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Breakdown of 1979 Squid Catches in Subarea 3 and Division 4R, with Length and Sex  
Compositions from Offshore and Newfoundland Inshore Commercial Samples

by

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Introduction

This paper presents 1979 commercial squid (*Illex illecebrosus*) landings, broken down by month and ICNAF division. Also included are length frequency distributions, maturity stages, mean lengths and weights and sex composition.

Landings for 1979 are also presented in comparison to those of previous years (Squires 1957, Mercer 1973a, Collins and Ennis 1978, Hurley et al. 1979). The squid catch for 1979 reached a record high level. However, landings reported from the offshore fishery were lower than those of the previous year (Hurley et al. 1979).

Materials and Methods

Monthly inshore landings of squid by ICNAF Div (Fig. 1) were obtained from the Economics and Intelligence Branch, Department of Fisheries and Oceans, Newfoundland Region. Offshore catches in Subarea 3 were made available by the FLASH information system and from logs of developmental charters. All figures for 1979 are preliminary.

During 1979 inshore samples were obtained from commercial catches at Holyrood (ICNAF Div. 3L), Twillingate (ICNAF Div. 3K), Hermitage and Harbour Breton (ICNAF Div. 3Ps). The location of sampling sites is shown in Fig. 2. No samples were obtained at any of these localities before July. Offshore samples (ICNAF Div. 30) were collected by the Foreign Observer Group, Department of Fisheries and Oceans, St. John's.

Dorsal mantle lengths by sex were reported to the nearest half centimeter. Maturities were classified based on the scale proposed by Mercer (1973b). Length frequencies were summarized biweekly for those periods when samples were taken.

#### Landings

Total landings for ICNAF Subarea 3 and Div. 4R, 1979, was 81,820 metric tons (Table 1). This represents an 85 percent increase above landings reported for 1978 (Fig. 3). However, offshore landings (2435 metric tons) are only 48 percent of the 1978 offshore catch. Offshore landings for 1979 comprise only three percent of the total landings. However, this is probably underestimated due to incomplete reporting of squid catches by foreign vessels. The small catch reported for ICNAF Div. 3M (Table 1) serves as evidence of this, as it is known that a substantial squid fishery was executed in that division in 1979.

The record high squid-catch for 1979 is probably due to many factors. These include extended wharfage processing by foreign trawler, increased squid processing facilities, utilization of facilities which were normally used for other species, and others (Hurley 1980).

Overall, fishermen were able to sell more squid in 1979 than in previous years due to expanded processing facilities, however dumping of unsellable catches occurred in some areas. The general opinion of fishermen was that squid abundance in 1979 was comparable to that of 1978. However, this may not be true for all areas.

#### Length Frequencies

Length frequency distributions by sex for Twillingate, Holyrood, Hermitage, Harbour Breton and ICNAF Div. 30 are shown in Fig. 4, 5, 6, 7 and 8 respectively. For males, frequencies were broken down by maturity stages. All females were immature. For ICNAF Div. 30 maturity stages are presented only for the period ending October 15. Biweekly changes in sex composition, mean mantle length, and mean body weight are presented in Fig. 9, 10 and 11 respectively.

As in 1978, mean lengths and weights increased throughout the season for both sexes and all ICNAF divisions. Increase in length between

biweekly periods was smallest late in the season. This is probably due to late-season offshore emigration of larger animals (Hurley et al. 1979).

Literature Cited

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- Hurley, G.V. 1980. Recent Developments in the Squid (Illex illecebrosus) Fishery of Newfoundland, Canada. Marine Fisheries Review (in press).
- Hurley, G.V., P. Beck and J. Drew 1979. Breakdown of Squid catches in ICNAF Sub area 3, 1978, with length and sex composition from offshore and Newfoundland inshore samples. ICNAF Res. Doc. 79/II/27 Ser. No. 5353.
- Mercer, M.C. 1973a. Nominal catch of squid in Canadian Atlantic waters (Subareas 2-4) 1920-68. ICNAF Res. Doc 73/73 Serial No. 3025: 10 p.
- 1973b. Sexual maturity and sex ratios of the omastrephid squid, Illex illecebrosus (Le Sueur) at Newfoundland (Subarea 3). ICNAF Res. Doc. 73/71 Ser. No. 3023: 14 p.
- Squires, H.J. 1957. Squid, Illex illecebrosus (Le Sueur), in the Newfoundland fishing area. J. Fish. Res. Board Can. 14: 693-728.

Table 1. Squid landings (metric tons) at Newfoundland by Division, 1979.

ICNAF Div	MONTH						TOTALS
	June	July	August	September	October	November	
2G							
2H							
2J							
3K		73	1,787	8,711	3,627	11	14,209
3L	13	5,002	11,040	17,611	12,401	2,827	48,894
3M				2			2
3N	8		43	3	7	14	75
3O	12	370	285	979	671	39	2,356
3PS	4	1,917	6,030	4,752	1,709	79	14,491
3PN			853	587	314		1,754
4R		3	27	7	2		39
Total	37	7,365	20,065	32,652	18,731	2,970	81,820

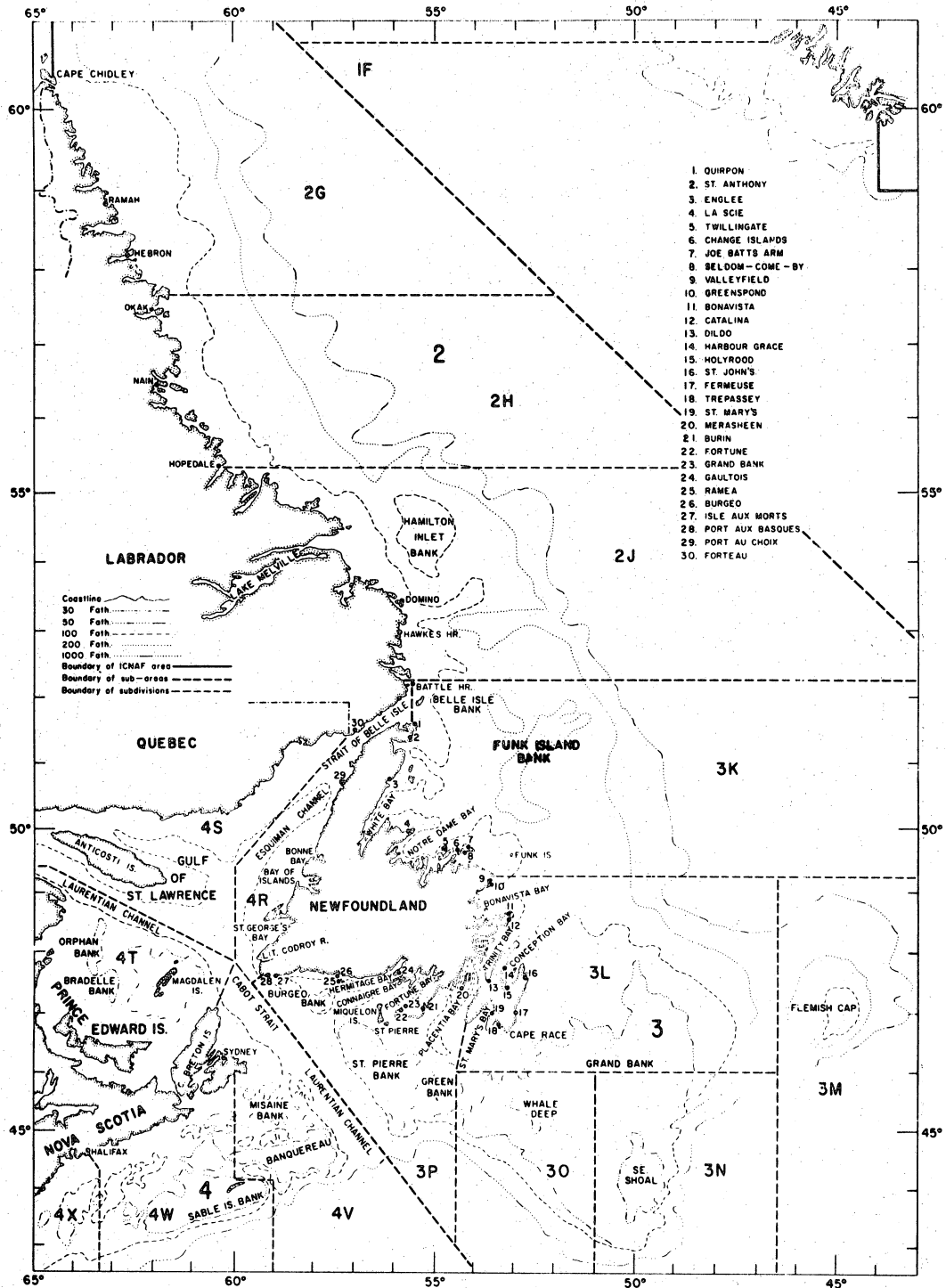


Fig. 1. Map of Northwest Atlantic ICNAF Subareas

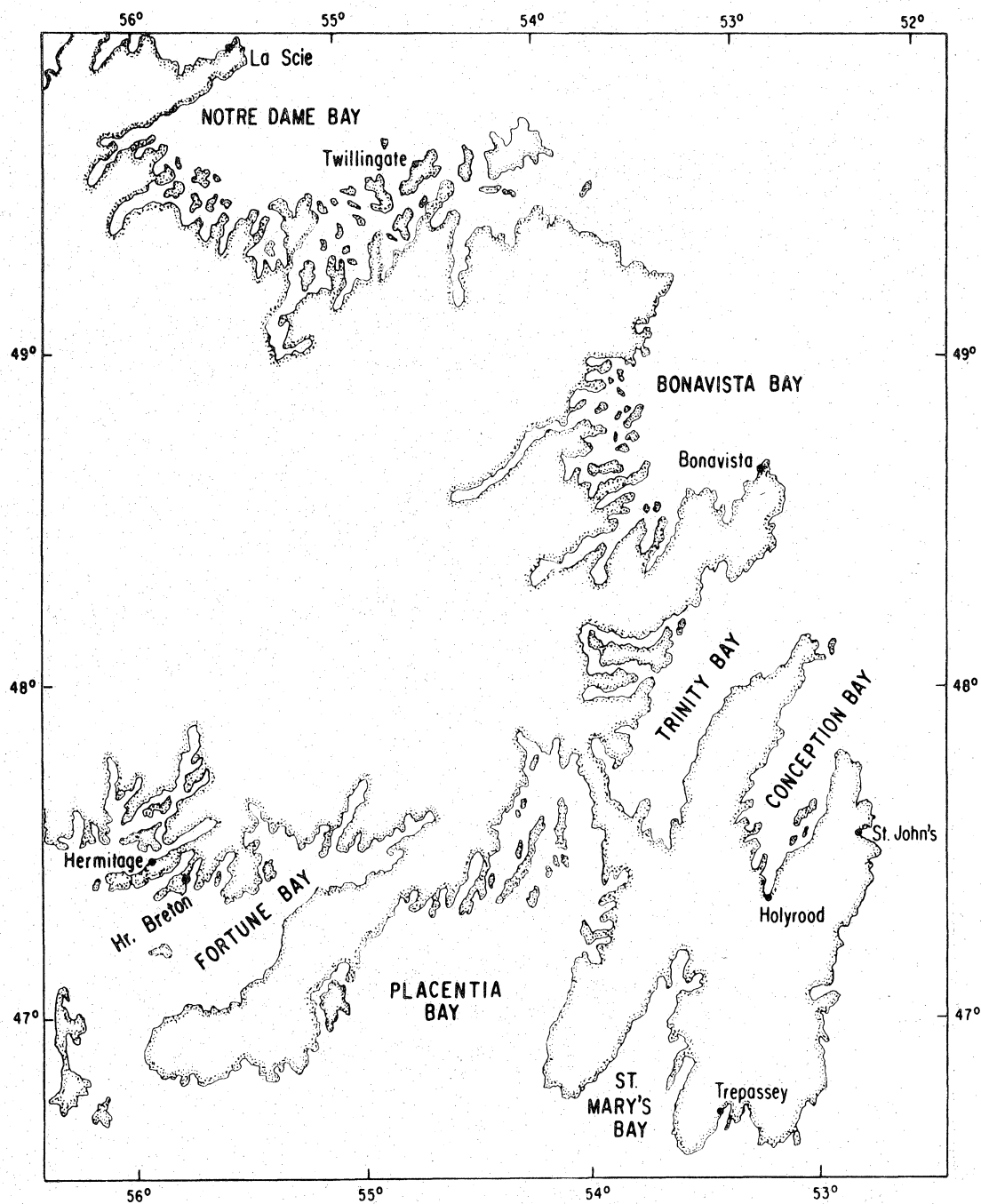


Fig. 2. Map of eastern Newfoundland showing inshore sampling locations.

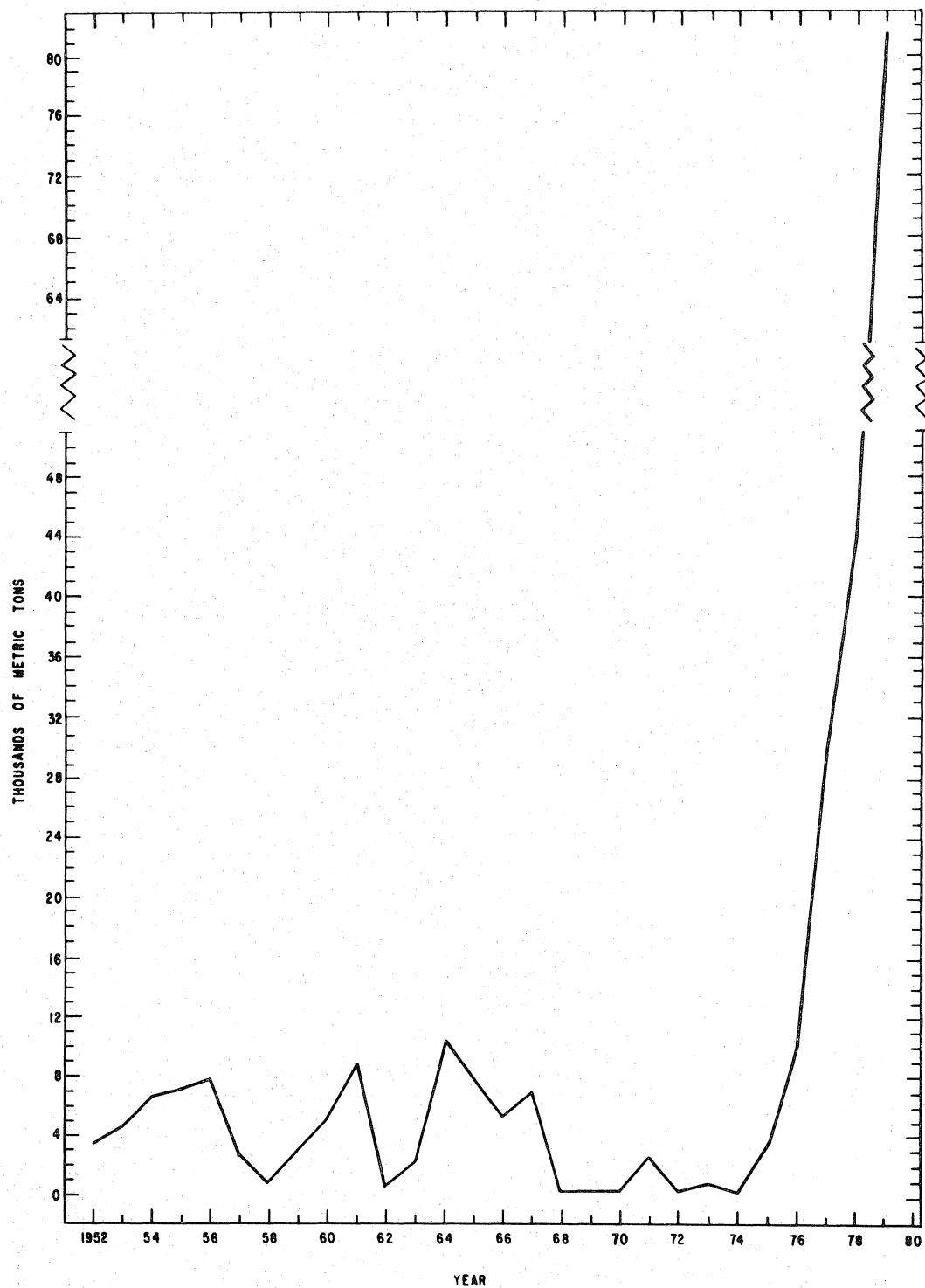


Fig. 3. Yearly landings of squid at Newfoundland for the period 1952-79.

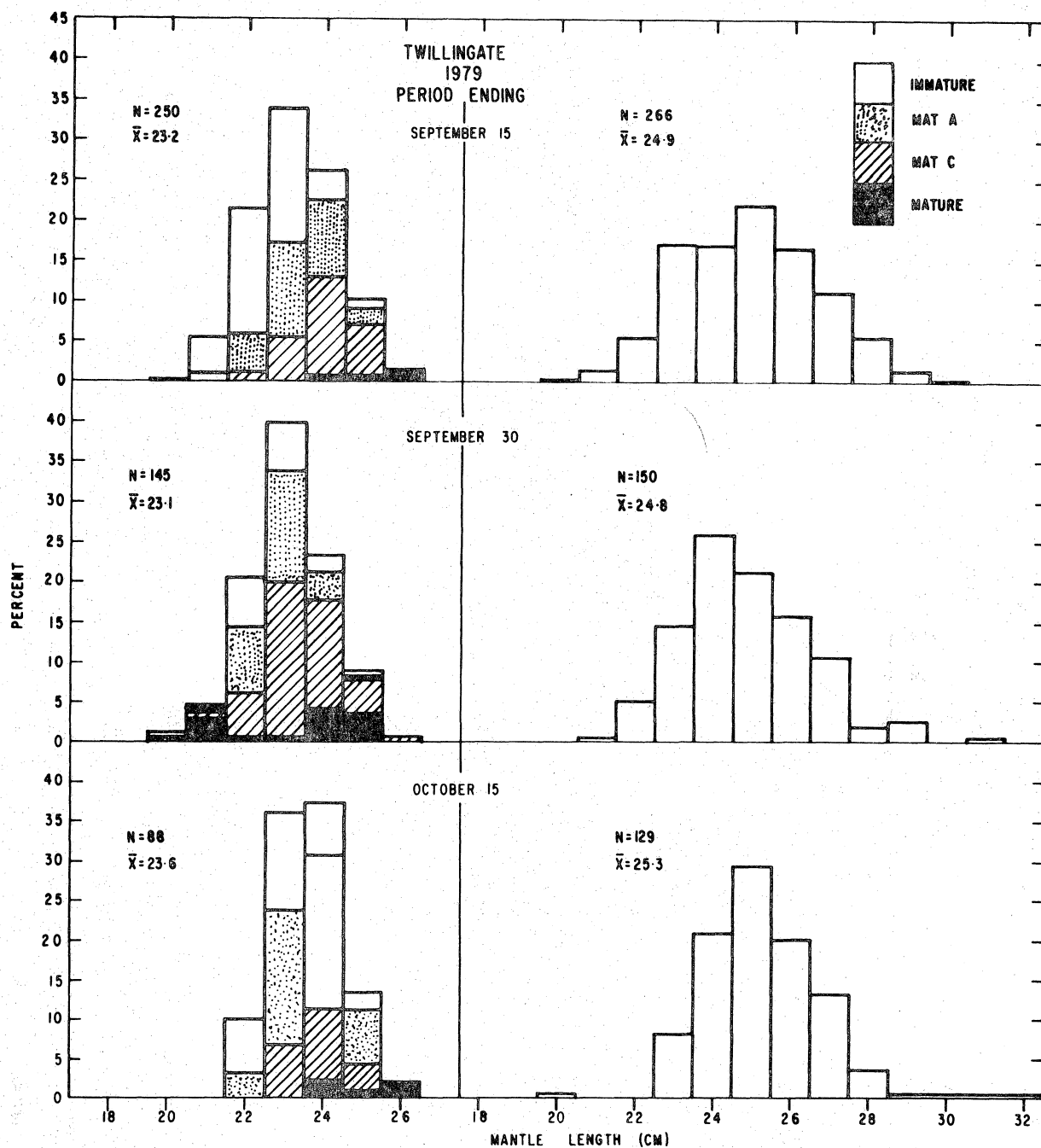


Fig. 4. Length frequencies and maturity stages by sex for biweekly periods in 1979 at Twillingate.



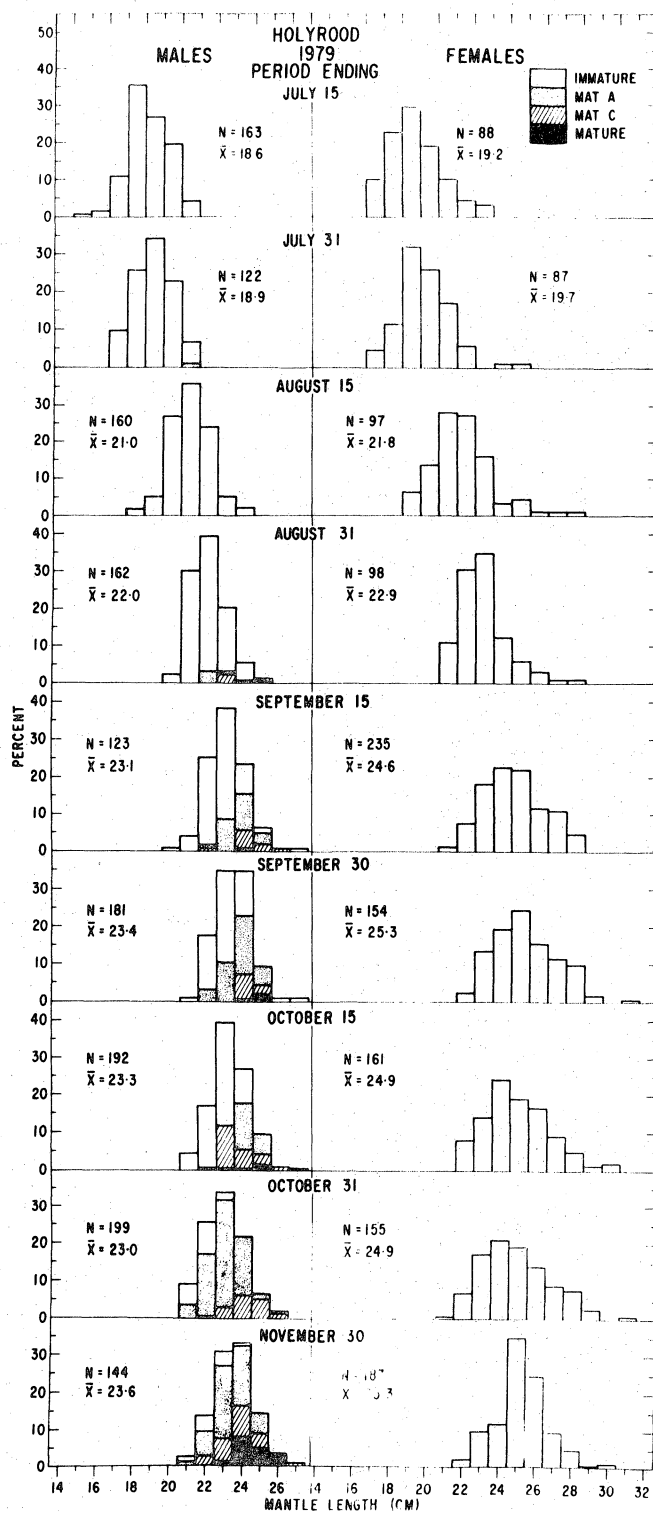


Fig. 5. Length frequencies and maturity stages by sex for biweekly periods in 1979 at Holyrood.

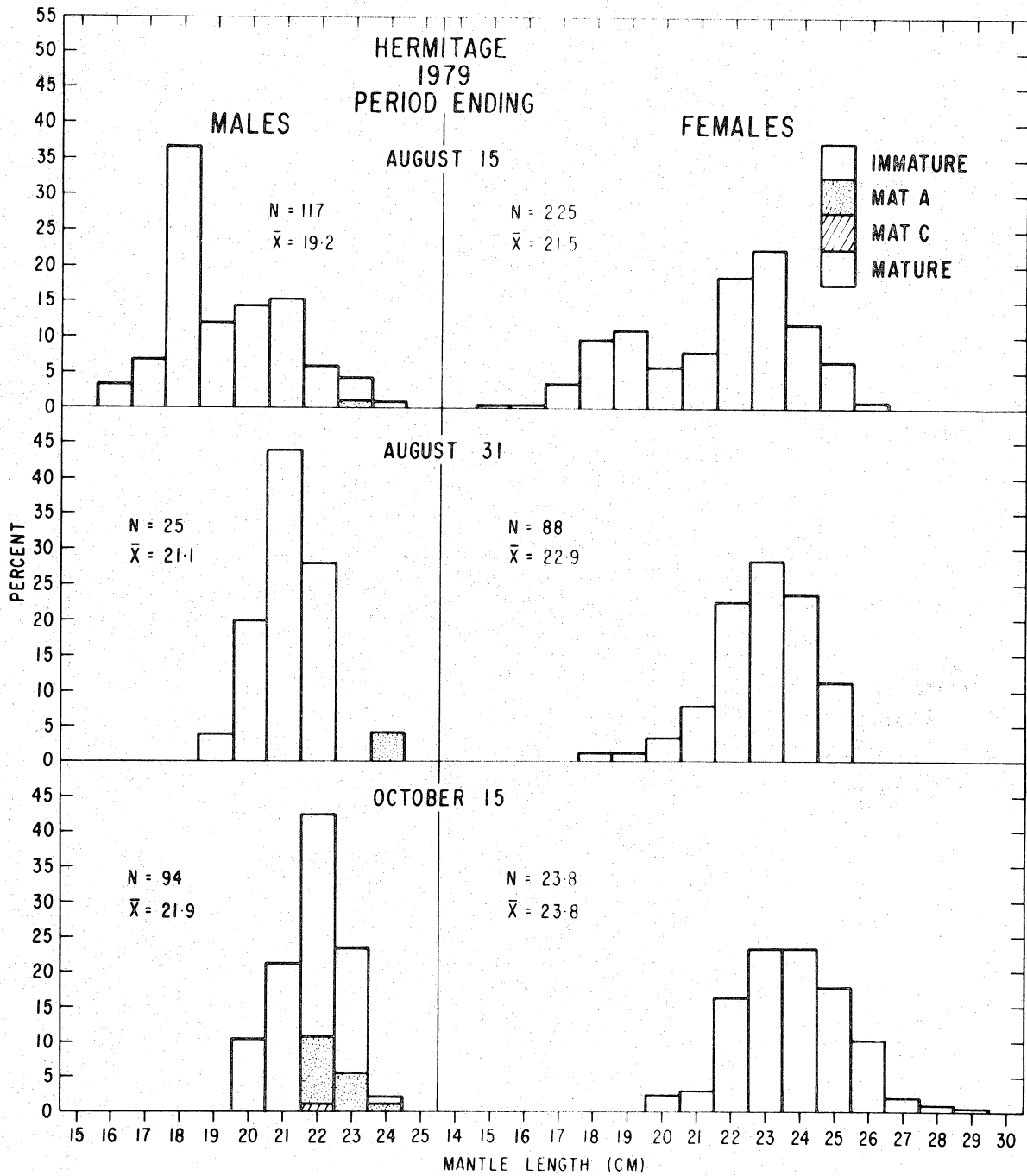


Fig. 6. Length frequencies and maturity stages by sex for biweekly periods in 1979 at Hermitage.

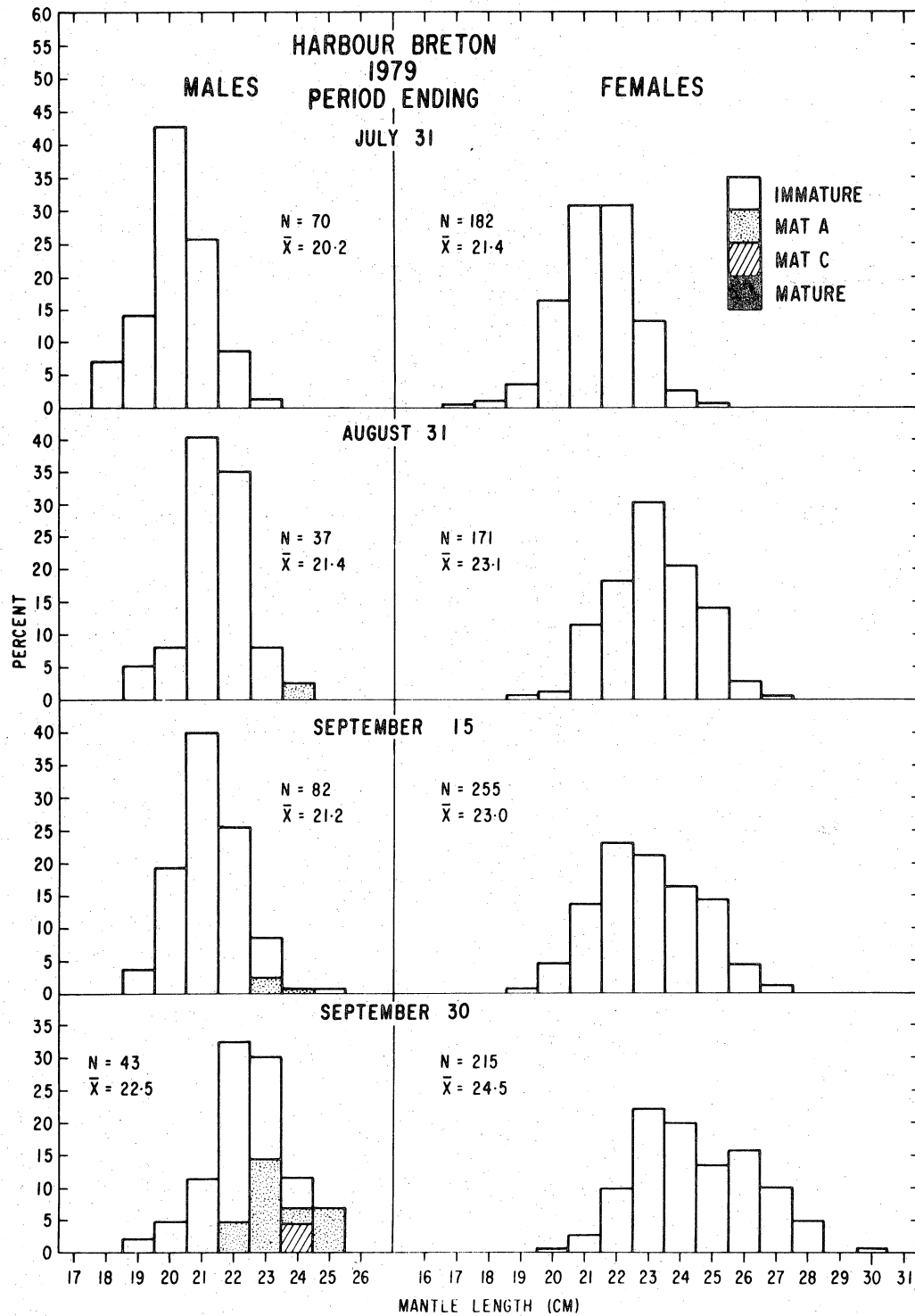


Fig. 7. Length frequencies and maturity stages by sex for biweekly periods in 1979 at Harbour Breton.

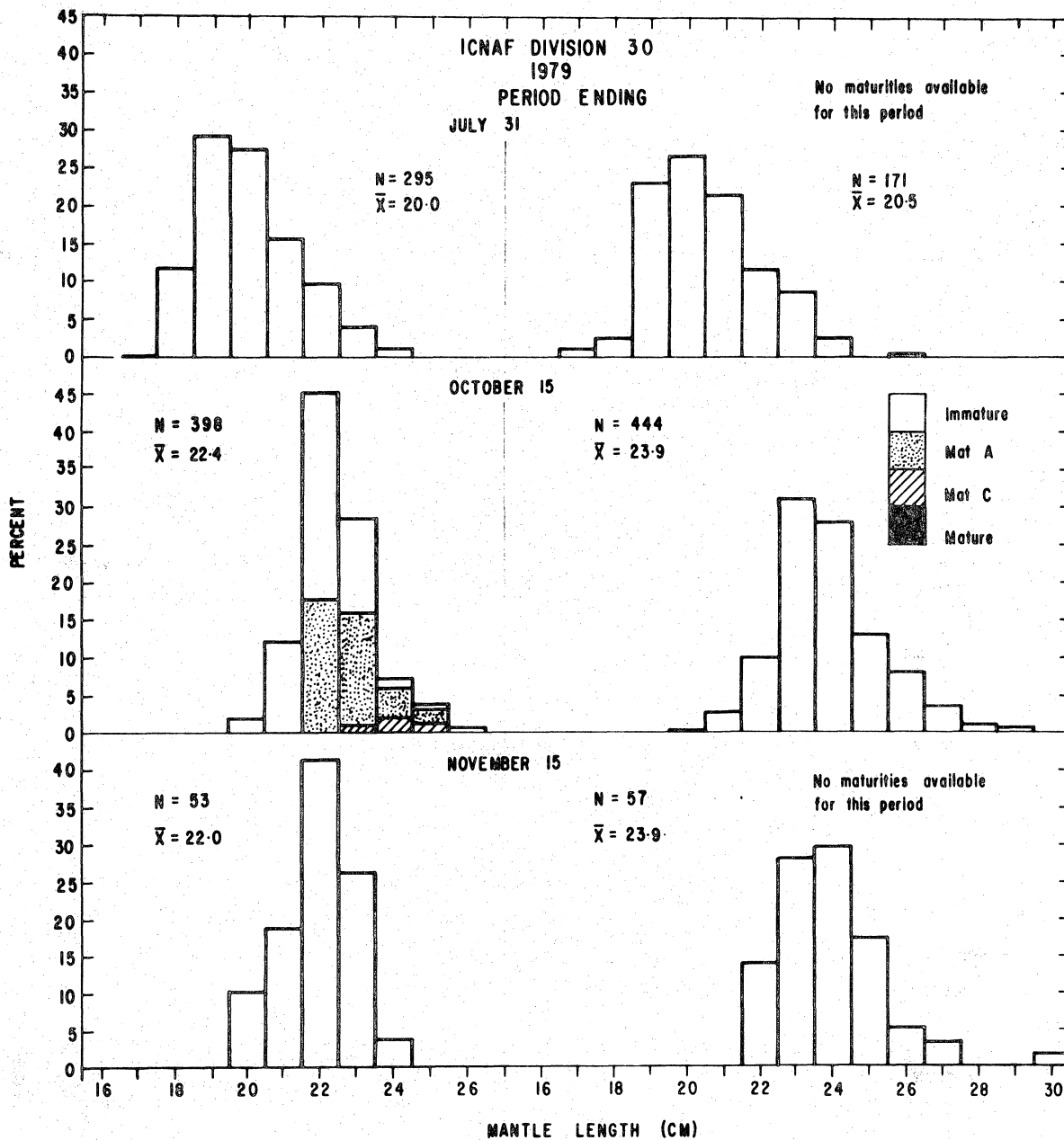


Fig. 8. Length frequencies and maturity stages by sex for biweekly periods in ICNAF Division 30 for 1979.

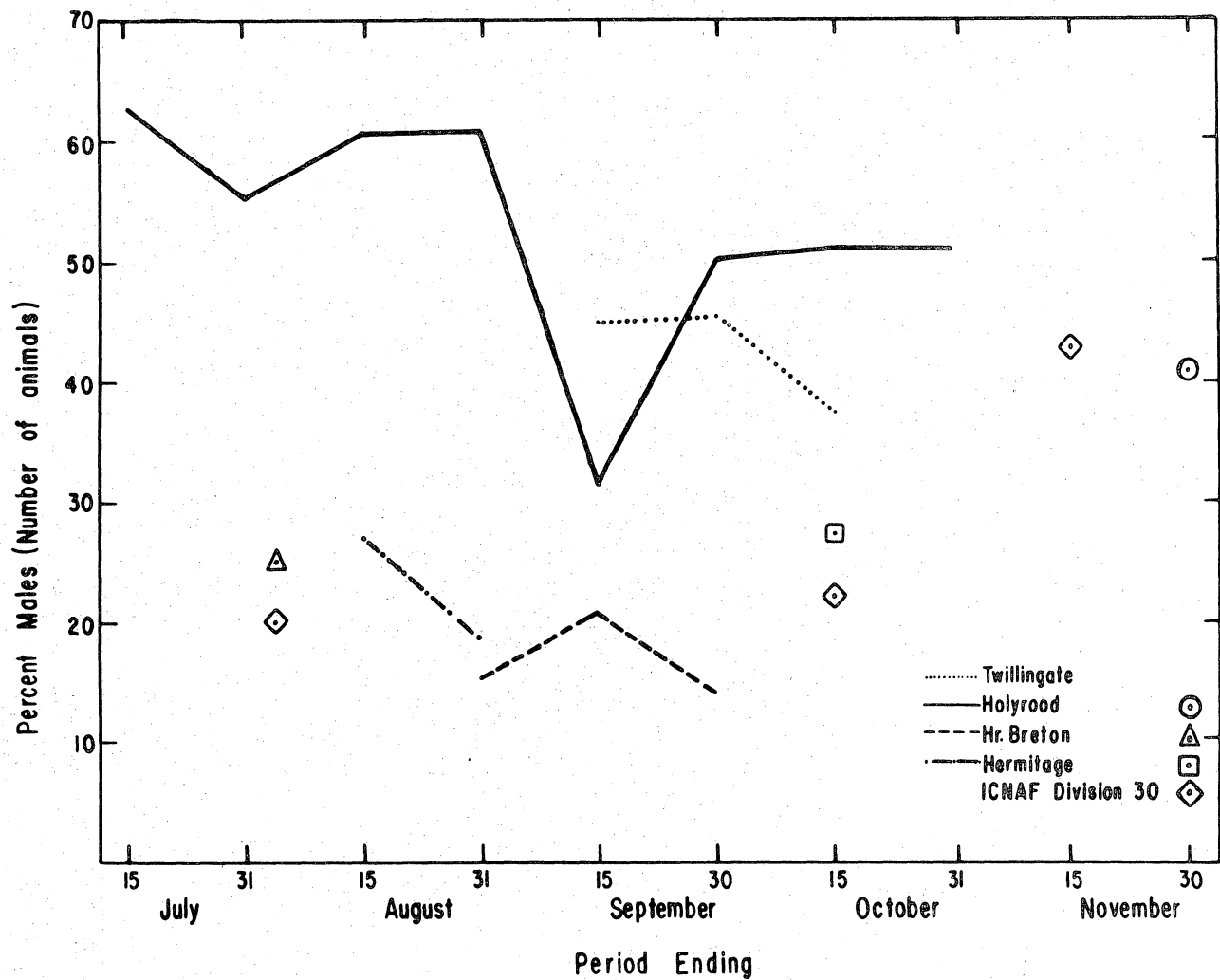


Fig. 9. Percent males over the fishing season at four inshore sampling locations and ICNAF Division 30 in 1979.

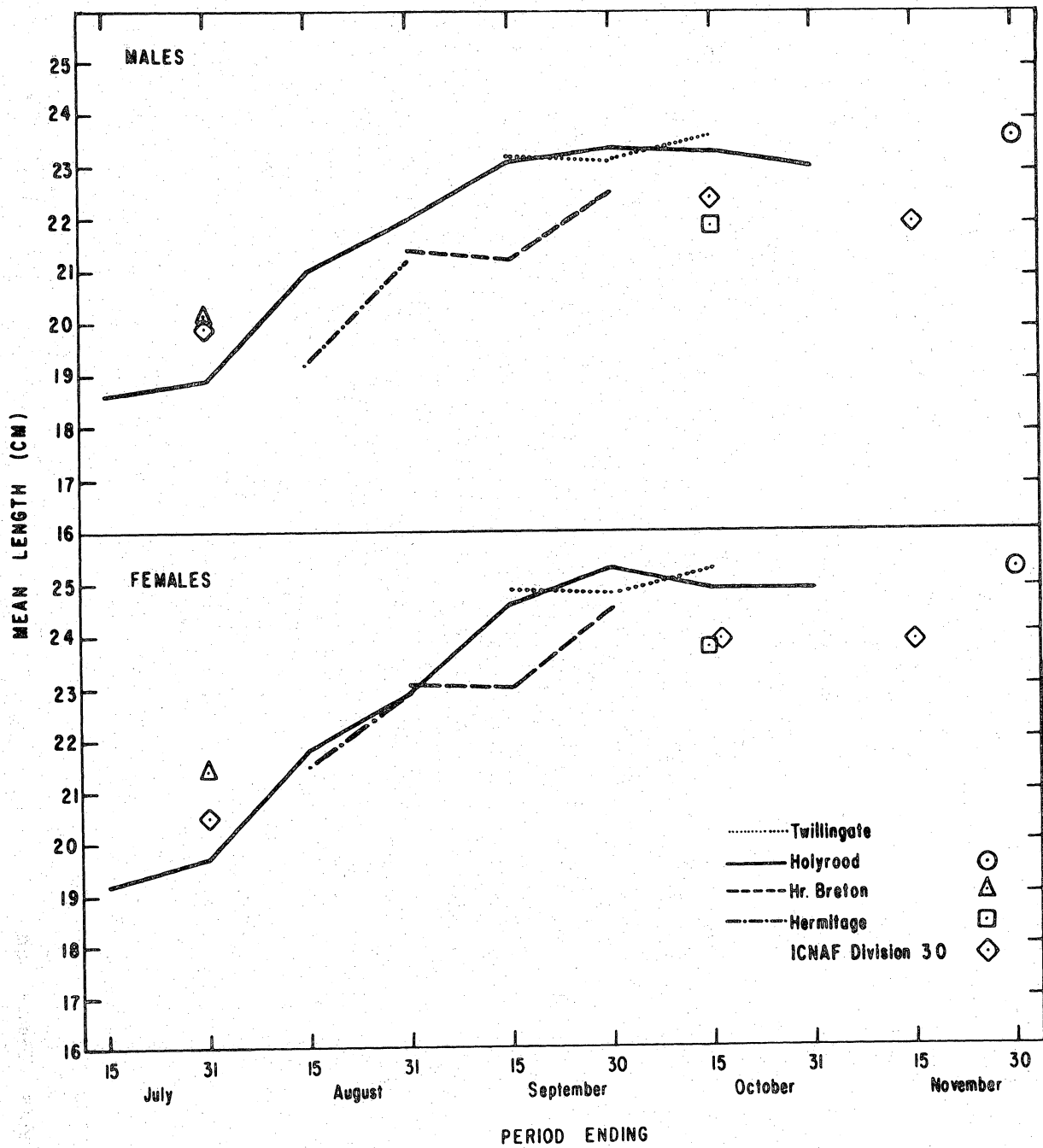


Fig. 10. Mean lengths by sex over the fishing season at four inshore sampling locations and ICNAF Division 30 in 1979.

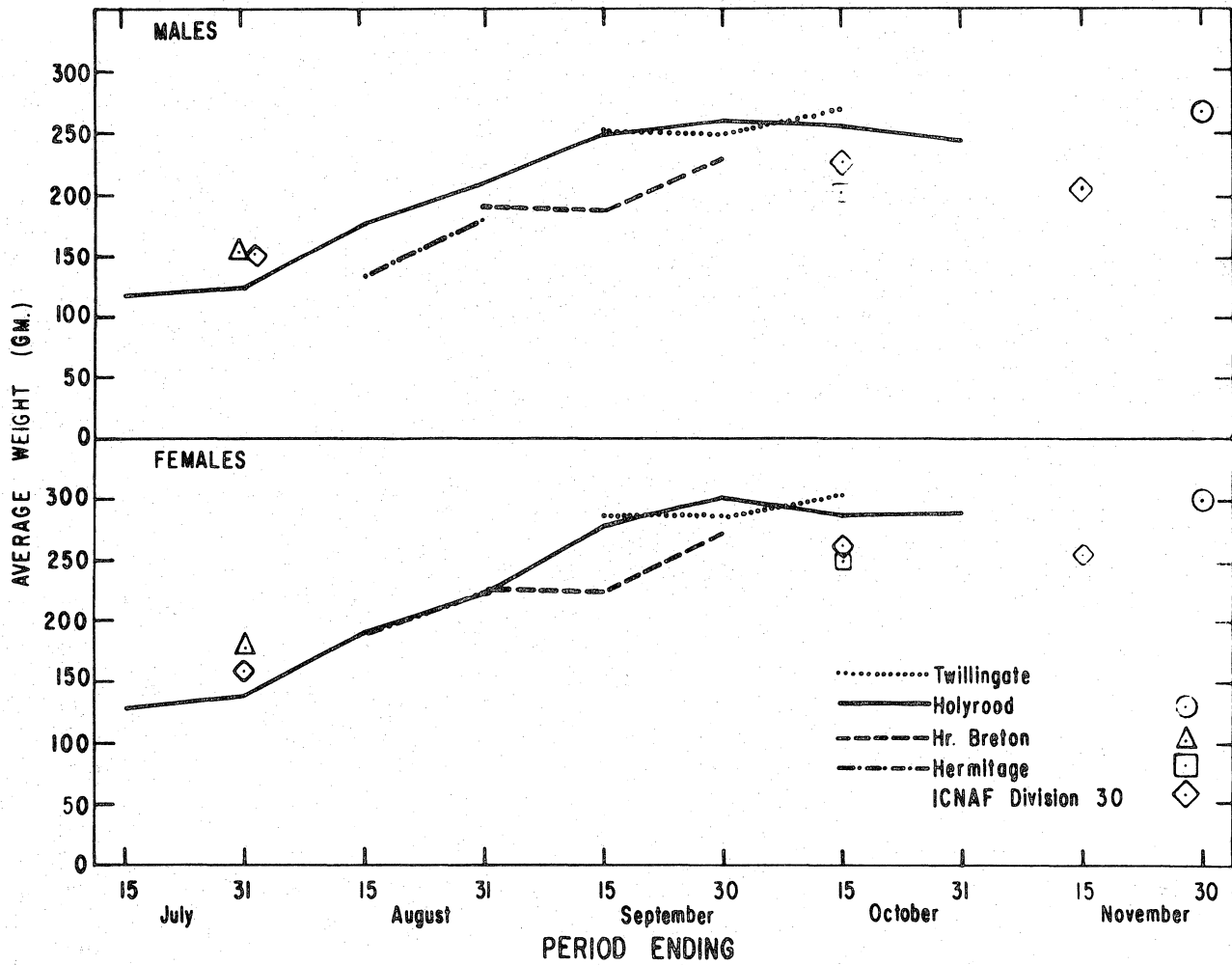


Fig. 11. Mean weight by sex over the fishing season at four inshore sampling locations and ICNAF Division 30 in 1979.