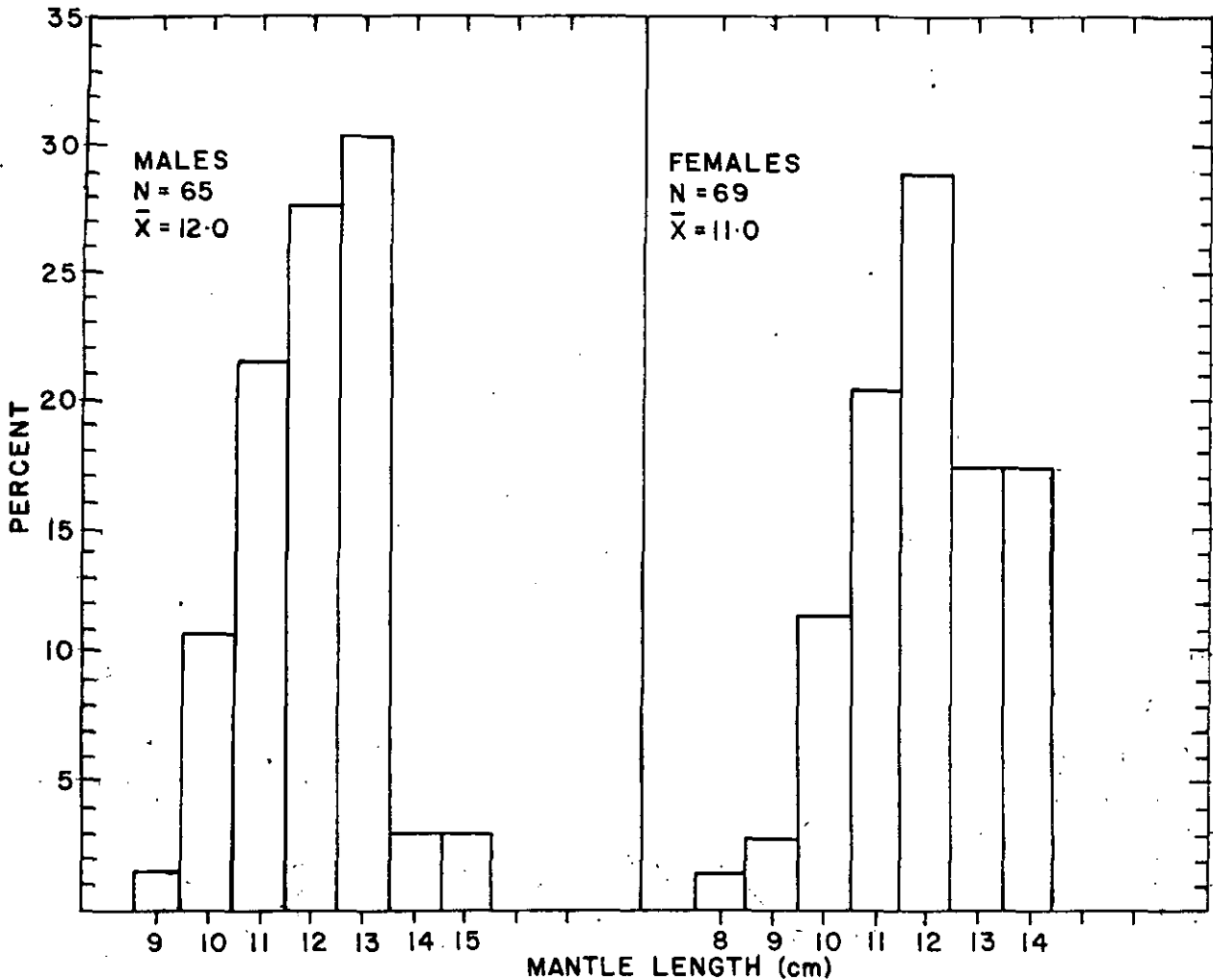


Fig. 5. Length frequency distributions for squid samples collected during June 15-29, 1984 southwest slope of the Grand Bank and St. Pierre Bank (NAFO Div. 30).

