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ICHTHYOPLANKTON DISTRIBUTION AND ABUNDANCE FOR SPECIES COLLECTED ON ICNAF LARVAL HERRING SURVEYS, SEPTEMBER 1971 - FEBRUARY 1977

by

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INTRODUCTION

From 1971 to 1979 the International Commission for the Northwest Atlantic (ICNAF) conducted surveys of larval Atlantic sea herring in the Georges Bank - Nantucket Shoals area (Fig. 1) in order to gain a better understanding of the early life history of herring and its relationship to recruitment and spawning stock size. More than 50 of these surveys, sampling a standard grid of stations (Fig. 2) were conducted at 3 - 4 week intervals throughout the autumn and bimonthly during the winter. The distribution, abundance and length-frequency data for all species of ichthyoplankton have been examined for 30 of these cruises covering the period September, 1971 to February, 1977. The present report is a summarization of this data and is intended to provide a general guide to the distribution and abundance of larval fish in the Georges Bank - Nantucket Shoals region. Sampling and sorting protocols for the period are provided, and the broad scale spatial and temporal variations are briefly discussed. A more detailed analysis (Bolz and Lough 1981) of the data is in preparation and will be forthcoming in the near future.

FIELD SAMPLING METHODS

Vessels, cruise dates, and other pertinent information are listed in chronological order in Table 1 for the 30 surveys included in this study from 1971 to 1977. Cruise tracks for each of the surveys can be found in Lough and Bolz (1979a). The station pattern, gear, and towing procedures have been modified over the course of this study, and sampling designs can be grouped into three periods: (1) 1971, initial ICNAF larval herring surveys with step-oblique tows; (2) 1972-1974, ICNAF surveys over the whole region using the continuous oblique tow profile; and (3) 1975-1977, ICNAF surveys with concentration of sampling effort in the Georges Bank - Nantucket Shoals area.

1971 ICNAF Surveys

When the ICNAF larval herring surveys were initiated in 1971, the plan was to cover the entire Georges Bank - Gulf of Maine with a standard grid of sampling stations 15-20 miles apart, at least once a month from September through December. At least five ICNAF countries have participated (Federal Republic of Germany, France, Poland, USA, USSR). Each survey usually required 15-20 days at sea and averaged about 6-8 stations per day depending on weather and amount of hydrographic and special sampling. Minimum sampling at each station included a bongo net haul and temperature-salinity profiles. A 3.5 knot double-oblique haul was made on station using a 61-cm bongo net sampler (0.505- and 0.333-mm mesh). A Braincon V-fin depressor (122 cm) was used to achieve the desired wire angle of 45° for the relatively high towing speed, and a Bendix or Benthos time-depth recorder was attached to the wire near the

bongo for a permanent trace of the haul profile. General Oceanics flow meters were tied in the mouths of each bongo net to calibrate the amount of water strained. A figure of the gear configuration and other details can be found in Posgay and Marak (1980). The bongo gear was deployed at 50 m/min to a maximum depth of 200 m or to within 5 m of the bottom in shoaler areas. The rate of retrieval was at 20 m/min up to 40 m and changed to a step-oblique profile up to the surface sampling 20 2-m steps, 1 min at each step. On Albatross IV 71-07, the bongo gear was retrieved continuously at 10 m/min in the upper 40 m.

1972-1977 Surveys

Beginning in 1972, the tow profile was changed such that the maximum depth of tow was only to 100 m and a continuous retrieval rate of 10 m/min was used from maximum depth of tow to the surface. In a standard ICNAF bongo haul ranging in duration from approximately 5 to 25 min, each 61-cm bongo net filters between 100 and 1000 m^3 of water, depending on the duration (maximum depth) of the haul.

Extrusion of small larvae through the mesh and escapement of large larvae are two possible sources of errors in the ichthyoplankton sampling. Extrusion can be a significant problem for the retention of relatively small organisms, expecially at high towing speeds (Smith and Richardson 1977). Previous studies have indicated that larvae smaller than 7.5 mm (standard length) may be extruded through the 0.333-mm mesh net (Colton et al. 1979). As the extent of extrusion of the small larvae has not yet been estimated adequately from the samples, it is probably a source of bias in estimates of recently hatched larvae. Another possible bias is the fact that samplers do not normally get closer than 5 m to the bottom and thus may miss larvae as noted by Colton and Green (1975) and Wood (1975).

The size of ichthyoplankton at which significant escapement occurs from the 61-cm bongos at 3.5 knots has not been adequately determined, but it is probably a major problem for larger larvae. A comparison of night to day catches of larval herring by Lough et al. (1980) indicated that escapement occurs after larvae are 12 mm in length. The problem becomes serious after 30 mm and cannot be easily corrected for by a simple linear regression estimation of night/day ratios. Due to the number and variability of species under consideration, it was not felt feasible at this time to compute a correction factor for the escapement problem. The towing speed of 3.5 knots is a compromise between slow hauls to minimize extrusion of small larvae and fast hauls to minimize escapement of larger larvae. A discussion of bongo het retention rates as effected by towing speed and mesh size can be found in Colton et al. (1979).

If February 1974 the USA (NEFC) began a series of February surveys to examine the overwinter survival of herring larvae. In June 1974 the ICNAF Environmental Working Group recommended more intensive studies of factors controlling the recruitment process of sea herring. A small bongo sampler (20 cm) with fine mesh nets (0.165- and 0.053-mm mesh; the 0.053-mm net was replaced with a 0.253-mm net the following year)

was added to the 61-cm bongo array starting in autumn 1974. Since the 1975 season, sampling effort has been concentrated on the Georges Bank - Nantucket Shoals area (Fig. 2) so that more frequent and intensive surveys could be made in this area of traditionally heavy herring spawning. A finer grid of plankton stations was employed in areas of heavy herring spawning aggregation, and more complete hydrographic coverage, as well as measures of nutrients, chlorophyll, and primary production were added when possible.

SAMPLE PROCESSING

Total ichthyoplankton for the 0.333-mm mesh, 61-cm bongo samples was sorted and identified by the Polish Sorting Center (Morski Instytut Rybacki) Szczecin, Poland, established in 1974. All larvae were measured (standard length) to the nearest 0.1 mm. In those cases where large numbers of a species were found in a sample, a subsample of 100 individuals was measured to establish the size frequency distribution of the total number. Due to presorting and other discrepancies, it was necessary to substitute 0.505-mm mesh data for larval herring (*Clupea harengus*) on several of the cruises and for all ichthyoplankton on two of the cruises (Table 1). A complete discussion of the problems encountered can be found in Bolz (1980). The standard MARMAP sorting protocols used on the samples are given in Sherman et al. (1976) and Sherman and Colton (1976). Where specific identity of larvae could not be ascertained, separation was made to the generic, familial or ordinal level. The systematic arrangement (Table 2) used in the present paper conforms in general to that found in Greenwood et al. (1966), with the exception of placing the Ophidiidae and Carapidae in the order Ophidiiformes as in Cohen and Nielsen (1978). Indices to common and scientific names can be found following the tables and figures at the end of the paper.

Basic station, haul, and standardized larval data from each cruise were processed through the MAPMAP Biostatistical Unit, NEFC Narragansett, RI, and presented to us in the form of various standard computer summaries and plots (Station Activity Summary, New Tow Data, Plankton Summary - station abundance of larvae by length categories). Examples of these computer outputs can be found in Lough (1976). Various internal audits have been incorporated into the computer routines to provide quality control of the data in addition to the initial quality control procedures prior to computer entry.

PRESENTATION OF DATA

All ichthyoplankton were standardized to number per 10 m^2 by 1-mm length classes. Cruise mean abundance and standard deviation of all positive tows was then computed and tabularized by species (Tables 3-211).

The mean length, standard deviation and length range also were calculated and recorded along with the abundance data. The references at the bottom of the tables are a partial listing of prior recorded occurrences of the taxa, either as larvae or adults, in the Georges Bank - Nantucket Shoals area.

Composite distribution and abundance maps were constructed for all taxa (Figures 3-211). The maps are intended to serve as a general guide to the distribution of species in the Georges Bank - Nantucket Shoals area based on their occurrences over the study period. The greatest abundance found at a given station during the six years is recorded on the map to provide an estimate of the highest concentration likely to be encountered and to delineate possible spawning areas for some species. Due to seasonal, annual and spatial variability, mean abundance per station greatly underestimated the number of larvae possible at a sampling site and was not used. Based on the observed distribution patterns, the study area was divided into four subareas (Fig. 2): 1) Gulf of Maine - north of the 100-m isobath; 2) Georges Bank - within the 100-m isobath extending from 66°W to 68°45'W; 3) Nantucket Shoals - within the 100-m isobath extending from 68°45'W to 70°30'W; and 4) Shelf/Slope Water - south of the 100-m isobath. Table 2 summarizes the distribution and relative abundance of all species by subarea. More detailed cruise maps for dominant species can be found in Bolz and Lough (1981, in preparation).

DISCUSSION

A total of 209 taxa, comprising 75 families and 13 orders, were identified in the Georges Bank - Nantucket Shoals area. Since 63 forms were identified to only the familial level, resulting in possible redundancies, the actual number of species is probably lower than the total reported. Despite the high diversity of taxa for the entire period, greater than 80% of the total abundance of ichthyoplankton on each survey was composed of only three or four dominant species. A large number of the taxa are subtropical and tropical forms which have been dispersed northward by the Gulf Stream and were found in very low numbers. These fish occurred primarily in the Shelf/Slope Water; species of Myctophidae and Paralepididae were the most prevalent expatriated forms. As has been noted by Colton and Stoddard (1972) and supported by the present study, these species occurred most abundantly in the late summer and the autumn when Shelf/Slope Water temperatures were at a maximum.

Only five species (*Clupea harengus*, *Pollachius virens*, *Urophycis* spp., *Merluccius bilinearis*, and *Ammodytes* spp.) had distributions of high abundance encompassing the entire area at some point in time during the sampling season. Four taxa (*Ceratoscopelus maderensis*, Ophidiidae, Gobiidae, and *Citharichthys arctifrons*) were found in high concentrations in all subareas, except the Gulf of Maine. Seven species were abundant

in two of the subareas; 12 had high numbers only off the southern edge in the Shelf/Slope Water; and two were abundant only on Nantucket Shoals. Of the 18 most abundant species originating within the 100-m isobath, all but six occurred at one period or another in high concentrations in the Shelf/Slope Water, indicating some southerly transport of larvae off the bank into deeper water. The diversity of species was very high in the Shelf/Slope Water and on Nantucket Shoals, somewhat lower on Georges Bank and very low in the Gulf of Maine.

The succession of the dominant species through the autumn and winter remained fairly constant for all six years despite fluctuations in abundance. On Nantucket Shoals *Merluccius bilinearis* and *Urophycis* spp. were dominant in early autumn, *Clupea harengus* in mid to late autumn and *Pollachius virens* and *Ammodytes* spp. in winter. Succession of dominants on Georges Bank showed a similar pattern, with the addition of *Scophthalmus aquosus* in early autumn for all years and *Notolepis rissoi* in December, 1976. The seasonal abundance of the total ichthyoplankton fluctuated by a factor of five over the six years, reaching highs of greater than 50×10^{12} individuals in 1973 and 1974 and lows of just over 10×10^{12} in 1972 and 1976.

A detailed analysis of the seasonal and yearly fluctuations in the distribution and abundance of ichthyoplankton is in preparation (Bolz and Lough 1981). Other studies of the ichthyoplankton community in the Georges Bank - Nantucket Shoals area which have utilized data from the ICNAF larval herring surveys are Colton and Byron (1977), Colton et al. (1978), Smith et al. (1978, 1979), Grimm (1978), Joakimsson (1978) and Bolz et al. (1980). A detailed data summary of larval herring (*Clupea harengus*) can be found in Lough and Bolz (1979a).

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Figure 1. The Gulf of Maine. (Depths are in meters).

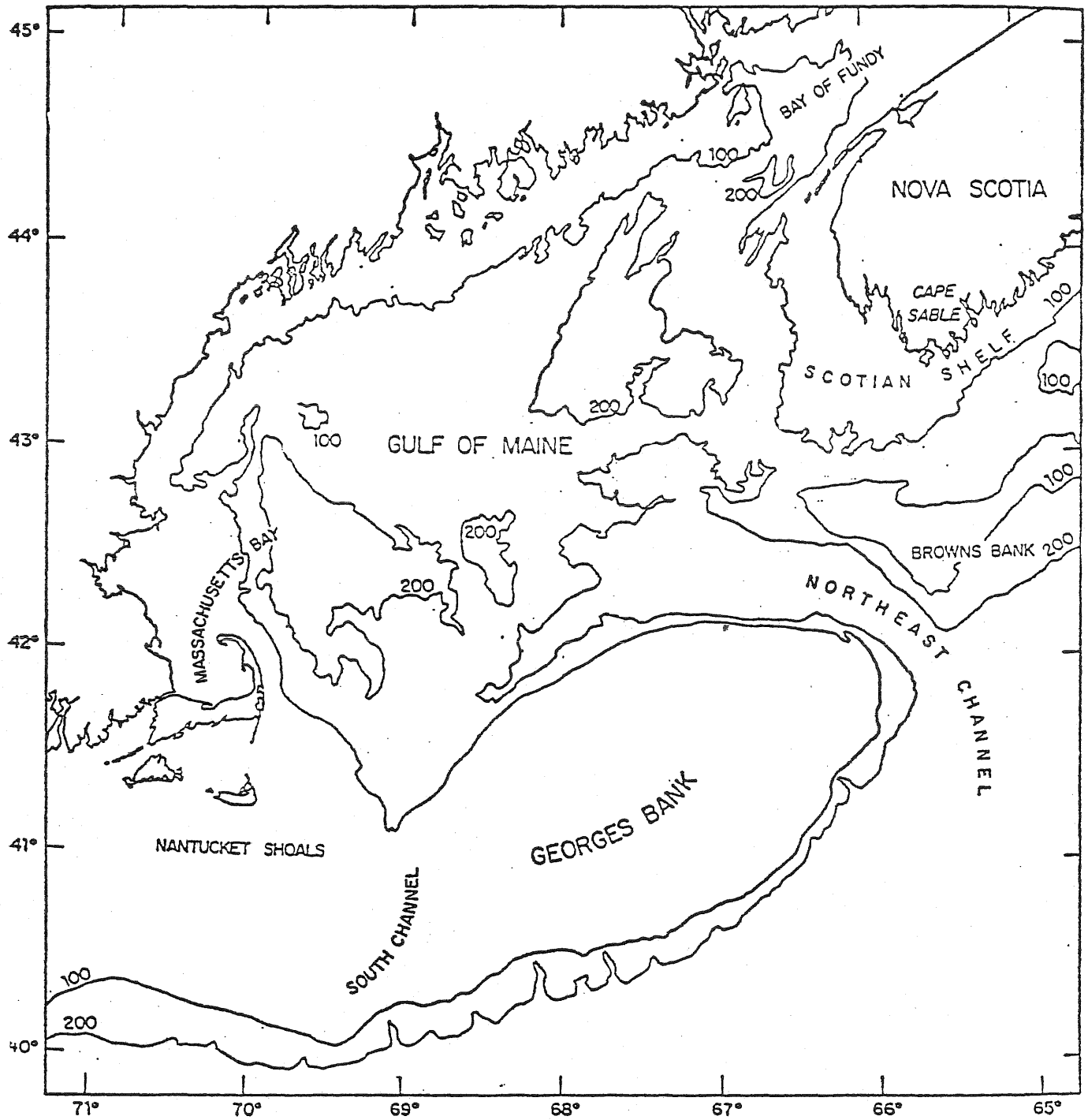


Figure 2. Station locations (dots) and geographical subdivisions of Georges Bank, Nantucket Shoals, Gulf of Maine, and Shelf/Slope Water used for abundance estimates of ichthyoplankton.

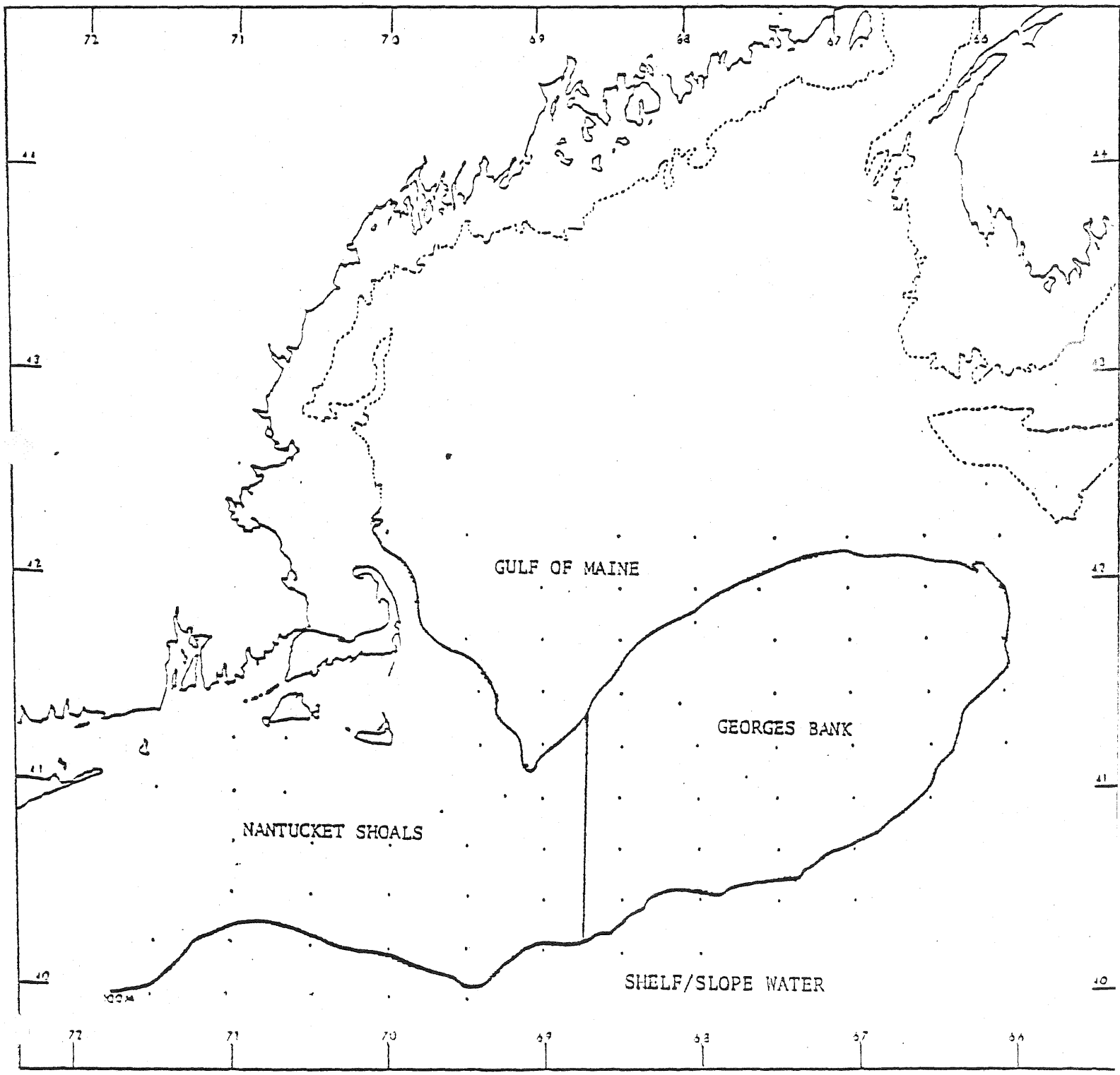


Table 1. Summary of cruise data, 1971-1977, used in abundance estimates of ichthyoplankton in the Georges Bank - Nantucket Shoals area (gear: 61-cm bongo; mesh size: 0.333 mm).

	Vessel	Cruise Number	Dates	Number of stations used in analysis
			1971	
1)	Delaware II*	71-04	21 Sep. - 04 Oct.	72
2)	Viandra	71-01	09 - 25 Oct.	64
3)	Walther Herwig	71-01	28 Oct. - 12 Nov.	71
4)	Albatross IV*	71-07	02 - 17 Dec.	71
			1972	
5)	Argus*	72-01	22 - 30 Sep.	45
6)	Wieczno	72-01	02 - 28 Oct.	80
7)	Argus	72-02	12 - 28 Oct.	75
8)	Anton Dohrn	72-01	31 Oct. - 12 Nov.	79
9)	Albatross IV**	72-09	02 - 20 Dec.	81
			1973	
10)	Cryos	73-01	16 - 28 Sep.	44
11)	Wieczno*	73-40	28 Sep. - 20 Oct.	79
12)	Belogorsk	73-01	15 Oct. - 01 Nov.	81
13)	Walther Herwig	73-43	28 Oct. - 08 Nov.	81
14)	Albatross IV	73-09	04 - 20 Dec.	82
15)	Albatross IV**	74-02	11 - 22 Feb.	57
			1974	
16)	Cryos	74-04	07 - 24 Sep.	65
17)	Prognoz	74-01	18 - 30 Oct.	79
18)	Anton Dohrn	74-01	16 - 23 Nov.	70
19)	Albatross IV	74-13	04 - 19 Dec.	83
20)	Albatross IV	75-02	12 - 28 Feb.	79
			1975	
21)	Belogorsk*	75-02	25 Sep. - 08 Oct.	80
22)	Belogorsk	75-03	17 - 30 Oct.	75
23)	Anton Dohrn	75-187	01 - 18 Nov.	85
24)	Albatross IV	75-14	05 - 17 Dec.	81
25)	Albatross IV	76-01	10 - 25 Feb.	82
			1976	
26)	Belogorsk	76-01	04 - 11 Oct.	50
27)	Wieczno	76-03	14 Oct. - 03 Nov.	82
28)	Anton Dohrn	76-02	15 - 29 Nov.	77
29)	Researcher	76-01	27 Nov. - 11 Dec.	74
30)	Mt. Mitchell	77-01	13 - 24 Feb.	82
				Total 2206

* 0.505-mm mesh data substituted for larval herring (*Clupea harengus*).
** 0.505-mm mesh data substituted for all ichthyoplankton.

Table 2. Taxonomic classification of ichthyoplankton in the Georges Bank - Nantucket Shoals area and the relative likelihood (rare, common, abundant, very abundant) of their being encountered during the autumn and winter seasons.

	Nantucket Shoals	Georges Bank	Shelf/ Slope	Gulf of Maine
Order Elopiformes				
Suborder Elopoidei				
Elopidae				
Elops saurus		Rare	Rare	
Unidentified			Rare	
Order Anguilliformes				
Unidentified	Rare	Rare	Rare	
Suborder Anguilloidei				
Anguillidae				
Anguilla rostrata		Rare	Rare	Rare
Anguilla sp.			Rare	
Unidentified			Rare	
Congridae				
Ariosoma balearicum			Rare	
Conger oceanicus	Rare			
Conger sp.			Rare	
Unidentified	Rare		Common	
Muraenidae				
Unidentified	Rare	Rare	Rare	
Nemichthyidae				
Nemichthys sp.		Rare	Rare	
Unidentified			Rare	
Nettastomatidae				
Unidentified	Rare	Rare	Common	
Ophichthidae				
Bascanichthys sp.	Rare			
Myrophis punctatus	Rare	Rare	Rare	
Ophichthus gomesii	Rare	Rare	Rare	Rare
Unidentified	Common	Common	Common	Rare

Table 2 - Cont'd

	Nantucket Shoals	Georges Bank	Shelf/ Slope	Gulf of Maine
Order Clupeiformes				
Suborder Clupeoidei				
Clupeidae				
Alosa sp.		Rare		
Brevoortia tyrannus	Common		Rare	
Clupea harengus	Very abundant	Very abundant	Very abundant	Very abundant
Unidentified	Rare	Rare	Rare	Rare
Engraulidae				
Anchoviella sp.	Rare			
Engraulis eurystole	Rare	Rare	Rare	
Unidentified	Abundant	Common	Abundant	Rare
Order Salmoniformes				
Suborder Argentinoidei				
Argentinidae				
Argentina sp.	Rare			
Nansenia gronlandica		Rare	Rare	
Nansenia sp.			Rare	
Unidentified	Rare	Rare	Rare	
Bathylagidae				
Unidentified			Rare	
Suborder Stomiatoidei				
Chauliodontidae				
Unidentified			Rare	
Gonostomatidae				
Cyclothone sp.	Rare	Rare	Common	
Gonostoma elongatum			Rare	Rare
Gonostoma sp.			Rare	
Maurolicus muelleri	Rare	Rare	Abundant	Rare
Maurolicus sp.			Rare	
Valenciennellus sp.			Rare	
Vinciguerria sp.	Rare		Common	Rare
Unidentified	Rare	Rare	Rare	
Melanostomiatidae				
Unidentified	Rare			Rare
Stomiatidae				
Unidentified	Rare		Rare	

Table 2 - Cont'd

	Nantucket Shoals	Georges Bank	Shelf/ Slope	Gulf of Maine
Suborder Myctophoidei				
Chlorophthalmidae				
Chlorophthalmus sp.		Rare		
Unidentified			Rare	
Myctophidae				
Benthosema glaciale	Rare	Rare	Abundant	
Benthosema suborbitale			Rare	
Benthosema sp.	Rare	Rare	Common	
Bolinichthys sp.			Rare	
Ceratoscopelus maderensis	Abundant	Abundant	Very abundant	Common
Ceratoscopelus warmingii			Rare	
Ceratoscopelus sp.	Rare			
Diaphus dumerilii			Rare	
Diaphus effulgens			Rare	
Diaphus splendidus	Rare			
Diaphus sp.	Rare		Common	
Diogenichthys atlanticus	Rare		Common	
Diogenichthys sp.			Rare	
Electrona sp.			Rare	
Gonichthys coccoi			Rare	
Hygophum benoiti			Rare	
Hygophum hygomi			Rare	
Hygophum reinhardtii			Rare	
Hygophum sp.	Rare	Rare	Abundant	
Lampanyctus sp.	Rare	Rare	Common	
Lobianchia dofleini			Rare	
Myctophum nitidulum			Rare	
Myctophum punctatum	Rare		Rare	
Myctophum sp.	Rare	Rare	Common	
Notolychnus valdiviae	Rare		Rare	
Protomyctophum sp.			Rare	
Symbolophorus sp.	Rare	Rare	Common	Rare
Unidentified	Rare	Rare	Abundant	Rare
Paralepididae				
Lestidiops sp.			Rare	
Lestidium atlanticum			Rare	

Table 2 - Cont'd

	Nantucket Shoals	Georges Bank	Shelf/ Slope	Gulf of Maine
Lestidium sp.		Rare		
Lestrolepis sp.			Rare	
Notolepis rissoi	Common	Common	Very abundant	Rare
Notolepis sp.			Rare	Rare
Paralepis coregonoides	Rare	Rare	Very abundant	
Paralepis sp.	Rare		Rare	
Sudis hyalina			Rare	
Sudis sp.			Rare	
Unidentified	Rare	Rare	Very abundant	Rare
Scopelosauridae				
Unidentified	Rare		Rare	
Synodontidae				
Synodus sp.	Rare		Rare	
Trachinocephalus myops	Rare	Rare	Common	Rare
Unidentified		Rare	Rare	
Order Lophiiformes				
Unidentified	Rare	Rare	Rare	
Suborder Antennarioidei				
Antennariidae				
Unidentified	Rare	Rare	Common	
Chaunacidae				
Chaunax pictus			Rare	
Ogcocephalidae				
Unidentified			Rare	
Suborder Ceratioidei				
Unidentified	Rare	Rare	Common	
Caulophrynidae				
Unidentified		Rare	Rare	
Ceratiidae				
Cryptosaras couesii			Rare	
Unidentified	Rare		Rare	
Himantolophidae				
Unidentified		Rare	Rare	
Melanocetidae				
Unidentified	Rare		Rare	
Oneirodidae				
Unidentified		Rare	Rare	

Table 2 - Cont'd

	Nantucket Shoals	Georges Bank	Shelf/ Slope	Gulf of Maine
Suborder Lophioidei				
Lophiidae				
Lo hius americanus	Common	Rare	Common	
Order Gadiformes				
Suborder Gadoidei				
Bregmacerotidae				
Bregmaceros atlanticus			Rare	
Bregmaceros sp.			Rare	
Unidentified		Rare	Rare	
Gadidae				
Brosme brosme	Rare		Rare	
Enchelyopus cimbrius	Abundant	Common	Rare	Abundant
Gadus morhua	Very abundant	Very abundant	Common	Rare
Melanogrammus aeglefinus	Abundant	Abundant	Common	
Melanogrammus sp.	Rare			
Pollachius virens	Very abundant	Very abundant	Very abundant	Very abundant
Urophycis spp.	Very abundant	Very abundant	Very abundant	Very abundant
Unidentified	Rare	Rare	Rare	
Merlucciidae				
Merluccius albidus	Rare	Rare		
Merluccius bilinearis	Very abundant	Very abundant	Very abundant	Very abundant
Suborder Macrouroidei				
Macrouridae				
Nezumia sp.			Rare	
Unidentified			Rare	
Suborder Zoarcoidei				
Zoarcidae				
Macrozoarces americanus	Rare			
Unidentified		Rare		

Table 2 - Cont'd

	Nantucket Shoals	Georges Bank	Shelf/ Slope	Gulf of Maine
Order Ophidiiformes				
Suborder Ophidioidei				
Carapidae				
Unidentified	Rare	Rare	Common	Rare
Ophidiidae				
Lephophidium sp.	Rare		Rare	
Unidentified	Very abundant	Abundant	Very abundant	Rare
Order Atheriniformes				
Suborder Exocoetoidei				
Exocoetidae				
Unidentified	Rare		Rare	
Scomberesocidae				
Scomberesox saurus		Rare	Rare	
Unidentified	Rare			
Order Gasterosteiformes				
Suborder Aulostomoidei				
Fistulariidae				
Fistularia villosa			Rare	
Suborder Gasterosteoidei				
Gasterosteidae				
Gasterosteus aculeatus		Rare		Rare
Suborder Syngnathoidei				
Syngnathidae				
Syngnathus fuscus		Rare		
Syngnathus sp.	Rare	Rare		Rare
Unidentified		Rare	Rare	
Order Scorpaeniformes				
Suborder Cottoidei				
Cyclopteridae				
Cyclopterus lumpus				Rare
Liparis atlanticus		Rare		
Liparis sp.	Rare	Rare		
Unidentified	Rare	Rare	Rare	

Table 2 - Cont'd

	Nantucket Shoals	Georges Bank	Shelf/ Slope	Gulf of Maine
Cottidae				
Myoxocephalus octodecemspinosa	Rare	Rare		
Myoxocephalus scorpius	Rare			
Suborder Scorpaenoidei				
Scorpaenidae				
Helicolenus dactylopterus			Rare	
Pontinus sp.			Common	
Scorpaena sp.	Rare		Rare	
Sebastes marinus		Rare		Rare
Sebastes sp.			Rare	
Unidentified			Rare	
Triglidae				
Prionotus sp.			Rare	
Unidentified	Rare		Rare	
Order Perciformes				
Suborder Acanthuroidei				
Acanthuridae				
Unidentified			Rare	
Suborder Ammodytoidei				
Ammodytidae				
Ammodytes spp.	Very abundant	Very abundant	Very abundant	Very abundant
Unidentified	Rare			
Suborder Blennioidei				
Anarhichadidae				
Anarhichas lupus		Rare		Rare
Blennidae				
Unidentified			Rare	
Pholidae				
Pholis gunnellus	Common	Rare		
Stichaeidae				
Lumpenus lumpretaeformis	Rare			Rare
Lumpenus maculatus	Rare			
Suborder Callionymoidei				
Callionymidae				
Unidentified	Rare	Rare	Abundant	Rare

Table 2 - Cont'd

	Nantucket Shoals	Georges Bank	Shelf/ Slope	Gulf of Maine
Suborder Gobioidei				
Gobiidae				
Unidentified	Abundant	Abundant	Very abundant	Common
Suborder Labroidei				
Labridae				
Tautoga onitis		Rare		
Tautogolabrus adspersus		Rare	Rare	
Thallassoma bifasciatum			Rare	
Unidentified	Common	Rare	Abundant	Rare
Scaridae				
Unidentified	Rare	Rare	Abundant	Rare
Suborder Percoidei				
Apogonidae				
Apogon sp.	Rare			
Aspidophoroides monopterygius				Rare
Howella sp.	Rare	Rare	Common	
Unidentified		Rare	Rare	
Bramidae				
Brama sp.			Rare	
Carangidae				
Selene vomer			Rare	
Unidentified	Rare		Rare	
Centrarchidae				
Enneacanthus sp.		Rare		
Kyphosidae				
Unidentified			Rare	
Lutjanidae				
Unidentified			Rare	
Percichthyidae				
Morone americana		Rare		
Pomacentridae				
Unidentified	Rare		Rare	
Sciaenidae				
Unidentified	Rare		Rare	Rare
Serranidae				
Centropristis striata	Rare	Rare	Common	
Centropristis sp.	Rare	Rare	Rare	
Unidentified	Rare	Rare	Common	

Table 2 - Cont'd

	Nantucket Shoals	Georges Bank	Shelf/ Slope	Gulf of Maine
Suborder Scombroidei				
Gempylidae				
Unidentified	Rare	Rare	Common	
Scombridae				
Unidentified	Rare		Rare	
Trichiuridae				
Unidentified			Rare	
Suborder Stromateoidei				
Nomeidae				
Unidentified			Rare	
Stromateidae				
Cubiceps sp.			Rare	
Peprilus alepidotus	Rare	Rare		Rare
Peprilus triacanthus	Abundant	Rare	Common	Common
Tetragonurus atlanticus			Rare	
Order Pleuronectiformes				
Suborder Pleuronectoidei				
Bothidae				
Bothus ocellatus	Abundant	Common	Very abundant	Rare
Bothus sp.	Rare	Rare	Abundant	
Citharichthys amblybregnathus	Rare			
Citharichthys arctifrons	Very abundant	Abundant	Very abundant	Common
Citharichthys cornutus			Rare	
Citharichthys spilopterus			Rare	
Citharichthys sp.	Common	Rare	Rare	
Cyclopsetta fimbriata	Rare	Rare	Rare	
Cyclopsetta sp.	Rare	Rare	Rare	
Etropus microstomus	Common		Rare	
Etropus sp.	Rare	Rare	Rare	
Paralichthys dentatus	Abundant	Rare	Abundant	
Paralichthys oblongus	Abundant	Rare	Common	Rare
Paralichthys sp.		Rare		
Scophthalmus aquosus	Very abundant	Very abundant	Common	Rare
Scophthalmus sp.	Rare			
Syacium sp.	Common	Rare	Very abundant	
Unidentified	Rare			

Table 2 - Cont'd

	Nantucket Shoals	Georges Bank	Shelf/ Slope	Gulf of Maine
Pleuronectidae				
Glyptocephalus cynoglossus	Common	Rare	Rare	Common
Glyptocephalus sp.				Rare
Hippoglossoides platessoides	Rare		Rare	
Limanda ferruginea	Rare	Rare	Rare	
Pseudopleuronectes americana	Rare	Rare	Rare	
Unidentified	Rare	Rare	Rare	
Suborder Soleoidei				
Cynoglossidae				
Symphurus plagiusa	Rare		Rare	
Symphurus sp.	Rare		Rare	
Unidentified			Rare	
Order Tetraodontiformes				
Suborder Balistoidei				
Balistidae				
Monacanthus hispidus	Rare			
Unidentified			Rare	
Suborder Tetraodontoidei				
Tetraodontidae				
Unidentified	Rare	Rare	Common	

Figure 3. Composite distribution and abundance (greatest occurrence per station) of Elopidae collected during 30 autumn and winter cruises for the period Sep. 1971 - Feb. 1977.

Elopidae

Common Name: Tarpons

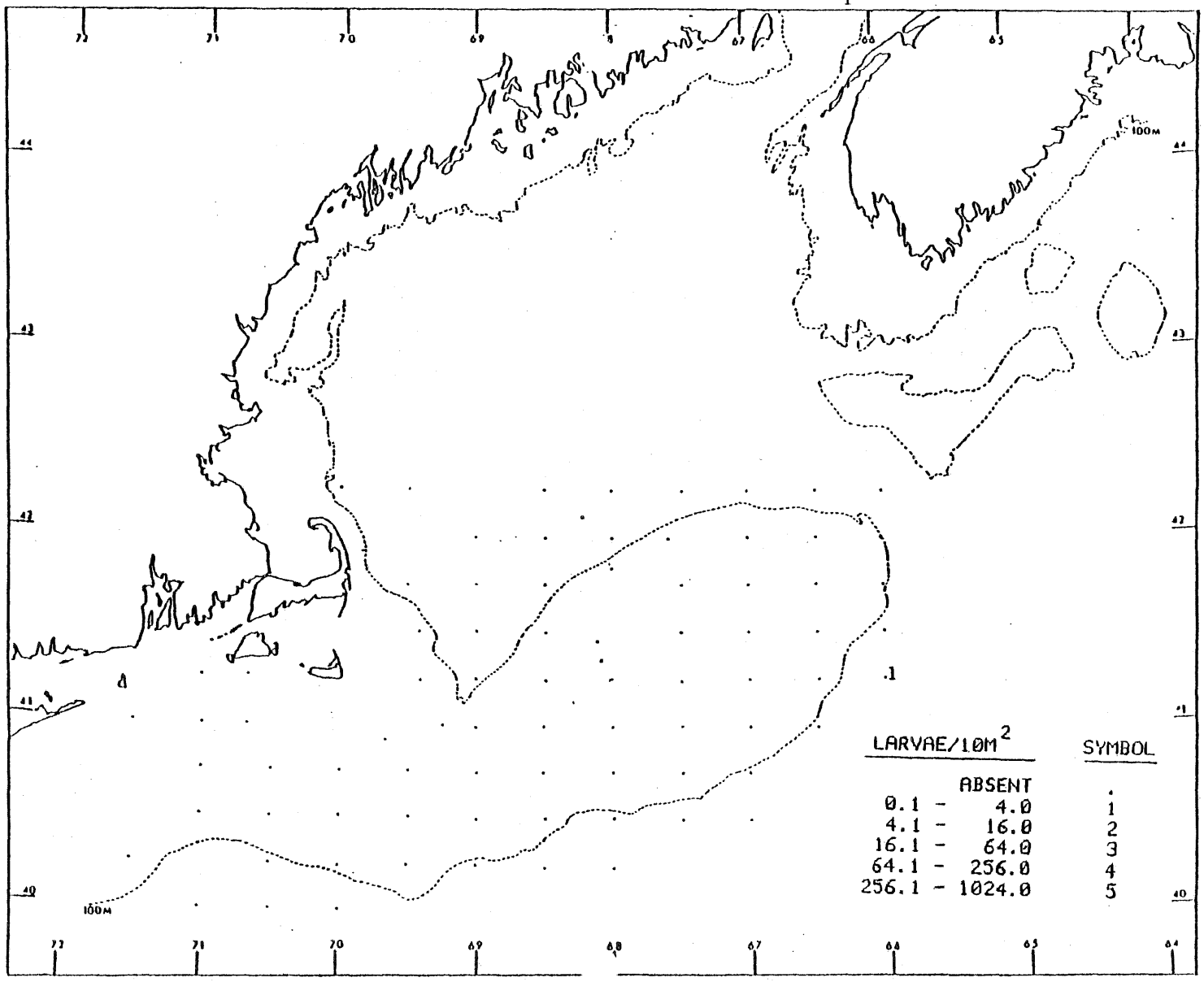


Table 3. Mean abundance (positive tows only) and mean length of Elopidae by cruise.

Cruise	Middate	Number of Positive Tows	Mean no./ $10m^2$	Standard Deviation	Mean Length (mm)	Standard Deviation	Range
Walther Herwig 73-43	02 Nov. 1973	1	1.5	-	31.0	-	-

References:

Bigelow et al. 1963
Jordan et al. 1962
Leim and Scott 1966

Figure 4. Composite distribution and abundance (greatest occurrence per station) of Elops saurus collected during 30 autumn and winter cruises for the period Sep. 1971 - Feb. 1977.

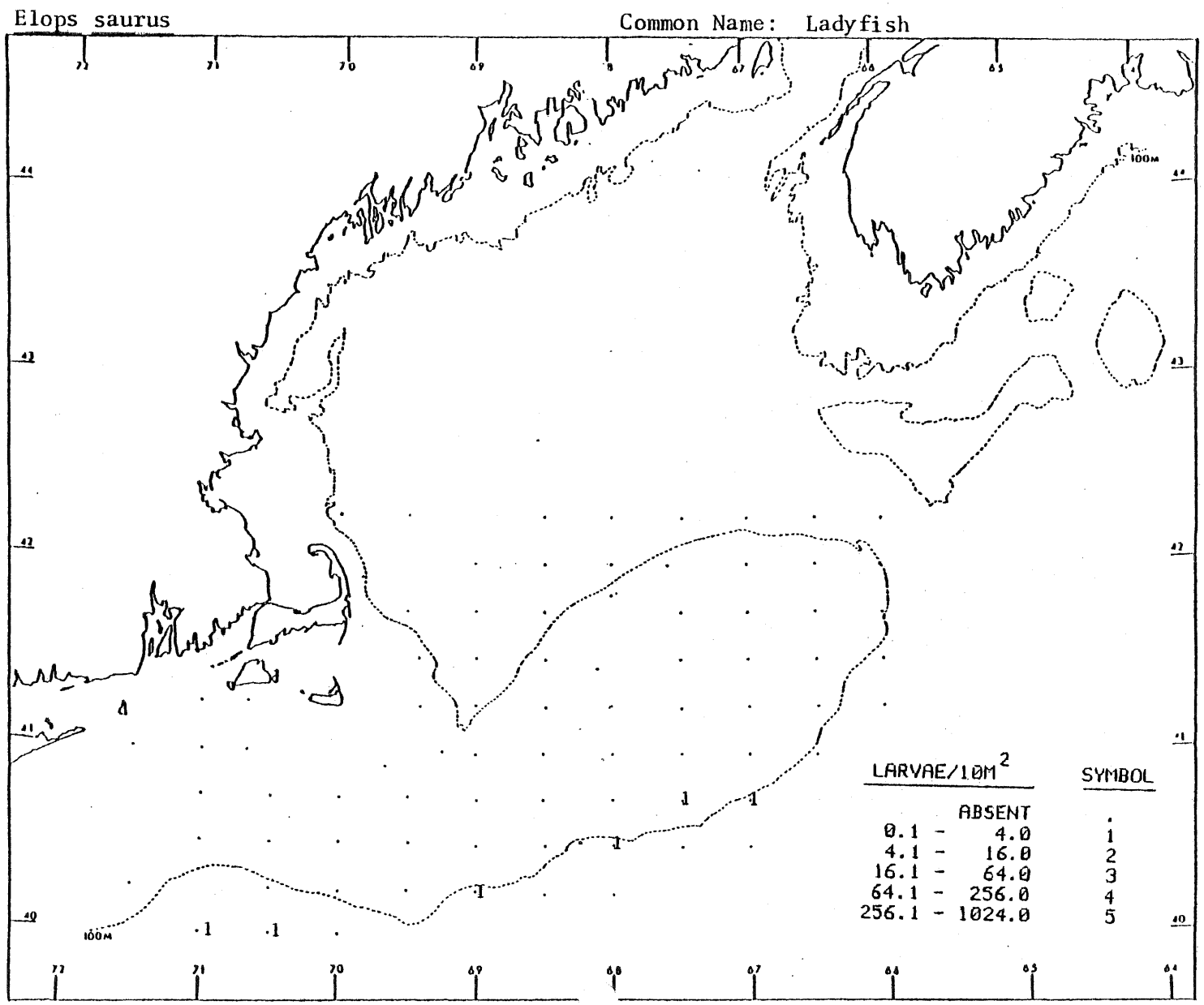


Table 4. Mean abundance (positive tows only) and mean length of *Elops saurus* by cruise.

Cruise	Middate	Number of Positive Tows	Mean no./ $10m^2$	Standard Deviation	Mean Length (mm)	Standard Deviation	Range
Walther Herwig 73-43	02 Nov. 1973	1	2.6	-	25.0	-	-
Anton Dohrn 74-01	19 Nov. 1974	1	1.9	-	29.0	-	-
Anton Dohrn 75-187	09 Nov. 1975	3	2.0	0.4	26.7	4.7	20 - 32
Albatross IV 75-14	09 Dec. 1975	2	1.7	0.3	32.4	0.6	32 - 33
Anton Dohrn 76-02	22 Nov. 1976	2	1.7	0.1	17.8	4.2	13 - 24

References:

Berrien et al. 1978
Bigelow et al. 1963
Colton and Byron 1977
Fischer 1978
Joakimsson 1978
Jordan et al. 1962

Figure 5. Composite distribution and abundance (greatest occurrence per station) of Anguilliformes collected during 30 autumn and winter cruises for the period Sep. 1971 - Feb. 1977.

Anguilliformes

Common Name:

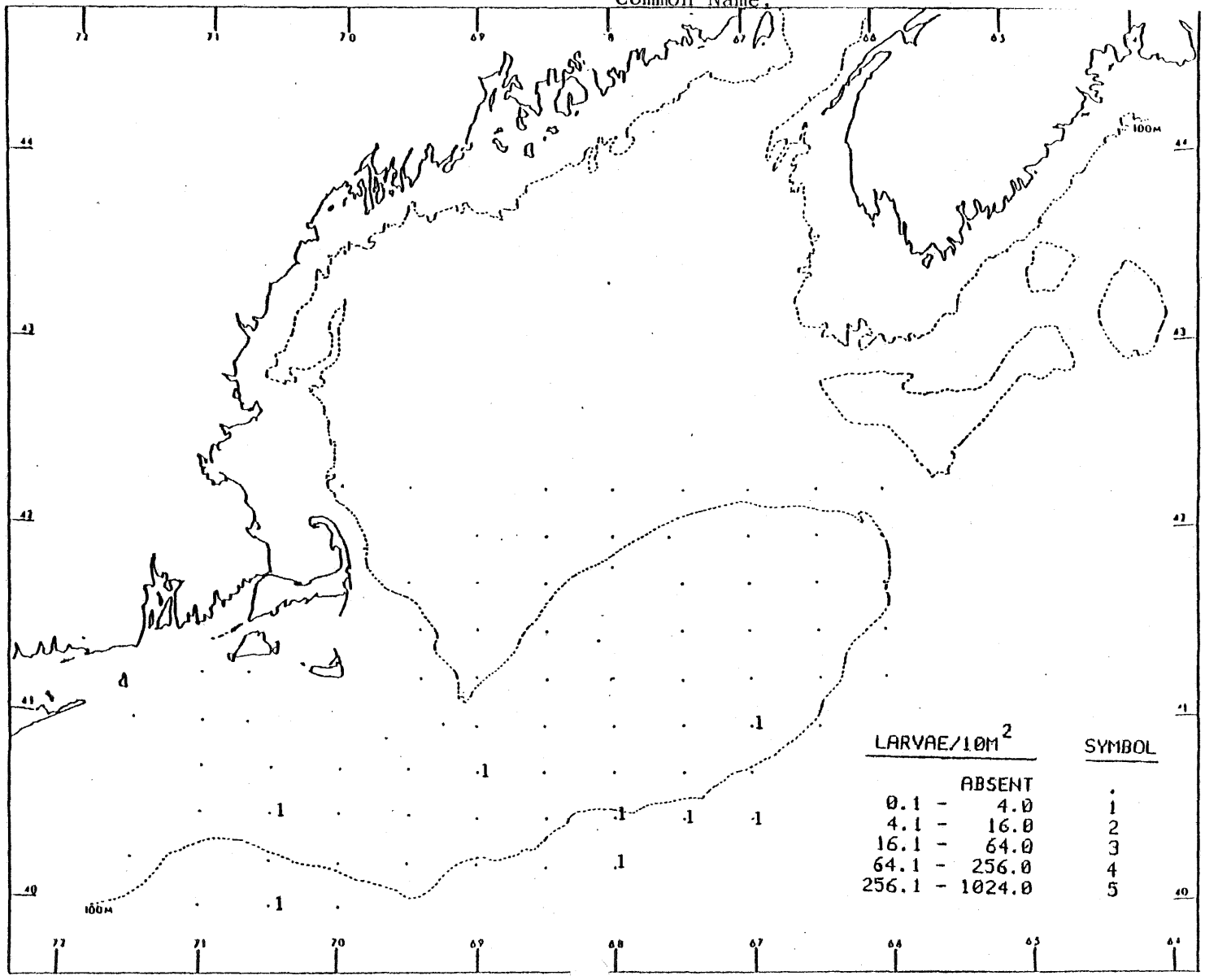


Table 5. Mean abundance (positive tows only) and mean length of Anguilliformes by cruise.

Cruise	Middate	Number of Positive Tows	Mean no./ $10m^2$	Standard Deviation	Mean Length (mm)	Standard Deviation	Range
Albatross IV 72-09	10 Dec. 1972	4	1.2	0.4	62.2	26.2	33 - 90
Belogorsk 73-01	23 Oct. 1973	1	1.5	-	66.0	-	-
Walther Herwig 73-43	02 Nov. 1973	1	6.5	-	62.5	12.5	52 - 90
Cryos 74-04	16 Sep. 1974	1	1.8	-	13.0	-	-
Albatross IV 75-02	14 Feb. 1975	1	2.2	-	34.0	35.2	8 - 60
Belogorsk 75-02	01 Oct. 1975	2	1.0	0	52.2	23.4	34 - 82
Belogorsk 75-03	23 Oct. 1975	1	0.9	-	33.0	-	-

References:

Grimm 1978
Joakimsson 1978

Figure 6. Composite distribution and abundance (grestest occurrence per station) of Anguillidae collected during 30 autumn and winter cruises for the period Sep. 1971 - Feb. 1977.

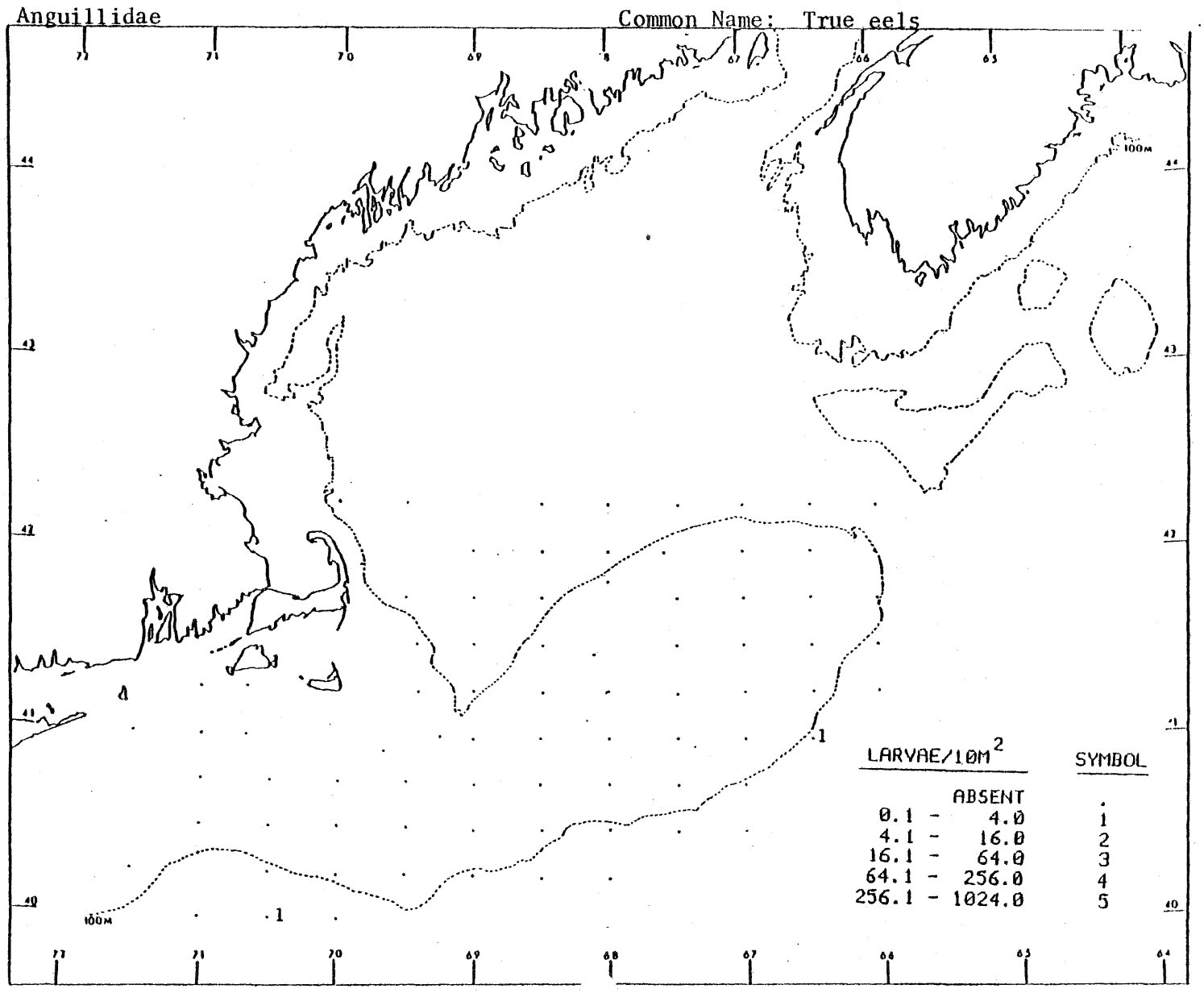


Table 6. Mean abundance (positive tows only) and mean length of Anguillidae by cruise.

Cruise	Middate	Number of Positive Tows	Mean no./ $10m^2$	Standard Deviation	Mean Length (mm)	Standard Deviation	Range
Cryos 73-01	19 Sep. 1973	1	0.8	-	8.0	-	-
Albatross IV 74-13	13 Dec. 1974	1	0.8	-	76.0	-	-

References:

Colton and Byron 1977
Jordan et al. 1962

Figure 7. Composite distribution and abundance (greatest occurrence per station) of Anguilla rostrata collected during 30 autumn and winter cruises for the period Sep. 1971 - Feb. 1977.

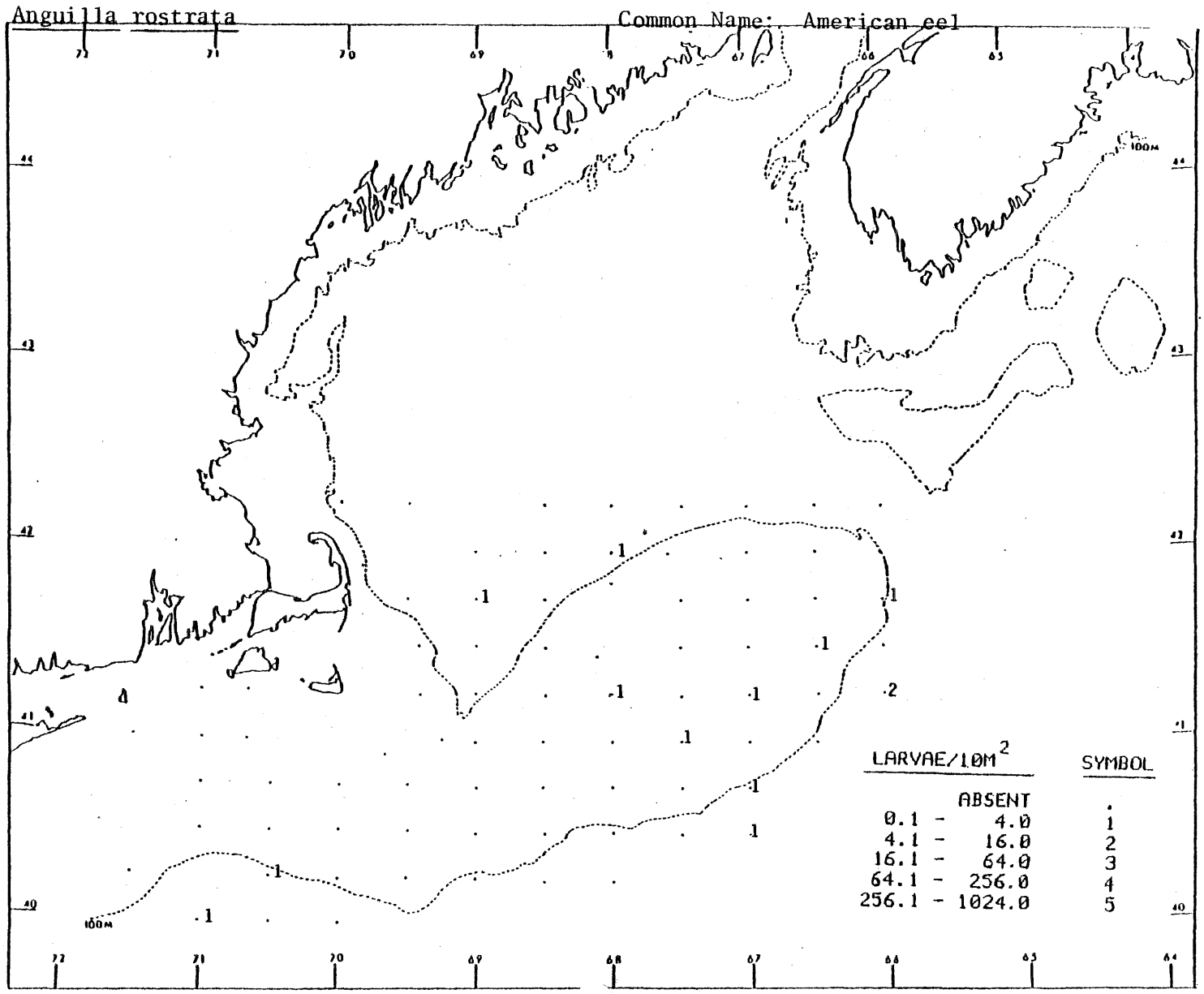


Table 7. Mean abundance (positive tow only) and mean length of *Anguilla rostrata* by cruise.

Cruise	Middate	Number of Positive Tows	Mean no./ $10m^2$	Standard Deviation	Mean Length (mm)	Standard Deviation	Range
Albatross IV 73-09	13 Dec. 1973	3	2.5	0.4	51.7	8.2	35 - 57
Anton Dohrn 74-01	19 Nov. 1974	1	1.7	-	78.0	-	-
Albatross IV 74-13	13 Dec. 1974	3	1.8	0.2	60.8	2.3	59 - 64
Albatross IV 75-02	14 Feb. 1975	1	2.2	-	57.5	2.0	56 - 59
Anton Dohrn 75-187	09 Nov. 1975	1	2.1	-	57.0	-	-
Albatross IV 76-01	16 Feb. 1076	3	3.8	1.4	59.5	3.0	55 - 64
Mt. Mitchell 77-01	18 Feb. 1977	1	1.3	-	64.0	-	-

References:

Berrien et al. 1978
Cloton and Byron 1977
Fischer 1978
Joakimsson 1978
Leim and Scott 1966

Figure 8. Composite distribution and abundance (greatest occurrence per station) of Anguilla sp. collected during 30 autumn and winter cruises for the period Sep. 1971 - Feb. 1977.

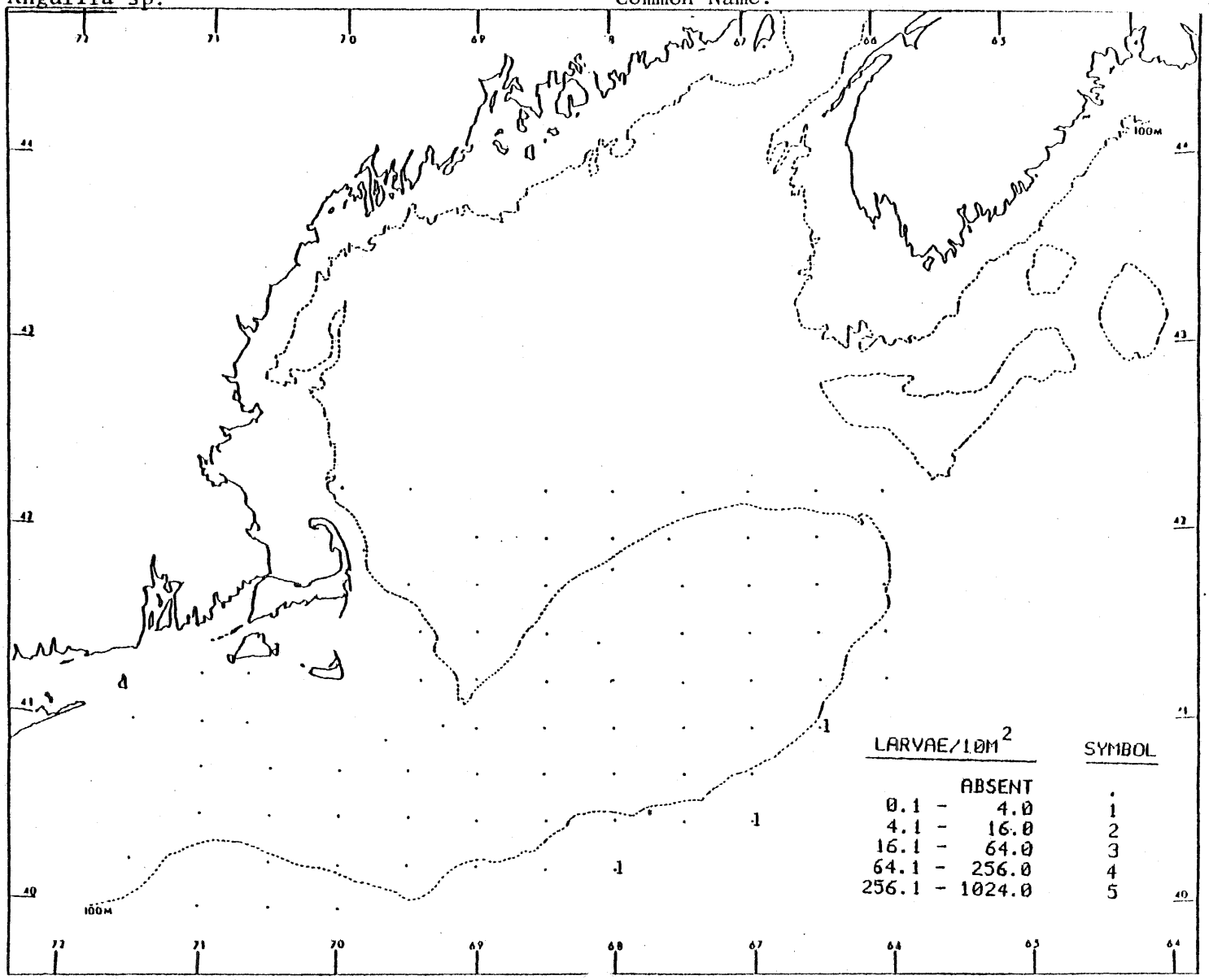


Table 8. Mean abundance (positive tows only) and mean length of *Anguilla* sp. by cruise.

Cruise	Middate	Number of Positive Tows	Mean no./ $10m^2$	Standard Deviation	Mean Length (mm)	Standard Deviation	Length Range
Cryos 74-04	16 Sep. 1974	1	1.5	-	59.0	-	-
Prognoz 74-01	24 Oct. 1974	1	1.1	-	31.0	-	-
Researcher 76-01	04 Dec. 1976	1	1.5	-	52.0	-	-

References:

See *Anguilla rostrata*

Figure 9. Composite distribution and abundance (greatest occurrence per station) of Congridae collected during 30 autumn and winter cruises for the period Sep. 1971 - Feb. 1977.

Congridae Common Name: Conger eels

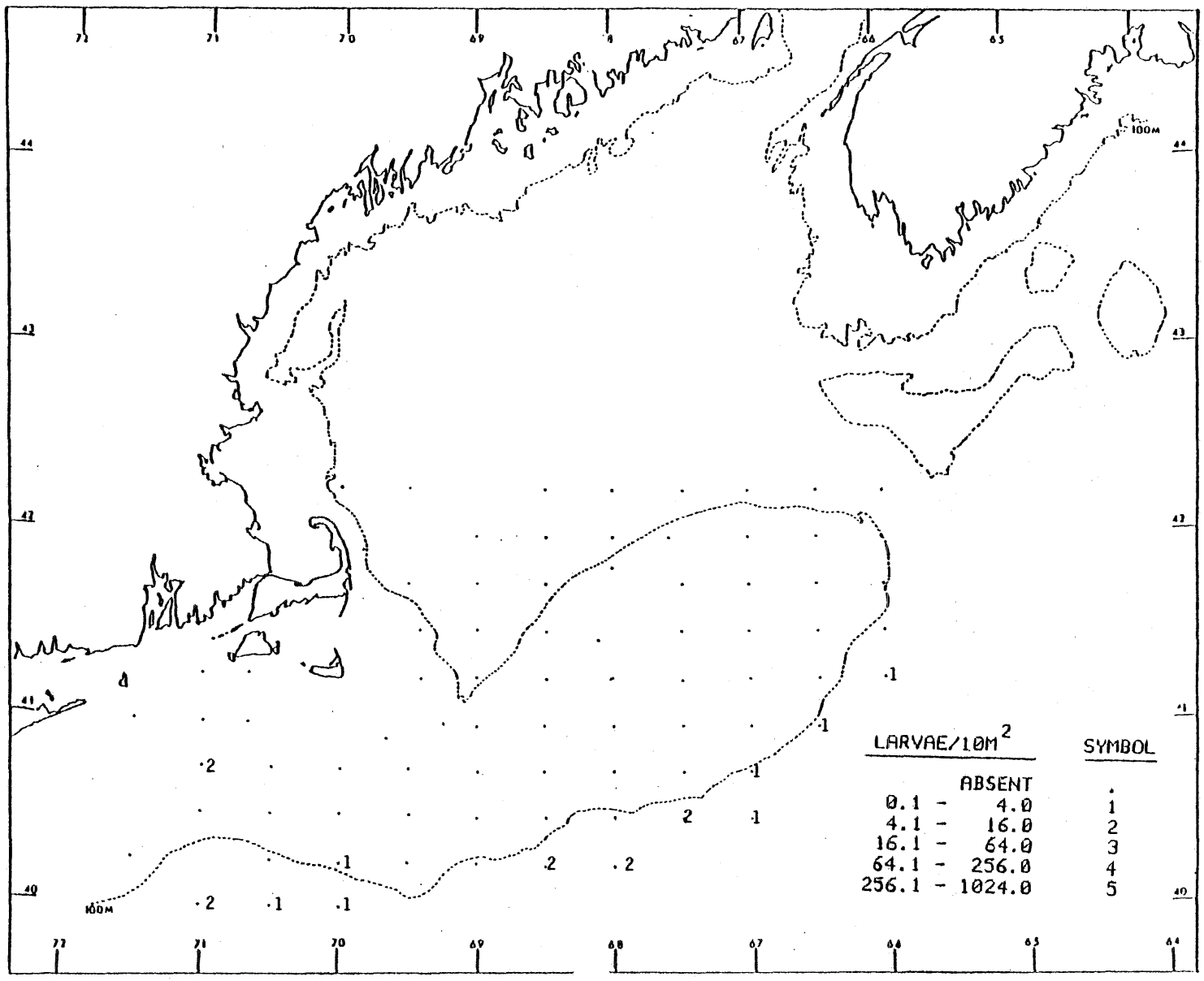


Table 9. Mean abundance (positive tows only) and mean length of Congridae by cruise.

Cruise	Middate	Number of Positive Tows	Mean no./ $10m^2$	Standard Deviation	Mean Length (mm)	Standard Deviation	Length Range
Delaware II 71-04	27 Sep. 1971	2	2.4	1.6	69.2	15.5	45 - 90
Argus 72-02	20 Oct. 1972	1	2.5	-	88.0	-	-
Cryos 73-01	19 Sep. 1973	1	0.8	-	82.0	-	-
Wieczno 73-40	09 Oct. 1973	1	1.3	-	7.0	-	-
Belogorsk 73-01	23 Oct. 1973	4	2.5	1.5	52.7	17.3	31 - 86
Walther Herwig 73-43	02 Nov. 1973	1	6.6	-	70.5	14.7	57 - 84
Albatross IV 73-09	13 Dec. 1973	2	2.6	0.7	75.1	15.3	56 - 90
Cryos 74-04	16 Sep. 1974	1	1.5	-	90.0	-	-
Prognoz 74-01	24 Oct. 1974	1	2.4	-	45.5	36.0	18 - 73
Anton Dohrn 74-01	19 Nov. 1974	2	8.1	1.1	44.3	24.2	10 - 90
Anton Dohrn 75-187	09 Nov. 1975	1	2.1	-	30.0	-	-
Albatross IV 75-14	09 Dec. 1975	2	2.7	1.4	29.3	2.3	27 - 32
Albatross IV 76-01	16 Feb. 1976	1	1.4	-	52.0	-	-
Wieczno 76-03	24 Oct. 1976	1	1.6	-	6.0	-	-
Anton Dohrn 76-02	22 Nov. 1976	1	5.6	-	54.5	1.7	53 - 56
Researcher 76-01	04 Dec. 1976	1	3.6	-	44.5	2.9	42 - 47

References:

Berrien et al. 1978
Colton and Byron 1977
Fischer 1978
Grimm 1978
Joakimsson 1978
Jordan et al. 1962

Figure 10. Composite distribution and abundance (greatest occurrence per station) of Ariosoma balearicum collected during 30 autumn and winter cruises for the period Sep. 1971 - Feb. 1977.

Ariosoma balearicum (Gilbert) Comman Name:

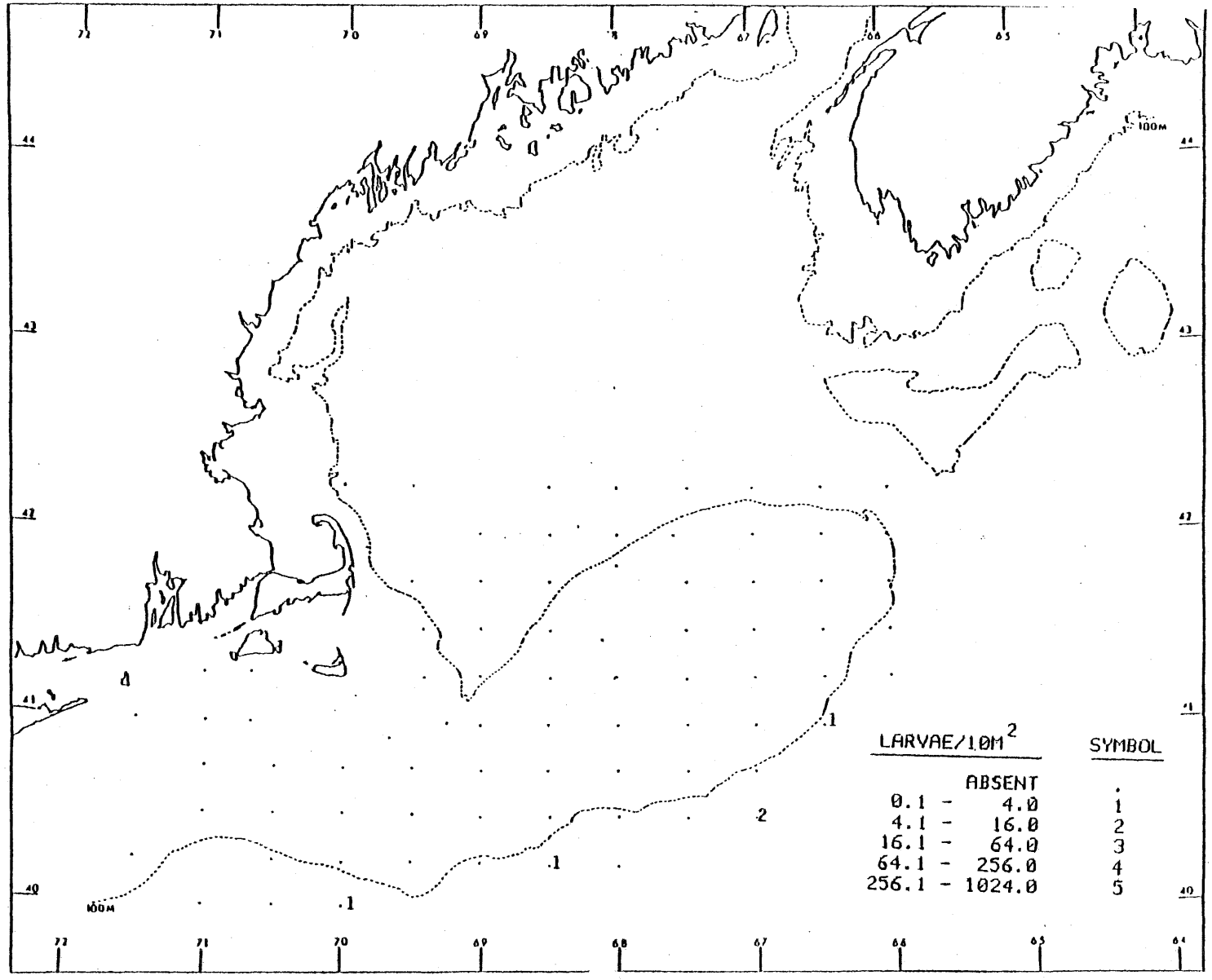


Table 10. Mean abundance (positive tows only) and mean length of *Ariosoma balearicum* by cruise.

Cruise	Middate	Number of Positive Tows	Mean no./ $10m^2$	Standard Deviation	Mean Length (mm)	Standard Deviation	Length Range
Delaware II 71-04	27 Sep. 1971	1	4.1	-	63.0	22.9	43 - 83
Albatross IV 73-09	13 Dec. 1973	1	3.4	-	82.0	-	-
Cryos 74-04	16 Sep. 1974	1	1.1	-	33.0	-	-
Albatross IV	09 Dec. 1975	1	1.6	-	13.0	-	-
Researcher 76-01	04 Dec. 1976	1	1.0	-	90.0	-	-

References:

Fischer 1978
Grimm 1978
Jordan et al. 1962

Figure 11. Composite distribution and abundance (greatest occurrence per station) of Conger oceanicus collected during 30 autumn and winter cruises for the period Sep. 1971 - Feb. 1977.

Conger oceanicus (Mitchill) Common Name: Conger eel

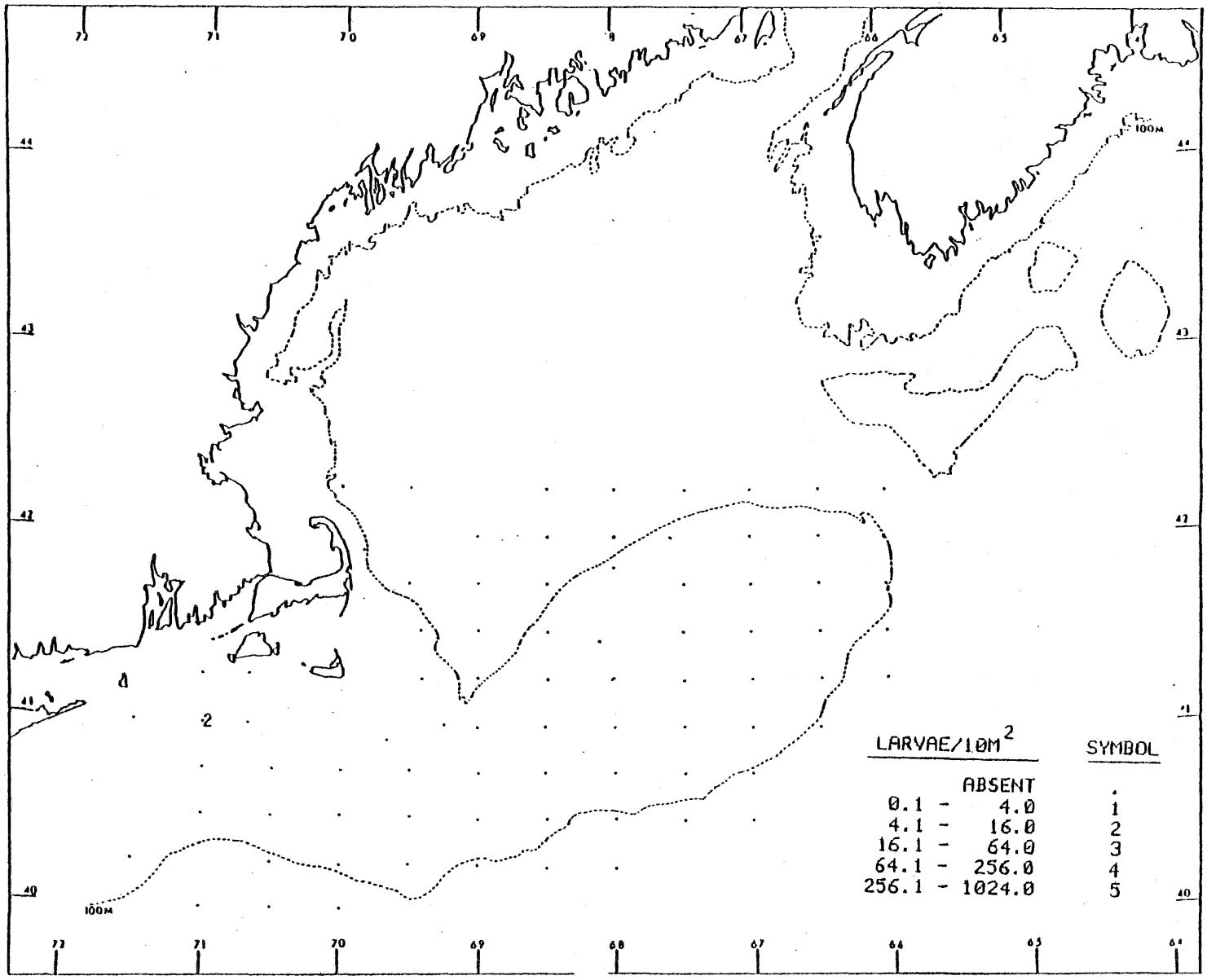


Table 11. Mean abundance (positive tows only) and mean length of *Conger oceanicus* by cruise.

Cruise	Middate	Number of Positive Tows	Mean no./ $10m^2$	Standard Deviation	Mean Length (mm)	Standard Deviation	Length Range
Walther Herwig 73-43	02 Nov. 1973	1	6.3	-	90.0	-	-

References:

Fischer 1978
Leim and Scott 1966

Figure 12. Composite distribution and abundance (greatest occurrence per station) of Conger sp. collected during 30 autumn and winter cruises for the period Sep. 1971 - Feb. 1977.

Conger sp. Common Name:

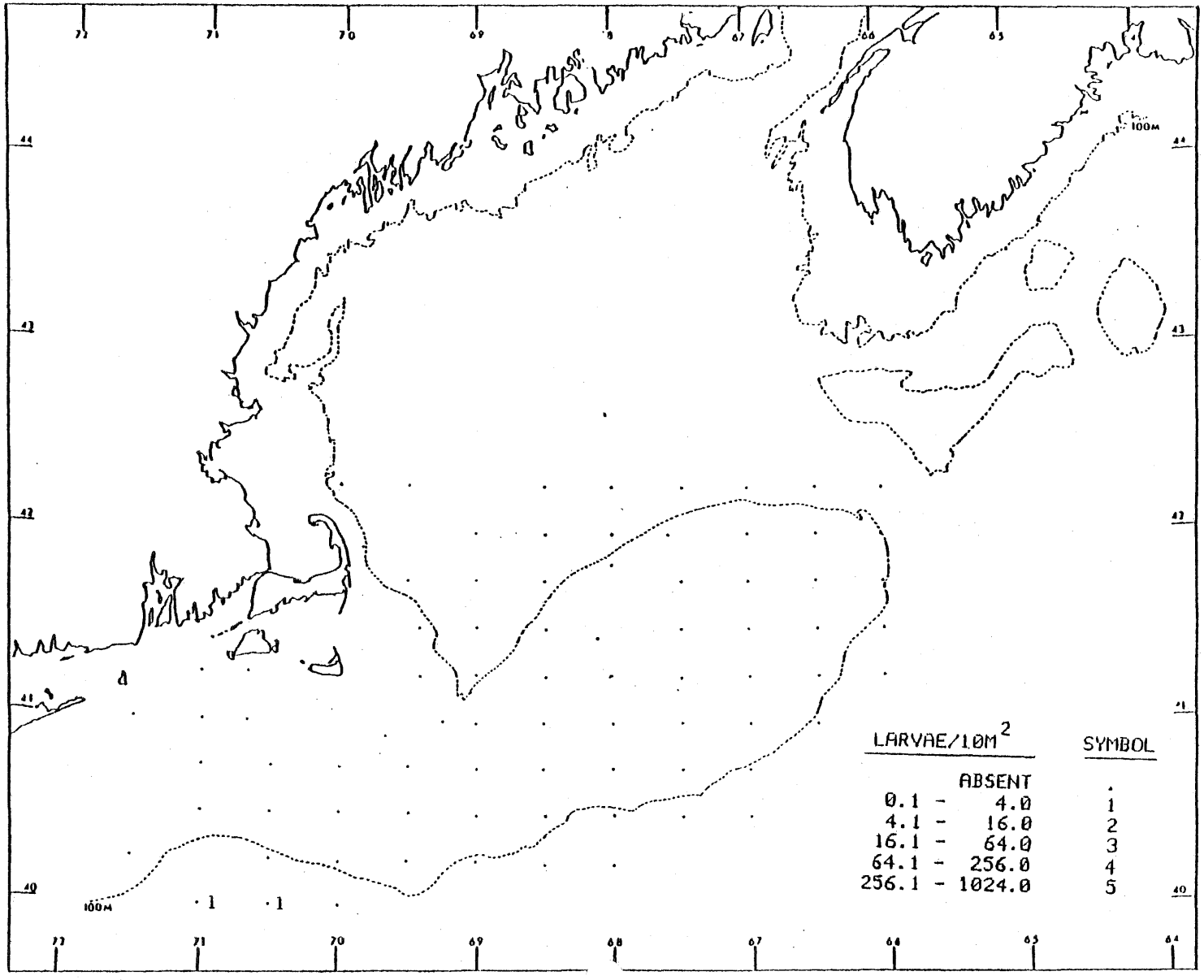


Table 12. Mean abundance (positive tows only) and mean length of *Conger* sp. by cruise.

Cruise	Middate	Number of Positive Tows	Mean no./ $10m^2$	Standard Deviation	Mean Length (mm)	Standard Deviation	Length Range
Albatross IV 74-13	13 Dec. 1974	1	1.2	-	47.0	-	-
Anton Dohrn 76-02	22 Nov. 1976	1	1.7	-	8.0	-	-

References:

Fischer 1978
Joakimsson 1978
Jordan et al. 1962

Figure 13. Composite distribution and abundance (greatest occurrence per station) of Muraenidae collected during 30 autumn and winter cruises for the period Sep. 1971 - Feb. 1977.

Muraenidae

Common Name: Morays

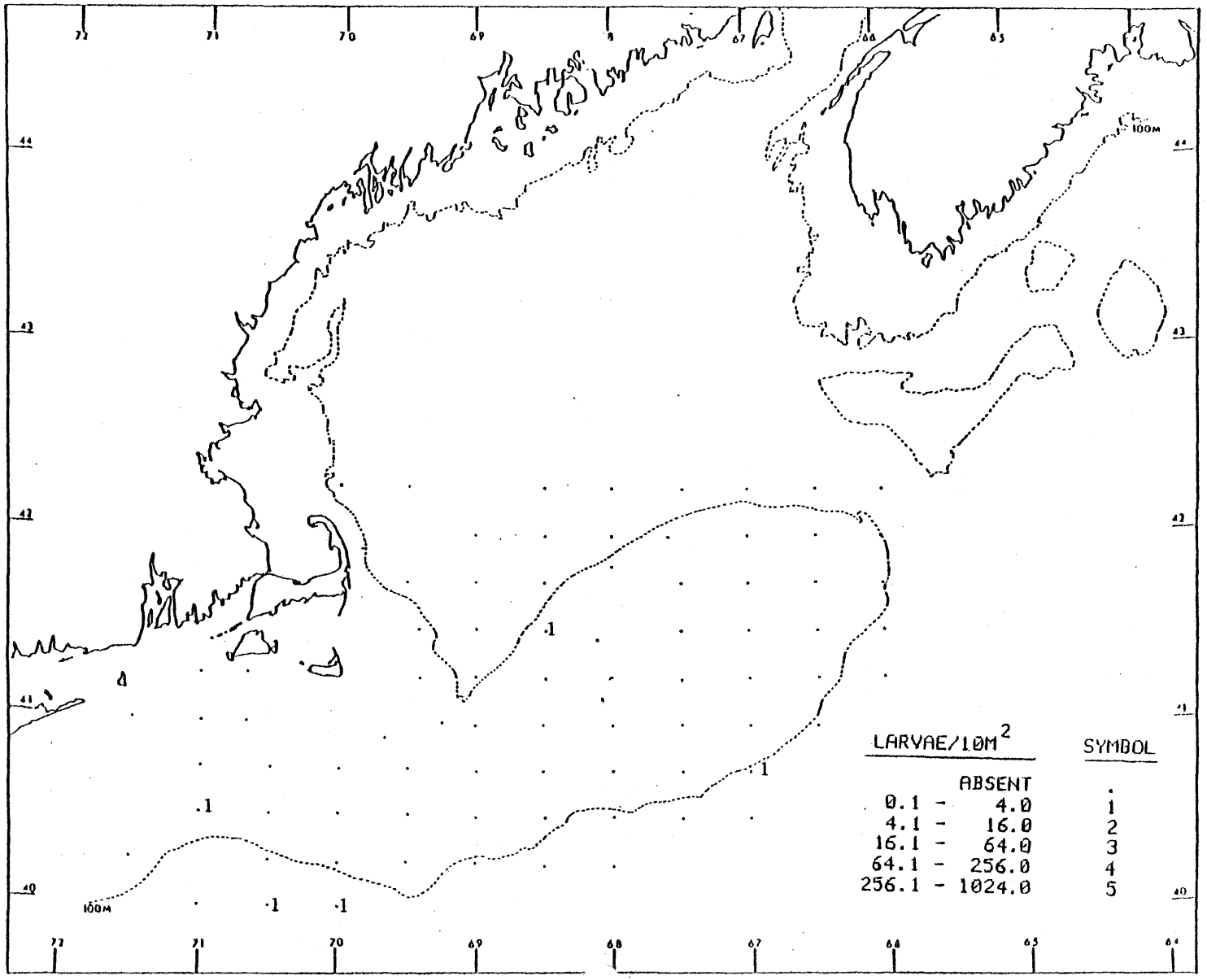


Table 13. Mean abundance (positive tows only) and mean length of Muraenidae by cruise.

Cruise	Middate	Number of Positive Tows	Mean no./ $10m^2$	Standard Deviation	Mean Length (mm)	Standard Deviation	Length Range
Wieczno 73-40	09 Oct. 1973	1	1.4	-	46.0	-	-
Anton Dohrn 74-01	19 Nov. 1974	2	2.0	0.8	43.8	10.6	37 - 56
Belogorsk 75-02	01 Oct. 1975	1	1.5	-	90.0	-	-
Belogorsk 75-03	23 Oct. 1975	1	1.0	-	75.0	-	-
Anton Dohrn 75-187	09 Nov. 1975	1	1.1	-	72.0	-	-

References:

Berrien et al. 1978
Colton and Byron 1977
Fischer 1978
Joakimsson 1978
Jordan et al. 1962
Leim and Scott 1966

Figure 14. Composite distribution and abundance (greatest occurrence per station) of Nemichthyidae collected during 30 autumn and winter cruises for the period Sep. 1971 - Feb. 1977.

Nemichthyidae

Common Name: Snipe eels

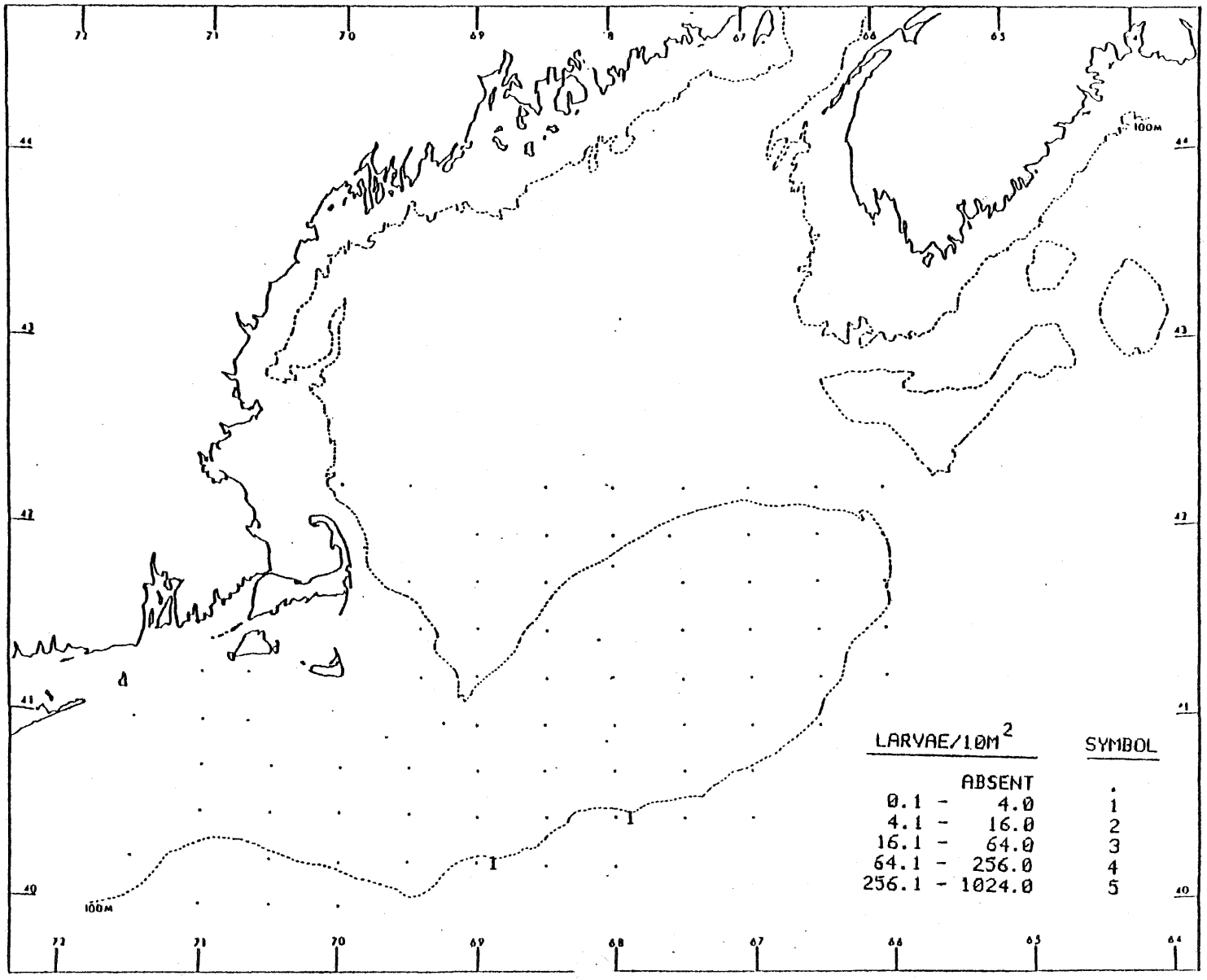


Table 14. Mean abundance (positive tows only) and mean length of Nemichthyidae by cruise.

Cruise	Middate	Number of Positive Tows	Mean no./ $10m^2$	Standard Deviation	Mean Length (mm)	Standard Deviation	Length Range
Albatross IV 75-14	09 Dec. 1975	1	1.4	-	52.0	-	-
Anton Dohrn 76-02	22 Nov. 1976	1	1.6	-	35.0	-	-

References:

Colton and Byron 1977
Joakimsson 1978
Jordan et al. 1962
Leim and Scott 1966

Figure 15. Composite distribution and abundance (greatest occurrence per station) of Nemichthys sp. collected during 30 autumn and winter cruises for the period Sep. 1971 - Feb. 1977.

Nemichthys sp. Common Name:

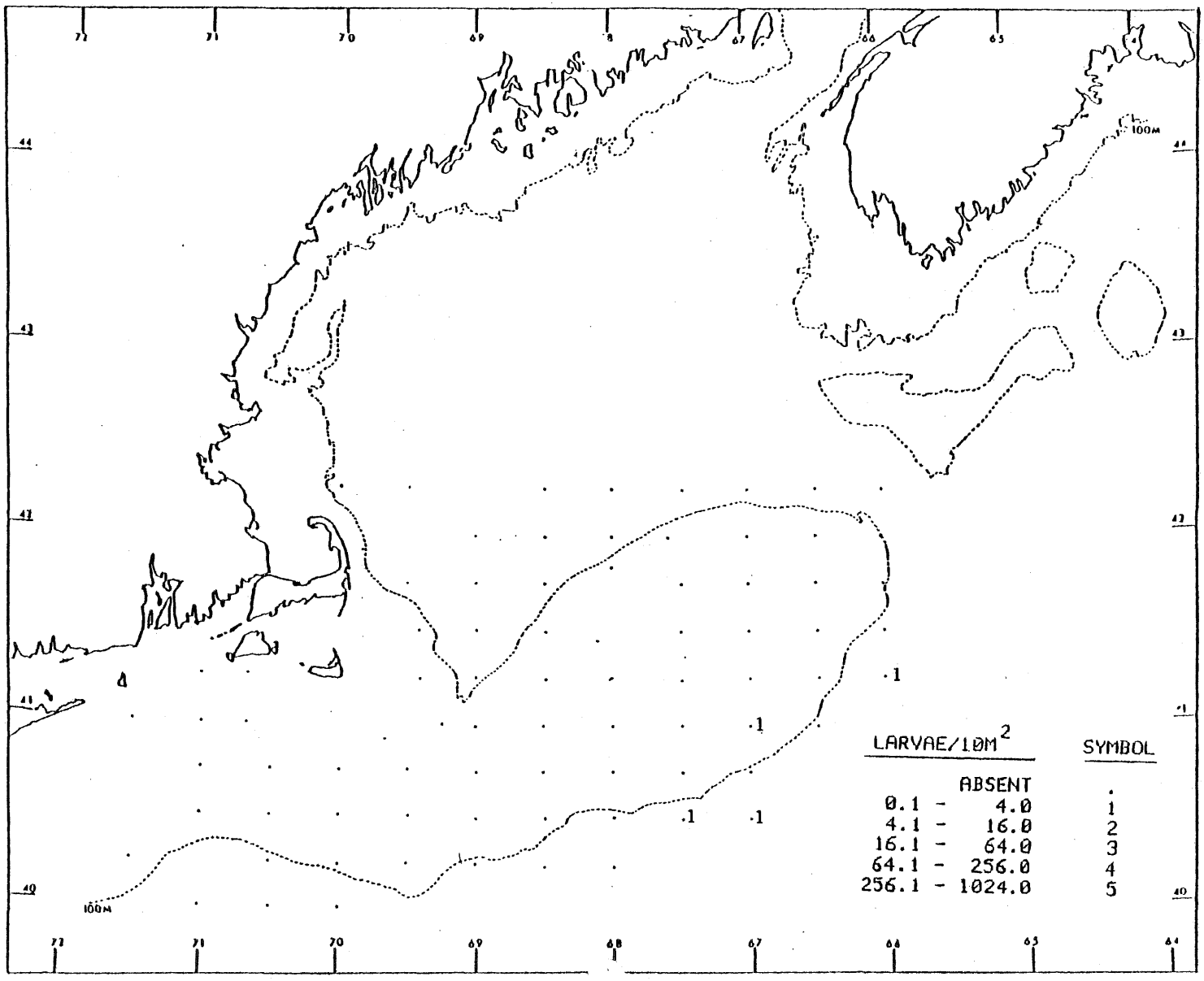


Table 15. Mean abundance (positive tows only) and mean length of *Nemichthys* sp. by cruise.

Cruise	Middate	Number of Positive Tows	Mean no./ $10m^2$	Standard Deviation	Mean Length (mm)	Standard Deviation	Length Range
Delaware II 71-04	27 Sep. 1971	2	1.9	0.4	90.0	-	-
Anton Dohrn 72-01	05 Nov. 1972	1	1.4	-	90.0	-	-
Belogorsk 73-01	23 Oct. 1973	1	1.3	-	90.0	-	-

Jordan et al. 1962
Leim and Scott 1966

Figure 16. Composite distribution and abundance (greatest occurrence per station) of Nettastomatidae collected during 30 autumn and winter cruises for the period Sep. 1971 - Feb. 1977.

Nettastomatidae

Common Name; Duckbill eels

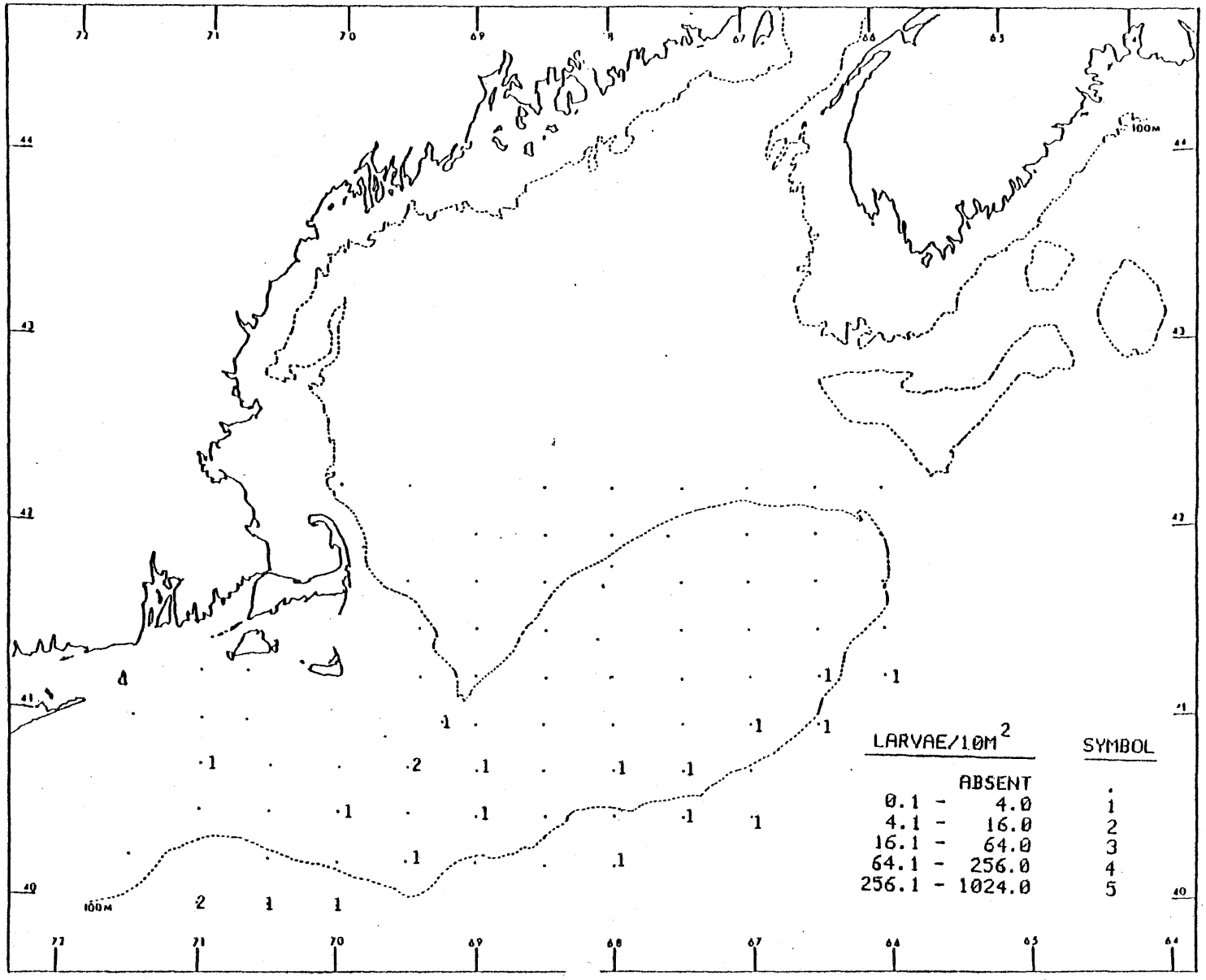


Table 16. Mean abundance (positive tows only) and mean length of Nettastomatidae by cruise.

Cruise	Middate	Number of Positive Tows	Mean no./ $10m^2$	Standard Deviation	Mean Length (mm)	Standard Deviation	Length Range
Delaware II 71-04	27 Sep. 1971	1	1.3	-	85.0	-	-
Argus 72-02	20 Oct. 1972	1	2.3	-	90.0	-	-
Wieczno 73-40	09 Oct. 1973	3	1.7	0.3	57.7	42.9	9 - 90
Walther Herwig 73-43	02 Nov. 1973	3	3.3	3.3	81.3	21.8	32 - 90
Albatross IV 73-09	13 Dec. 1973	2	2.7	0.2	86.2	4.4	82 - 90
Cryos 74-04	16 Sep. 1974	1	1.5	-	90.0	-	-
Anton Dohrn 74-01	19 Nov. 1974	3	2.9	0.9	47.0	23.8	8 - 66
Albatross IV 74-13	13 Dec. 1974	1	1.6	-	90.0	-	-
Anton Dohrn 75-187	09 Nov. 1975	1	4.5	-	82.0	9.0	74 - 90
Wieczno 76-03	24 Oct. 1976	1	3.0	-	90.0	-	-
Anton Dohrn 76-02	22 Nov. 1975	3	1.7	0.1	78.1	12.0	60 - 90
Researcher 76-01	04 Dec. 1976	1	3.1	-	90.0	-	-

References:

Berrien et al. 1978
Colton and Byron 1977
Grimm 1978
Joakimsson 1978
Jordan et al. 1962

Figure 17. Composite distribution and abundance (greatest occurrence per station) of Opichthidae collected during 30 autumn and winter cruises for the period Sep. 1971 - Feb. 1977.

Ophichthidae

Common Name: Snake eels

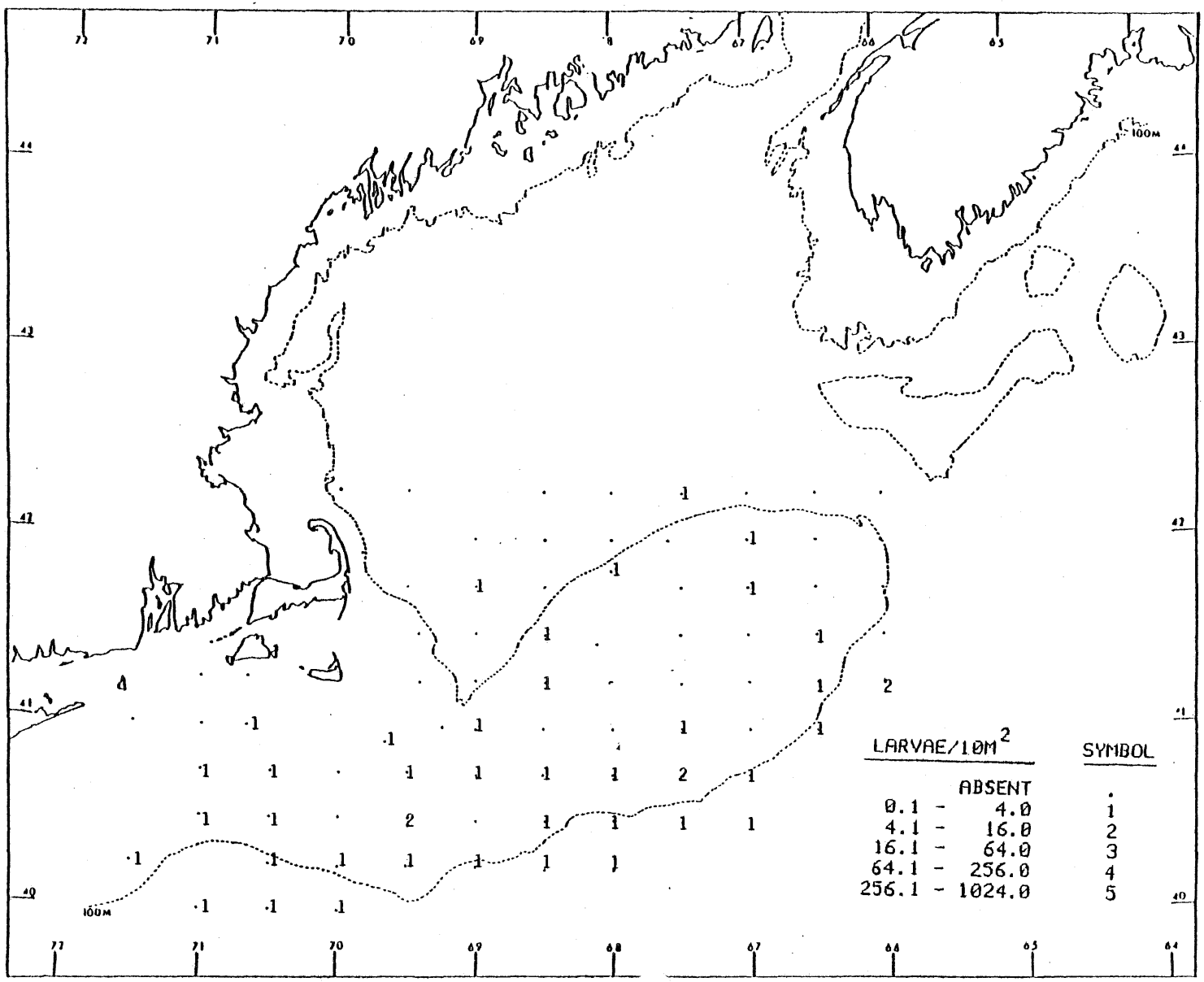


Table 17. Mean abundance (positive tows only) and mean length of Ophichthidae by cruise.

Cruise	Middate	Number of Positive Tows	Mean no./ $10m^2$	Standard Deviation	Mean Length (mm)	Standard Deviation	Length Range
Delaware II 71-04	27 Sep. 1971	2	1.1	0.7	85.9	9.0	75 - 90
Viandra 71-01	17 Oct. 1971	3	0.8	0.2	71.3	79.8	54 - 88
Wieczno 72-01	14 Oct. 1972	2	1.6	0.7	76.0	11.3	65 - 88
Argus 72-02	20 Oct. 1972	2	2.3	0.4	83.3	3.4	80 - 86
Anton Dohrn 72-01	05 Nov. 1972	4	1.7	0.9	86.1	7.0	72 - 90
Wieczno 73-40	09 Oct. 1973	3	1.6	0.2	89.7	0.5	89 - 90
Belogorsk 73 -01	23 Oct. 1973	6	1.9	1.1	71.7	21.5	40 - 90
Walther Herwig 73-43	09 Nov. 1973	3	3.7	3.1	81.0	25.7	6 - 90
Cryos 74-04	16 Sep. 1974	2	0.9	0.6	55.1	24.4	29 - 83
Prognoz 74-01	24 Oct. 1974	1	1.1	-	74.0	-	-
Anotn Dohrn 74-01	19 Nov. 1974	3	2.8	0.9	40.8	9.0	25 - 47
Albatross IV 74-13	13 Dec. 1974	2	1.7	0.1	62.8	33.5	34 - 90
Albatross IV 75-02	14 Feb. 1974	2	1.4	1.1	58.8	4.4	55 - 62
Belogorsk 75-03	23 Oct. 1975	4	1.2	0.3	60.2	19.6	38 - 86
Albatross IV 75-14	09 Dec. 1975	2	2.5	1.3	67.3	6.6	62 - 76
Belogorsk 76-03	08 Oct. 1976	9	1.2	0.7	70.4	24.0	14 - 90
Wiecano 76-03	24 Oct. 1976	5	1.9	0.7	72.3	9.3	58 - 83
Anton Dohrn 76-02	22 Nov. 1976	7	2.8	2.5	49.5	23.7	1 - 79
Researcher 76-01	04 Dec. 1976	7	2.0	1.2	64.6	11.2	44 - 88

References:

Berrien et al. 1978
Colton and Byron 1977
Fischer 1978
Grimm 1978
Joakimsson 1978
Jordan et al. 1962
Leim and Scott 1966

Figure 18. Composite distribution and abundance (greatest occurrence per station) of Bascanichthys sp. collected during 30 autumn and winter cruises for the period Sep. 1971 - Feb. 1977.

Bascanichthys sp. Common Name:

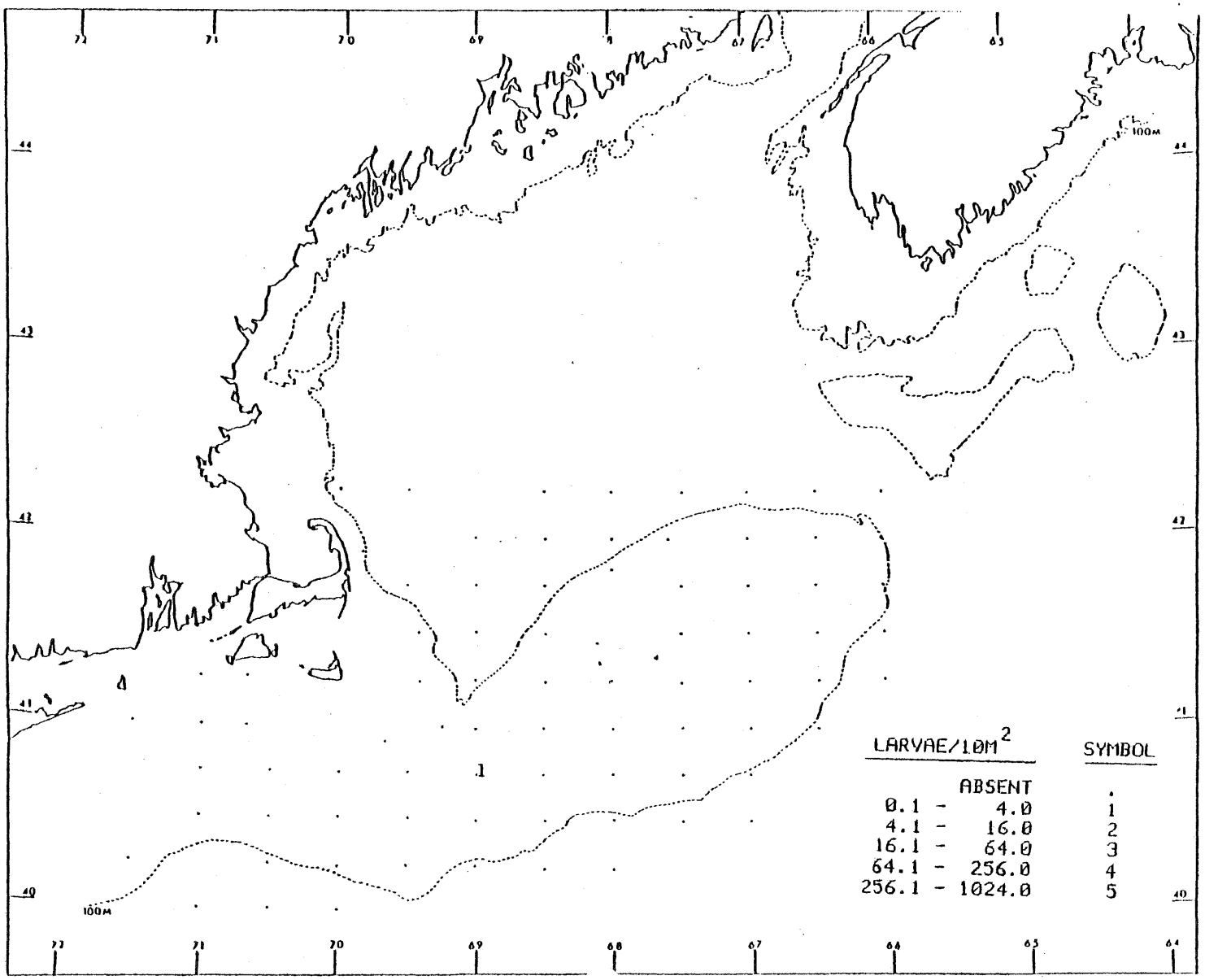


Table 18. Mean abundance (positive tows only) and mean length of Bascanichthys sp. by cruise.

Cruise	Middate	Number of Positive Tows	Mean no./ $10m^2$	Standard Deviation	Mean Length (mm)	Standard Deviation	Length Range
Delaware II 71-04	27 Sep. 1971	1	1.0	-	90.0	-	-

References:

Fischer 1978
Jordan et al. 1962

Figure 19. Composite distribution and abundance (greatest occurrence per station) of Myrophis punctatus collected during 30 autumn and winter cruises for the period Sep. 1971 - Feb. 1977.

Myrophis punctatus

Common Name: Speckled worm eel

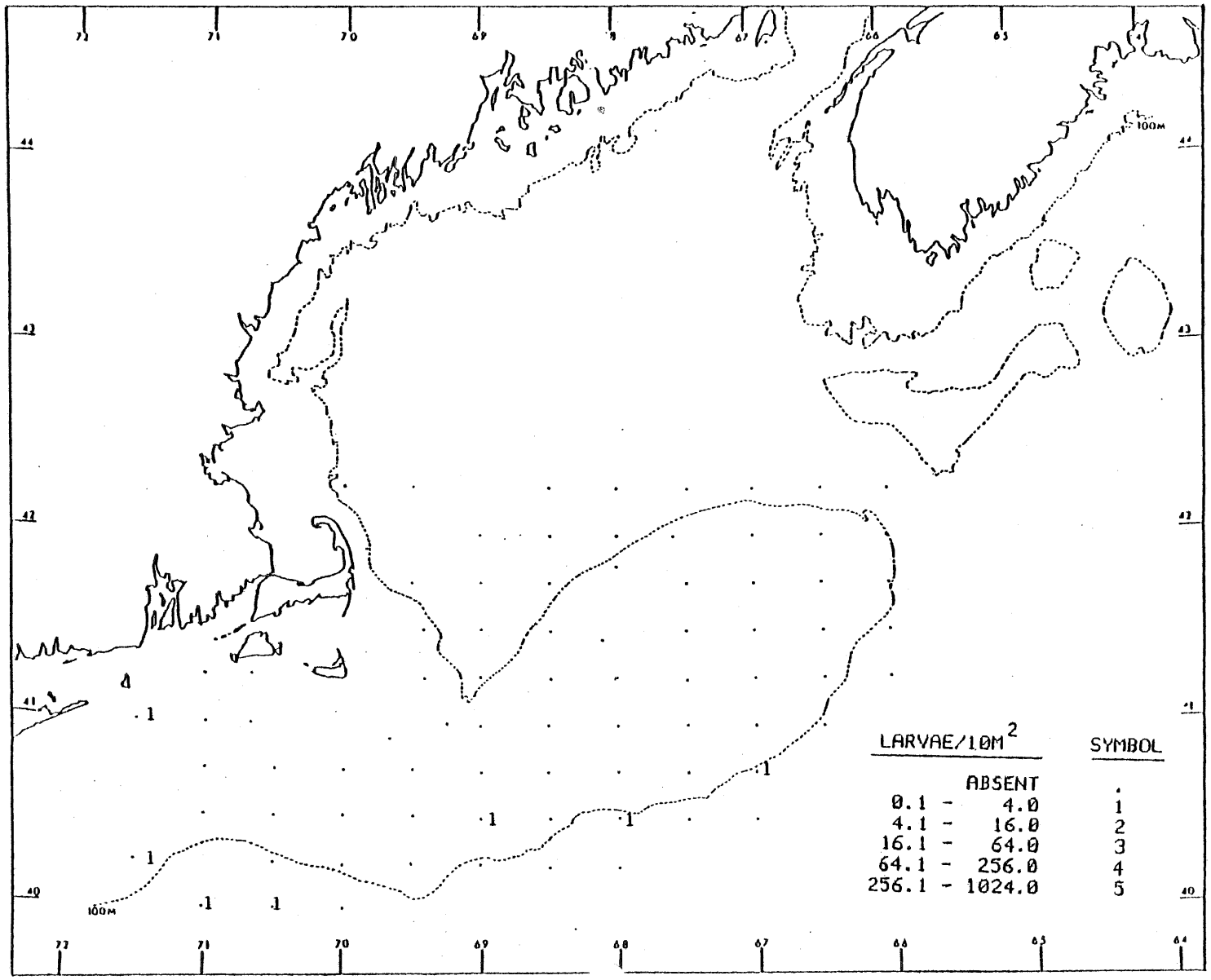


Table 19. Mean abundance (positive tows only) and mean length of *Myrophis punctatus* by cruise.

Cruise	Middate	Number of Positive Tows	Mean no./ $10m^2$	Standard Deviation	Mean Length (mm)	Standard Deviation	Length Range
Anton Dohrn 74-01	19 Nov. 1974	1	2.0	-	73.0	-	-
Albatross IV 74-13	13 Dec 1974	1	0.6	-	35.0	-	-
Anton Dohrn 75-187	09 Nov. 1975	3	2.1	1.0	47.9	14.9	33 - 79
Albatross IV 75-14	09 Dec. 1975	2	2.0	1.0	65.7	11.7	54 - 79
Researcher 76-01	04 Dec. 1976	2	1.4	0.2	61.3	1.9	50 - 63

References:

Berrien et al. 1978
Fischer 1978
Grimm 1978
Joakimsson 1978
Jordan et al. 1978

Figure 20. Composite distribution and abundance (greatest occurrence per station) of Ophichthus gomesii collected during 30 autumn and winter cruises for the period Sep. 1971 - Feb. 1977.

Ophichthus gomesii (Castelnau) Common Name: Shrimp eel

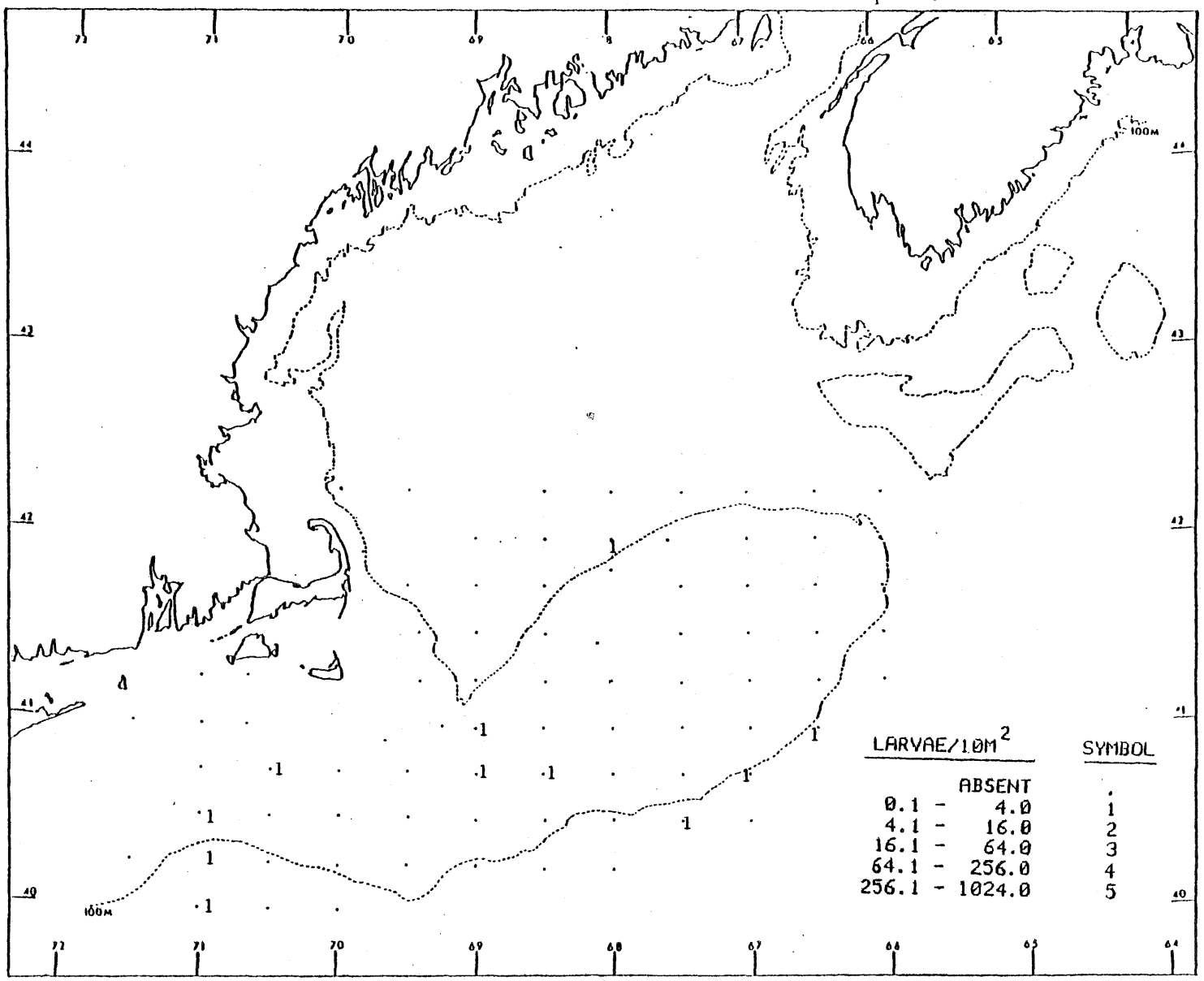


Table 20. Mean abundance (positive tows only) and mean length of *Ophichthus gomesi* by cruise.

Cruise	Middate	Number of Positive Tows	Mean no./ $10m^2$	Standard Deviation	Mean Length (mm)	Standard Deviation	Length Range
Delaware II 71-04	27 Sep. 1971	8	1.6	0.9	73.9	6.7	65 - 86
Belogorsk 75-03	23 Oct. 1975	1	1.1	-	80.0	-	-
Anton Dohrn 75-187	09 Nov. 1975	3	1.2	0.3	75.6	21.6	40 - 90

References:

Berrien et al. 1978
Fischer 1978
Joakimsson 1978
Jordan et al. 1962

Figure 21. Composite distribution and abundance (greatest occurrence per station) of Clupeidae collected during 30 autumn and winter cruises for the period Sep. 1971 - Feb. 1977.

Clupeidae Common Name: Herrings

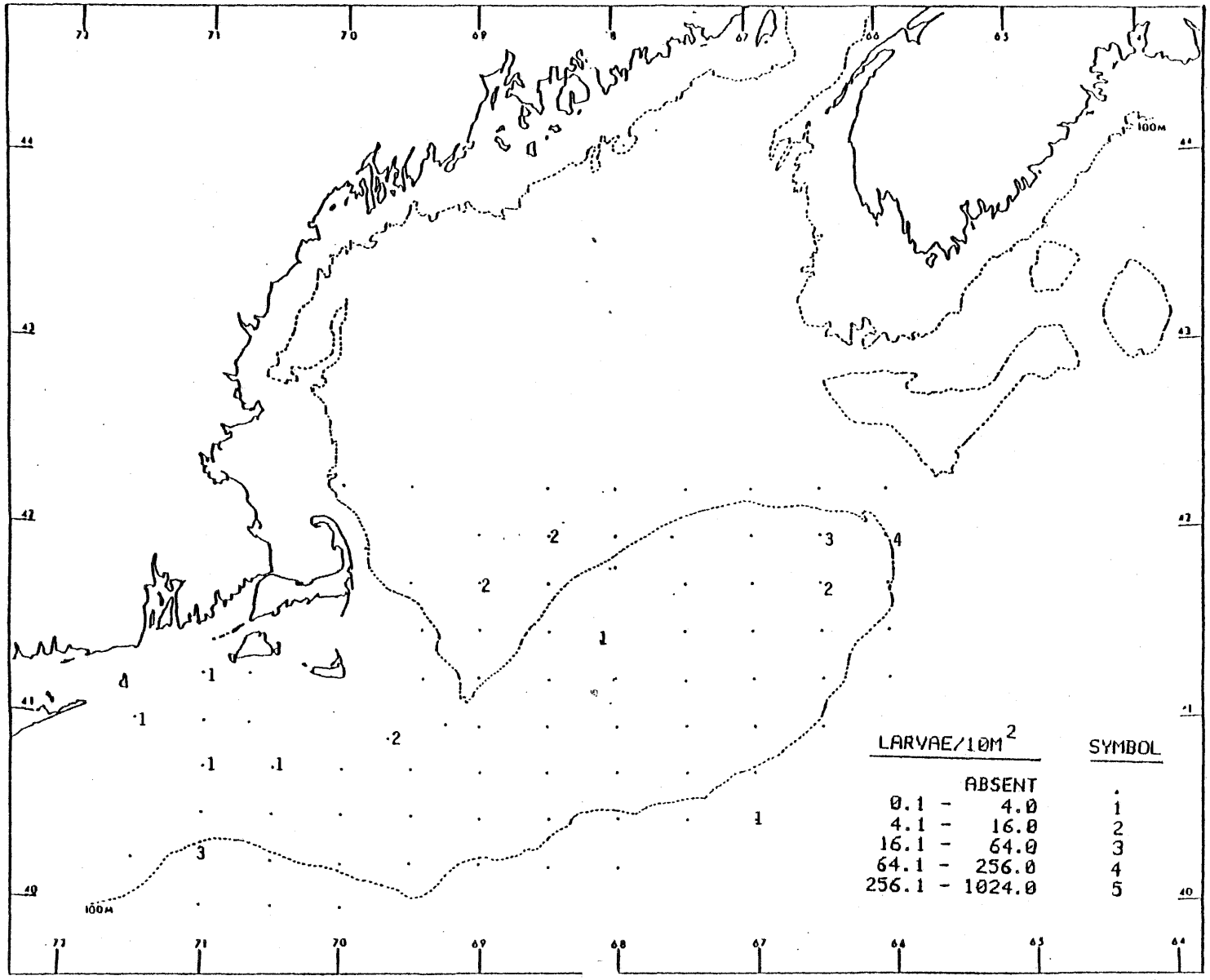


Table 21. Mean abundance (positive tows only) and mean length of Clupeidae by cruise.

Cruise	Middate	Number of Positve Tows	Mean no./ $10m^2$	Standard Deviation	Mean Length (mm)	Standard Deviation	Length Range
Viandra 71-01	17 Oct. 1971	1	2.3	-	4.0	-	-
Cryos 73-01	19 Sep 1973	1	46.1	-	5.9	0.6	5 - 7
Belogorsk 73-01	23 Oct. 1973	1	81.4	-	6.2	0.7	5 - 7
Albatross IV 73-09	13 Dec. 1973	2	9.7	9.7	5.4	0.8	4 - 6
Cryos 74-04	16 Sep. 1974	1	3.1	-	6.0	-	-
Anton Dohrn 75-187	09 Nov. 1975	2	19.0	24.9	13.6	1.6	11 - 17
Belogorsk 76-03	08 Oct. 1976	4	7.3	1.5	8.4	2.9	2 - 12
Wieczno 76-03	24 Oct. 1976	3	2.0	0.5	6.0	0.7	5 - 7

References:

Colton and Byron 1977
Grimm 1978
Joakimsson 1978
Jordan et al. 1962

Figure 22. Composite distribution and abundance (greatest occurrence per station) of Clupea harengus collected during 30 autumn and winter cruises for the period Sep. 1971 - Feb. 1977.

Clupea harengus Linnaeus Common Name: Atlantic sea herring

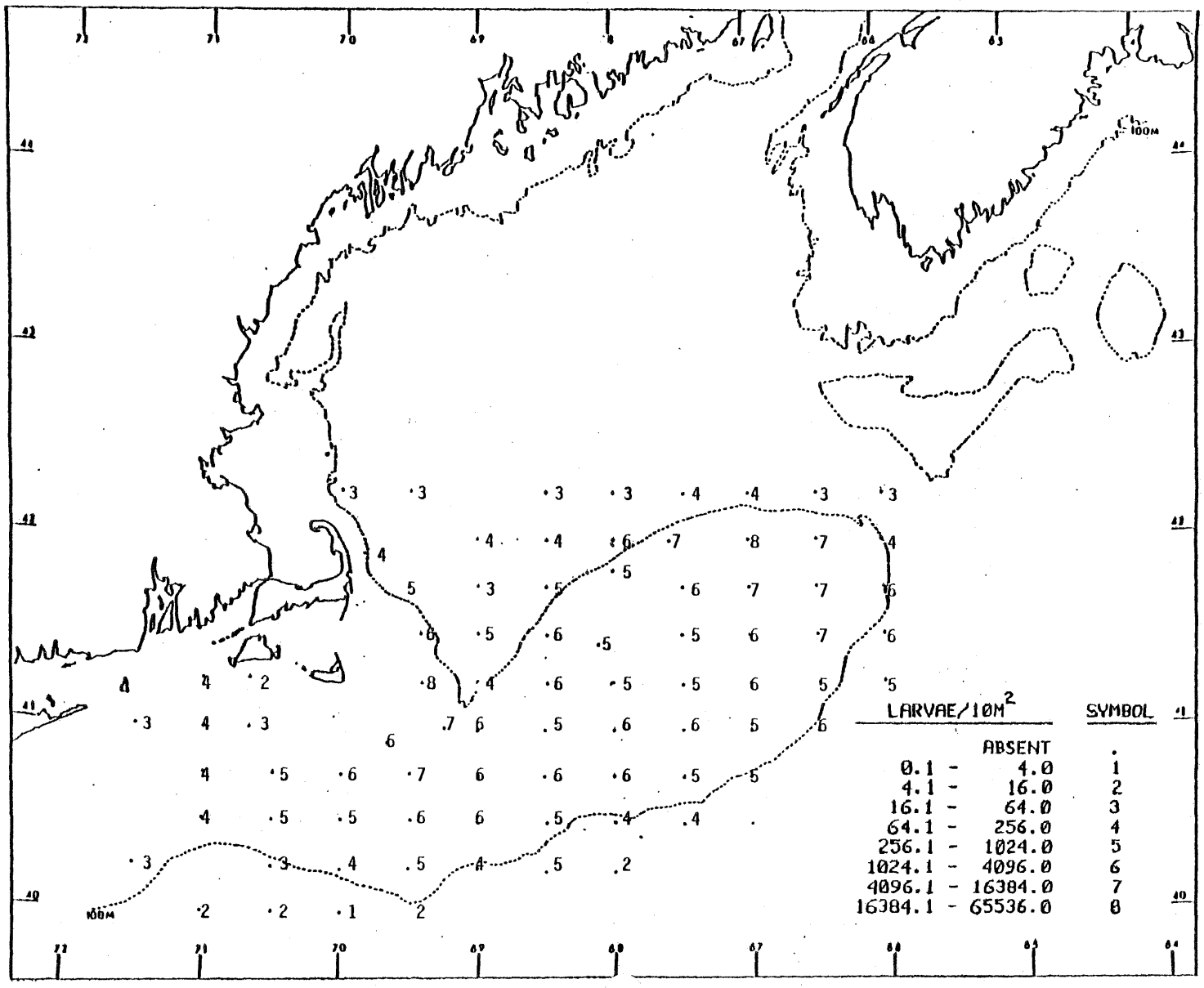


Table 22. Mean abundance (positive tows only) and mean length of *Clupea harengus* by cruise.

Cruise	Middate	Number of Positive Tows	Mean no./ $10m^2$	Standard Deviation	Mean Length (mm)	Standard Deviation	Length Range
Delaware II 71-04	27 Sep. 1971	17	137.3	335.2	11.6	3.0	6 - 22
Viandra 71-01	17 Oct. 1971	44	152.8	294.6	12.3	5.0	5 - 30
Walther Herwig 71-01	05 Nov. 1971	24	740.8	1994.4	11.9	3.4	4 - 30
Albatross IV 7 -07	09 Dec. 1971	35	84.2	120.0	15.3	4.0	4 - 23
Argus 72-01	26 Sep. 1972	8	123.9	253.8	11.5	3.6	9 - 22
Wieczno 72-01	14 Oct. 1972	41	106.6	217.7	11.9	3.2	5 - 27
Argus 72-02	20 Oct. 1972	36	507.8	2053.1	9.9	3.4	5 - 26
Anton Dorhn 72-01	05 Nov. 1972	52	97.5	299.5	12.8	3.7	5 - 28
Albatross IV 72-09	10 Dec. 1972	49	34.3	97.2	10.2	5.9	3 - 24
Cryos 73-01	19 Sep. 1973	5	387.1	472.2	8.6	3.3	3 - 24
Wiecano 73-01	09 Oct. 1973	33	858.1	2140.8	9.5	4.0	4 - 28
Belogorsk 73-01	23 Oct. 1973	52	1472.4	5221.0	11.9	3.8	5 - 27
Walther Herwig 73-43	02 Nov. 1973	55	1549.9	3043.0	11.0	4.2	5 - 30
Albatross IV 73-09	13 Dec. 1973	63	246.9	399.8	17.4	5.0	5 - 31
Albatross IV 74-02	14 Feb. 1974	31	13.8	25.8	23.4	4.7	18 - 32
Cryos 74-04	16 Sep. 1974	1	15.9	0	8.0	2.5	5 - 20
Prognoz 74-01	24 Oct. 1974	51	1151.9	2965.0	8.3	1.8	5 - 20
Anton Dohrn 74-01	19 Nov. 1974	59	354.3	688.6	13.0	3.6	6 - 25
Albatross IV 74-13	13 Dec. 1974	60	162.4	239.2	17.8	5.0	2 - 35
Albatross IV 75-02	14 Feb. 1975	33	20.6	33.1	28.1	3.7	8 - 40
Belogorsk 75-02	01 Oct. 1975	12	31.6	66.3	6.5	1.3	5 - 18
Belogorsk 75-03	23 Oct. 1975	42	538.8	1821.1	8.2	1.8	5 - 19
Anton Dohrn 75-187	09 Nov. 1975	57	258.8	496.1	12.0	3.8	2 - 25
Albatross IV 75-14	09 Dec. 1975	51	42.3	50.1	17.8	4.0	6 - 29
Albatross IV 76-01	16 Feb. 1976	31	38.8	73.9	30.6	4.7	2 - 39
Belogorsk 76-03	08 Oct. 1976	17	60.7	144.2	8.6	1.6	5 - 16
Wieczno 76-03	24 Oct. 1976	29	41.3	92.6	11.4	3.0	6 - 21
Anton Dohrn 76-02	22 Nov. 1976	20	5.8	5.4	19.3	3.2	9 - 27
Researcher 76-01	04 Dec. 1976	28	4.0	4.8	18.7	4.3	7 - 29
Mt. Mitchell 77-01	18 Feb. 1977	12	3.2	1.8	30.2	3.5	21 - 36

Figure 23. Composite distribution and abundance (greatest occurrence per station) of Alosa sp. collected during 30 autumn and winter cruises for the period Sep. 1971 - Feb. 1977.

Alosa sp. Common Name:

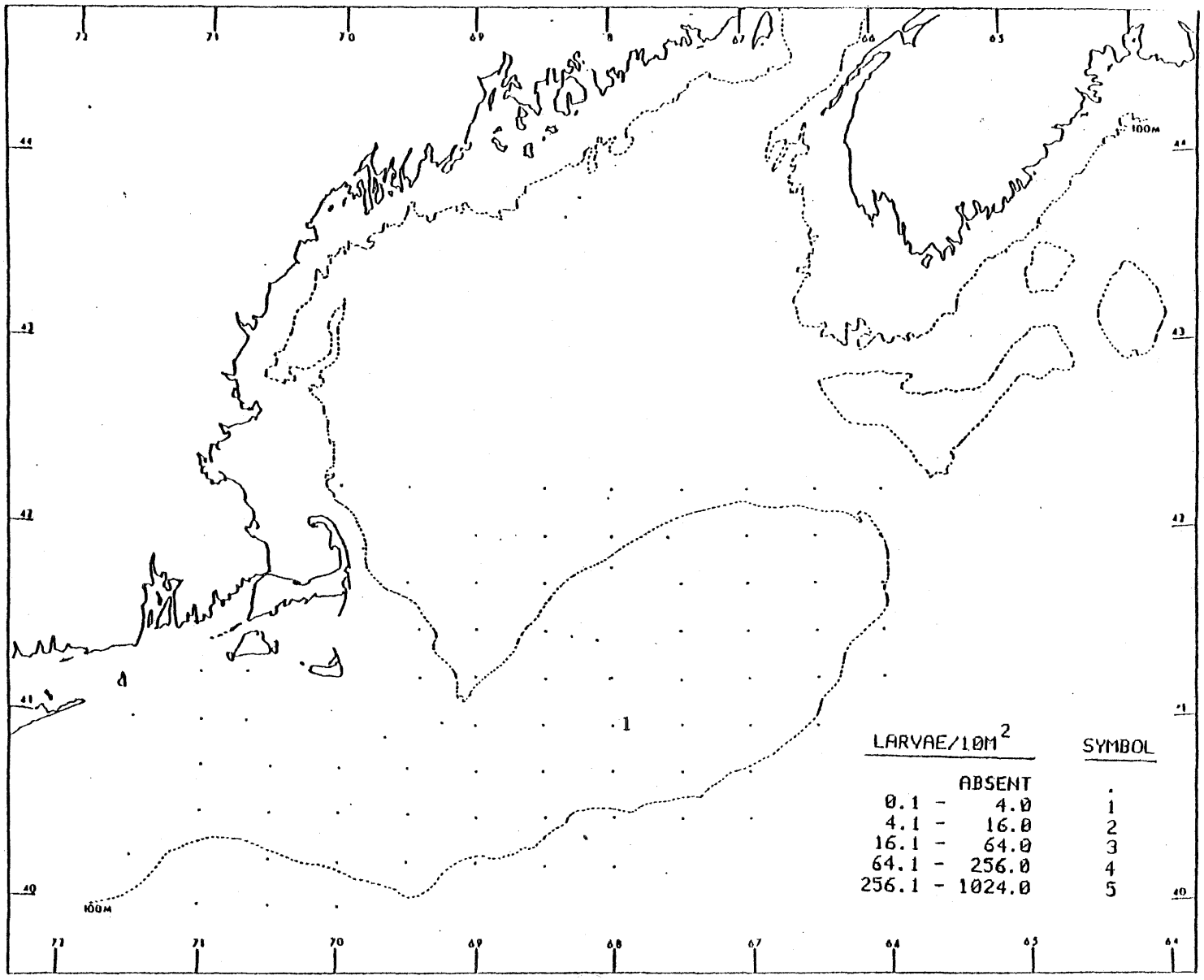


Table 23. Mean abundance (positive tows only) and mean length of *Alosa* sp. by cruise.

Cruise	Middate	Number of Positive Tows	Mean no./ $10m^2$	Standard Deviation	Mean Length (mm)	Standard Deviation	Length Range
Belogorsk 75-02	01 Oct. 1975	1	1.2	-	20.0	-	-

References:

Bigelow et al. 1963
Fischer 1978
Jordan et al. 1962
Leim and Scott 1966

Figure 24. Composite distribution and abundance (greatest occurrence per station) of Brevoortia tyrannus collected during 30 autumn and winter cruises for the period Sep. 1971 - Feb. 1977.

Brevoortia tyrannus (Latrobe) Common Name: Atlantic menhaden

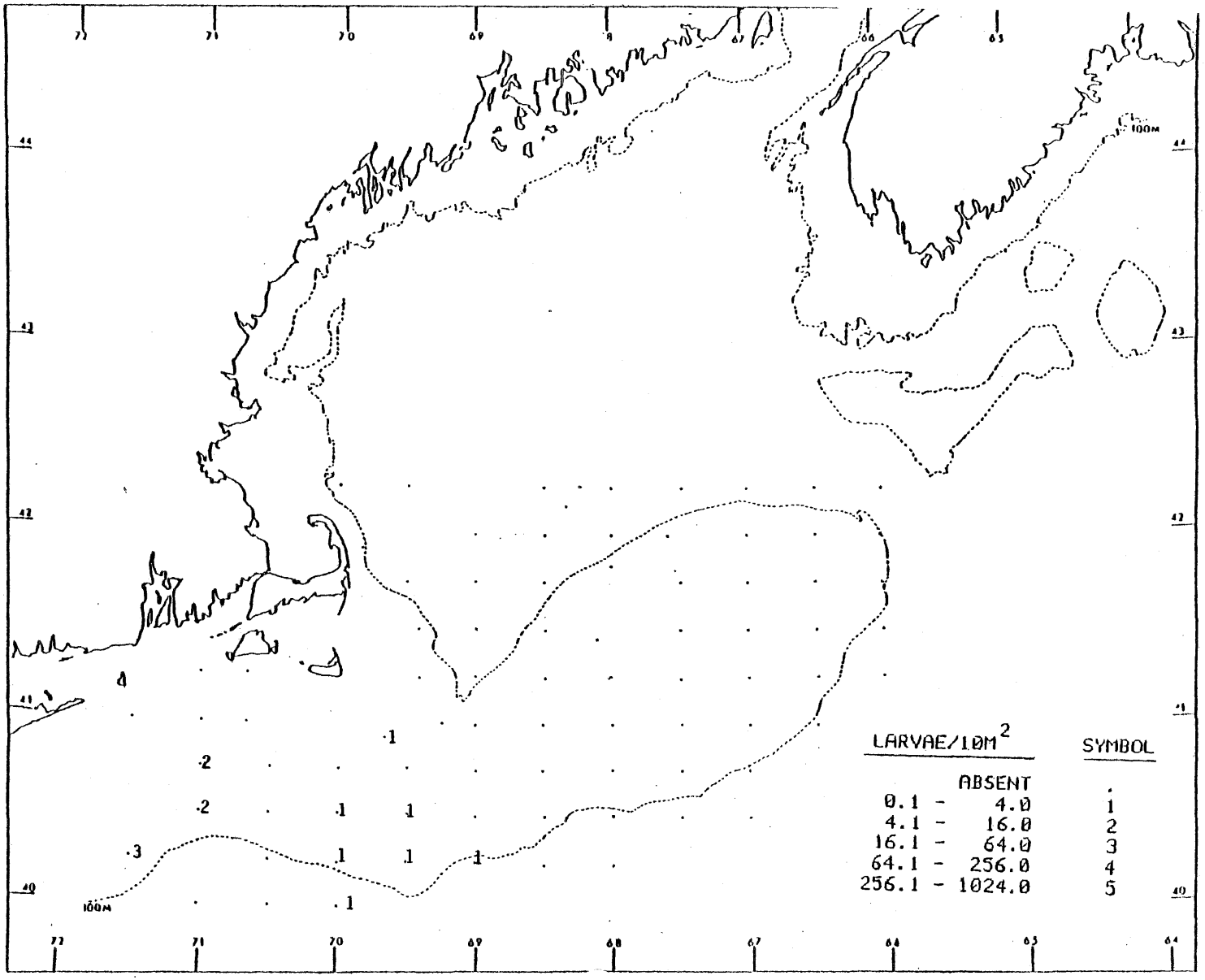


Table 24. Mean abundance (positive tows only) and mean length of *Brevoortia tyrannus* by cruise.

Cruise	Middate	Number of Positive Tows	Mean no./ $10m^2$	Standard Deviation	Mean Length (mm)	Standard Deviation	Length Range
Wieczno 72-01	14 Oct. 1972	2	0.7	0.4	19.4	1.7	18 - 20
Wieczno 73-40	09 Oct. 1973	1	4.0	-	7.0	-	-
Albatross IV 73-09	13 Dec. 1973	1	12.3	-	10.5	2.7	9 - 15
Prognoz 74-01	24 Oct. 1974	4	8.9	13.0	14.5	1.8	12 - 21
Belogorsk 75-02	01 Oct. 1975	1	1.6	-	32.0	-	-
Belogorsk 75-03	23 Oct. 1975	1	1.5	-	18.0	-	-
Researcher 76-01	04 Dec. 1976	1	3.1	-	12.0	-	-

References:

Berrien et al. 1978
Bigelow et al. 1963
Fischer 1978
Kendall and Reintjes 1875
Leim and Scott 1966

Figure 25. Composite distribution and abundance (greatest occurrence per station) of Engraulidae collected during 30 autumn and winter cruises for the period Sep. 1971 - Feb. 1977.

Engraulidae Common Name: Anchovies

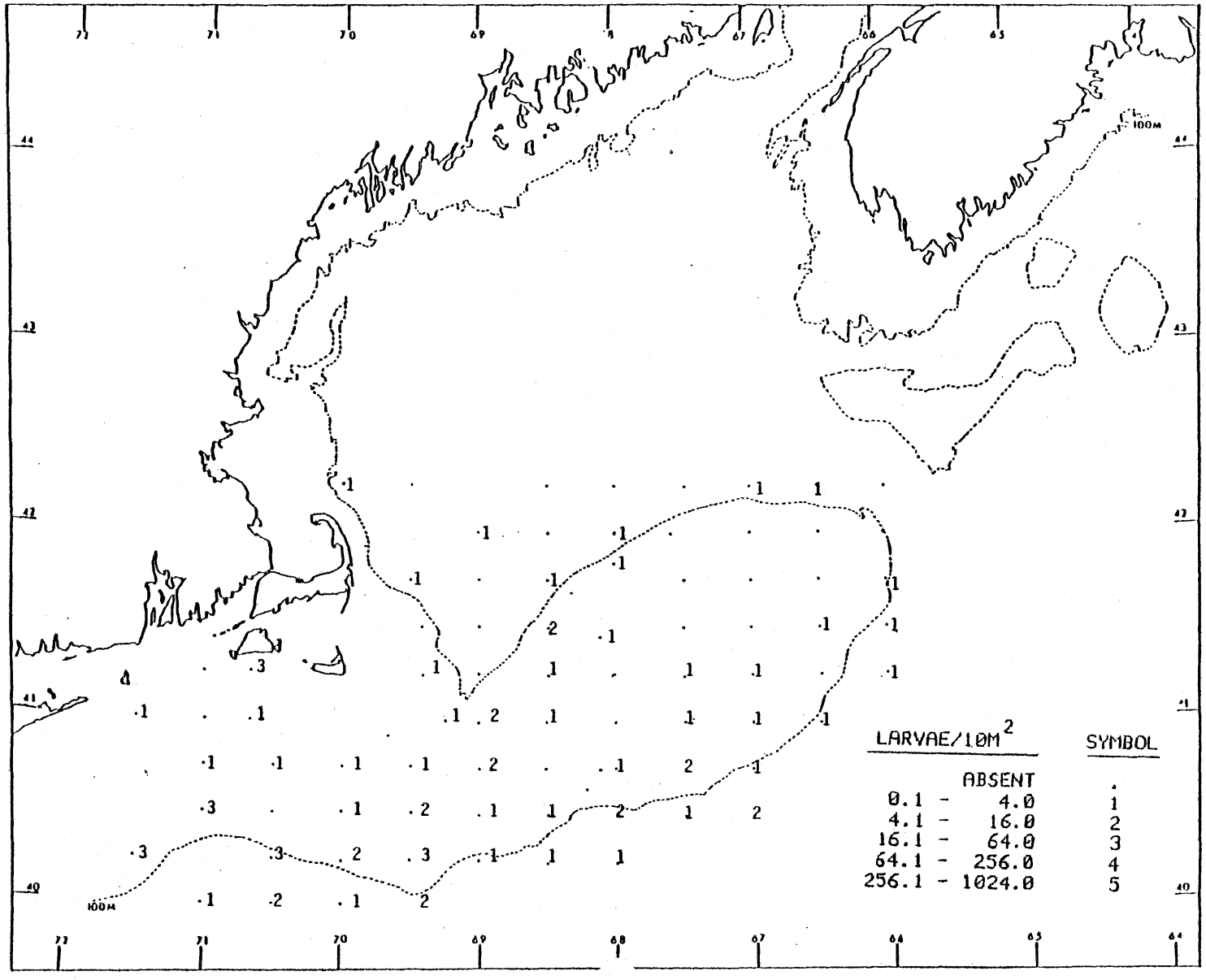


Table 25. Mean abundance (positive tows only) and mean length of Engraulidae by cruise.

Cruise	Middate	Number of Positive Tows	Mean no./ $10m^2$	Standard Deviation	Mean Length (mm)	Standard Deviation	Length Range
Delaware II 71-04	27 Sep. 1971	4	5.4	8.7	5.4	3.5	3 - 15
Viandra 71-01	17 Oct. 1971	2	1.7	0.9	12.6	2.5	10 - 15
Wieczno 72-01	14 Oct. 1972	2	1.6	0.6	12.5	3.2	9 - 15
Argus 72-02	20 Oct. 1972	1	2.9	-	12.0	-	-
Anton Dohrn 72-01	05 Nov. 1972	2	1.3	0.2	17.2	3.2	15 - 20
Wieczno 73-40	09 Oct. 1973	18	5.5	7.4	9.7	4.8	4 - 23
Belogorsk 73-01	23 Oct. 1973	16	3.6	4.3	12.8	4.1	7 - 23
Walther Herwig 73-43	02 Nov. 1973	10	8.1	9.8	17.9	3.9	12 - 26
Albatross IV 73-09	13 Dec. 1973	3	2.8	0.4	16.9	6.5	10 - 25
Cryos 74-04	16 Sep. 1974	7	2.1	0.9	17.3	5.7	6 - 26
Prognoz 74-01	24 Oct. 1974	9	1.9	1.0	15.6	8.6	4 - 30
Anton Dohrn 74-01	19 Nov. 1974	7	3.2	1.5	11.5	2.6	7 - 16
Albatross IV 74-13	13 Dec. 1974	2	1.7	0	20.5	0.6	20 - 21
Belogorsk 75-02	01 Oct. 1975	5	1.5	1.1	18.3	5.9	9 - 27
Belogorsk 75-03	23 Oct. 1975	1	1.4	-	11.0	-	-
Anton Dohrn 75-187	09 Nov. 1975	5	5.3	3.9	11.4	5.2	6 - 29
Albatross IV 75-14	09 Dec. 1975	5	1.9	0.7	16.2	6.5	2 - 23
Belogorsk 76-03	08 Oct. 1976	9	1.4	0.4	20.3	5.3	14 - 30
Wieczno 76-03	24 Oct. 1976	7	1.4	0.9	13.4	4.3	7 - 19
Anton Dohrn 76-02	22 Nov. 1976	4	2.5	1.1	17.9	3.9	13 - 24
Researcher 76-01	04 Dec. 1976	6	1.5	0.3	21.1	8.0	8 - 34

References:

Colton and Byron 1977
Fischer 1978
Grimm 1978
Joakimsson 1978
Jordan et al. 1962

Figure 26. Composite distribution and abundance (greatest occurrence per station) of Anchoviella sp. collected during 30 autumn and winter cruises for the period Sep. 1971 - Feb. 1977.

Anchoviella sp. Common Name:

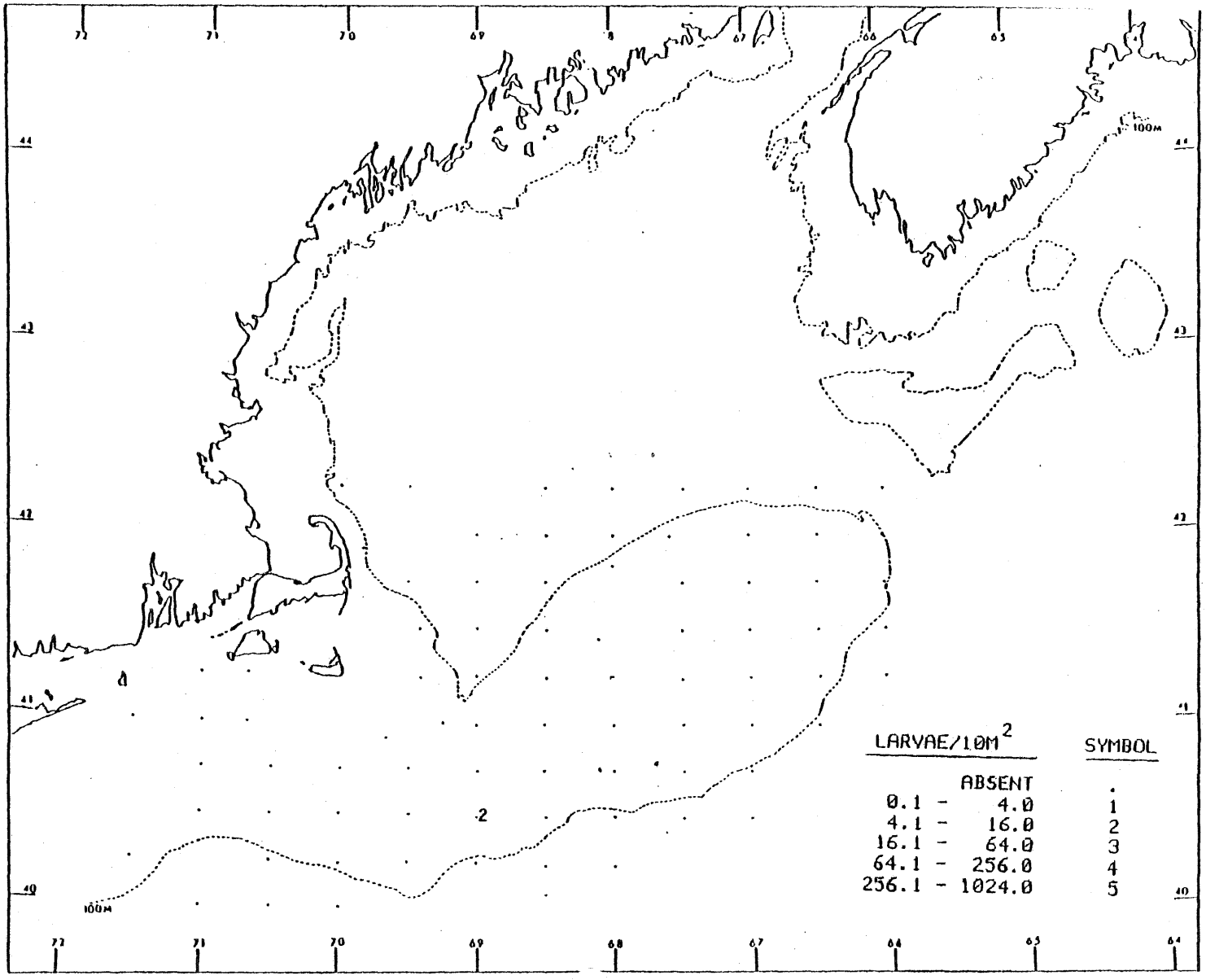


Table 26. Mean abundance (positive tows only) and mean length of *Anchoviella* sp. by cruise.

Cruise	Middate	Number of Positive Tows	Mean no./ $10m^2$	Standard Deviation	Mean Length (mm)	Standard Deviation	Length Range
Walther Herwig 73-43	02 Nov. 1973	1	8.8	-	37.0	-	-

References:

Figure 27. Composite distribution and abundance (greatest occurrence per station) of Engraulis eurystole collected during 30 autumn and winter cruises for the period Sep. 1971 - Feb. 1977.

Engraulis eurystole (Swain and Meek) Common Name: Silver anchovy

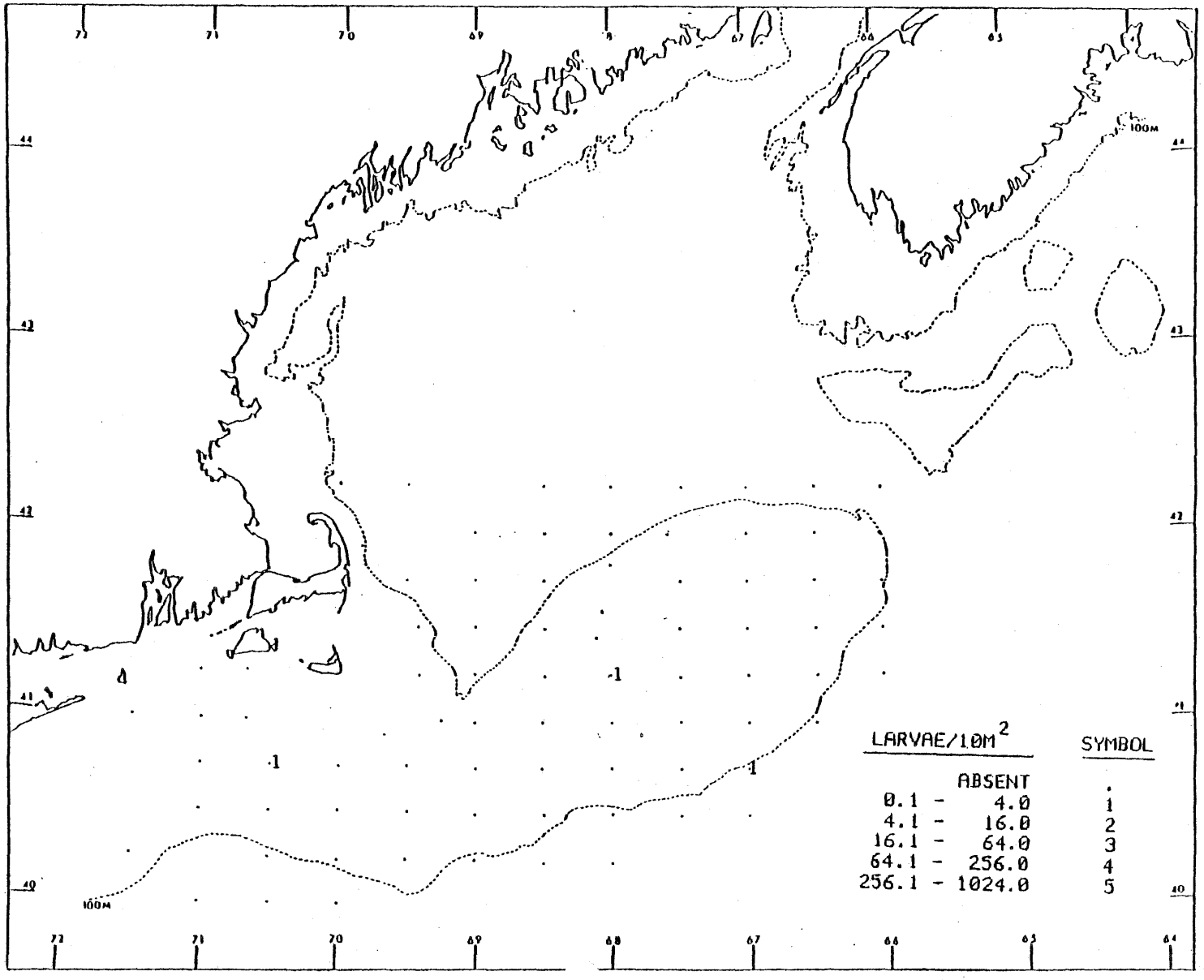


Table 27. Mean abundance (positive tows only) and mean length of *Engraulis eurystole* by cruise.

Cruise	Middate	Number of Positive Tows	Mean no./ $10m^2$	Standard Deviation	Mean Length (mm)	Standard Deviation	Length Range
Belogorsk 73-01	23 Oct. 1973	1	1.3	-	32.0	-	-
Anton Dohrn 75-187	09 Nov. 1975	2	1.5	0	37.0	3.7	34 - 40

References:

Berrien et al. 1978
Fischer 1978
Joakimsson 1978
Klima 1971
Markle et al. 1980

Figure 28. Composite distribution and abundance (greatest occurrence per station) of Argentinidae collected during 30 autumn and winter cruises for the period Sep. 1971 - Feb. 1977.

Argentinidae

Common Name: Argentines

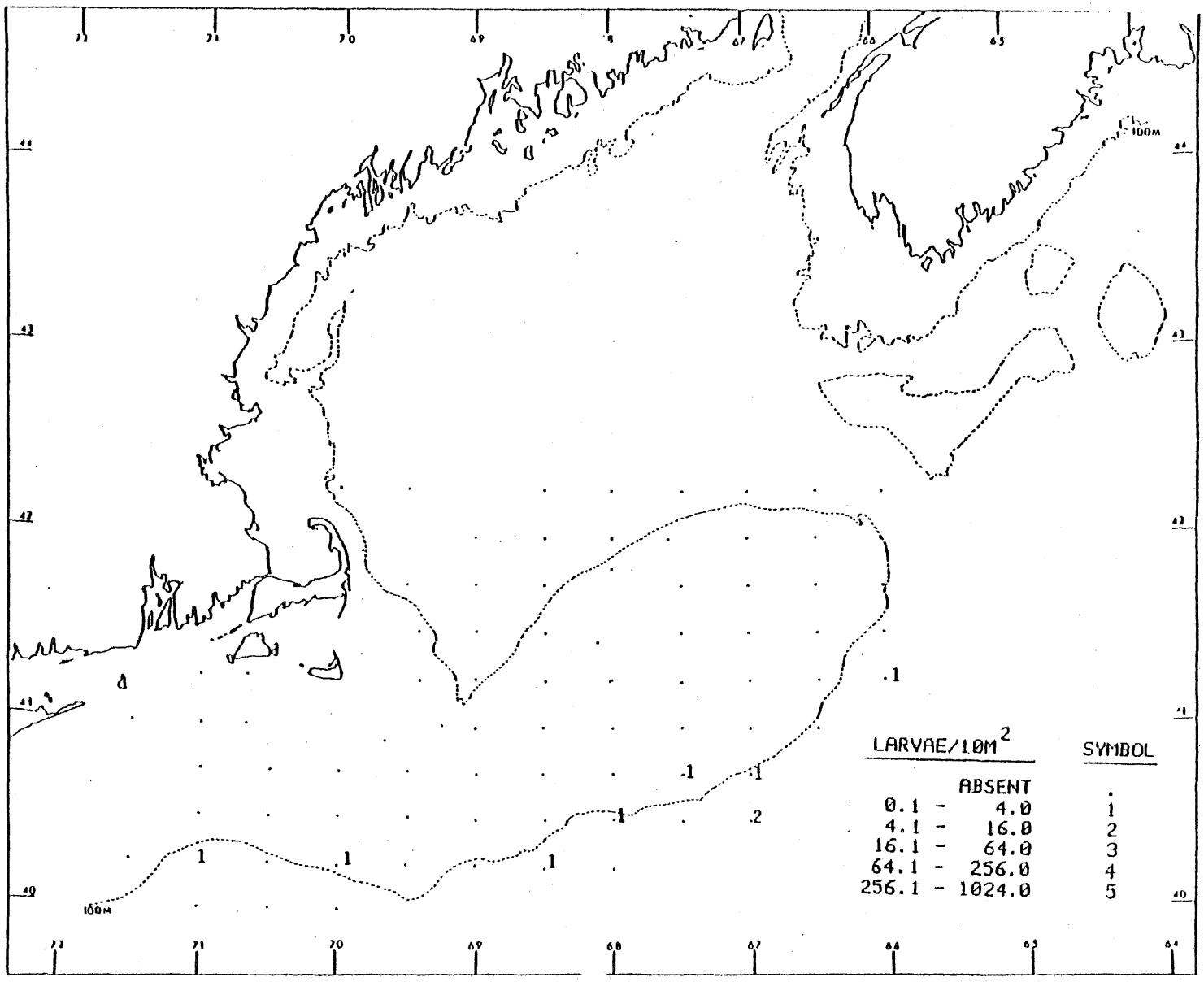


Table 28. Mean abundance (positive tows only) and mean length of Argentinidae by cruise.

Cruise	Middate	Number of Positive Tows	Mean no./ $10m^2$	Standard Deviation	Mean Length (mm)	Standard Deviation	Length Range
Delaware II 71-04	27 Sep. 1971	2	1.1	0.4	4.3	1.3	3 - 5
Viandra 71-01	17 Oct. 1071	1	1.1	-	5.0	-	-
Wieczno 73-40	09 Oct. 1973	3	2.2	0.8	5.6	1.5	4 - 7
Belogorsk 73-01	23 Oct. 1973	1	2.6	-	5.0	-	-
Cryos 74-04	16 Sep. 1974	2	6.6	0.6	5.2	0.4	5 - 6
Belogorsk 75-03	23 Oct. 1975	1	0.9	-	6.0	-	-
Wieczno 76-03	24 Oct. 1976	1	2.0	-	7.0	-	-

Reference:

Bigelow et al. 1964
Fischer 1978
Joakimsson 1978
Jordan et al. 1962
Leim and Scott 1966

Figure 29. Composite distribution and abundance (greatest occurrence per station) of Argentina sp. collected during 30 autumn and winter cruises for the period Sep. 1971 - Feb. 1977.

Argentina sp. Common Name;

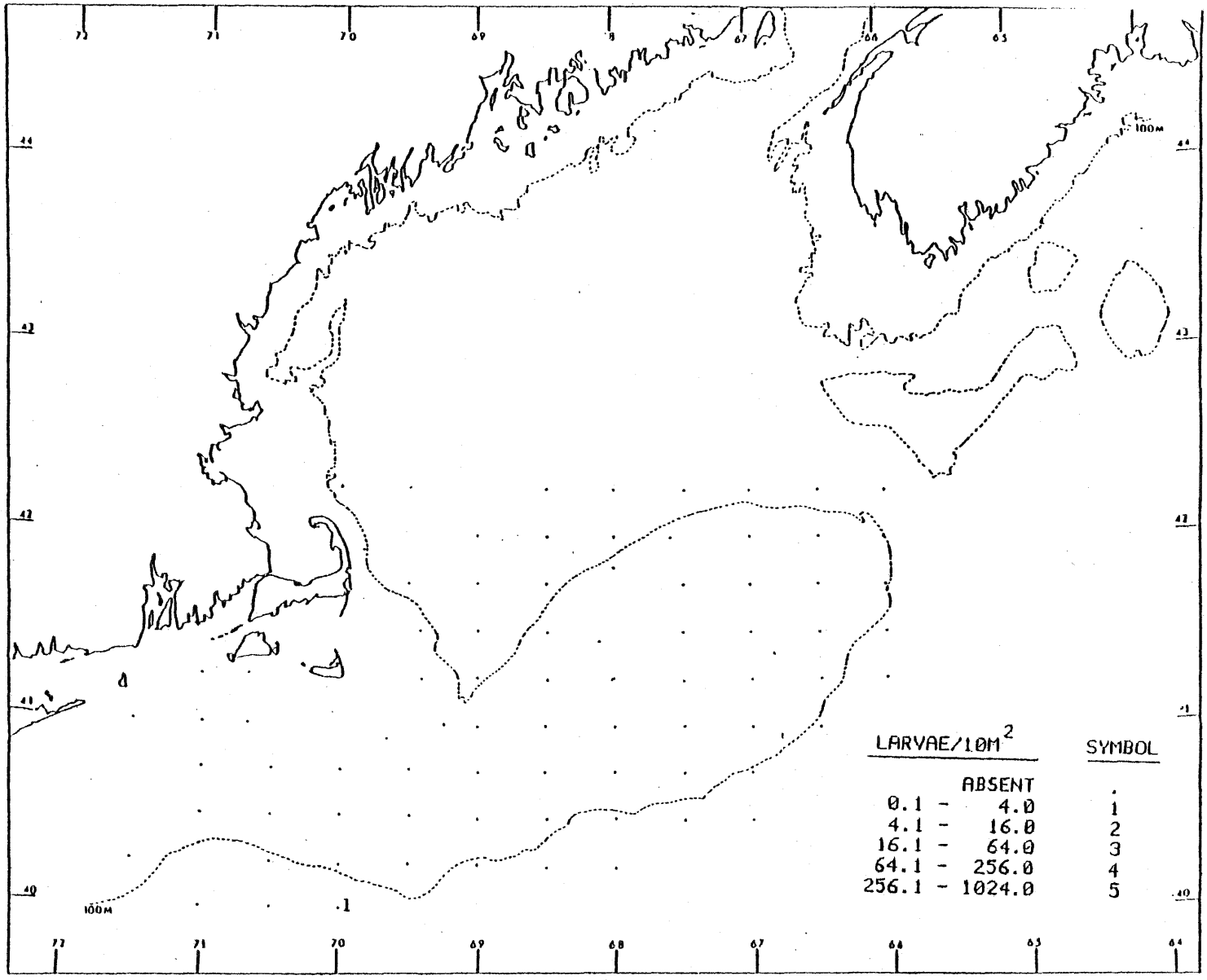


Table 29. Mean abundance (positive tows only) and mean length of *Argentina* sp. by cruise.

Cruise	Middate	Number of Positive Tows	Mean no./ $10m^2$	Standard Deviation	Mean Length (mm)	Standard Deviation	Length Range
Anton Dohrn 74-01	19 Nov. 1974	1	2.0	-	6.0	-	-

References:

Bigelow et al. 1964
Jordan et al. 1962
Leim and Scott 1966

Figure 30. Composite distribution and abundance (greatest occurrence per station) of Nansenia gronlandica collected during 30 autumn and winter cruises for the period Sep. 1971 - Feb. 1977.

Nansenia gronlandica (Reinhardt) Common Name: Large-eyed argentine

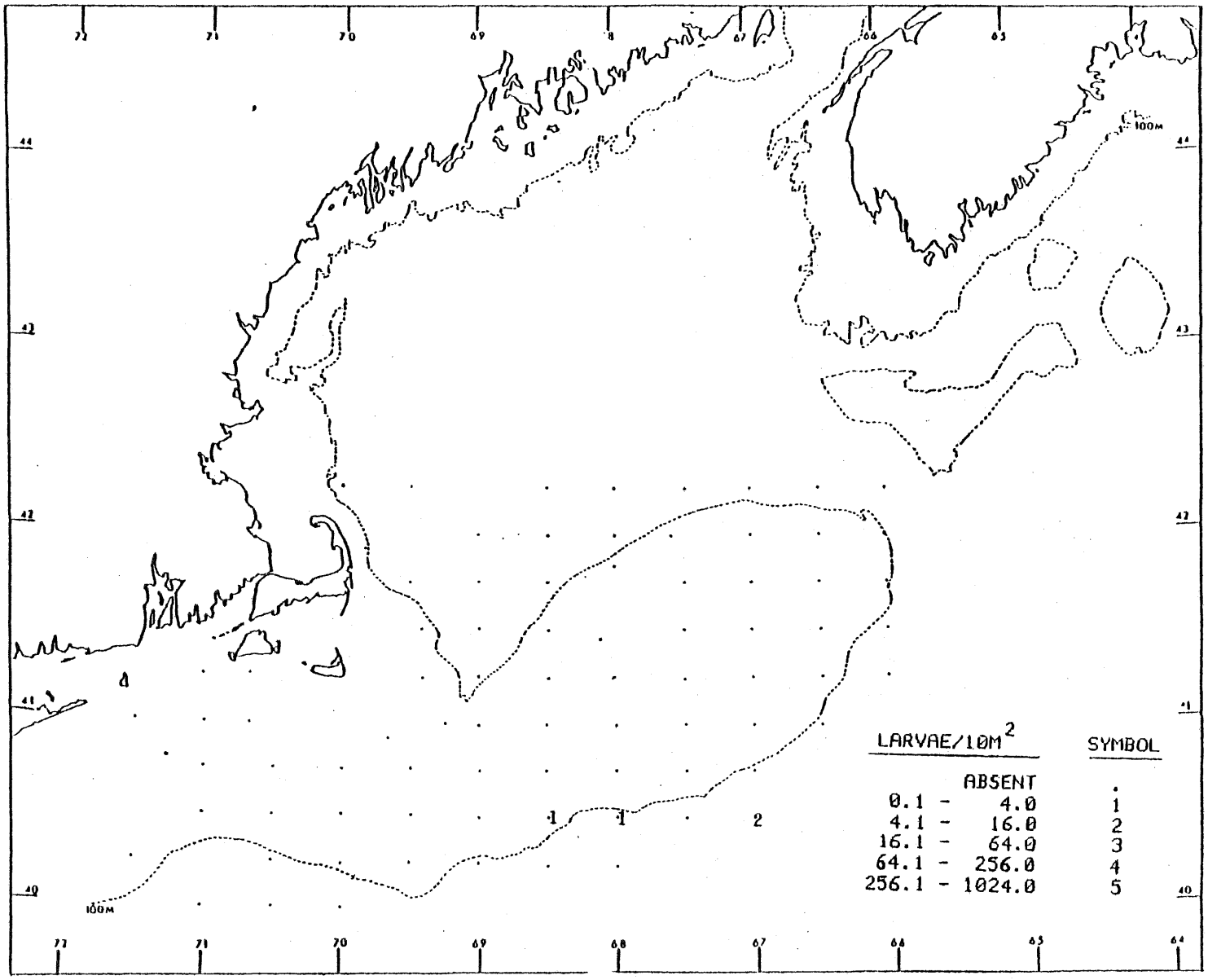


Table 30. Mean abundance (positive tows only) and mean length of *Nansenia gronlandica* by cruise.

Cruise	Middate	Number of Positive Tows	Mean no./ $10m^2$	Standard Deviation	Mean Length (mm)	Standard Deviation	Length Range
Walther Herwig 73-43	02 Nov. 1973	1	2.6	-	8.0	-	-
¼rognoz 74-01	24 Oct. 1974	1	5.7	-	9.0	-	-
Albatross IV 74-13	13 Dec. 1974	1	1.7	-	8.0	-	-

References:

Bigelow et al. 1964
Jordan et al. 1962
Leim and Scott 1966

Figure 31. Composite distribution and abundance (greatest occurrence per station) of Nansenia sp. collected during 30 autumn and winter cruises for the period Sep. 1971 - Feb. 1977.

Nansenia sp. Common Name:

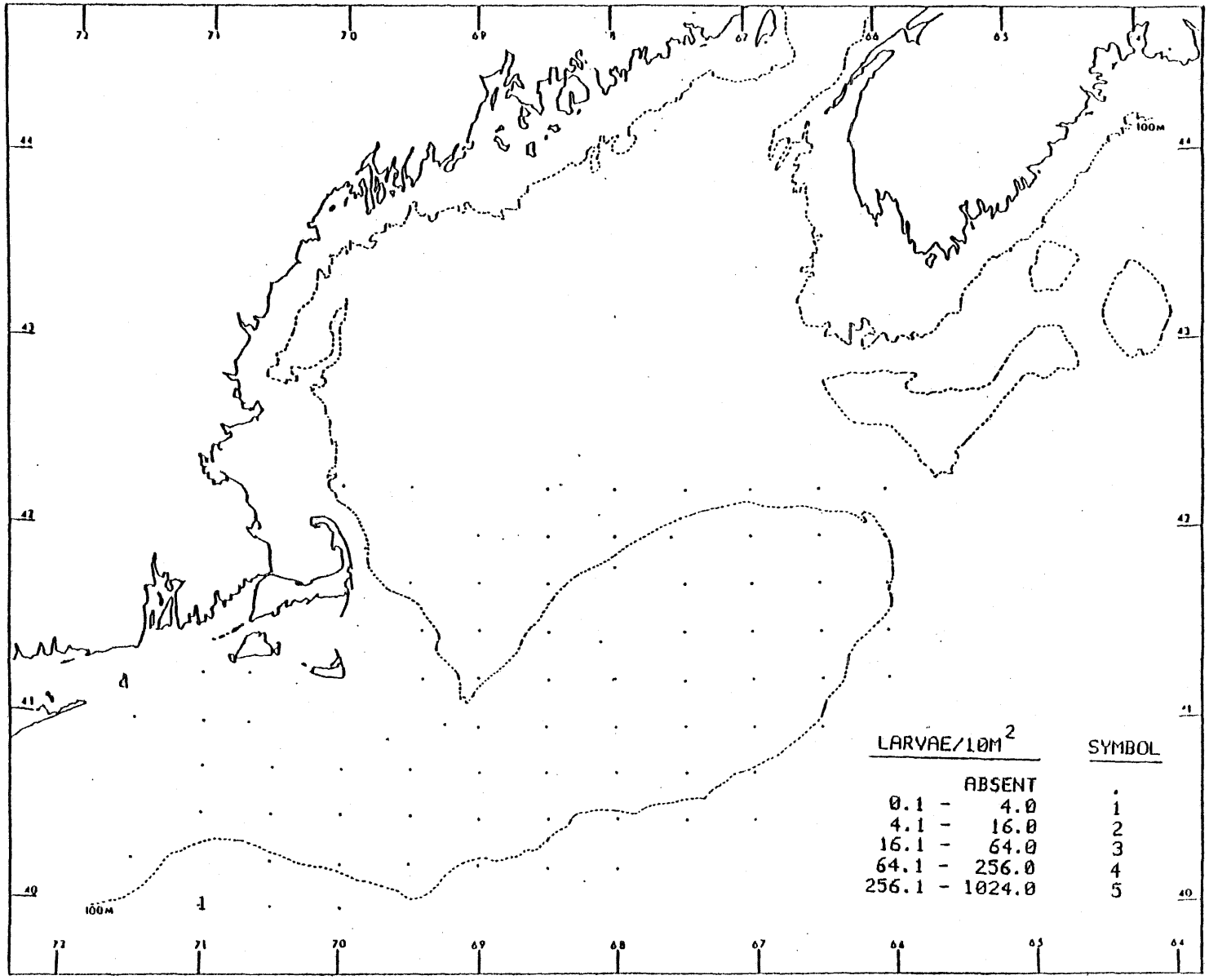


Table 31. Mean abundance (positive tows only) and mean length of *Nansenia* sp. by cruise.

Cruise	Middate	Number of Positive Tows	Mean no./ $10m^2$	Standard Deviation	Mean Length (mm)	Standard Deviation	Length Range
Albatross IV 74-13	13 Dec. 1974	1	1.2	-	5.0	-	-

References:

See *N. gronlandica*

Figure 32 Composite distribution and abundance (greatest occurrence per station) of Bathylagidae collected during 30 autumn and winter cruises for the period Sep. 1971 - Feb. 1977.

Bathylagidae Common Name: Blacksmelts

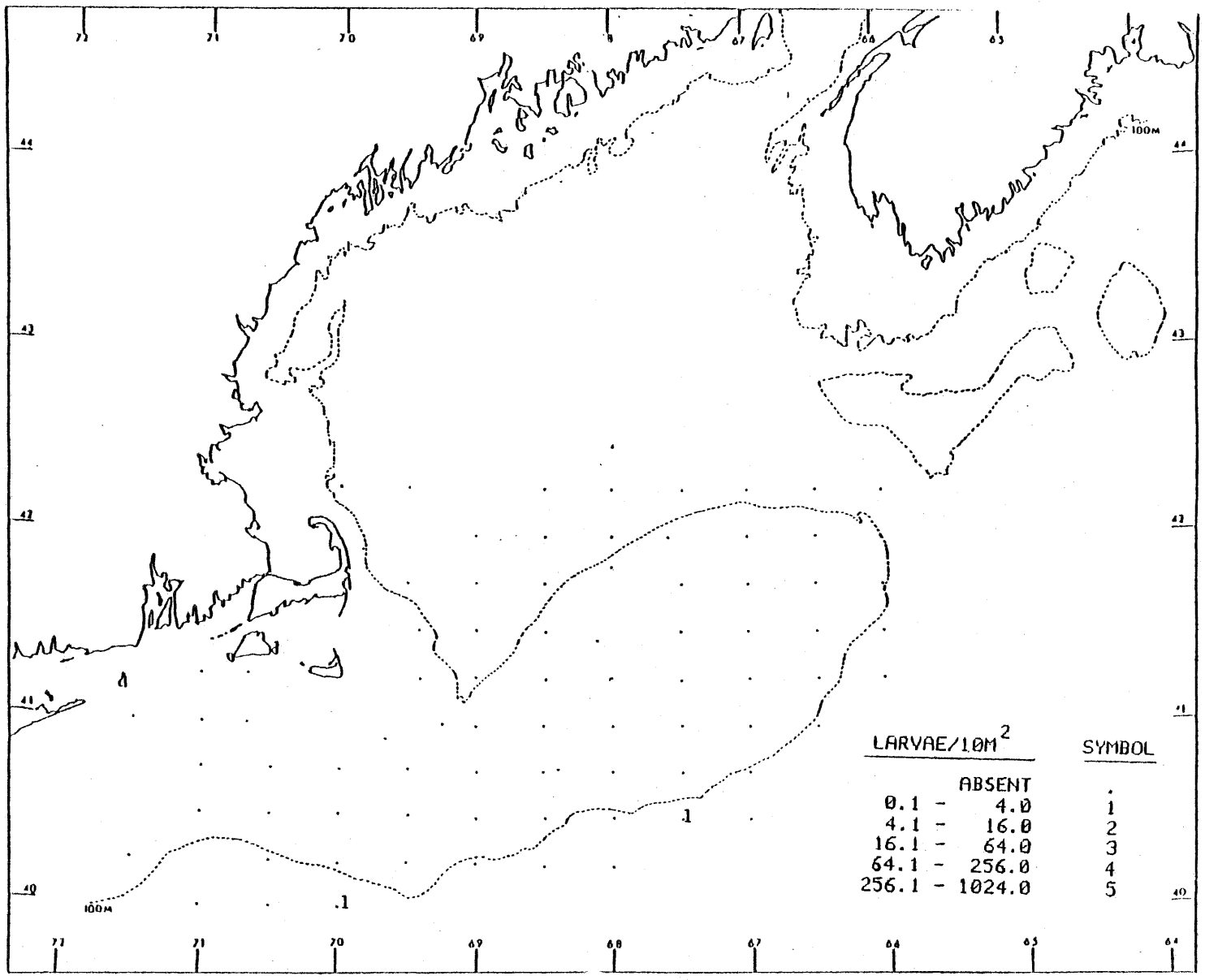


Table 32. Mean abundance (positive tows only) and mean length of Bathylagidae by cruise.

Cruise	Middate	Number of Positive Tows	Mean no./ $10m^2$	Standard Deviation	Mean Length (mm)	Standard Deviation	Length Range
Belogorsk 73-01	23 Oct. 1973	1	1.5	-	8.0	-	-
Anton Dohrn 76-02	22 Nov. 1976	1	1.6	-	5.0	-	-

References:

Bigelow et al. 1964
Leim and Scott 1966

Figure 33. Composite distribution and abundance (greatest occurrence per station) of Chauliodontidae collected during 30 autumn and winter cruises for the period Sep. 1971 - Feb. 1977.

Chauliodontidae Common Name: Viperfishes

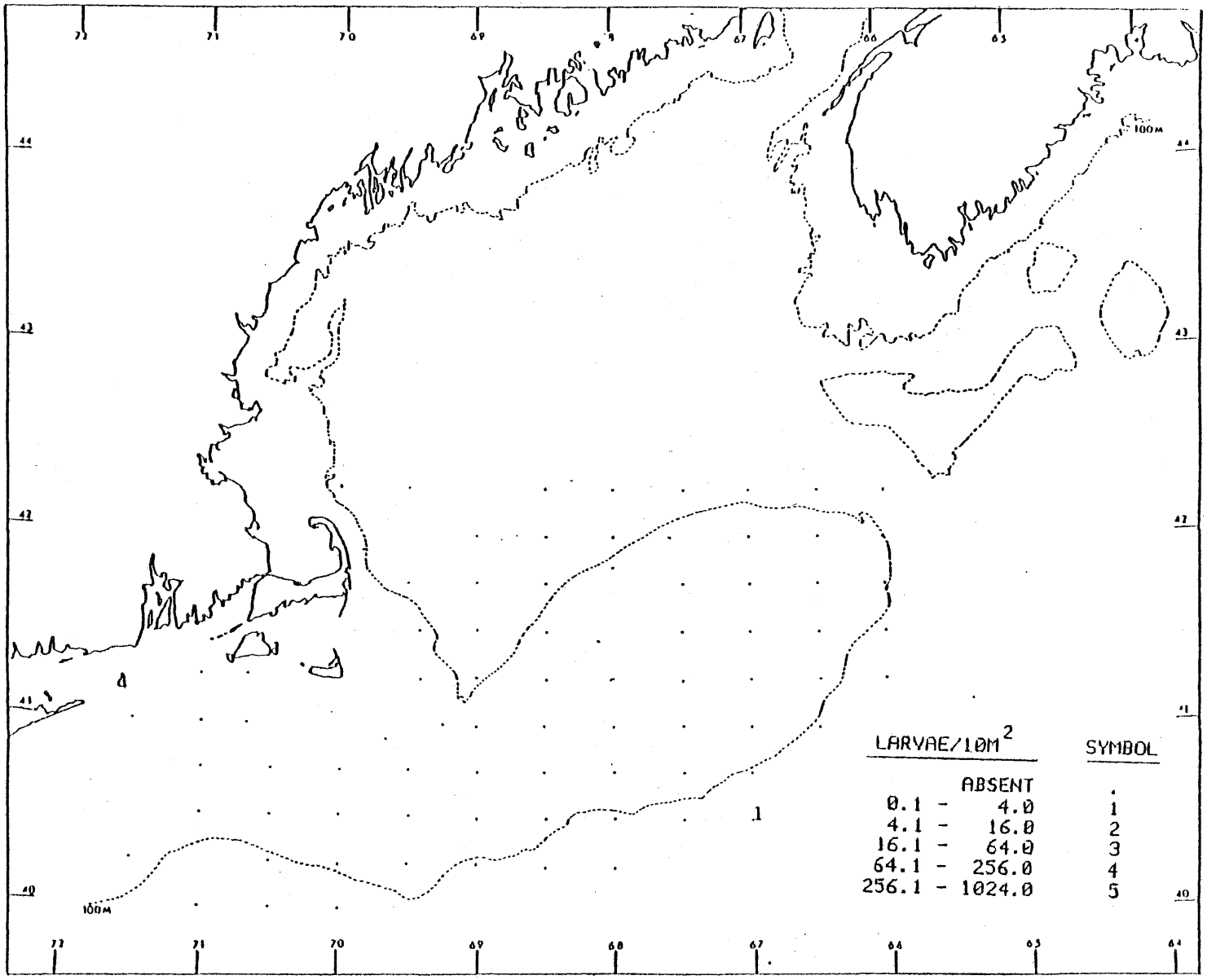


Table 33. Mean abundance (positive tows only) and mean length of Chauliodontidae by cruise.

Cruise	Middate	Number of Positive Tows	Mean no./ $10m^2$	Standard Deviation	Mean Length (mm)	Standard Deviation	Length Range
Delaware II 71-04	27 Sep. 1971	1	2.1	-	7.0	-	-

References:

Bigelow et al. 1964
Colton and Byron 1977
Jordan et al. 1962
Leim and Scott 1966

Figure 34. Composite distribution and abundance (greatest occurrence per station) of Gonostomatidae collected during 30 autumn and winter cruises for the period Sep. 1971 - Feb. 1977.

Gonostomatidae Common Name: Lightfishes

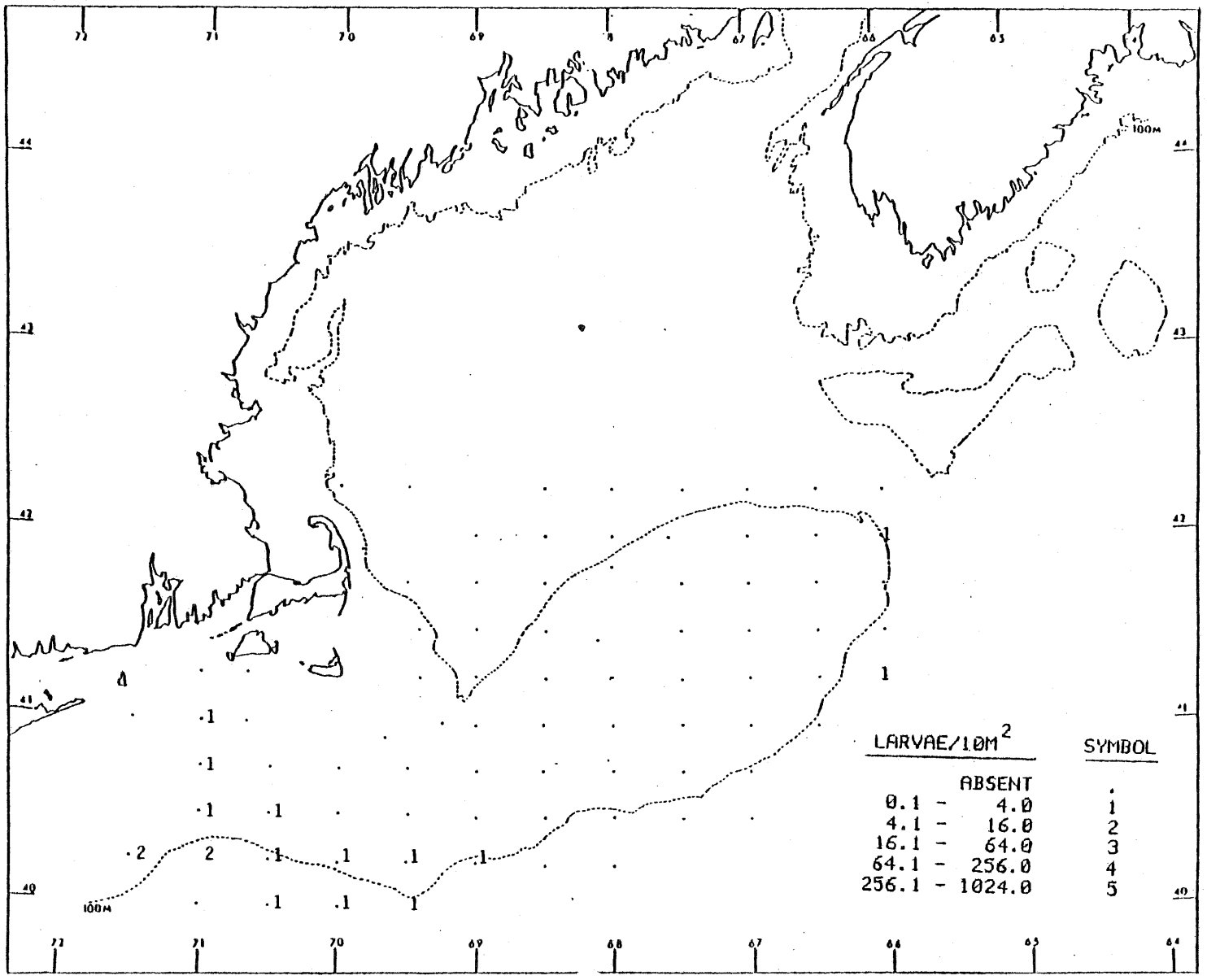


Table 34. Mean abundance (positive tows only) and mean length of Gonostomatidae by cruise.

Cruise	Middate	Number of Positive Tows	Mean no./ $10m^2$	Standard Deviation	Mean Length (mm)	Standard Deviation	Length Range
Wieczno 72-01	14 Oct. 1972	1	2.1	-	12.0	-	-
Anton Dohrn 72-01	05 Nov. 1972	1	3.1	-	5.0	-	-
Albatross IV 72-09	10 Dec. 1972	2	1.4	0	11.5	4.9	8 - 15
Wieczno 73-40	09 Oct. 1973	2	1.2	0.4	6.1	1.9	5 - 8
Walther Herwig 73-43	02 Nov. 1973	1	0.8	-	18.0	-	-
Albatross IV 73-09	13 Dec. 1973	3	4.5	1.4	6.4	0.5	7 - 7
Cryos 74-04	16 Sep. 1974	1	1.3	-	7.0	-	-
Anton Dohrn 74-01	19 Nov. 1974	1	1.4	-	7.0	-	-
Albatross IV 74-13	13 Dec. 1974	3	3.9	0.6	6.6	1.1	4 - 8
Belogorsk 75-02	01 Oct. 1975	1	1.5	-	9.0	-	-
Anton Dohrn 75-187	09 Nov. 1975	2	1.7	0.1	8.6	1.3	7 - 10
Albatross IV 75-14	09 Dec. 1975	2	1.6	0	8.5	0.6	8 - 9

References:

Bigelow et al. 1964
Colton and Byron 1977
Grimm 1978
Joakimsson 1978

Figure 35. Composite distribution and abundance (greatest occurrence per station) of Cyclothone sp. collected during 30 autumn and winter cruises for the period Sep. 1971 - Feb. 1977.

Cyclothone sp. Common Name:

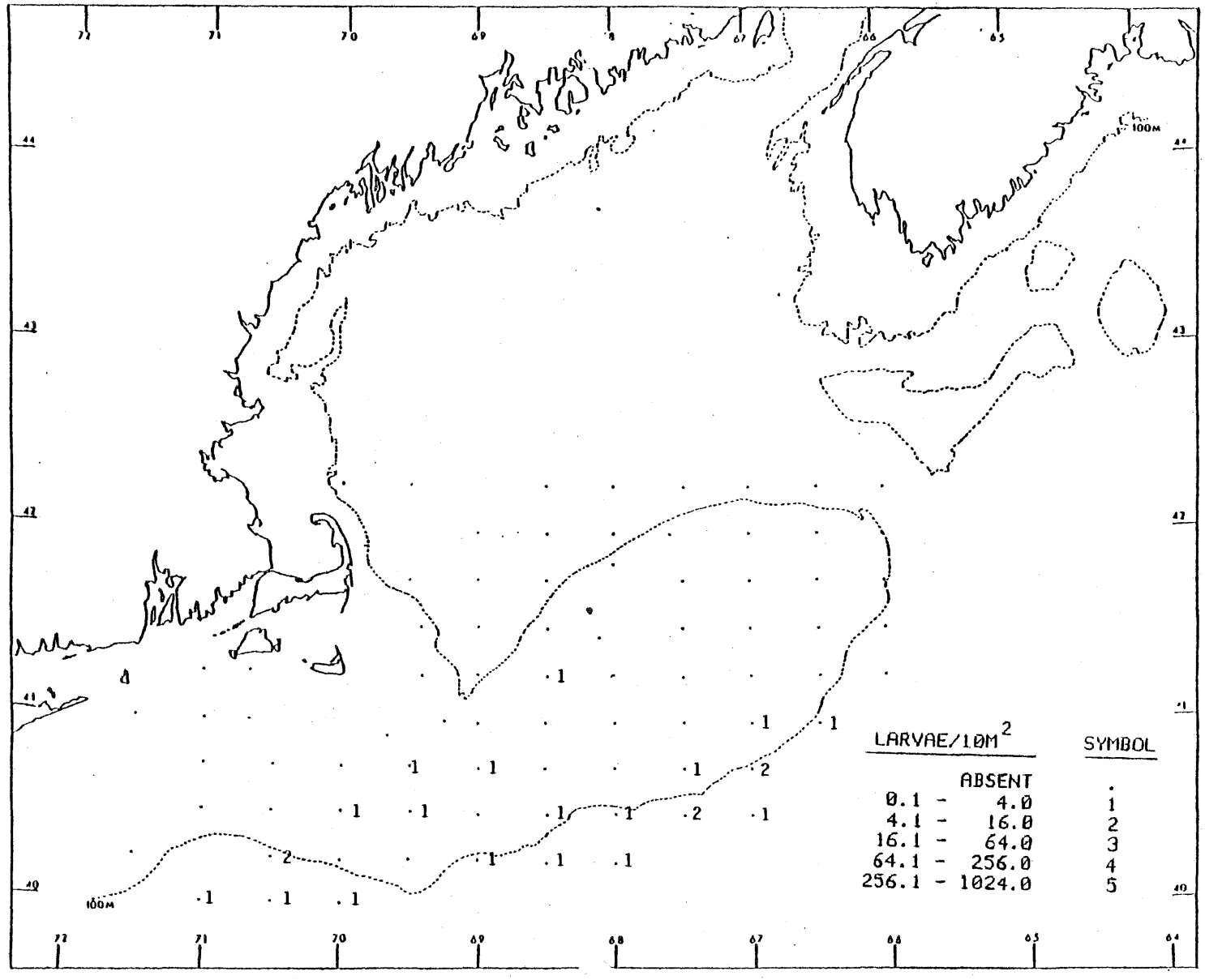


Table 35. Mean abundance (positive tows only) and mean length of *Cyclothone* sp. by cruise.

Cruise	Middate	Number of Positive Tows	Mean no./ $10m^2$	Standard Deviation	Mean Length (mm)	Standard Deviation	Length Range
Delaware II 71-04	27 Sep. 1971	9	1.8	1.0	8.1	2.3	5 - 12
Viandra 71-01	17 Oct. 1971	4	1.9	1.0	7.9	1.9	5 - 10
Albatross IV 71-07	09 Dec. 1971	1	1.6	-	6.0	-	-
Anton Dohrn 72-01	05 Nov. 1972	1	1.1	-	9.0	-	-
Wieczno 73-40	09 Oct. 1973	2	3.3	0.9	8.2	2.5	5 - 11
Belogorsk 73-01	23 Oct. 1973	3	6.2	5.7	7.7	2.0	5 - 10
Walther Herwig 73-43	02 Nov. 1973	2	1.0	0.4	6.4	2.7	5 - 9
Cryos 74-04	16 Sep. 1974	1	1.8	-	6.0	-	-
Prognoz 74-01	24 Oct. 1974	2	1.2	0.1	7.5	0.7	7 - 8
Anton Dohrn 74-01	19 Nov. 1974	4	3.6	1.4	7.3	1.3	5 - 9
Albatross IV 74-13	13 Dec. 1974	3	1.6	0.5	9.3	3.5	4 - 12
Albatross IV 75-14	09 Dec. 1975	1	1.4	-	8.0	-	-
Belogorsk 76-03	08 Oct. 1976	1	2.0	-	5.0	-	-
Wieczno 76-03	24 Oct. 1976	4	1.6	0.3	8.4	0.9	8 - 10
Anton Dohrn 76-02	22 Nov. 1976	2	1.7	0.3	9.3	1.4	7 - 10
Researcher 76-01	04 Dec. 1976	1	1.1	-	7.0	-	-

References:

Berrien et al. 1978
Bigelow et al. 1964
Fischer 1978
Leim and Scott 1966

Figure 36. Composite distribution and abundance (greatest occurrence per station) of Gonostoma elongatum collected during 30 autumn and winter cruises for the period Sep. 1971 - Feb. 1977.

Gonostoma elongatum (Gunther) Common Name: Longtooth anglemouth

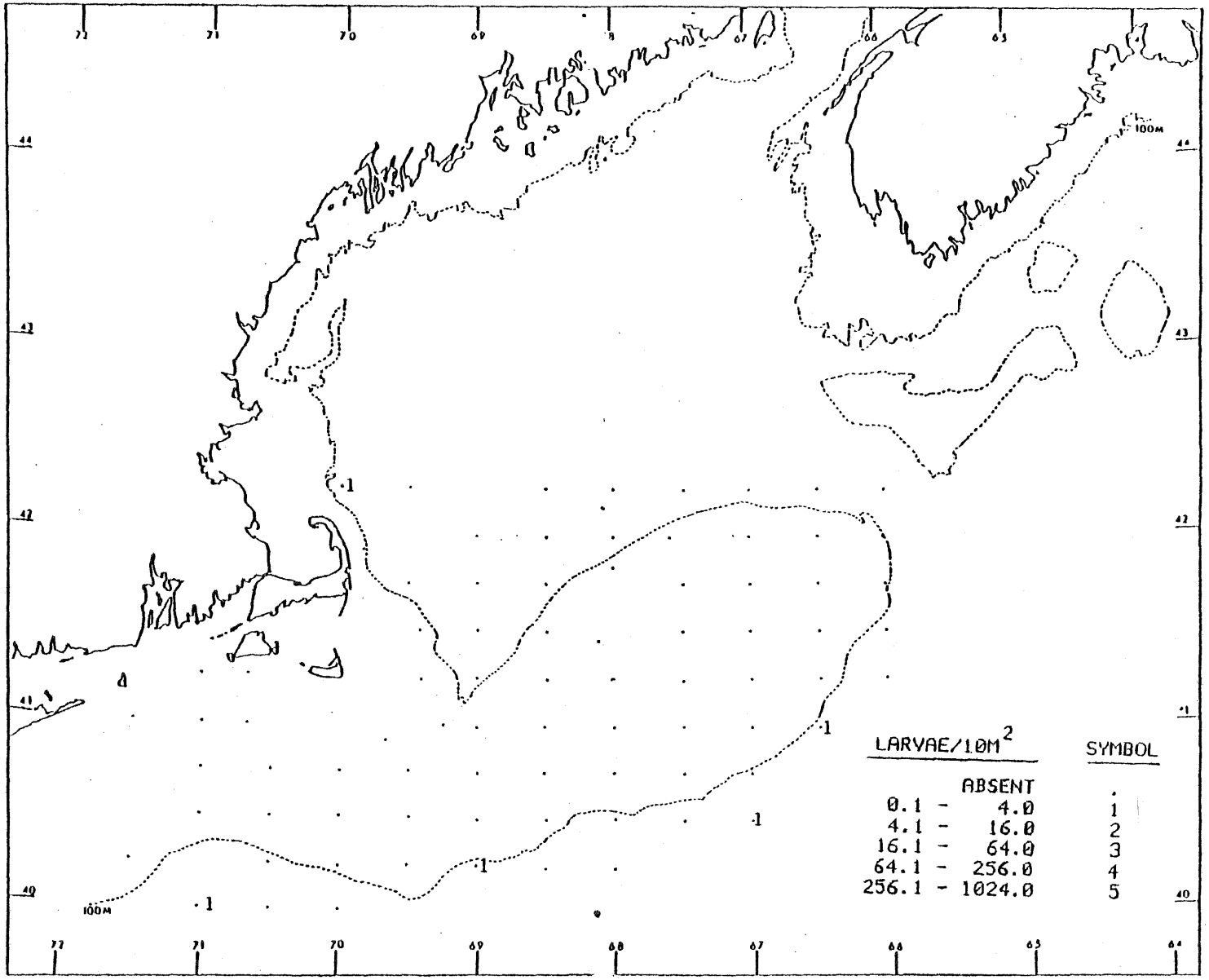


Table 36. Mean abundance (positive tows only) and mean length of *Gonostoma elongatum* by cruise.

Cruise	Middate	Number of Positive Tows	Mean no./ $10m^2$	Standard Deviation	Mean Length (mm)	Standard Deviation	Length Range
Delaware II 71-04	27 Sep. 1971	1	2.1	-	38.0	-	-
Belogorsk 73-01	23 Oct. 1973	1	2.8	-	12.0	-	-
Albatross IV 73-09	13 Dec. 1973	1	2.4	-	13.0	-	-
Anton Dohrn 75-187	09 Nov. 1975	1	2.1	-	10.0	-	-
Researcher 76-01	04 Dec. 1976	3	2.1	1.4	10.3	1.7	8 - 12

References:

Backus et al. 1970
Bigelow et al. 1964
Colton and Byron 1977
Fischer 1978
Grimm 1978
Joakimsson 1978
Leim and Scott 1966

Figure 37. Composite distribution and abundance (greatest occurrence per station) of Gonostoma sp. collected during 30 autumn and winter cruises for the period Sep. 1971 - Feb. 1977.

Gonostoma sp. Common Name:

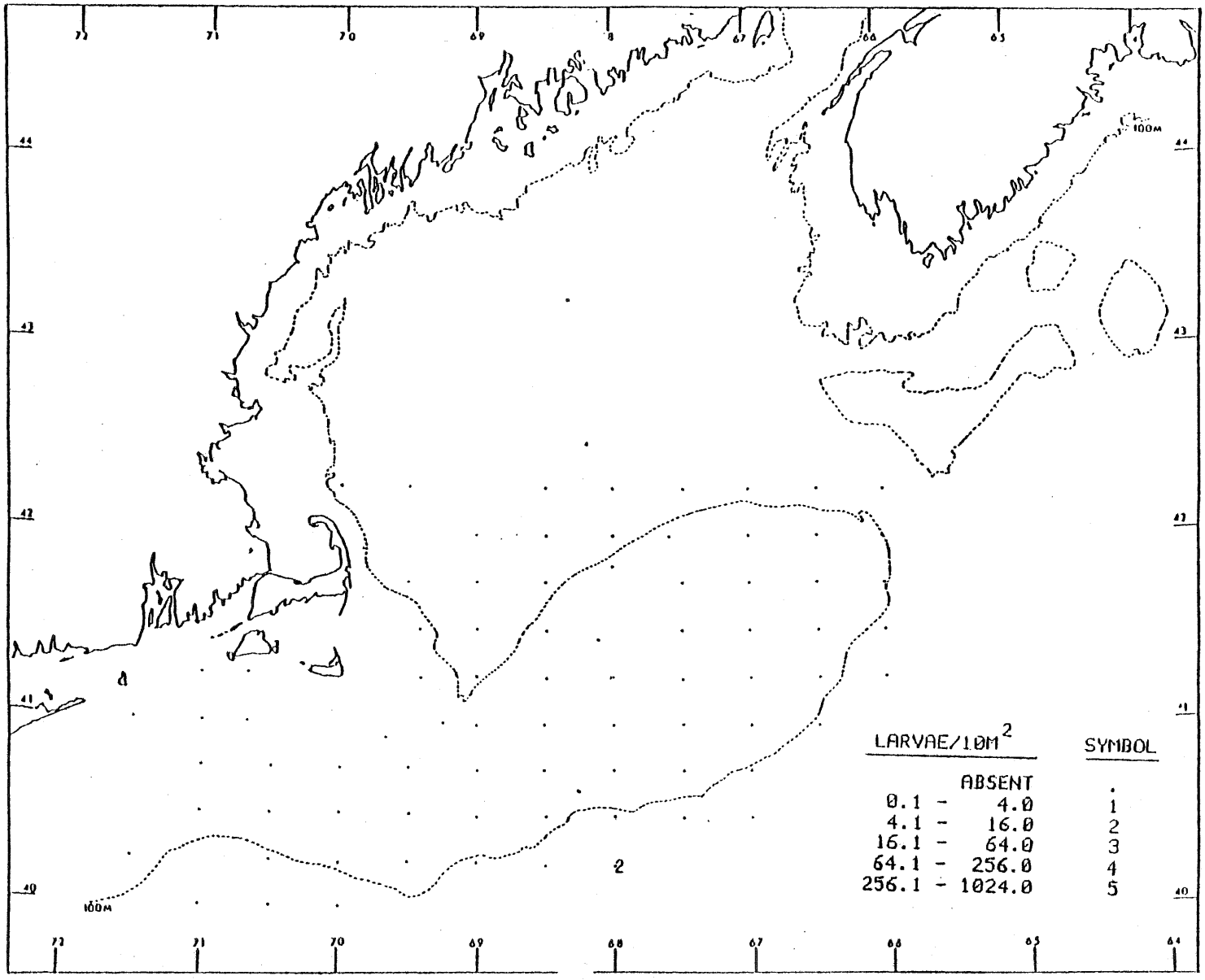


Table 37. Mean abundance (positive tows only) and mean length of *Gonostoma* sp. by cruise.

Cruise	Middate	Number of Positive Tows	Mean no./ $10m^2$	Standard Deviation	Mean Length (mm)	Standard Deviation	Length Range
Anton Dohrn 74-01	19 Nov. 1974	1	7.0	-	6.5	1.6	4 - 8

References:

See *G. elongatum*

Figure 38. Composite distribution and abundance (greatest occurrence per station) of Maurolicus muelleri collected during 30 autumn and winter cruises for the period Sep. 1971 - Feb. 1977.

Maurolicus muelleri (Gmelin) Common Name: Muller's pearlsides

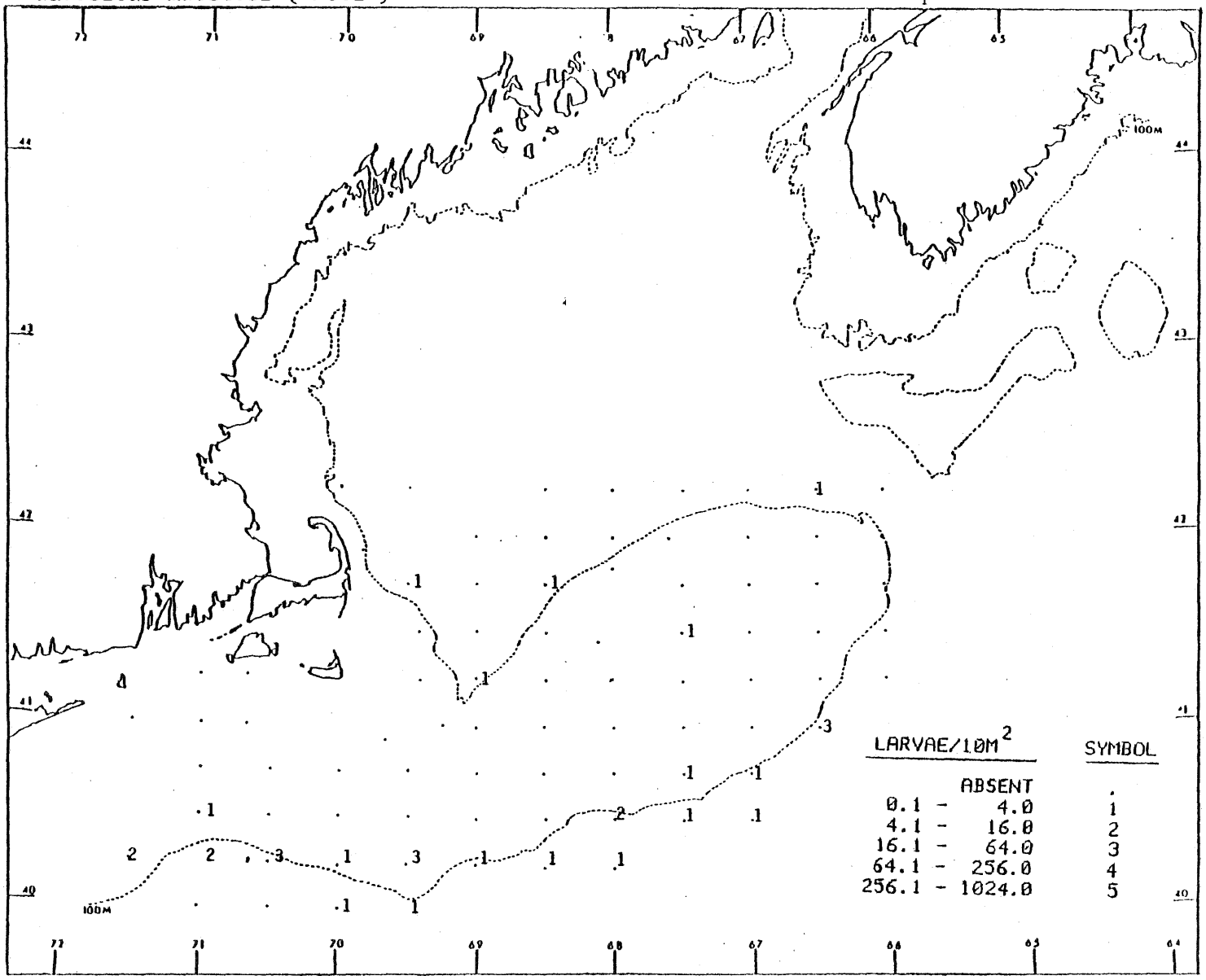


Table 38. Mean abundance (positive tows only) and mean length of *Maurolicus muelleri* by cruise.

Cruise	Middate	Number of Positive Tows	Mean no./ $10m^2$	Standard Deviation	Mean Length (mm)	Standard Deviation	Length Range
Delaware II 71-04	27 Sep. 1971	3	8.2	11.2	30.0	9.0	10 - 40
Viandra 71-01	17 Oct. 1971	1	0.5	-	9.0	-	-
Albatross IV 71-07	09 Dec. 1971	1	1.8	-	5.0	-	-
Wieczno 73-40	09 Oct. 1973	1	1.7	-	44.0	-	-
Albatross IV 73-09	13 Dec. 1973	1	3.1	-	8.0	-	-
Cryos 74-04	16 Sep. 1974	2	2.7	1.7	17.1	14.4	9 - 38
Prognoz 74-01	24 Oct. 1974	3	4.4	3.2	10.2	10.8	5 - 46
Anton Dohrn 74-01	19 Nov. 1974	6	3.1	0.7	8.2	1.7	6 - 12
Albatross IV 74-13	13 Dec. 1974	9	7.2	8.5	9.5	7.1	6 - 42
Belogorsk 75-02	01 Oct. 1975	2	1.7	0.5	16.3	3.5	13 - 20
Anton Dohrn 75-187	09 Nov. 1975	2	1.9	0.4	8.6	3.0	7 - 15
Albatross IV 75-14	09 Dec. 1975	3	1.9	0.7	12.4	9.3	7 - 30
Anton Dohrn 76-02	22 Nov. 1976	1	6.1	-	10.5	1.6	9 - 12
Researcher 76-01	04 Dec. 1976	2	3.8	0.4	8.0	0.8	7 - 9

References:

Backus et al. 1970
Bigelow et al. 1964
Colton and Byron 1977
Fischer 1978
Joakimsson 1978
Leim and Scott 1966

Figure 39. Composite distribution and abundance (greatest occurrence per station) of Maurolicus sp. collected during 30 autumn and winter cruises for the period Sep. 1971 - Feb. 1977.

Maurolicus sp. Common Name:

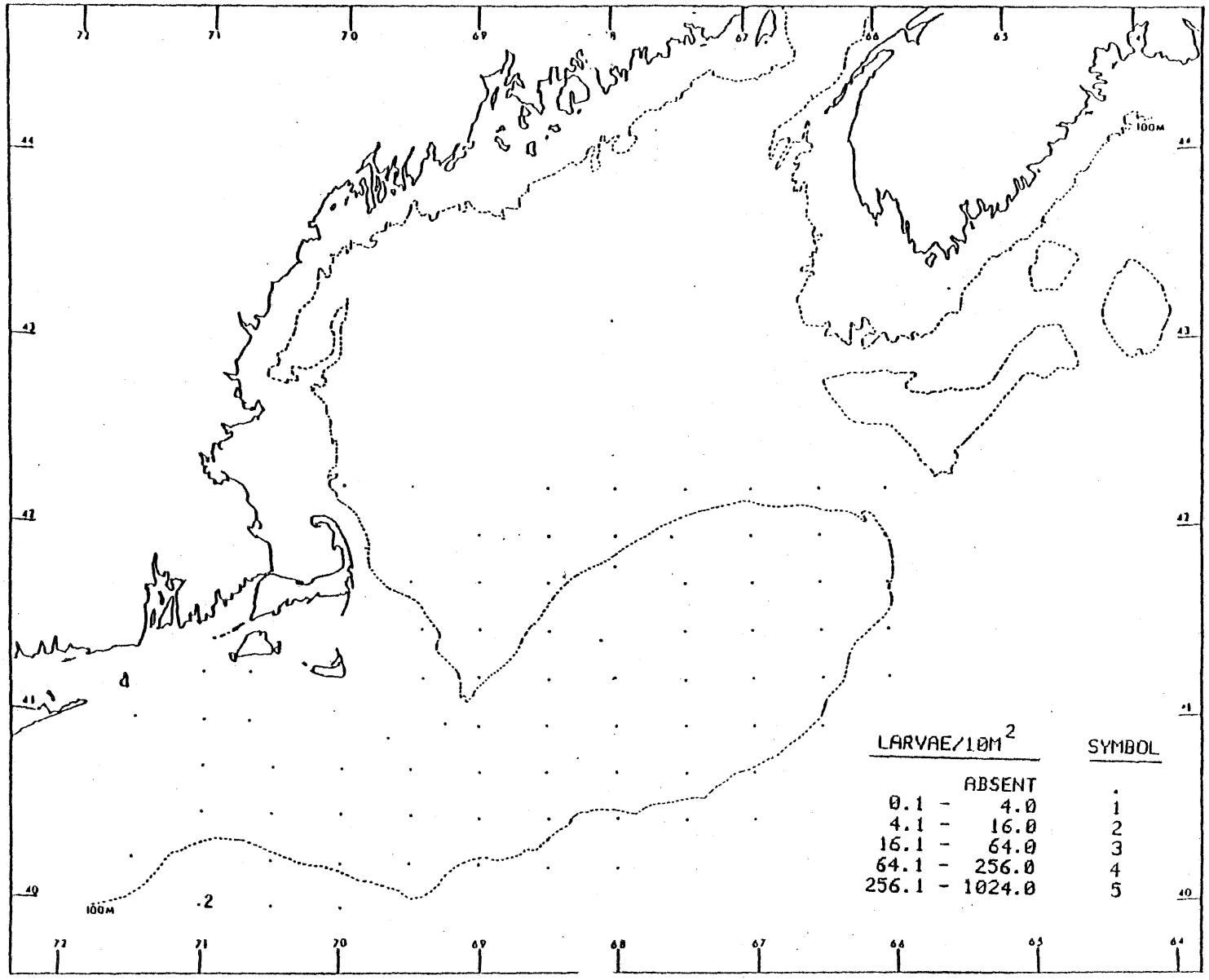


Table 39. Mean abundance (positive tows only) and mean length of *Maurolicus* sp. by cruise.

Cruise	Middate	Number of Positive Tows	Mean no./ $10m^2$	Standard Deviation	Mean Length (mm)	Standard Deviation	Length Range
Albatross IV 74-13	13 Dec. 1974	1	4.9	-	10.3	6.3	7 - 20

References:

See *M. muelleri*

Figure 40. Composite distribution and abundance (greatest occurrence per station) of Valenciennellus sp. collected during 30 autumn and winter cruises for the period Sep. 1971 - Feb. 1977.

Valenciennellus sp. Common Name:

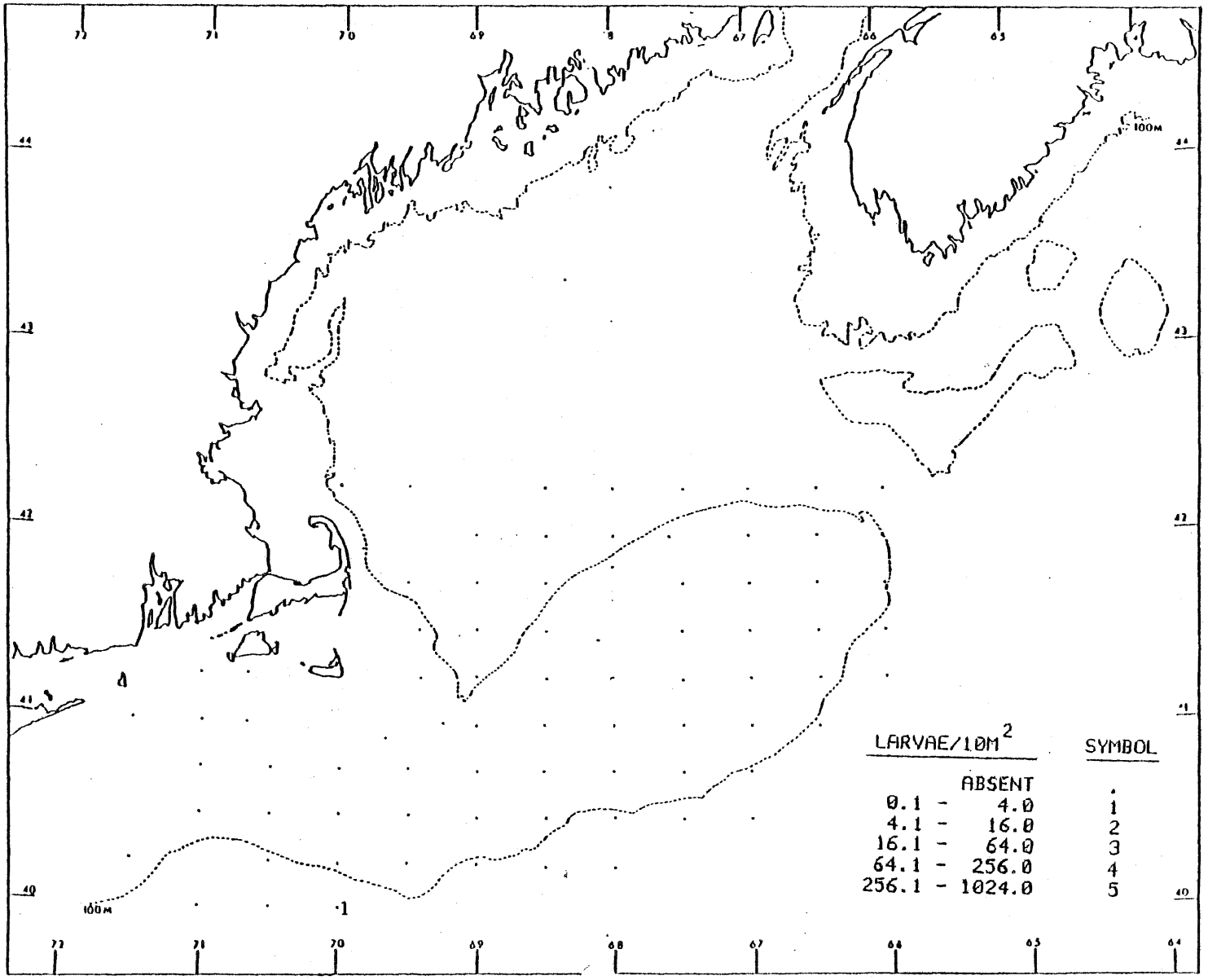


Table 40. Mean abundance (positive tows only) and mean length of *Valenciennellus* sp. by cruise.

Cruise	Middate	Number of Positive Tows	Mean no./ $10m^2$	Standard Deviation	Mean Length (mm)	Standard Deviation	Length Range
Anton Dohrn 72-01	05 Nov. 1972	1	1.4	-	14.0	-	-

References:

Bigelow et al. 1964
Fischer 1978
Joakimsson 1978
Jordan et al. 1962

Figure 41. Composite distribution and abundance (greatest occurrence per station) of Vinciguerria sp. collected during 30 autumn and winter cruises for the period Sep. 1971 - Feb. 1977.

Vinciguerria sp. Common Name:

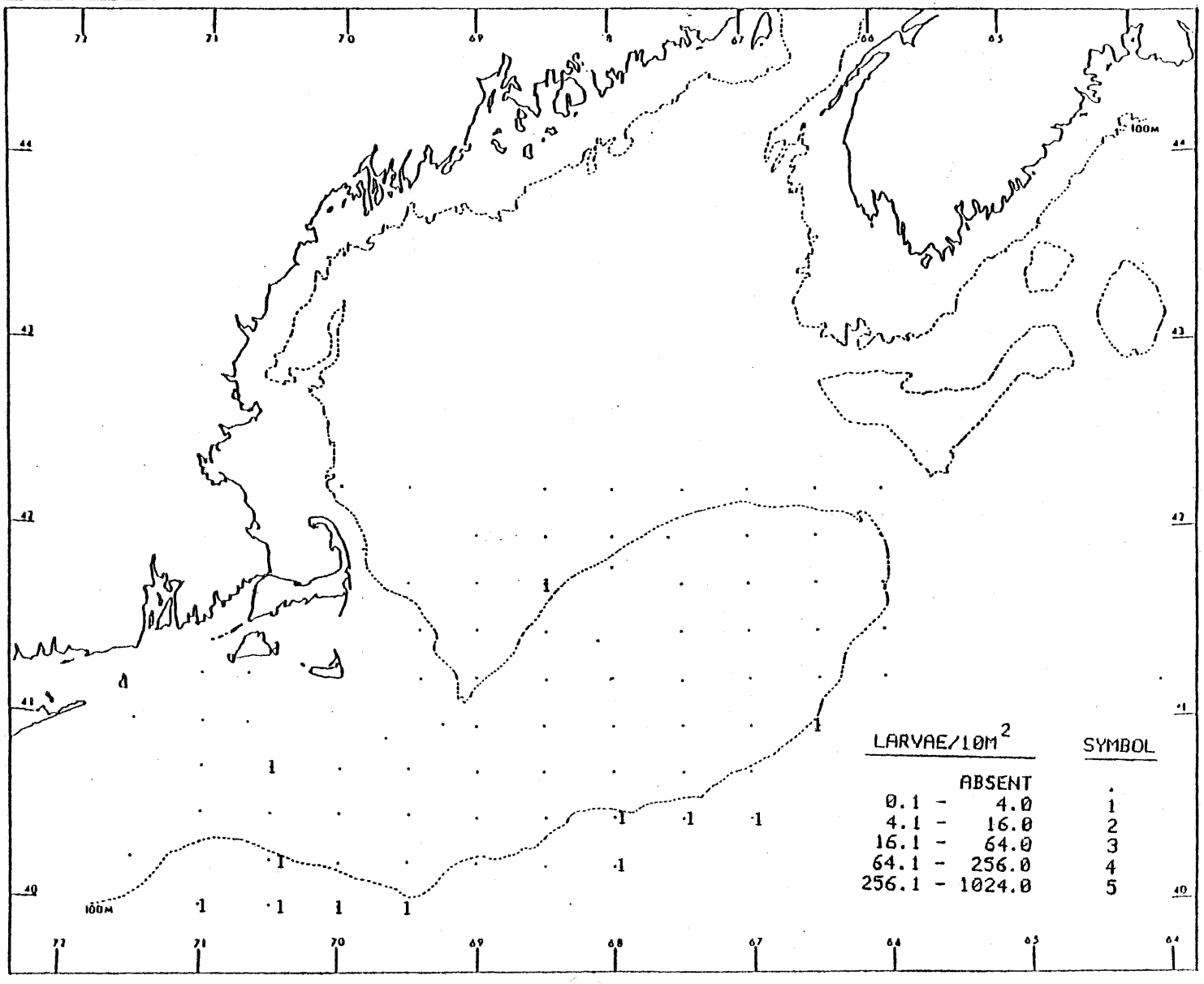


Table 41. Mean abundance (positive tows only) and mean length of Vinciguerria sp. by cruise.

Cruise	Middate	Number of Positive Tows	Mean no./ $10m^2$	Standard Deviation	Mean Length (mm)	Standard Deviation	Length Range
Delaware II 71-04	27 Sep. 1971	1	1.0	-	16.0	-	-
Wieczno 73-40	09 Oct. 1973	1	1.3	-	12.0	-	-
Belogorsk 73-01	23 Oct. 1973	1	1.2	-	16.0	-	-
Walther Herwig 73-43	02 Nov. 1973	2	1.3	0.9	11.0	3.6	8 - 15
Prognoz 74-01	24 Oct. 1974	1	1.1	-	17.0	-	-
Albatross IV 74-13	13 Dec. 1974	2	1.4	0.3	17.1	1.2	16 - 18
Belogorsk 75-02	01 Oct. 1975	1	1.7	-	16.0	-	-
Albatross IV 75-14	09 Dec. 1975	1	1.5	-	18.0	--	-
Belogorsk 76-03	08 Oct. 1976	1	1.4	-	10.0	-	-
Wieczno 76-03	24 Oct. 1976	3	1.6	0.4	9.9	2.7	8 - 14
Anton Dohrn 76-02	22 Nov. 1976	3	2.3	0.9	16.9	2.2	14 - 20
Researcher 76-01	04 Dec. 1976	2	2.4	0.8	17.0	0	-

References:

Berrien et al. 1978
Bigelow et al. 1964
Fischer 1978
Grimm 1978
Joakimsson 1978
Jordan et al. 1962

Figure 42. Composite distribution and abundance (greatest occurrence per station) of Melanostomiatidae collected during 30 autumn and winter cruises for the period Sep. 1971 - Feb. 1977.

Melanostomiatidae Common Name: Scaleless dragonfishes

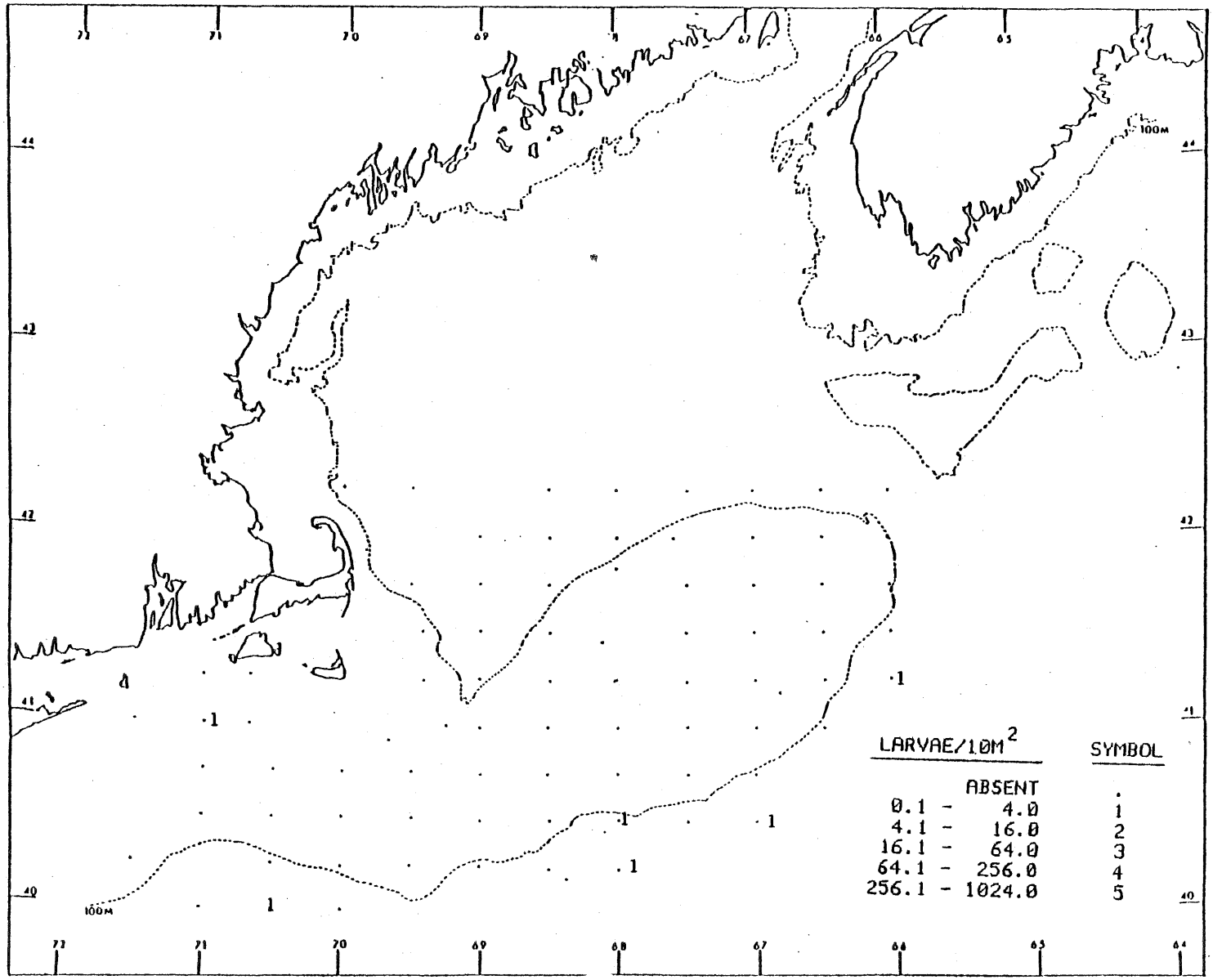


Table 42. Mean abundance (positive tows only) and mean length of Melanostomiatidae by cruise.

Cruise	Middate	Number of Positive Tows	Mean no./ $10m^2$	Standard Deviation	Mean Length (mm)	Standard Deviation	Length Range
Wieczno 73-40	09 Oct. 1973	2	2.0	0.9	6.0	-	-
Belogorsk 73-01	23 Oct. 1973	1	1.3	-	9.0	-	-
Prognoz 74-01	24 Oct. 1974	1	1.5	-	8.0	-	-
Anton Dohrn 74-01	19 Nov. 1974	2	3.2	1.0	8.6	2.1	7 - 11
Wieczno 76-03	24 Oct. 1976	1	0.9	-	64.0	-	-
Anton Dohrn 76-02	22 Nov. 1976	1	1.9	-	64.0	-	-

References:

Bigelow et al. 1964
Joakimsson 1978
Leim and Scott 1966

Figure 43. Composite distribution and abundance (greatest occurrence per station) of Stomiatidae collected during 30 autumn and winter cruises for the period Sep. 1971 - Feb. 1977.

Stomiatidae Common Name:

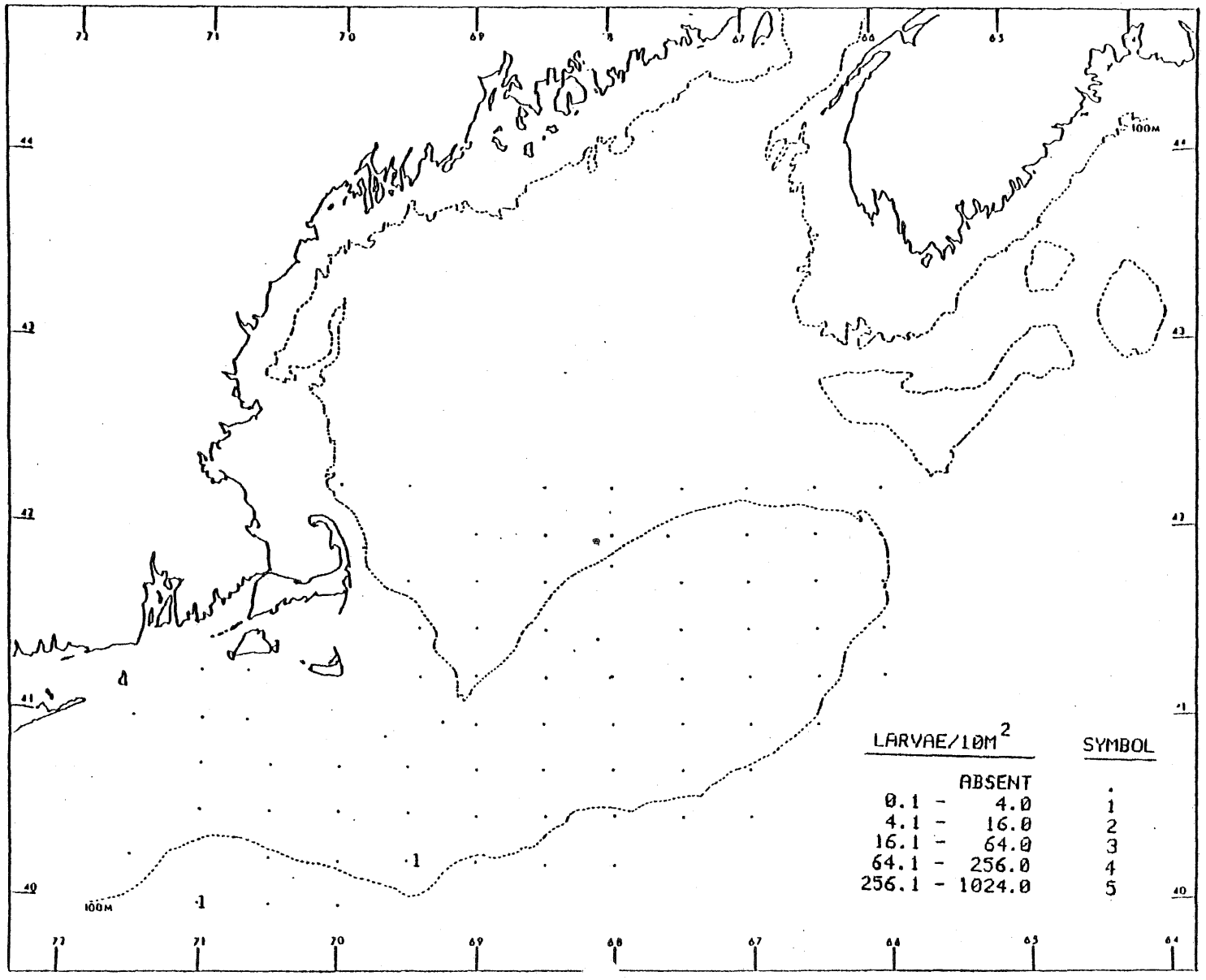


Table 43. Mean abundance (positive tows only) and mean length of Stomiatidae by cruise.

Cruise	Middate	Number of Positive Tows	Mean no./ $10m^2$	Standard Deviation	Mean Length (mm)	Standard Deviation	Length Range
Belogorsk 73-01	23 Oct. 1973	1	1.1	-	30.0	-	-
Albatross IV 74-13	13 Dec. 1974	1	2.4	-	5.5	0.7	5 - 6

References;

Berrien et al. 1978
Bigelow et al. 1964
Colton and Byron 1964

Figure 44. Composite distribution and abundance (greatest occurrence per station) of Chlorophthalmidae collected during 30 autumn and winter cruises for the period Sep. 1971 - Feb. 1977.

Chlorophthalmidae Common Name: Greeneyes

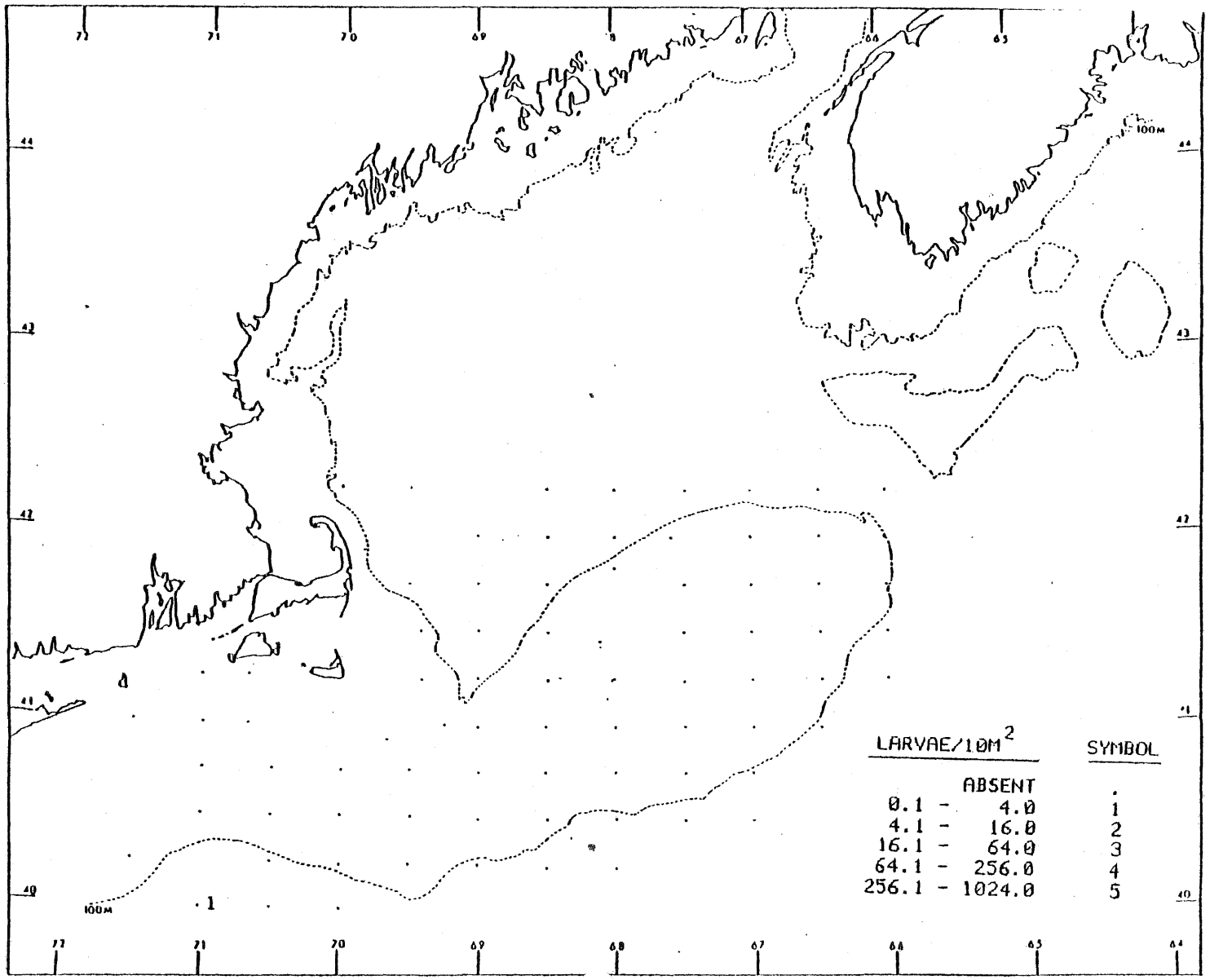


Table 44. Mean abundance (positive tows only) and mean length of Chlorophthalmidae by cruise.

Cruise	Middate	Number of Positive Tows	Mean no./ $10m^2$	Standard Deviation	Mean Length (mm)	Standard Deviation	Length Range
Researcher 76-01	04 Dec. 1976	1	1.8	-	17.0	-	-

References:

Anderson et al. 1966(2)
Berrien et al. 1978
Fischer 1978
Jordan et al. 1962

Figure 45. Composite distribution and abundance (greatest occurrence per station) of Chlorophthalmus sp. collected during 30 autumn and winter cruises for the period Sep. 1971 - Feb. 1977.

Chlorophthalmus sp. Common Name:

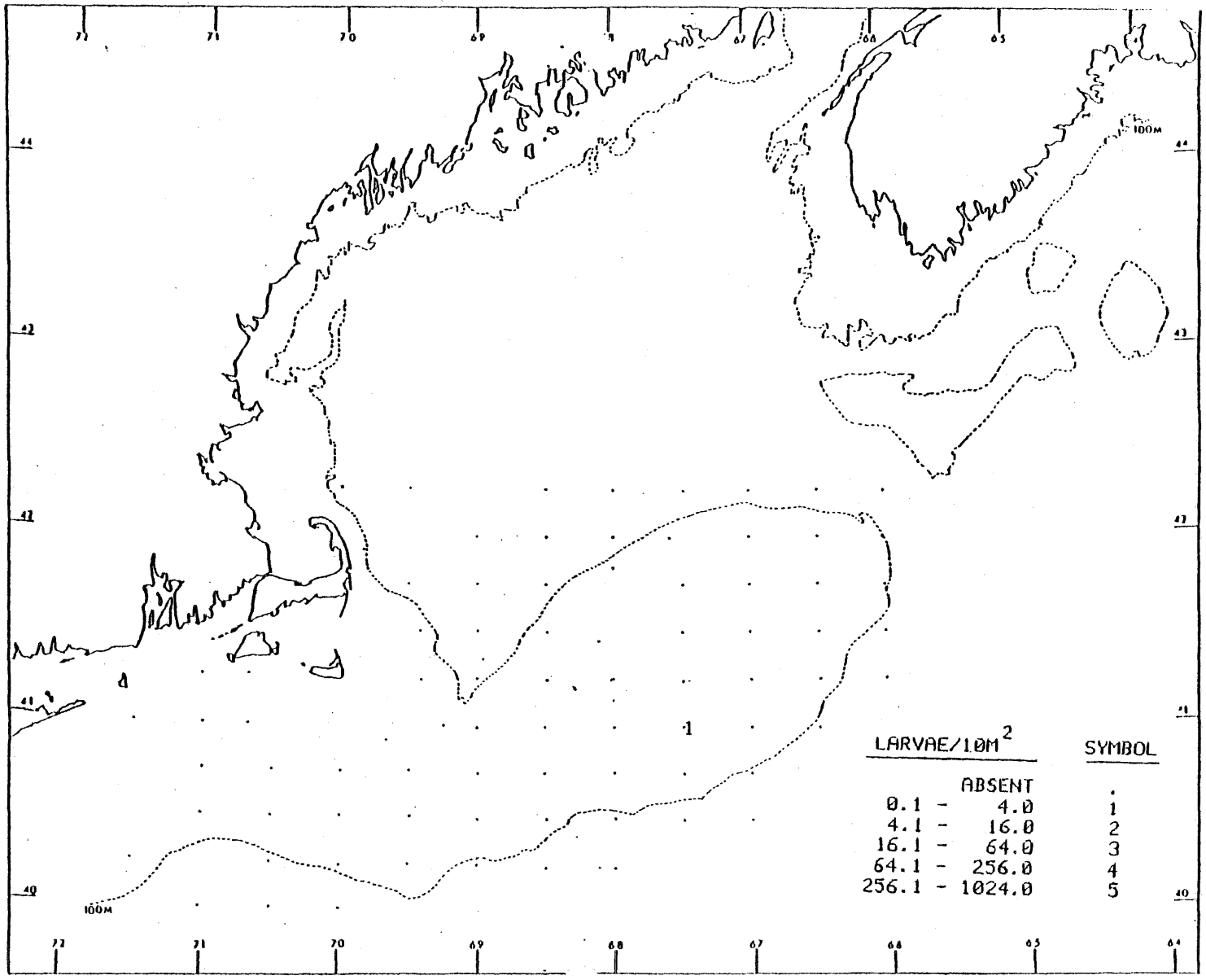


Table 45. Mean abundance (positive tows only) and mean length of Chlorophthalmus sp. by cruise.

Cruise	Middate	Number of Positive Tows	Mean no./ $10m^2$	Standard Deviation	Mean Length (mm)	Standard Deviation	Length Range
Albatross IV 73-09	13 Dec. 1973	1	2.6	-	21.0	-	-

References:

Anderson et al. 1966(2)
Joakimsson 1978
Jørdan et al. 1962

Figure 46. Composite distribution and abundance (greatest occurrence per station) of Myctophidae collected during 30 autumn and winter cruises for the period Sep. 1971 - Feb. 1977.

Mytophidae Common Name: Lanternfishes

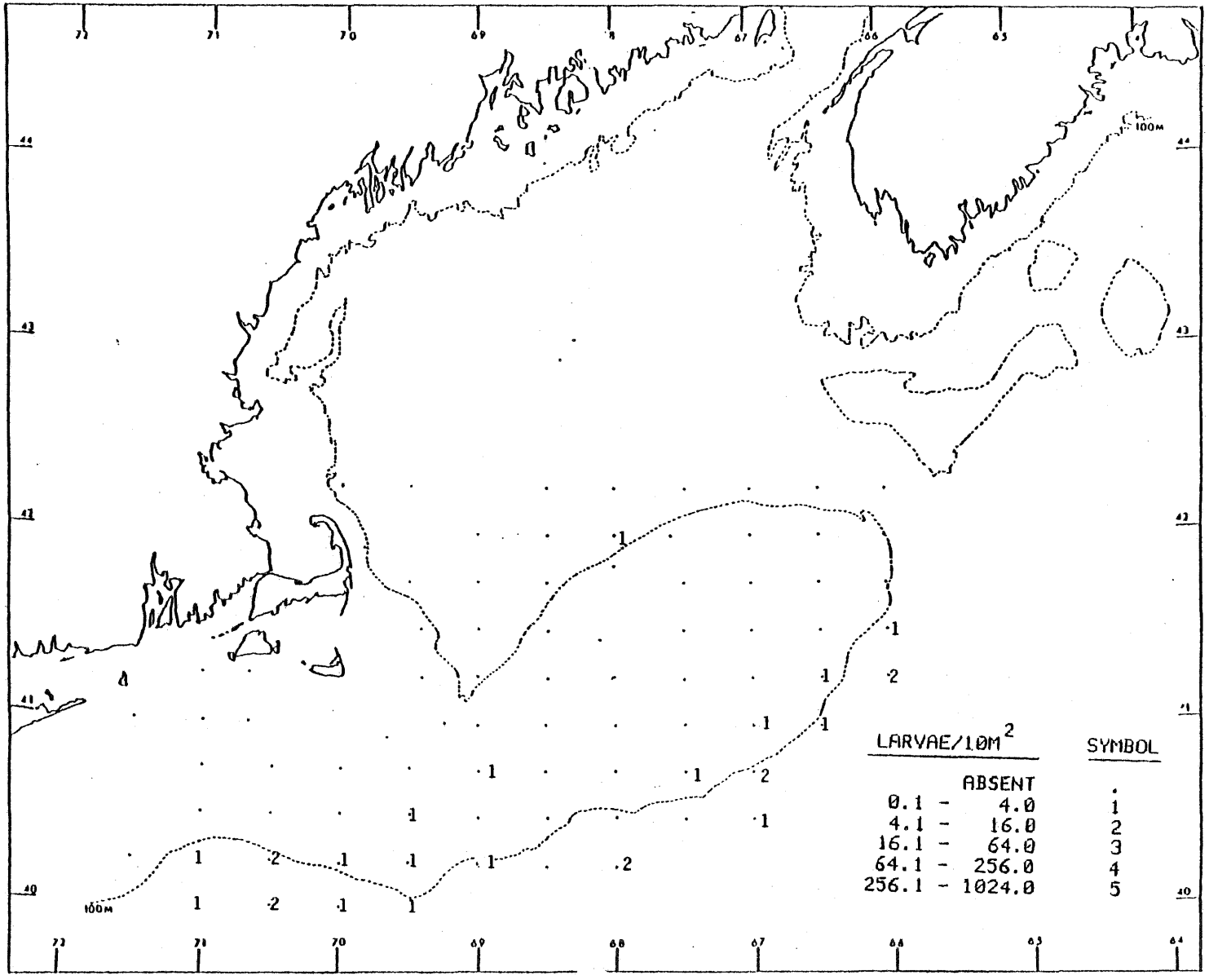


Table 46. Mean abundance (positive tows only) and mean length of Myctophidae by cruise.

Cruise	Middate	Number of Positive Tows	Mean no./ $10m^2$	Standard Deviation	Mean Length (mm)	Standard Deviation	Length Range
Delaware II 71-04	27 Sep. 1971	1	1.1	-	3.0	-	-
Argus 72-02	20 Oct. 1972	1	3.5	-	63.0	-	-
Anton Dohrn 72-01	05 Nov. 1972	1	1.4	-	3.0	-	-
Albatross IV 72-09	10 Dec. 1972	9	4.0	2.2	19.9	10.9	5 - 59
Wieczno 73-40	09 Oct. 1973	1	1.9	-	7.5	2.2	6 - 9
Walther Herwig 73-43	02 Nov. 1973	1	1.8	-	9.0	-	-
Albatross IV 73-09	13 Dec. 1973	3	4.7	3.4	4.6	1.1	3 - 6
Cryos 74-04	16 Sep. 1974	2	1.8	0.1	5.3	2.0	4 - 9
Prognoz 74-01	24 Oct. 1974	1	1.1	-	21.0	-	-
Anton Dohrn 74-01	19 Nov. 1974	1	1.9	-	5.0	-	-
Albatross IV 74-13	13 Dec. 1974	5	1.9	0.8	6.2	3.9	2 - 15
Belogorsk 75-03	23 Oct. 1975	1	1.4	-	5.8	0.7	5 - 7
Anton Dohrn 76-02	22 Nov. 1976	1	0.3	-	5.0	-	-
Researcher 76-01	04 Dec. 1976	2	1.9	0.1	5.5	1.8	4 - 7

Figure 47. Composite distribution and abundance (greatest occurrence per station) of Benthosema glaciale collected during 30 autumn and winter cruise for the period Sep. 1971 - Feb. 1977.

Benthosema glaciale (Reinhardt) Common Name: Glacier lanternfish

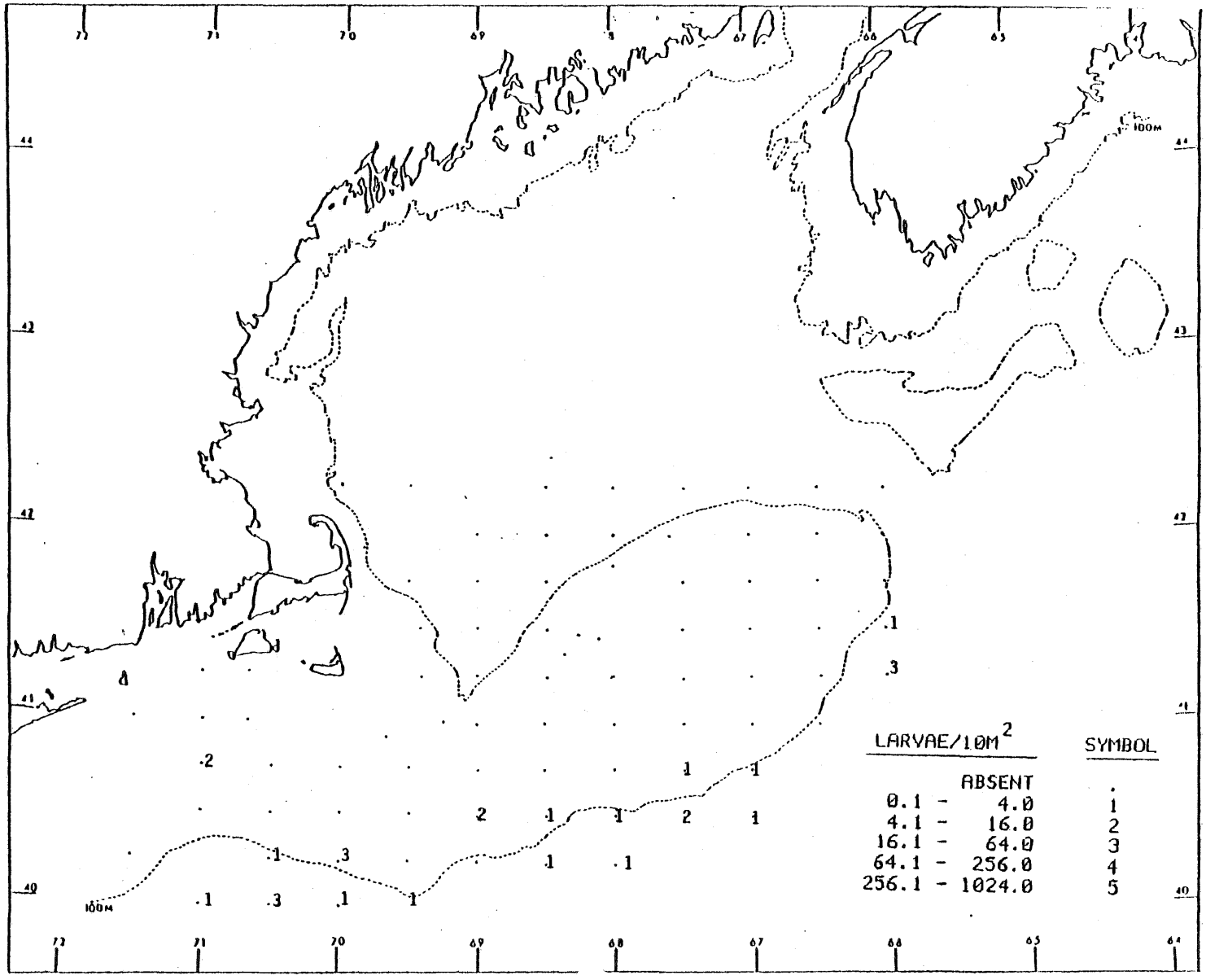


Table 47. Mean abundance (positive tows only) and mean length of *Benthosema glaciale* by cruise.

Cruise	Middate	Number of Positive Tows	Mean no./ $10m^2$	Standard Deviation	Mean Length (mm)	Standard Deviation	Length Range
Delaware II 71-04	27 Sep. 1971	1	3.0	-	39.0	1.2	38 - 40
Argus 72-02	20 Oct. 1972	1	32.1	-	24.2	2.4	19 - 27
Anton Dohrn 72-01	05 Nov. 1972	6	1.7	0.7	11.6	5.2	8 - 25
Wieczno 73-40	09 Oct. 1973	3	3.9	1.9	8.3	1.4	6 - 10
Belogorsk 73-01	23 Oct. 1973	2	3.2	0.9	18.8	3.3	15 - 24
Walther Herwig 73-43	02 Nov. 1973	3	5.3	3.0	8.3	2.2	4 - 11
Albatross IV 73-09	13 Dec. 1973	2	7.8	7.7	35.0	10.2	21 - 53
Cryos 74-04	16 Sep. 1974	1	37.0	-	10.1	1.5	6 - 13
Albatross IV 75-02	14 Feb. 1975	1	30.3	-	22.5	2.0	19 - 27
Albatross IV 75-14	09 Dec. 1975	6	1.9	0.8	12.4	12.2	3 - 41
Albatross IV 76-02	16 Feb. 1976	2	3.8	2.3	33.9	6.8	24 - 38
Wieczno 76-03	24 Oct. 1976	1	15.4	-	20.5	0.9	19 - 22
anton Dohrn 76-02	22 Nov. 1976	1	5.7	-	8.7	1.0	8 - 10
Researcher 76-01	04 Dec. 1976	1	1.5	-	23.0	-	-
Mt. Mitchell 77-01	18 Feb. 1977	1	1.6	-	36.0	13.5	24 - 48

References:

Backus et al. 1970
Berrien et al. 1978
Grimm 1978
Halliday 1970
Joakimsson 1978
Leim and Scott 1966
Nafpaktitis et al. 1977

Figure 48. Composite distribution and abundance (greatest occurrence per station) of Benthosema suborbitale collected during 30 autumn and winter cruise for the period Sep. 1971 - Feb. 1977.

Benthosema suborbitale (Gilbert) Common Name:

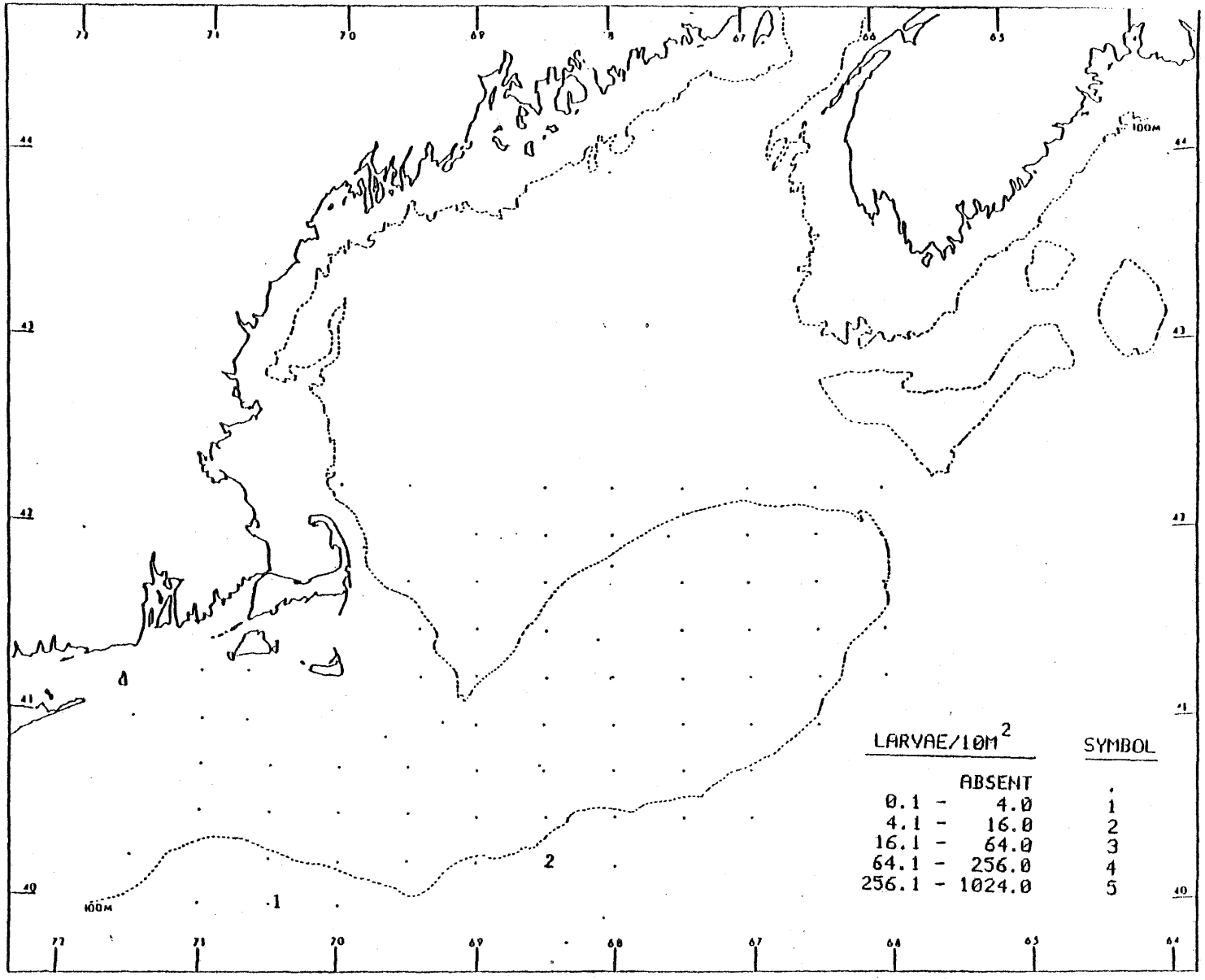


Table 48. Mean abundance (positive tows only) and mean length of *Benthosema suborbitale* by cruise.

Cruise	Middate	Number of Positive Tows	Mean no./ $10m^2$	Standard Deviation	Mean Length (mm)	Standard Deviation	Length Range
Walther Herwig 73-43	02 Nov. 1973	1	6.3	-	7.0	-	-
Albatross IV 74-13	13 Dec. 1974	1	0.8	-	7.0	-	-

References:

Backus et al. 1970
Berrien et al. 1978
Nafpaktitis et al. 1977

Figure 49. Composite distribution and abundance (greatest occurrence per station) of Benthosema sp. collected during 30 autumn and winter cruises for the period Sep. 1971 - Feb. 1977.

Benthosema sp. Common Name:

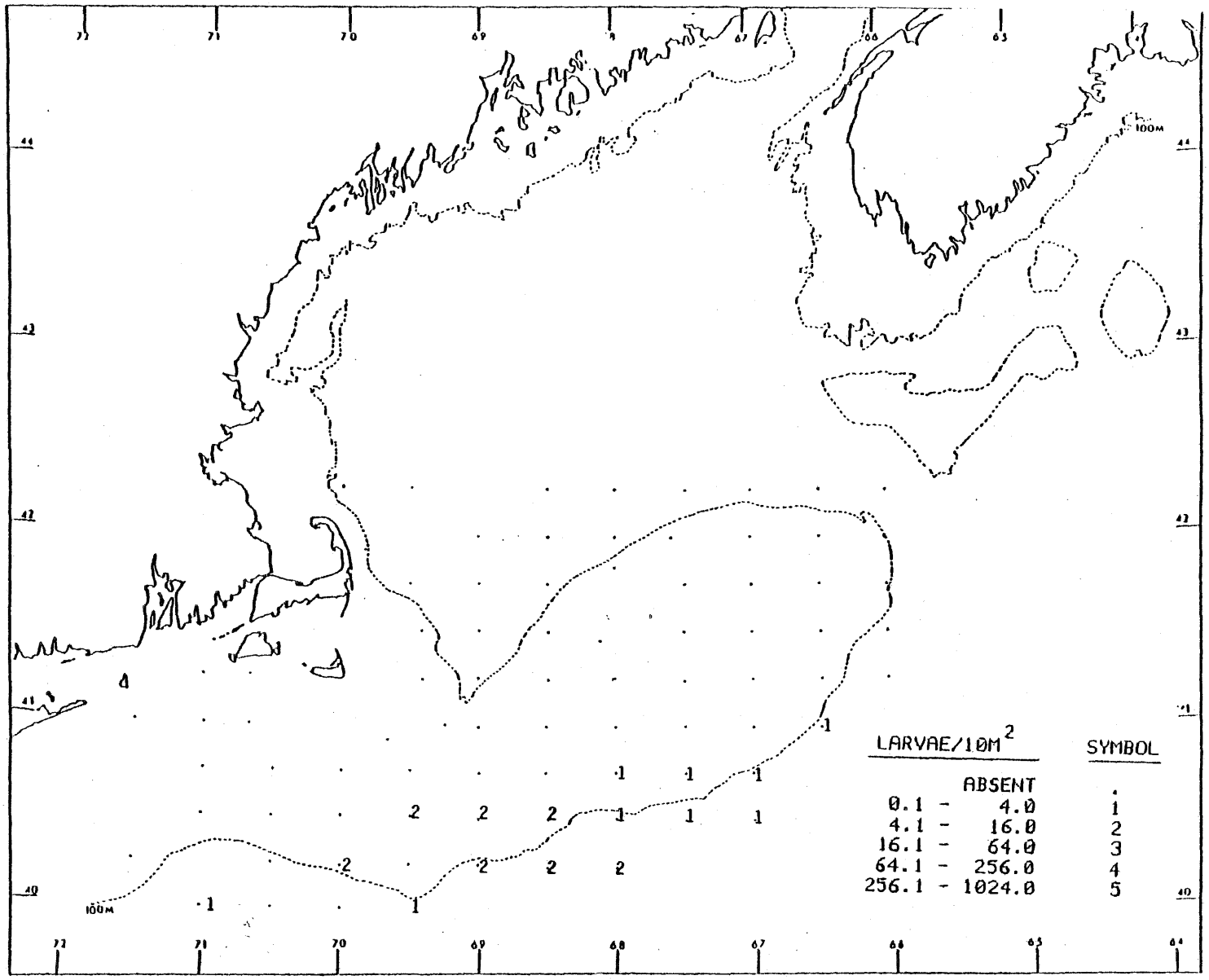


Table 49. Mean abundance (positive tows only) and mean length of Benthosema sp. by cruise.

Cruise	Middate	Number of Positive Tows	Mean no./ $10m^2$	Standard Deviation	Mean Length (mm)	Standard Deviation	Length Range
Viandra 71-01	17 Oct. 1971	4	1.5	0.6	16.9	10.2	5 - 48
Wieczno 73-40	09 Oct. 1973	1	2.8	-	5.0	-	-
Belogorsk 73-01	23 Oct. 1973	4	1.5	0.3	6.7	0.9	6 - 8
Walther Herwig 73-43	02 Nov. 1973	1	8.4	-	8.5	3.7	5 - 12
Cryos 74-04	16 Sep. 1974	1	3.1	-	6.0	-	-
Prognoz 74-01	24 Oct. 1974	1	1.2	-	8.0	-	-
Anton Dohrn 74-01	19 Nov. 1974	9	6.4	3.9	7.3	2.1	4 - 10
Wieczno 76-03	24 Oct. 1976	4	1.6	0.1	6.9	2.1	4 - 9
Anton Dohrn 76-02	22 Nov. 1976	3	1.7	1.4	8.8	1.4	8 - 11

References:

See B. glaciale and B. suborbitale

Figure 50. Composite distribution and abundance (greatest occurrence per station) of Bolinichthys sp. collected during 30 autumn and winter cruises for the period Sep. 1971 - Feb. 1977.

Bolinichthys sp. Common Name:

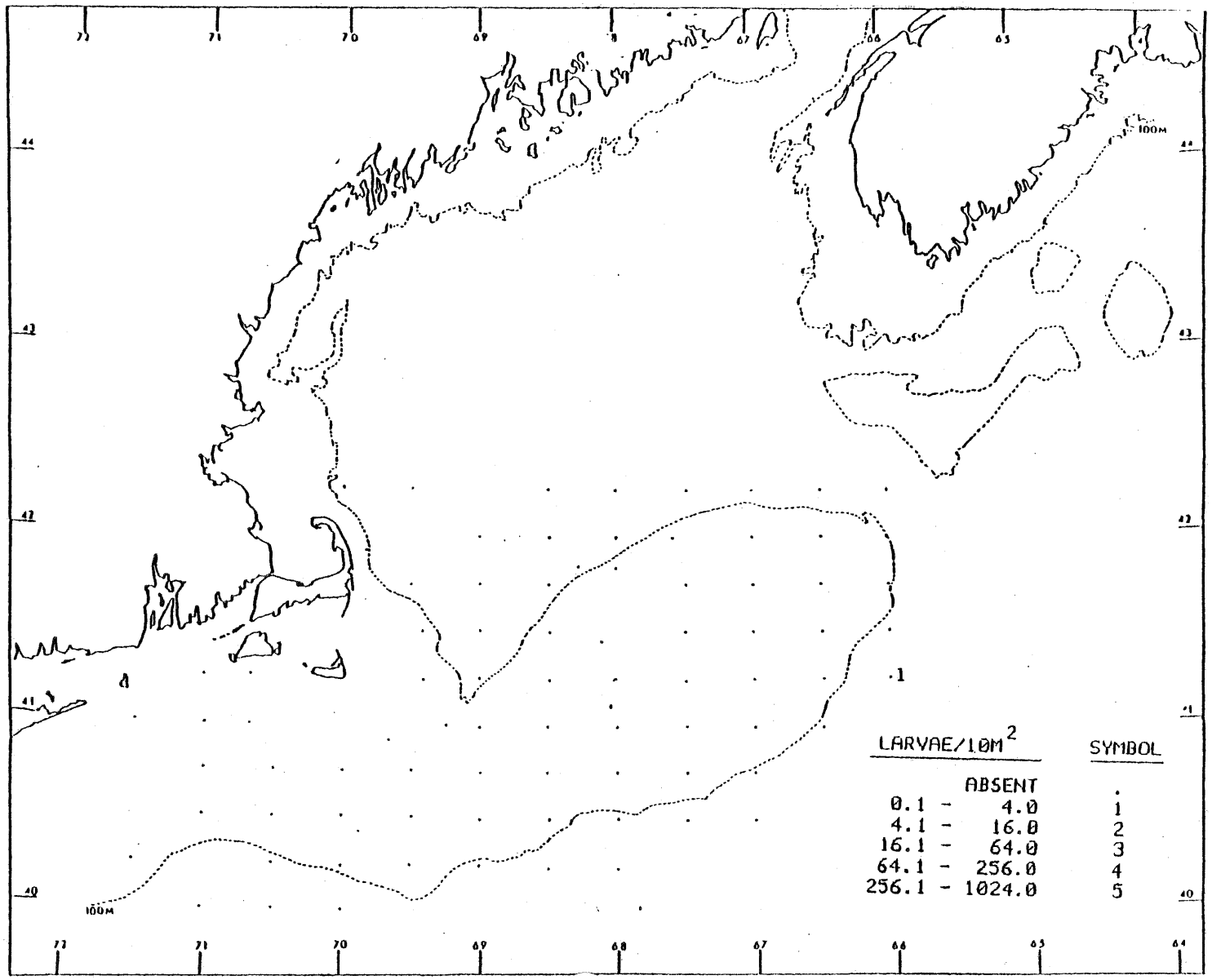


Table 50. Mean abundance (positive tows only) and mean length of Bolinichthys sp. by cruise.

Cruise	Middate	Number of Positive Tows	Mean no./ $10m^2$	Standard Deviation	Mean Length (mm)	Standard Deviation	Length Range
Anton Dohrn 74-01	19 Nov. 1974	1	3.9	-	18.3	1.1	17 - 19

References:

Joakimsson 1978
Nafpaktitis et al. 1977

Figure 51. Composite distribution and abundance (greatest occurrence per station) of Ceratoscopelus maderensis collected during 30 autumn and winter cruises for the period Sep. 1971 - Feb. 1977.

Ceratoscopelus maderensis (Lowe) Common Name: Horned lanternfish

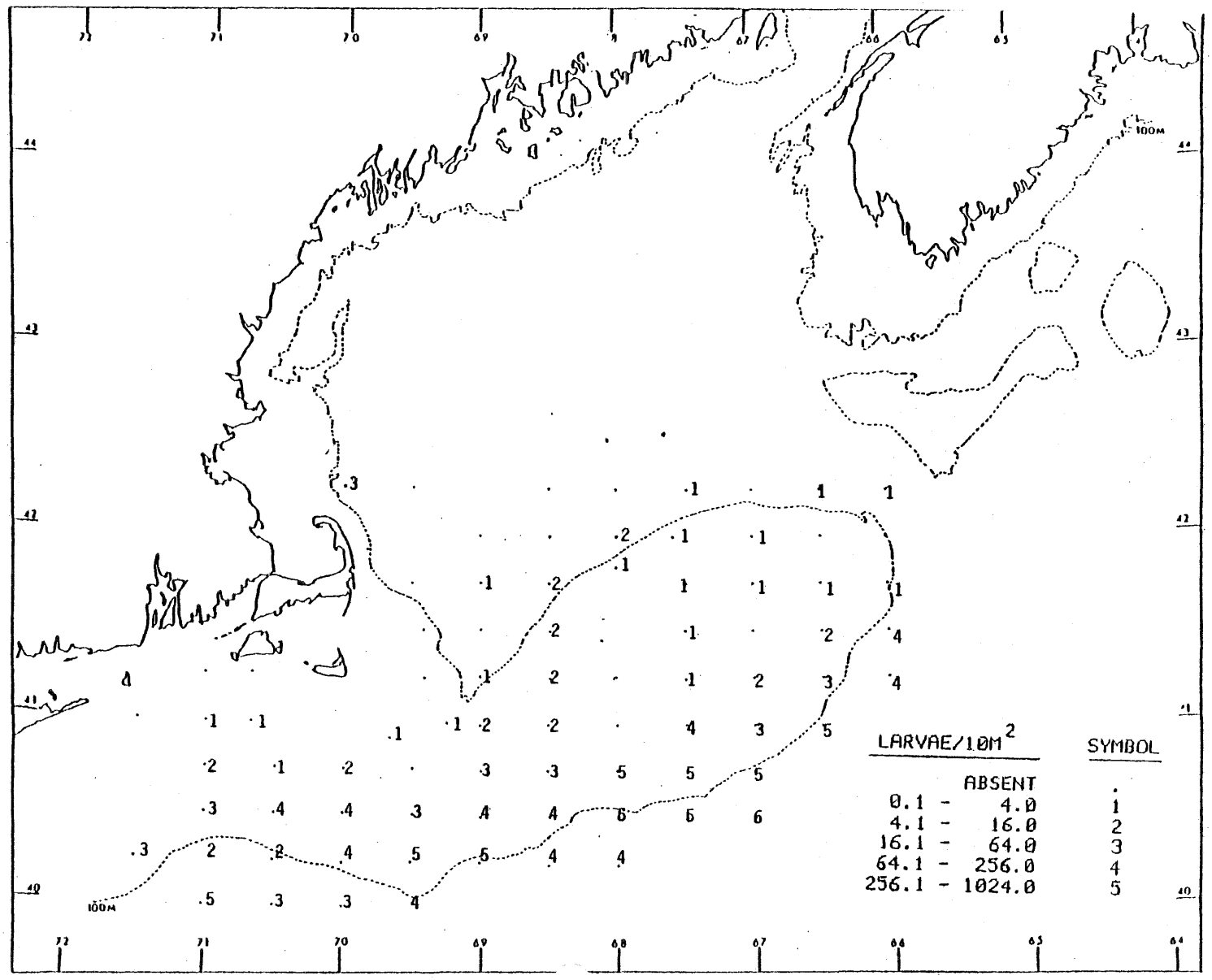


Table 51. Mean abundance (positive tows only) and mean length of *Ceratoscopelus madrensis* by cruise.

Cruise	Middate	Number of Positive Tows	Mean no./ $10m^2$	Standard Deviation	Mean Length (mm)	Standard Deviation	Length Range
Delaware II 71-04	27 Sep. 1971	21	327.1	729.4	7.7	2.4	5 - 66
Viandra 71-01	17 Oct. 1971	16	52.8	120.8	6.4	1.8	3 - 20
Walther Herwig 71-01	05 Nov. 1971	2	0.7	0.1	5.9	1.9	5 - 7
Wieczno 72-01	14 Oct. 1972	8	5.1	7.1	9.1	2.0	6 - 14
Albatross IV 72-02	10 Dec. 1972	4	3.6	2.5	7.8	2.3	5 - 11
Anton Dohrn 72-01	05 Nov. 1972	13	8.4	10.1	9.6	5.8	5 - 43
Cryos 73-01	19 Sep. 1973	4	5.8	3.0	8.0	2.6	5 - 14
Wieczno 73-40	09 Oct. 1973	26	83.3	175.5	7.7	1.8	5 - 16
Belogorsk 73-01	23 Oct. 1973	23	55.3	82.9	9.8	2.2	3 - 21
Walther Herwig 73-43	02 Nov. 1973	33	52.3	68.2	10.0	3.7	4 - 67
Albatross IV 73-09	13 Dec. 1973	5	8.3	13.0	23.8	6.6	6 - 39
Cryos 74-04	16 Sep. 1974	9	14.0	21.7	8.2	4.0	3 - 22
Prognoz 74-01	24 Oct. 1974	24	40.3	71.3	8.9	2.7	3 - 18
Anton Dohrn 74-01	19 Nov. 1974	19	15.5	13.7	8.1	1.8	3 - 14
Albatross IV 74-13	13 Dec. 1974	3	1.9	0.5	7.9	2.5	5 - 15
Belogorsk 75-02	01 Oct. 1975	25	31.8	77.4	5.8	3.8	2 - 54
Belogorsk 75-03	23 Oct. 1975	13	18.7	35.2	10.4	4.8	4 - 34
Anton Dohrn 75-187	09 Nov. 1975	13	9.8	9.3	11.0	5.9	3 - 61
Albatross IV 75-14	09 Dec. 1975	1	1.5	-	30.0	-	-
Albatross IV 76-01	16 Feb. 1976	2	2.6	0.2	44.2	25.1	23 - 68
Belogorsk 76-03	08 Oct. 1976	13	7.6	8.3	7.7	1.4	5 - 12
Wieczno 76-03	24 Oct. 1976	21	10.4	12.7	9.4	3.2	6 - 24
Anton Dohrn 76-02	22 Nov. 1976	5	7.0	5.1	18.9	11.3	5 - 58
Researcher 76-01	04 Dec. 1976	2	2.2	0.2	8.2	1.5	6 - 9

References:

Backus et al. 1970
Berrien et al. 1978
Colton and Byron 1977
Grimm 1978
Joakimsson 1978
Leim and Scott 1966
Nafpaktitis et al. 1977

Figure 52. Composite distribution and abundance (greatest occurrence per station) of Ceratoscopelus warmingii collected during 30 autumn and winter cruises for the period Sep. 1971 - Feb. 1977.

Ceratoscopelus warmingii (Lutken) Common Name:

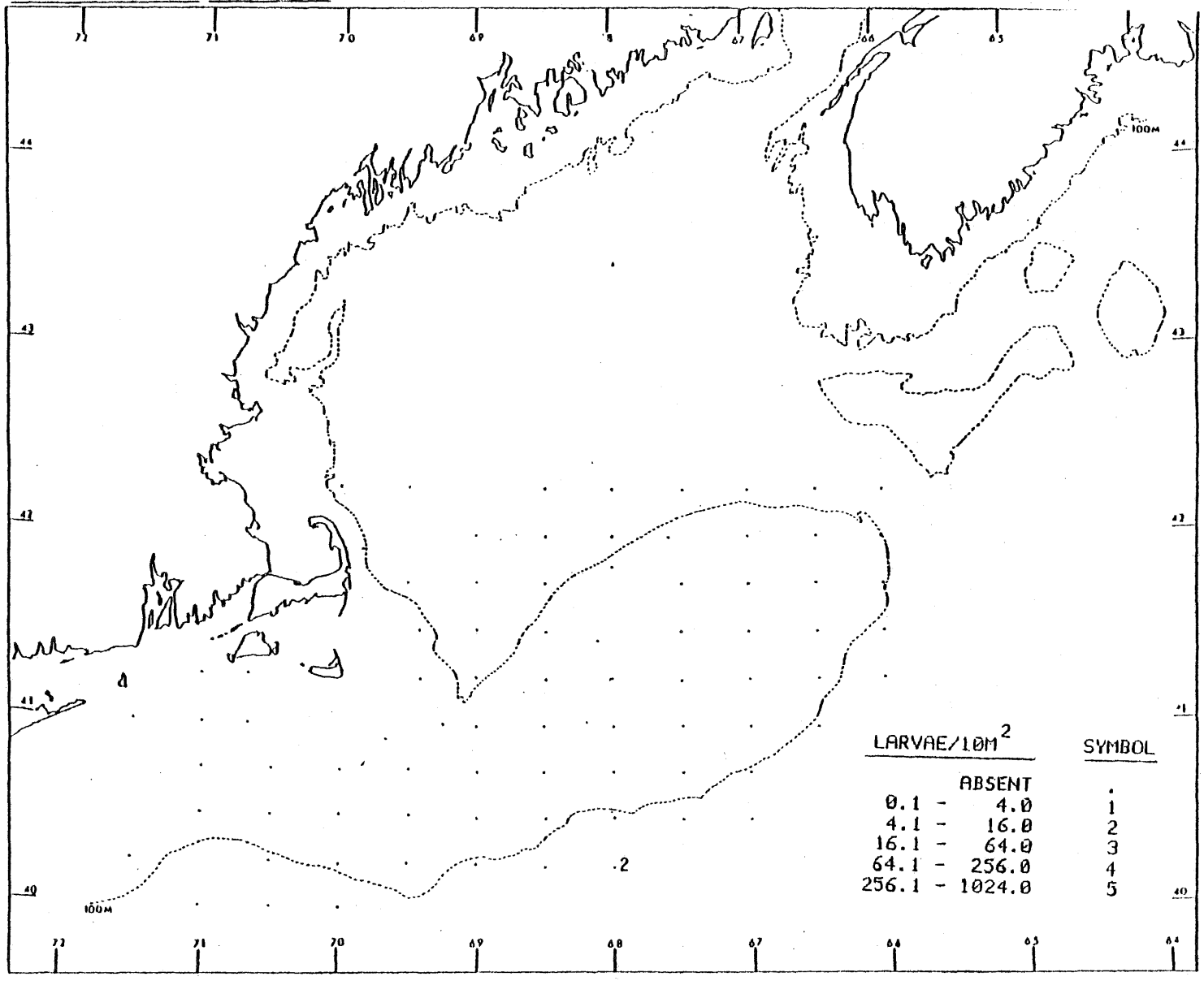


Table 52. Mean abundance (positive tows only) and mean length of *Ceratoscopelus warmingii* by cruise.

Cruise	Middate	Number of Positive Tows	Mean no./ $10m^2$	Standard Deviation	Mean Length (mm)	Standard Deviation	Length Range
Wieczno 73-40	09 Oct. 1973	1	6.9	-	21.0	-	-

References:

Backus et al. 1970
Berrien et al. 1978
Nafpaktitis et al. 1977

Figure 53. Composite distribution and abundance (greatest occurrence per station) of **Ceratoscopelus** sp. collected during 30 autumn and winter cruises for the period Sep. 1971 - Feb. 1977.

Ceratscopelus sp. Common Name:

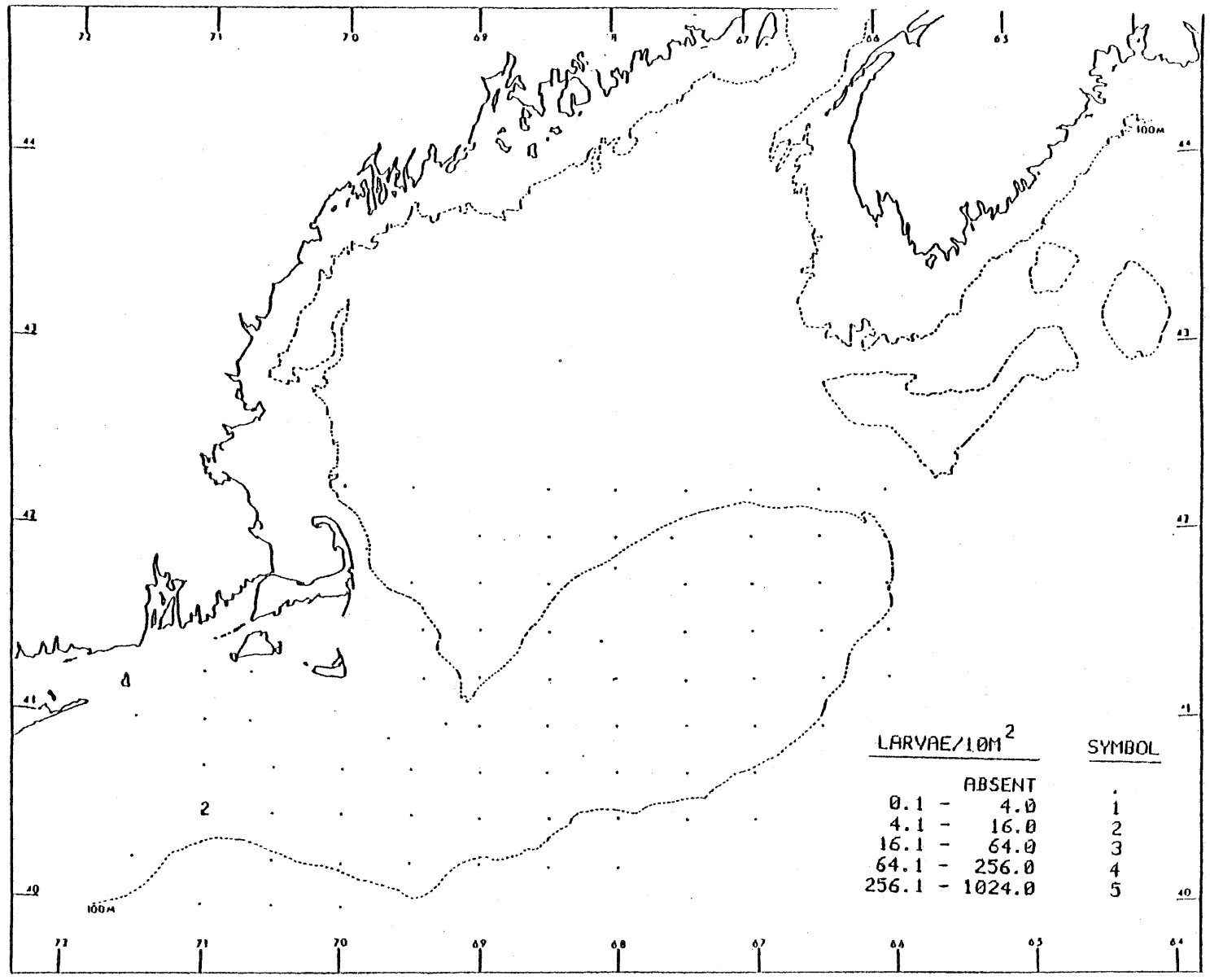


Table 53. Mean abundance (positive tows only) and mean length of *Ceratoscopelus* sp. by cruise.

Cruise	Middate	Number of Positive Tows	Mean no./ $10m^2$	Standard Deviation	Mean Length (mm)	Standard Deviation	Length Range
Anton Dohrn 74-01	19 Nov. 1974	1	14.1	-	6.9	0.8	5 - 8

Berrien et al. 1978
Colton and Byron 1977
Nafpaktitis et al. 1977

Figure 54. Composite distribution and abundance (greatest occurrence per station) of Diaphus dumerili collected during 30 autumn and winter cruises for the period Sep. 1971 - Feb. 1977.

Diaphus dumerili (Bleeker) Common Name:

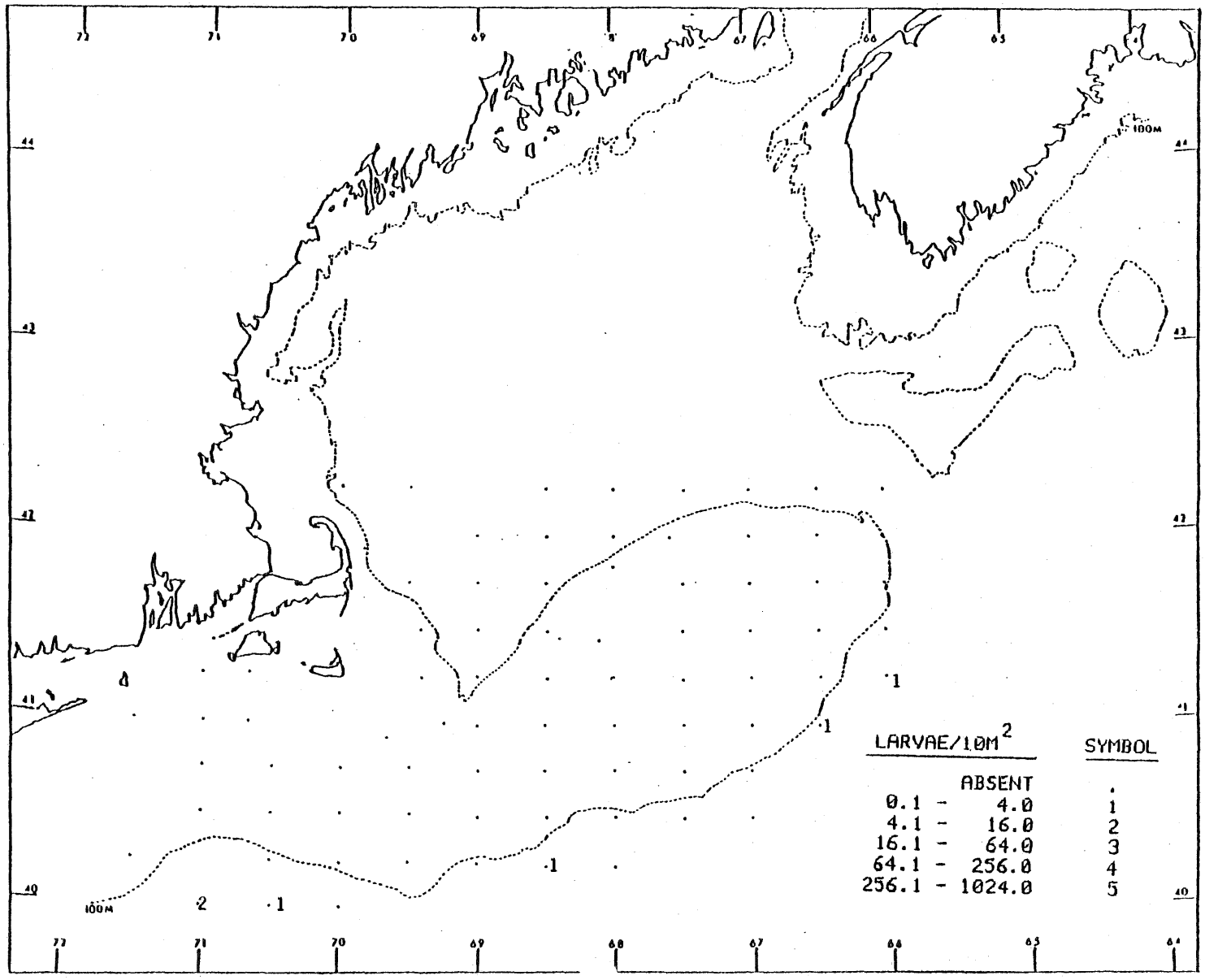


Table 54. Mean abundance (positive tows only) and mean length of *Diaphus dumerilii* by cruise.

Cruise	Middate	Number of Positive Tows	Mean no./ $10m^2$	Standard Deviation	Mean Length (mm)	Standard Deviation	Length Range
Belogorsk 73-01	23 Oct. 1973	1	1.3	-	3.0	-	-
Albatross IV 74-13	13 Dec. 1974	2	5.1	4.8	25.6	24.3	4 - 62
Belogorsk 75-03	23 Oct. 1975	3	1.6	0.4	31.7	19.3	6 - 49

References:

Backus et al. 1970
Colton and Byron 1977
Grimm 1978
Nafpaktitis et al. 1977

Figure 55. Composite distribution and abundance (greatest occurrence per station) of Diaphus effulgens collected during 30 autumn and winter cruises for the period Sep. 1971 - Feb. 1977.

Diaphus effulgens (Goode and Bean) Common Name:

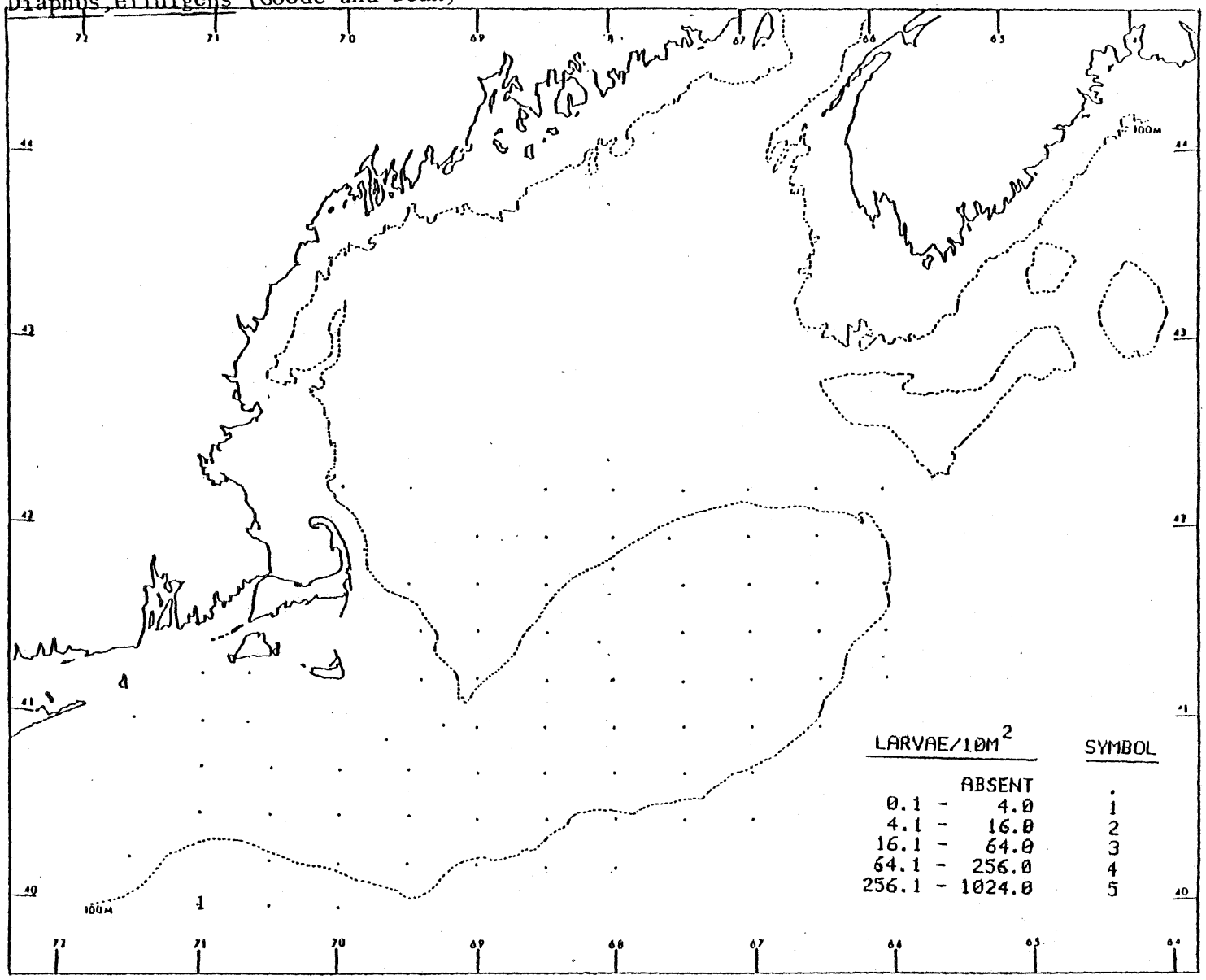


Table 55. Mean abundance (positive tows only) and mean length of *Diaphus effulgens* by cruise.

Cruise	Middate	Number of Positive Tows	Mean no./ $10m^2$	Standard Deviation	Mean Length (mm)	Standard Deviation	Length Range
Albatross IV 74-13	13 Dec. 1974	1	3.6	-	57.7	3.9	53 - 60

References:

Backus et al. 1970
Nafpaktitis et al. 1977

Figure 56. Composite distribution and abundance (greatest occurrence per station) of Diaphus splendidus collected during 30 autumn and winter cruises for the period Sep. 1971 - Feb. 1977.

Diaphus splendidus (Beaker) Common Name:

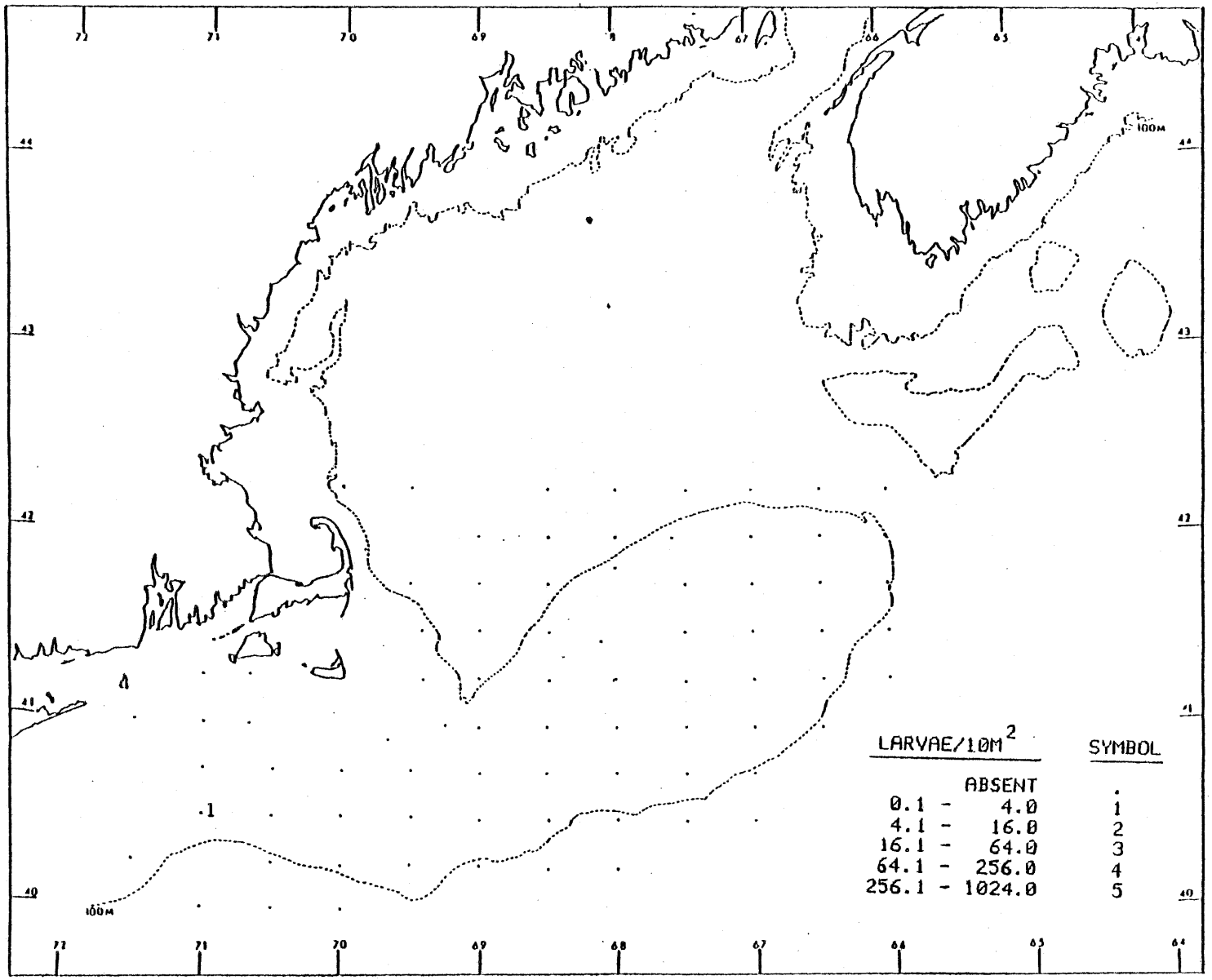


Table 56. Mean abundance (positive tows only) and mean length of *Diaphus splendidus* by cruise.

Cruise	Middate	Number of Positive Tows	Mean no./ $10m^2$	Standard Deviation	Mean Length (mm)	Standard Deviation	Length Range
Anton Dohrn 74-01	19 Nov. 1974	1	1.4	-	6.0	-	-

References:

Backus et al. 1970
Nafpaktitis et al. 1970

Figure 57. Composite distribution and abundance (greatest occurrence per station) of Diaphus sp. collected during 30 autumn and winter cruises for the period Sep. 1971 - Feb. 1977.

Diaphus sp. Common Name:

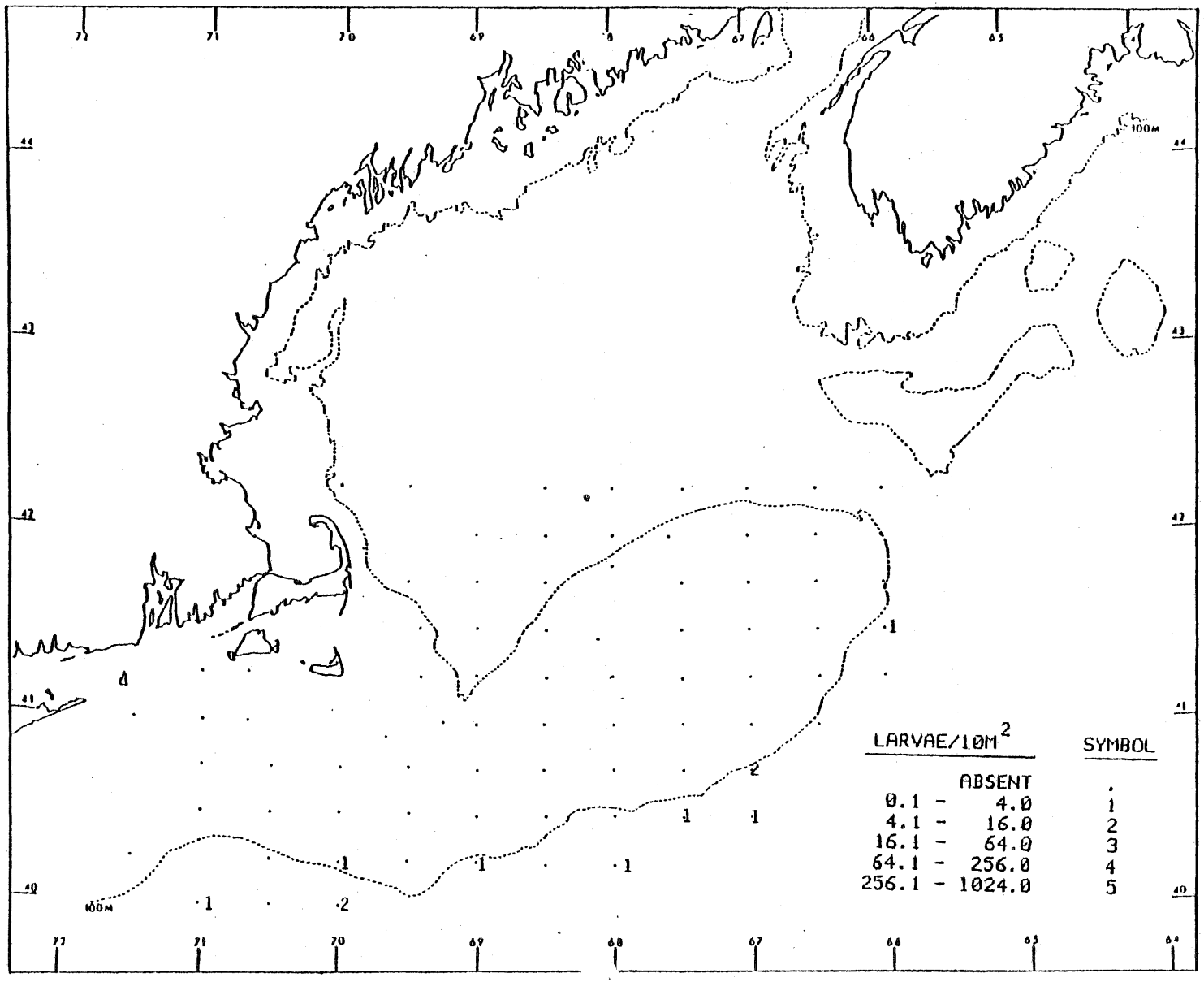


Table 57. Mean abundance (positive tows only) and mean length of *Diaphus* sp. by cruise.

Cruise	Middate	Number of Positive Tows	Mean no./ $10m^2$	Standard Deviation	Mean Length (mm)	Standard Deviation	Length Range
Delaware II 71-04	27 Sep. 1971 m	1	1.0	-	13.0	-	-
Wieczno 73-40	09 Oct. 1973	2	1.8	0.6	14.8	8.6	9 - 24
Belogorsk 73-01	23 Oct. 1973	2	1.7	1.3	8.4	1.7	7 - 11
Cryos 74-04	16 Sep. 1974	2	7.9	9.1	32.9	18.8	6 - 52
Prognoz 74-01	24 Oct. 1974	1	1.4	-	8.0	-	-
Anton Dohrn 75-187	09 Nov. 1975	1	2.1	-	7.0	-	-

References:

See *D. dumerilii*, *D. effulgens*, *D. splendidus*

Figure 58. Composite distribution and abundance (greatest occurrence per station) of Diogenichthys atlanticus collected during 30 autumn and winter cruises for the period Sep. 1971 - Feb. 1977.

Diogenichthys atlanticus (Taning) Common Name:

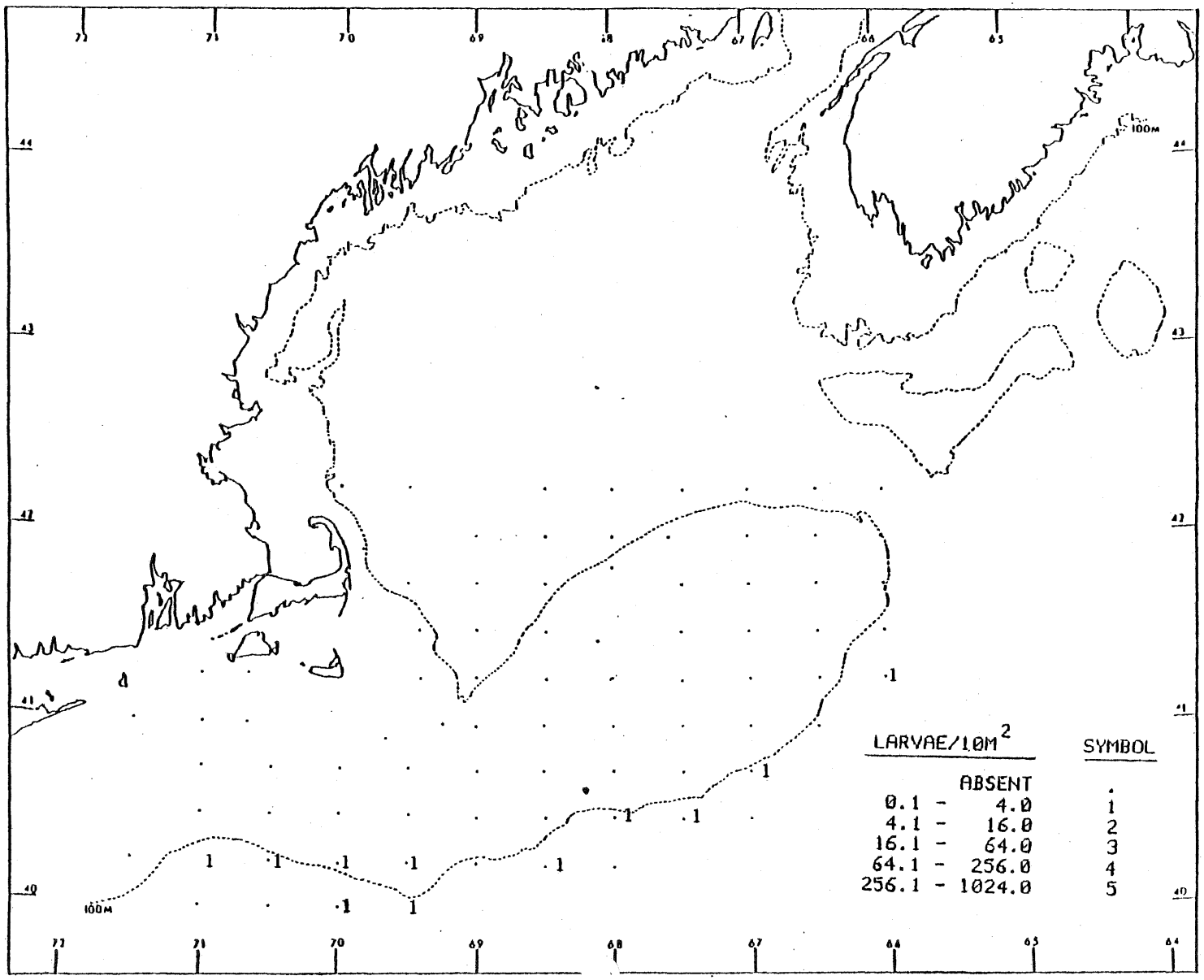


Table 58. Mean abundance (positive tows only) and mean length of *Diogenichthys atlanticus* by cruise.

Cruise	Middate	Number of Positive Tows	Mean no./ $10m^2$	Standard Deviation	Mean Length (mm)	Standard Deviation	Length Range
Wieczno 73-40	09 Oct. 1973	1	1.3	-	5.0	-	-
Belogorsk 73-01	23 Oct. 1973	2	1.5	0.2	6.6	0.6	6 - 7
Albatross IV 73-09	13 Dec. 1973	2	2.8	0.1	9.5	2.2	7 - 12
Prognoz 74-01	24 Oct. 1974	3	1.7	0.6	6.7	2.5	4 - 9
Albatross IV 74-13	13 Dec. 1974	3	1.7	0.2	5.6	1.4	4 - 7
Albatross IV 75-14	09 Dec. 1975	2	2.3	0.9	5.3	0.9	4 - 6
Wieczno 76-03	24 Oct. 1976	2	1.6	0.4	6.6	0.6	6 - 7

References:

Backus et al. 1977
Nafpaktitis et al. 1977

Figure 59. Composite distribution and abundance (greatest occurrence per station) of Diogenichthys sp. collected during 30 autumn and winter cruises for the period Sep. 1971 - Feb. 1977.

Diogenichthys sp. Common Name:

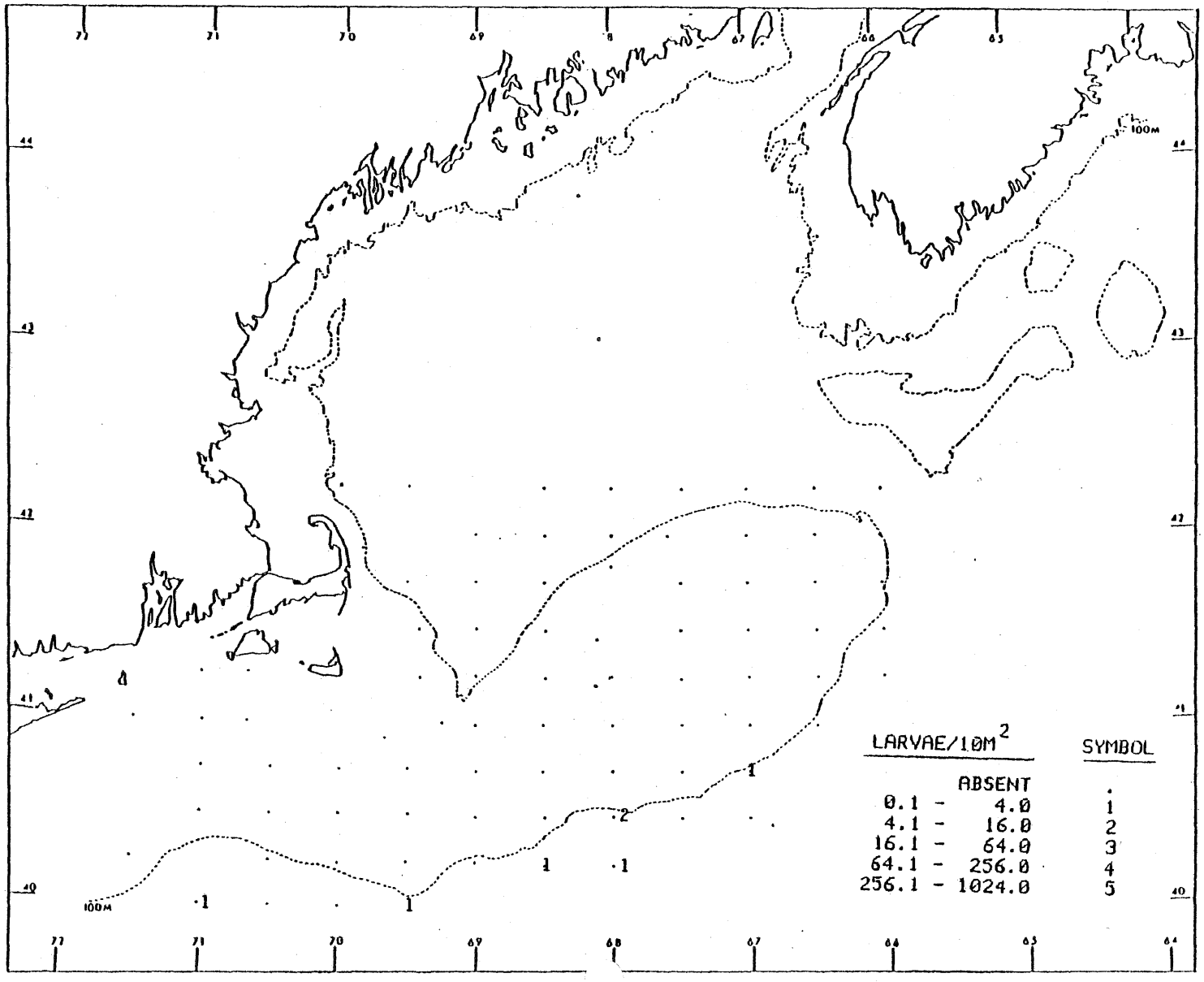


Table 59. Mean abundance (positive tows only) and mean length of *Diogenichthys* sp. by cruise.

Cruise	Middate	Number of Positive Tows	Mean no./ $10m^2$	Standard Deviation	Mean Length (mm)	Standard Deviation	Length Range
Albatross IV 71-07	09 Dec. 1971	1	22.2	-	4.4	0.7	4 - 6
Albatross IV 75-14	09 Dec. 1975	3	4.5	4.4	5.2	1.6	3 - 7
Wieczno 76-03	24 Oct. 1976	1	2.8	-	12.6	1.2	12 - 14
Researcher 76-01	04 Dec. 1976	1	3.5	-	6.0	-	-

References:

See *D. atlanticus*

Figure 60. Composite distribution and abundance (greatest occurrence per station) of Electrona sp. collected during 30 autumn and winter cruise for the period Sep. 1971 - Feb. 1977.

Electrona sp. Common Name:

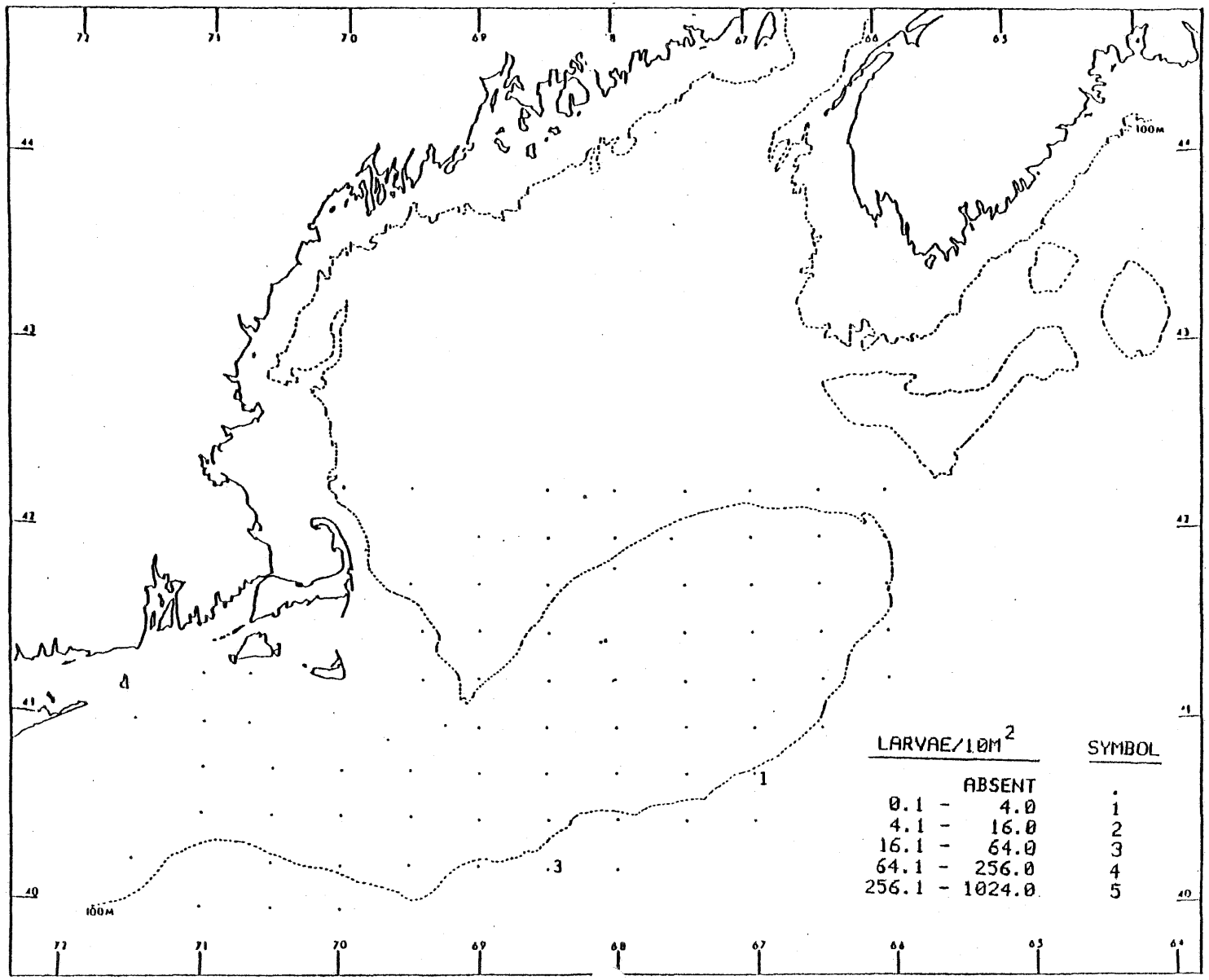


Table 60. Mean abundance (positive tows only) and mean length of *Electrona* sp. by cruise.

Cruise	Middate	Number of Positive Tows	Mean no./ $10m^2$	Standard Deviation	Mean Length (mm)	Standard Deviation	Length Range
Belogorsk 73-01	23 Oct. 1973	1	1.6	-	8.0	-	-
Anton Dohrn 76-02	22 Nov. 1976	1	24.3	-	7.0	-	-

References:

Berrien et al. 1978
Nafpaktitis 1977

Figure 61. Composite distribution and abundance (greatest occurrence per station) of Gonichthys coccoi collected during 30 autumn and winter cruises for the period Sep. 1971 - Feb. 1977.

Gonichthys coccoi (Cocco) Common Name: Cocco's lanternfish

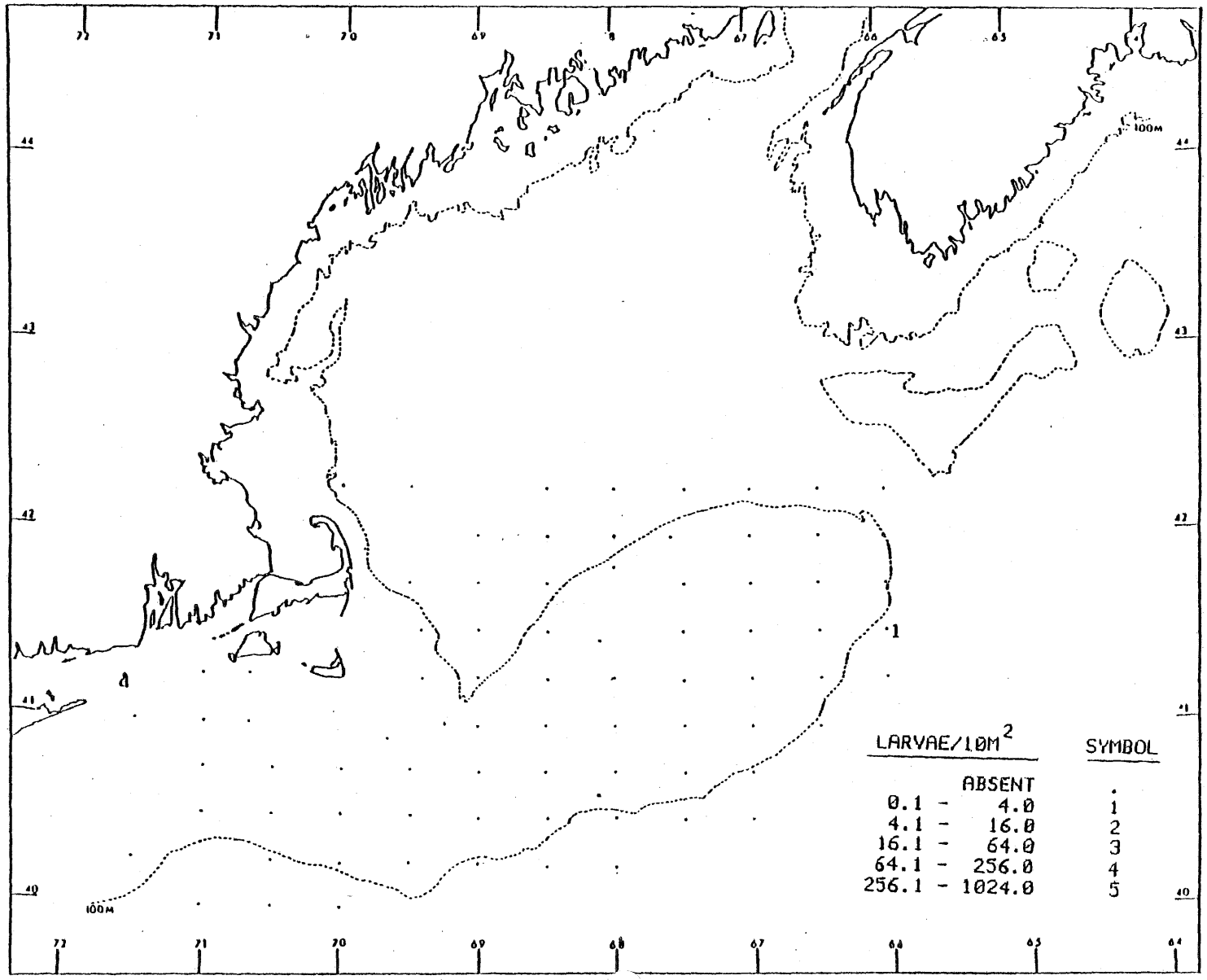


Table 61. Mean abundance (positive tows only) and mean length of *Gonichthys coccoi* by cruise.

Cruise	Middate	Number of Positive Tows	Mean no./ $10m^2$	Standard Deviation	Mean Length (mm)	Standard Deviation	Length Range
Belogorsk 73-01	23 Oct. 1973	1	1.3	-	39.0	-	-

References:

Backus et al. 1970
Leim and Scott 1966
Markle et al. 1980
Nafpaktitis et al. 1977

Figure 62. Composite distribution and abundance (greatest occurrence per station) of Hygophum benoiti collected during 30 autumn and winter cruises for the period Sep. 1971 - Feb. 1977.

Hygophum benoiti (Cocco) Common Name: Benoit's lanternfish

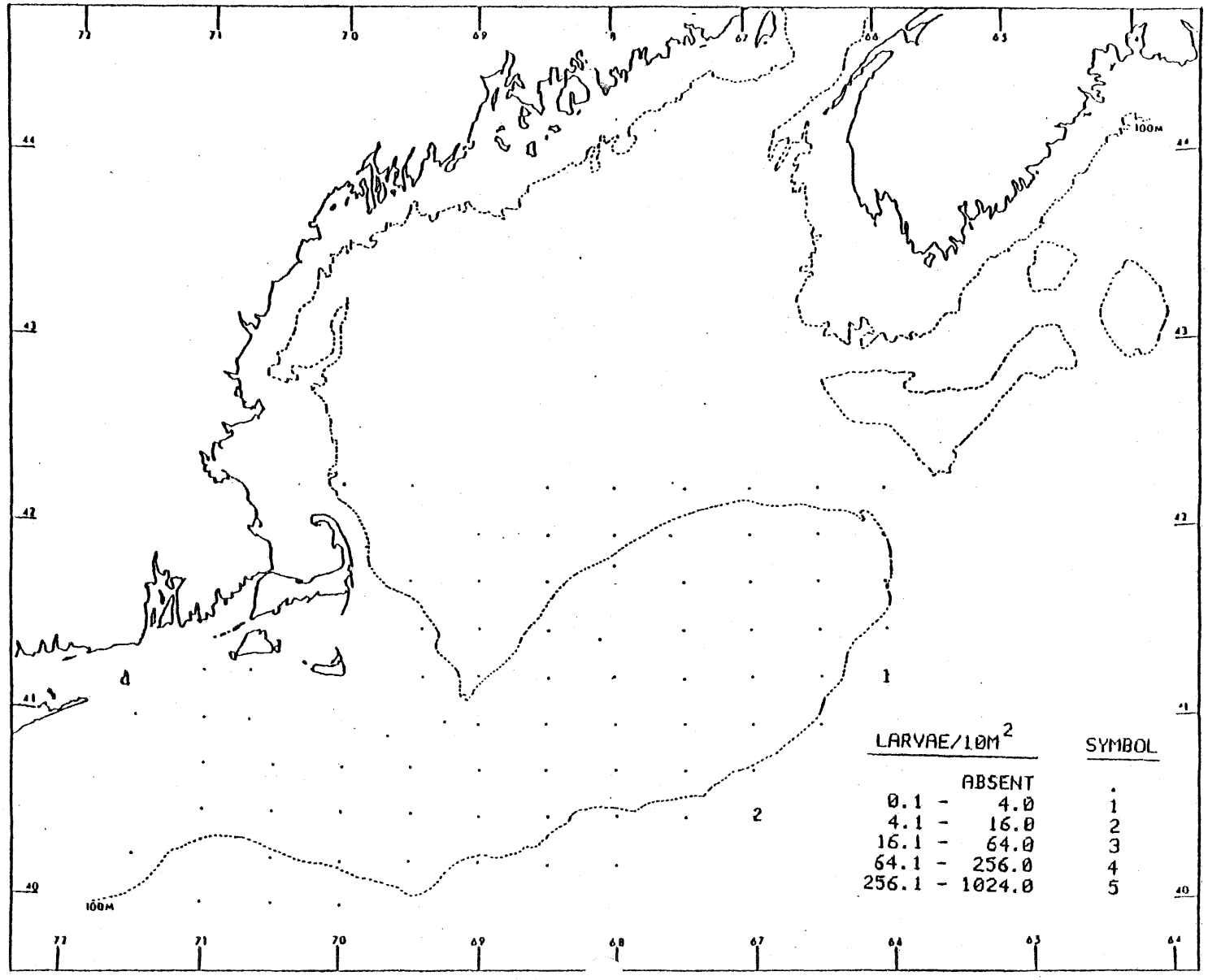


Table 62. Mean abundance (positive tows only) and mean length of *Hygophum benoiti* by cruise.

Cruise	Middate	Number of Positive Tows	Mean no./ $10m^2$	Standard Deviation	Mean Length (mm)	Standard Deviation	Length Range
Delaware II 71-04	27 Sep. 1971	1	6.2	-	15.0	1.8	13 - 17
Wieczno 76-03	24 Oct. 1976	1	1.9	-	23.0	-	-

References:

Backus et al. 1970
Berrien et al. 1978
Leim and Scott 1966
Markle et al. 1980
Nafpaktitis et al. 1977

Figure 63. Composite distribution and abundance (greatest occurrence per station) of Hygophum hygomi collected during 30 autumn and winter cruises for the period Sep. 1971 - Feb. 1977.

Hygophum hygomi (Lutken) Common Name:

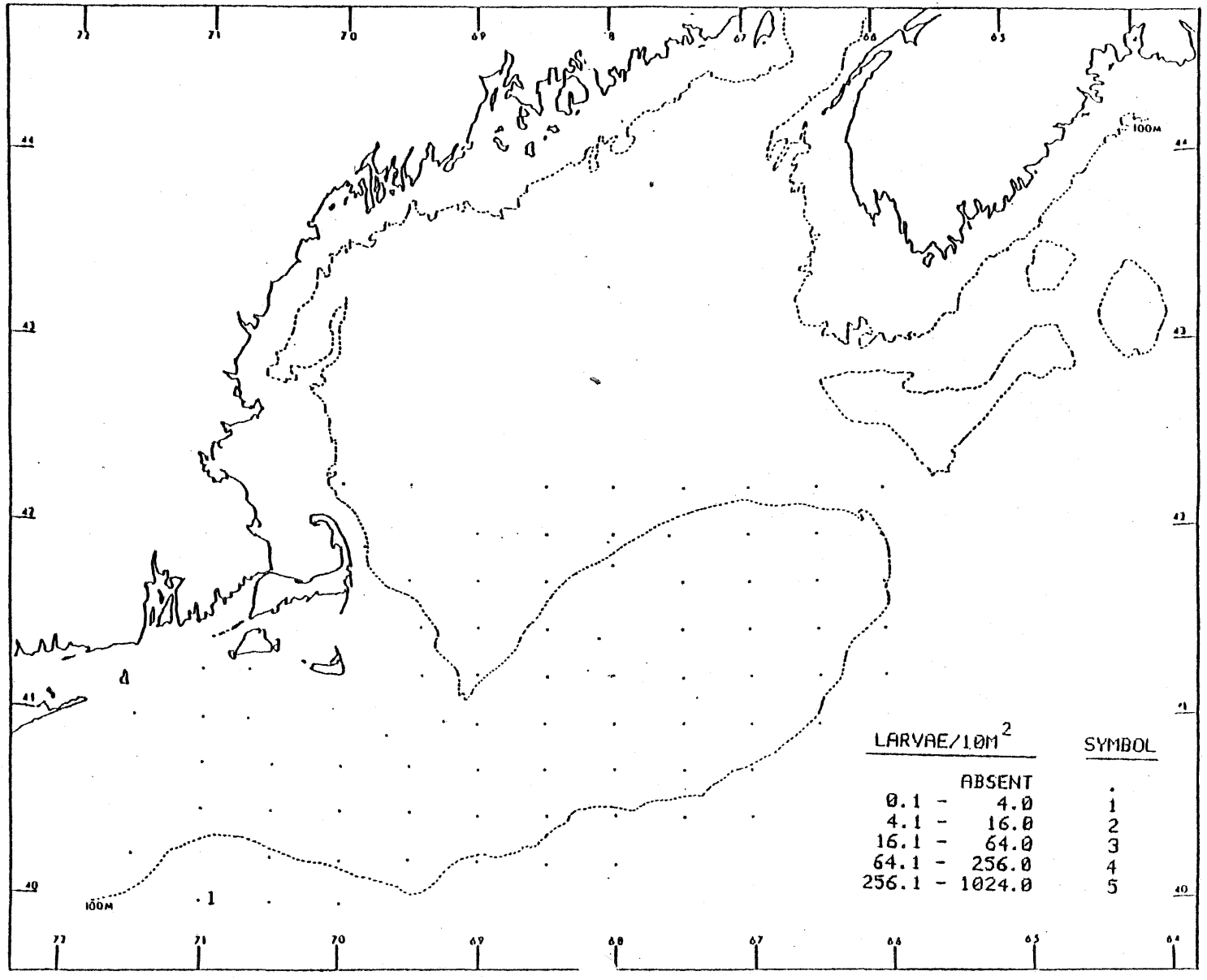


Table 63. Mean abundance (positive tows only) and mean length of *Hygophum hygomi* by cruise.

Cruise	Middate	Number of Positive Tows	Mean no./ $10m^2$	Standard Deviation	Mean Length (mm)	Standard Deviation	Length Range
Delaware II 71-04	27 Sep. 1971	1	1.0	-	67.0	-	-

Backus et al. 1970
Berrien et al. 1978
Nafpaktitis et al. 1977

Figure 64. Composite distribution and abundance (greatest occurrence per station) of Hygophum reinhardti collected during 30 autumn and winter cruises for the period Sep. 1971 - Feb. 1977.

Hygophum reinhardti (Lutken) Common Name:

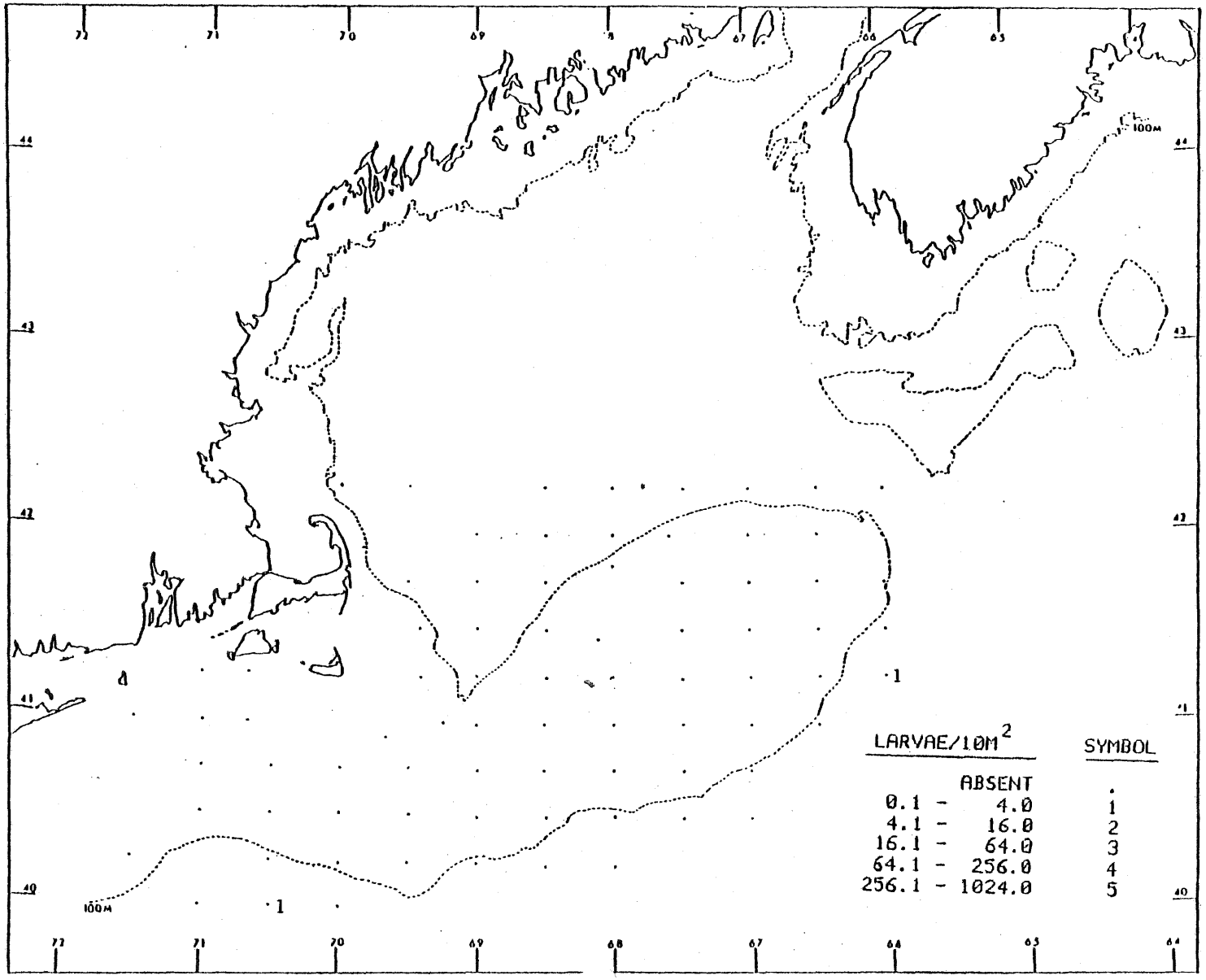


Table 64. Mean abundance (positive tows only) and mean length of *Hygophum reinhardtii* by cruise.

Cruise	Middate	Number of Positive Tows	Mean no./ $10m^2$	Standard Deviation	Mean Length (mm)	Standard Deviation	Length Range
Wieczno 76-03	24 Oct. 1976	1	1.9	-	30.0	-	-
Anton Dohrn 76-02	22 Nov. 1976	1	1.7	-	15.0	-	-

References:

Berrien et al. 1978
Nafpaktitis et al. 1977

Figure 65. Composite distribution and abundance (greatest occurrence per station) of Hygophum sp. collected during 30 autumn and winter cruises for the period Sep. 1971 - Feb. 1977.

Hygophum sp. Common Name:

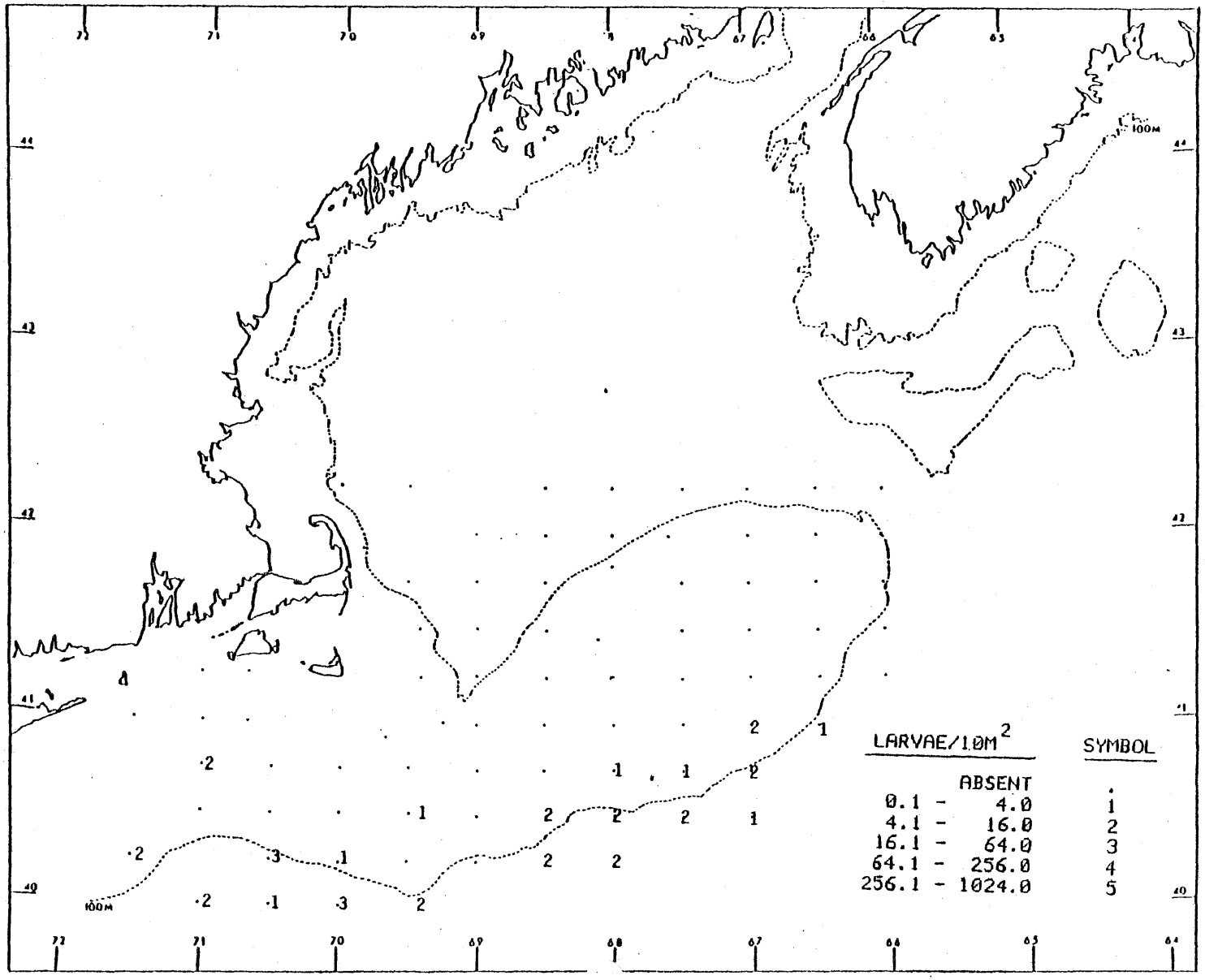


Table 65. Mean abundance (positive tows only) and mean length of *Hygophum* sp. by cruise.

Cruise	Middate	Number of Positive Tows	Mean no./ $10m^2$	Standard Deviation	Mean Length (mm)	Standard Deviation	Length Range
Albatross IV 71-07	09 Dec. 1971	1	3.1	-	4.5	0.6	4 - 5
Anton Dohrn 72-01	05 Nov. 1972	1	1.8	-	41.0	-	-
Walther Herwig 73-43	02 Nov. 1973	2	1.3	0.5	6.4	0.6	6 - 7
Albatross IV 73-09	13 Dec. 1973	6	16.7	19.9	6.2	1.8	3 - 10
Cryos 74-04	16 Sep. 1974	1	1.5	-	7.0	-	-
Prognoz 74-01	24 Oct. 1974	1	1.1	-	13.0	-	-
Anton Dohrn 74-01	19 Nov. 1974	6	2.6	0.8	5.3	1.0	4 - 7
Albatross IV 74-13	13 Dec. 1974	5	5.8	5.9	4.8	1.2	3 - 8
Albatross IV 75-14	09 Dec. 1975	4	2.0	0.9	6.6	1.6	4 - 8
Albatross IV 76-01	16 Feb. 1976	1	8.7	-	4.8	1.7	3 - 7
Wieczno 76-03	24 Oct. 1976	1	1.9	-	17.0	-	-
Anton Dohrn 76-02	22 Nov. 1976	3	8.0	6.1	6.4	1.1	4 - 8
Researcher 76-01	04 Dec. 1976	2	11.3	1.3	7.0	1.4	5 - 11

References:

See *H. benoiti*, *H. hygomi*, *H. reinhardtii*

Figure 66. Composite distribution and abundance (greatest occurrence per station) of Lampanyctus sp. collected during 30 autumn and winter cruises for the period Sep. 1971 - Feb. 1977.

Lampanyctus sp.

Common Name:

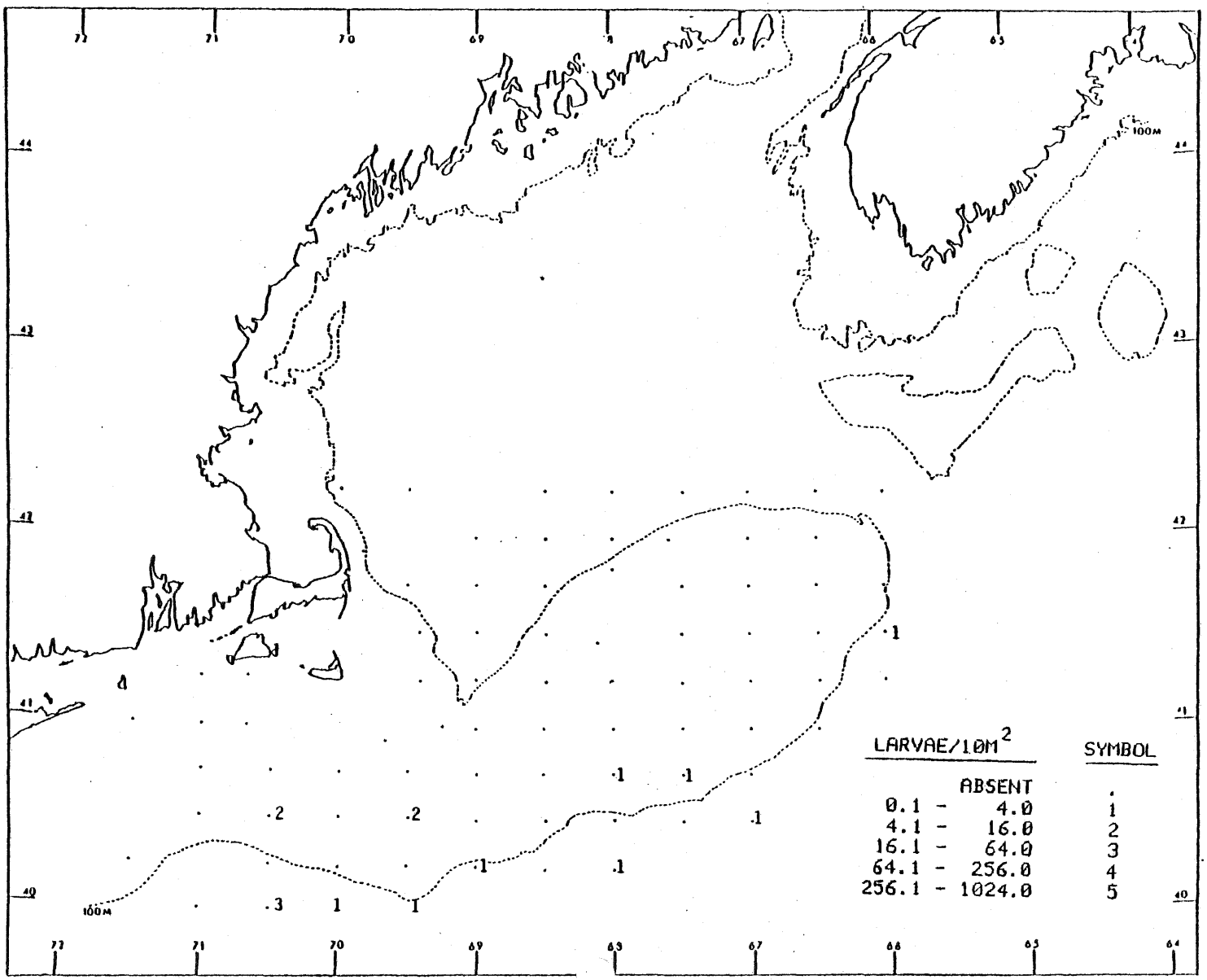


Table 66. Mean abundance (positive tows only) and mean length of *Lampanyctus* sp. by cruise.

Cruise	Middate	Number of Positive Tows	Mean no./ $10m^2$	Standard Deviation	Mean Length (mm)	Standard Deviation	Length Range
Delaware II 71-04	27 Sep. 1971	3	1.6	0.9	5.7	0.5	5 - 6
Viandra 71-01	17 Oct. 1971	5	2.5	3.1	16.3	6.9	4 - 22
Belogorsk 73-01	23 Oct. 1973	1	2.6	-	21.0	2.5	19 - 23
Walther Herwig 73-43	02 Nov. 1973	2	7.5	0.4	5.5	0.5	5 - 6
Albatross IV 73-09	13 Dec. 1973	1	3.1	-	4.0	-	-
Prognoz 74-01	24 Oct. 1974	1	1.4	-	8.0	-	-
Anton Dohrn 74-01	19 Nov. 1974	2	3.0	0.7	5.2	1.1	4 - 6
Anton Dohrn 75-187	09 Nov. 1975	1	17.3	-	21.5	4.3	17 - 33
Albatross IV 75-14	09 Dec. 1975	1	1.6	-	5.0	-	-
Researcher 76-01	04 Dec. 1976	1	0.9	-	19.0	-	-

Berrien et al. 1978
Grimm 1978
Joakimsson 1978
Leim and Scott 1966
Nafpaktitis et al. 1977

Figure 67. Composite distribution and abundance (greatest occurrence per station) of Lobianchia dofleini collected during 30 autumn and winter cruises for the period Sep. 1971 - Feb. 1977.

Lobianchia dofleini (Zugmayer) Common Name:

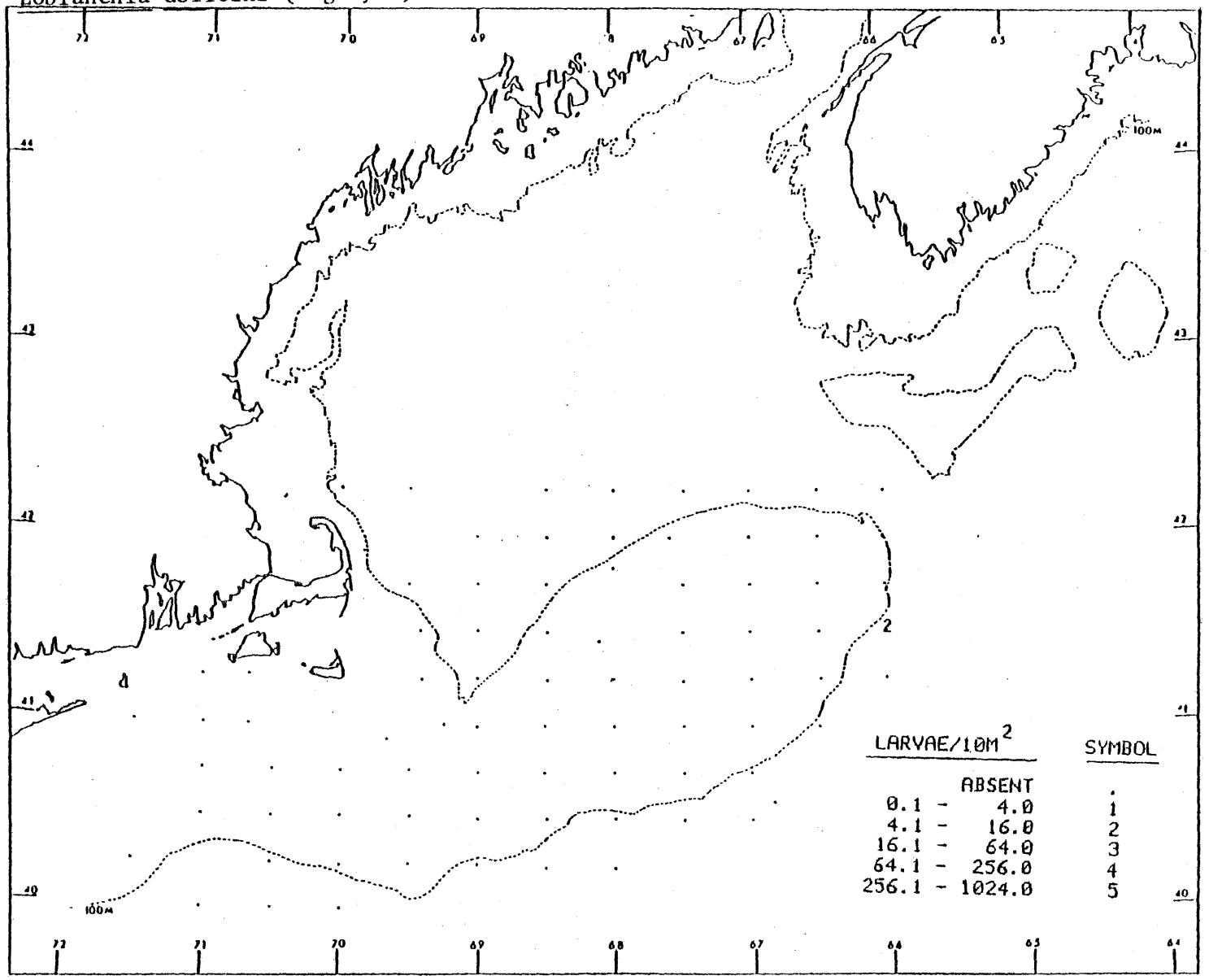


Table 67. Mean abundance (positive tows only) and mean length of *Lobianchia dofleini* by cruise.

Cruise	Middate	Number of Positive Tows	Mean no./ $10m^2$	Standard Deviation	Mean Length (mm)	Standard Deviation	Length Range
Belogorsk 73-01	23 Oct. 1973	1	10.6	-	24.6	6.0	18 - 32

References:

Backus et al. 1970
Berrien et al. 1978
Nafpaktitis et al. 1977

Figure 68. Composite distribution and abundance (greatest occurrence per station) of Myctophum nitidulum collected during 30 autumn and winter cruises for the period Sep. 1971 - Feb. 1977.

Myctophum nitidulum Garman Common Name:

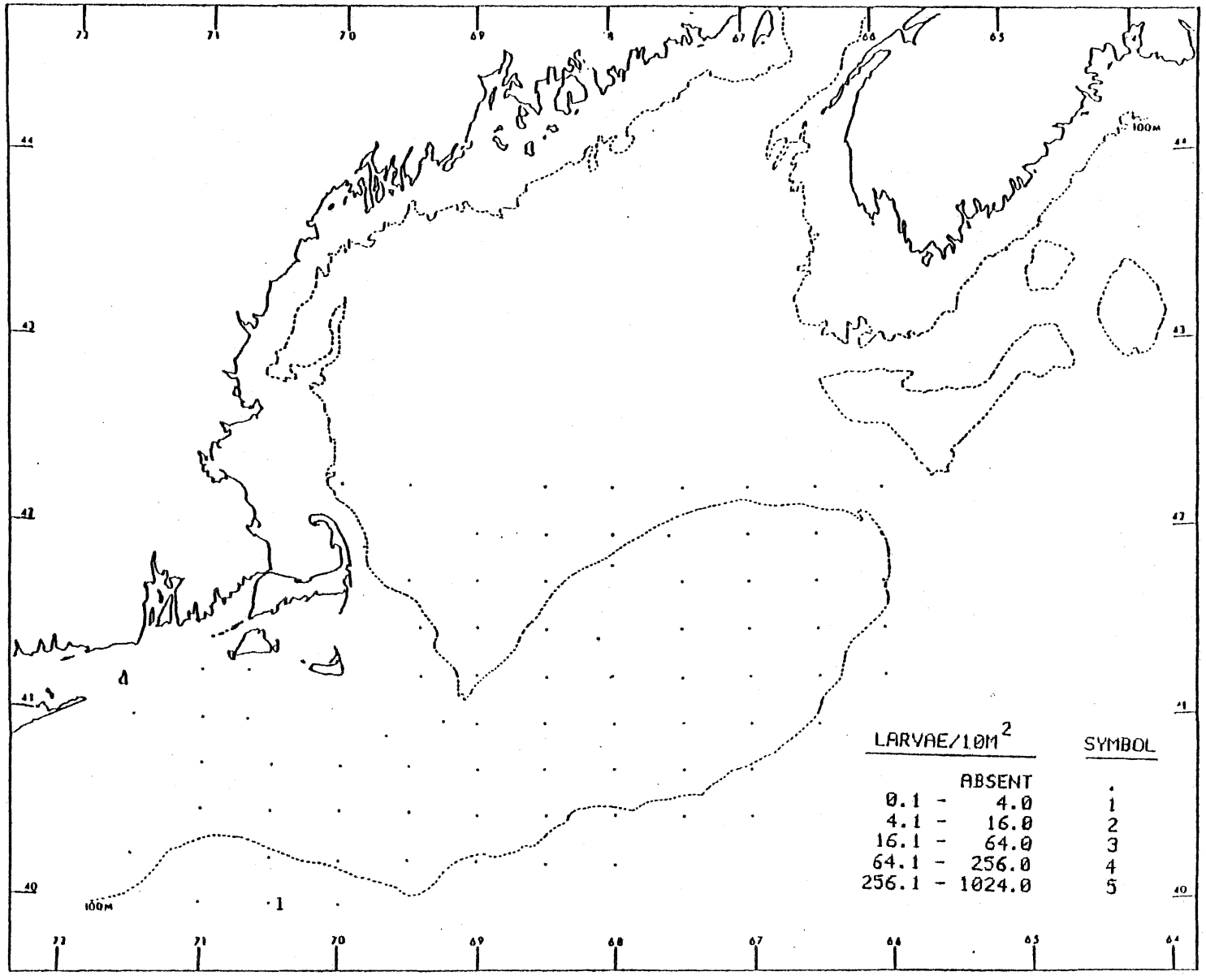


Table 68. Mean abundance (positive tows only) and mean length of Myctophum nitidulum by cruise.

Cruise	Middate	Number of Positive Tows	Mean no./ $10m^2$	Standard Deviation	Mean Length (mm)	Standard Deviation	Length Range
Anton Dohrn 74-01	19 Nov. 1974	1	2.5	-	10.0	-	-

References:

Backus et al. 1970
Grimm 1978
Joakimsson 1978
Leim and Scott 1966
Nafpaktitis et al. 1977

Figure 69. Composite distribution and abundance (greatest occurrence per station) of Myctophum punctatum collected during 30 autumn and winter cruises for the period Sep. 1971 - Feb. 1977.

Myctophum punctatum Rafinesque Common Name: Common lanternfish

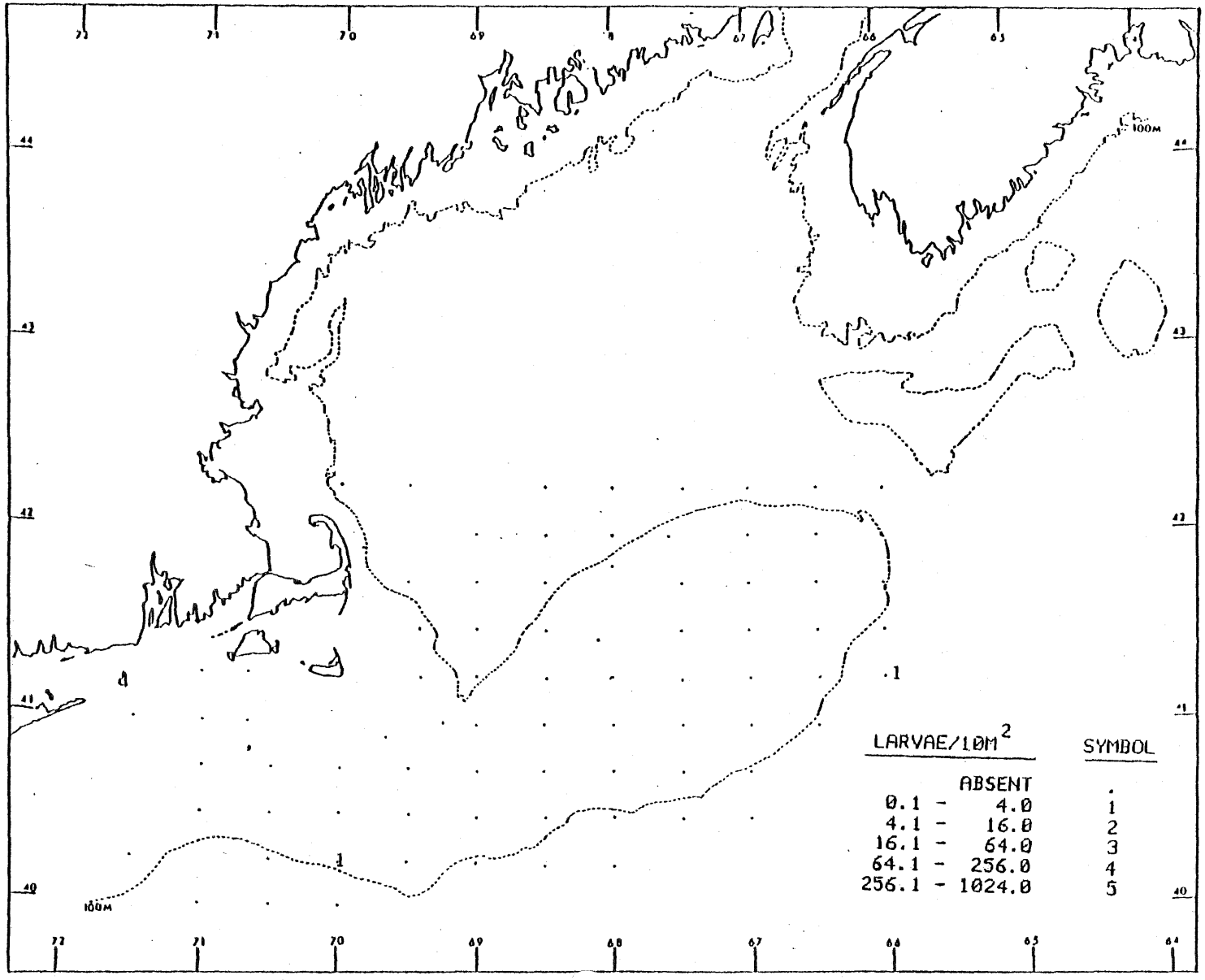
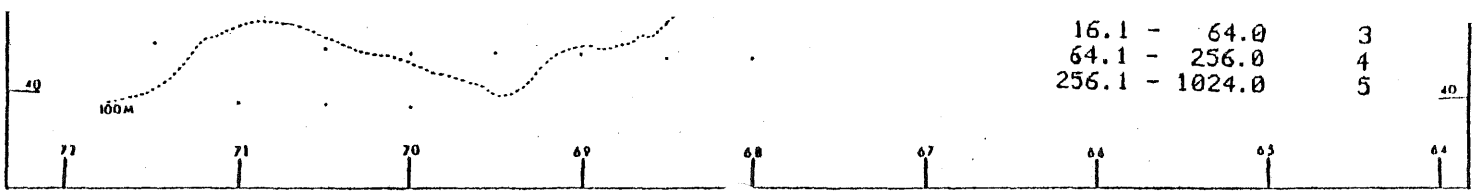


Table 69. Mean abundance (positive tows only) and mean length of *Myctophum punctatum* by cruise.

Cruise	Middate	Number of Positive Tows	Mean no./ $10m^2$	Standard Deviation	Mean Length (mm)	Standard Deviation	Length Range
Delaware II 71-04	27 Sep. 1971	1	1.5	-	53.0	-	-
Albatross IV 74-13	13 Dec. 1974	1	3.4	-	74.0	3.5	71 - 77

References:

Backus et al. 1970
Joakimsson 1978
Nafpaktitis et al. 1977
Zurbrigg and Scott 1972



16.1 - 64.0	3
64.1 - 256.0	4
256.1 - 1024.0	5

Table 71. Mean abundance (positive tows only) and mean length of *Notolychnus valdiviae* by cruise.

Cruise	Middate	Number of Positive Tows	Mean no./ $10m^2$	Standard Deviation	Mean Length (mm)	Standard Deviation	Length Range
Albatross IV 73-09	13 Dec. 1973	1	3.1	-	18.0	-	-
Anton Dohrn 76-02	22 Nov. 1976	1	11.1	-	13.3	1.1	12 - 15

References:

Backus et al. 1970
Berrien et al. 1978
Nafpaktitis et al. 1977

Figure 72. Composite distribution and abundance (greatest occurrence per station) of Protomyctophum sp. collected during 30 autumn and winter cruises for the period Sep. 1971 - Feb. 1977.

Protomyctophum sp. Common Name:

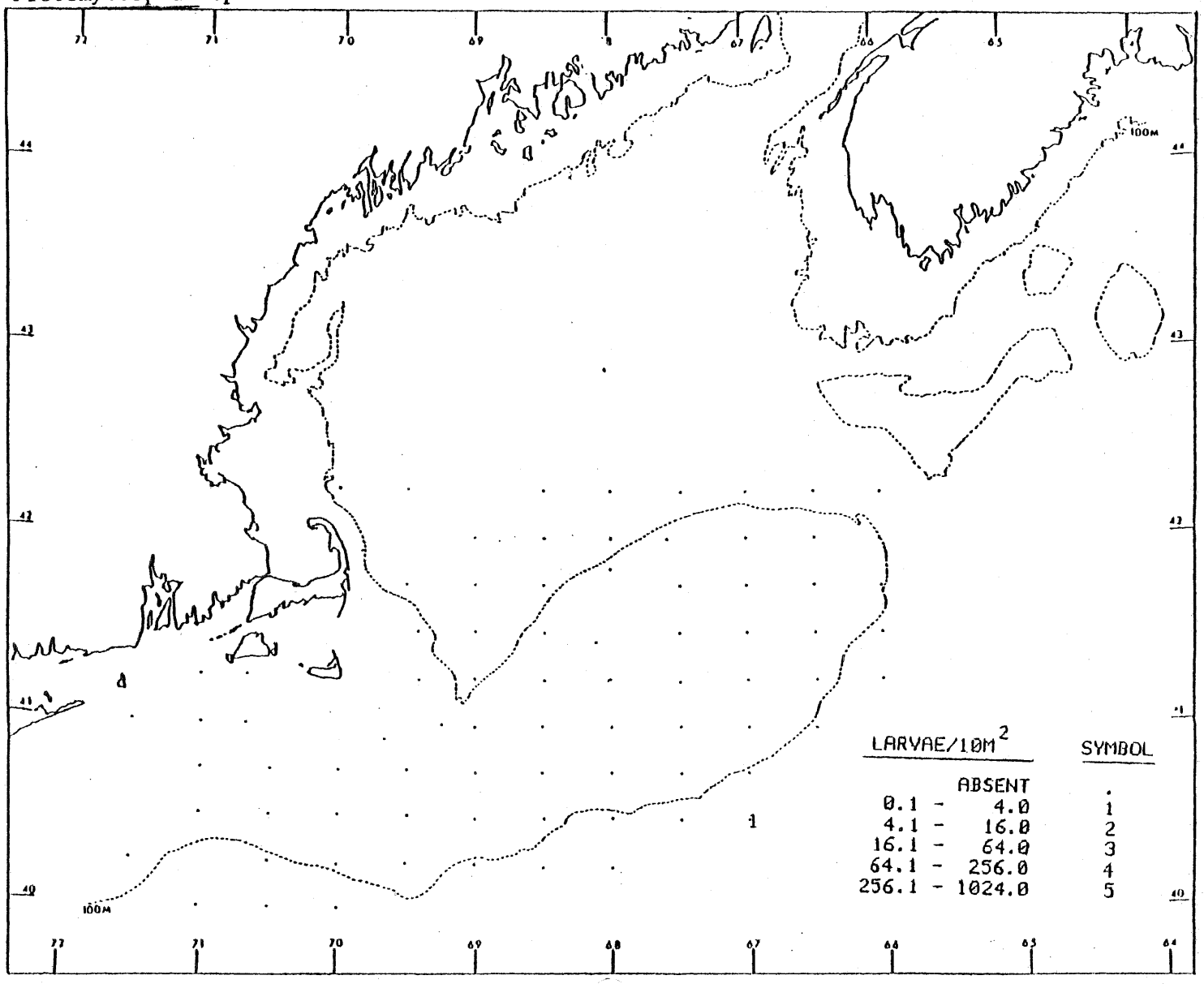


Table 72. Mean abundance (positive tow only) and mean length of *Protomyctophum* sp. by cruise.

Cruise	Middate	Number of Positive Tows	Mean no./ $10m^2$	Standard Deviation	Mean Length (mm)	Standard Deviation	Length Range
Belogorsk 73-01	23 Oct. 1973	1	1.3	-	4.0	-	-

References:

Nafpaktitis et al. 1977

Figure 73. Composite distribution and abundance (greatest occurrence per station) of Symbolophorus sp. collected during 30 autumn and winter cruises for the period Sep. 1971 - Feb. 1977.

Symbolophorus sp. Common Name:

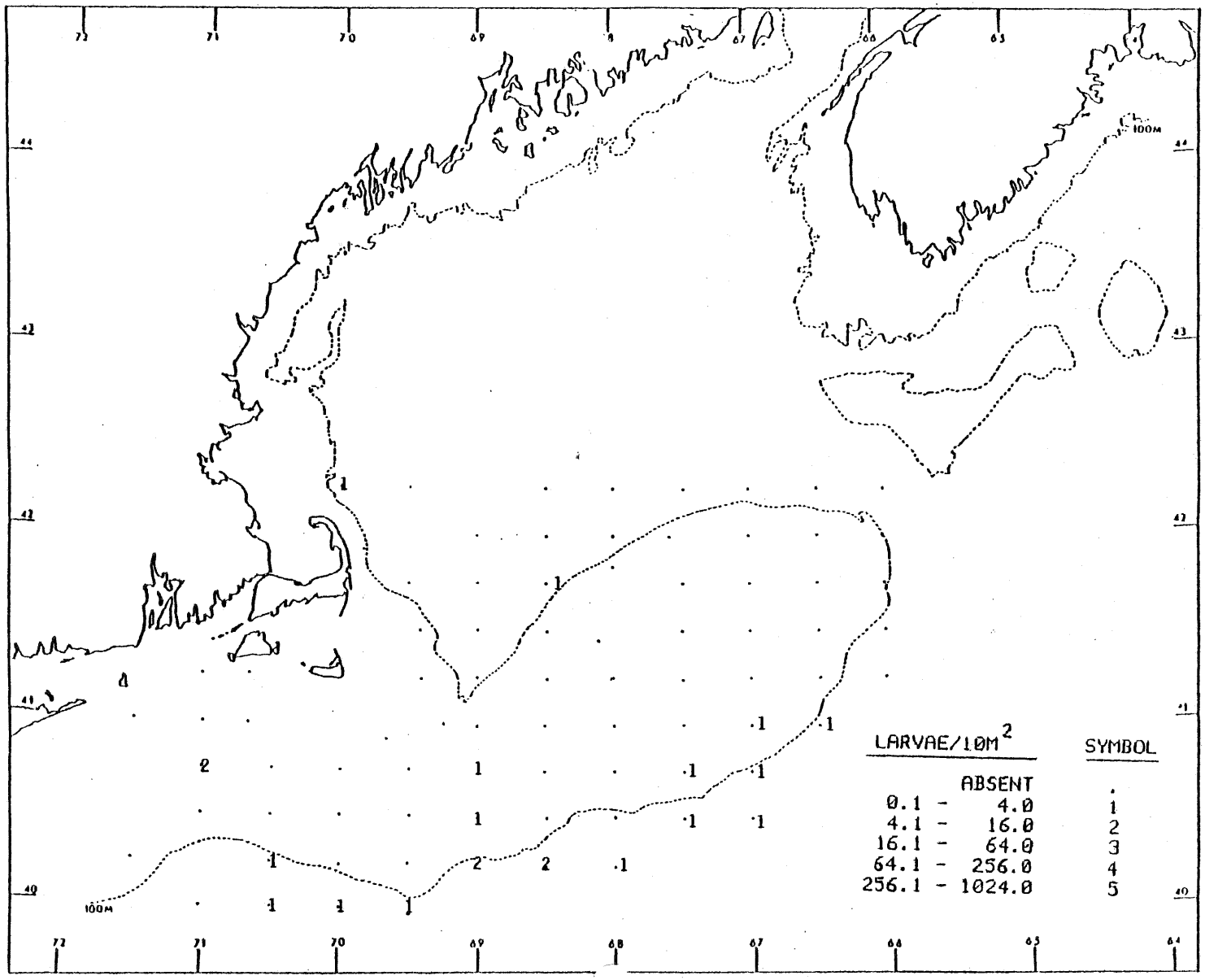


Table 73. Mean abundance (positive tows only) and mean length of Symbolophorus sp. by cruise.

Cruise	Middate	Number of Positive Tows	Mean no./ $10m^2$	Standard Deviation	Mean Length (mm)	Standard Deviation	Length Range
Anton Dohrn 72-01	05 Nov. 1972	1	2.3	-	7.5	2.0	6 - 9
Belogorsk 73-01	23 Oct. 1973	6	2.0	0.9	7.4	2.5	4 - 12
Walther erwig 73-43	02 Nov. 1973	1	6.2	-	5.0	-	-
Albatross IV 73-09	13 Dec. 1973	3	2.6	0.4	6.1	1.4	5 - 8
Cryos 74-04	16 Sep. 1974	1	1.5	-	9.0	-	-
Prognoz 74-01	24 Oct. 1974	1	1.3	-	9.0	-	-
Anton Dohrn 74-01	19 Nov. 1974	3	3.4	3.0	7.7	0.5	7 - 8
Albatross IV 75-14	09 Dec. 1975	3	2.2	0.7	7.9	2.4	6 - 12
Belogorsk 76-03	08 Oct. 1976	1	2.0	-	7.0	-	-
Wieczno 76-03	24 Oct. 1976	6	1.5	1.0	9.1	2.5	6 - 12
Anton Dohrn 76-02	22 Nov. 1976	1	5.6	-	8.0	-	-

References:

Berrien et al. 1978
Grimm 1978
Joakimsson 1978
Leim and Scott 1966
Nafpaktitis et al. 1977

Figure 74. Composite distribution and abundance (greatest occurrence per station) of Paralepididae collected during 30 autumn and winter cruises for the period Sep. 1971 - Feb. 1977.

Paralepididae Common Name: Lancetfishes

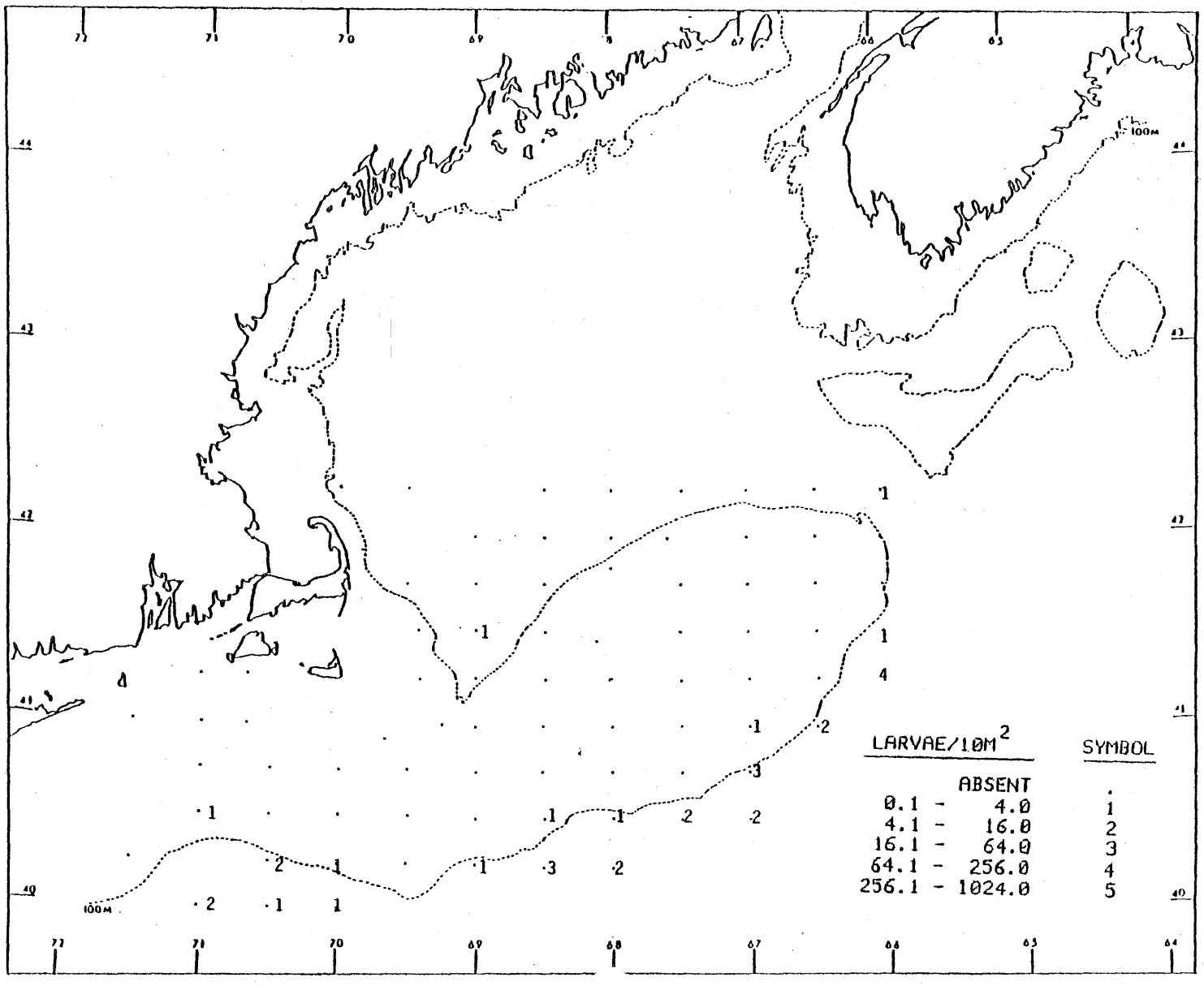


Table 74. Mean abundance (positive tows only) and mean length of Paralepididae by cruise.

Cruise	Middate	Number of Positive Tows	Mean no./ $10m^2$	Standard Deviation	Mean Length (mm)	Standard Deviation	Length Range
Anton Dohrn 72-01	05 Nov. 1972	1	1.4	-	9.0	-	-
Albatross IV 72-09	10 Dec. 1972	9	8.9	10.4	9.6	4.0	4 - 24
Wieczno 73-40	09 Oct. 1973	1	3.6	-	9.0	-	-
Belogorsk 73-01	23 Oct. 1973	2	1.8	1.8	14.7	1.4	13 - 16
Walther Herwig 73-43	02 Nov. 1973	4	4.5	2.8	8.7	6.5	4 - 32
Prognoz 74-01	24 Oct. 1974	3	5.4	3.4	9.4	3.0	4 - 15
Anton Dohrn 74-01	19 Nov. 1974	1	4.8	-	6.0	-	-
Albatross IV 74-13	13 Dec. 1974	5	3.2	1.8	7.5	1.2	5 - 9
Albatross IV 75-02	14 Feb. 1975	1	3.0	-	8.0	-	-
Belogorsk 75-02	01 Oct. 1975	2	3.7	1.1	11.0	2.8	8 - 16
Belogorsk 75-03	23 Oct. 1975	2	47.5	64.5	5.7	2.1	3 - 19
Anton Dohrn 75-187	09 Nov. 1975	3	7.1	4.4	11.6	5.0	6 - 21
Wieczno 76-03	24 Oct. 1976	1	1.1	-	12.0	-	-
Anton Dohrn 76-02	22 Noc. 1976	3	22.0	25.7	6.0	1.7	4 - 14
Mt. Mitchill 77-01	18 Feb. 1977	1	1.4	-	9.0	5.6	6 - 12

References:

Andersen et al. 1966(2)
Berrien et al. 1978
Colton and Byron 1977
Grimm 1978
Joakimsson 1978
Leim and Scott 1966

Figure 75. Composite distribution and abundance (greatest occurrence per station) of Lestidiops sp. collected during 30 autumn and winter cruises for the period Sep. 1971 - Feb. 1977.

Lestidiops sp. Common Name:

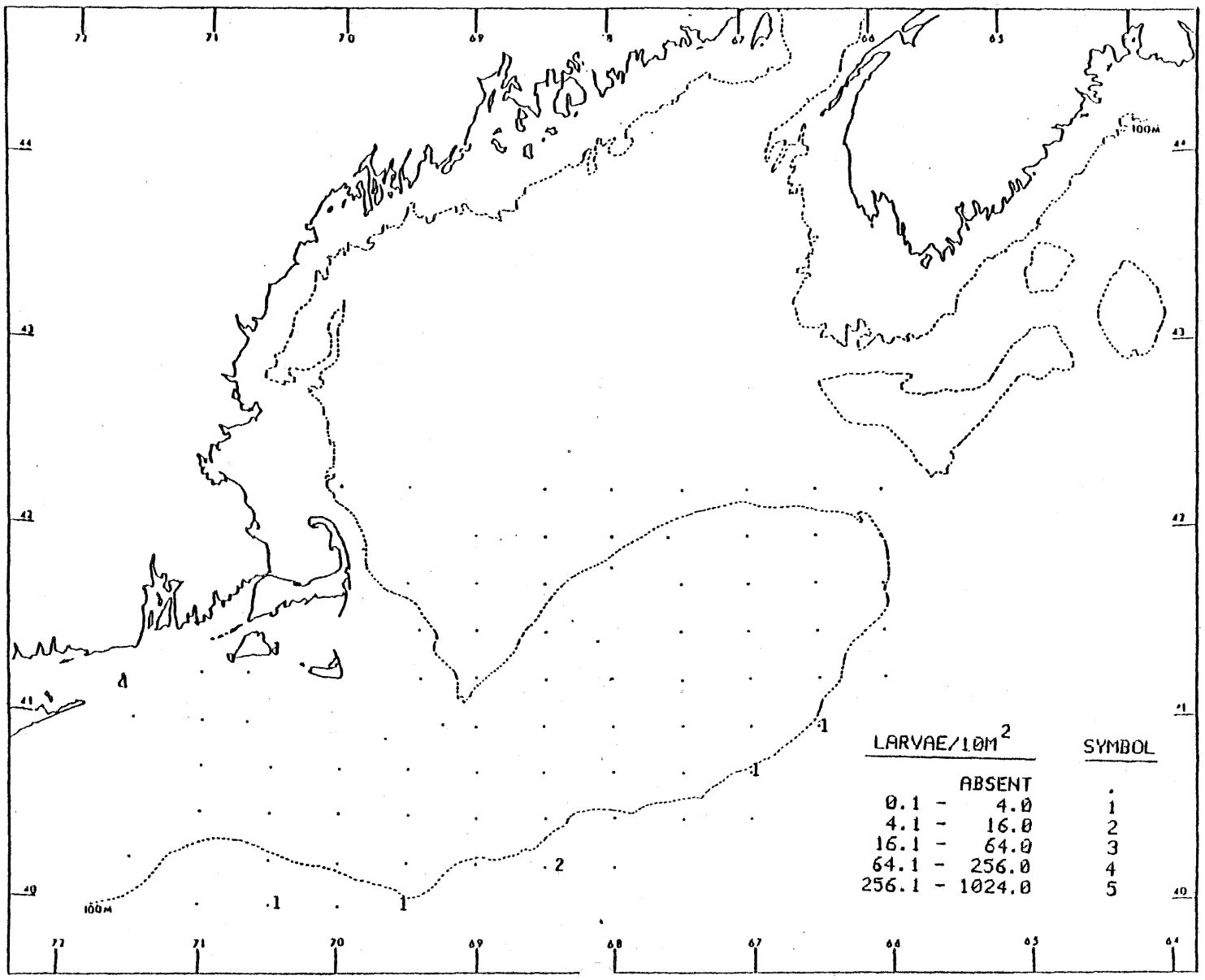


Table 75. Mean abundance (positive tows only) and mean length of *Lestidiops* sp. by cruise.

Cruise	Middate	Number of Positive Tows	Mean no./ $10m^2$	Standard Deviation	Mean Length (mm)	Standard Deviation	Length Range
Delaware II 71-04	27 Sep. 1971	2	1.4	0.6	44.0	16.0	26 - 53
Viandra 71-07	17 Oct. 1971	1	1.0	-	37.0	-	-
Belogorsk 73-01	23 Oct. 1973	1	3.2	-	14.0	4.8	10 - 18
Anton Dohrn 74-01	19 Nov. 1974	1	5.4	-	24.0	6.6	18 - 30

References:

Anderson et al. 1966(2)
Fischer 1978
Joakimsson 1978

Figure 76. Composite distribution and abundance (greatest occurrence per station) of Lestidium atlanticum collected during 30 autumn and winter cruises for the period Sep. 1971 - Feb. 1977.

Lestidium atlanticum Borodin Common Name:

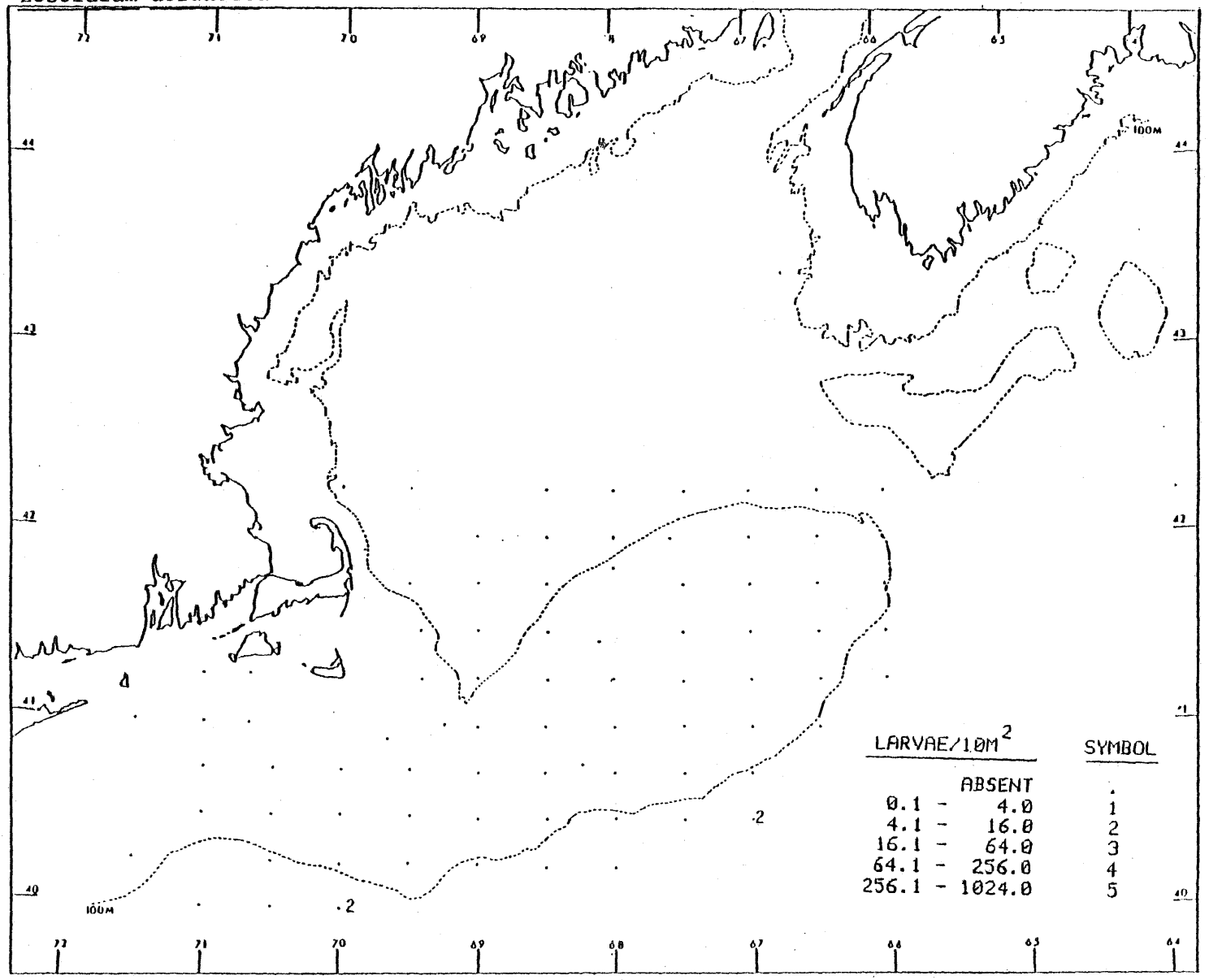


Table 76. Mean abundance (positive tows only) and mean length of *Lestidium atlanticum* by cruise.

Cruise	Middate	Number of Positive Tows	Mean no./ $10m^2$	Standard Deviation	Mean Length (mm)	Standard Deviation	Length Range
Albatross IV 73-09	13 Dec. 1973	1	5.3	-	19.0	-	-
Cryos 74-04	16 Sep. 1974	1	4.6	-	17.3	4.8	12 - 22

References:

Anderson et al. 1966(2)
Fischer 1978

Figure 77. Composite distribution and abundance (greatest occurrence per station) of Lestidium sp. collected during 30 autumn and winter cruises for the period Sep. 1971 - Feb. 1977.

Lestidium sp. Common Name:

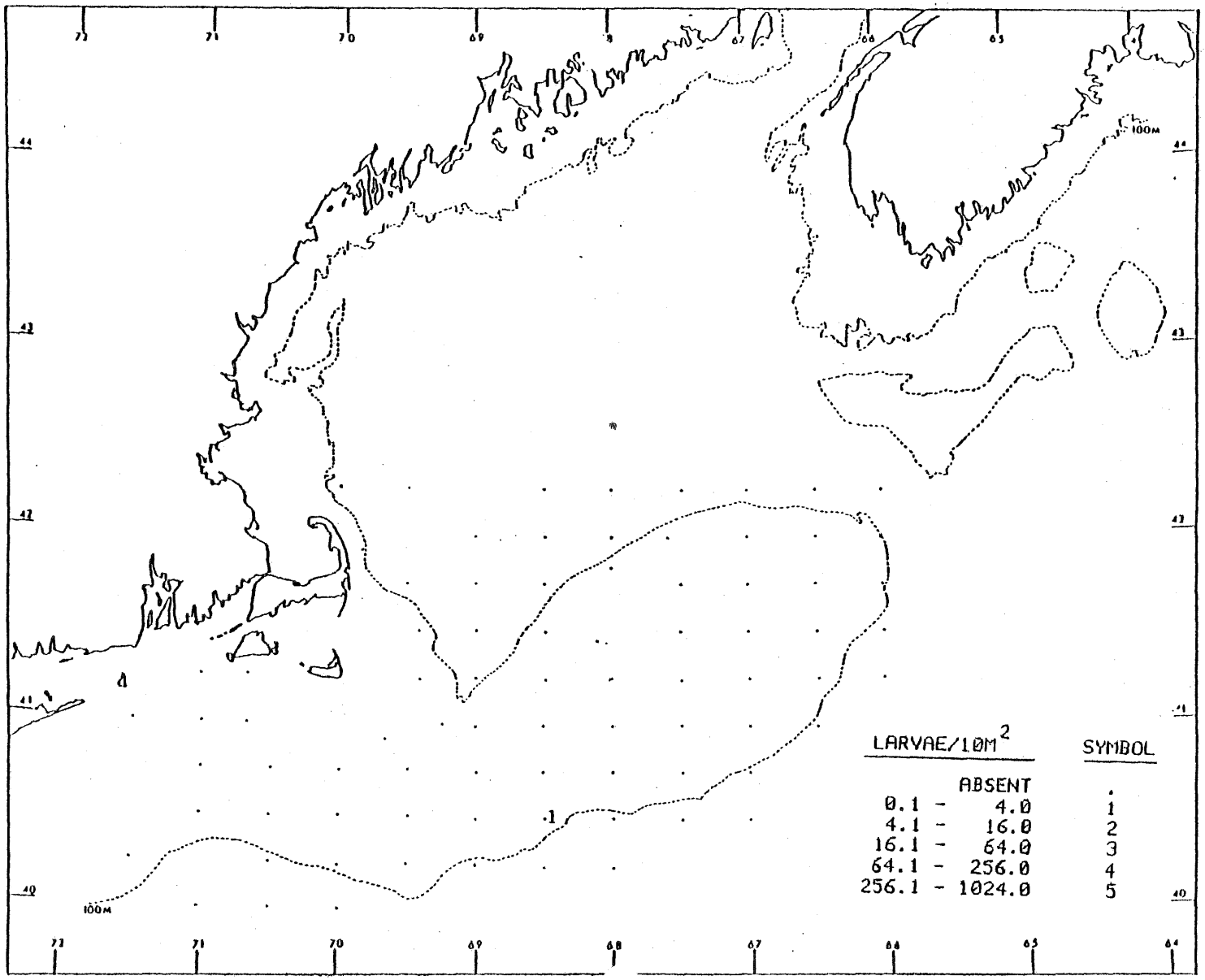


Table 77. Mean abundance (positive tows only) and mean length of *Lestidium* sp. by cruise.

Cruise	Middate	Number of Positive Tows	Mean no./ $10m^2$	Standard Deviation	Mean Length (mm)	Standard Deviation	Length Range
Anton Dohrn 74-01	19 Nov. 1974	1	2.2	-	20.0	-	-

References:

Andersen et al. 1966(2)
Fischer 1978
Joakimsson 1978

Figure 78. Composite distribution and abundance (greatest occurrence per station) of Lestrolepis sp. collected during 30 autumn and winter cruises for the period Sep. 1971 - Feb. 1977.

Lestrolepis sp. Common Name:

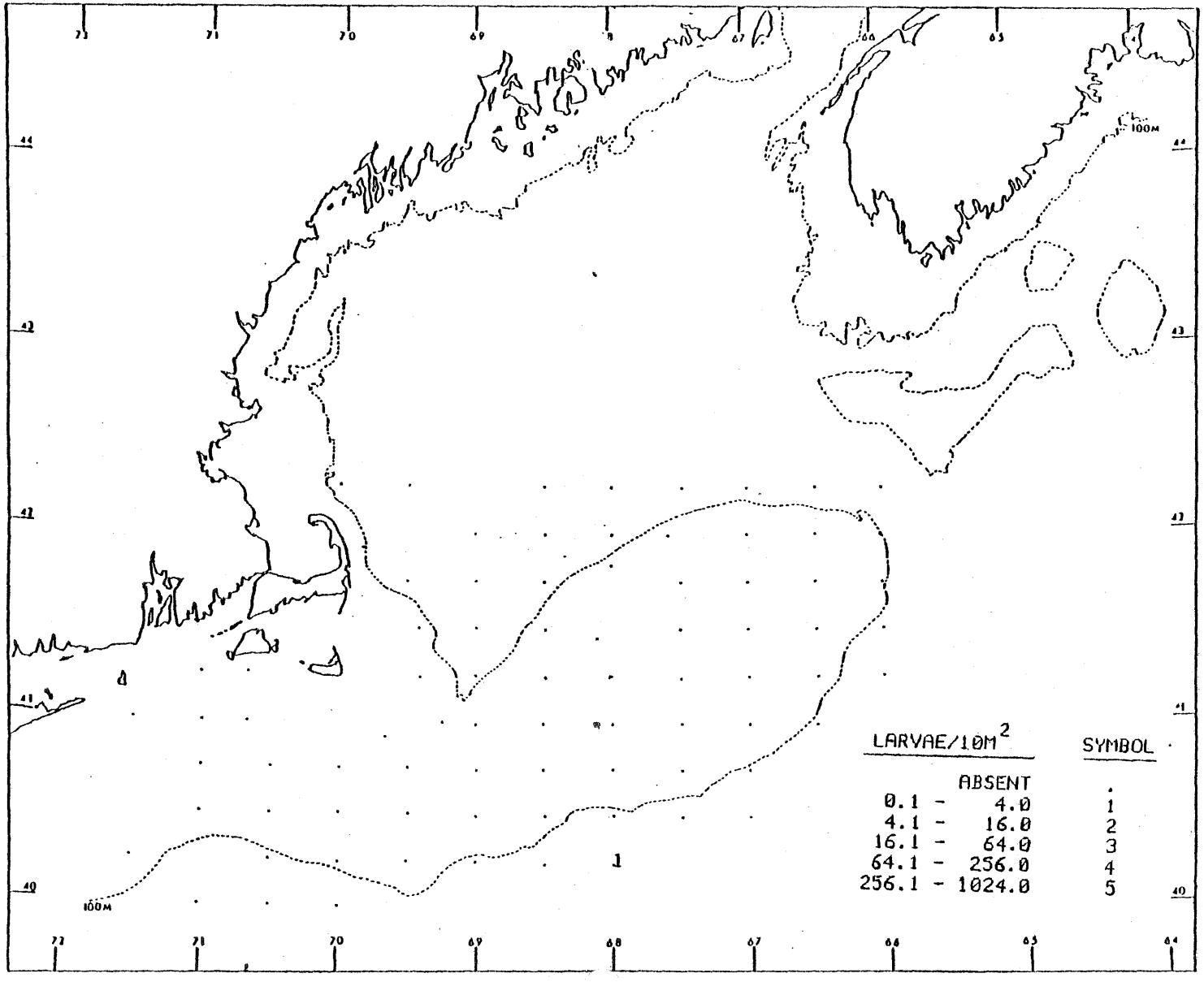


Table 78. Mean abundance (positive tows only) and mean length of *Lestrolepis* sp. by cruise.

Cruise	Middate	Number of Positive Tows	Mean no./ $10m^2$	Standard Deviation	Mean Length (mm)	Standard Deviation	Length Range
Anton Dohrn 74-01	19 Nov. 1974	1	1.8	-	11.0	-	-

References:

Anderson et al. 1966(2)
Fischer 1978

Figure 79. Composite distribution and abundance (greatest occurrence per station) of Notolepis rissoi collected during 30 autumn and winter cruises for the period Sep. 1971 - Feb. 1977.

Notolepis rissoi (Bonaparte) Common Name:

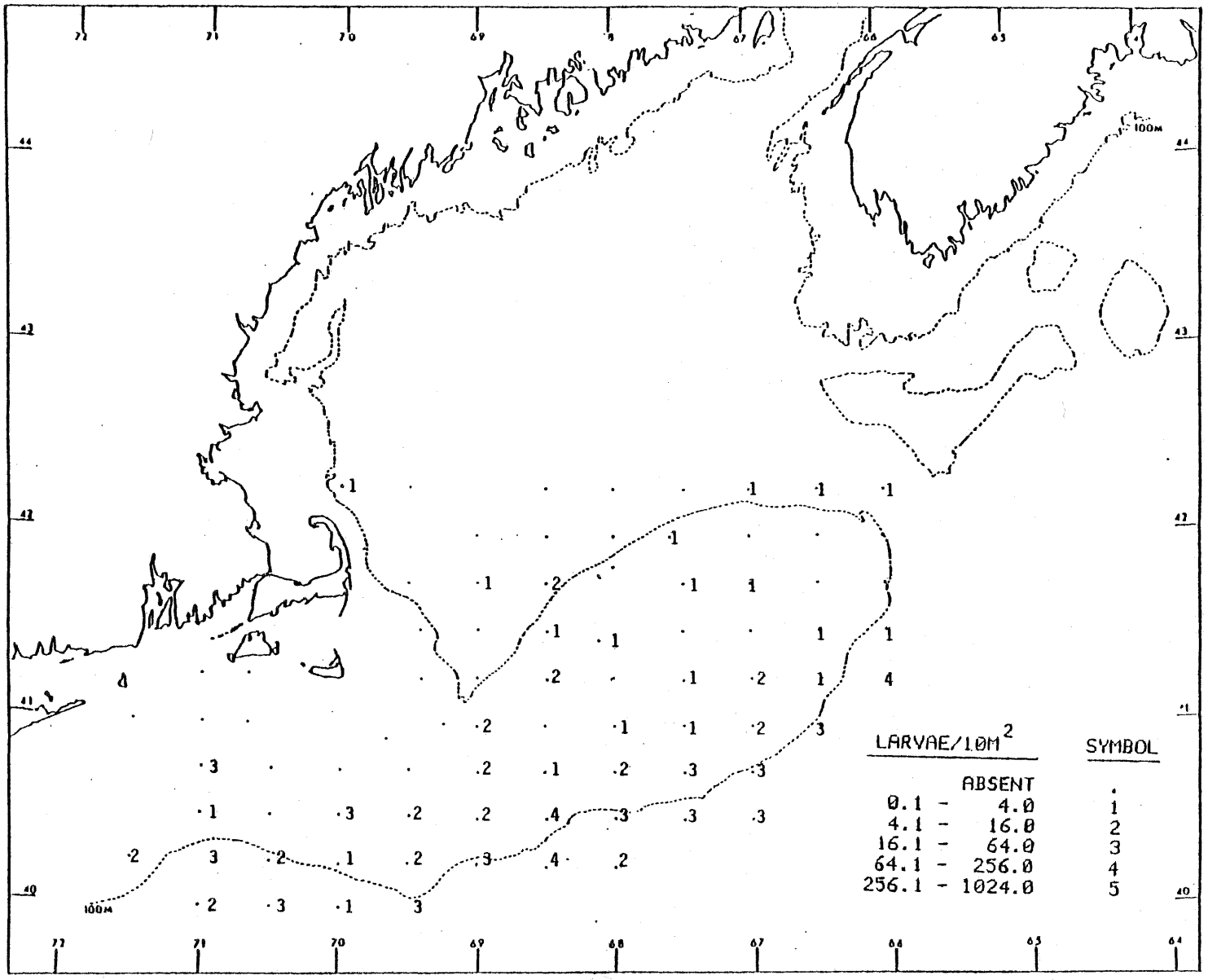


Table 79. Mean abundance (positive tows only) and mean length of Notolepis rissoi by cruise.

Cruise	Middate	Number of Positive Tows	Mean no./ $10m^2$	Standard Deviation	Mean Length (mm)	Standard Deviation	Length Range
Delaware II 71-04	27 Sep. 1971	2	12.0	15.0	12.1	3.3	9 - 21
Albatross IV 71-07	09 Dec. 1971	7	5.4	3.4	10.9	3.4	5 - 25
Anton Dohrn 72-01	05 Nov. 1972	3	5.1	2.6	13.7	2.9	10 - 18
Cryos 73-01	19 Sep. 1973	1	4.0	-	13.4	7.9	8 - 26
Wieczno 73-40	09 Oct. 1973	7	24.0	29.2	9.9	4.4	5 - 40
Belogorsk 73-01	23 Oct. 1973	8	3.0	2.7	12.6	3.6	7 - 18
Walther Herwig 73-43	02 Nov. 1973	14	14.4	21.6	15.9	3.9	9 - 37
Albatross IV 73-09	13 Dec. 1973	13	13.5	14.7	13.4	4.1	8 - 29
Albatross IV 74-02	14 Feb. 1974	1	87.7	-	8.7	2.0	6 - 16
Cryos 74-04	16 Sep. 1974	2	1.7	0.6	16.7	3.7	11 - 23
Prognoz 74-01	24 Oct. 1974	4	5.2	7.0	10.1	2.9	6 - 18
Anton Dohrn 74-01	19 Nov. 1974	11	7.8	6.3	12.5	4.2	6 - 22
Albatross IV 74-13	13 Dec. 1974	16	9.9	10.3	11.7	5.0	4 - 30
Albatross IV 75-02	14 Feb. 1975	1	3.0	-	16.0	-	-
Belogorsk 75-02	01 Oct. 1975	1	0.4	-	14.0	1.0	13 - 15
Belogorsk 75-03	23 Oct. 1975	3	2.0	1.4	16.0	4.3	11 - 21
Anton Dohrn 75-187	09 Nov. 1975	3	1.5	0.7	10.7	6.0	5 - 39
Albatross IV 75-14	09 Dec. 1975	9	13.2	21.4	12.3	5.3	8 - 55
Albatross IV 76-01	16 Feb. 1976	3	2.3	0.8	15.8	1.1	15 - 21
Belogorsk 76-03	08 Oct. 1976	8	2.4	1.8	13.6	5.2	8 - 28
Wieczno 76-03	24 Oct. 1976	16	2.8	2.2	18.3	5.3	8 - 34
Anton Dohrn 76-02	22 Nov. 1976	10	15.9	12.6	11.0	3.2	6 - 25
Researcher 76-01	04 Dec. 1976	15	10.2	13.7	11.0	3.1	5 - 20
Mt. Mitchell 77-01	18 Feb. 1977	6	1.2	0.2	18.2	7.6	9 - 27

References:

Anderson et al. 1966(2)
Backus et al. 1970
Colton and Byron 1977
Fischer 1978
Grimm 1978
Joakimsson 1978

Figure 80. Composite distribution and abundance (greatest occurrence per station) of Notolepis sp. collected during 30 autumn and winter cruises for the period Sep. 1971 - Feb. 1977.

Notolepis sp. Common Name:

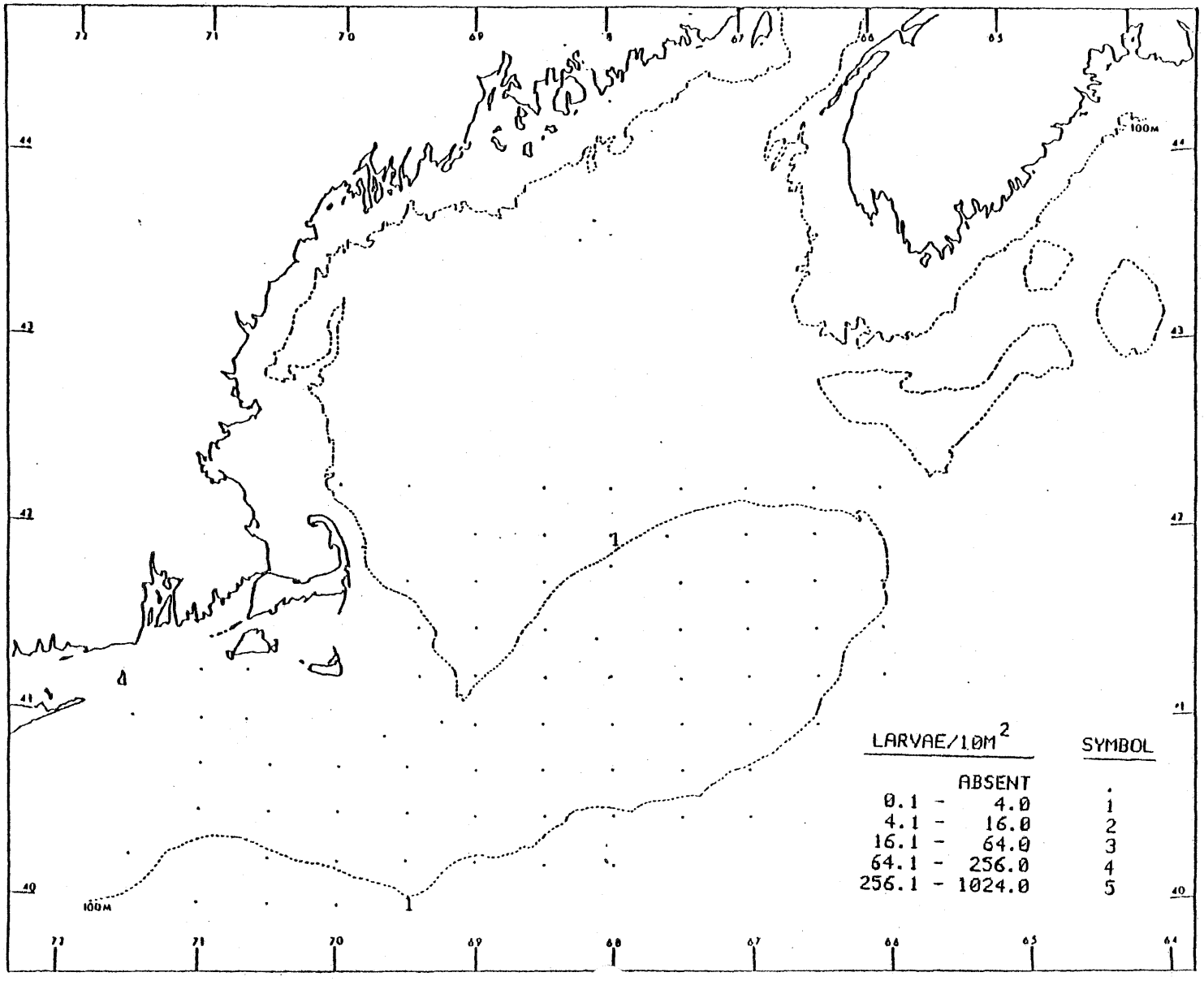


Table 80. Mean abundance (positive tows only) and mean length of *Notolepis* sp. by cruise.

Cruise	Middate	Number of Positive Tows	Mean no. $10m^2$	Standard Deviation	Mean Length (mm)	Standard Deviation	Length Range
Albatross IV 76-01	16 Feb. 1976	1	1.4	-	15.0	-	-
Researcher 76-01	04 Dec. 1976	1	1.0	-	26.0	-	-

References:

Anderson et al. 1966(2)

Figure 81. Composite distribution and abundance (greatest occurrence per station) of Paralepis coregonoides collected during 30 autumn and winter cruises for the period Sep. 1971 - Feb. 1977.

Paralepis coregonoides

Common Name:

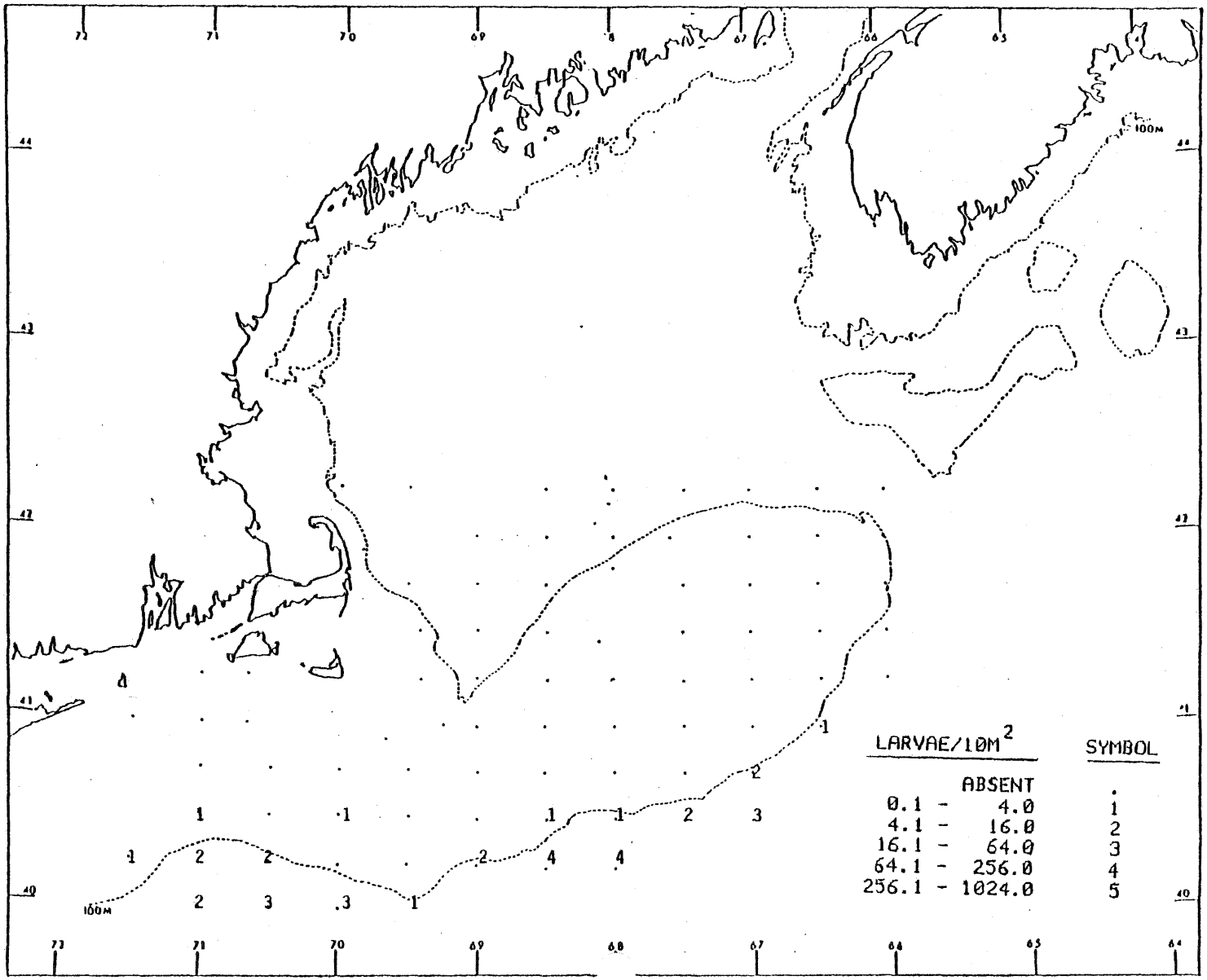


Table 81. Mean abundance (positive tows only) and mean length of *Paralepis coregonoides* by cruise.

Cruise	Middate	Number of Positive Tows	Mean no./ $10m^2$	Standard Deviation	Mean Length (mm)	Standard Deviation	Length Range
Albatross IV 73-09	13 Dec. 1973	2	5.4	3.8	8.6	3.4	6 - 19
Albatross IV 74-13	13 Dec. 1973	2	1.5	-	11.0	2.4	9 - 13
Albatross IV 75-02	14 Feb. 1974	9	4.3	2.9	12.1	4.0	6 - 21
Albatross IV 75-14	09 Dec. 1975	8	13.7	21.6	10.1	2.4	5 - 18
Albatross IV 76-01	16 Feb. 1976	9	52.7	83.4	8.0	2.5	4 - 21

References:

Anderson et al. 1966(2)
Colton and Byron 1977
Fischer 1978
Jordan et al. 1962

Figure 82. Composite distribution and abundance (greatest occurrence per station) of Paralepis sp. collected during 30 autumn and winter cruises for the period Sep. 1971 - Feb. 1977.

Paralepis sp. Common Name:

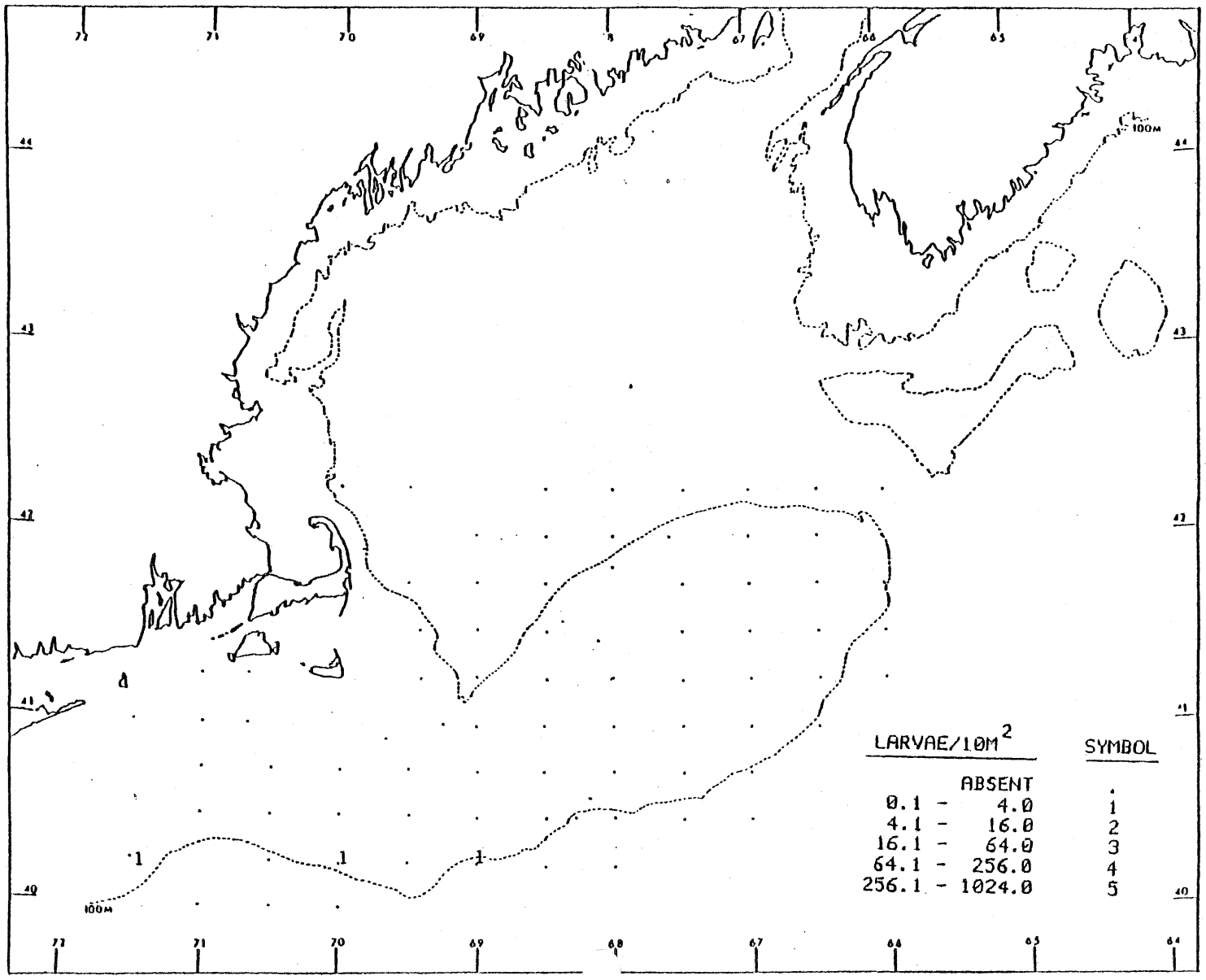


Table 82. Mean abundance (positive tows only) and mean length of *Paralepis* sp. by cruise.

Cruise	Middate	Number of Positive Tows	Mean no./ $10m^2$	Standard Deviation	Mean Length (mm)	Standard Deviation	Length Range
Albatross IV 75-02	14 Feb. 1975	3	3.4	0.5	14.9	3.3	11 - 19

References:

Anderson et al. 1966(2)
Fischer 1978
Leim and Scott 1966

Figure 83. Composite distribution and abundance (greatest occurrence per station) of Sudis hyalina collected during 30 autumn and winter cruises for the period Sep. 1971 - Feb. 1977.

Sudis hyalina Rafinesque

Common Name:

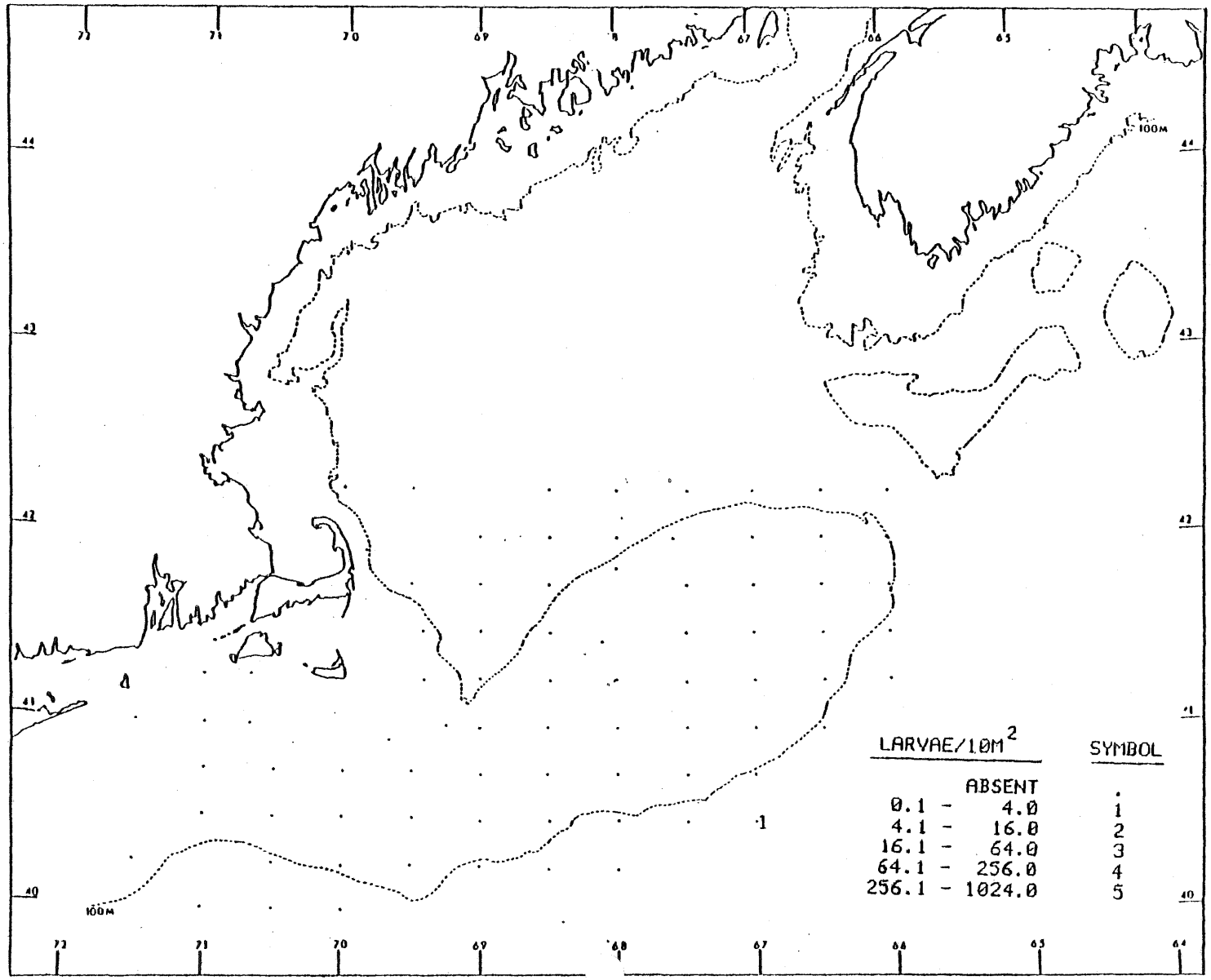


Table 83. Mean abundance (positive tows only) and mean length of *Sudis hyalina* by cruise.

Cruise	Middate	Number of Positive Tows	Mean no./ $10m^2$	Standard Deviation	Mean Length (mm)	Standard Deviation	Length Range
Prognoz 74-01	24 Oct. 1974	1	1.4	-	11.0	-	-

References:

Anderson et al. 1966(2)
Fischer 1978
Grimm 1978

Figure 84. Composite distribution and abundance (greatest occurrence per station) of Sudis sp. collected during 30 autumn and winter cruises for the period Sep. 1971 - Feb. 1977.

Sudis sp. Common Name:

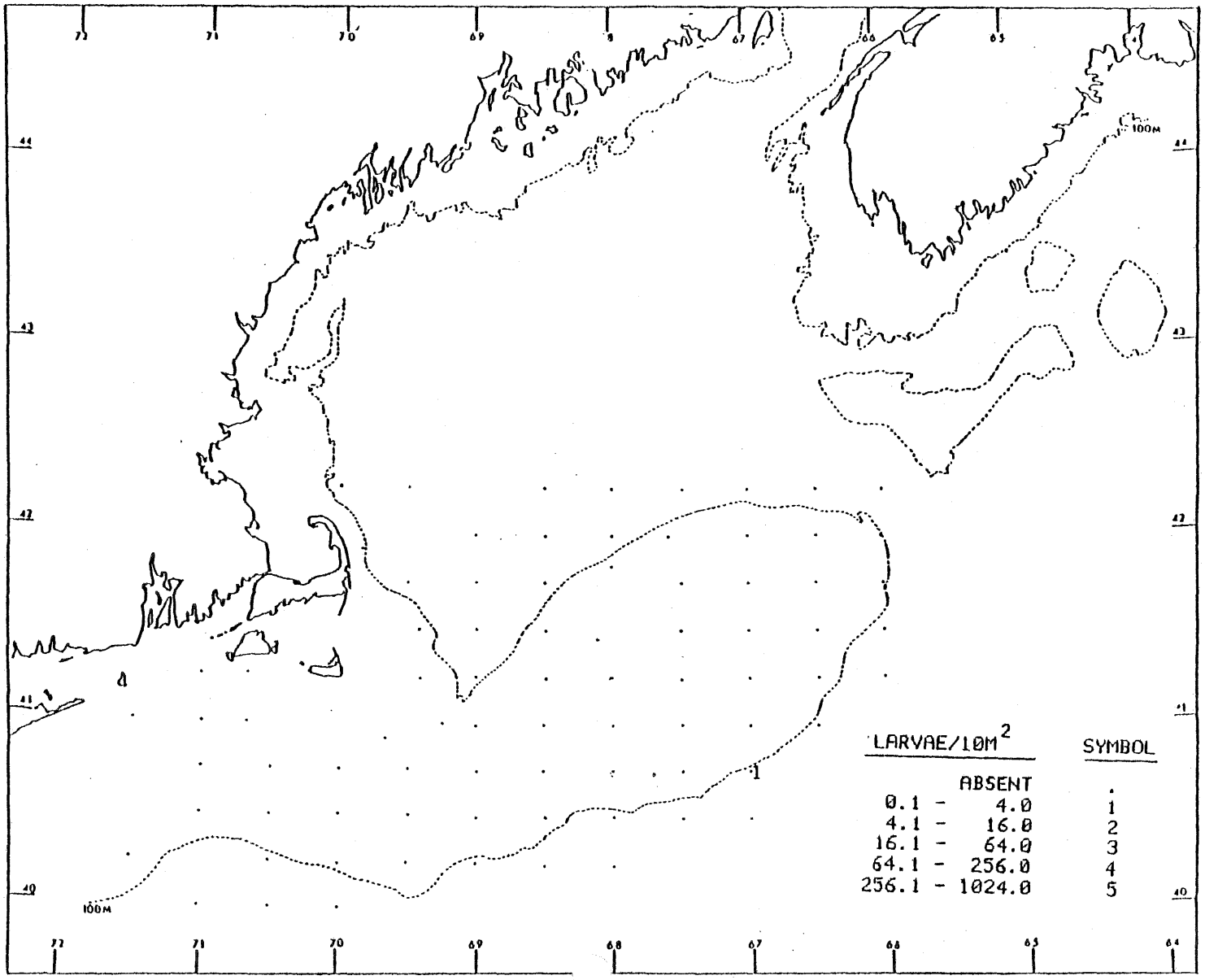


Table 84. Mean abundance (positive tows only) and mean length of *Sudis* sp. by cruise.

Cruise	Middate	Number of Positive Tows	Mean no./ $10m^2$	Standard Deviation	Mean Length (mm)	Standard Deviation	Length Range
Belogorsk 73-01	23 Oct. 1973	1	1.6	-	9.0	-	-

References:

Anderson et al. 1966(2)
Berrien et al. 1978
Fischer 1978

Figure 85. Composite distribution and abundance (greatest occurrence per station) of Scopelosauridae collected during 30 autumn and winter cruises for the period Sep. 1971 - Feb. 1977.

Scopelosauridae

Common Name:

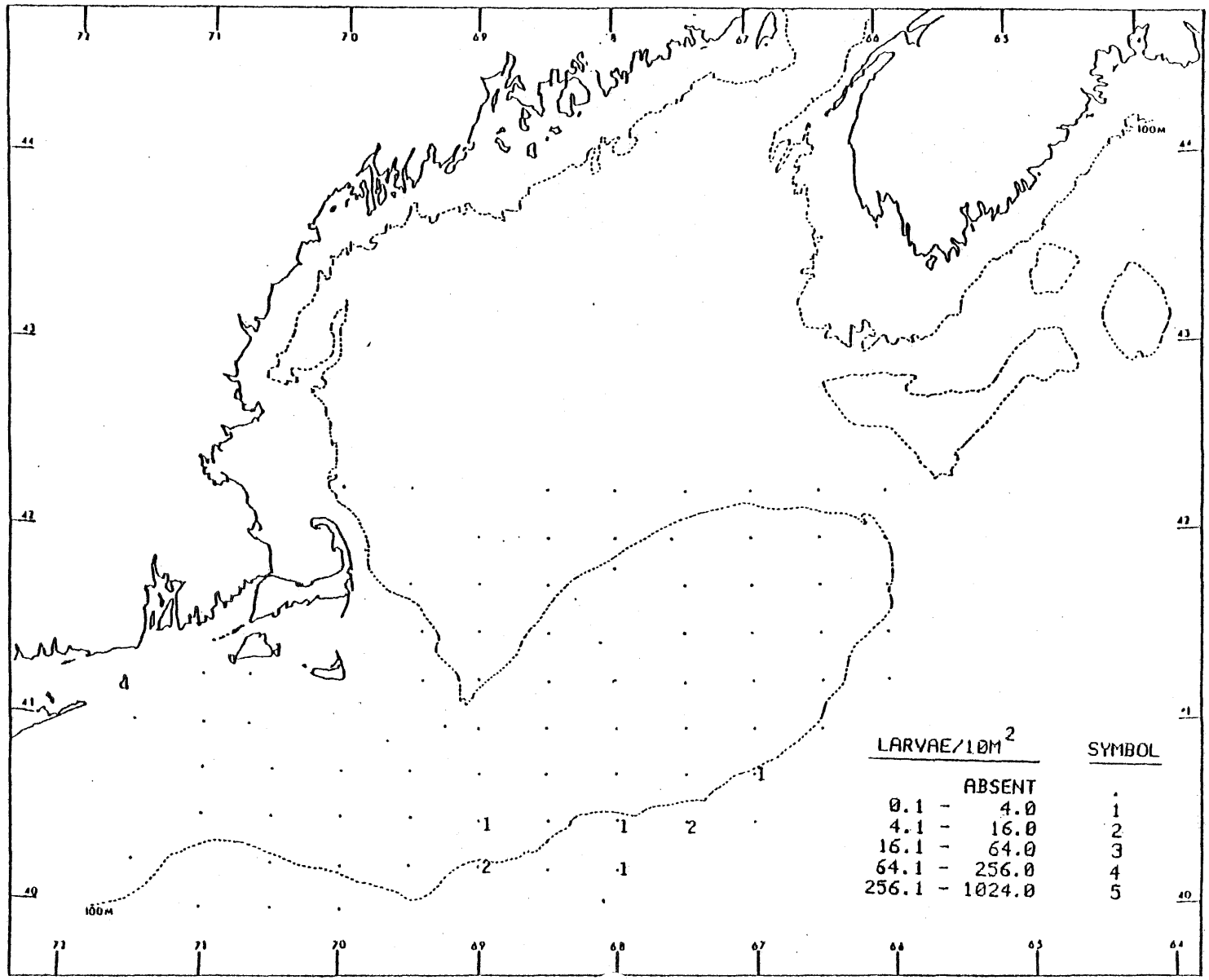


Table 85. Mean abundance (positive tows only) and mean length of Scopelosauridae by cruise.

Cruise	Middate	Number of Position Tows	Mean no./ $10m^2$	Standard Deviation	Mean Length (mm)	Standard Deviation	Length Range
Belogorsk 73-01	23 Oct. 1973	4	4.4	3.3	13.3	3.3	8 - 19
Albatross IV 73-09	13 Dec. 1973	1	2.9	-	22.0	-	-
Anton Dohrn 74-01	19 Nov. 1974	1	3.5	-	13.5	10.0	5 - 22
Wieczno 76-03	24 Oct. 1976	1	1.5	-	14.0	-	-
Anton Dohrn 76-02	22 Nov. 1976	1	3.1	-	13.0	-	-
Researcher 76-01	04 Dec. 1976	1	1.1	-	15.0	-	-

References:

Anderson et al. 1966(2)
Joakimsson 1978

Figure 86. Composite distribution and abundance (greatest occurrence per station) of Synodontidae collected during 30 autumn and winter cruises for the period Sep. 1971 - Feb. 1977.

Synodontidae

Common Name: Lizardfishes

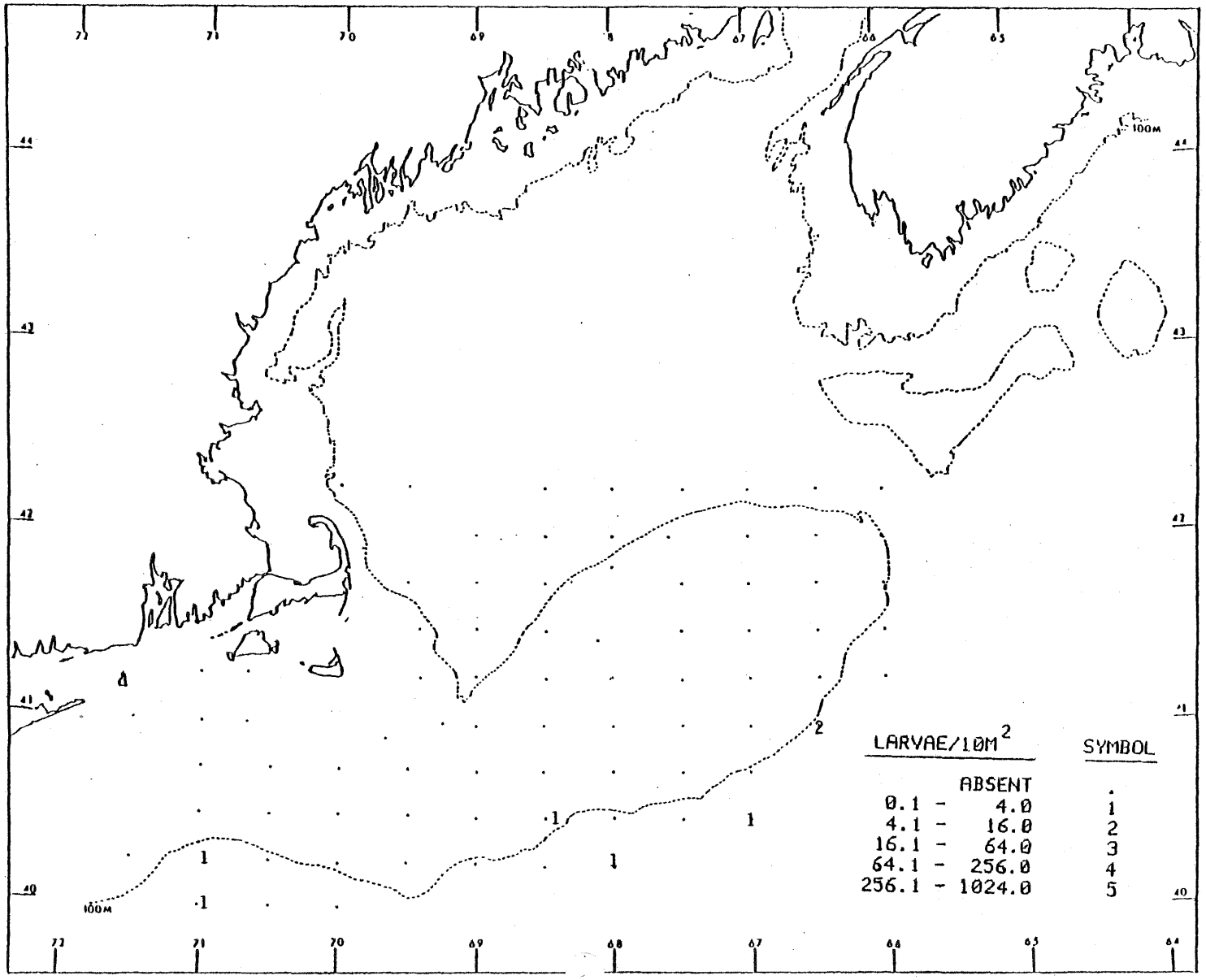


Table 86. Mean abundance (positive tows only) and mean length of Synodontidae by cruise.

Cruise	Middate	Number of Positive Tows	Mean no./ $10m^2$	Standard Deviation	Mean Length (mm)	Standard Deviation	Length Range
Wieczno 7 -40	09 Oct. 1973	2	2.6	1.8	11.8	1.2	10 - 13
Belogorsk 73-01	23 Oct. 1973	1	4.2	-	7.0	1.9	5 - 9
Belogorsk 75-02	01 Oct. 1975	1	1.0	-	21.0	-	-
Anton Dohrn 75-187	09 Nov. 1975	1	1.0	-	12.0	-	-
Albatross IV 76-01	16 Feb. 1976	2	2.9	0.1	6.0	0	-
Wieczno 76-03	24 Oct. 1976	1	0.9	-	10.0	-	-
Anton Dohrn 76-02	22 Nov. 1976	1	1.7	-	16.0	-	-

References:

Anderson et al. 1966(1)
Berrien et al. 1978
Bigelow et al. 1964
Colton and Byron 1977
Fischer 1978
Grimm 1978
Joakimsson 1978

Figure 87. Composite distribution and abundance (greatest occurrence per station) of Synodus sp. collected during 30 autumn and winter cruises for the period Sep. 1971 - Feb. 1977.

Synodus sp. Common Name:

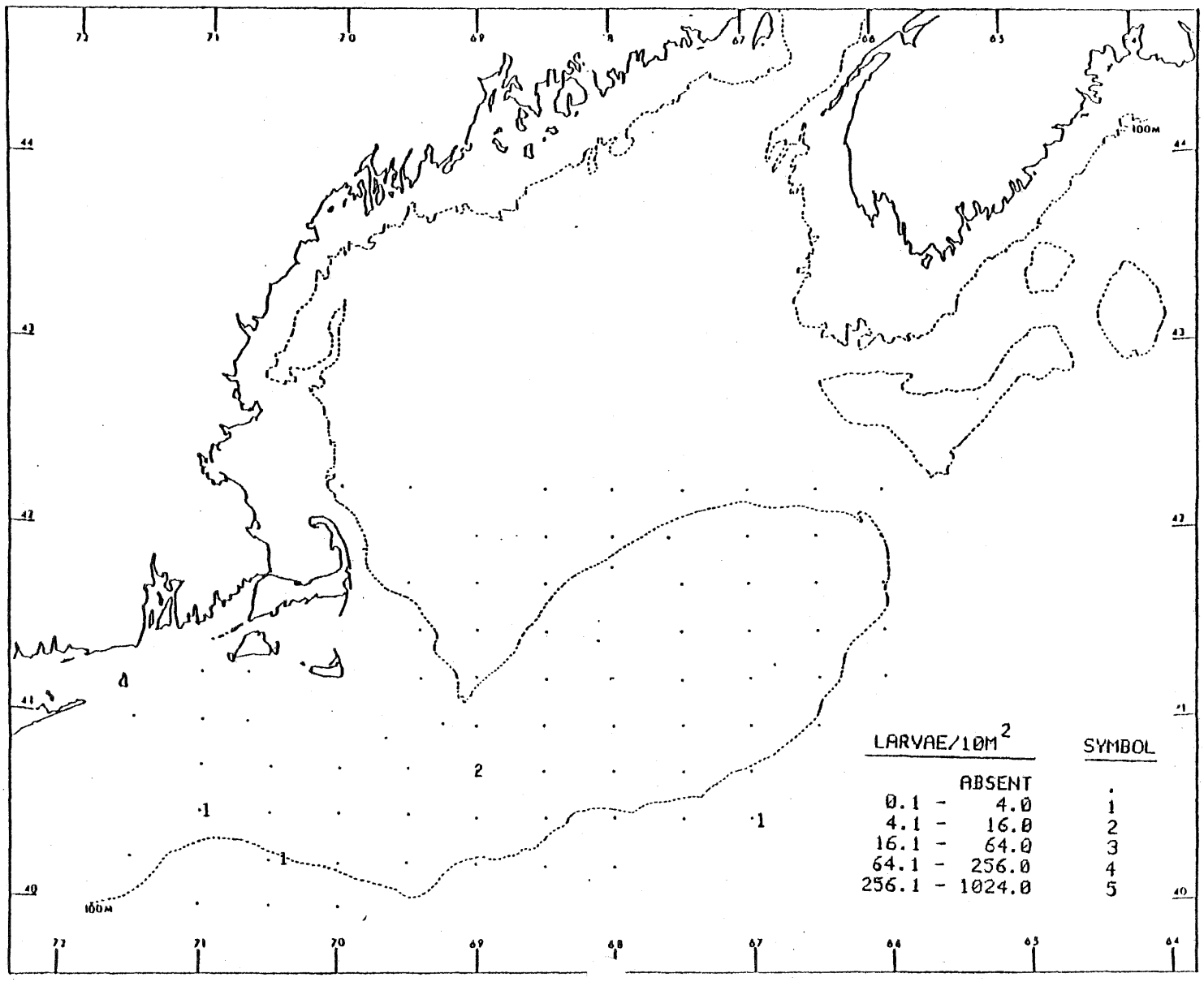


Table 87. Mean abundance (positive tows only) and mean length of *Synodus* sp. by cruise.

Cruise	Middate	Number of Positive Tows	Mean no./ $10m^2$	Standard Deviation	Mean Length (mm)	Standard Deviation	Length Range
Anton Dohrn 72-01	05 Nov. 1972	1	1.1	-	21.0	-	-
Albatross IV 72-09	10 Dec. 1972	2	1.1	0.5	12.7	4.2	8 - 16
Albatross IV 74-02	14 Feb. 1974	1	8.0	-	14.5	0.7	14 - 15

References:

Anderson et al. 1966(1)
Anderson et al. 1966(2)
Colton and Byron 1977
Fischer 1978
Joakimsson 1978
Markle et al. 1980

Figure 88. Composite distribution and abundance (greatest occurrence per station) of Trachinocephalus myops collected during 30 autumn and winter cruises for the period Sep. 1971 - Feb. 1977.

Trachinocephalus myops (Forster) Common Name: Snakefish

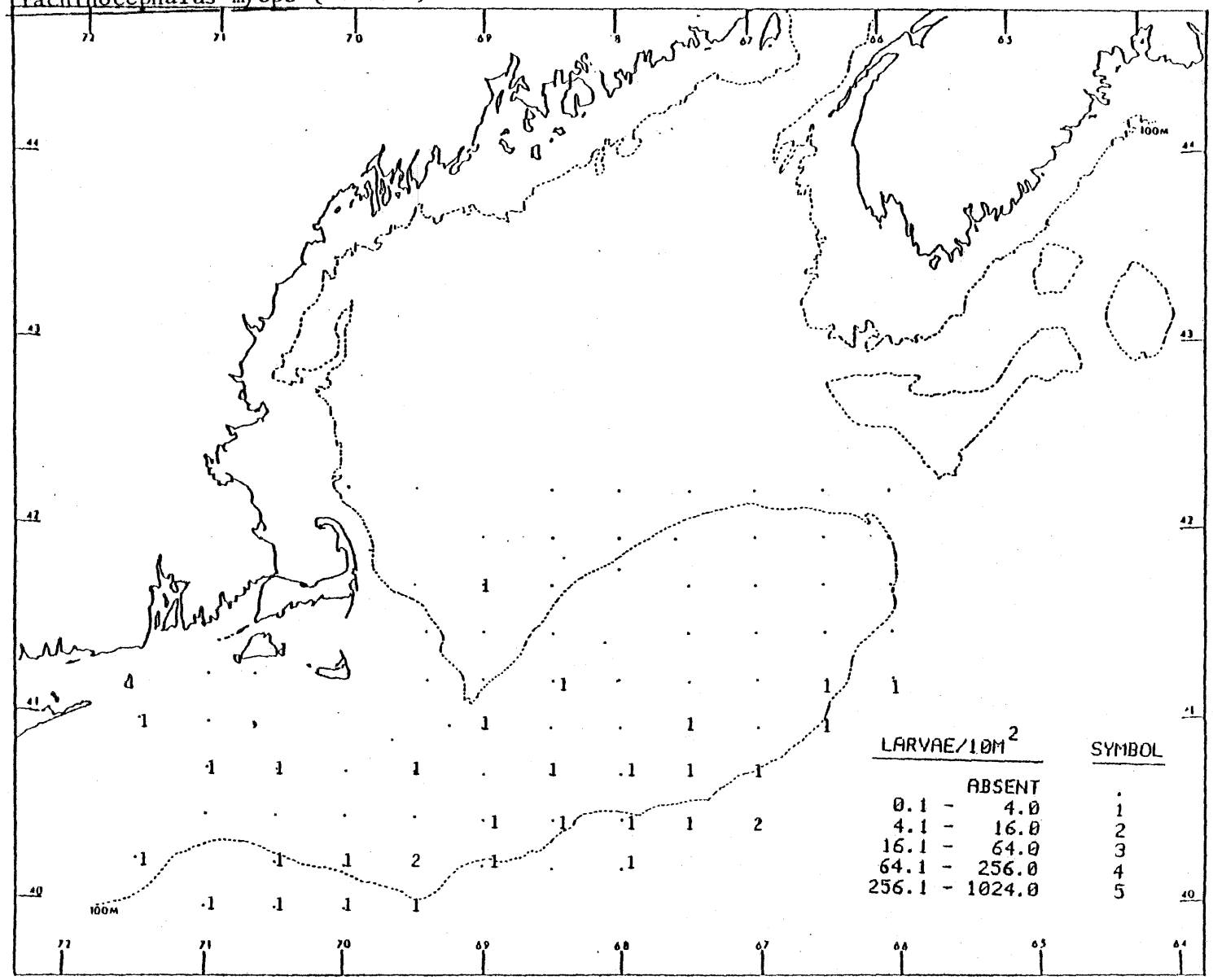


Table 88. Mean abundance (positive tows only) and mean length of *Trachinocephalus myops* by cruise.

Cruise	Middate	Number of Positive Tows	Mean no./ $10m^2$	Standard Deviation	Mean Length (mm)	Standard Deviation	Length Range
Delaware II 71-04	27 Sep. 1971	9	1.8	1.7	13.5	9.1	8 - 43
Viandra 71-01	17 Oct. 1971	5	1.5	1.1	17.9	7.1	11 - 39
Wieczno 72-01	14 Oct. 1972	1	1.3	-	12.0	-	-
Argus 72-02	20 Oct. 1972	1	2.9	-	40.0	-	-
Anton Dohrn 72-01	05 Nov. 1972	2	1.6	1.1	12.1	4.6	8 - 17
Cryos 73-01	19 Sep. 1973	1	1.3	-	10.0	-	-
Wieczno 73-40	09 Oct. 1973	7	2.3	1.1	15.9	8.7	9 - 40
Belogorsk 73-01	23 Oct. 1973	11	1.6	1.0	11.6	2.8	7 - 17
Walther Herwig 73-43	02 Nov. 1973	4	2.9	2.4	15.6	3.2	10 - 18
Albatross IV 73-09	13 Dec. 1973	1	2.6	-	13.0	-	-
Cryos 74-04	16 Sep. 1974	2	4.0	3.1	9.9	5.0	5 - 18
Prognoz 74-01	24 Oct. 1974	4	1.2	0.3	8.9	3.1	6 - 13
Anton Dohrn 74-01	19 Nov. 1974	4	2.4	0.7	8.5	3.1	5 - 13
Albatross IV 74-13	13 Dec. 1974	1	1.5	-	10.7	2.5	9 - 13
Belogorsk 75-02	01 Oct. 1975	1	0.1	-	5.0	-	-
Anton Dohrn 75-187	09 Nov. 1975	3	2.7	1.2	10.0	4.5	5 - 20
Anton Dohrn 76-02	22 Nov. 1976	2	1.8	0.1	15.6	2.9	13 - 18

Figure 89. Composite distribution and abundance (greatest occurrence per station) of Lophiiformes collected during 30 autumn and winter cruises for the period Sep. 1971 - Feb. 1977.

Lophiiformes

Common Name:

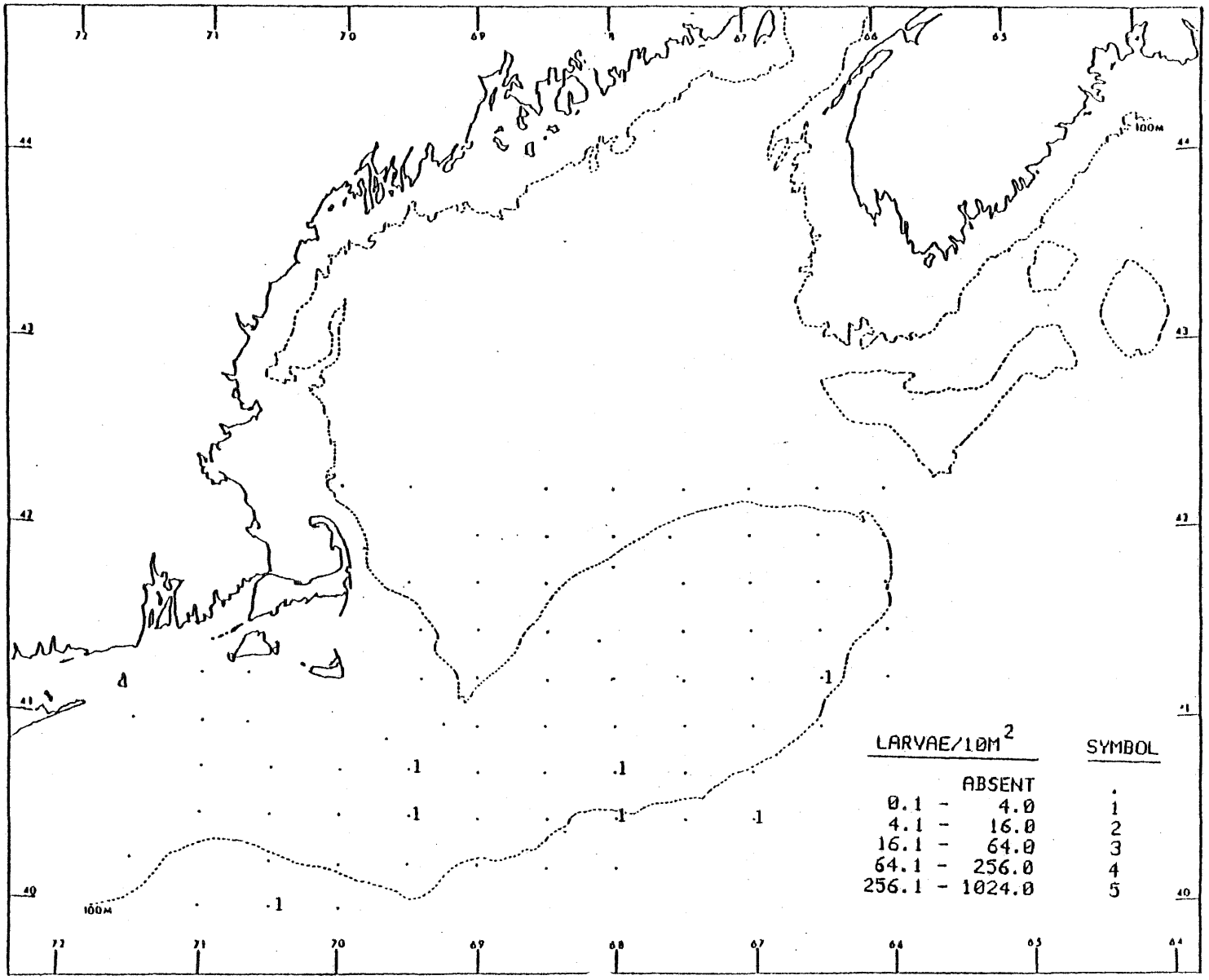


Table 89. Mean abundance (positive tows only) and mean length of Lophiiformes by cruise.

Cruise	Middate	Number of Positive Tows	Mean no./ $10m^2$	Standard Deviation	Mean Length (mm)	Standard Deviation	Length Range
Delaware II 71-04	27 Sep. 1971	3	0.8	0.2	2.0	-	-
Cryos 73-01	19 Sep. 1973	1	1.5	-	2.0	-	-
Cryos 74-04	16 Sep. 1974	1	2.1	-	4.0	-	-
Belogorsk 75-02	01 Oct. 1975	1	1.7	-	4.0	-	-
Anton Dohrn 75-187	09 Nov. 1975	2	4.7	5.1	3.3	0.9	2 - 5

Figure 90. Composite distribution and abundance (greatest occurrence per station) of Antennariidae collected during 30 autumn and winter cruises for the period Sep. 1971 - Feb. 1977.

Antennariidae Common Name: Frogfishes

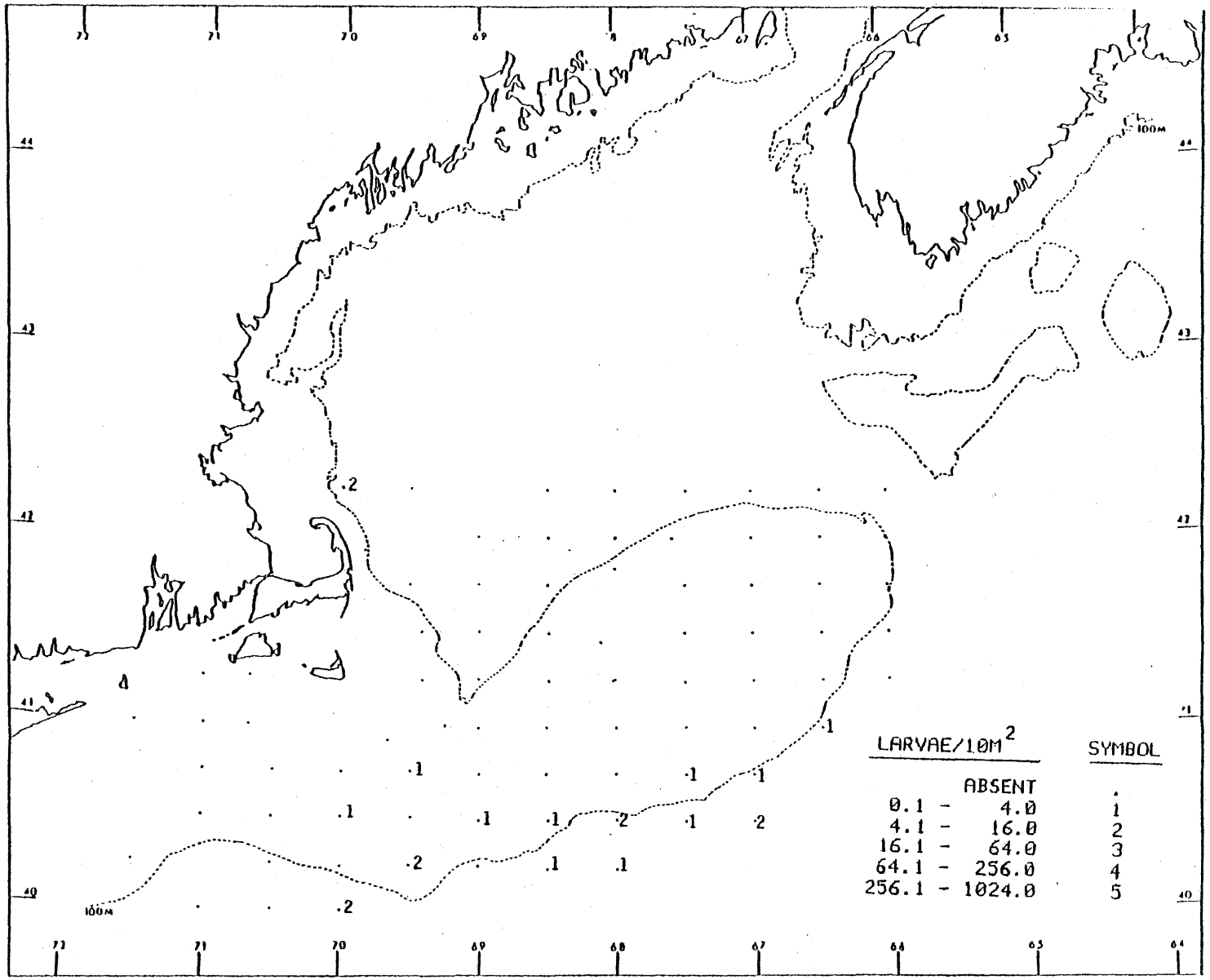


Table 90. Mean abundance (positive tows only) and mean length of Antennariidae by cruise.

Cruise	Middate	Number of Positive Tows	Mean no./ $10m^2$	Standard Deviation	Mean Length (mm)	Standard Deviation	Length Range
Delaware II 71-04	27 Sep. 1971	2	2.1	2.3	3.5	1.2	2 - 7
Viandra 71-01	17 Oct. 1971	1	1.1	-	3.0	-	-
Wieczno 73-40	09 Oct. 1973	1	5.4	-	4.0	-	-
Walther Herwig 73-43	02 Nov. 1973	4	3.4	2.5	4.4	0.6	3 - 5
Albatross IV 73-09	13 Dec. 1973	2	5.2	3.0	3.2	0.4	3 - 4
Anton Dohrn 74-01	19 Nov. 1974	1	1.8	-	4.0	-	-
Wieczno 76-03	24 Oct. 1976	1	1.0	-	3.0	-	-
Anton Dohrn 76-02	22 Nov. 1976	2	2.4	1.1	4.7	1.1	4 - 6

References:

Colton and Scott 1966
Fischer 1978
Grimm 1978
Joakimsson 1978
Leim and Scott 1966

Figure 91. Composite distribution and abundance (greatest occurrence per station) of Chaunax pictus collected during 30 autumn and winter cruises for the period Sep. 1971 - Feb. 1977.

Chaunax pictus Lowe Common Name:

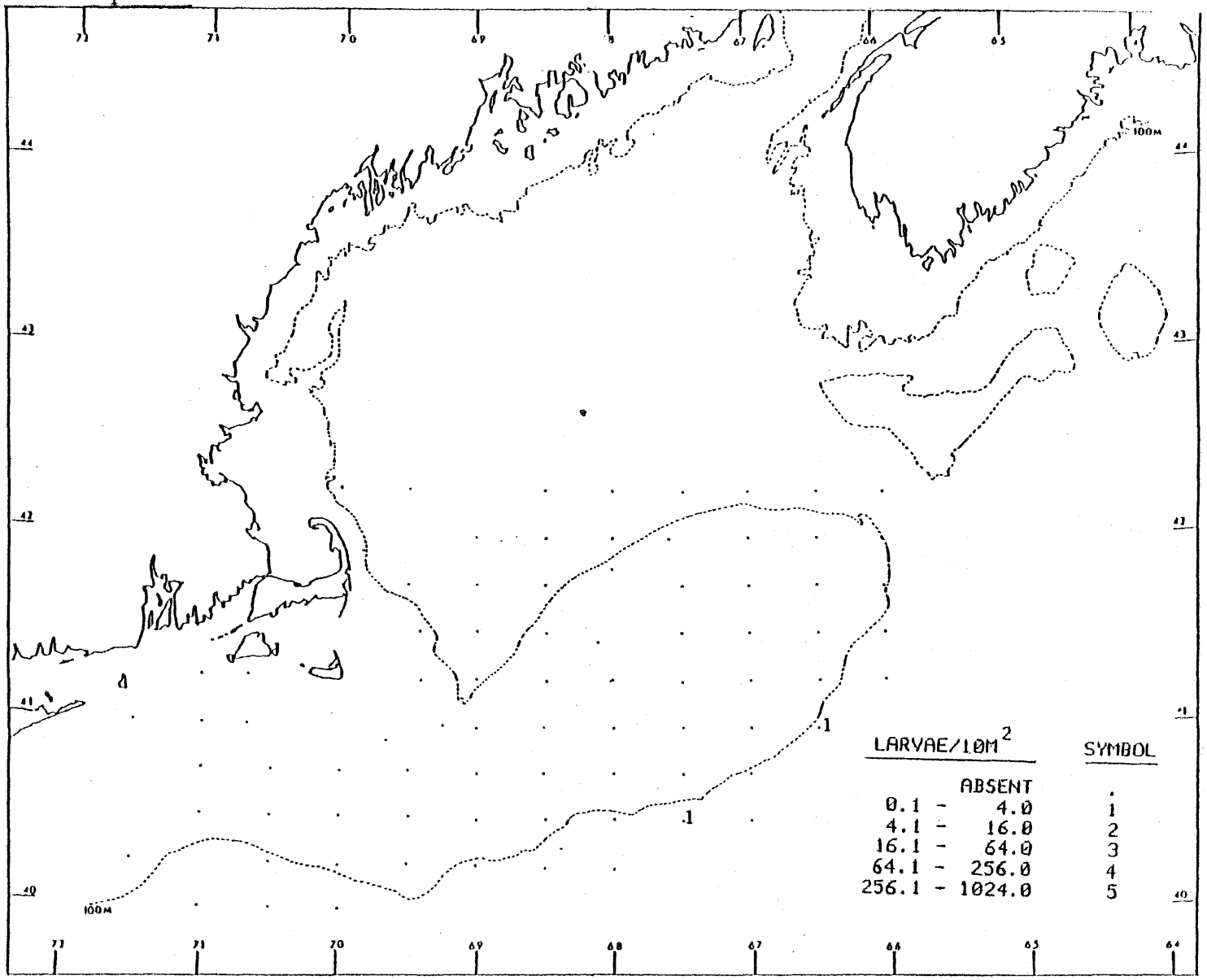


Table 91. Mean abundance (positive tows only) and mean length of *Chaunax pictus* by cruise.

Cruise	Middate	Number of Positive Tows	Mean no./ $10m^2$	Standard Deviztion	Mean Length (mm)	Standard Deviation	Length Range
Wieczno 76-03	24 Oct. 1976	1	1.0	-	4.0	-	-
Researcher 76-01	04 Dec. 1976	1	1.1	-	4.0	-	-

References:

Jordan et al. 1962

Figure 92. Composite distribution and abundance (greatest occurrence per station) of Ogcocephalidae collected during 30 autumn and winter cruises for the period Sep. 1971 - Feb. 1977.

Ogcocephalidae Common Name: Batfishes

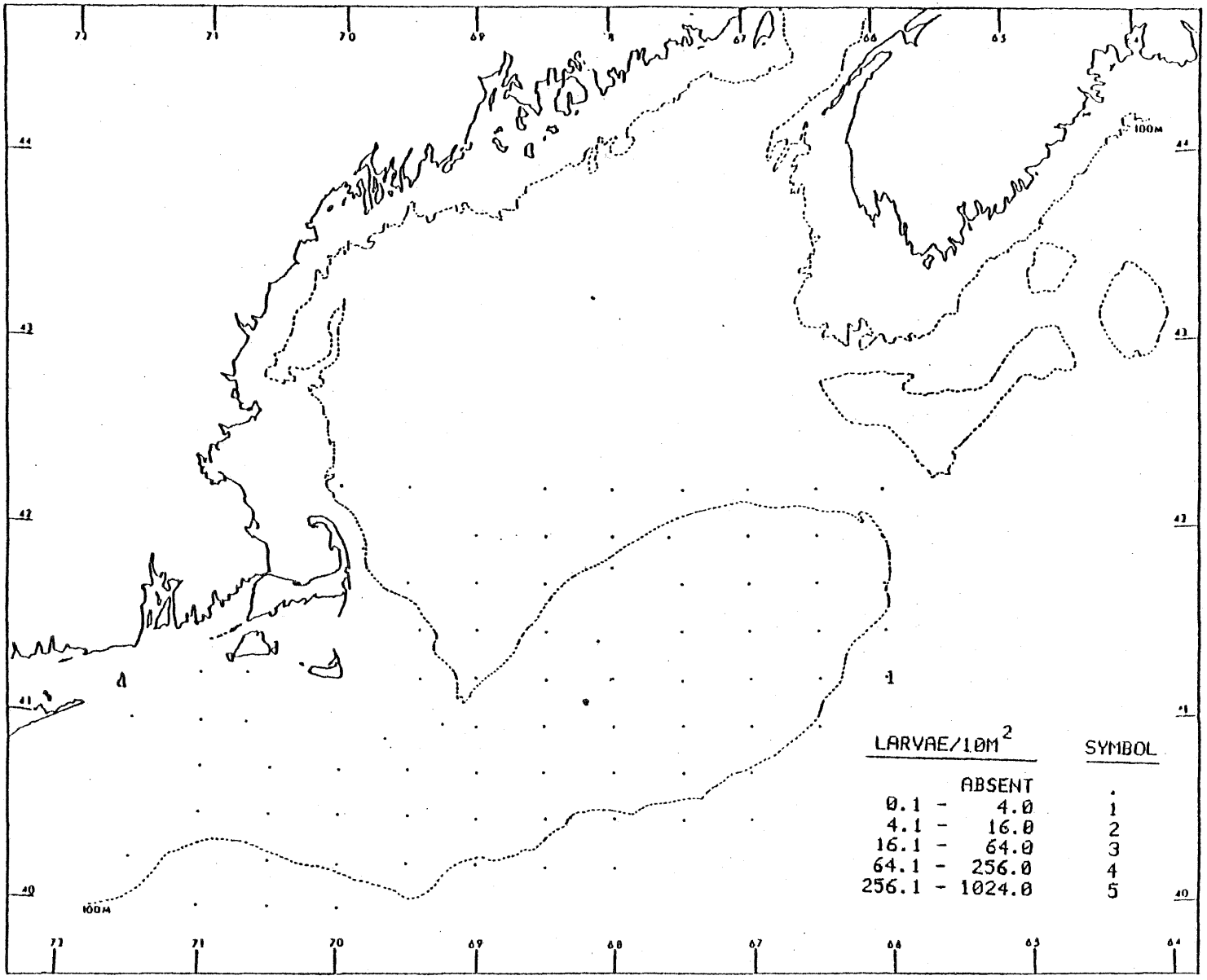


Table 92. Mean abundance (positive tows only) and mean length of Ogcocephalidae by cruise.

Cruise	Middate	Number of Positive Tows	Mean no./ $10m^2$	Standard Deviation	Mean Length (mm)	Standard Deviation	Length Range
Prognoz 74-01	24 Oct. 1974	1	1.5	-	8.0	-	-

References:

Fischer 1978
Jordan et al. 1962
Leim and Scott 1966

Figure 93. Composite distribution and abundance (greatest occurrence per station) of Ceratioidei collected during 30 autumn and winter cruises for the period Sep. 1971 - Feb. 1977.

Ceratioidei Common Name:

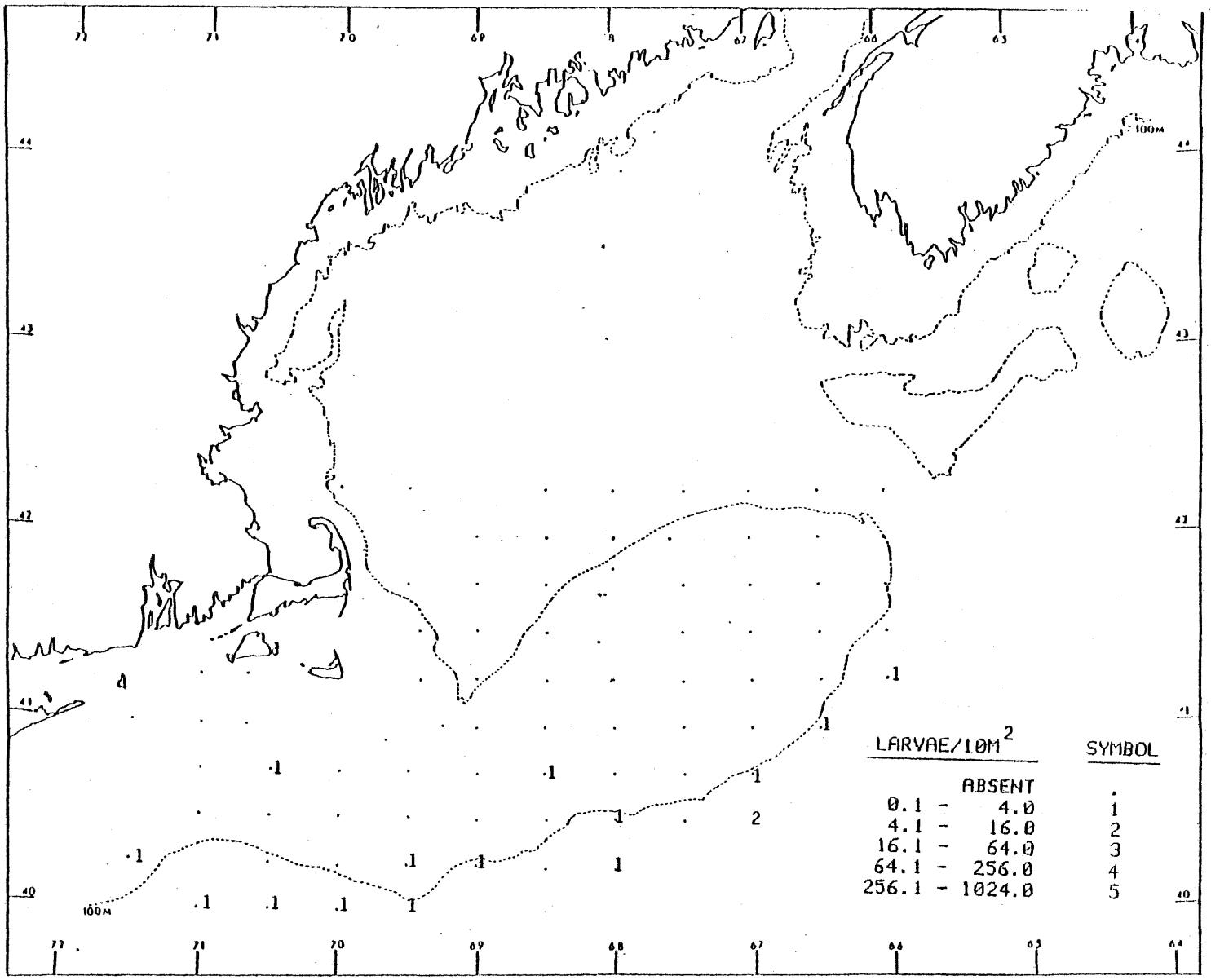


Table 93. Mean abundance (positive tows only) and mean length of Ceratioidea by cruise.

Cruise	Middate	Number of Positive Tows	Mean no./ $10m^2$	Standard Deviztion	Mean Length (mm)	Standard Deviation	Length Range
Delaware II 71-04	27 Sep. 1971	3	4.7	6.7	2.4	0.8	2 - 4
Viandra 71-01	17 Oct. 1971	4	1.1	0.6	3.2	0.7	2 - 4
Wieczno 73-40	09 Oct. 1973	2	1.7	0.5	3.2	1.2	2 - 4
Cryos 74-04	16 Sep. 1974	2	4.1	2.7	2.5	0.5	2 - 3
Prognoz 74-01	24 Oct. 1974	4	1.6	1.0	2.9	0.7	2 - 4
Albatross IV 74-13	13 Dec. 1974	1	0.6	-	5.0	-	-
Anton Dohrn 76-02	22 Nov. 1976	3	1.2	0.8	4.1	2.5	2 - 7

References:

Leim and Scott 1966

Figure 94. Composite distribution and abundance (greatest occurrence per station) of Caulophrynidae collected during 30 autumn and winter cruises for the period Sep. 1971 - Feb. 1977.

Caulophrynidae Common Name:

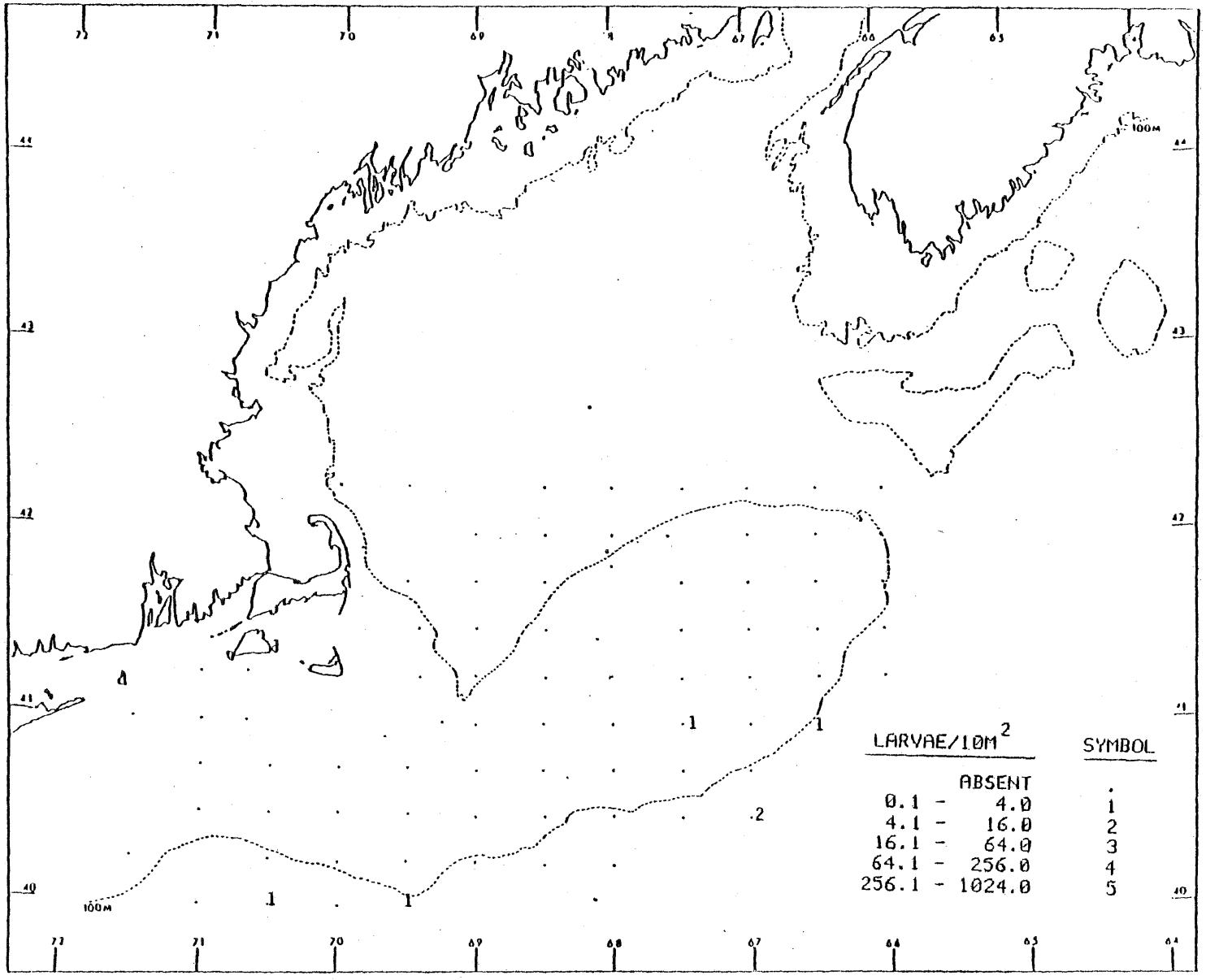


Table 94. Mean abundance (positive tows only) and mean length of Caulophrynidae by cruise.

Cruise	Middate	Number of Positive Tows	Mean no./ $10m^2$	Standard Deviation	Mean Length (mm)	Standard Deviation	Length Range
Delaware II 71-04	27 Sep. 1971	2	3.3	1.2	3.7	0.5	3 - 4
Wieczno 73-40	09 Oct. 1973	1	1.8	-	5.0	-	-
Albatross IV 74-13	13 Dec. 1974	1	0.8	-	5.0	-	-
Wieczno 76-03	24 Oct. 1976	1	1.8	-	8.0	-	-

References:

Jordan et al. 1962

Figure 95. Composite distribution and abundance (greatest occurrence per station) of Ceratiidae collected during 30 autumn and winter cruises for the period Sep. 1971 - Feb. 1977.

Ceratiidae

Common Name: Anglerfishes

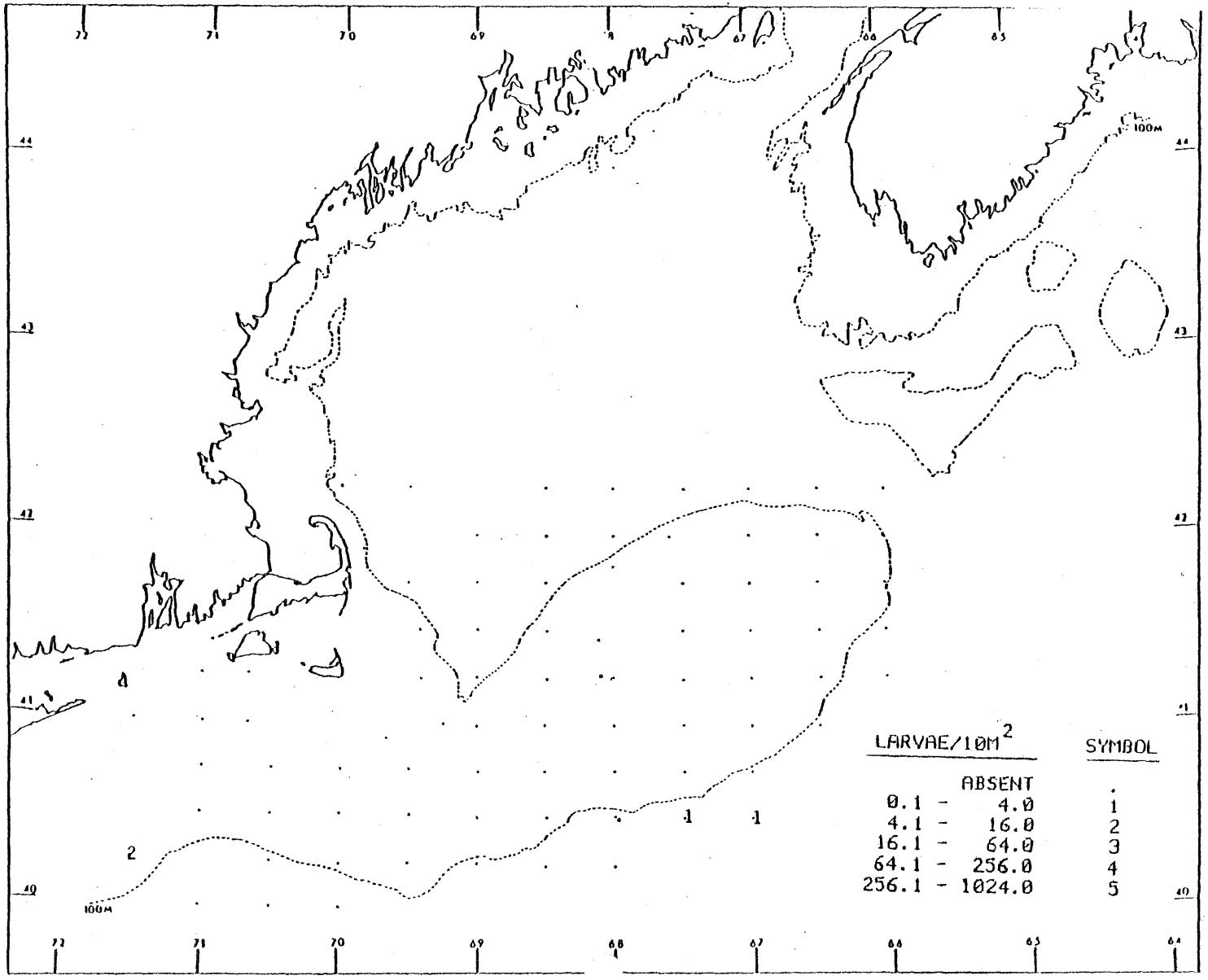


Table 95. Mean abundance (positive tows only) and mean length of Ceratiidae by cruise.

Cruise	Middate	Number of Positive Tows	Mean no./ $10m^2$	Standard Deviation	Mean Length (mm)	Standard Deviation	Length Range
Wieczno 72-01	14 Oct. 1972	1	4.2	-	4.0	-	-
Wieczno 73-40	09 Oct. 1973	2	1.6	0.4	4.0	0	-

References:

Colton and Byron 1977
Grimm 1978
Joakimsson 1978
Jordan et al. 1962
Leim and Scott 1966

Figure 96, Composite distribution and abundance (greatest occurrence per station) of Cryptosaras couesii collected during 30 autumn and winter cruises for the period Sep. 1971 - Feb. 1977.

Cryptosaras couesii Gill Common Name: Lesser deepsea angler

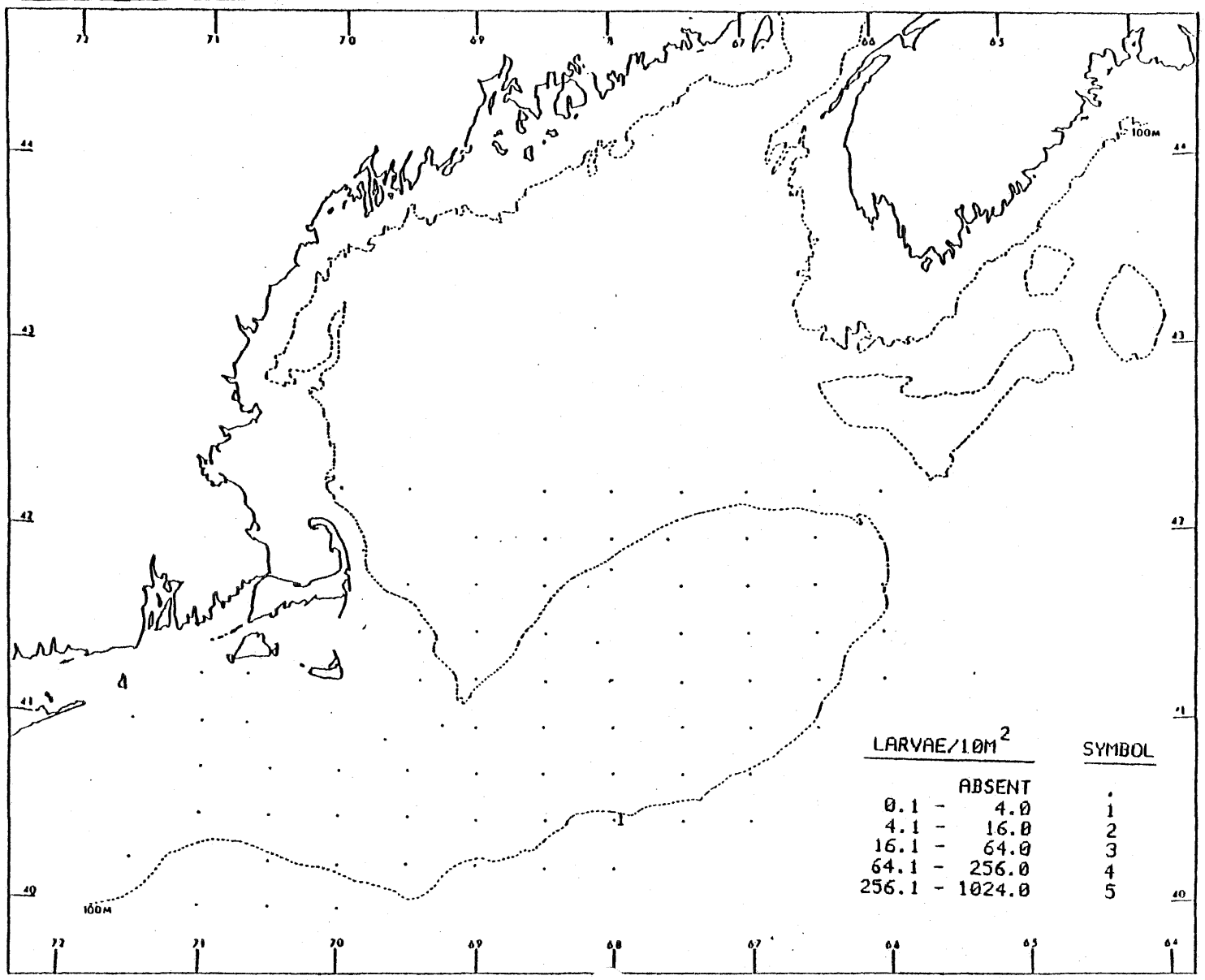


Table 96. Mean abundance (positive tows only) and mean length of *Cryptosaras couesii* by cruise.

Cruise	Middate	Number of Positive Tows	Mean no./ $10m^2$	Standard Deviation	Mean Length (mm)	Standard Deviation	Length Range
Delaware II 71-04	27 Sep. 1971	1	0.8	-	3.0	-	-

References:

Jordan et al. 1962
Leim and Scott 1966

Figure 97. Composite distribution and abundance (greatest occurrence per station) of Himantolophidae collected during 30 autumn and winter cruises for the period Sep. 1971 - Feb. 1977.

Himantolophidae

Common Name: Footballfishes

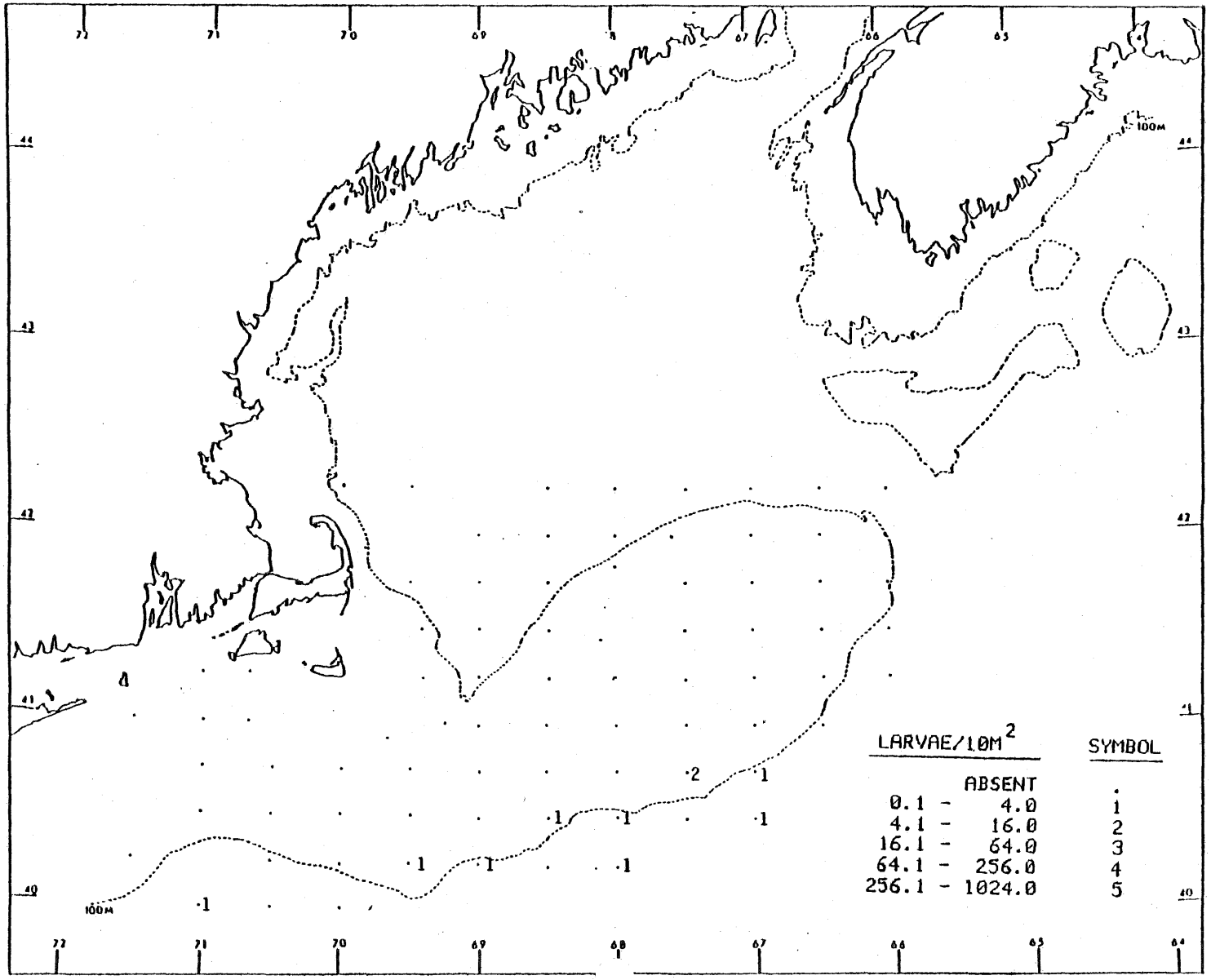


Table 97. Mean abundance (positive tows only) and mean length of Himantolophidae by cruise.

Cruise	Middate	Number of Positive Tows	Mean no./ $10m^2$	Standard Deviation	Mean Length (mm)	Standard Deviation	Length Range
Delaware II 71-04	27 Sep. 1971	5	1.9	2.1	2.4	0.7	2 - 4
Wieczno 73-40	09 Oct. 1973	3	2.2	0.8	2.6	0.5	2 - 3
Anton Dohrn 74-01	19 Nov. 1974	1	3.5	-	2.0	-	-
Wieczno 76-03	24 Oct. 1976	1	1.3	-	3.0	-	-

References:

Grimm 1978
Joakimsson 1978
Leim and Scott 1966

Figure 98. Composite distribution and abundance (greatest occurrence per station) of Melanocetidae collected during 30 autumn and winter cruises for the period Sep. 1971 - Feb. 1977.

Melanocetidae

Common Name:

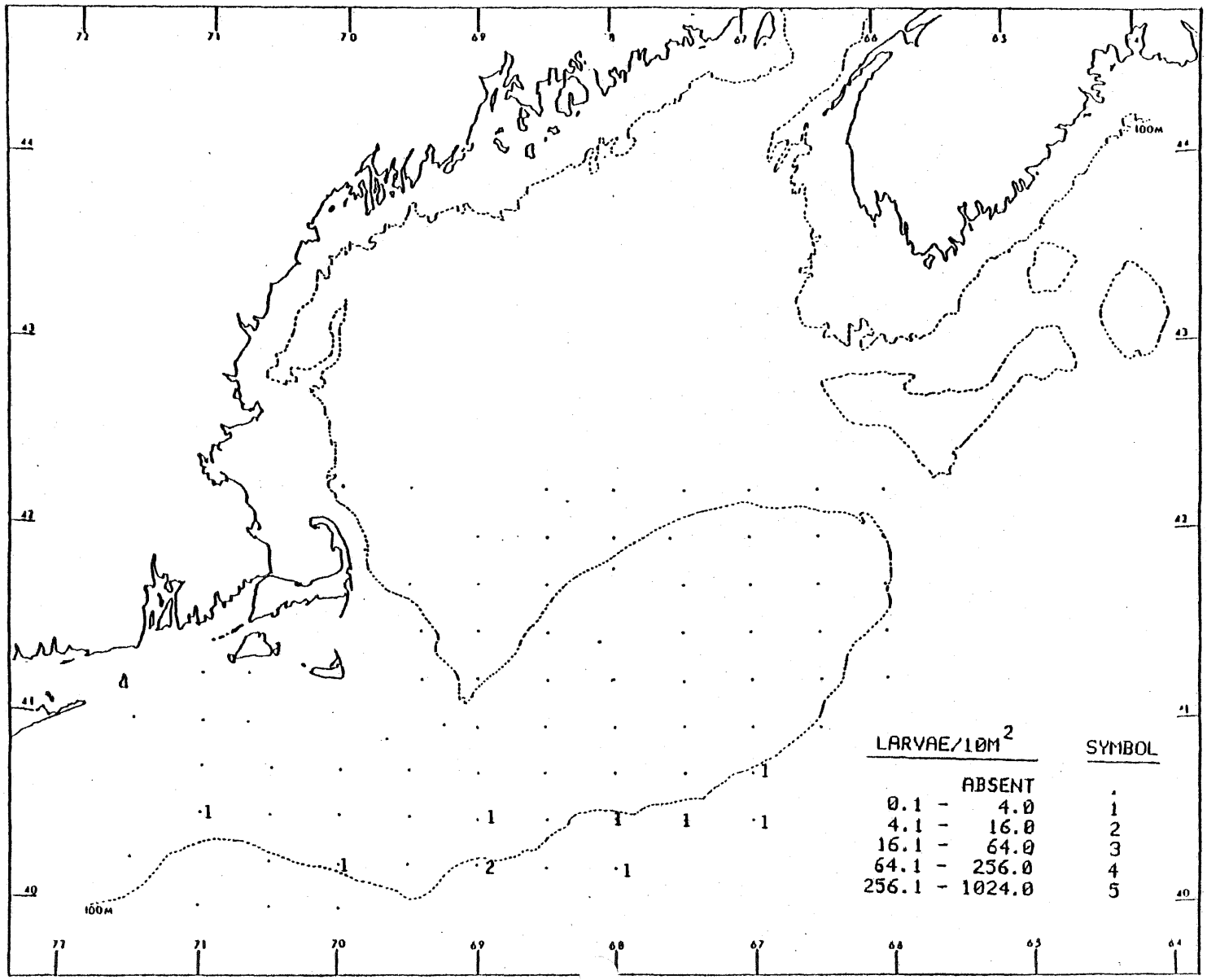


Table 98. Mean abundance (positive tows only) and mean length of Melanocetidae by cruise.

Cruise	Middate	Number of Positive Tows	Mean no./ $10m^2$	Standard Deviation	Mean Length (mm)	Standard Deviation	Length Range
Delaware II 71-04	27 Sep. 1971	1	0.8	-	3.0	-	-
Wieczno 73-40	09 Oct. 1973	1	1.3	-	3.0	-	-
Belogorsk 73-01	23 Oct. 1973	6	1.6	0.8	3.2	0.4	3 - 4
Walther Herwig 73-43	02 Nov. 1973	2	2.5	2.5	6.4	1.6	3 - 7
Anton Dohrn 74-01	19 Nov. 1974	2	1.9	0.1	3.5	0.6	3 - 4

References:

Grimm 1978
Joakimsson 1978
Jordan et al. 1962

Figure 99. Composite distribution and abundance (greatest occurrence per station) of Oneirodidae collected during 30 autumn and winter cruises for the period Sep. 1971 - Feb. 1977.

Oneirodidae

Common Name:

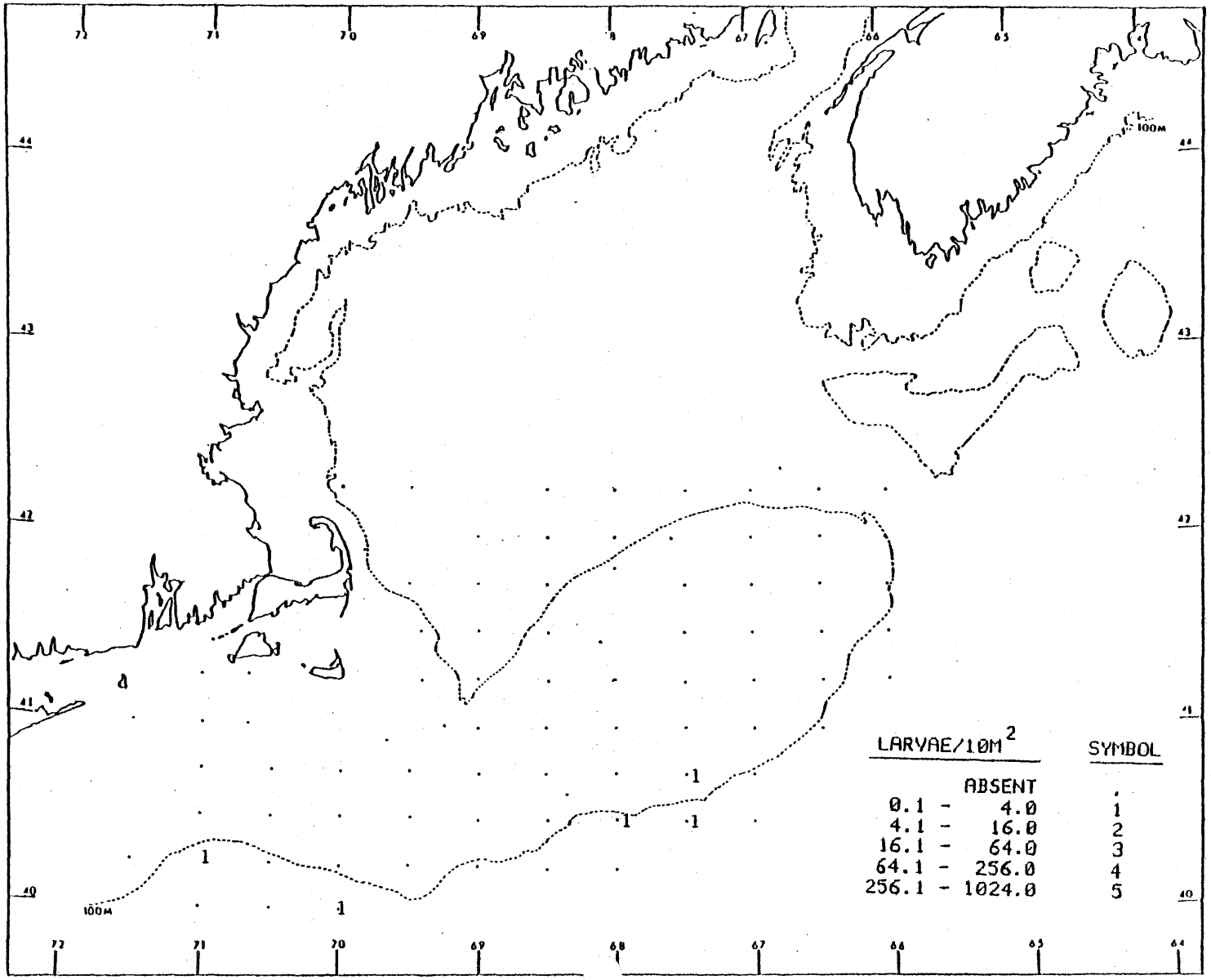


Table 99. Mean abundance (positive tows only) and mean length of Oneirodidae by cruise.

Cruise	Middate	Number of Positive Tows	Mean no./ $10m^2$	Standard Deviation	Mean Length (mm)	Standard Deviation	Length Range
Delaware II 71-04	27 Sep. 1971	1	1.4	-	2.0	-	-
Wieczno 73-40	09 Oct. 1973	1	2.6	-	2.0	-	-
Belogorsk 73-01	23 Oct. 1973	1	3.0	-	2.0	-	-
Albatross IV 73-09	13 Dec. 1973	1	2.7	-	3.0	-	-
Anton Dohrn 74-01	19 Nov. 1974	1	2.0	-	3.0	-	-

References:

Joakimsson 1978

Figure 100. Composite distribution and abundance (greatest occurrence per station) of Lophius americanus collected during 30 autumn and winter cruises for the period Sep. 1971 - Feb. 1977.

Lophius americanus Valenciennes Common Name: Goosefish

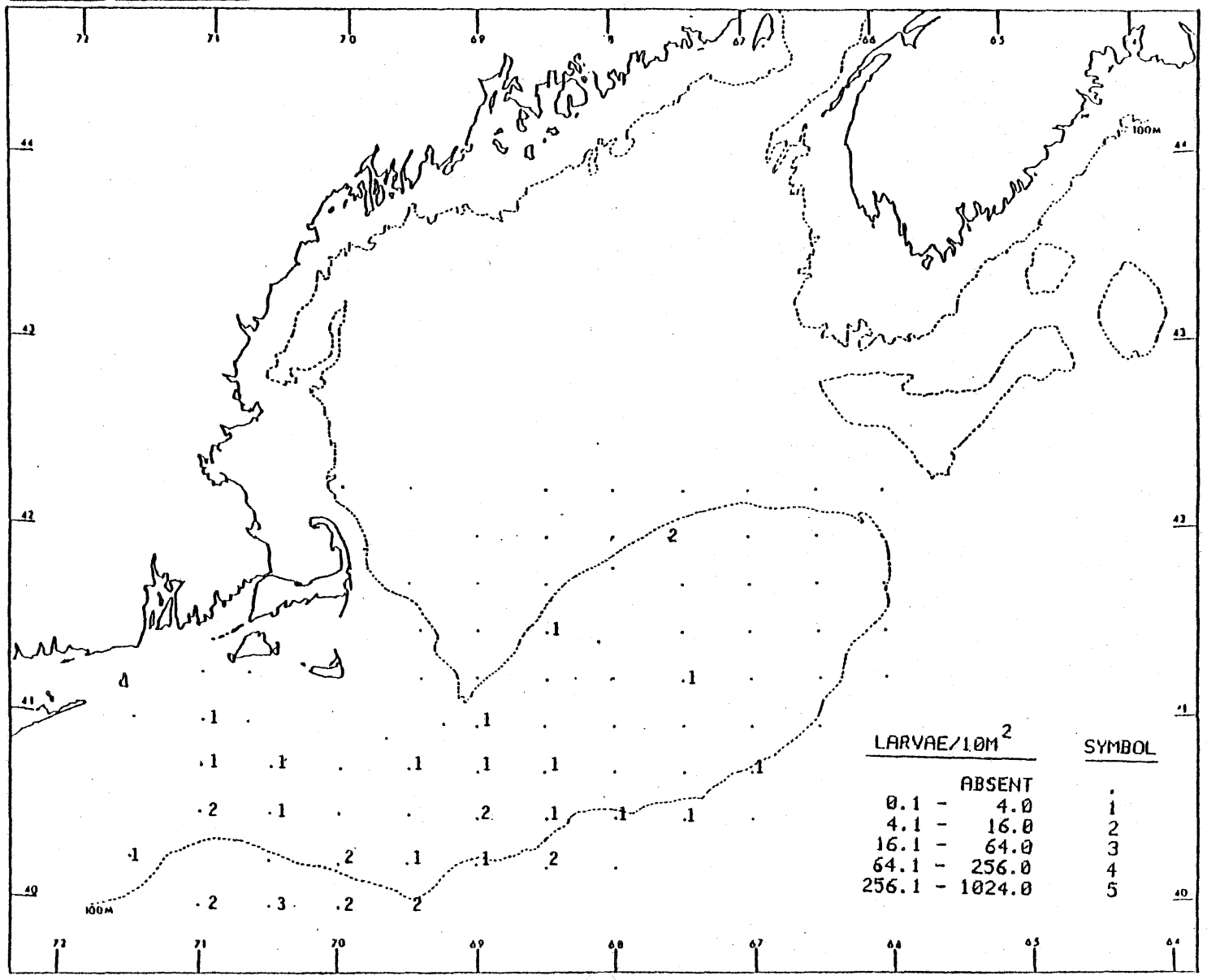


Table 100. Mean abundance (positive tows only) and mean length of *Lophius americanus* by cruise.

Cruise	Middate	Number of Positive Tows	Mean no./ $10m^2$	Standard Deviation	Mean Length (mm)	Standard Deviation	Length Range
Delaware II 71-04	27 Sep. 1971	11	2.6	2.4	3.9	1.2	2 - 11
Viandra 71-01	17 Oct. 1971	3	1.2	1.2	7.9	2.6	4 - 10
Wieczno 72-01	14 Oct. 1972	5	2.2	1.2	4.9	1.6	4 - 8
Argus 72-02	20 Oct. 1972	1	4.7	-	5.0	-	-
Wieczno 73-40	09 Oct. 1973	10	3.2	2.5	4.7	1.2	3 - 9
Belogorsk 73-01	23 Oct. 1973	5	1.7	1.0	8.6	6.7	4 - 21
Walther Herwig 73-43	02 Nov. 1973	2	6.9	2.8	5.3	1.0	4 - 6
Cryos 74-04	16 Sep. 1974	2	3.8	2.9	4.2	0.4	4 - 5
Prognoz 74-01	24 Oct. 1974	3	1.3	0.1	8.9	3.3	5 - 11
Albatross IV 75-02	14 Feb. 1975	1	6.1	-	10.7	1.3	8 - 12
Belogorsk 75-02	01 Oct. 1975	1	0.9	-	44.0	-	-
Belogorsk 76-03	08 Oct. 1976	2	1.1	0.4	9.0	5.4	4 - 12
Wieczno 76-03	24 Oct. 1976	4	11.1	18.2	7.6	1.2	4 - 8
Anton Dohrn 76-0	22 Nov. 1976	1	1.7	-	10.0	-	-

References:

Berrien et al. 1978
Colton and Byron 1977
Fischer 1978
Grimm 1978
Joakimsson 1978
Leim and Scott 1966

Figure 101. Composite distribution and abundance (greatest occurrence per station) of Bregmacerotidae collected during 30 autumn and winter cruises for the period Sep. 1971 - Feb. 1977.

Bregmacerotidae

Common Name: Codlets

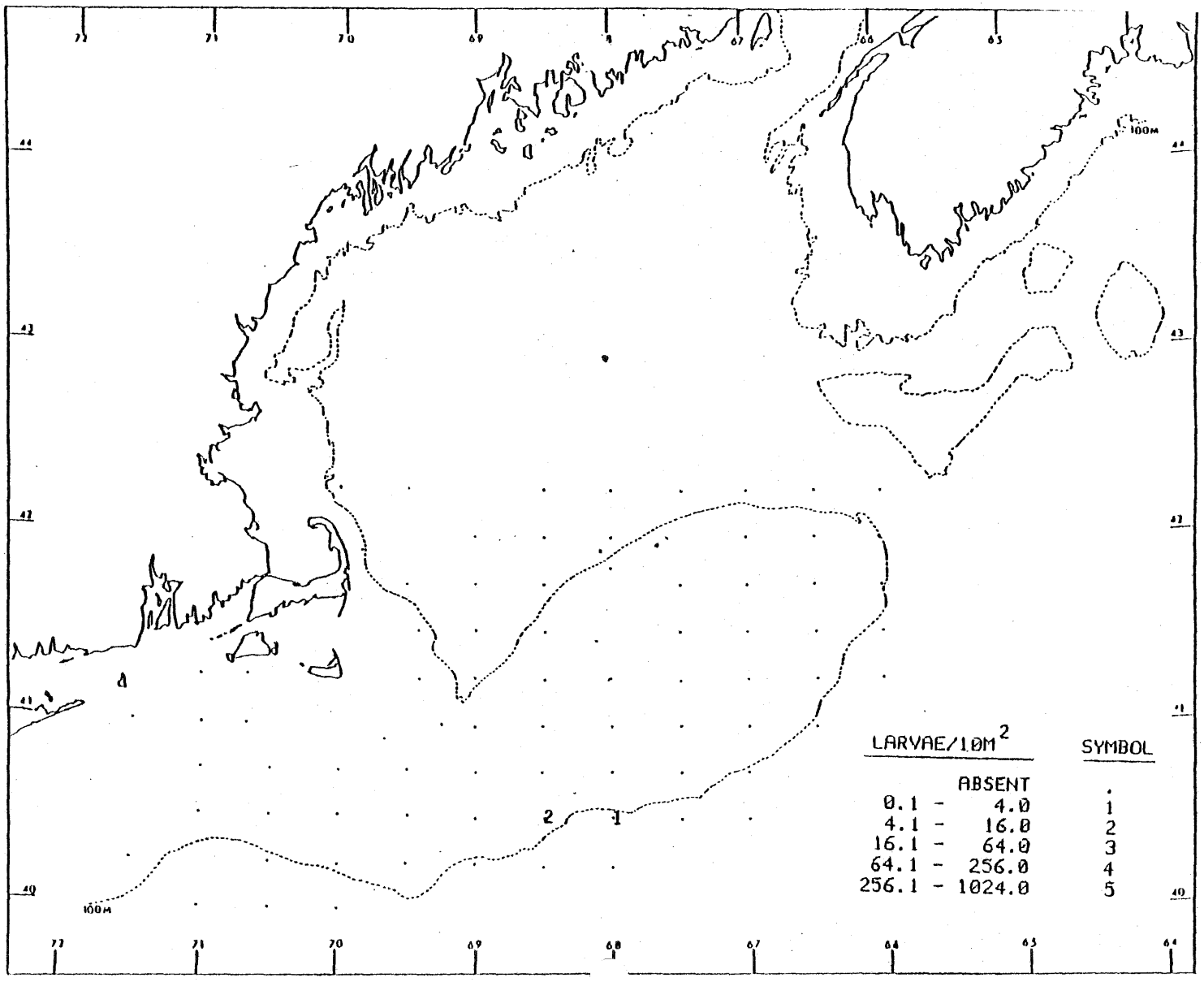


Table 101. Mean abundance (positive tows only) and mean length of Bregmacerotidae by cruise.

Cruise	Middate	Number of Positive Tows	Mean no./ $10m^2$	Standard Deviation	Mean Length (mm)	Standard Deviation	Length Range
Anton Dohrn 74-01	19 Nov. 1974	2	4.2	0.4	6.5	1.2	5 - 8

References:

Berrien et al. 1978
Colton and Byron 1977
Grimm 1978
Jordan et al. 1962

Figure 102. Composite distribution and abundance (greatest occurrence per station) of Bregmaceros atlanticus collected during 30 autumn and winter cruises, for the period Sep. 1971 - Feb. 1977.

Bregmaceros atlanticus Goode and Bean Common Name: Antenna codlet

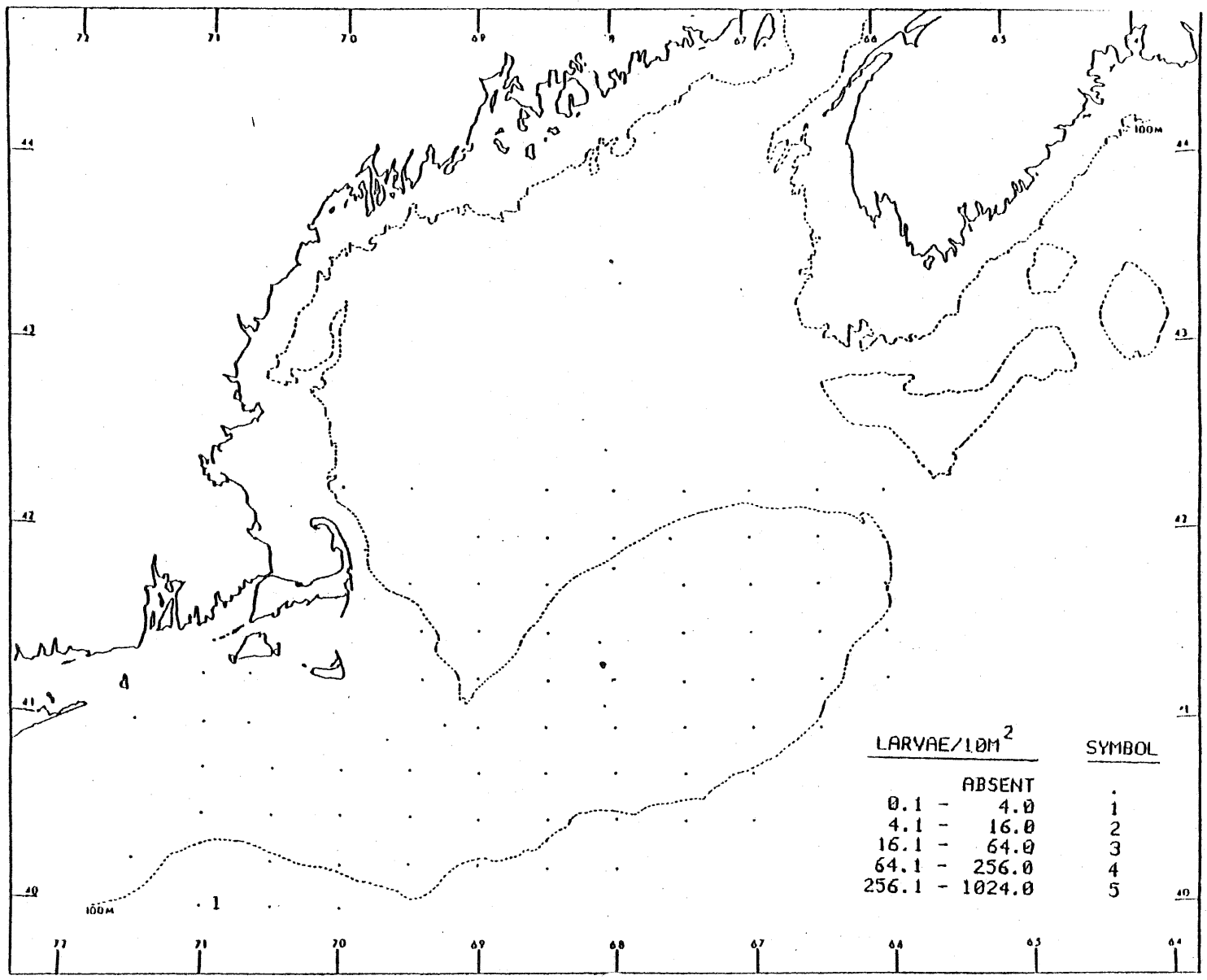


Table 102. Mean abundance (positive tows only) and mean length of *Bregmaceros atlanticus* by cruise.

Cruise	Middate	Number of Positive Tows	Mean no./ $10m^2$	Standard Deviation	Mean Length (mm)	Standard Deviation	Length Range
Albatross IV 74-13	13 Dec. 1974	1	1.2	-	18.0	-	-

References:

Colton and Byron 1977
Grimm 1978
Joakimsson 1978
Jordan et al. 1962

Figure 103. Composite distribution and abundance (greatest occurrence per station) of Bregmaceros sp. collected during 30 autumn and winter cruises for the period Sep. 1971 - Feb. 1977.

Bregamaceros sp. Common Name:

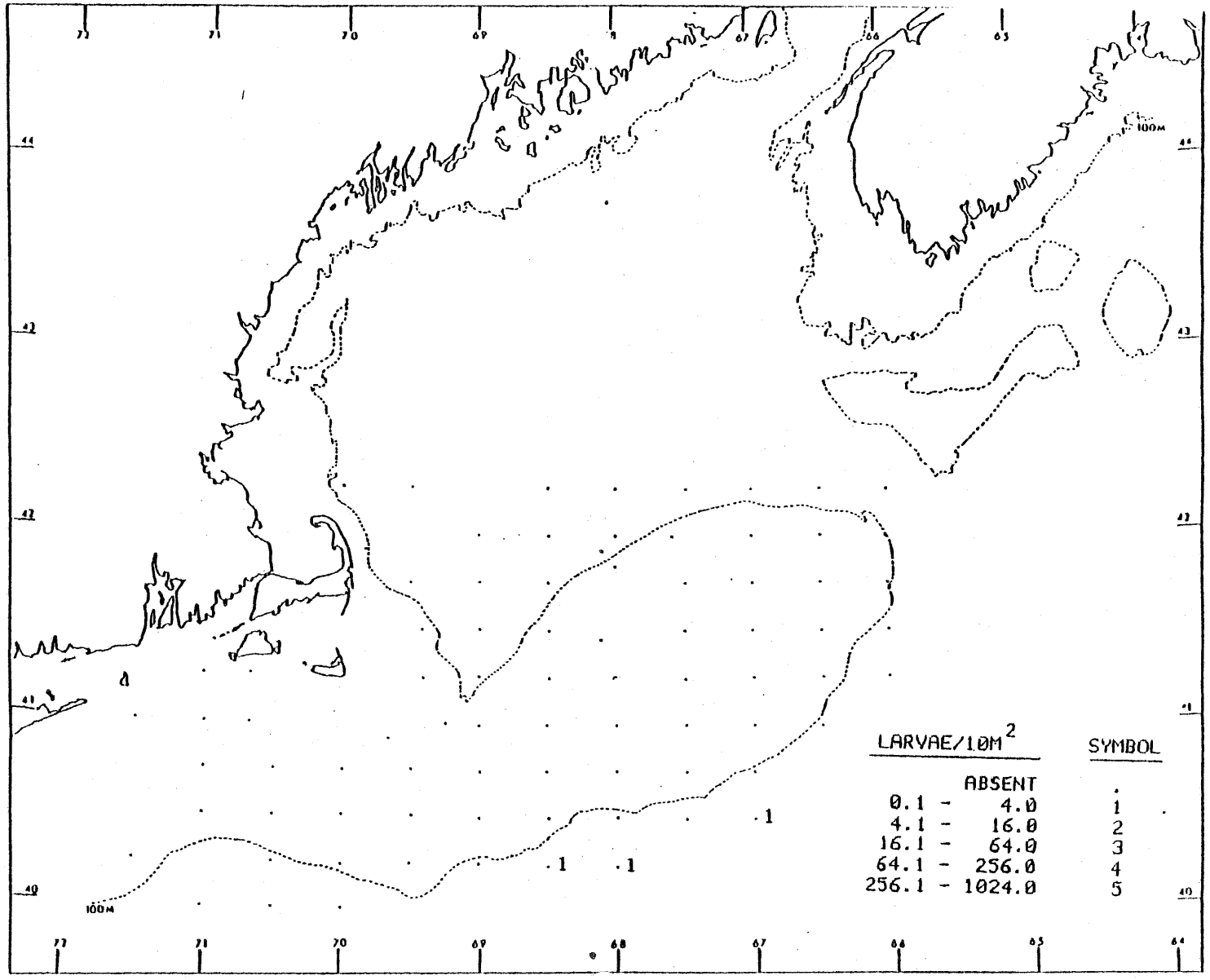


Table 103. Mean abundance (positive tows only) and mean length of *Bregmaceros* sp. by cruise.

Cruise	Middate	Number of Positive Tows	Mean no./ $10m^2$	Standard Deviation	Mean Length (mm)	Standard Deviation	Length Range
Anton Dohrn 74-01	19 Nov. 1974	2	2.3	0.6	7.4	3.3	5 - 11
Anton Dohrn 75-187	09 Nov. 1975	1	2.1	-	9.0	-	-

References:

See *B. atlanticus*

Figure 104. Composite distribution and abundance (greatest occurrence per station) of Gadidae collected during 30 autumn and winter cruises for the period Sep. 1971 - Feb. 1977.

Gadidae

Common Name: Codfishes

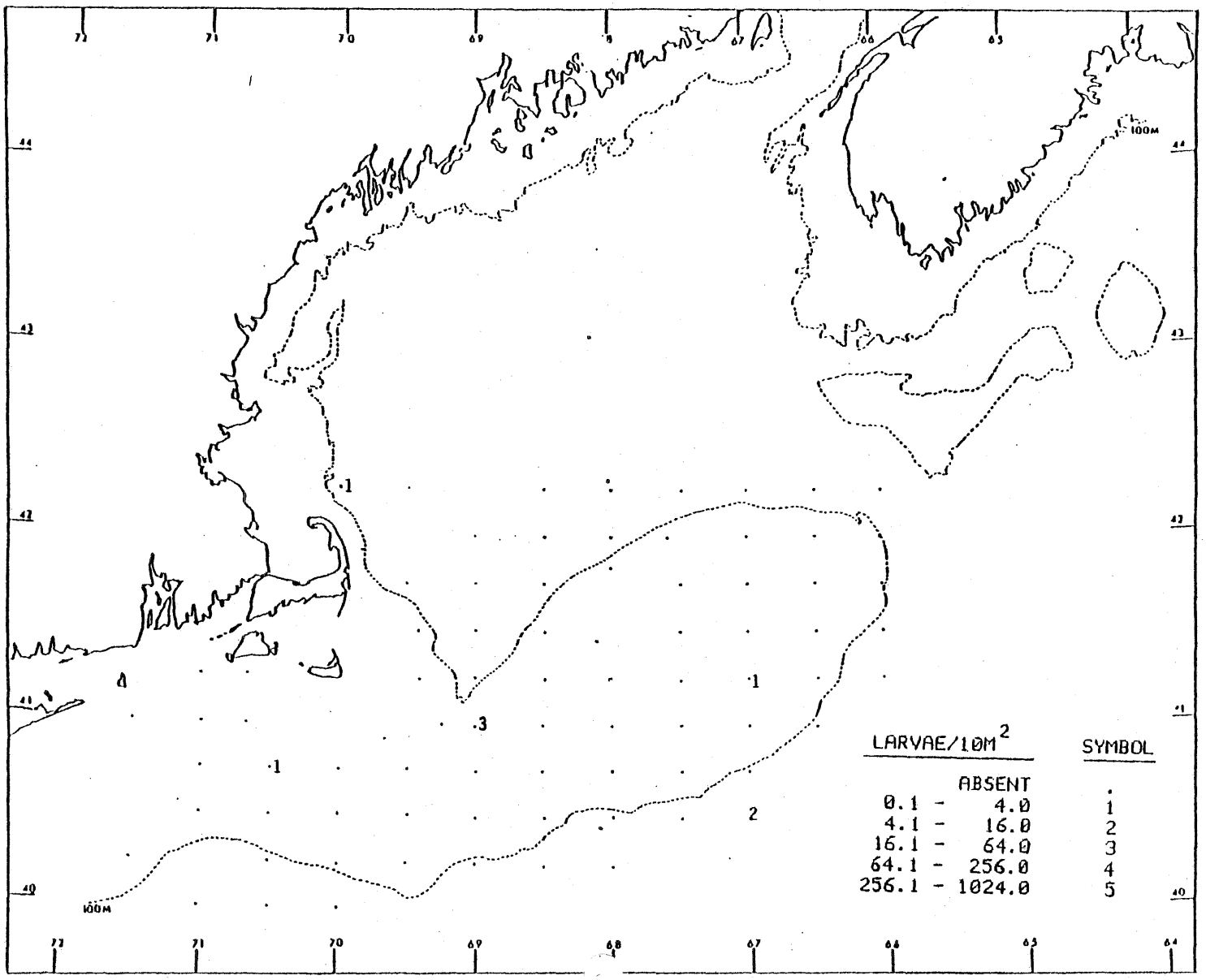


Table 104. Mean abundance (positive tows only) and mean length of Gadidae by cruise.

Cruise	Middate	Number of Positive Tows	Mean no./ $10m^2$	Standard Deviation	Mean Length (mm)	Standard Deviation	Length Range
Albatross IV 72-09	10 Dec. 1972	2	10.8	10.5	3.2	1.0	2 - 6
Albatross IV 75-02	14 Feb. 1975	1	1.9	-	8.0	-	-
Anton Dohrn 75-187	09 Nov. 1975	1	6.2	-	2.0	-	-
Anton Dohrn 76-02	22 Nov. 1976	1	2.2	-	3.0	-	-

Figure 105. Composite distribution and abundance (greatest occurrence per station) of Brosme brosme collected during 30 autumn and winter cruises for the period Sep. 1971 - Feb. 1977.

Brosme brosme (Muller) Common Name: Cusk

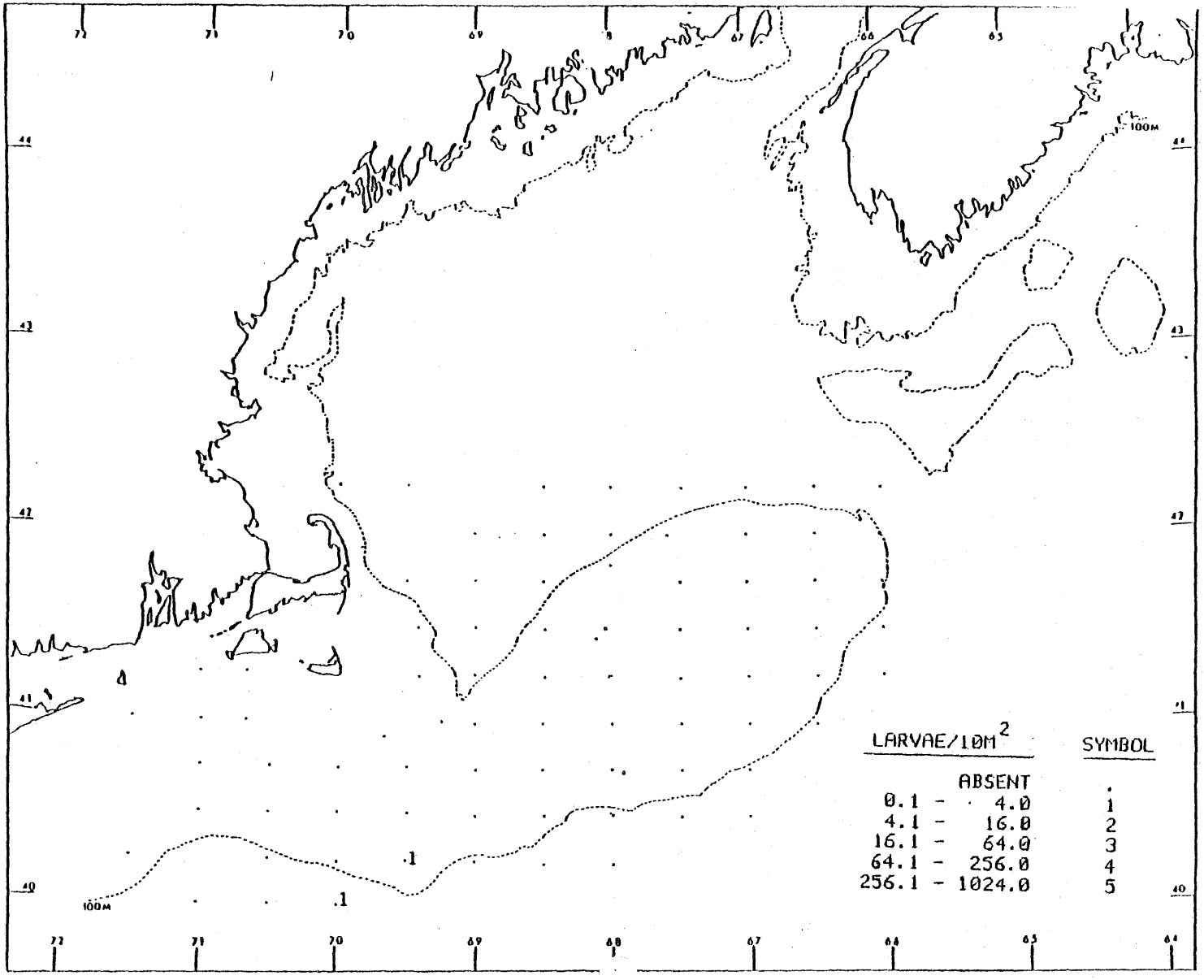


Table 105. Mean abundance (positive tows only) and mean length of *Brosme brosme* by cruise.

Cruise	Middate	Number of Positive Tows	Mean no./ $10m^2$	Standard Deviation	Mean Length (mm)	Standard Deviation	Length Range
Cryos 74-04	16 Sep. 1974	1	3.8	-	3.0	-	-
Belogorsk 75-02	01 Oct. 1975	1	1.5	-	3.0	-	-

References:

Jordan et al. 1962
Leim and Scott 1966

Figure 106. Composite distribution and abundance (greatest occurrence per station) of Enchelyopus cimbrius collected during 30 autumn and winter cruises for the period Sep. 1971 - Feb. 1977.

Enchelyopus cimbrius (linnaeus) Common Name: Fourbeard rockling

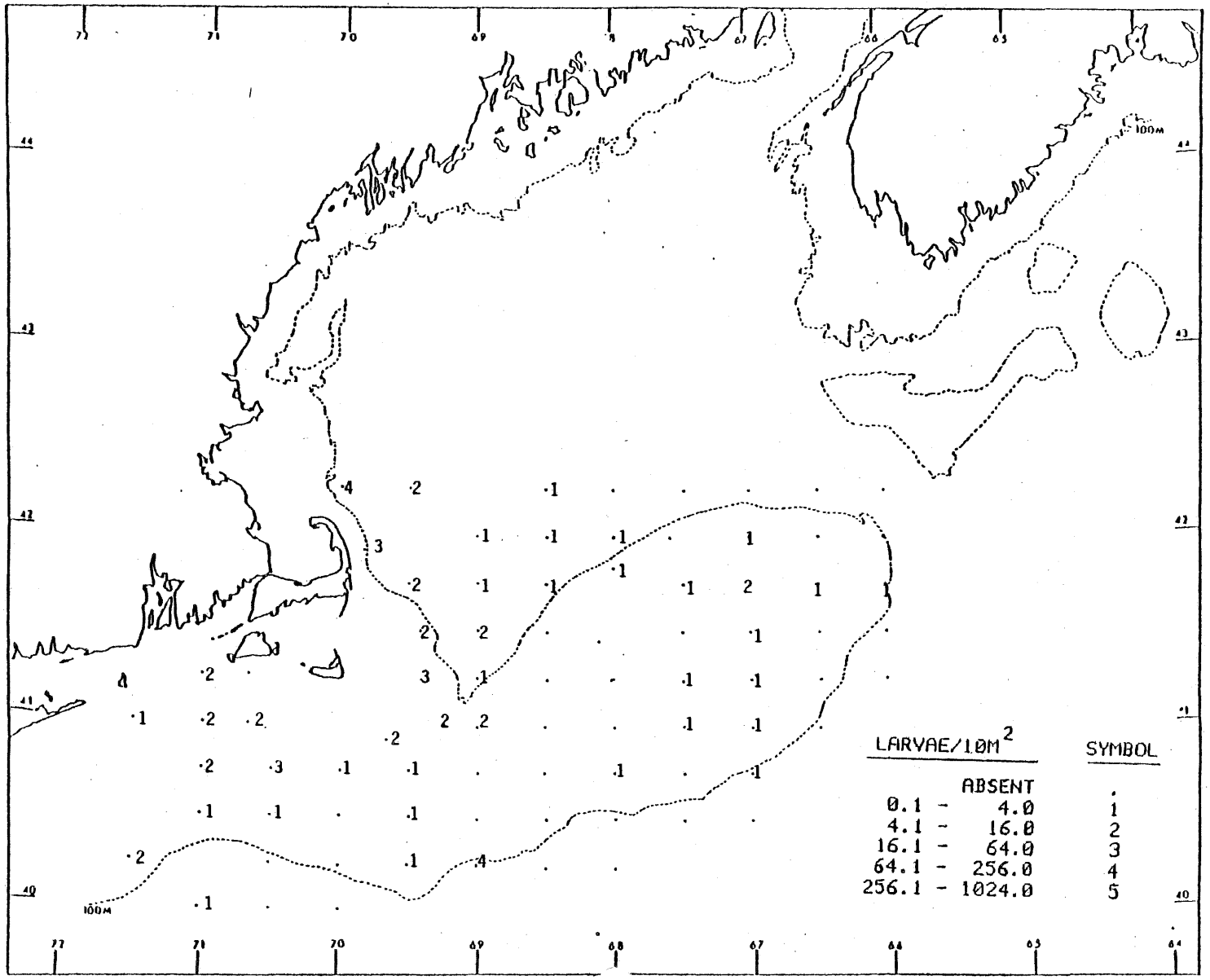


Table 106. Mean abundance (positive tows only) and mean length of *Enchelyopus cimbrius* by cruise.

Cruise	Middate	Number of Positive Tows	Mean no./ $10m^2$	Standard Deviation	Mean Length (mm)	Standard Deviation	Length Range
Delaware II 71-04	27 Sep. 1971	6	12.2	24.4	2.2	0.7	2 - 7
Viandra 71-01	17 Oct. 1971	5	4.1	5.0	2.9	0.8	2 - 5
Walther Herwig 71-01	05 Nov. 1971	3	2.2	1.8	3.9	0.9	3 - 6
Wieczno 72-01	14 Oct. 1972	9	1.8	0.8	5.1	3.8	2 - 14
Argus 72-02	20 Oct. 1972	1	1.8	-	5.0	-	-
Anton Dohrn 72-01	05 Nov. 1972	2	4.1	4.9	4.8	3.8	2 - 17
Albatross Iv 72-09	10 Dec. 1972	1	1.1	-	5.0	-	-
Wieczno 73-40	09 Oct. 1973	3	6.7	3.6	7.1	6.1	2 - 32
Belogorsk 73-01	23 Oct. 1973	1	14.0	-	2.0	-	-
Walther Herwig 73-43	02 Nov. 1973	2	1.0	0.2	7.7	3.7	2 - 13
Albatross IV 73-09	13 Dec. 1973	3	3.7	1.5	11.5	5.5	7 - 20
Cryos 74-04	16 Sep. 1974	6	19.9	35.5	4.8	1.3	2 - 10
Prognoz 74-01	24 Oct. 1974	2	5.5	2.3	3.9	1.1	2 - 6
Anton Dohrn 74-01	19 Nov. 1974	1	2.1	-	14.0	-	-
Albatross IV 74-13	13 Dec. 1974	4	4.2	3.8	6.3	5.4	2 - 25
Belogorsk 75-02	01 Oct. 1975	8	13.5	24.2	5.6	1.7	2 - 10
Belogorsk 75-03	23 Oct. 1975	13	8.7	10.1	4.1	1.2	2 - 8
Anton Dohrn 75-187	09 Nov. 1975	19	3.6	2.8	6.8	4.1	2 - 17
Albatross IV 75-14	09 Dec. 1975	4	1.7	0.3	8.8	7.3	4 - 25
Belogorsk 76-03	08 Oct. 1976	9	7.6	7.8	3.7	1.0	2 - 6
Wieczno 76-03	24 Oct. 1976	7	2.6	2.1	6.2	3.9	2 - 16
Researcher 76-01	04 Dec. 1976	8	2.1	2.2	11.9	7.0	4 - 27

References:

Berrien et al. 1978
Leim and Scott 1966

Figure 107. Composite distribution and abundance (greatest occurrence per station) of Gadus morhua collected during 30 autumn and winter cruises for the period Sep. 1971 - Feb. 1977.

Gadus morhua Linnaeus Common Name: Codfish

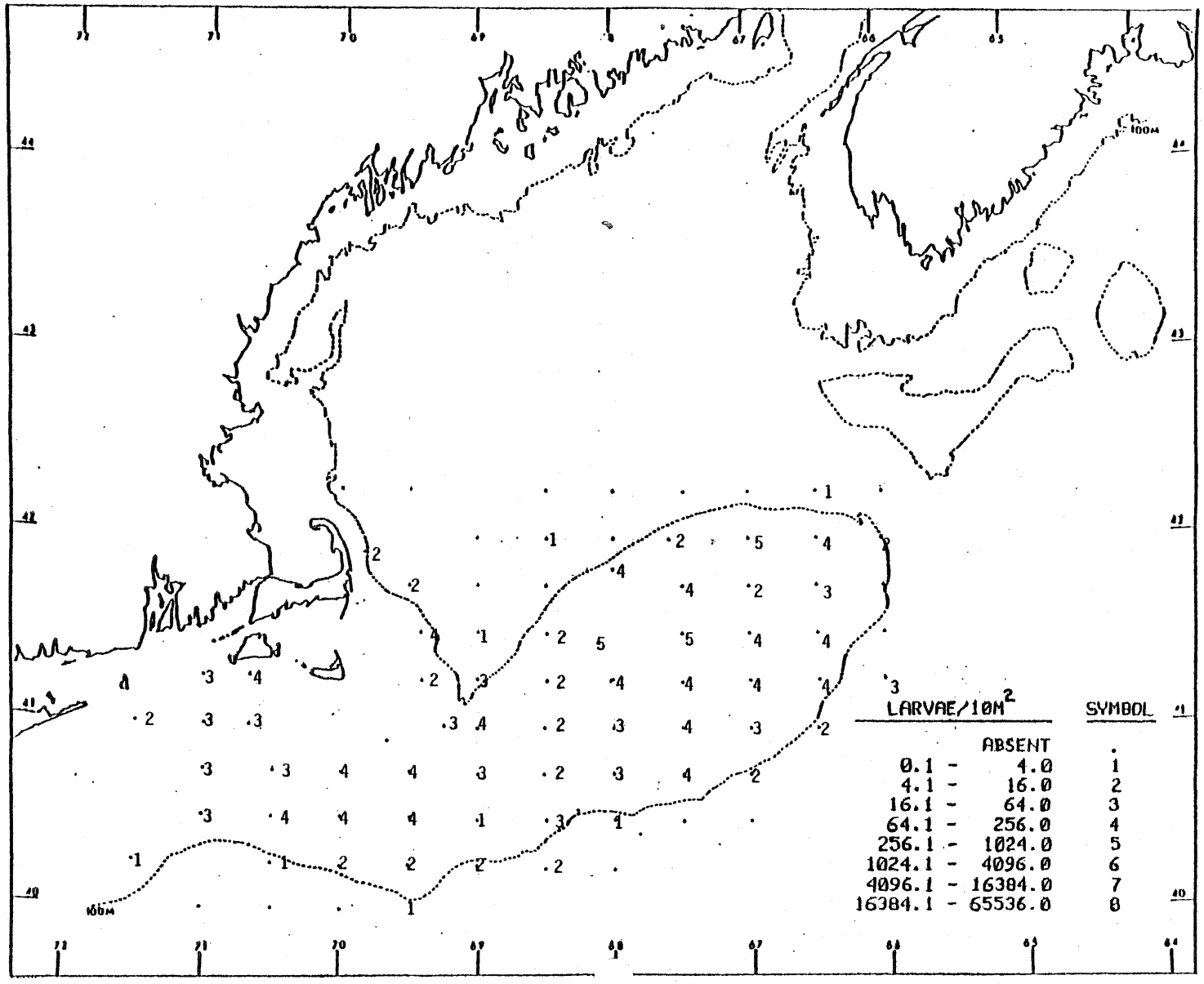


Table 107. Mean abundance (positive tows only) and mean length of Gadus morhua by cruise.

Cruise	Middate	Number of Positive Tows	Mean no./ $10m^2$	Standard Deviation	Mean Length (mm)	Standard Deviation	Length Range
Walther Herwig 71-01	05 Nov. 1971	1	6.4	-	4.9	0.3	3 - 5
Albatross IV 71-07	09 Dec. 1971	27	17.3	22.8	3.5	0.7	2 - 6
Anton Dohrn 72-01	05 Nov. 1972	5	2.8	2.8	3.5	0.7	3 - 5
Albatross IV 72-09	10 Dec. 1972	21	23.6	20.1	3.6	0.9	2 - 7
Belogorsk 73-01	23 Oct. 1973	1	0.7	-	3.0	-	-
Albatross IV 73-09	13 Dec. 1973	29	119.3	171.3	3.8	1.0	2 - 10
Albatross IV 74-02	14 Feb. 1974	26	20.3	27.5	4.8	1.4	3 - 10
Anton Dohrn 74-01	19 Nov. 1974	1	8.3	-	4.4	1.3	3 - 7
Albatross IV 74-13	13 Dec. 1974	33	13.2	22.3	4.0	0.9	3 - 9
Albatross IV 75-02	14 Feb. 1975	36	29.3	47.4	5.6	2.8	3 - 24
Belogorsk 75-03	23 Oct. 1975	2	1.7	0.5	4.5	0.6	4 - 5
Anton Dohrn 75-187	09 Nov. 1975	3	1.3	0.2	7.0	1.7	5 - 9
Albatross IV 75-14	09 Dec. 1975	26	13.0	19.2	3.6	0.7	3 - 9
Albatross IV 76-01	16 Feb. 1976	17	11.0	9.2	4.2	1.4	2 - 11
Anton Dohrn 76-02	22 Nov. 1976	2	3.3	3.3	3.6	0.5	3 - 4
Researcher 76-01	04 Dec. 1976	12	20.0	30.8	3.7	0.7	3 - 7
Mt. Mitchell 77-01	18 Feb. 1977	3	2.6	1.6	3.9	0.5	3 - 5

Figure 108. Composite distribution and abundance (greatest occurrence per station) of Melanogrammus aeglefinus collected during 30 autumn and winter cruises for the period Sep. 1971 - Feb. 1977.

Melanogrammus aeglefinus (linnaeus) Common Name: Haddock

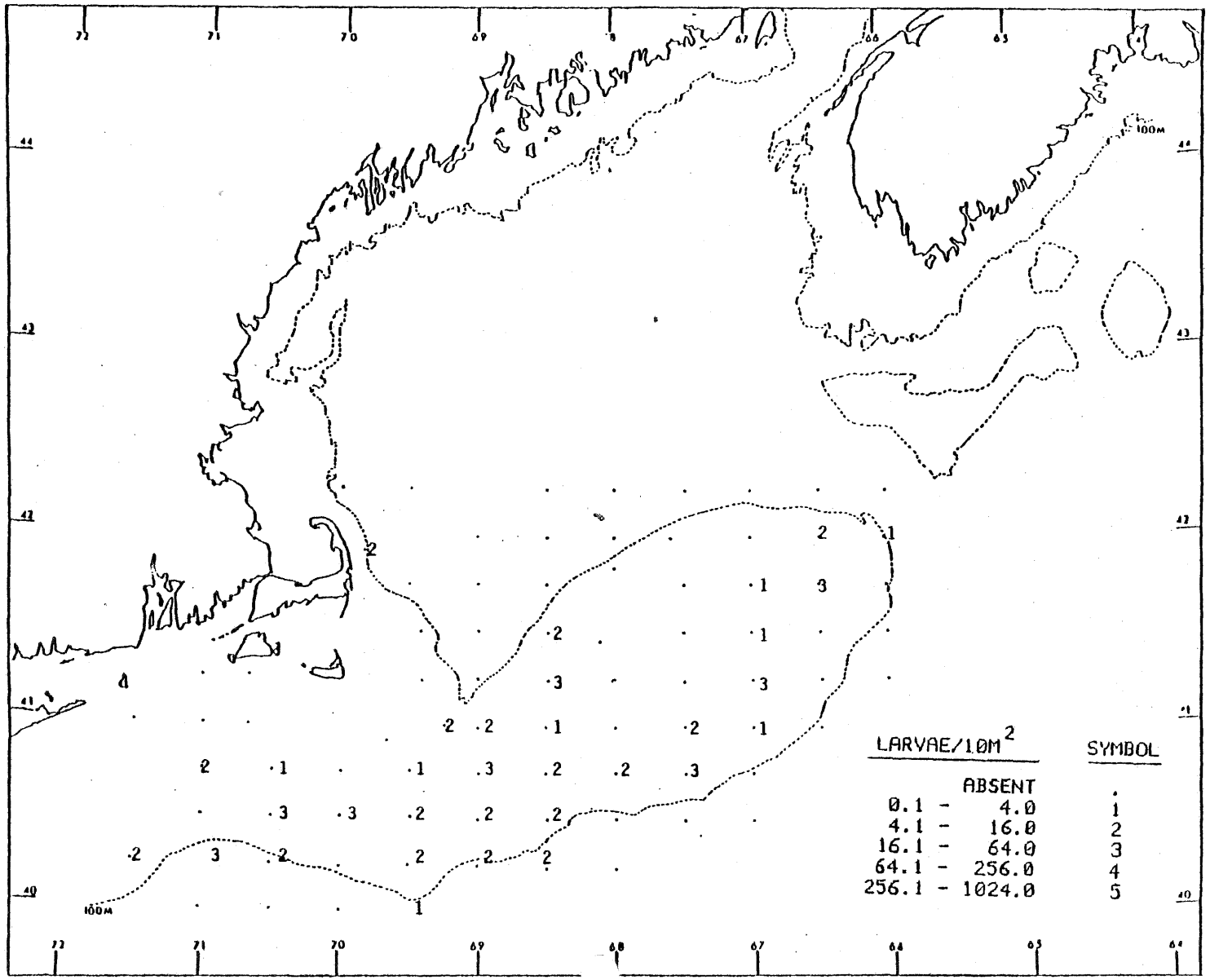


Table 108. Mean abundance (positive tows only) and mean length of *Melanogrammus aeglefinus* by cruise.

Cruise	Middate	Number of Positive Tows	Mean no./ $10m^2$	Standard Deviation	Mean Length (mm)	Standard Deviation	Length Range
Albatross IV 74-02	14 Feb. 1974	10	12.5	15.8	4.8	1.4	3 - 11
Albatross IV 75-02	14 Feb. 1975	24	13.4	13.8	4.4	1.5	2 - 10
Belogorsk 75-03	23 Oct. 1975	3	3.2	2.6	3.6	0.5	3 - 4
Albatross IV 76-01	16 Feb. 1976	4	3.6	1.8	3.7	0.5	3 - 4
Mt. Mitchell 77-01	18 Feb. 1977	1	1.1	-	8.0	-	-

Figure 109. Composite distribution and abundance (greatest occurrence per station) of Melanogrammus sp. collected during 30 autumn and winter cruises for the period Sep. 1971 - Feb. 1977.

Melanogrammus sp. Common Name:

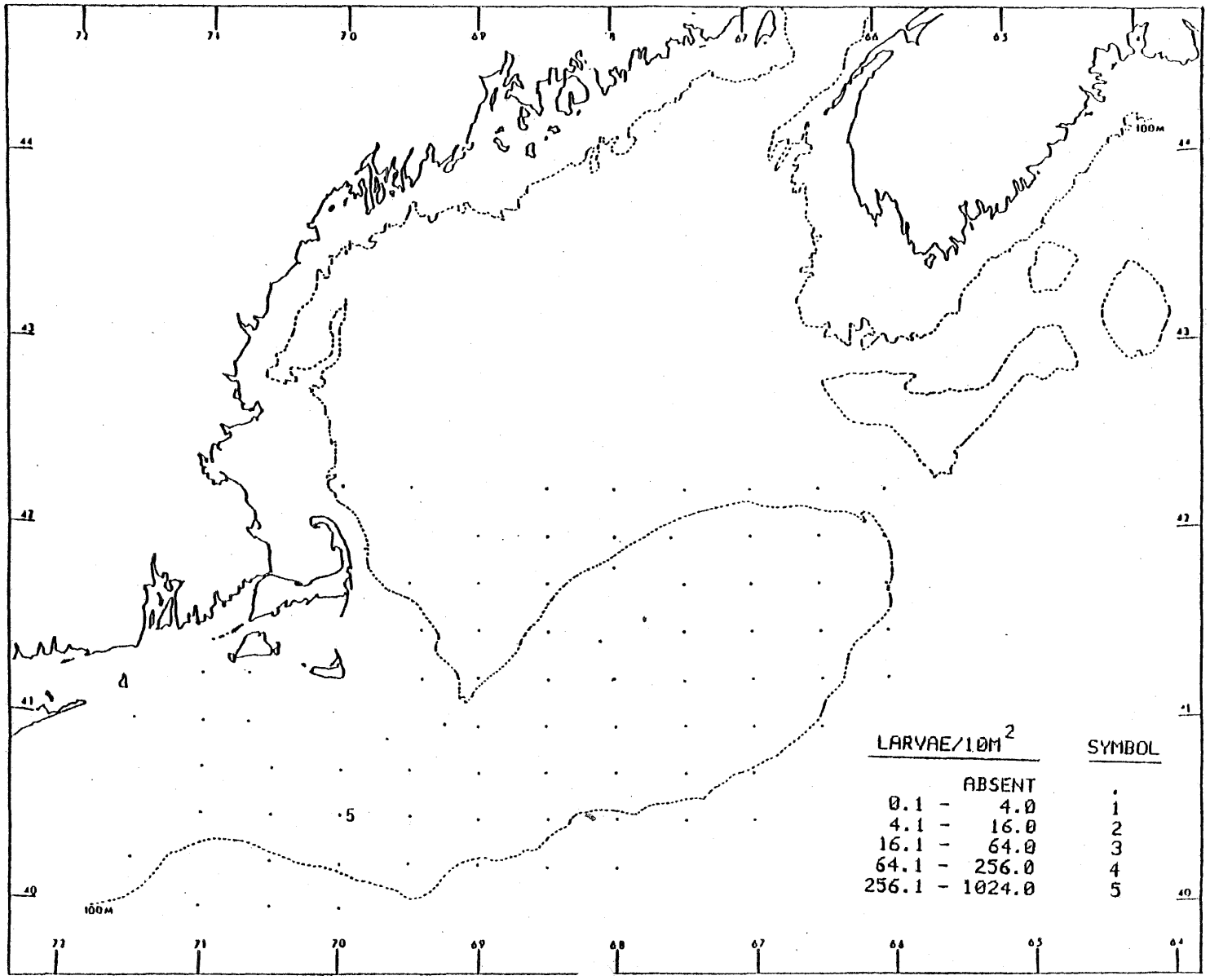


Table 109. Mean abundance (positive tows only) and mean length of *Melanogrammus* sp. by cruise.

Cruise	Middate	Number of Positive Tows	Mean no./ $10m^2$	Standard Deviation	Mean Length (mm)	Standard Deviation	Length Range
Wieczno 72-01	14 Oct. 1972	1	278.6	-	4.4	1.7	3 - 21

Figure 110. Composite distribution and abundance (greatest occurrence per station) of Pollachius virens collected during 30 autumn and winter cruises for the period Sep. 1971 - Feb. 1977.

Pollachius virens (Linnaeus) Common Name: Pollock

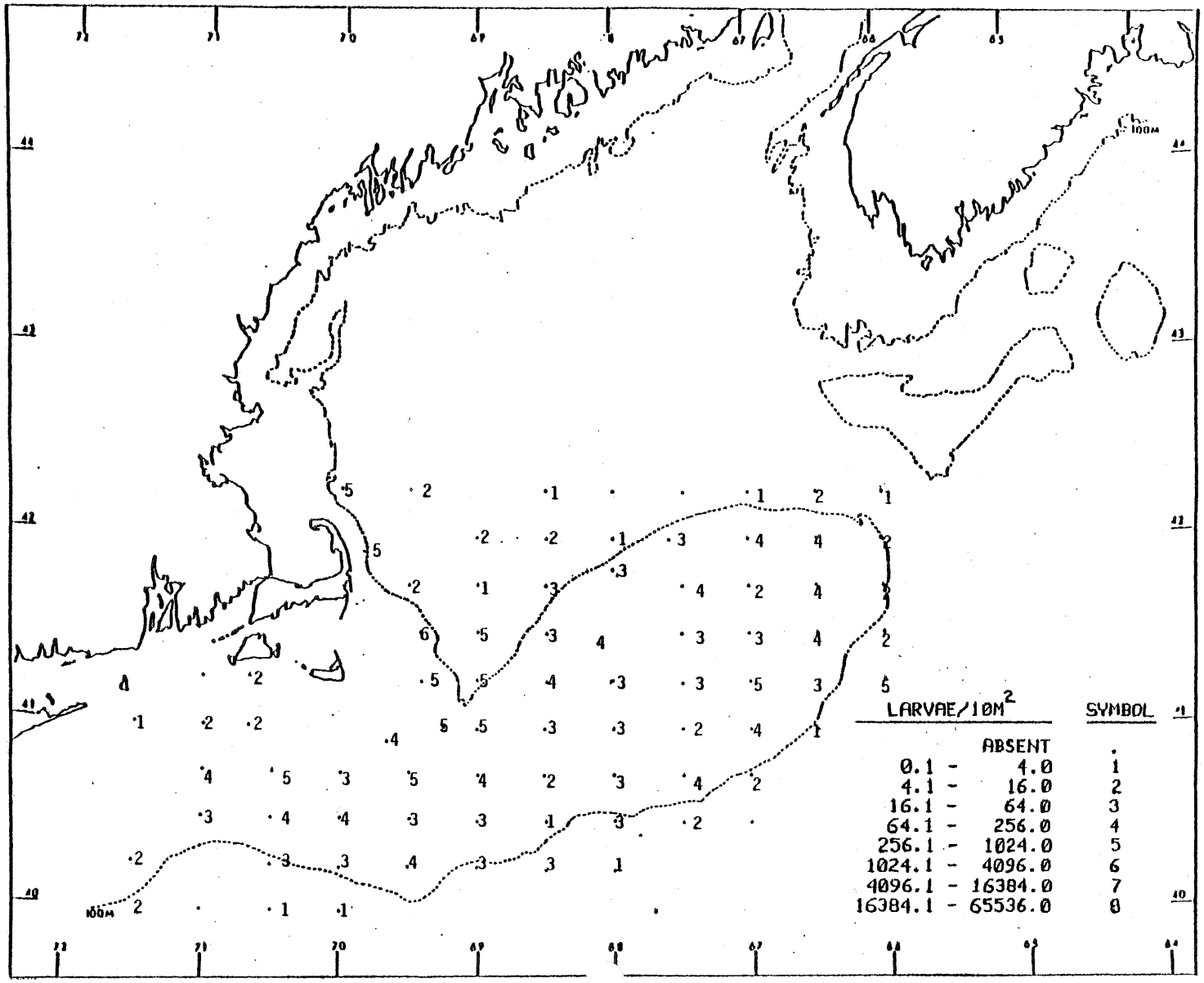


Table 110. Mean abundance (positive tows only) and mean length of *Pollachius virens* by cruise.

Cruise	Middate	Number of Positive Tows	Mean no./ $10m^2$	Standard Deviation	Mean Length (mm)	Standard Deviation	Length Range
Albatross IV 71-07	09 Dec. 1971	23	91.9	157.3	3.7	0.8	2 - 8
Albatross IV 72-09	10 Dec. 1972	10	12.3	12.2	3.3	0.5	2 - 5
Albatross IV 73-09	13 Dec. 1973	29	43.5	78.4	3.9	1.3	3 - 9
Albatross IV 74-02	14 Feb. 1974	33	34.8	63.6	5.3	1.7	3 - 14
Prognoz 74-01	24 Oct. 1974	1	1.4	-	4.0	-	-
Anton Dohrn 74-01	19 Nov. 1974	8	9.1	8.7	3.7	0.7	3 - 5
Albatross IV 74-13	13 Dec. 1974	24	48.2	89.0	3.9	1.3	2 - 12
Albatross IV 75-02	14 Feb. 1975	46	43.4	79.9	5.1	2.1	3 - 25
Belogorsk 75-03	23 Oct. 1975	4	3.8	3.1	4.1	1.0	3 - 8
Anton Dohrn 75-187	09 Nov. 1975	6	6.1	5.5	5.4	1.3	3 - 10
Albatross IV 75-14	09 Dec. 1975	28	142.9	317.9	4.4	1.1	2 - 13
Albatross IV 76-01	16 Feb. 1976	39	24.5	71.8	6.2	2.9	2 - 19
Researcher 76-01	04 Dec. 1976	8	11.0	11.8	3.8	1.0	3 - 9
Mt. Mitchell 77-01	18 Feb. 1977	5	7.2	10.1	4.5	1.7	3 - 9

Figure 111. Composite distribution and abundance (greatest occurrence per station) of Urophycis spp. collected during 30 autumn and winter cruises for the period Sep. 1971 - Feb. 1977.

Urophycis spp. Common Name: Hake species

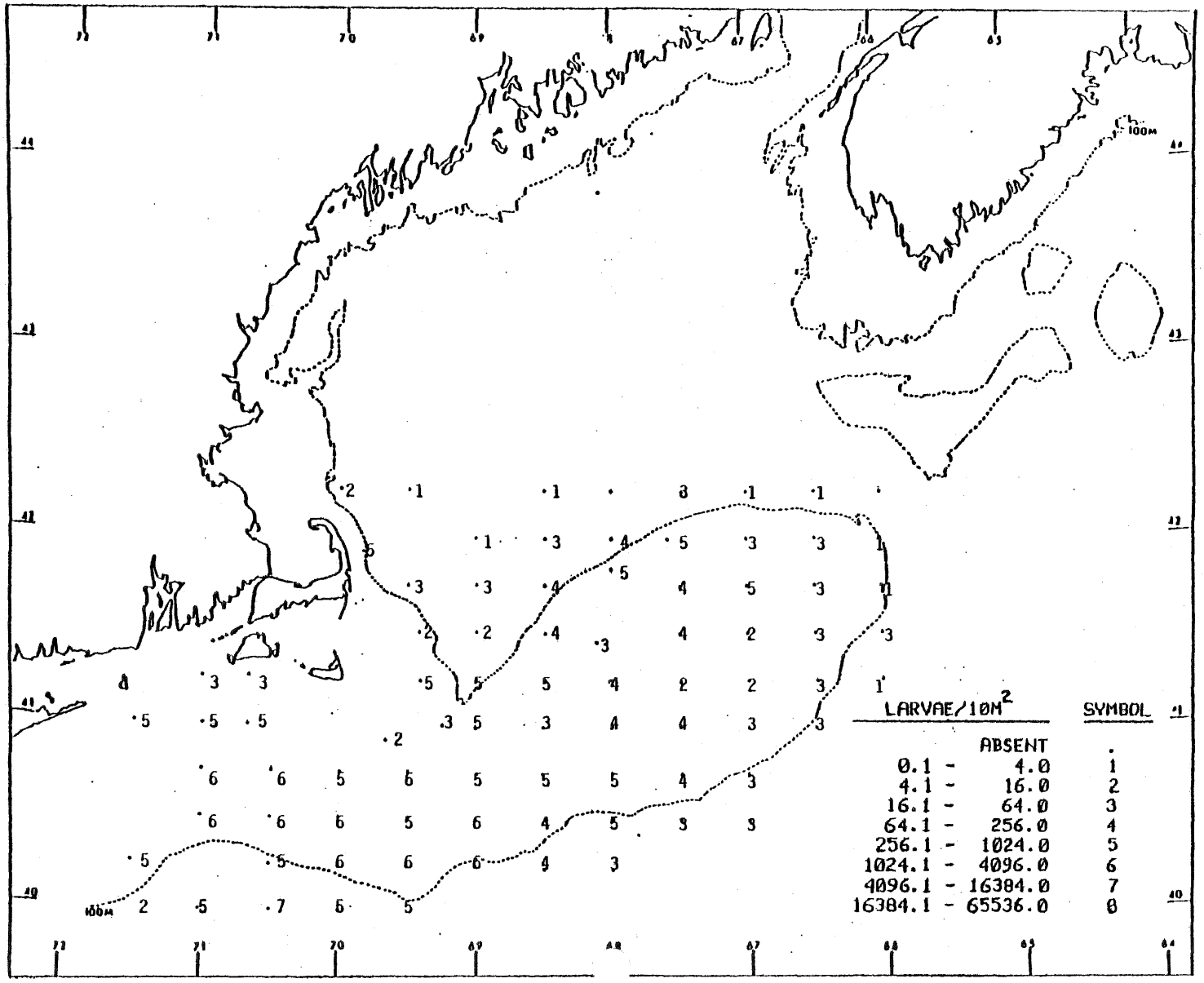


Table 111. Mean abundance (positive tows only) and mean length of *Urophycis* spp. by cruise.

Cruise	Middate	Number of Positive Tows	Mean no./ $10m^2$	Standard Deviation	Mean Length (mm)	Standard Deviation	Length Range
Delaware II 71-04	27 Sep. 1971	38	190.5	365.1	4.0	2.1	2 - 42
Viandra 71-01	17 Oct. 1971	31	17.1	34.9	5.8	4.4	2 - 40
Walther Herwig 71-01	05 Nov. 1971	6	2.9	2.8	4.0	0.8	2 - 5
Albatross IV 71-07	09 Dec. 1971	1	1.5	-	8.0	-	-
Argus 72-01	26 Sep. 1972	10	20.3	25.5	2.1	0.6	2 - 10
Wieczno 72-01	14 Oct. 1972	44	114.0	240.7	4.0	2.3	2 - 22
Argus 72-02	20 Oct. 1972	30	59.5	112.8	3.9	1.8	2 - 28
Anton Dohrn 72-01	05 Nov. 1972	30	10.2	16.2	4.8	2.6	2 - 23
Albatross IV 72-09	10 Dec. 1972	13	1.9	1.2	10.3	6.4	2 - 21
Cryos 73-01	19 Sep. 1973	21	56.9	84.3	3.4	1.8	2 - 14
Wieczno 73-40	09 Oct. 1973	53	323.2	463.2	4.7	2.6	2 - 30
Belogorsk 73-01	23 Oct. 1973	34	115.9	219.1	4.2	1.8	2 - 15
Walther Herwig 73-43	02 Nov. 1973	35	131.4	326.3	6.5	3.9	2 - 47
Albatross IV 73-09	13 Dec. 1973	11	3.7	2.6	9.2	9.9	2 - 40
Cryos 74-04	16 Sep. 1974	21	542.9	939.4	4.4	2.6	2 - 26
Prognoz 74-01	24 Oct. 1974	46	52.6	91.6	9.6	5.7	2 - 51
Anton Dohrn 74-01	19 Nov. 1974	17	5.0	6.0	8.9	9.3	2 - 45
Albatross IV 74-13	13 Dec. 1974	14	2.2	1.4	10.6	13.0	2 - 50
Belogorsk 75-02	01 Oct. 1975	31	49.9	153.7	4.0	3.7	2 - 44
Belogorsk 75-03	23 Oct. 1975	17	4.7	5.2	6.7	7.7	2 - 43
Anton Dohrn 75-187	09 Nov. 1975	14	2.0	0.9	10.6	12.5	2 - 54
Albatross IV 75-14	09 Dec. 1975	5	3.9	1.8	5.3	6.2	2 - 18
Albatross IV 76-01	16 Feb. 1976	3	4.2	2.2	20.9	10.2	4 - 36
Belogorsk 76-03	08 Oct. 1976	39	46.1	113.8	5.1	3.8	2 - 56
Wieczno 76-03	24 Oct. 1976	58	209.0	975.6	4.5	2.2	2 - 33
Anton Dohrn 76-02	22 Nov. 1976	22	4.3	4.0	11.0	9.8	2 - 53

Figure 112. Composite distribution and abundance (greatest occurrence per station) of Merluccius albidus collected during 30 autumn and winter cruises for the period Sep. 1971 - Feb. 1977.

Merluccius albidus (Mitchill) Common Name: Offshore hake

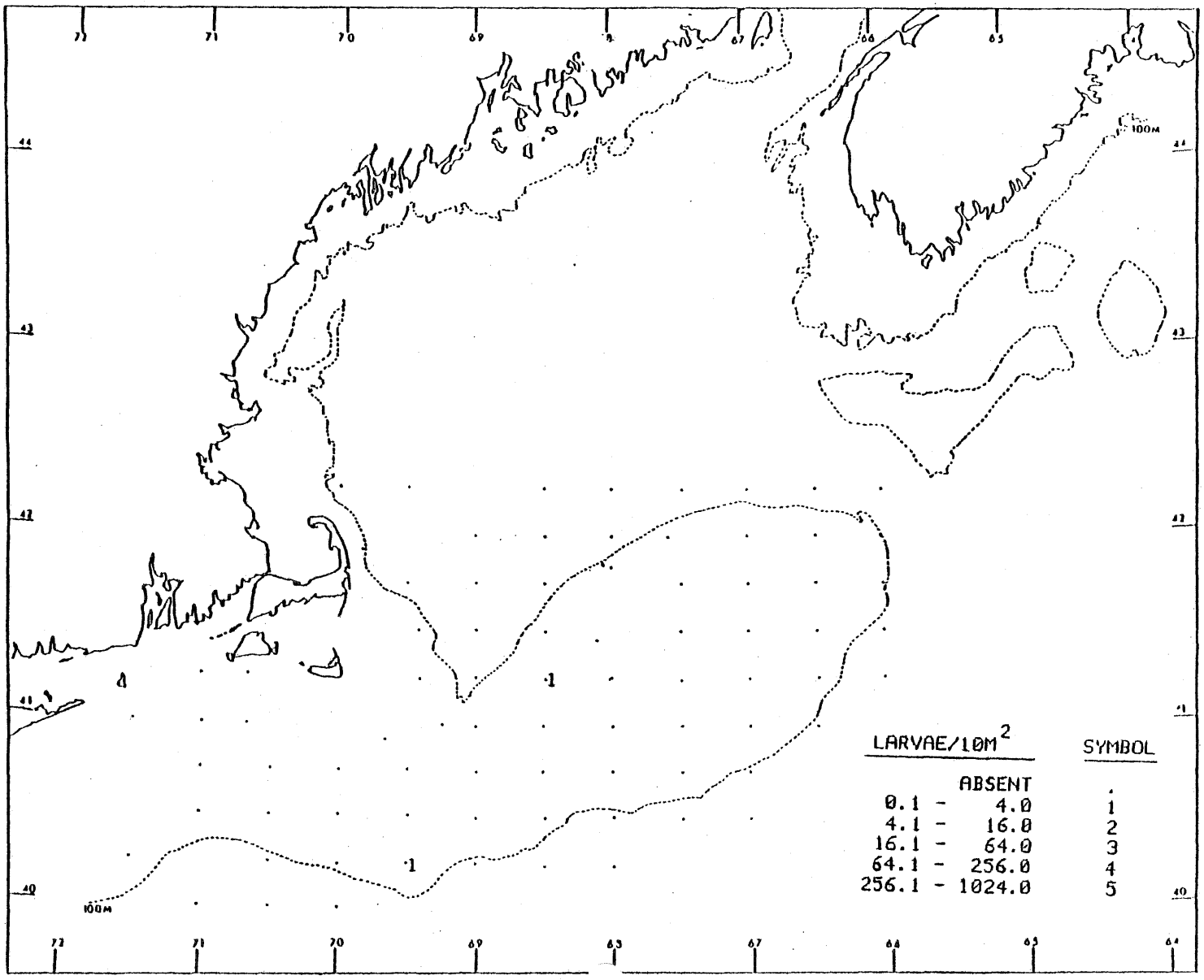


Table 112. Mean abundance (positive tows only) and mean length of *Merluccius albidus* by cruise.

Cruise	Middate	Number of Positive Tows	Mean no./ $10m^2$	Standard Deviation	Mean Length (mm)	Standard Deviation	Length Range
Albatross IV 72-09	10 Dec. 1972	1	1.5	-	52.0	-	-
Belogorsk 76-03	08 Oct. 1976	1	1.0	-	9.0	-	-

References:

Colton and Byron 1977
Fischer 1978
Grimm 1978
Leim and Scott 1966
Markle et al. 1980

Figure 113. Composite distribution and abundance (greatest occurrence per station) of Merluccius bilinearis collected during 30 autumn and winter cruises for the period Sep. 1971 - Feb. 1977.

Merluccius bilinearis (Mitchill) Common Name: Silver hake

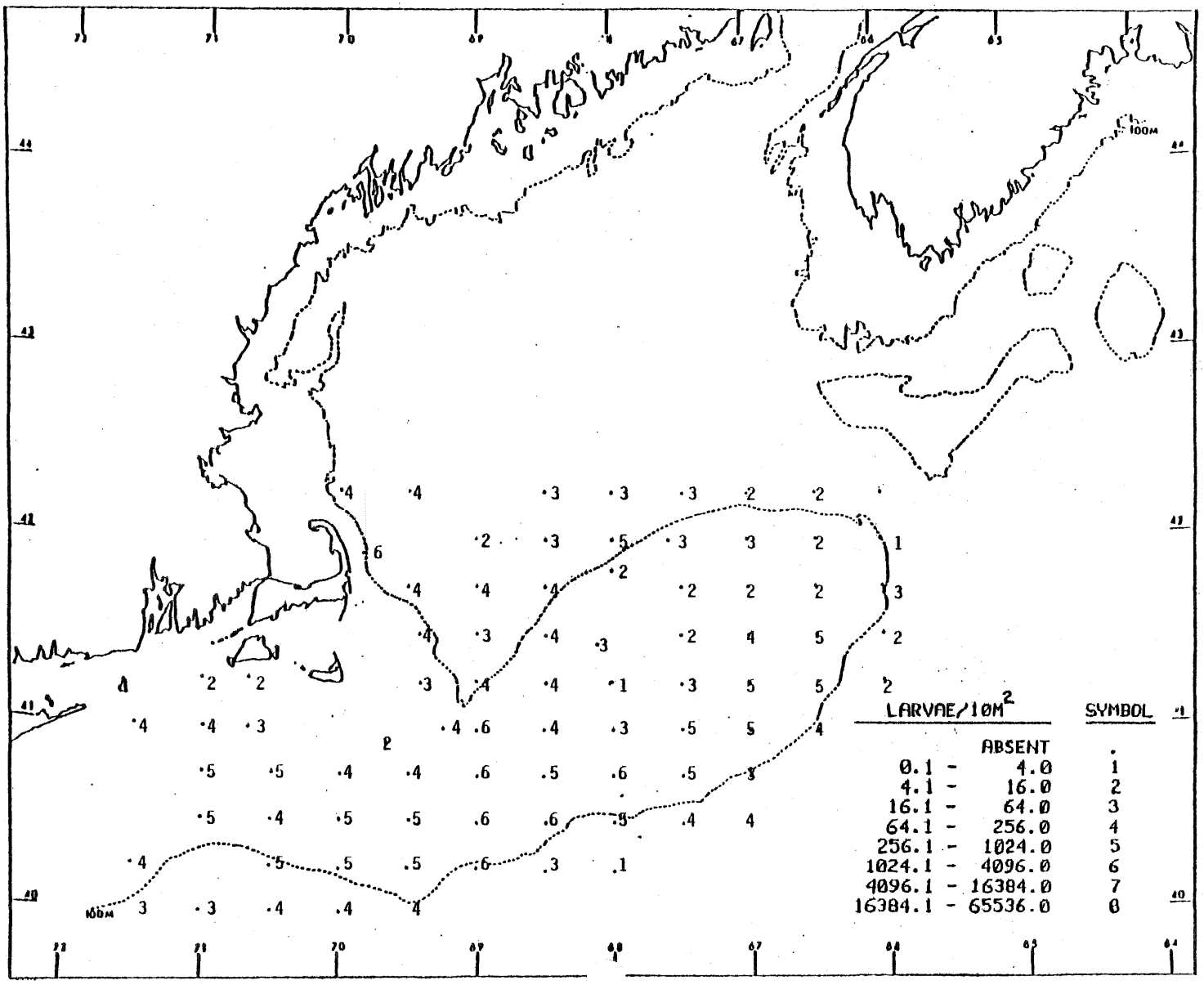


Table 113. Mean abundance (positive tows only) and mean length of *Merluccius bilinearis* by cruise.

Cruise	Middate	Number of Positive Tows	Mean no./ $10m^2$	Standard Deviation	Mean Length (mm)	Standard Deviation	Length Range
Delaware II 71-04	27 Sep. 1971	36	270.0	405.4	4.6	2.4	2 - 37
Viandra 71-01	17 Oct. 1971	34	37.8	51.6	7.4	4.5	2 - 43
Walther Herwig 71-01	05 Nov. 1971	10	38.4	80.5	2.8	1.3	2 - 16
Albatross IV 71-07	09 Dec. 1971	2	1.4	0.1	7.1	2.9	4 - 10
Argus 72-01	26 Sep. 1972	7	106.8	106.8	3.0	0.8	2 - 7
Wieczno 72-01	14 Oct. 1972	48	128.0	381.7	5.1	2.1	2 - 43
Argus 72-02	20 Oct. 1972	38	68.0	206.9	6.5	2.7	2 - 52
Anton Dohrn 72-01	05 Nov. 1972	34	23.8	28.4	7.1	5.7	2 - 51
Albatross IV 72-09	10 Dec. 1972	20	6.0	6.2	4.3	1.9	2 - 8
Cryos 73-01	19 Sep. 1973	21	47.7	86.9	5.9	3.1	2 - 24
Wieczno 73-40	09 Oct. 1973	55	89.9	189.7	5.8	3.1	2 - 46
Belogorsk 73-01	23 Oct. 1973	42	49.4	75.3	7.5	4.2	2 - 34
Walther Herwig 73-43	02 Nov. 1973	53	49.1	66.7	10.8	9.3	2 - 52
Albatross IV 73-09	13 Dec. 1973	18	17.1	28.1	6.4	3.3	2 - 30
Albatross IV 74-02	14 Feb. 1974	1	1.7	-	75.0	-	-
Cryos 74-04	16 Sep. 1974	29	320.8	705.5	6.9	4.6	2 - 66
Prognoz 74-01	24 Oct. 1974	50	39.0	68.3	6.4	4.4	2 - 47
Anton Dohrn 74-01	19 Nov. 1974	37	26.7	59.5	7.3	4.7	2 - 60
Albatross IV 74-13	13 Dec. 1974	20	6.8	7.1	8.8	8.2	2 - 70
Albatross IV 75-02	14 Feb. 1975	1	1.3	-	77.0	-	-
Belogorsk 75-02	01 Oct. 1975	48	41.4	82.4	8.2	6.3	2 - 45
Belogorsk 75-03	23 Oct. 1975	45	15.7	19.8	5.9	3.9	2 - 34
Anton Dohrn 75-187	09 Nov. 1975	43	8.4	10.1	9.0	7.9	3 - 62
Albatross IV 75-14	09 Dec. 1975	19	10.8	10.5	7.4	4.1	3 - 22
Albatross IV 76-01	16 Feb. 1976	8	3.8	4.5	12.8	19.2	3 - 67
Belogorsk 76-03	08 Oct. 1976	39	73.5	223.0	7.5	3.6	2 - 26
Wieczno 76-03	24 Oct. 1976	60	71.4	174.6	5.1	3.5	2 - 27
Anton Dohrn 76-02	22 Nov. 1976	30	32.2	45.6	6.3	4.8	2 - 50
Researcher 76-01	04 Dec. 1976	27	25.5	36.8	5.8	2.9	2 - 22
Mt. Mitchell 77-01	18 Feb. 1977	1	1.1	-	36.0	-	-

Figure 114. Composite distribution and abundance (greatest occurrence per station) of Macrouridae collected during 30 autumn and winter cruises for the period Sep. 1971 - Feb. 1977.

Macrouridae Common Name: Grenadiers

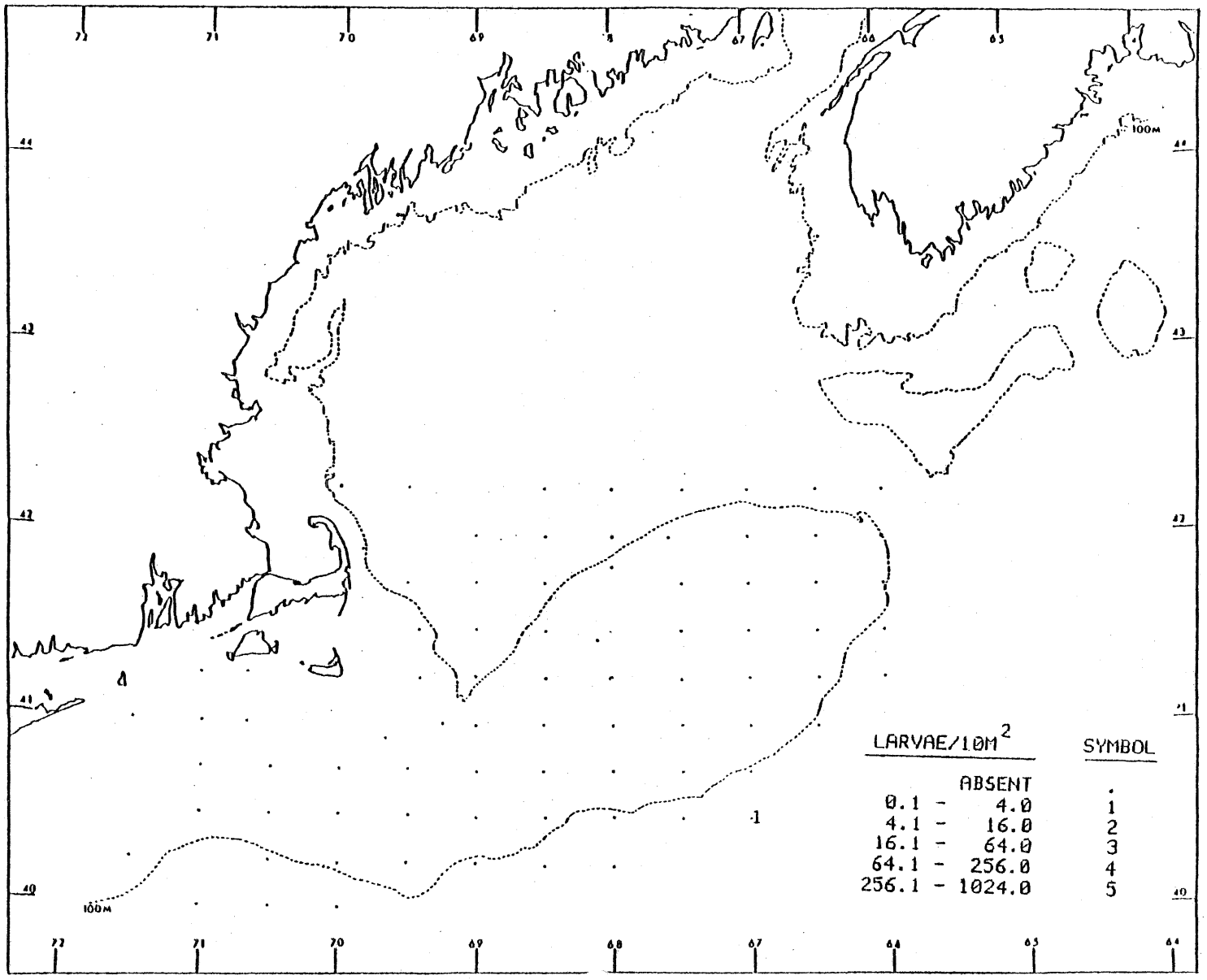


Table 114. Mean abundance (positive tows only) and mean length of Macrouridae by cruise.

Cruise	Middate	Number of Positive Tows	Mean no./ $10m^2$	Standard Deviation	Mean Length (mm)	Standard Deviation	Length Range
Belogorsk 73-01	23 Oct. 1973	1	1.3	-	9.0	-	-

References:

Cohen 1973
Colton and Byron 1977
Fischer 1978
Joakimsson 1978
Jordan et al. 1962
Leim and Scott 1966

Figure 115. Composite distribution and abundance (greatest occurrence per station) of Nezumia sp. collected during 30 autumn and winter cruises for the period Sep. 1971 - Feb. 1977.

Nezumia sp. Common Name:

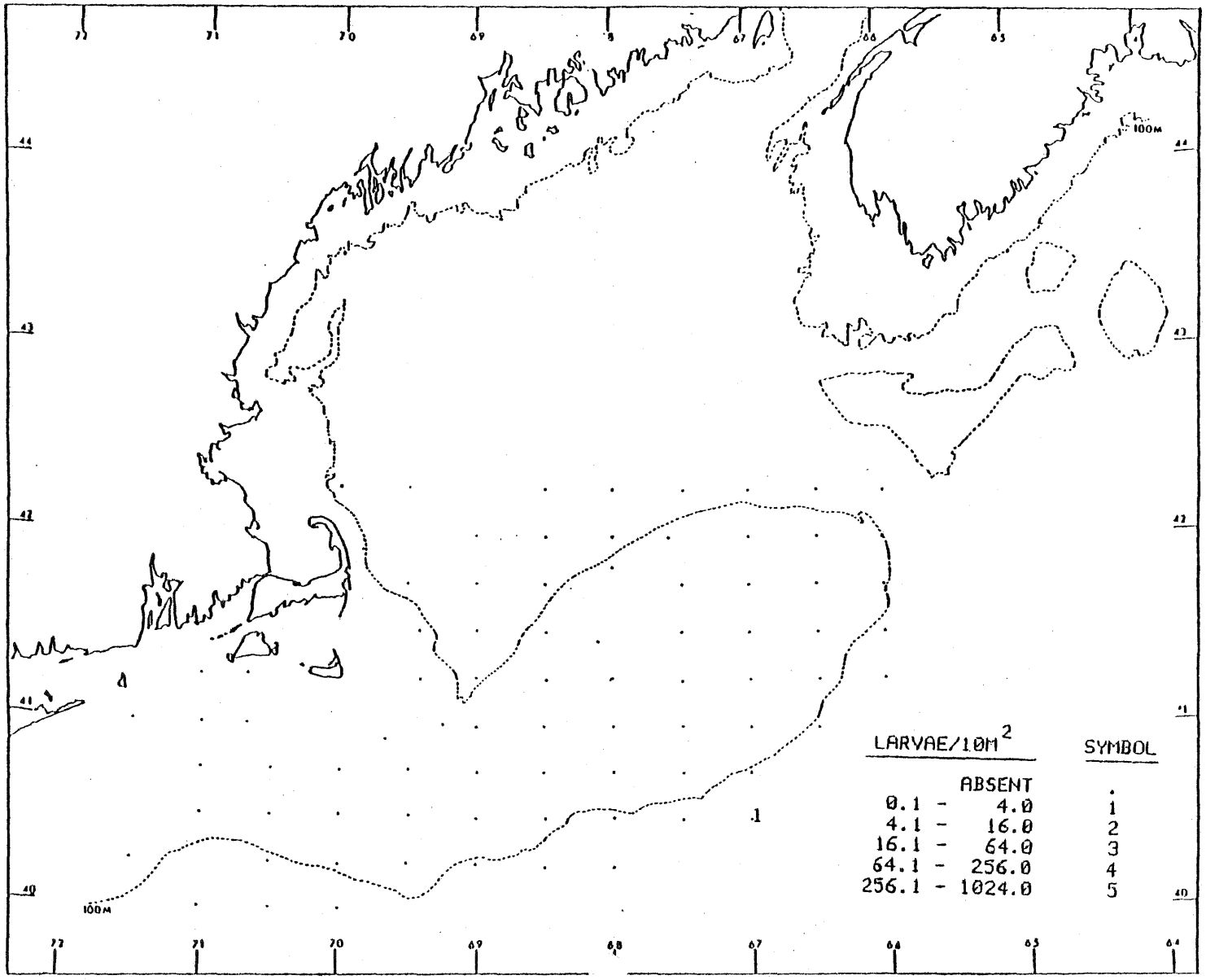


Table 115. Mean abundance (positive tows only) and mean length of *Nezumia* sp. by cruise.

Cruise	Middate	Number of Positive Tows	Mean no./ $10m^2$	Standard Deviation	Mean Length (mm)	Standard Deviation	Length Range
Delaware II 71-04	27 Sep. 1971	1	2.1	-	19.0	-	-

References:

Cohen 1973
Fischer 1978
Leim and Scott 1966

Figure 116. Composite distribution and abundance (greatest occurrence per station) of Zoarcidae collected during 30 autumn and winter cruises for the period Sep. 1971 - Feb. 1977.

Zoarcidae

Common Name: Eelpouts

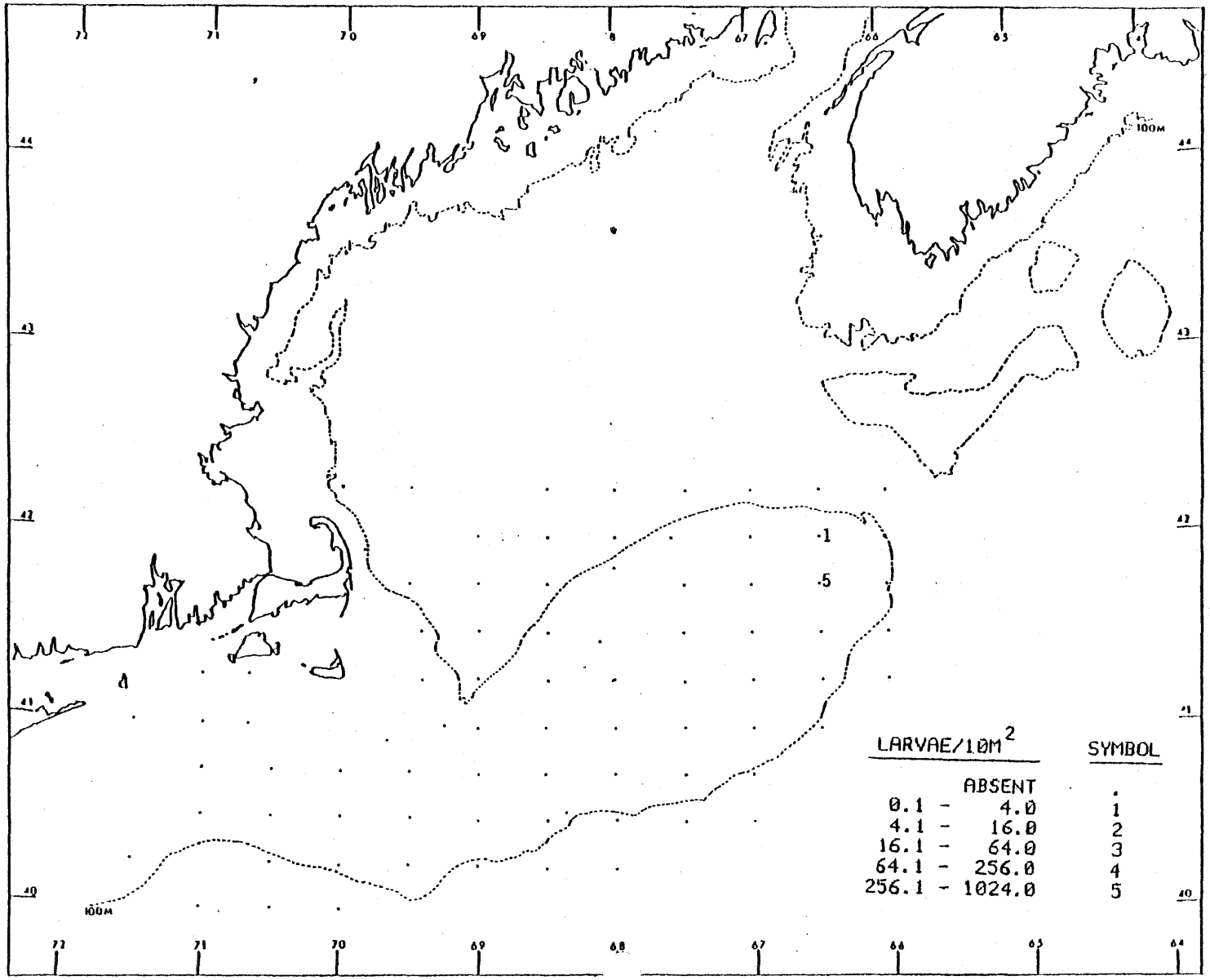


Table 116. Mean abundance (positive tows only) and mean length of Zoarcidae by cruise.

Cruise	Middate	Number of Positive Tows	Mean no./ $10m^2$	Standard Deviation	Mean Length (mm)	Standard Deviation	Length Range
Anton Dohrn 75-187	09 Nov. 1975	2	241.9	337.3	48.1	0.9	48 - 62

References:

Colton and Byron 1977
Jordan et al. 1962
Leim and Scott 1966

Figure 117. Composite distribution and abundance (greatest occurrence per station) of Macrozoarces americanus collected during 30 autumn and winter cruises for the period Sep. 1971 - Feb. 1977.

Macrozoarces americanus (Bloch and Schneider) Common Name: Ocean pout

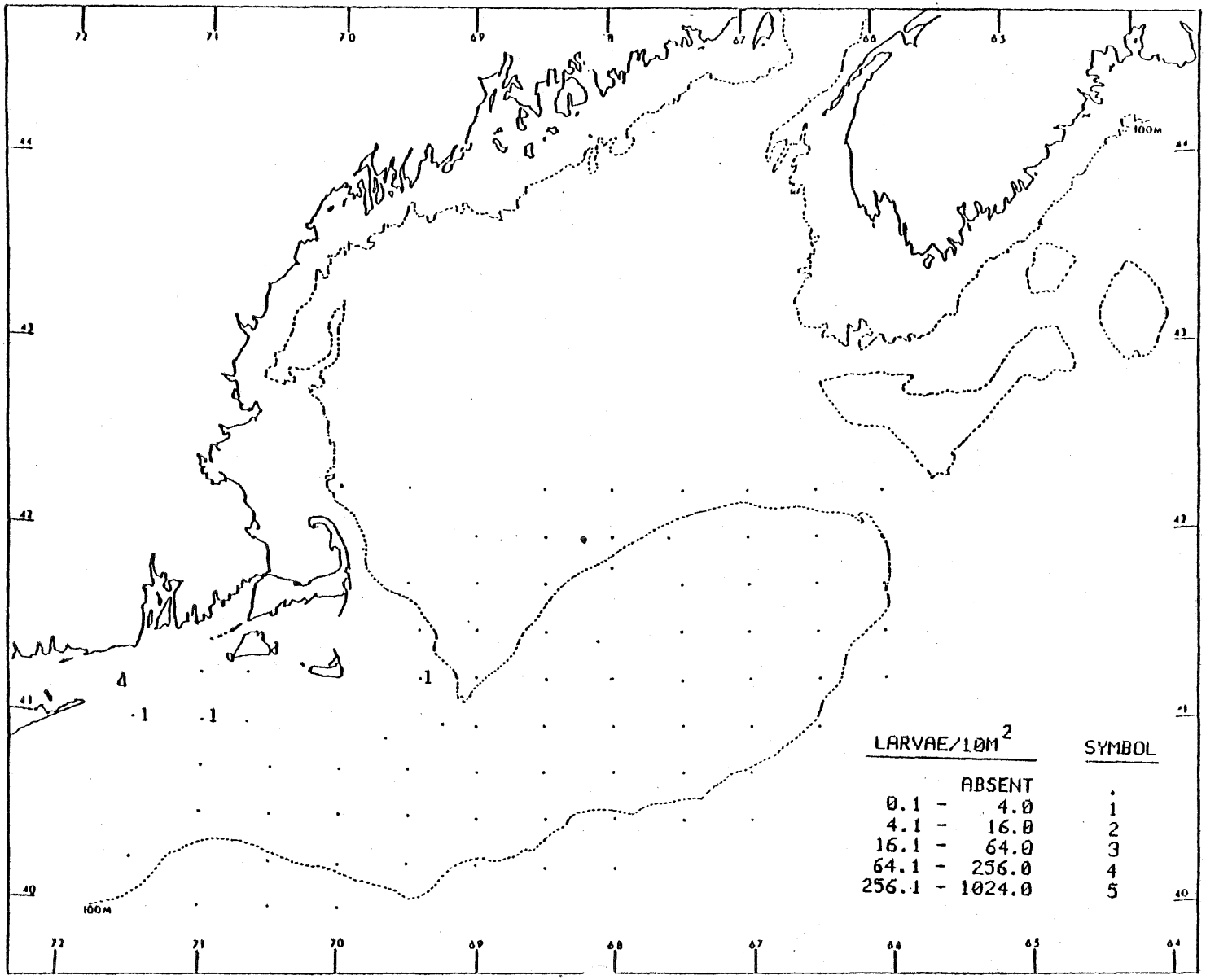


Table 117. Mean abundance (positive tows only) and mean length of *Macrozoarces americanus* by cruise.

Cruise	Middate	Number of Positive Tows	Mean no./ $10m^2$	Standard Deviation	Mean Length (mm)	Standard Deviation	Length Range
Mt. Mitchell 77-01	18 Feb. 1977	3	2.4	1.3	34.6	1.5	33 - 36

References:

Colton and Byron 1977
Joakimsson 1978
Jordan et al. 1962
Leim and Scott 1966

Figure 118. Composite distribution and abundance (greatest occurrence per station) of Carapidae collected during 30 autumn and winter cruises for the period Sep. 1971 - Feb. 1977.

Carapidae

Common Name: Pearlfishes

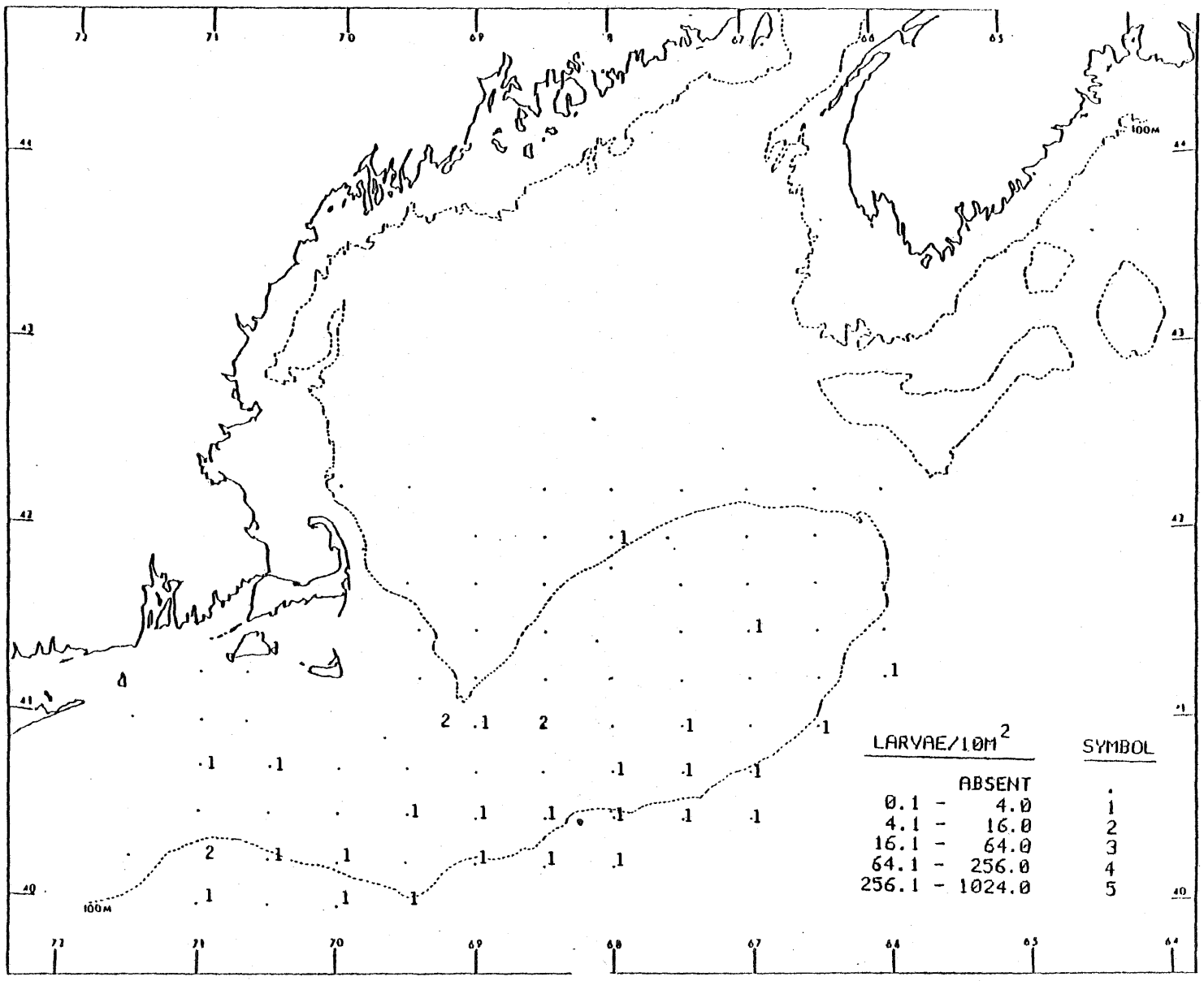


Table 118. Mean abundance (positive tows only) and mean length of Carapidae by cruise.

Cruise	Middate	Number of Positive Tows	Mean no./ $10m^2$	Standard Deviation	Mean Length (mm)	Standard Deviation	Length Range
Delaware II 71-04	27 Sep. 1971	7	1.4	0.6	60.7	9.1	39 - 70
Albatross IV 71-07	09 Dec. 1971	1	0.8	-	49.0	-	-
Wieczno 72-01	14 Oct. 1972	1	1.1	-	65.0	-	-
Wieczno 73-40	09 Oct. 1973	2	2.1	0.2	59.4	6.9	53 - 65
Belogorsk 73-01	23 Oct. 1973	2	1.4	0.3	51.7	2.5	50 - 54
Walther Herwig 73-43	02 Nov. 1973	9	2.2	1.9	54.3	20.2	8 - 74
Albatross IV 73-09	13 Dec. 1973	5	2.9	1.6	58.8	10.7	44 - 75
Cryos 74-04	16 Sep. 1974	3	2.5	0.8	52.5	23.0	27 - 90
Prognoz 74-01	24 Oct. 1974	6	1.5	0.5	58.8	7.9	48 - 72
Anton Dohrn 74-01	19 Nov. 1974	1	1.6	-	61.0	-	-
Albatross IV 74-13	13 Dec. 1974	1	2.5	-	29.0	-	-
Belogorsk 75-02	01 Oct. 1975	2	1.4	0.5	56.9	1.8	55 - 58
Anton Dohrn 75-187	09 Nov. 1975	1	1.5	-	59.0	-	-
Albatross IV 75-14	09 Dec. 1975	2	1.9	0.2	57.9	1.2	57 - 59
Wieczno 76-03	24 Oct. 1976	2	1.4	0.1	60.1	2.5	58 - 62
Anton Dohrn 76-02	22 Nov. 1976	4	2.9	1.0	36.8	13.8	1 - 50
Researcher 76-01	04 Dec. 1976	5	1.9	1.1	43.7	8.8	35 - 56

References:

Berrien et al. 1978
Cohen and Nielson 1978
Colton and Byron 1977
Grimm 1978
Joakimsson 1978

Figure 119. Composite distribution and abundance (greatest occurrence per station) of Ophidiidae collected during 30 autumn and winter cruises for the period Sep. 1971 - Feb. 1977.

Ophidiidae

Common Name: Cusk-eels

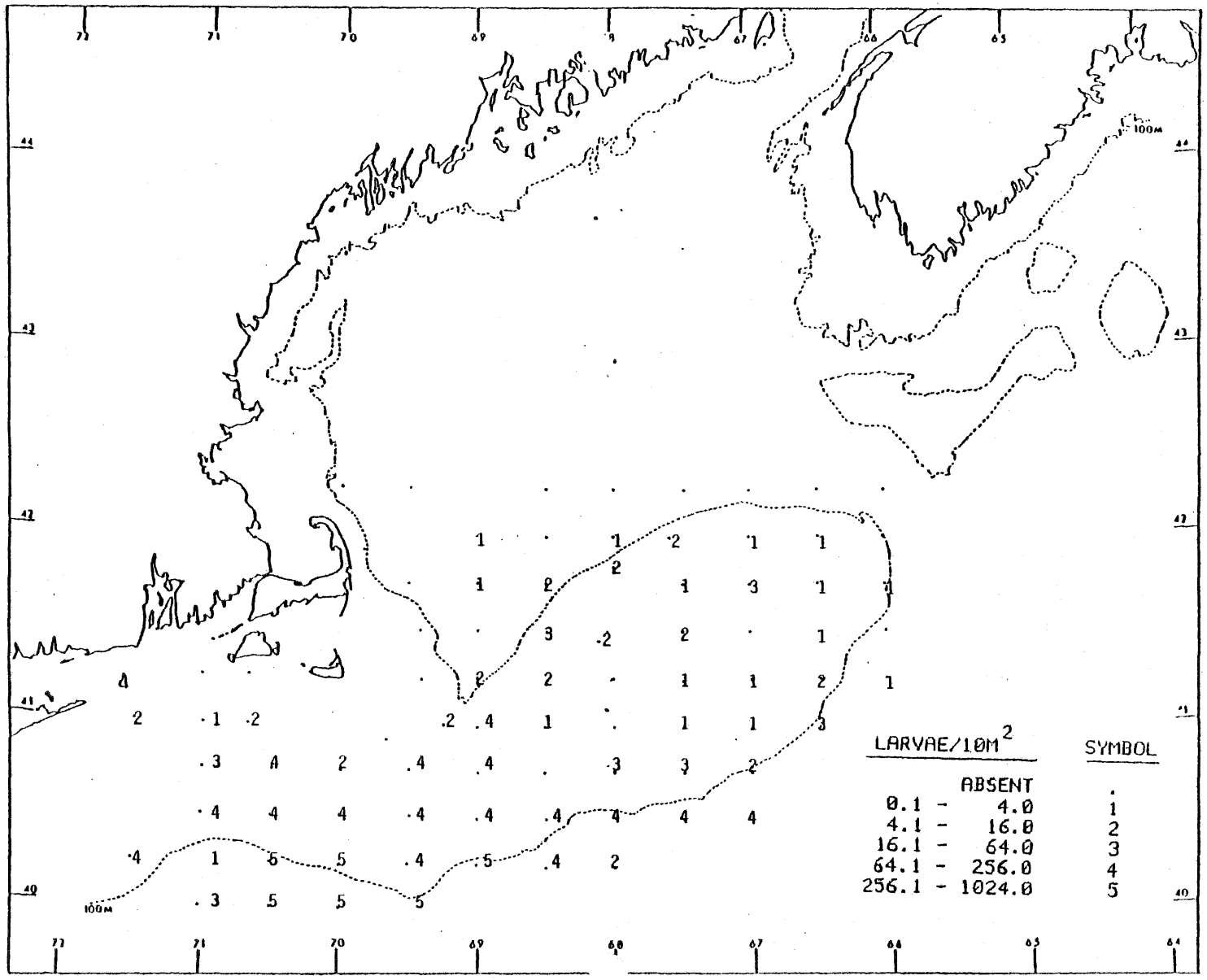


Table 119. Mean abundance (positive tows only) and mean length of Ophidiidae by cruise.

Cruise	Middate	Number of Positive Tows	Mean no./ $10m^2$	Standard Deviation	Mean Length (mm)	Standard Deviation	Length Range
Delaware II 71-04	27 Sep. 1971	25	76.7	186.9	4.9	3.0	2 - 41
Viandra 71-01	17 Oct. 1971	17	4.5	7.2	12.0	6.7	3 - 32
Walther Herwig 71-01	05 Nov. 1971	2	2.5	2.4	10.9	1.5	8 - 12
Argus 72-01	26 Sep. 1972	2	3.8	0.8	3.0	0	-
Wieczno 72-01	14 Oct. 1972	20	12.4	14.2	6.8	5.8	2 - 40
Argus 72-02	20 Oct. 1972	11	16.9	19.1	7.3	2.1	5 - 14
Anton Dohrn 72-01	04 Nov. 1972	11	4.0	5.1	13.4	11.0	3 - 46
Cryos 73-01	19 Sep. 1973	4	15.4	22.9	3.3	1.5	2 - 10
Wieczno 73-40	09 Oct. 1973	39	53.4	76.2	6.5	3.9	2 - 40
Belogorsk 73-01	23 Oct. 1973	23	62.5	160.4	8.4	4.9	2 - 43
Walther Herwig 73-43	02 Nov. 1973	17	53.2	82.1	11.0	7.0	3 - 36
Albatross IV 73-09	13 Dec. 1973	2	2.6	0.4	41.1	7.2	34 - 47
Cryos 74-04	16 Sep. 1974	11	86.7	76.6	7.5	6.5	2 - 44
Prognoz 74-01	24 Oct. 1974	22	28.1	55.5	8.1	4.5	2 - 42
Anton Dohrn 74-01	19 Nov. 1974	7	4.9	5.8	20.2	15.6	3 - 47
Albatross IV 74-13	13 Dec. 1974	6	1.8	0.9	50.2	19.0	10 - 80
Belogorsk 75-02	01 Oct. 1975	3	11.7	17.7	7.3	4.3	4 - 25
Belogorsk 75-03	23 Oct. 1975	3	1.5	0.1	36.3	7.5	27 - 41
Belogorsk 76-03	08 Oct. 1976	18	19.8	59.5	6.4	5.5	2 - 41
Wieczno 76-03	24 Oct. 1976	28	92.0	157.1	7.8	4.5	2 - 36
Anton Dohrn 76-02	22 Nov. 1976	8	3.0	1.7	27.9	10.1	13 - 43
Researcher 76-01	04 Dec. 1976	1	1.9	-	33.0	-	-

References:

Berrien et al. 1978
Cohen and Nielson 1978
Colton and Byron 1977
Grimm 1978

Figure 120. Composite distribution and abundance (greatest occurrence per station) of Lephophidium sp. collected during 30 autumn and winter cruises for the period Sep. 1971 - Feb. 1977.

Lephophidium sp. Common Name:

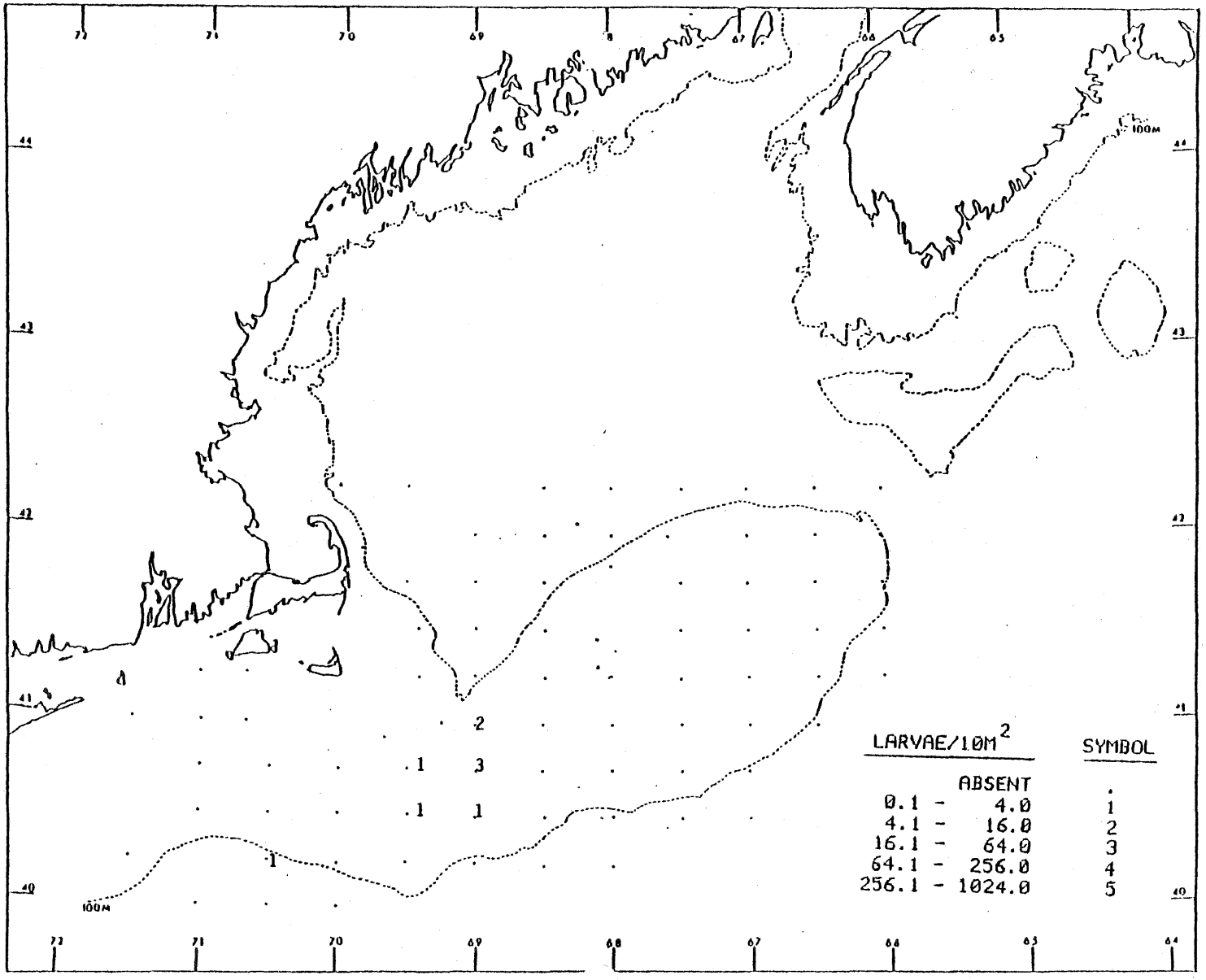


Table 120. Mean abundance (positive tows only) and mean length of *Lephophidium* sp. by cruise.

Cruise	Middate	Number of Positive Tows	Standard Deviation	Mean no./ $10m^2$	Mean Length (mm)	Standard Deviation	Length Range
Cryos 73-01	19 Sep. 1973	3	16.4	16.0	10.7	6.1	5 - 24
Belogorsk 75-02	01 Oct. 1975	2	2.6	1.0	16.4	4.6	13 - 23
Anton Dohrn 76-02	22 Nov. 1976	1	2.0	-	33.0	-	-

References:

Cohen and Nielson 1978
Fischer 1978
Joakimsson 1978

Figure 121. Composite distribution and abundance (greatest occurrence per station) of Exocoetidae collected during 30 autumn and winter cruises for the period Sep. 1971 - Feb. 1977.

Exocoetidae Common Name: Flyingfishes

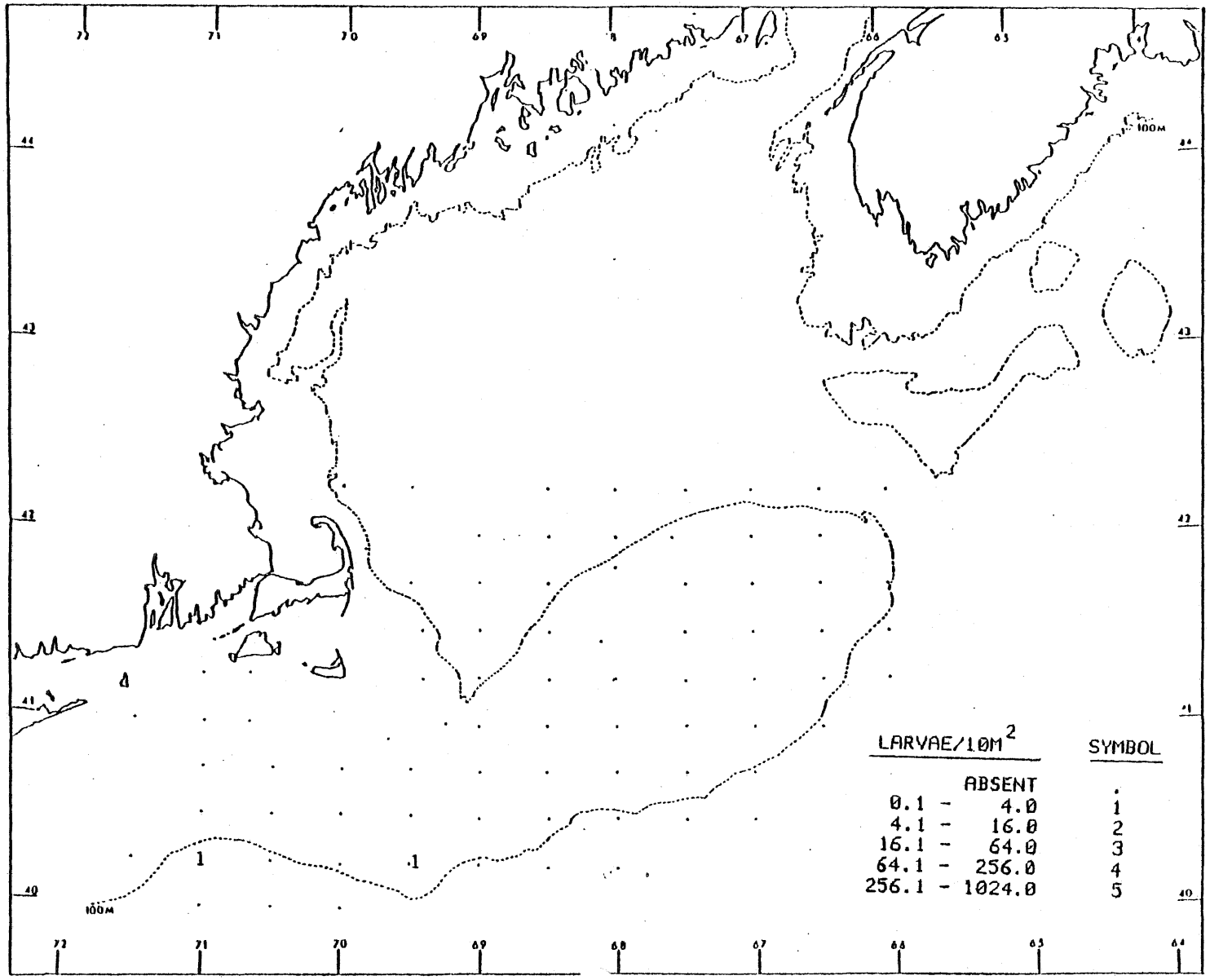


Table 121. Mean abundance (positive tows only) and mean length of Exocoetidae by cruise.

Cruise	Middate	Number of Positive Tows	Mean no./ $10m^2$	Standard Deviation	Mean Length (mm)	Standard Deviation	Length Range
Wieczno 73-40	09 Oct. 1973	2	1.6	0.4	8.0	0	-

References:

Berrien et al. 1978
Fischer 1978
Jordan et al. 1962
Leim and Scott 1966

Figure 122. Composite distribution and abundance (greatest occurrence per station) of Scomberesocidae collected during 30 autumn and winter cruises for the period Sep. 1971 - Feb. 1977.

Scomberesocidae

Common Name: Sauries

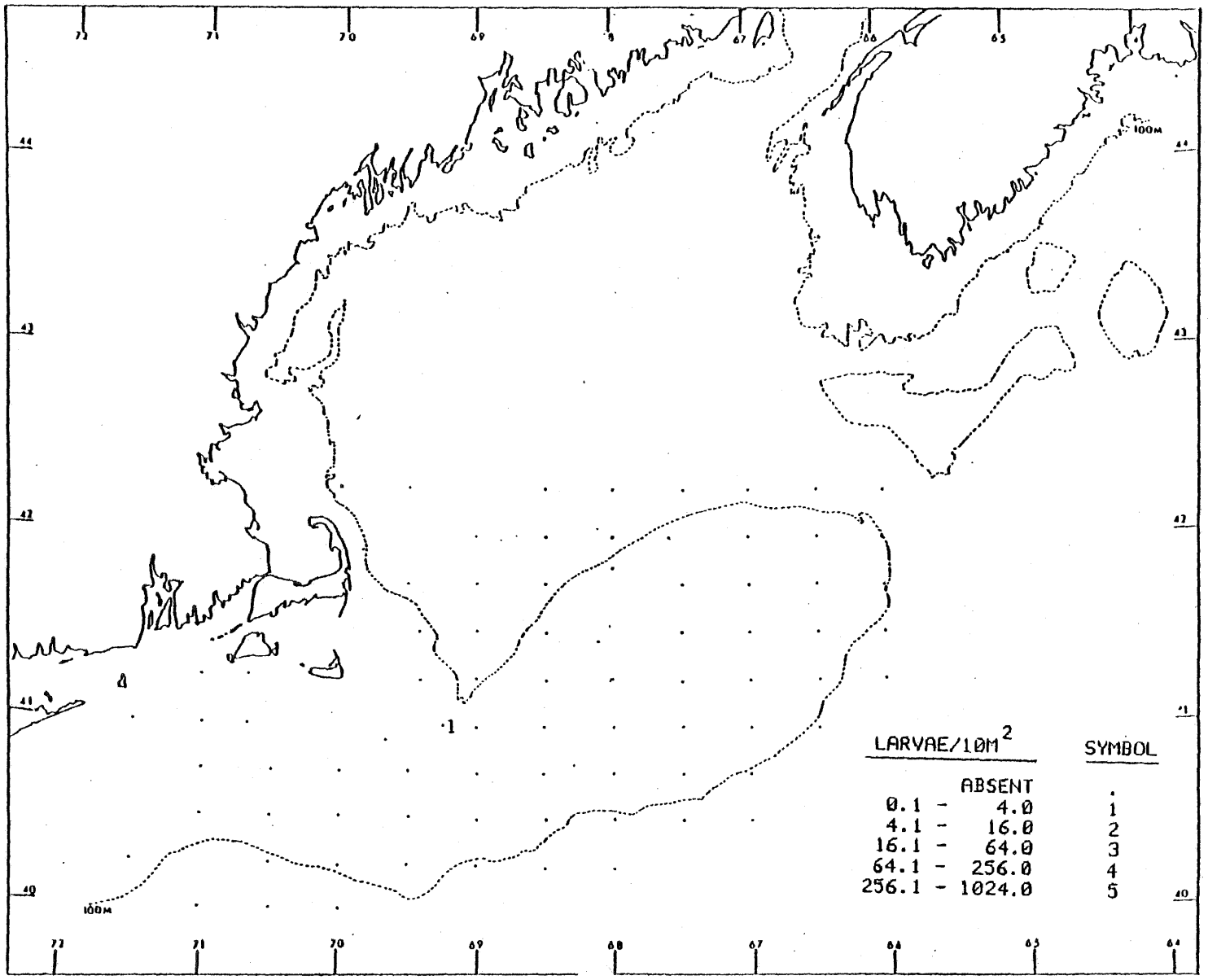


Table 122. Mean abundance (positive tows only) and mean length of Scomberesocidae by cruise.

Cruise	Middate	Number of Positive Tows	Mean no./ $10m^2$	Standard Deviation	Mean Length (mm)	Standard Deviation	Length Range
Wieczno 73-40	09 Oct. 1973	1	2.2	-	7.0	-	-

References:

Colton and Byron 1977
Fischer 1978
Jordan et al. 1962

Figure 123. Composite distribution and abundance (greatest occurrence per station) of Scomberesox saurus collected during 30 autumn and winter cruises for the period Sep. 1971 - Feb. 1977

Scomberesox saurus (Walbaum) Common Name: Atlantic saury

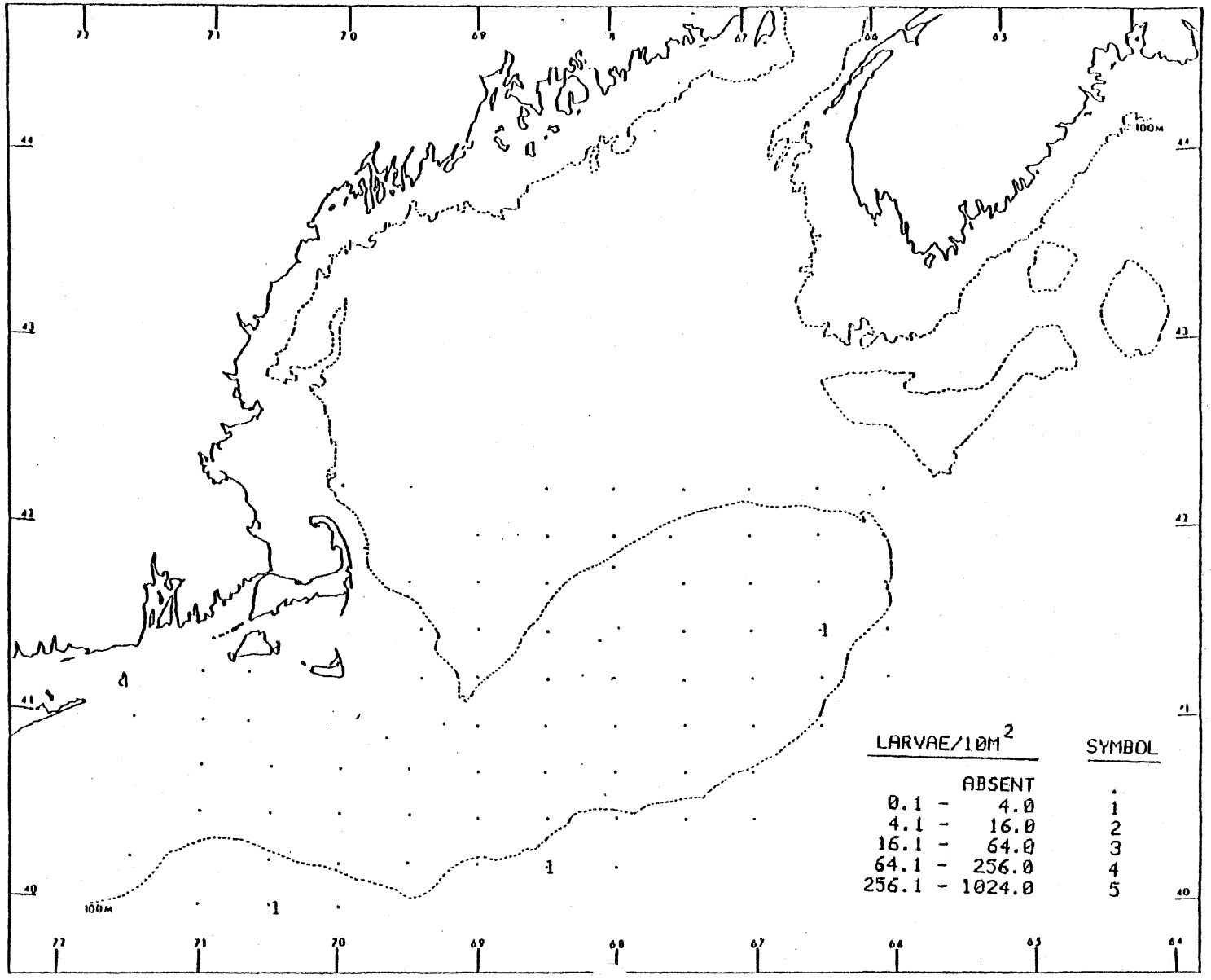


Table 123. Mean abundance (positive tows only) and mean length of *Scomberesox saurus* by cruise.

Cruise	Middate	Number of Positive Tows	Mean no./ $10m^2$	Standard Deviation	Mean Length (mm)	Standard Deviation	Length Range
Albatross IV 72-09	10 Dec. 1972	1	2.9	-	10.0	-	-
Prognoz 74-01	24 Oct. 1974	1	2.4	-	8.0	-	-
Wieczno 76-03	24 Oct. 1976	1	1.2	-	28.0	-	-

References:

Colton and Byron 1977
Fischer 1978
Joakimsson 1978
Jordan et al. 1962
Leim and Scott 1966

Figure 124. Composite distribution and abundance (greatest occurrence per station) of Fistularia villosa collected during 30 autumn and winter cruises for the period Sep. 1971 - Feb. 1977.

Fistularia villosa Klunzinger Common Name: Flutemouth

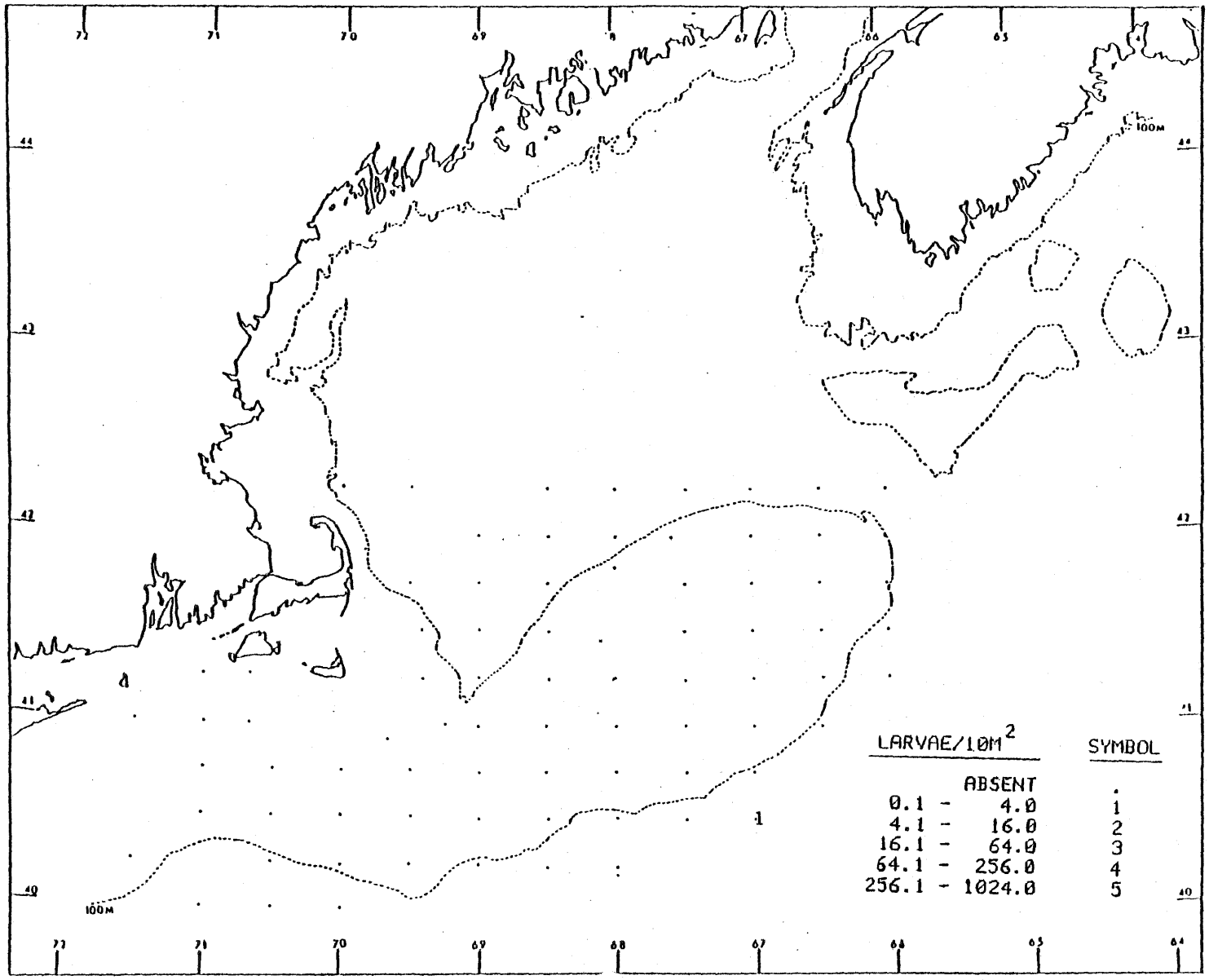


Table 124. Mean abundance (positive tows only) and mean length of *Fistularia villosa* by cruise.

Cruise	Middate	Number of Positive Tows	Mean no./ $10m^2$	Standard Deviation	Mean Length (mm)	Standard Deviation	Length Range
Belogorsk 73-01	23 Oct. 1973	1	1.3	-	19.0	-	-

References:

Berrien et al. 1978
Jordan et al. 1962

Figure 125. Composite distribution and abundance (greatest occurrence per station) of Gasterosteus aculeatus collected during 30 autumn and winter cruises for the period Sep. 1971 - Feb. 1977.

Gasterosteus aculeatus Linnaeus Common Name: Three-spined stickleback

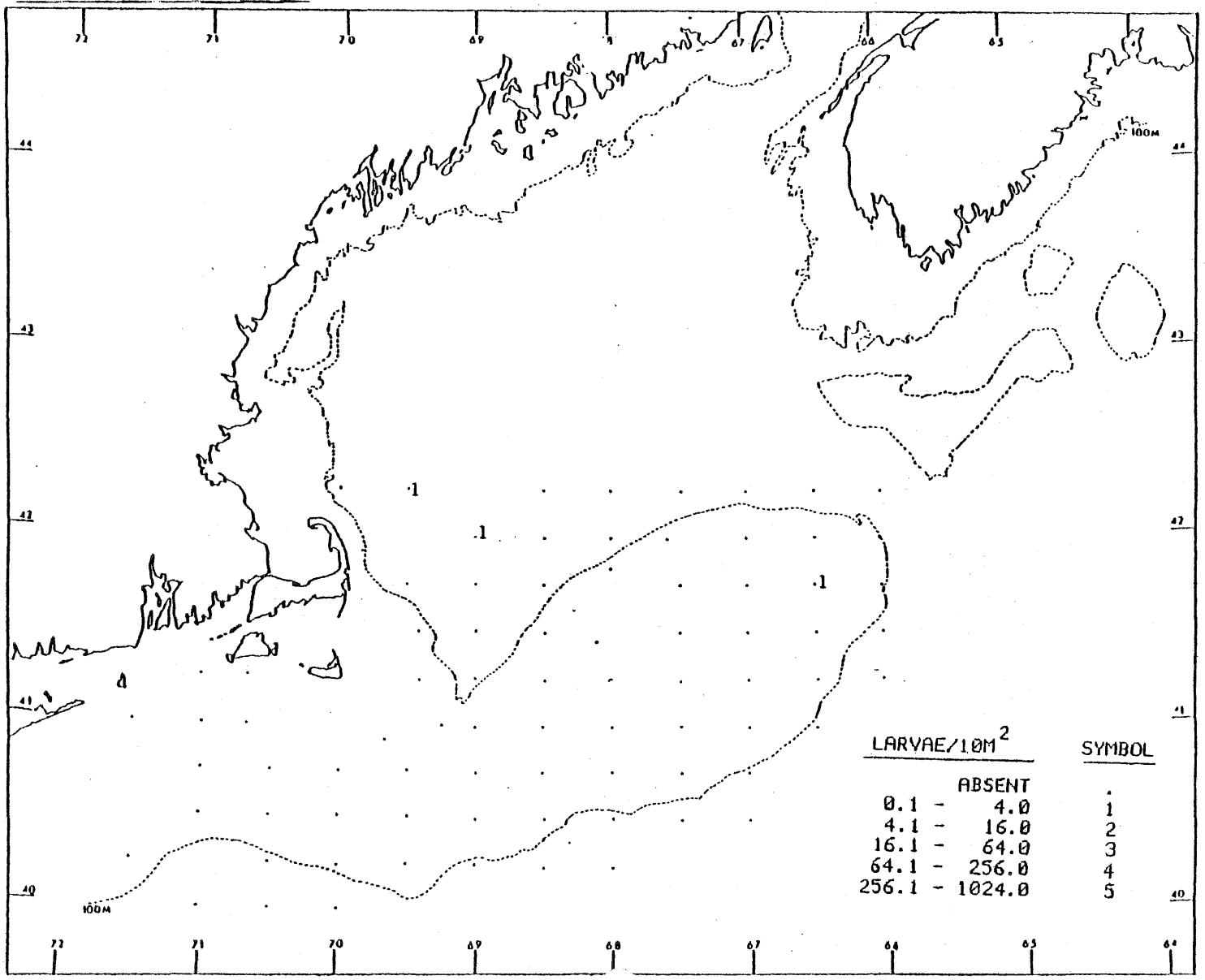


Table 125. Mean abundance (positive tows only) and mean length of *Gasterosteus aculeatus* by cruise.

Cruise	Middate	Number of Positive Tows	Mean no./ $10m^2$	Standard Deviation	Mean Length (mm)	Standard Deviation	Length Range
Anton Dohrn 72-01	05 Nov. 1972	1	1.3	-	42.0	-	-
Cryos 73-01	19 Sep. 1973	1	1.1	-	51.0	-	-
Albatross IV 73-09	13 Dec. 1973	1	2.5	-	46.0	-	-

References:

Dunbar and hildebrand 1952
Jordan et al. 1962
Leim and Scott 1966

Figure 126. Composite distribution and abundance (greatest occurrence per station) of Syngnathidae collected during 30 autumn and winter cruises for the period Sep. 1971 - Feb. 1977.

Syngnathidae

Common Name: Pipefishes and seahorses

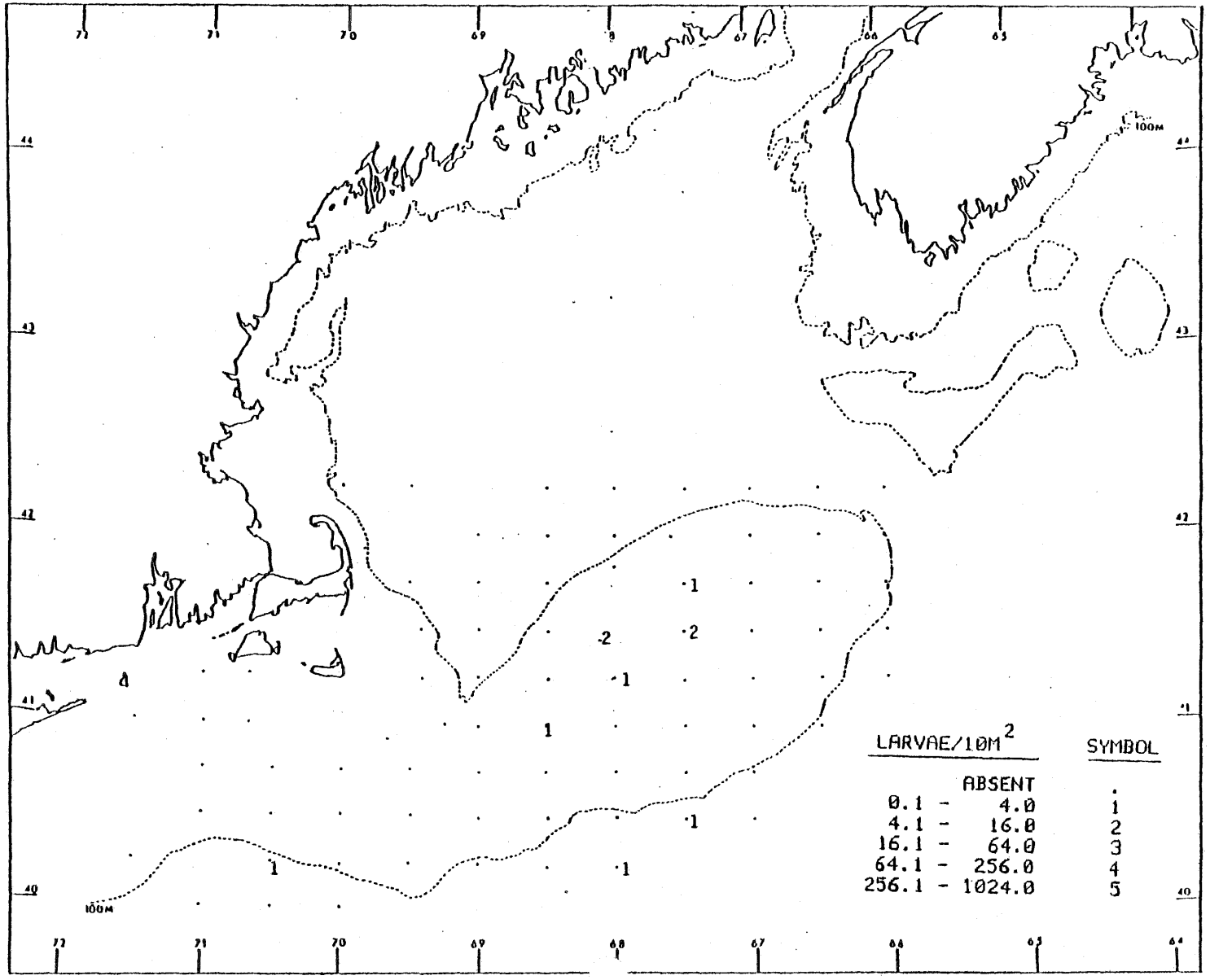


Table 126. Mean abundance (positive tows only) and mean length of Syngnathidae by cruise.

Cruise	Middate	Number of Positive Tows	Mean no./ $10m^2$	Standard Deviation	Mean Length (mm)	Standard Deviation	Length Range
Wieczno 72-01	14 Oct. 1972	1	1.2	-	24.0	-	-
Wieczno 73-40	09 Oct. 1973	1	1.4	-	90.0	-	-
Prognoz 74-01	24 Oct. 1974	1	1.1	-	87.0	-	-
Anton Dohrn 74-01	19 Nov. 1974	1	1.8	-	12.0	-	-
Albatross IV 74-13	13 Dec. 1974	2	1.4	0.2	34.3	3.8	31 - 37
Belogorsk 75-02	01 Oct. 1975	2	5.1	0.4	67.1	14.0	45 - 90

References:

Berrien et al. 1978
Colton and Byron 1977
Jordan et al. 1962

Figure 127. Composite distribution and abundance (greatest occurrence per station) of Syngnathus fuscus collected during 30 autumn and winter cruises for the period Sep. 1971 - Feb. 1977.

Syngnathus fuscus Storer Common Name: Northern pipefish

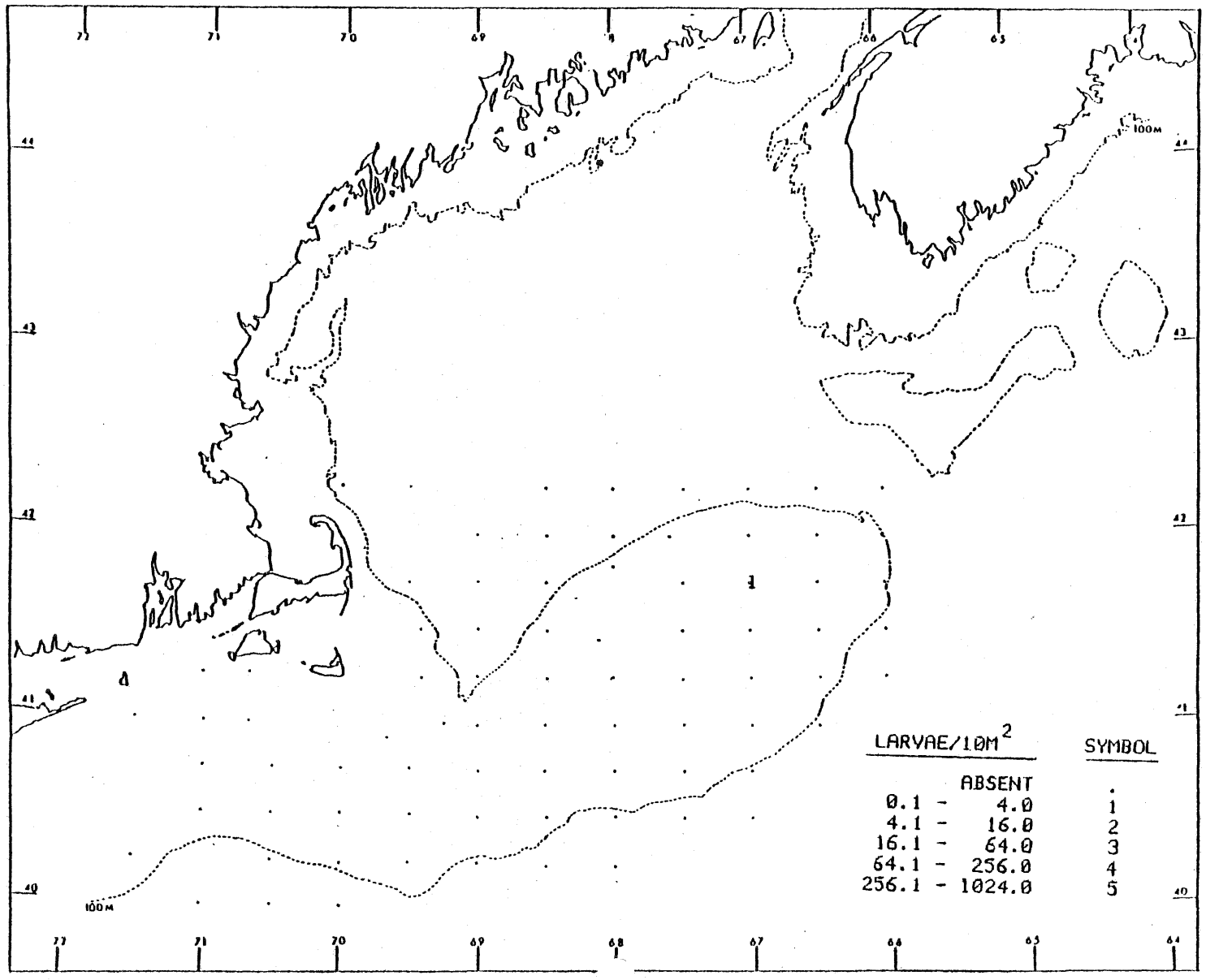


Table 127. Mean abundance (positive tows only) and mean length of *Syngnathus fuscus* by cruise.

Cruise	Middate	Number of Positive Tows	Mean no./ $10m^2$	Standard Deviation	Mean Length (mm)	Standard Deviation	Length Range
Wieczno 76-03	24 Oct. 1976	1	1.0	-	90.0	-	-

References:

Jordan et al. 1962
Leim and Scott 1966

Figure 128. Composite distribution and abundance (greatest occurence per station) of Syngnathus sp. collected during 30 autumn and winter cruises for the period Sep. 1971 - Feb. 1977.

Syngnathus sp. Common Name:

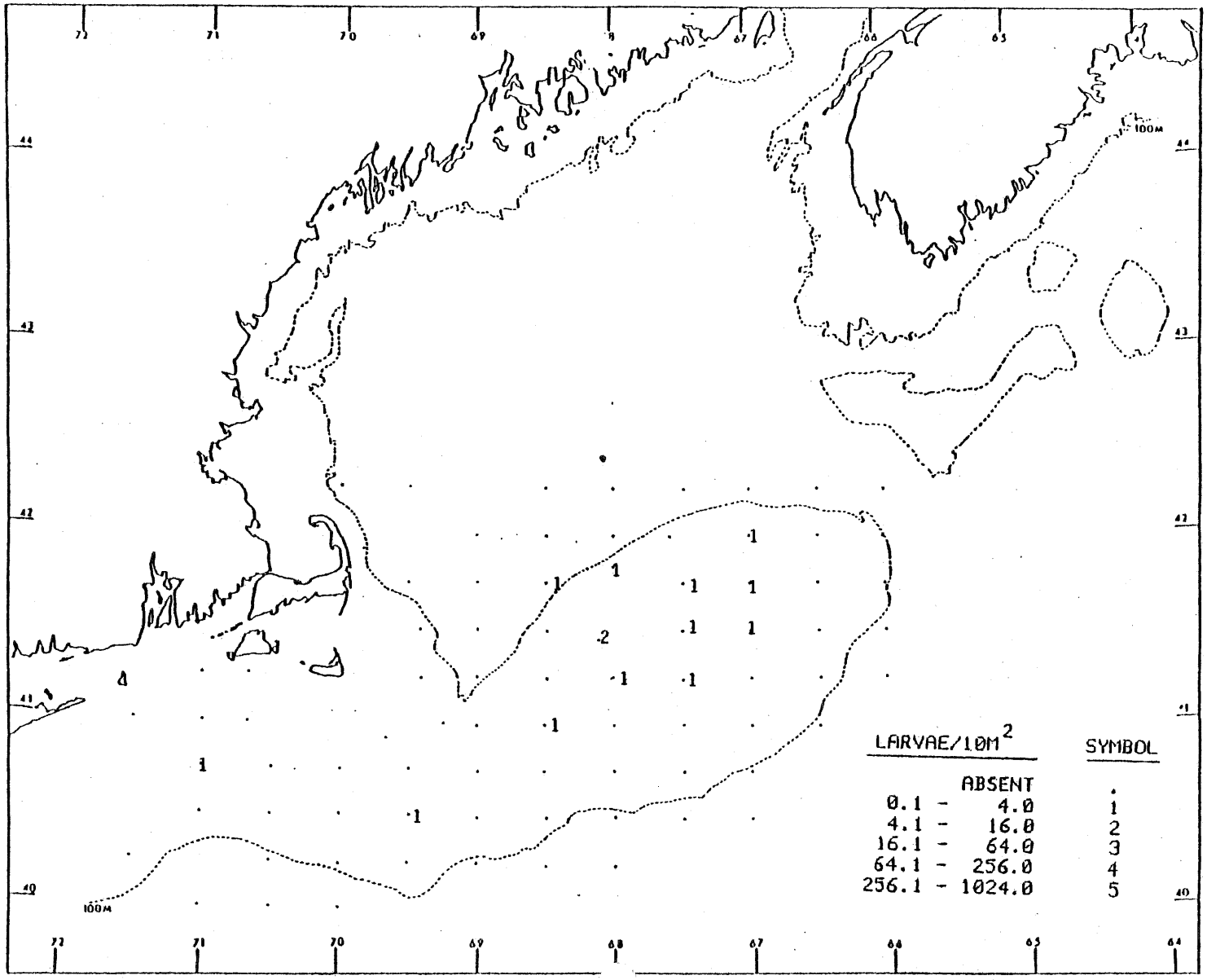


Table 128. Mean abundance (positive tows only) and mean length of *Syngnathus* sp. by cruise.

Cruise	Middate	Number of Positive Tows	Mean no./ $10m^2$	Standard Deviation	Mean Length (mm)	Standard Deviation	Length Range
Delaware II 71-04	27 Sep. 1971	1	0.8	-	33.0	-	-
Viandra 71-01	17 Oct. 1971	2	1.5	0.1	49.7	31.7	16 - 84
Argus 72-01	26 Sep. 1972	1	0.9	-	23.0	-	-
Argus 72-02	20 Oct. 1972	1	1.6	-	29.0	-	-
Belogorsk 75-03	23 Oct. 1975	5	2.7	3.1	81.4	8.1	67 - 90
Anton Dohrn 75-187	09 Nov. 1975	6	2.5	1.3	70.9	23.8	11 - 90
Belogorsk 76-03	08 Oct. 1976	2	1.3	0.1	55.8	20.3	41 - 73
Anton Dohrn 76-02	22 Nov. 1976	1	1.9	-	34.0	-	-

References:

Joakimsson 1978
Jordan et al. 1962

Figure 129. Composite distribution and abundance (greatest occurrence per station) of Cyclopteridae collected during 30 autumn and winter cruises for the period Sep. 1971 - Feb. 1977.

Cyclopteridae

Common Name: Lumpfishes and snailfishes

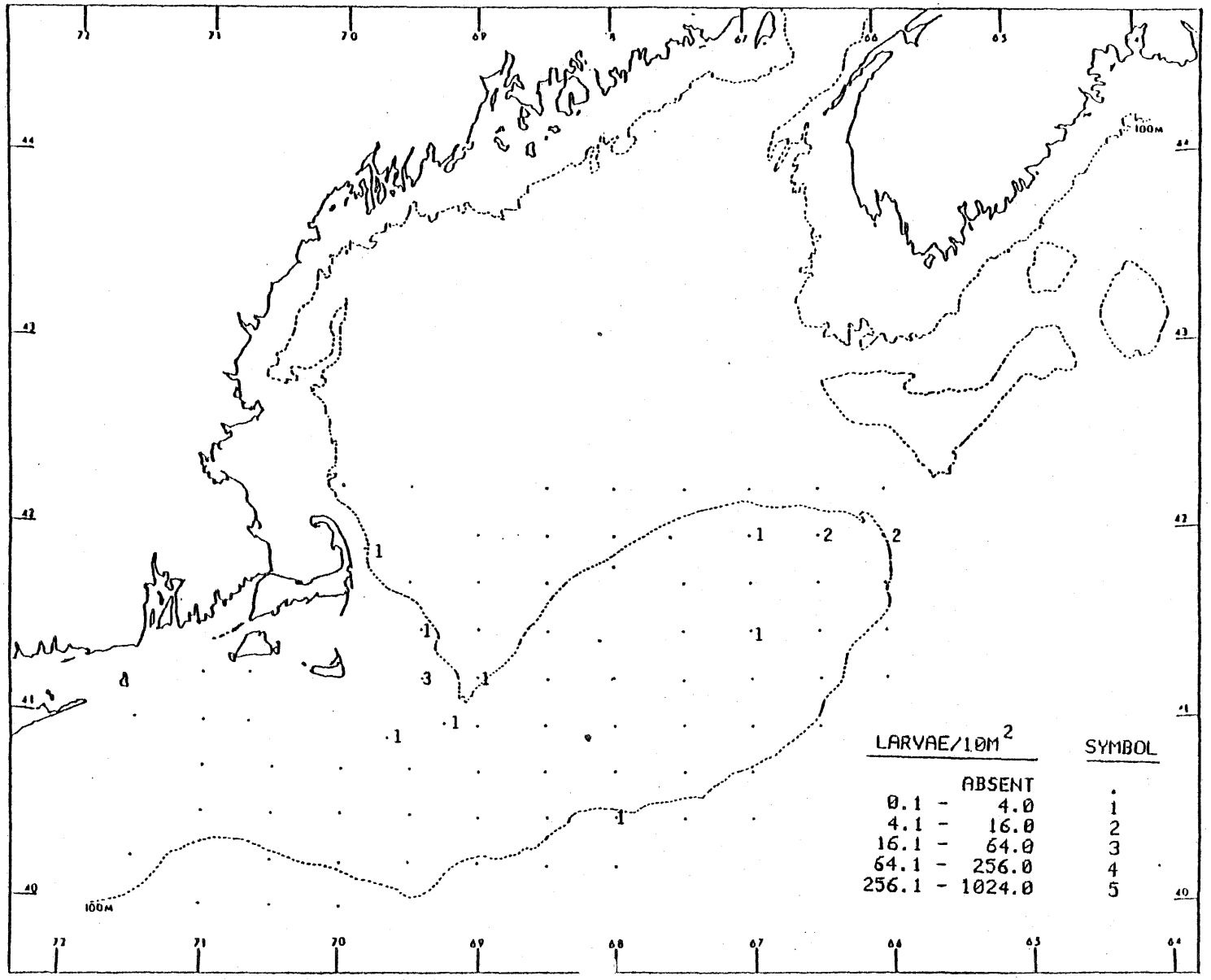


Table 129. Mean abundance (positive tows only) and mean length of Cyclopteridae by cruise.

Cruise	Middate	Number of Positive Tows	Mean no./ $10m^2$	Standard Deviation	Mean Length (mm)	Standard Deviation	Length Range
Albatross IV 71-07	09 Dec. 1971	1	1.9	-	4.0	-	-
Wieczno 73-40	09 Oct. 1973	1	1.3	-	2.0	-	-
Belogorsk 73-01	23 Oct. 1973	1	2.6	-	3.0	-	-
Albatross IV 73-09	13 Dec. 1973	1	2.3	-	5.0	-	-
Albatross IV 74-02	14 Feb. 1974	3	1.9	1.0	8.0	2.8	5 - 12
Prognoz 74-01	24 Oct. 1974	1	1.1	-	4.0	-	-
Anton Dohrn 74-01	19 Nov. 1974	2	6.0	3.0	3.7	0.5	3 - 4
Albatross IV 74-13	13 Dec. 1974	2	5.2	5.3	5.1	1.1	4 - 7
Albatross IV 75-02	14 Feb. 1975	3	2.9	2.2	7.2	2.2	5 - 11
Belogorsk 75-02	01 Oct. 1975	1	2.2	-	10.0	-	-
Anton Dohrn 75-187	09 Nov. 1975	1	3.2	-	4.3	1.4	3 - 6
Albatross IV 74-14	09 Dec. 1975	2	10.1	12.2	4.8	0.8	4 - 6
Albatross IV 76-01	16 Feb. 1976	2	4.1	3.4	8.9	10.1	4 - 32
Anton Dohrn 76-02	22 Nov. 1976	1	2.2	-	28.0	-	-

References:

Colton and Byron 1977
Grimm 1978
Joakimsson 1978
Jordan et al. 1962
Leim and Scott 1966

Figure 130. Composite distribution and abundance (greatest occurrence per station) of Cyclopterus lumpus collected during 30 autumn and winter cruises for the period Sep. 1971 - Feb. 1977.

Cyclopterus lumpus Linnaeus

Common Name: Lumpfish

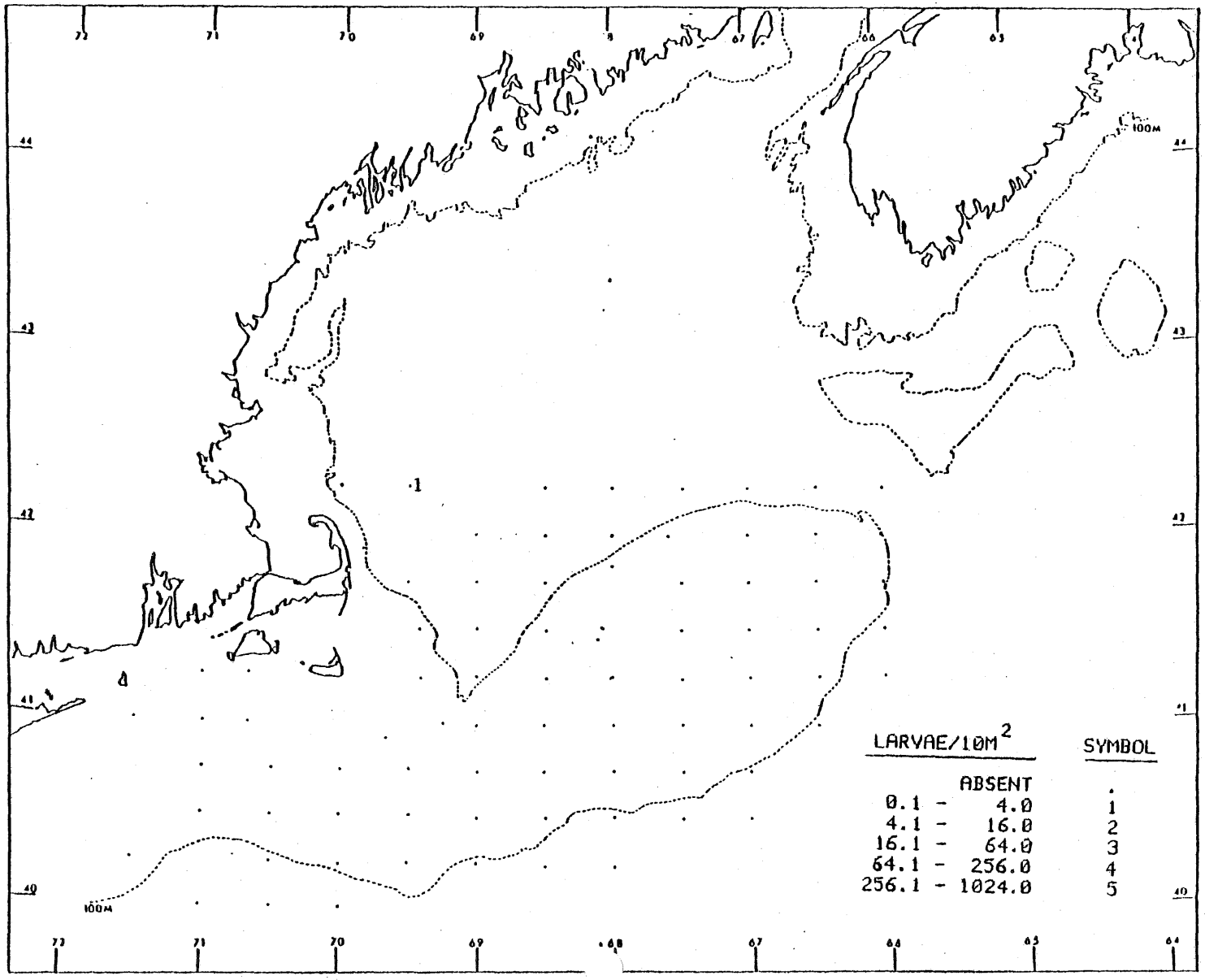


Table 130. Mean abundance (positive tows only) and mean length of *Cyclopterus lumpus* by cruise.

Cruise	Middate	Number of Positive Tows	Mean no./ $10m^2$	Standard Deviation	Mean Length (mm)	Standard Deviation	Length Range
Anton Dohrn 72-01	05 Nov. 1972	1	1.3	-	31.0	-	-

References:

Colton and Byron 1977
Joakimsson 1978
Jordan et al. 1962
Leim and Scott 1966

Figure 131. Composite distribution and abundance (greatest occurrence per station) of Liparis atlanticus collected during 30 autumn and winter cruises for the period Sep. 1971 - Feb. 1977.

Liparis atlanticus (Jordan and Evermann) Common Name: Atlantic seasnail

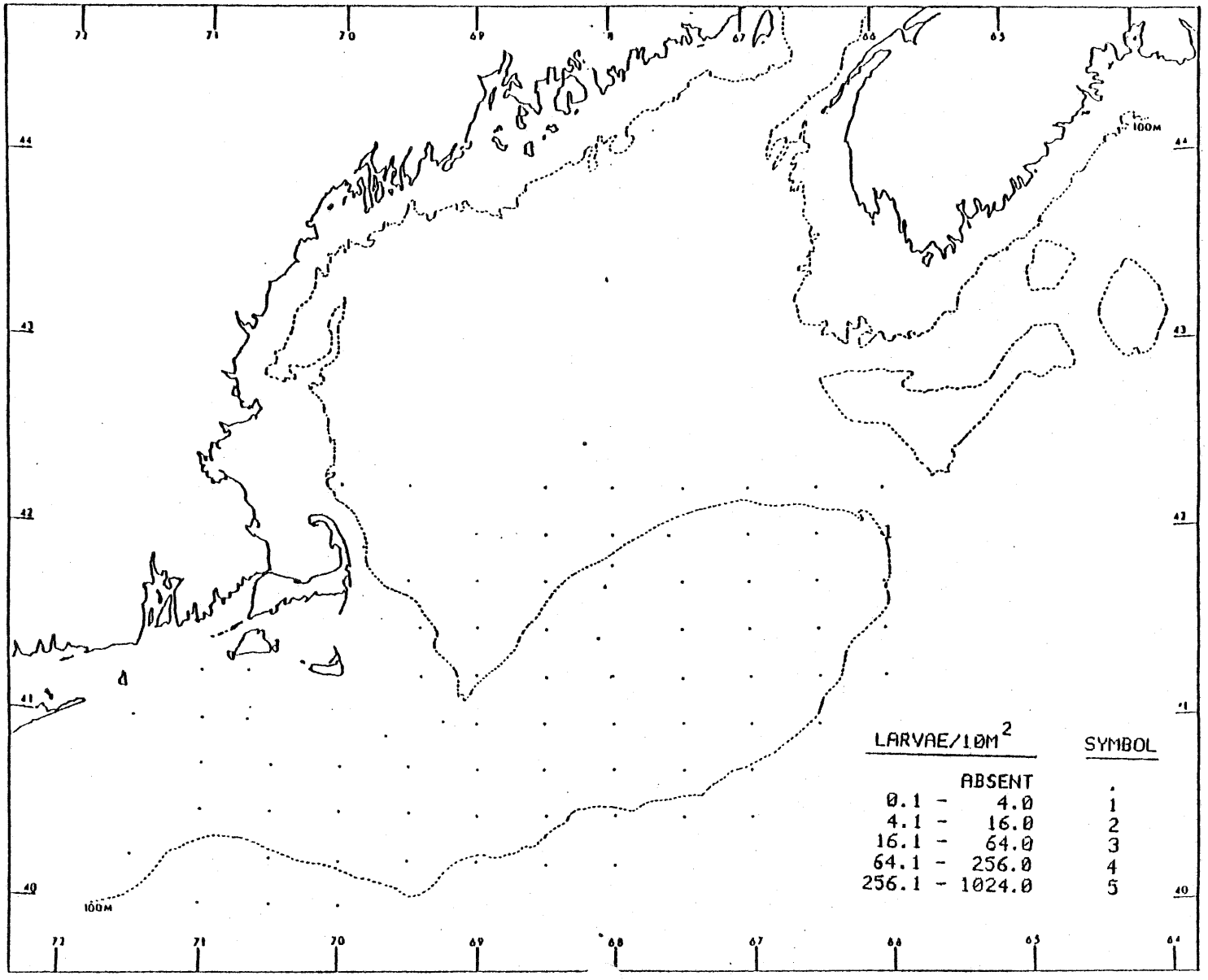


Table 131. Mean abundance (positive tows only) and mean length of *Liparis atlanticus* by cruise.

Cruise	Middate	Number of Positive Tows	Mean no./ $10m^2$	Standard Deviation	Mean Length (mm)	Standard Deviation	Length Range
Anton Dohrn 75-187	09 Nov. 1975	1	1.1	-	45.0	-	-

References:

Berrien et al. 1978
Dunbar and Hildebrand 1952
Joakimsson 1978
Leim and Scott 1966

Figure 132. Composite distribution and abundance (greatest occurrence per station) of Liparis sp. collected during 30 autumn and winter cruises for the period Sep. 1971 - Feb. 1977.

Liparis sp. Common Name:

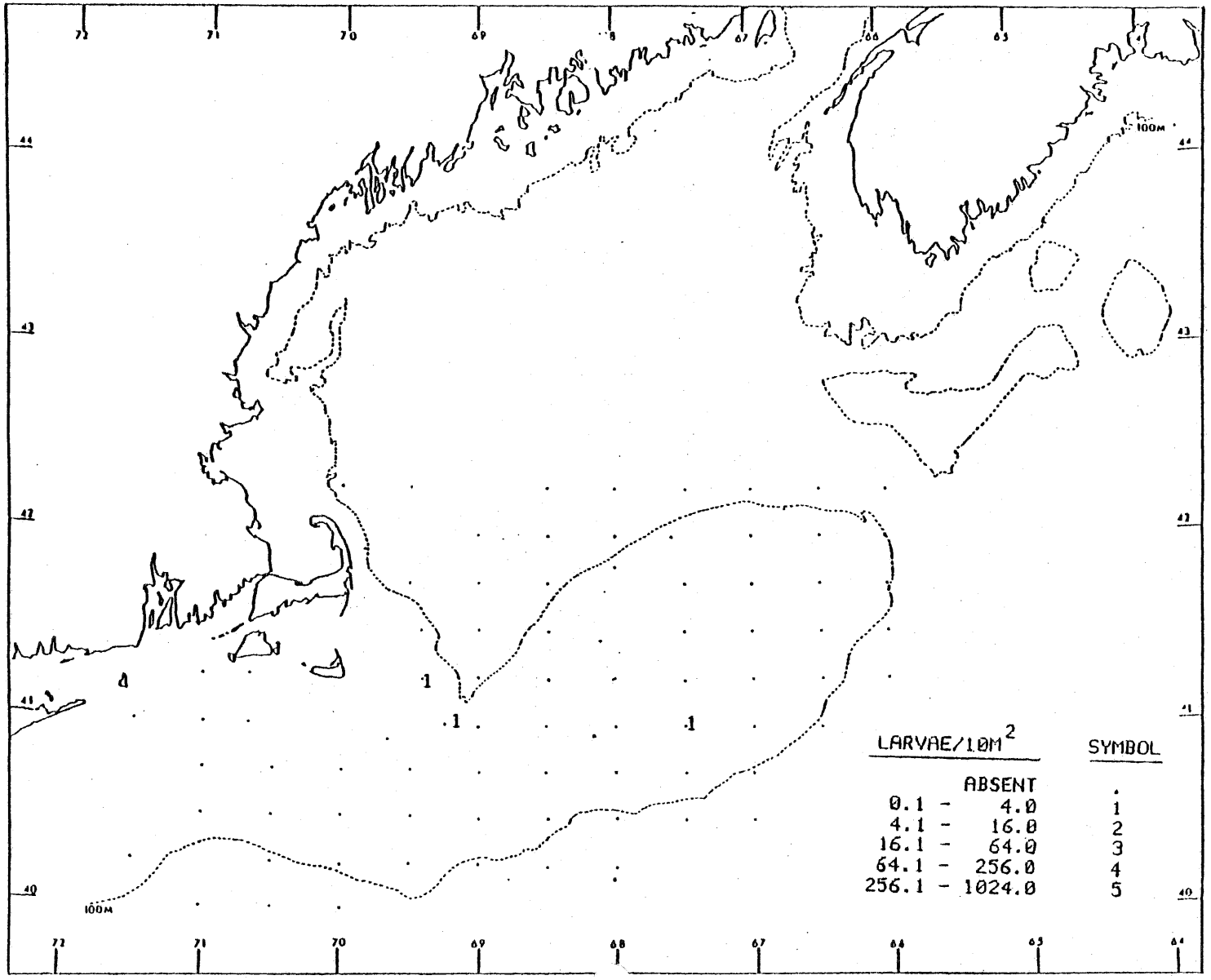


Table 132. Mean abundance (positive tows only) and mean length of *Liparis* sp. by cruise.

Cruise	Middate	Number of Positive Tows	Mean no./ $10m^2$	Standard Deviation	Mean Length (mm)	Standard Deviation	Length Range
Albatross IV 72-09	10 Dec. 1972	2	1.8	0.4	6.0	2.8	4 - 8
Walther Herwig 73-43	02 Nov. 1973	1	1.0	-	22.0	-	-

References:

Berrien et al. 1978
Colton and Byron 1977
Jordan et al. 1962
Leim and Scott 1966

Figure 133. Composite distribution and abundance (greatest occurrence per station) of Myoxocephalus octodecemspinosa collected during 30 autumn and winter cruises for the period Sep. 1971 - Feb. 1977.

Myoxocephalus octodecemspinosa (Mitchill) Common Name: Longhorn sculpin

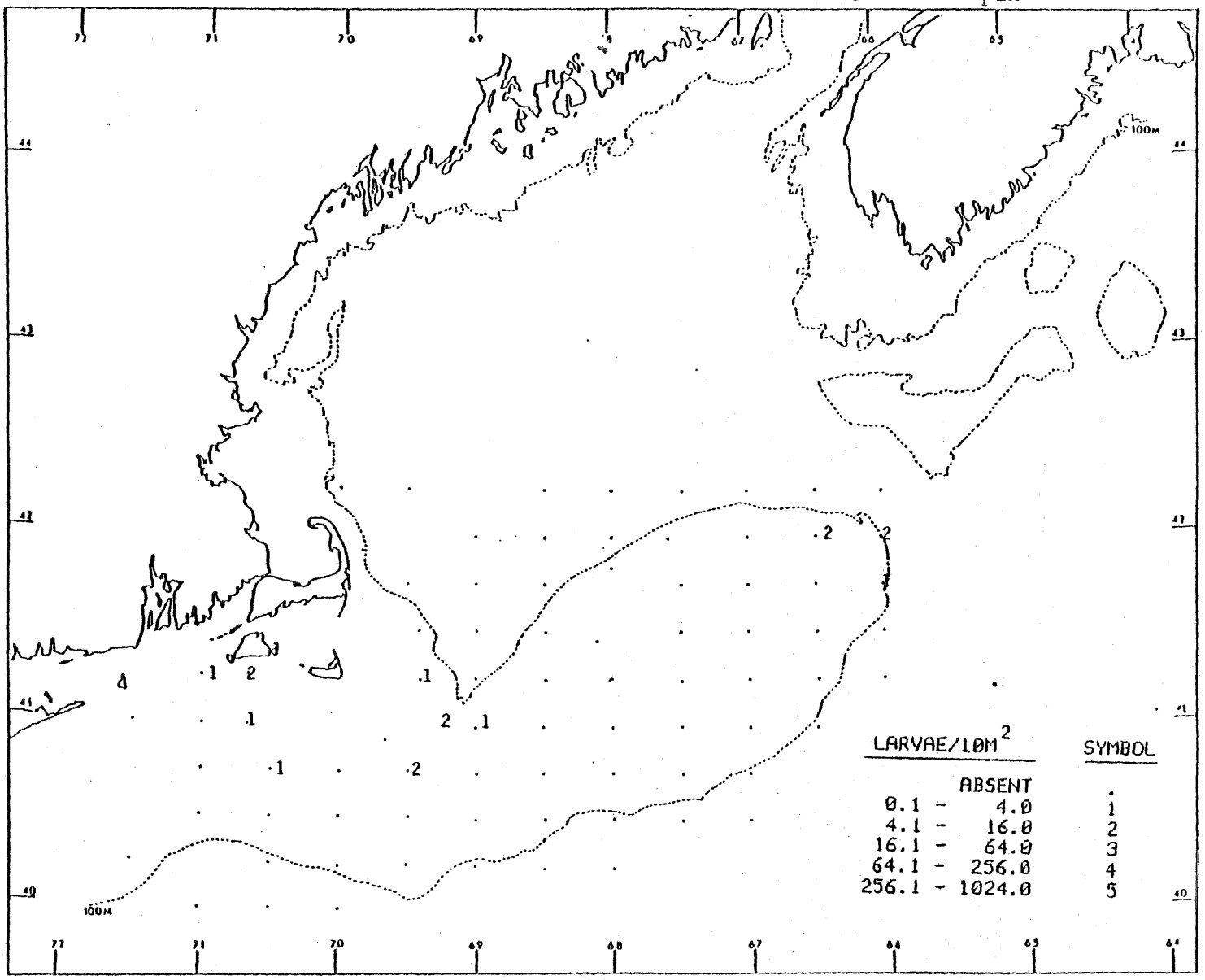


Table 133. Mean abundance (positive tows only) and mean length of *Myoxocephalus octodecemspinosa* by cruise.

Cruise	Middate	Number of Positive Tows	Mean no./ $10m^2$	Standard Deviation	Mean Length (mm)	Standard Deviation	Length Range
Albatross IV 73-09	13 Dec. 1973	1	2.7	-	6.0	-	-
Albatross IV 74-02	14 Feb. 1974	2	1.5	0.4	7.3	1.3	6 - 9
Albatross IV 74-13	13 Dec. 1974	1	1.9	-	7.0	-	-
Albatross IV 75-02	14 Feb. 1975	1	1.7	-	9.0	-	-
Belogorsk 75-02	01 Oct. 1975	1	1.9	-	30.0	-	-
Albatross IV 76-01	16 Feb. 1976	3	5.0	0.4	8.7	2.7	6 - 13
Mt. Mitchell 77-01	18 Feb. 1977	6	3.1	1.9	7.9	2.1	6 - 14

References:

Colton and Byron 1977
Jordan et al. 1962
Leim and Scott 1966

Figure 134. Composite distribution and abundance (greatest occurrence per station) of Myoxocephalus scorpius collected during 30 autumn and winter cruises for the period Sep. 1971 - Feb. 1977.

Myoxocephalus scorpius (linnaeus) Common Name: Shorthorn sculpin

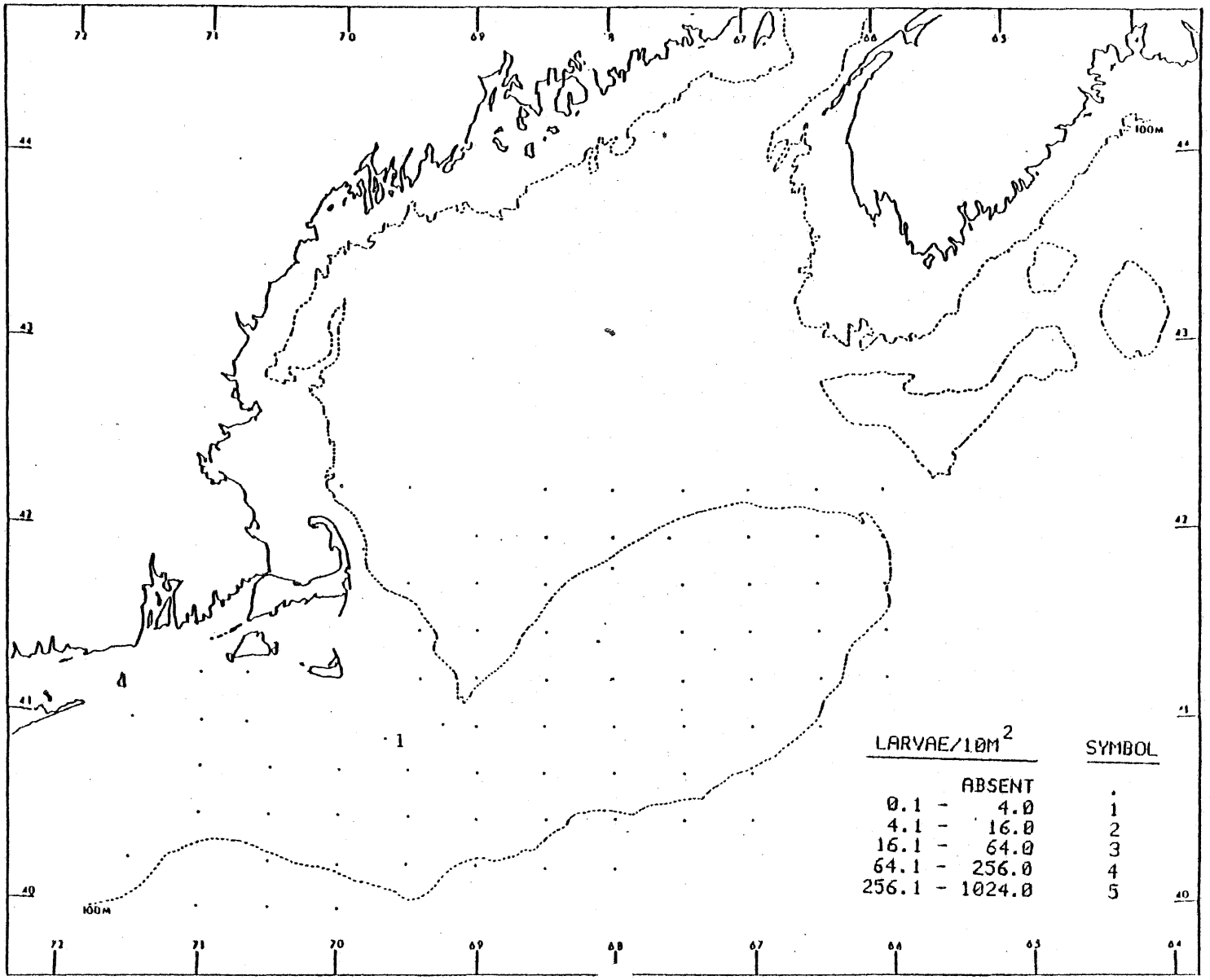


Table 134. Mean abundance (positive tows only) and mean length of *Myoxocephalus scorpius* by cruise.

Cruise	Middate	Number of Positive Tows	Mean no./ $10m^2$	Standard Deviation	Mean Length (mm)	Standard Deviation	Length Range
Albatross IV 75-02	14 Feb. 1975	1	3.6	-	9.0	-	-

References:

Dunbar and Hildebrand 1952
Leim and Scott 1966

Figure 135. Composite distribution and abundance (greatest occurrence per station) of Scorpaenidae collected during 30 autumn and winter cruises for the period Sep. 1971 - Feb. 1977.

Scorpaenidae Common Name: Scorpionfishes

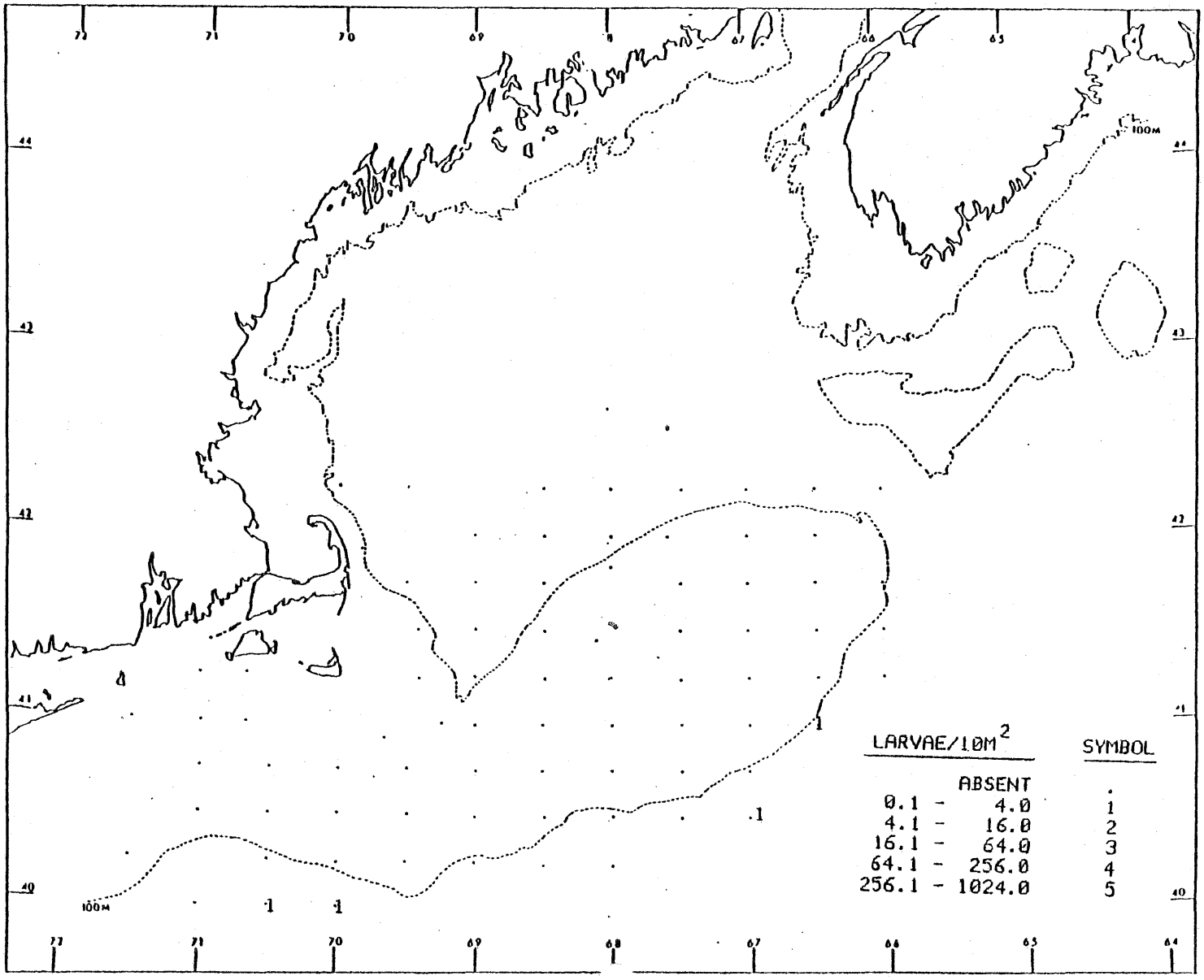


Table 135. Mean abundance (positive tows only) and mean length of Scorpaenidae by cruise.

Cruise	Middate	Number of Positive Tows	Mean no./ $10m^2$	Standard Deviation	Mean Length (mm)	Standard Deviation	Length Range
Delaware II 71-04	27 Sep. 1971	1	0.9	-	3.0	-	-
Belogorsk 73-01	23 Oct. 1973	2	2.1	1.1	4.7	0.5	4 - 5
Albatross IV 73-09	13 Dec. 1973	1	3.1	-	17.0	-	-
Prognoz 74-01	24 Oct. 1974	1	1.1	-	3.0	-	-
Albatross IV 74-13	13 Dec. 1974	1	1.6	-	10.8	2.1	8 - 12
Albatross IV 75-02	14 Feb. 1975	1	1.4	-	13.0	-	-

References:

Berrien et al. 1978
Colton and Byron 1977
Fischer 1978
Grimm 1978
Joakimsson 1978
Jordan et al. 1962
Leim and Scott 1966

Figure 136. Composite distribution and abundance (greatest occurrence per station) of Helicolenus dactylopterus collected during 30 autumn and winter cruises for the period Sep. 1971 - Feb. 1977.

Helicolenus dactylopterus (De la Roche) Common Name: Blackbelly rosefish)

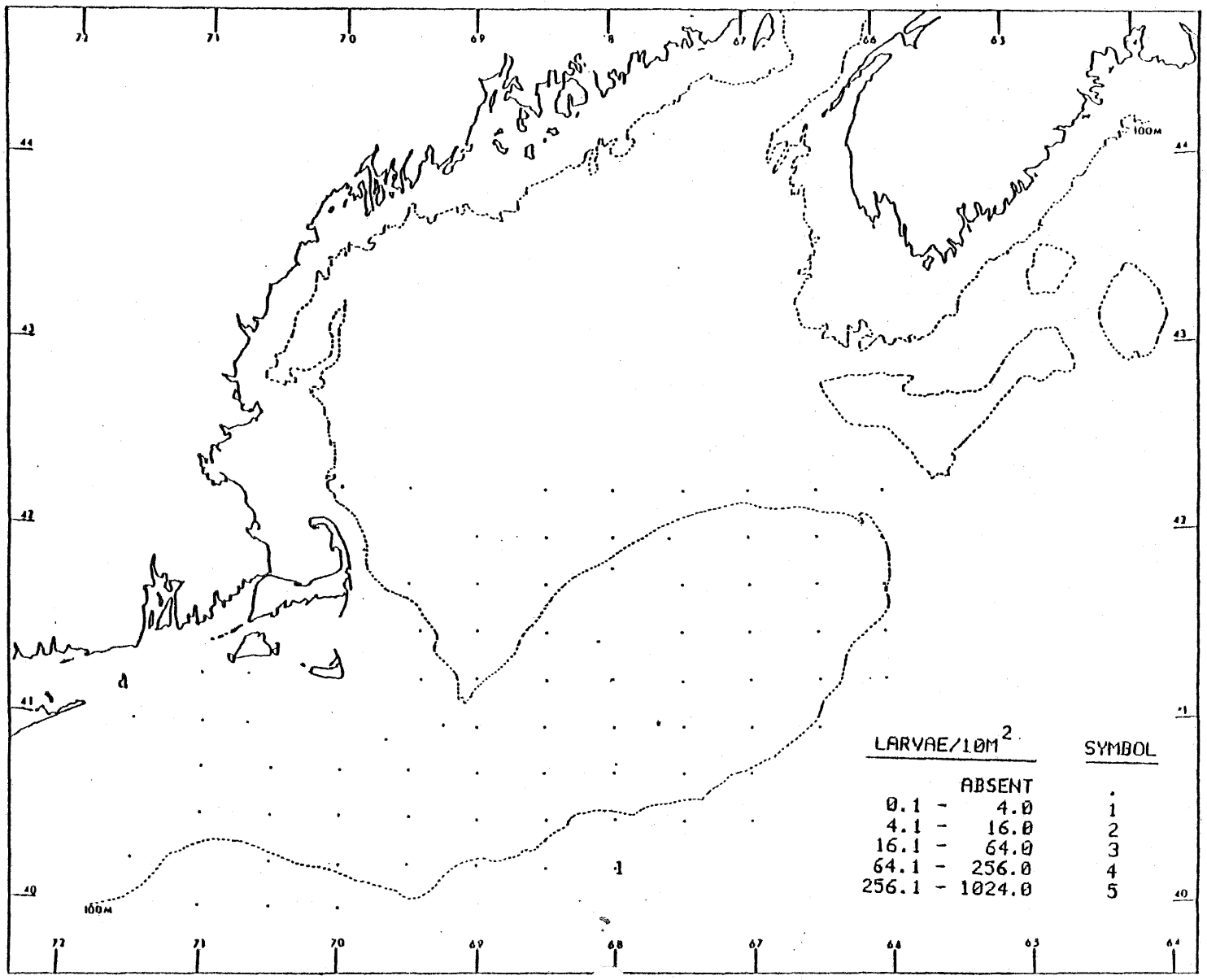


Table 136. Mean abundance (positive tows only) and mean length of *Helicolenus dactylopterus* by cruise.

Cruise	Middate	Number of Positive Tows	Mean no./ $10m^2$	Standard Deviation	Mean Length (mm)	Standard Deviation	Length Range
Albatross IV 76-01	16 Feb. 1976	1	2.9	-	6.0	-	-

References:

Fischer 1978
Joakimsson 1978
Jordan et al. 1962
Leim and Scott 1966

Figure 137. Composite distribution and abundance (greatest occurrence per station) of Pontinus sp. collected during 30 autumn and winter cruises for the period Sep. 1971 - Feb. 1977.

Pontinus sp. Common Name:

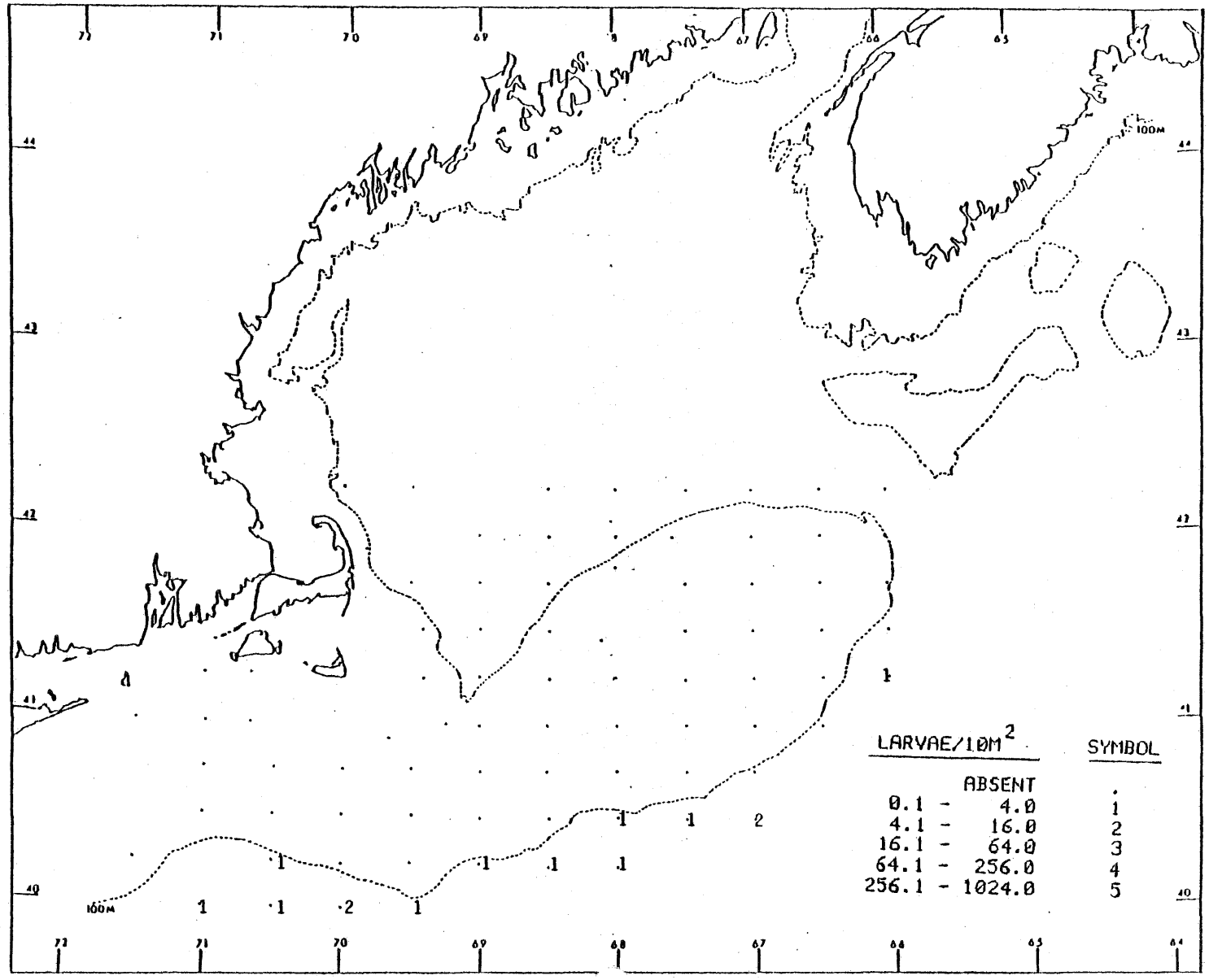


Table 137. Mean abundance (positive tows only) and mean length of Pontinus sp. by cruise.

Cruise	Middate	Number of Positive Tows	Mean no./ $10m^2$	Standard Deviation	Mean Length (mm)	Standard Deviation	Length Range
Delaware II 71-04	27 Sep. 1971	1	0.8	-	8.0	-	-
Viandra 71-01	17 Oct. 1971	1	1.0	-	5.0	-	-
Anton Dohrn 72-01	05 Nov. 1972	1	1.5	-	8.0	-	-
Wieczno 73-40	09 Oct. 1973	1	0.9	-	10.0	-	-
Walther Herwig 73-43	02 Nov. 1973	1	0.7	-	5.0	-	-
Cryos 74-04	16 Sep. 1974	1	7.7	-	3.6	2.0	2 - 7
Anton Dohrn 74-01	19 Nov. 1974	5	3.0	1.8	7.4	1.9	5 - 10
Albatross IV 75-14	09 Dec. 1975	3	1.7	0.2	11.7	2.3	9 - 14
Anton Dohrn 76-02	22 Nov. 1976	3	1.6	0.1	8.5	2.7	5 - 12
Researcher 76-01	04 Dec. 1976	3	1.6	0.3	9.2	1.4	8 - 11

References:

Fischer 1978
Grimm 1978
Joakimsson 1978
Jordan et al. 1962

Figure 138. Composite distribution and abundance (greatest occurrence per station) of Scorpaena sp. collected during 30 autumn and winter cruises for the period Sep. 1971 - Feb. 1977.

Scorpaena sp. Common Name:

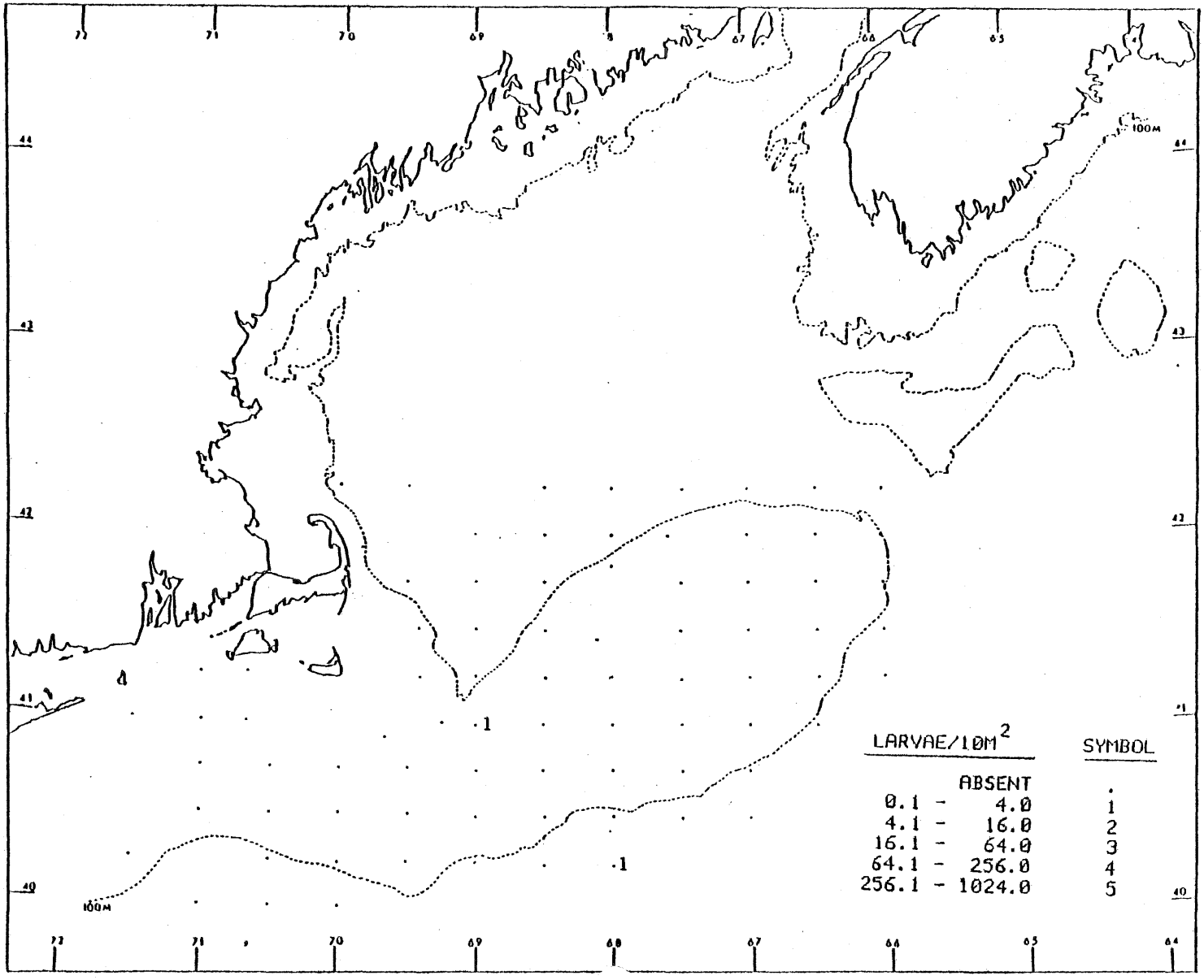


Table 138. Mean abundance (positive tows only) and mean length of *Scorpaena* sp. by cruise.

Cruise	Middate	Number of Positive Tows	Mean no./ $10m^2$	Standard Deviation	Mean Length (mm)	Standard Deviation	Length Range
Argus 72-02	20 Oct. 1972	1	2.1	-	7.0	-	-
Walther Herwig 73-43	02 Nov. 1973	1	3.3	-	11.0	-	-

References:

Fischer 1978
Joakimsson 1978
Jordan et al. 1962

Figure 139. Composite distribution and abundance (greatest occurrence per station) of Sebastes marinus collected during 30 autumn and winter cruises for the period Sep. 1971 - Feb. 1977.

Sebastes marinus (Linnaeus) Common Name: Redfish

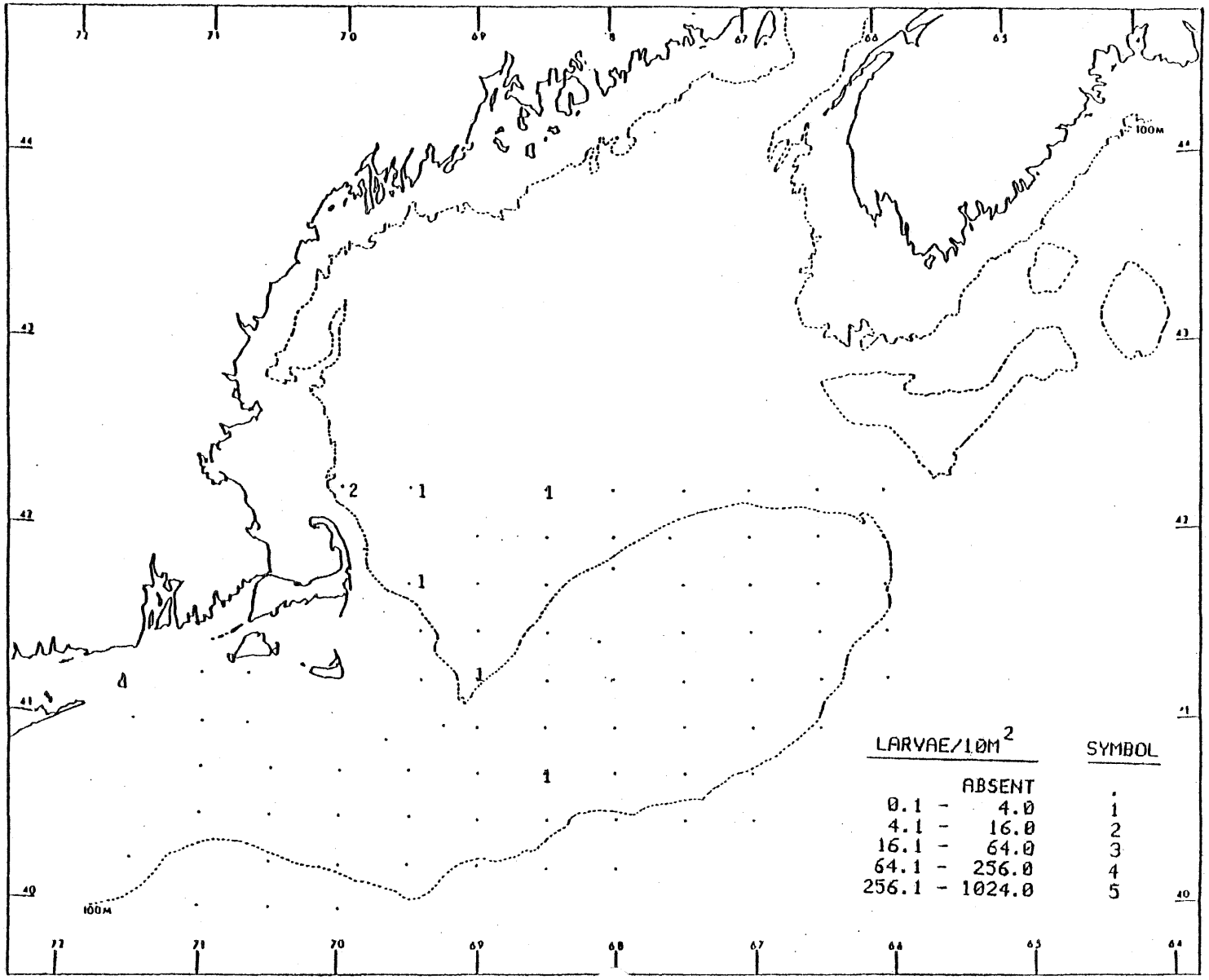


Table 139. Mean abundance (positive tows only) and mean length of *Sebastes marinus* by cruise.

Cruise	Middate	Number of Positive Tows	Mean no./ $10m^2$	Standard Deviation	Mean Length (mm)	Standard Deviation	Length Range
Cryos 74-04	16 Sep. 1974	1	1.3	-	6.0	-	-
Belogorsk 75-02	01 Oct. 1975	4	5.0	5.5	11.9	2.7	6 - 16
Belogorsk 75-03	23 Oct. 1975	2	1.3	0.1	11.2	2.5	9 - 13

References:

Dunbar and Hildebrand 1952
Grimm 1978
Joakimsson 1978
Jordan et al. 1962

Figure 140. Composite distribution and abundance (greatest occurrence per station) of Sebastes sp. collected during 30 autumn and winter cruises for the period Sep. 1971 - Feb. 1977.

Sebastes sp. Common Name:

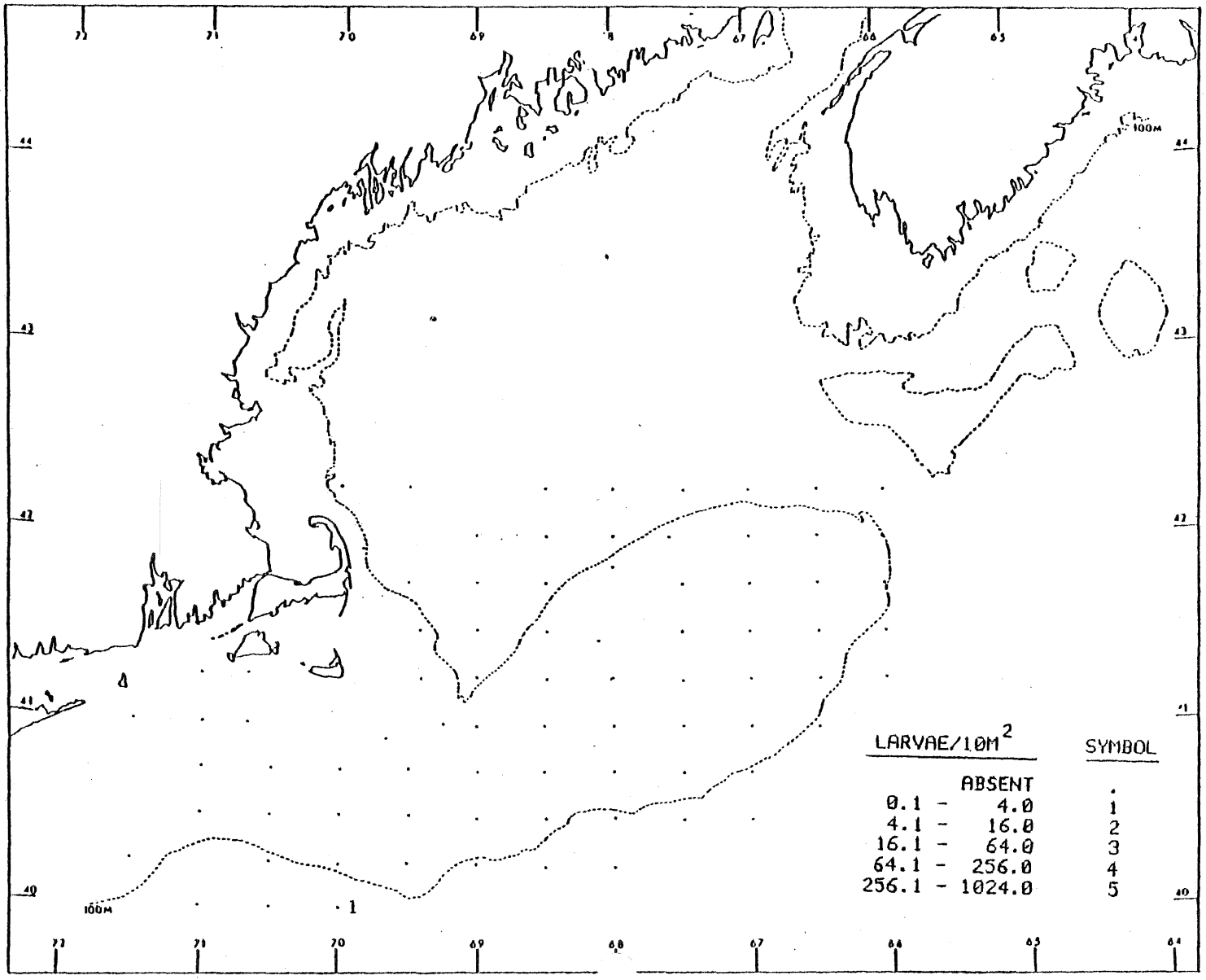


Table 140. Mean abundance (positive tows only) and mean length of *Sebastes* sp. by cruise.

Cruise	Middate	Number of Positive Tows	Mean no./ $10m^2$	Standard Deviation	Mean Length (mm)	Standard Deviation	Length Range
Anton Dohrn 74-01	19 Nov. 1974	1	2.0	-	5.0	-	-

References:

Colton and Byron 1977
Grimm 1978
Jordan et al. 1962

Figure 141. Composite distribution and abundance (greatest occurrence per station) of Triglidae collected during 30 autumn and winter cruises for the period Sep. 1971 - Feb. 1977.

Triglidae

Common Name: Searobins

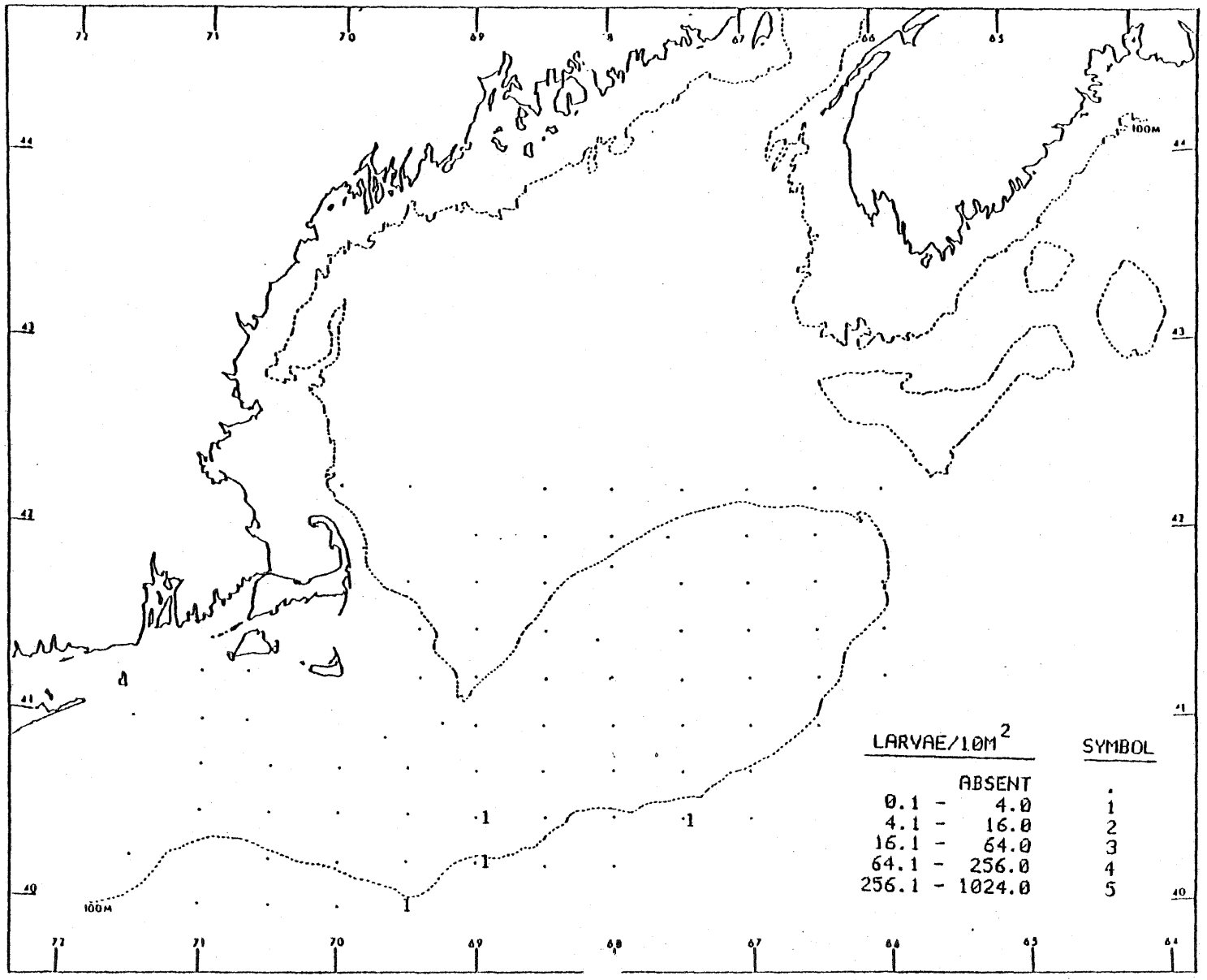


Table 141. Mean abundance (positive tows only) and mean length of Triglidae by cruise.

Cruise	Middate	Number of Positive Tows	Mean no./ $10m^2$	Standard Deviation	Mean Length (mm)	Standard Deviation	Length Range
Wieczno 73-40	09 Oct. 1973	1	2.2	-	4.0	-	-
Belogorsk 73-01	23 Oct. 1973	1	1.1	-	3.0	-	-
Walther Herwig 73-43	02 Nov. 1973	1	1.5	-	8.0	-	-
Cryos 74-04	16 Sep. 1974	1	2.2	-	20.0	-	-

References:

Berrien et al. 1978
Colton and Byron 1977
Fischer 1978
Joakimsson 1978
Jordan et al. 1962
Leim and Scott 1966

Figure 142. Composite distribution and abundance (greatest occurrence per station) of Prionotus sp. collected during 30 autumn and winter cruises for the period Sep. 1971 - Feb. 1977.

Prionotus sp. Common Name:

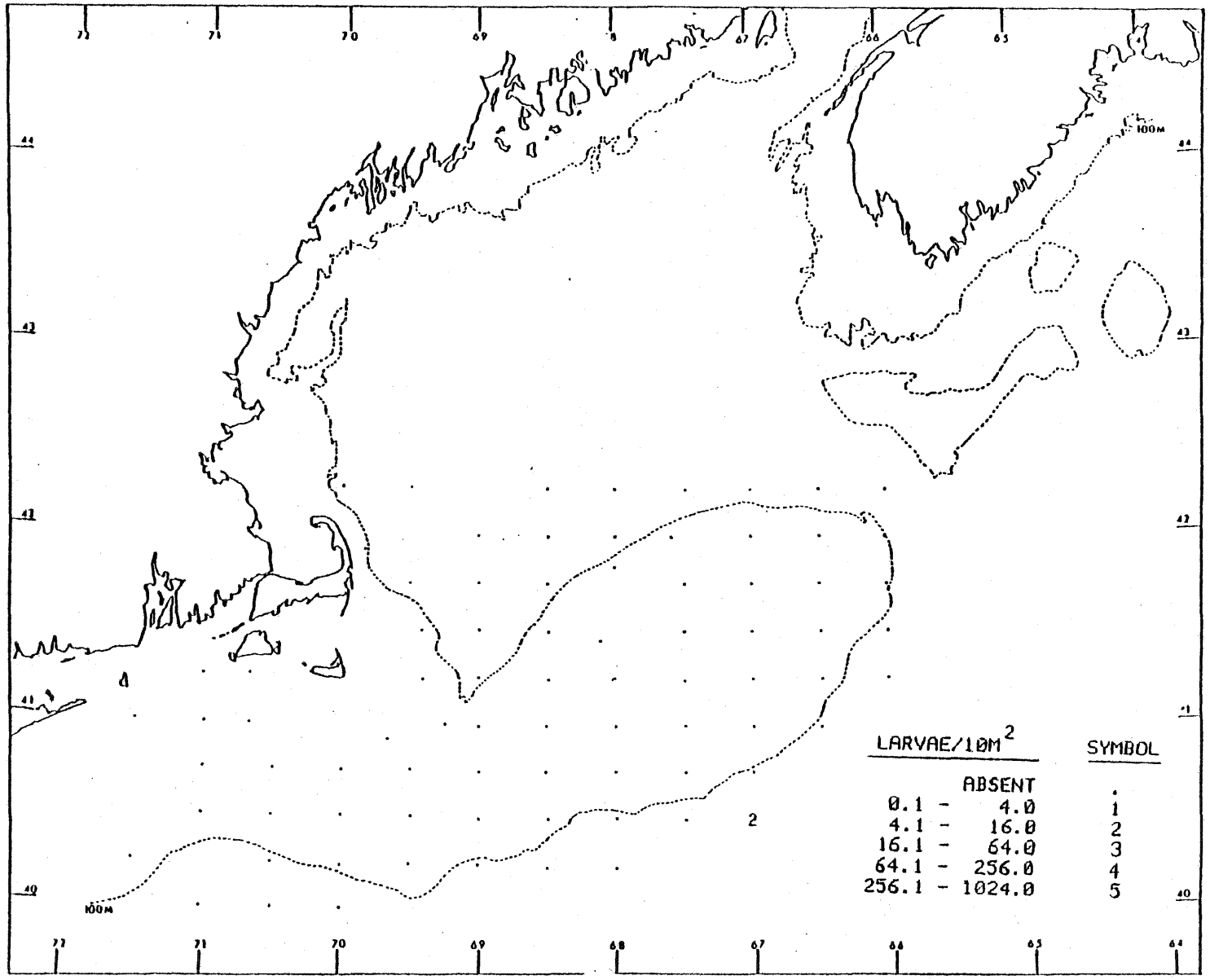


Table 142. Mean abundance (positive tows only) and mean length of *Prionotus* sp. by cruise.

Cruise	Middate	Number of Positive Tows	Mean no./ $10m^2$	Standard Deviation	Mean Length (mm)	Standard Deviation	Length Range
Anton Dohrn 75-187	09 Nov. 1975	1	4.1	-	4.0	-	-

References:

Berrien et al. 1978
Fischer 1978
Joakimsson 1978
Leim and Scott 1966

Figure 143. Composite distribution and abundance (greatest occurrence per station) of Acanthuridae collected during 30 autumn and winter cruises for the period Sep. 1971 - Feb. 1977.

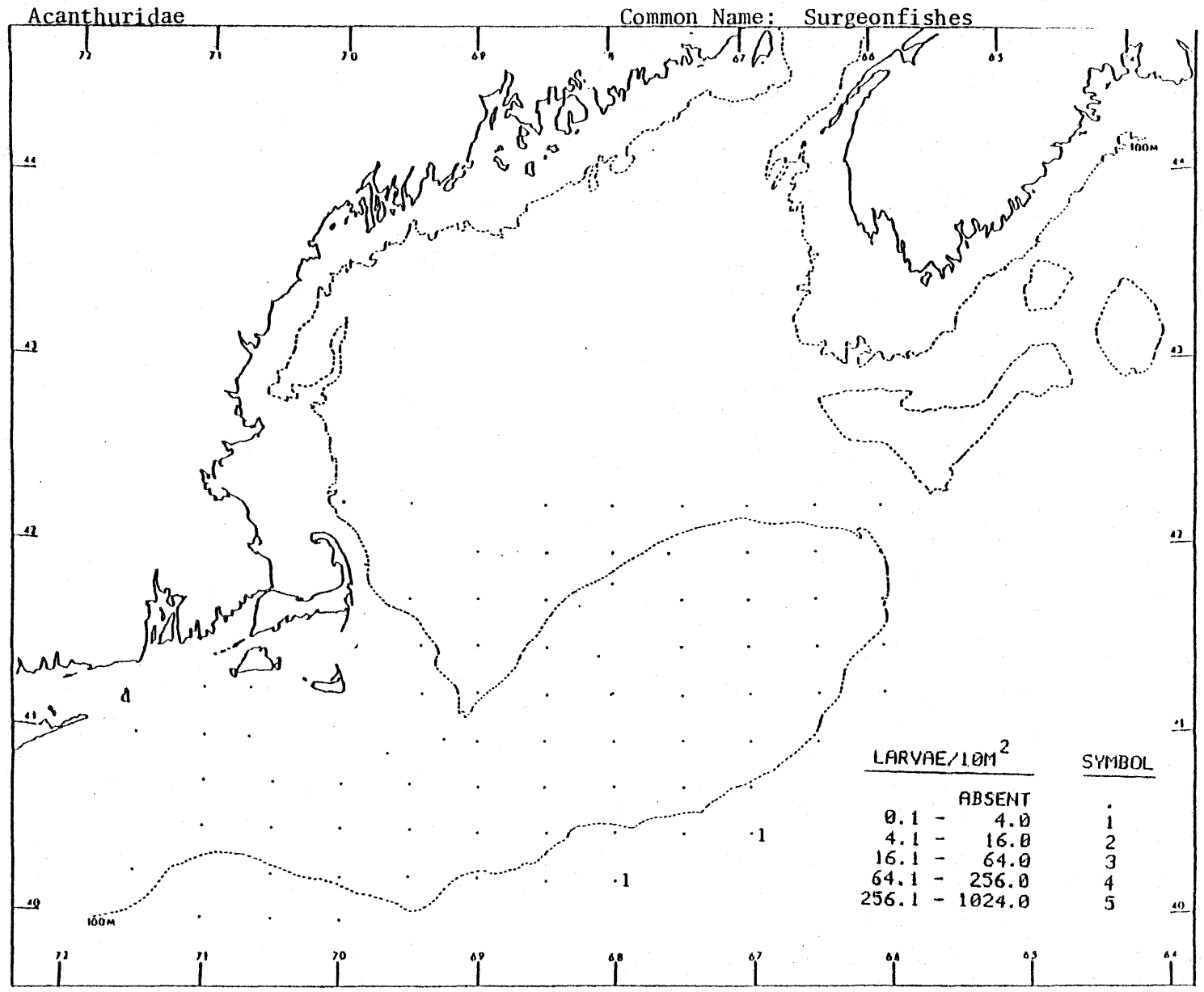


Table 143. Mean abundance (positive tows only) and mean length of Acanthuridae by cruise.

Cruise	Middate	Number of Positive Tows	Mean no./ $10m^2$	Standard Deviation	Mean Length (mm)	Standard Deviation	Length Range
Walther Herwig 73-43	02 Nov. 1973	1	0.9	-	15.0	-	-
Anton Dohrn 74-01	19 Nov. 1974	1	1.8	-	5.0	-	-

References:

Berrien et al. 1978
Fischer 1978
Joakimsson 1978
Jordan et al. 1962

Figure 144. Composite distribution and abundance (greatest occurrence per station) of Ammodytidae collected during 30 autumn and winter cruises for the period Sep. 1971 - Feb. 1977.

Ammodytidae Common Name:

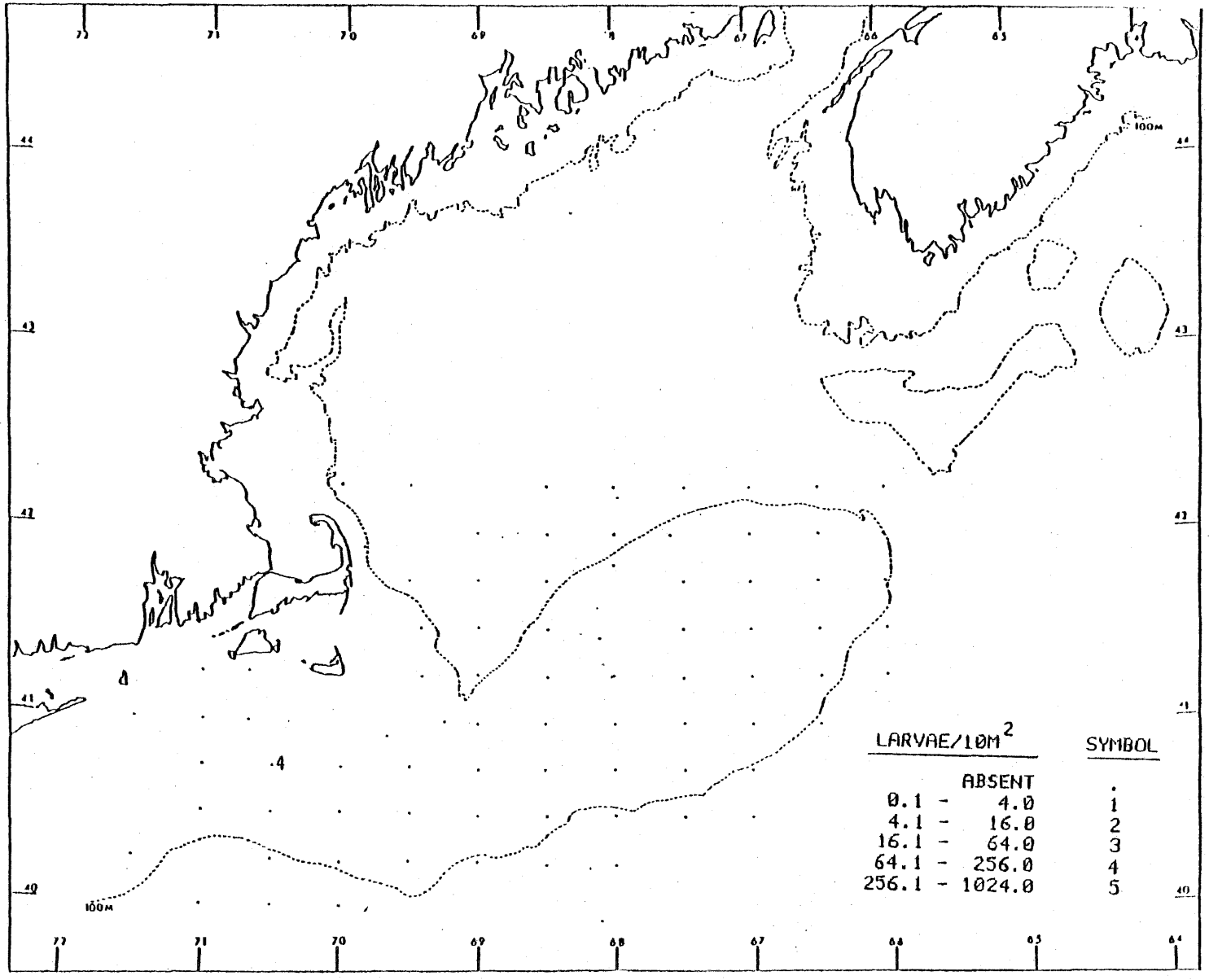


Table 144. Mean abundance (positive tows only) and mean length of Ammodytidae by cruise.

Cruise	Middate	Number of Positive Tows	Mean no./ $10m^2$	Standard Deviation	Mean Length (mm)	Standard Deviati n	Length Range
Albatross IV 75-02	14 Feb. 1975	1	155.7	-	17.1	4.0	11 - 28

Figure 145. Composite distribution and abundance (greatest occurrence per station) of Ammodytes spp. collected during 30 autumn and winter cruises for the period Sep. 1971 - Feb. 1977.

Ammodytes spp. Common Name: Sandlance

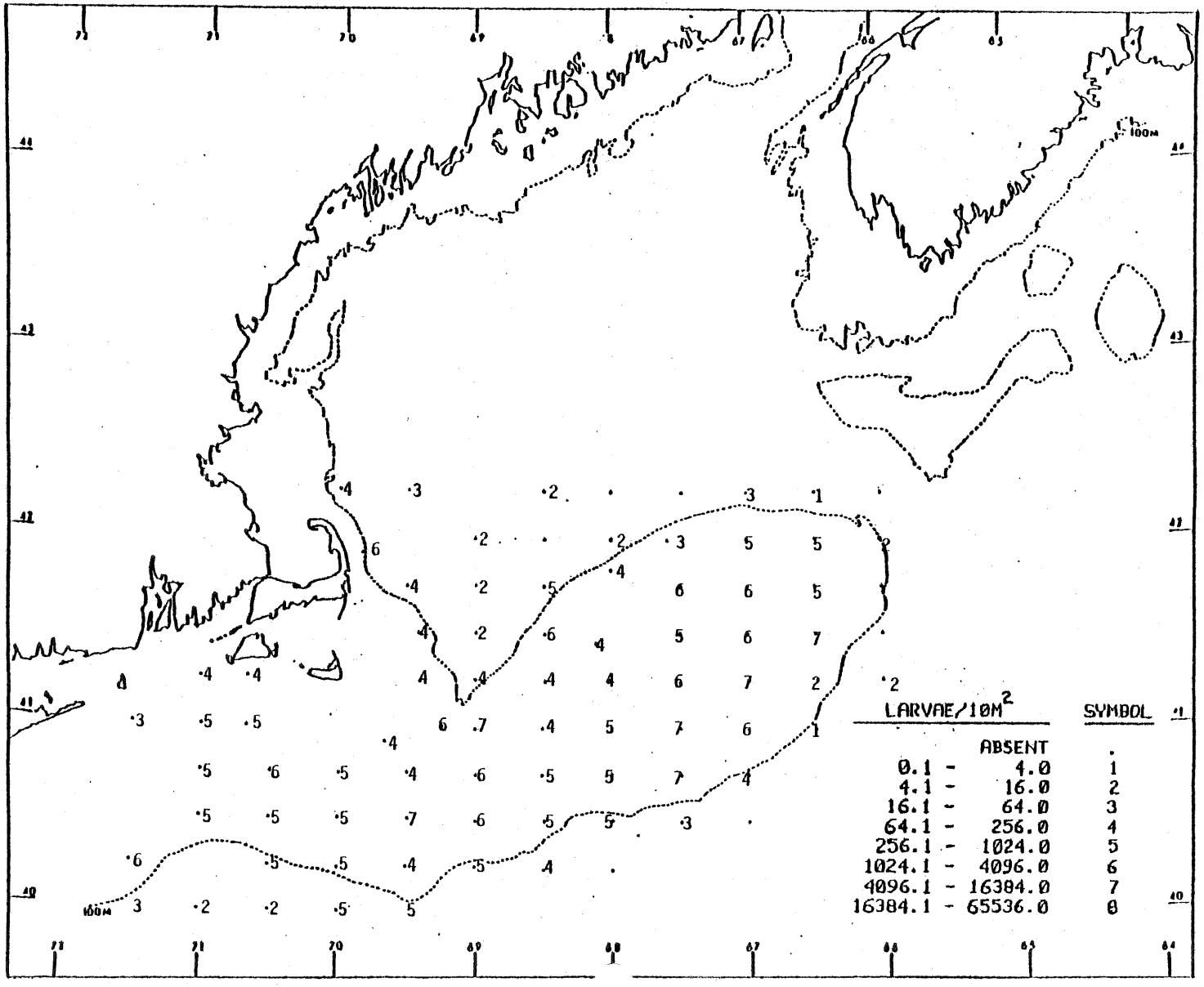


Table 145. Mean abundance (positive tows only) and mean length of *Ammodytes* spp. by cruise.

Cruise	Middate	Number of Positive Tows	Mean no./ $10m^2$	Standard Deviation	Mean Length (mm)	Standard Deviation	Length Range
Albatross IV 74-02	14 Feb. 1974	41	31.1	30.3	10.6	4.8	4 - 33
Albatross IV 74-13	13 Dec. 1974	2	27.7	10.9	4.7	0.5	4 - 6
Albatross IV 75-02	14 Feb. 1975	44	110.8	158.0	12.7	3.8	4 - 33
Albatross IV 75-14	09 Dec. 1975	8	208.2	484.8	5.8	0.5	4 - 8
Albatross IV 76-01	16 Feb. 1976	72	723.6	1350.9	8.9	3.1	1 - 36
Researcher 76-01	04 Dec. 1976	2	33.4	45.6	5.0	0.5	4 - 6
Mt. Mitchell 77-01	18 Feb. 1977	31	320.9	473.5	7.7	1.9	4 - 19

Figure 146. Composite distribution and abundance (greatest occurrence per station) of Anarhichas lupus collected during 30 autumn and winter cruises for the period Sep. 1971 - Feb. 1977.

Anarhichas lupus Linnaeus Common Name: Atlantic wolffish

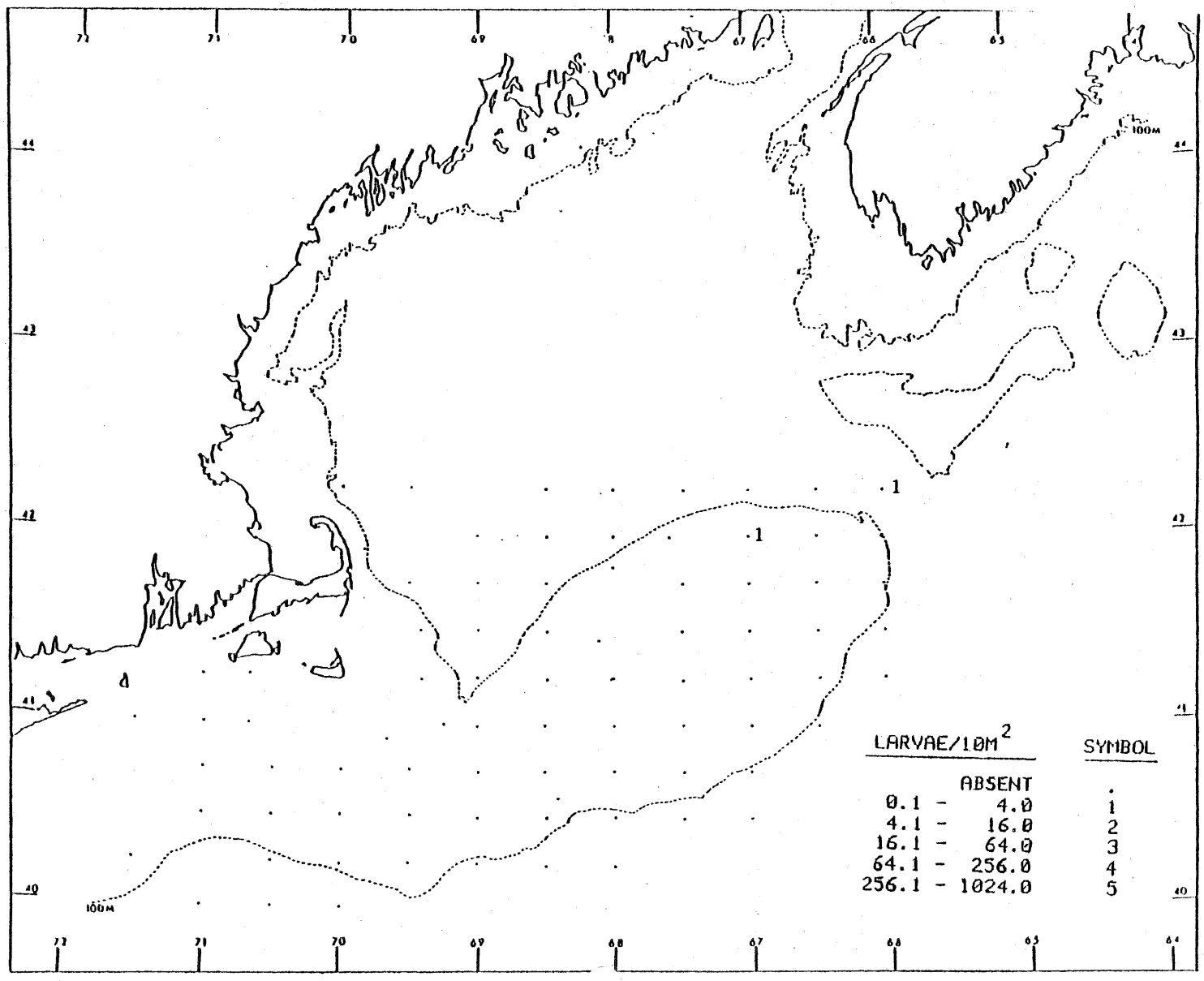


Table 146. Mean abundance (positive tows only) and mean length of *Anarhichas lupus* by cruise.

Cruise	Middate	Number of Positive Tows	Mean no./ $10m^2$	Standard Deviation	Mean Length (mm)	Standard Deviation	Length Range
Mt. Mitchell 77-01	18 Feb. 1977	2	1.1	0	15.9	5.9	12 - 23

References:

Jordan et al. 1962
Leim and Scott 1966

Figure 147. Composite distribution and abundance (greatest occurrence per station) of Blennidae collected during 30 autumn and winter cruises for the period Sep. 1971 - Feb. 1977.

Blennidae

Common Name: Blennies

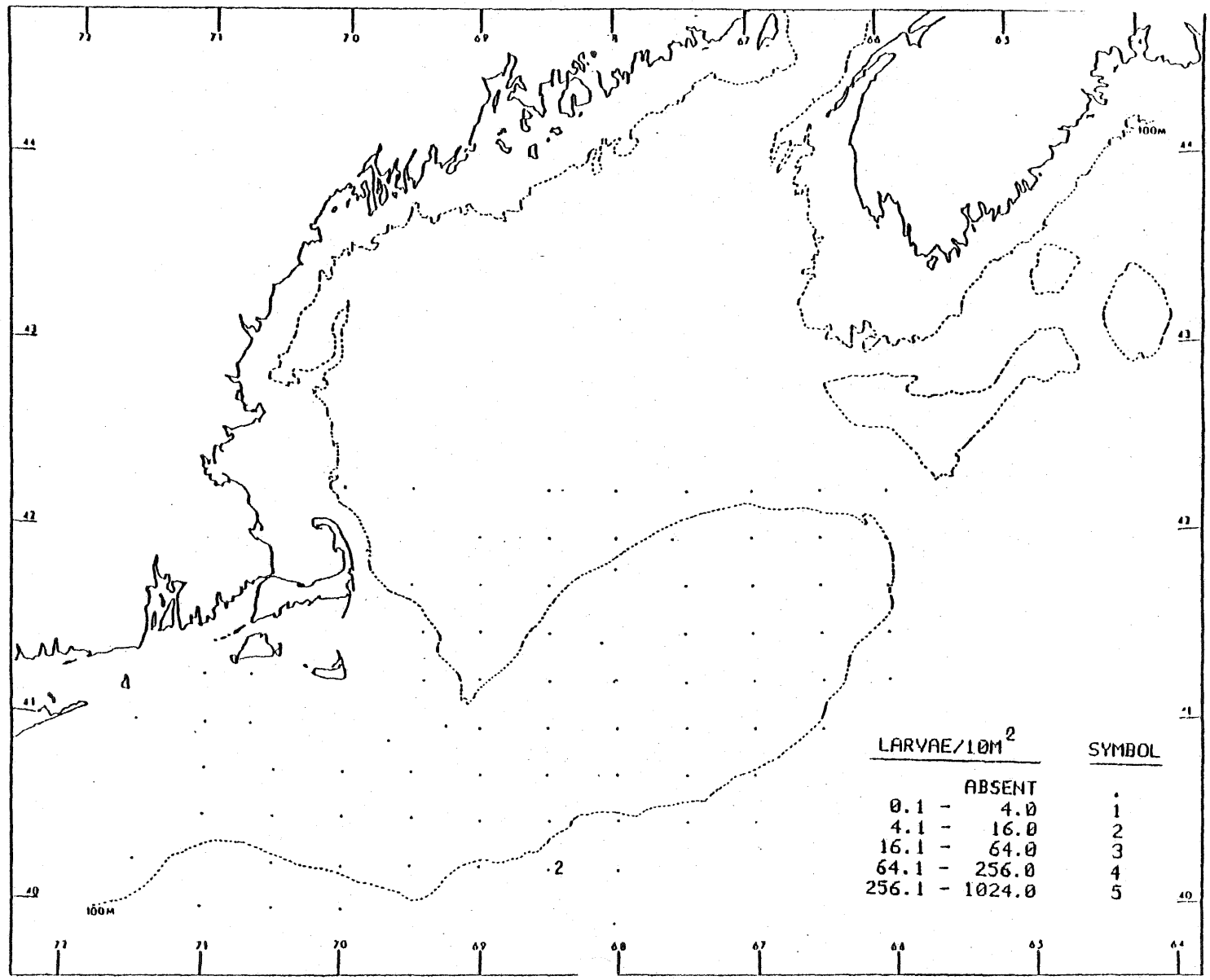


Table 147. Mean abundance (positive tows only) and mean length of Blennidae by cruise.

Cruise	Middate	Number of Positive Tows	Mean no./ $10m^2$	Standard Deviation	Mean Length (mm)	Standard Deviation	Length Range
Walther Herwig 73-43	02 Nov. 1973	1	6.3	-	16.0	-	-

References:

Berrien et al. 1978
Colton and Byron 1977
Fischer 1978
Jordan et al. 1962

Figure 148. Composite distribution and abundance (greatest occurrence per station) of Pholis gunnellus collected during 30 autumn and winter cruises for the period Sep. 1971 - Feb. 1977.

Pholis gunnellus (linnaeus) Common Name: Rock gunnel

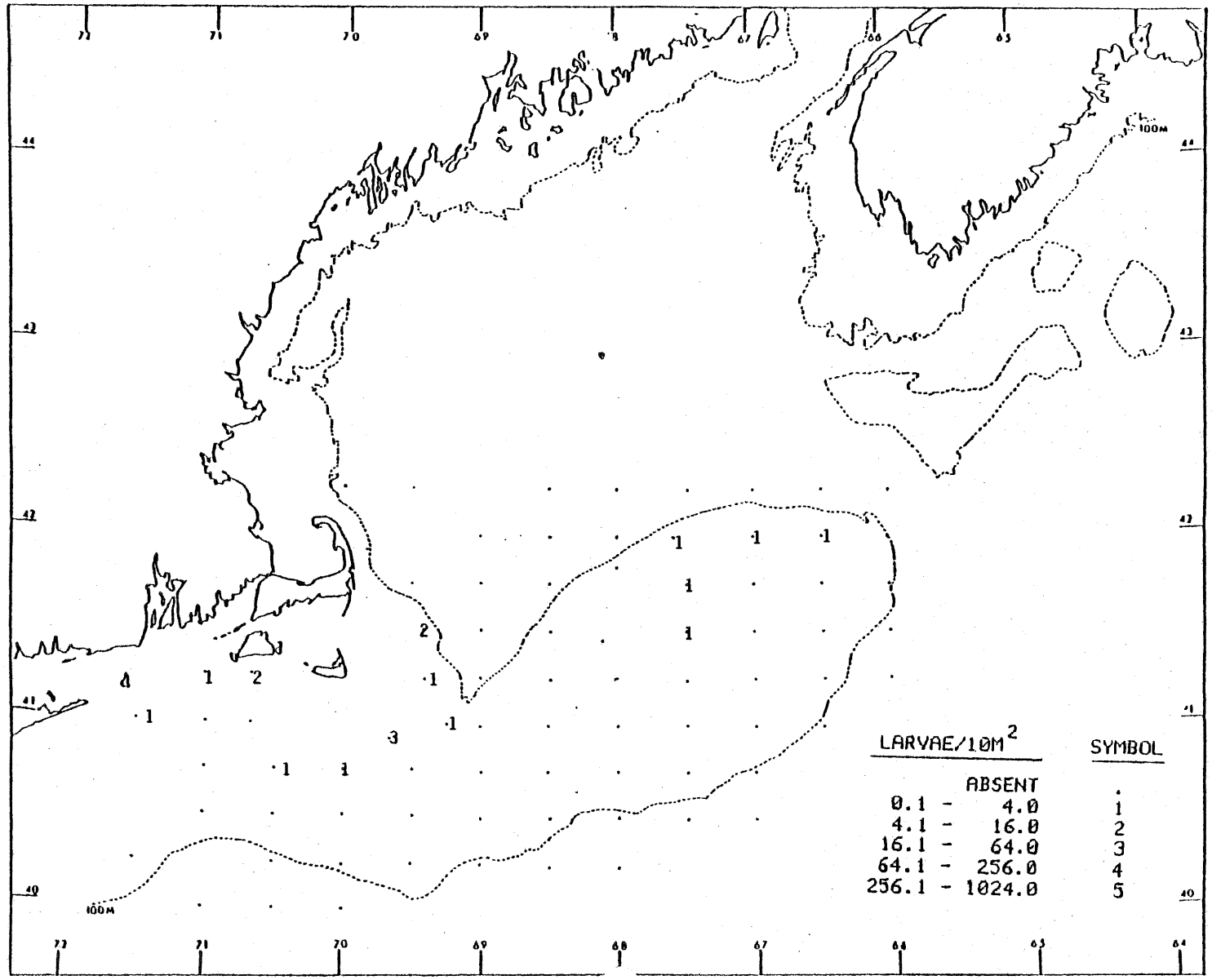


Table 148. Mean abundance (positive tows only) and mean length of *Pholis gunnellus* by cruise.

Cruise	Middate	Number of Positive Tows	Mean no./ $10m^2$	Standard Deviation	Mean Length (mm)	Standard Deviation	Length Range
Albatross IV 74-02	14 Feb. 1974	4	1.8	1.2	10.4	3.1	4 - 17
Albatross IV 75-02	14 Feb. 1975	3	11.5	16.7	13.4	2.4	10 - 20
Albatross IV 75-14	09 Dec. 1975	2	1.8	-	61.0	0	-
Albatross IV 76-01	16 Feb. 1976	5	7.0	4.7	13.6	3.2	10 - 22
Mt. Mitchell 77-01	18 Feb. 1977	10	1.6	0.8	11.7	1.4	10 - 15

References:

Berrien et al. 1978
Colton and Byron 1977
Jordan et al. 1962
Leim and Scott 1966

Figure 149. Composite distribution and abundance (greatest occurrence per station) of Lumpenus lumpretaeformis collected during 30 autumn and winter cruises for the period Sep. 1971 - Feb. 1977.

Lumpenus lumpretaeformis (Walbaum) Common Name: Snakeblenny

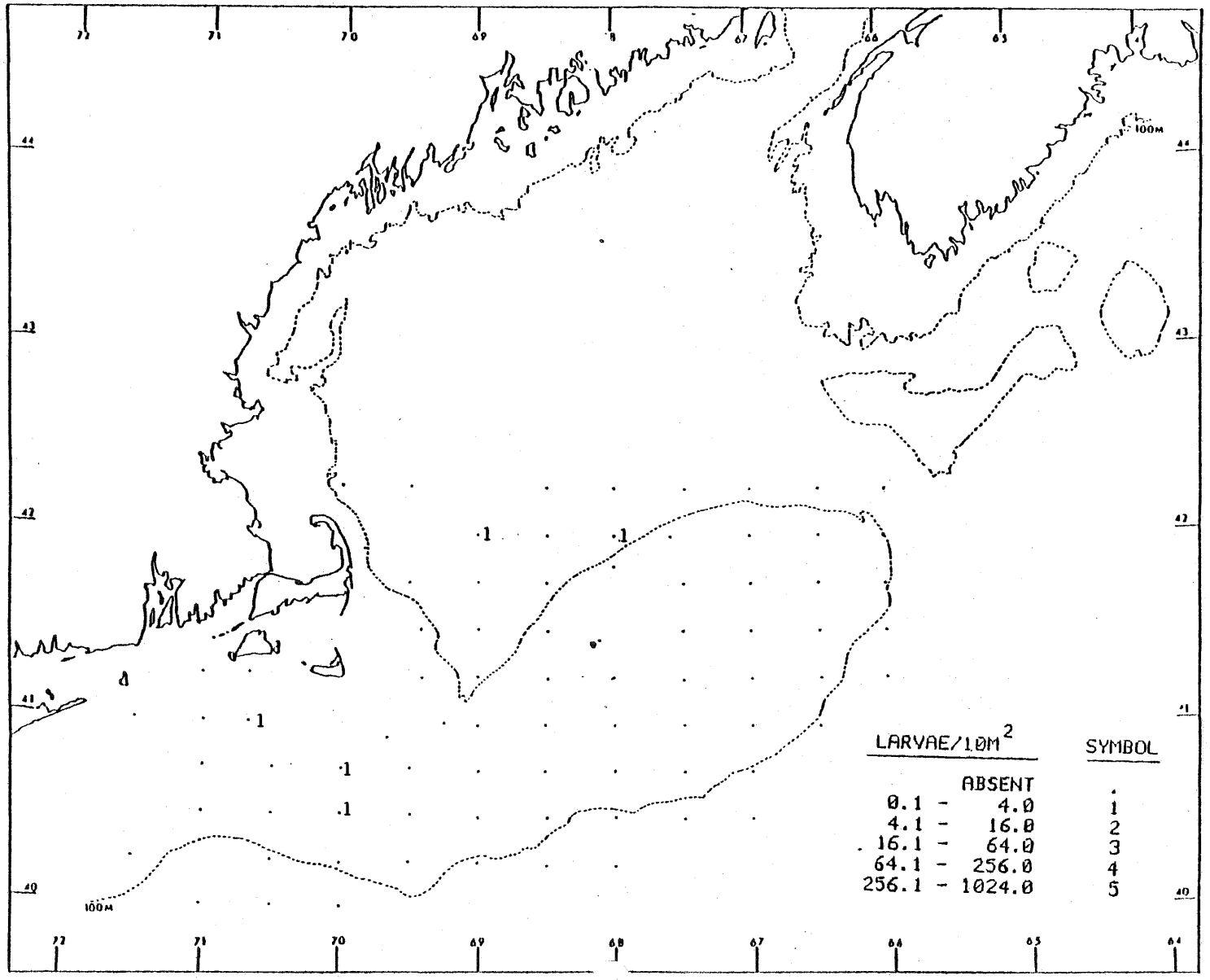


Table 149. Mean abundance (positive tows only) and mean length of *Lumpenus lumpretaeformis* by cruise.

Cruise	Middate	Number of Positive Tows	Mean no./ $10m^2$	Standard Deviation	Mean Length (mm)	Standard Deviation	Length Range
Delaware II 71-04	27 Sep. 1971	1	1.6	-	62.0	-	-
Albatross IV 75-02	14 Feb. 1975	1	1.7	-	24.0	-	-
Albatross IV 76-02	16 Feb. 1976	2	2.2	1.2	18.4	1.3	17 - 21
Mt. Mitchell 77-01	18 Feb. 1977	1	0.6	-	13.0	-	-

References:

Joakimsson 1978
Jordan et al. 1962
Leim and Scott 1966

Figure 150. Composite distribution and abundance (greatest occurrence per station) of Lumpenus maculatus collected during 30 autumn and winter cruises for the period Sep. 1971 - Feb. 1977.

Lumpenus maculatus (Fries) Common Name: Daubed shanny

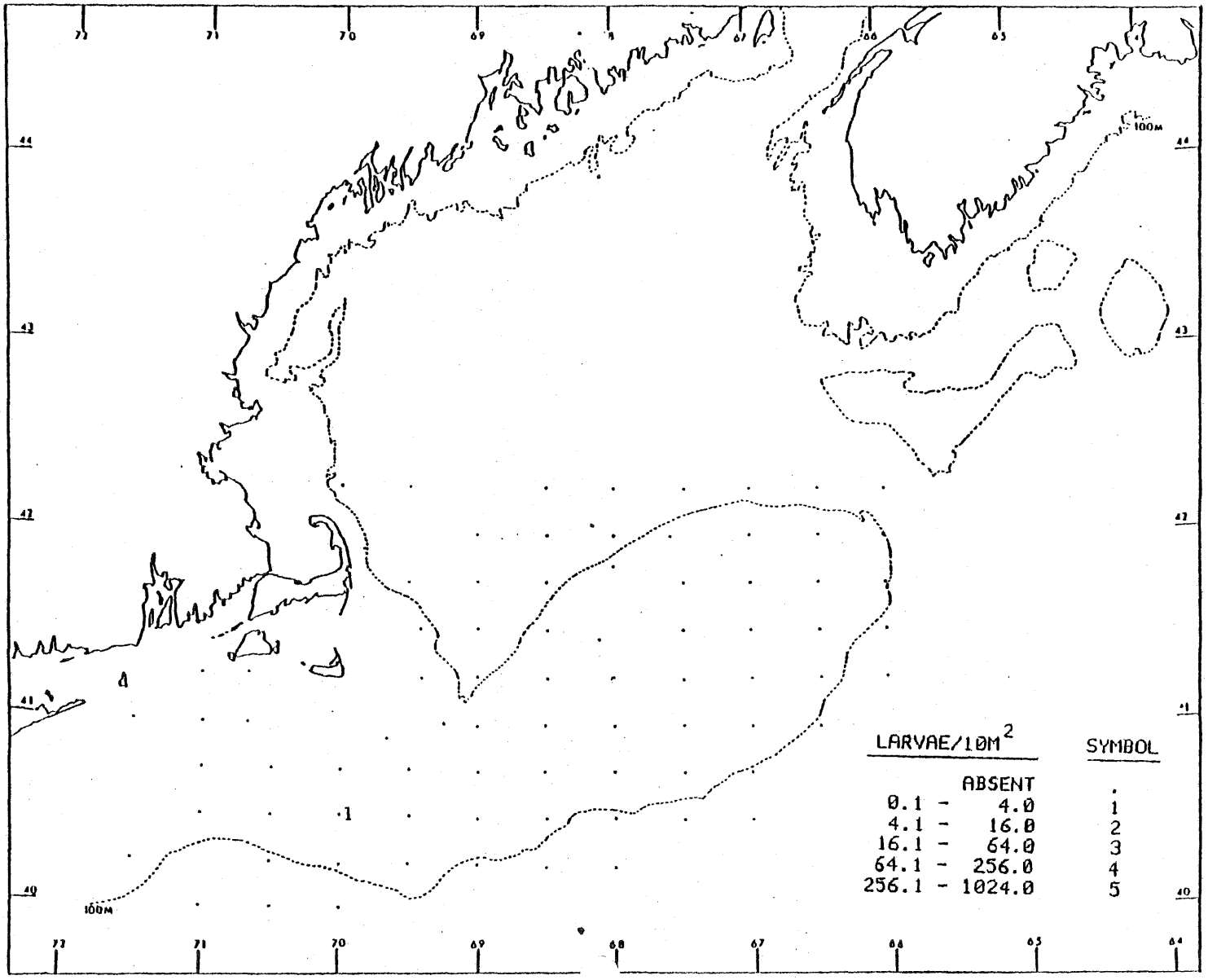


Table 150. Mean abundance (positive tows only) and mean length of *Lumpenus maculatus* by cruise.

Cruise	Middate	Number of Positive Tows	Mean no./ $10m^2$	Standard Deviation	Mean Length (mm)	Standard Deviation	Length Range
Albatross IV 76-01	16 Feb. 1976	1	1.3	-	21.0	-	-

References:

Dunbar and Hildebrand 1952
Leim and Scott 1966

Figure 151. Composite distribution and abundance (greatest occurrence per station) of Callionymidae collected during 30 autumn and winter cruises for the period Sep. 1971 - Feb. 1977.

Callionymidae Common Name: Dragonets

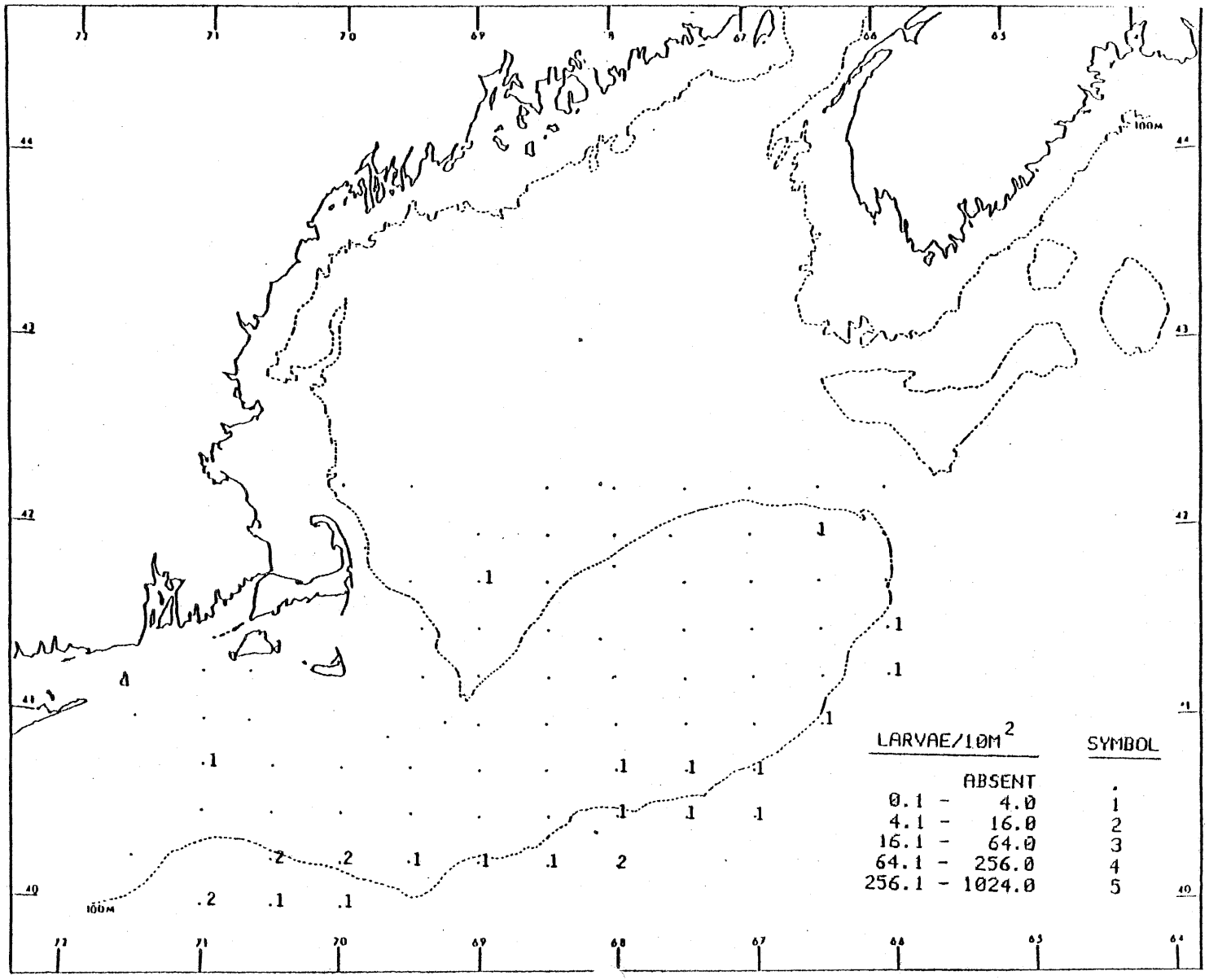


Table 151. Mean abundance (positive tows only) and mean length of Callionymidae by cruise.

Cruise	Middate	Number of Positive Tows	Mean no./ $10m^2$	Standard Deviation	Mean Length (mm)	Standard Deviation	Length Range
Delaware II 71-04	27 Sep. 1971	3	1.4	0.2	5.8	1.1	5 - 7
Viandra 71-01	17 Oct. 1971	2	1.2	0.1	7.0	1.3	6 - 8
Anton Dohrn 72-01	05 Nov. 1972	1	1.4	-	7.0	-	-
Wieczno 73-40	09 Oct. 1973	5	2.3	0.5	4.7	1.0	4 - 7
Belogorsk 73-01	23 Oct. 1973	1	1.6	-	5.0	-	-
Walther Herwig 73-43	02 Nov. 1973	5	5.8	5.0	6.4	4.8	2 - 30
Cryos 74-04	16 Sep. 1974	1	1.9	-	6.0	-	-
Prognoz 74-01	24 Oct. 1974	3	4.2	0.7	5.0	2.1	3 - 9
Anton Dohrn 74-01	19 Nov. 1974	3	3.9	1.4	5.3	1.1	4 - 7
Albatross IV 74-13	13 Dec. 1974	3	2.8	2.9	3.8	0.6	3 - 5
Belogorsk 75-02	01 Oct. 1975	1	1.3	-	3.0	-	-
Anton Dohrn 75-187	09 Nov. 1975	1	1.6	-	5.0	-	-
Albatross IV 75-14	09 Dec. 1975	4	1.5	0.1	3.7	0.5	3 - 4
Wieczno 76-03	24 Oct. 1976	1	1.2	-	7.0	-	-
Anton Dohrn 76-02	22 Nov. 1976	3	2.9	1.2	5.3	1.6	3 - 8

References:

Berrien et al. 1978
Colton and Byron 1977
Grimm 1978
Markle et al. 1980

Figure 152. Composite distribution and abundance (greatest occurrence per station) of Gobiidae collected during 30 autumn and winter cruises for the period Sep. 1971 - Feb. 1977.

Gobiidae

Common Name: Gobies

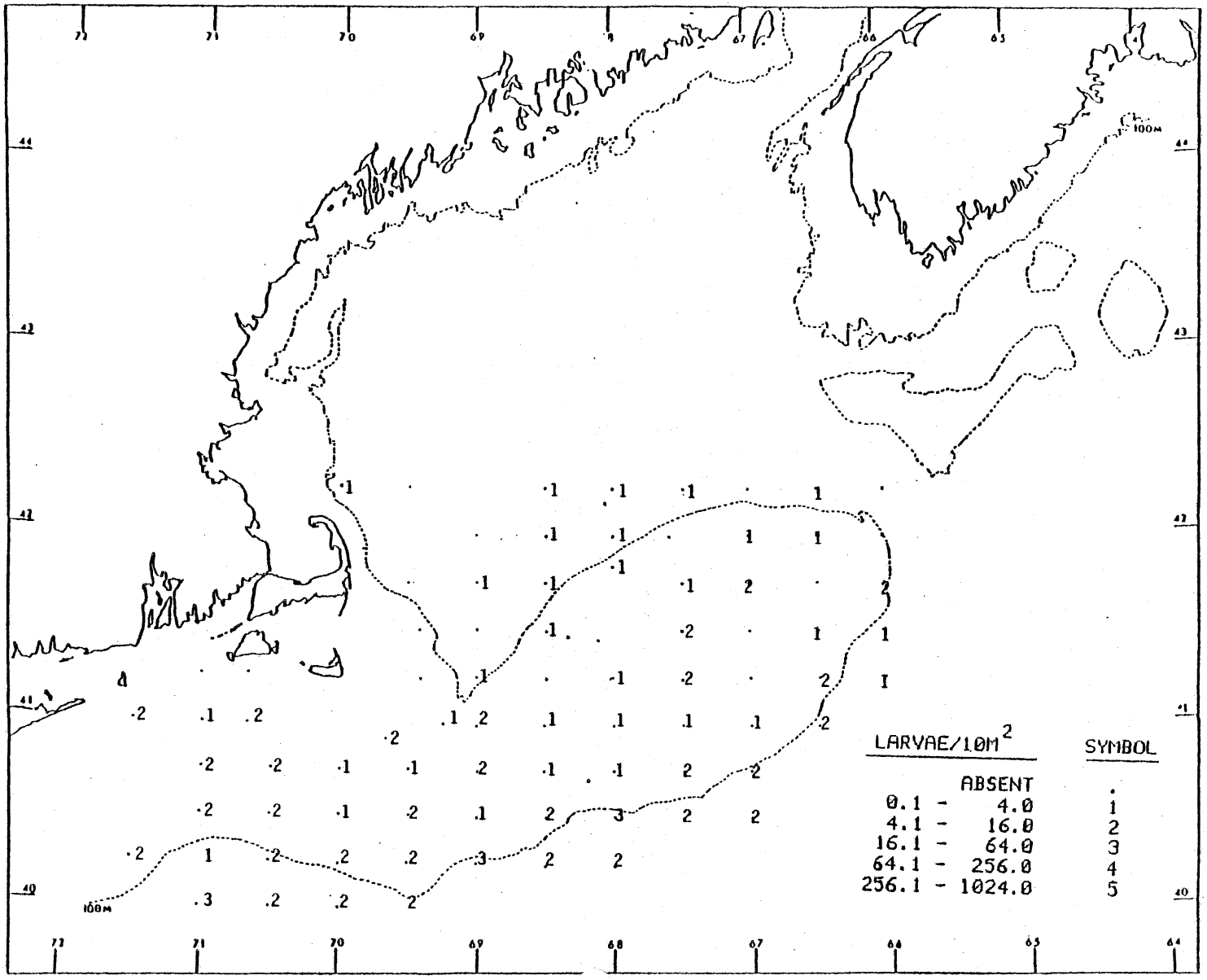


Table 152. Mean abundance (positive tows only) and mean length of Gobiidae by cruise.

Cruise	Middate	Number of Positive Tows	Mean no./ $10m^2$	Standard Deviation	Mean Length (mm)	Standard Deviation	Length Range
Delaware II 71-04	27 Sep. 1971	21	5.0	5.2	10.1	2.0	6 - 15
Viandra 71-01	17 Oct. 1971	13	4.1	3.8	8.5	2.6	4 - 15
Walther Herwig 71-01	05 Nov. 1971	3	1.1	0.3	8.4	0.6	8 - 9
Albatross IV 71-07	09 Dec. 1971	1	1.4	-	11.0	-	-
Wieczno 72-01	14 Oct. 1972	16	2.2	1.8	9.1	2.5	4 - 16
Argus 72-02	20 Oct. 1972	6	7.3	4.3	8.3	1.1	7 - 10
Anton Dohrn 72-01	05 Nov. 1972	11	2.8	2.0	8.2	1.5	5 - 11
Albatross IV 72-09	10 Dec. 1972	1	0.8	-	10.0	-	-
Cryos 73-01	19 Sep. 1973	3	1.7	0.9	8.2	1.7	6 - 10
Wieczno 73-40	09 Oct. 1973	16	3.8	3.3	8.6	2.3	4 - 15
Belogorsk 73-01	23 Oct. 1973	17	2.5	1.6	8.0	1.9	4 - 12
Walther Herwig 73-43	02 Nov. 1973	19	6.0	4.4	7.9	1.7	5 - 12
Albatross IV 73-09	13 Dec. 1973	9	4.3	2.5	8.3	1.3	7 - 12
Cryos 74-04	16 Sep. 1974	12	4.3	3.2	8.3	1.9	4 - 12
Prognoz 74-01	24 Oct. 1974	21	2.8	2.1	8.3	1.9	4 - 12
Anton Dohrn 74-01	19 Nov. 1974	18	5.3	3.8	7.1	1.8	4 - 12
Albatross IV 74-13	13 Dec. 1974	9	2.7	1.9	7.9	1.5	4 - 10
Belogorsk 75-02	01 Oct. 1975	1	1.4	-	6.0	-	-
Belogorsk 75-03	23 Oct. 1975	3	2.3	0.8	8.4	2.0	5 - 11
Anton Dohrn 75-187	09 Nov. 1975	10	4.9	4.4	7.9	1.8	4 - 11
Albatross IV 75-14	09 Dec. 1975	12	3.8	3.8	7.9	1.6	5 - 13
Belogorsk 76-03	08 Oct. 1976	16	1.9	1.6	9.3	1.4	7 - 11
Wieczno 76-03	24 Oct. 1976	24	3.0	1.6	8.9	1.5	6 - 13
Anton Dohrn 76-02	22 Nov. 1976	11	5.4	6.5	8.2	2.0	5 - 13
Researcher 76-02	04 Dec. 1976	18	2.5	1.7	8.0	1.8	5 - 12

References:

Berrien et al. 1978
Colton and Byron 1977
Fischer 1978
Grimm 1978
Joakimsson 1978
Markle et al. 1980

Figure 153. Composite distribution and abundance (greatest occurrence per station) of Labridae collected during 30 autumn and winter cruises for the period Sep. 1971 - Feb. 1977.

Labridae Common Name: Wrasses

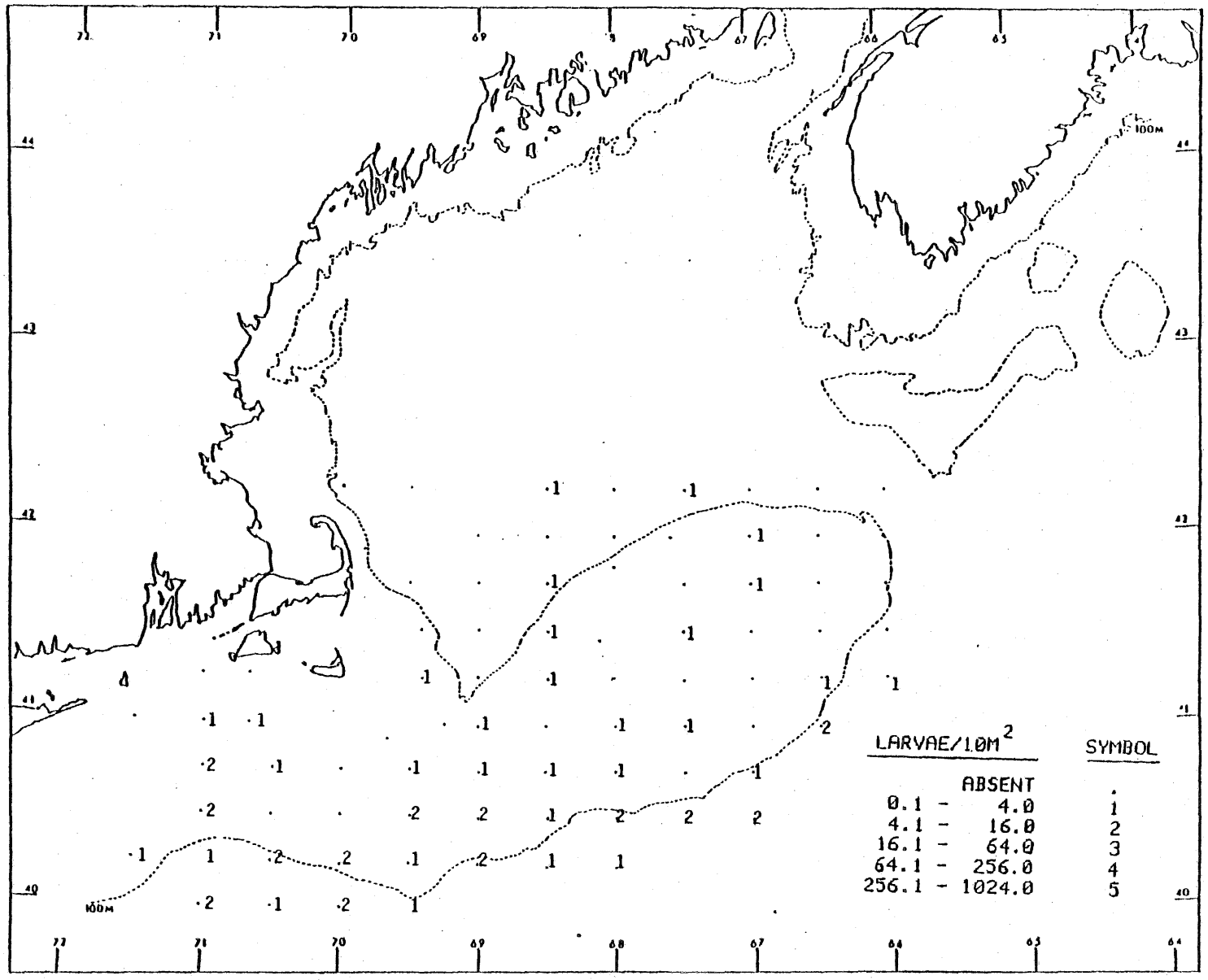


Table 153. Mean abundance (positive tows only) and mean length of Labridae by cruise.

Cruise	Middate	Number of Positive Tows	Mean no./ $10m^2$	Standard Deviation	Mean Length (mm)	Standard Deviation	Length Range
Delaware II 71-04	27 Sep. 1971	18	3.1	2.3	11.9	1.4	9 - 15
Viandra 71-01	17 Oct. 1971	3	1.1	0.5	13.0	1.5	12 - 15
Wieczno 72-01	14 Oct. 1972	4	2.8	1.8	11.4	1.3	8 - 13
Argus 72-02	20 Oct. 1972	2	4.6	1.6	10.0	0.8	9 - 11
Anton Dohrn 72-01	05 Nov. 1972	2	2.1	1.0	8.7	1.4	7 - 10
Albatross IV 72-09	10	2	1.4	0.1	10.5	0.7	10 - 11
Cryos 73-01	19 Sep. 1973	1	1.3	-	11.0	-	-
Wieczno 73-40	09 Oct. 1973	9	2.5	1.2	11.5	2.6	5 - 15
Belogorsk 73-01	23 Oct. 1973	16	1.7	0.8	10.4	2.1	6 - 13
Walther Herwig 73-43	02 Nov. 1973	8	3.1	2.4	12.0	2.5	7 - 18
Albatross IV 73-09	13 Dec. 1973	1	10.7	-	11.0	-	-
Cryos 74-04	16 Sep. 1974	4	3.6	2.6	7.9	4.1	3 - 15
Prognoz 74-01	24 Oct. 1974	4	1.2	0.1	9.6	2.4	7 - 13
Anton Dohrn 74-01	19 Nov. 1974	3	1.8	0.4	9.6	2.7	7 - 13
Albatross IV 74-13	13 Dec. 1974	5	1.5	0.7	10.0	2.8	5 - 13
Belogorsk 75-02	01 Oct. 1975	6	2.0	1.7	8.6	2.3	5 - 13
Belogorsk 75-03	23 Oct. 1975	4	1.7	0.7	9.4	1.8	7 - 11
Anton Dohrn 75-187	09 Nov. 1975	3	2.9	0.8	10.0	2.7	5 - 15
Albatross IV 75-14	09 Dec. 1975	2	1.7	0.4	9.6	0.6	9 - 10
Belogorsk 76-03	08 Oct. 1976	10	1.6	0.9	11.7	0.9	10 - 13
Wieczno 76-03	24 Oct. 1976	7	1.9	0.9	11.3	1.7	8 - 13
Anton Dohrn 76-02	22 Nov. 1976	2	3.7	2.7	9.8	3.1	6 - 14

References:

Berrien et al. 1978
Colton and Byron 1977
Fischer 1978
Grimm 1978
Joakimsson 1978
Leim and Scott 1966

Figure 154. Composite distribution and abundance (greatest occurrence per station) of Tautoga onitis collected during 30 autumn and winter cruises for the period Sep. 1971 - Feb. 1977.

Tautoga onitis (Linnaeus) Common Name: Tautog

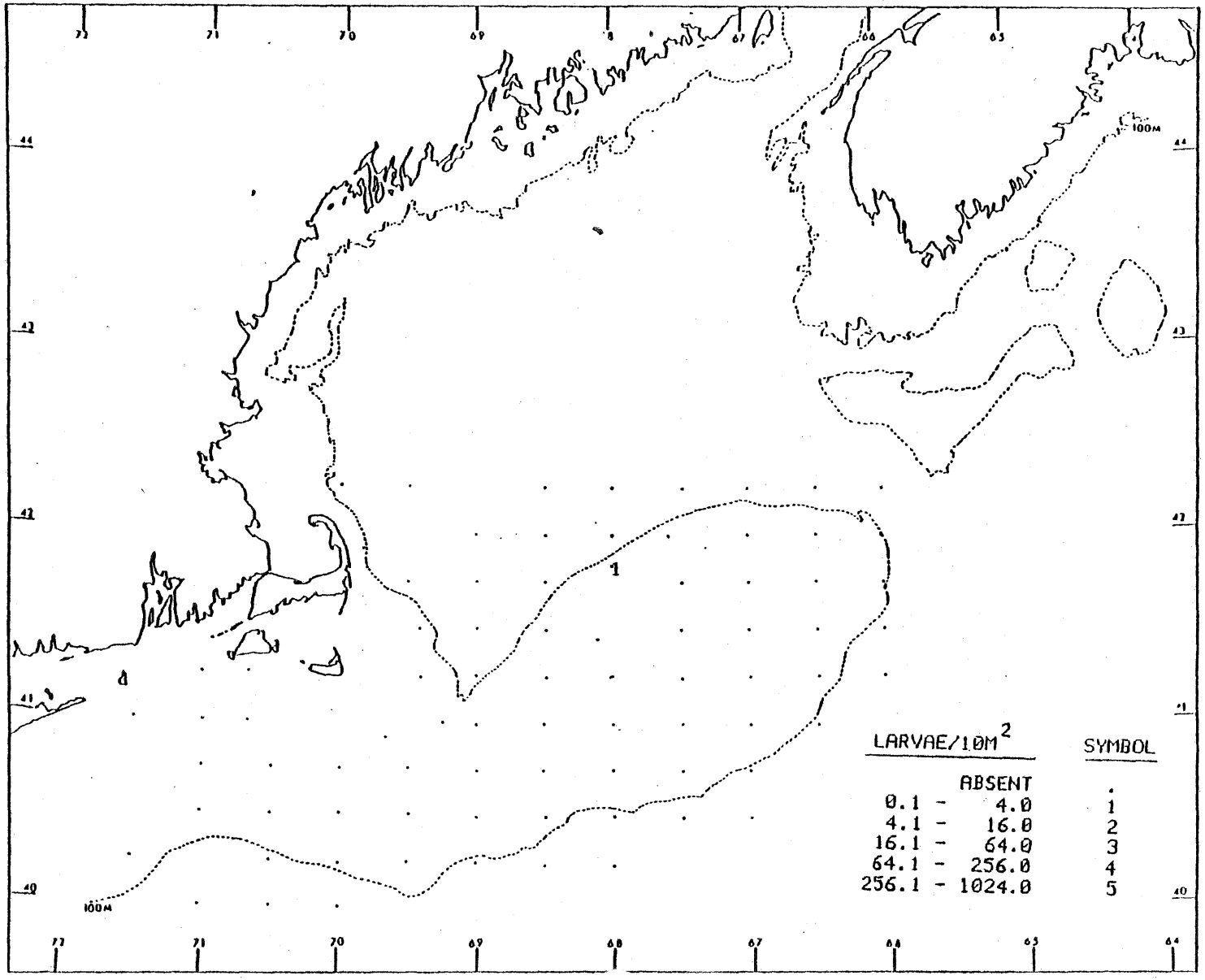


Table 154. Mean abundance (positive tows only) and mean length of *Tautoga onitis* by cruise.

Cruise	Middate	Number of Positive Tows	Mean no./ $10m^2$	Standard Deviation	Mean Length (mm)	Standard Deviation	Length Range
Wieczno 73-40	09 Oct. 1973	1	1.6	-	13.0	-	-

References:

Berrien et al. 1978
Colton and Byron 1977
Leim and Scott 1966
Markle et al. 1980

Figure 155. Composite distribution and abundance (greatest occurrence per station) of Tautogolabrus adspersus collected during 30 autumn and winter cruises for the period Sep. 1971 - Feb. 1977.

Tautogolabrus adspersus (Walbaum) Common Name: Cunner

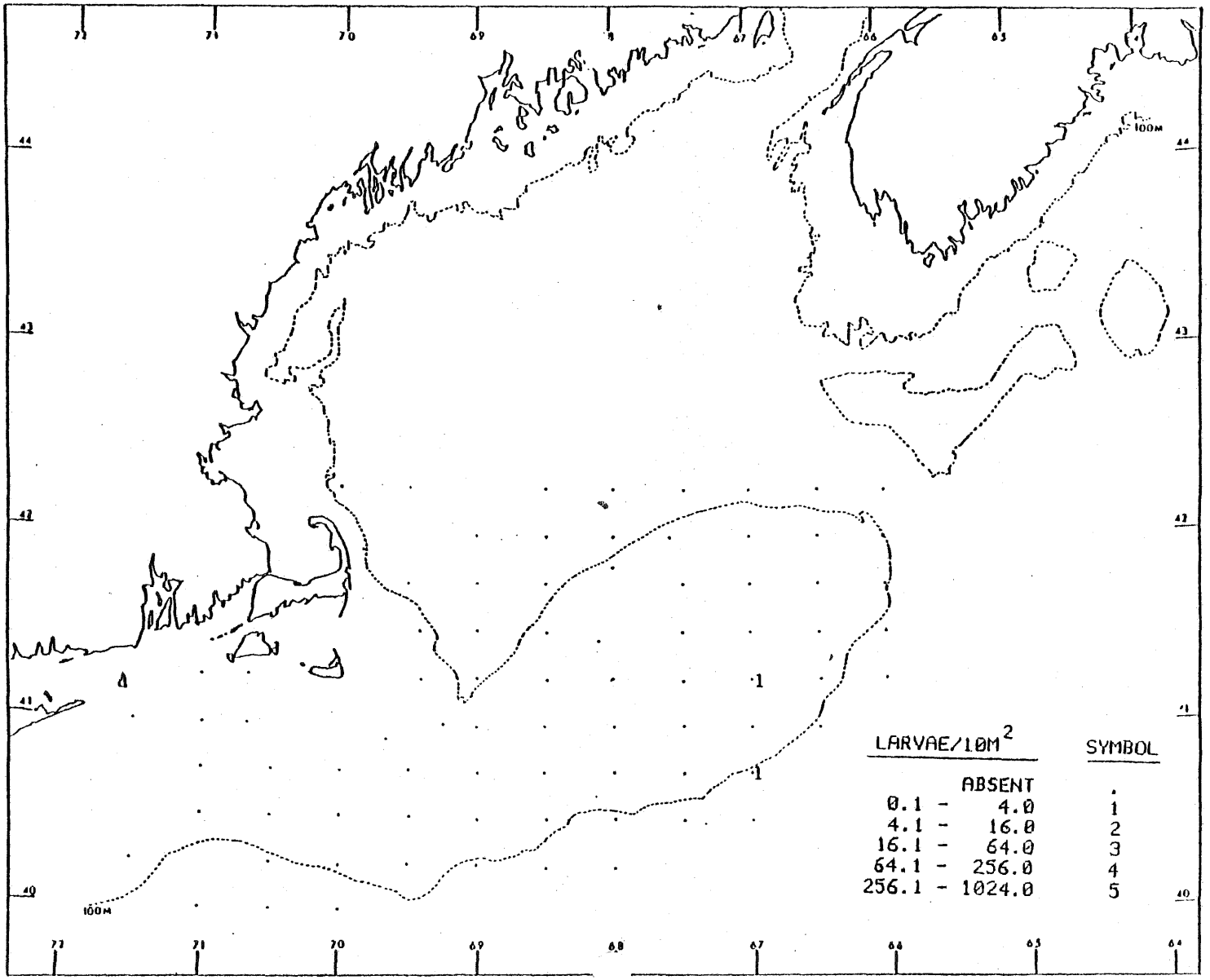


Table 155. Mean abundance (positive tows only) and mean length of *Tautogolabrus adspersus* by cruise.

Cruise	Middate	Number of Positive Tows	Mean no./ $10m^2$	Standard Deviation	Mean Length (mm)	Standard Deviation	Length Range
Walther Herwig 73-43	02 Nov. 1973	1	1.3	-	5.0	-	-
Albatross IV 73-09	13 Dec. 1973	1	3.8	-	9.0	-	-

References:

Berrien et al. 1978
Colton and Byron 1977
Joakimsson 1978
Leim and Scott 1966

Figure 156. Composite distribution and abundance (greatest occurrence per station) of Thalassoma bifasciatum collected during 30 autumn and winter cruises for the period Sep. 1971 - Feb. 1977.

Thalassoma bifasciatum (Bloch) Common Name: Bluehead

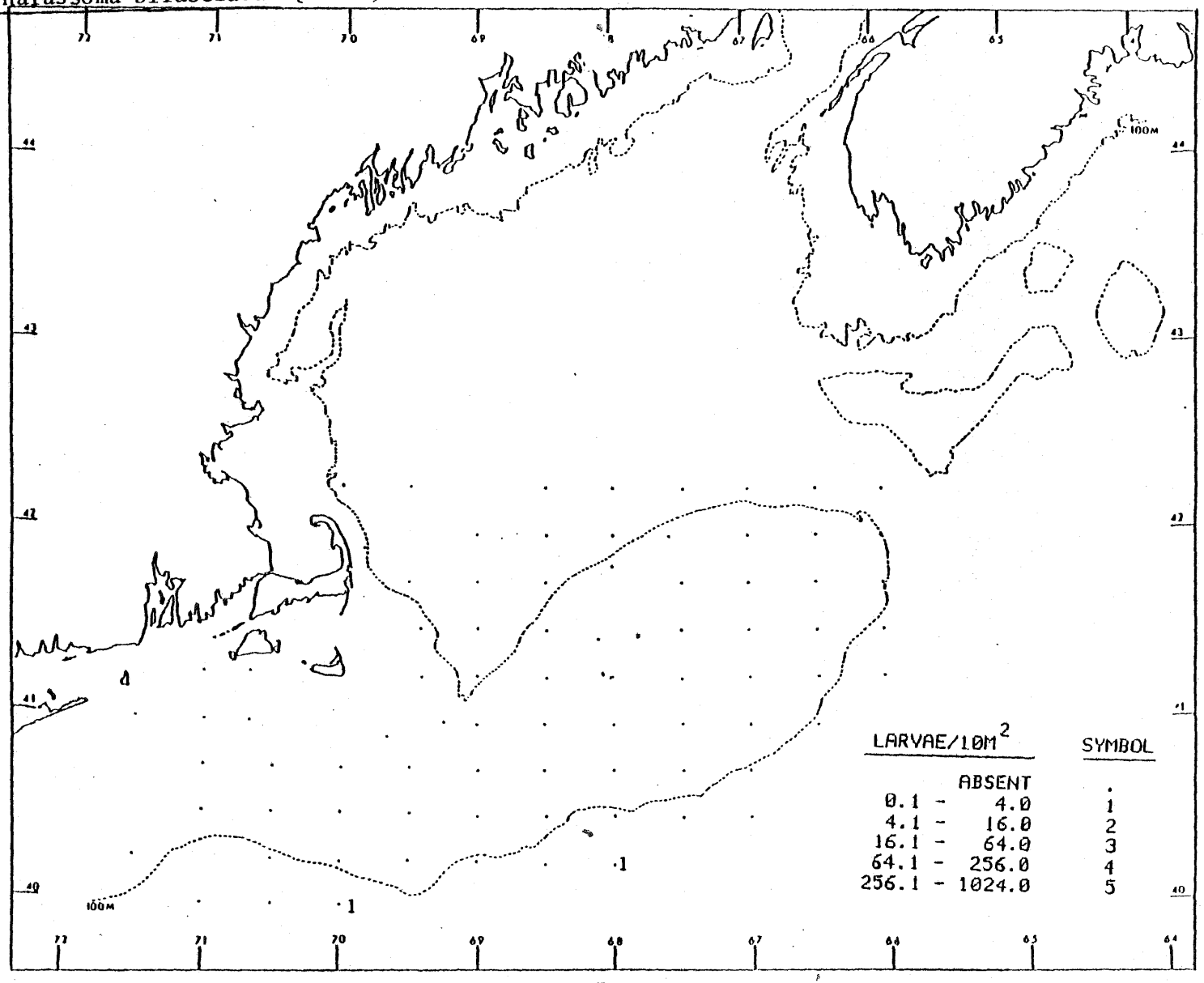


Table 156. Mean abundance (positive tows only) and mean length of *Thalassoma bifasciatum* by cruise.

Cruise	Middate	Number of Positive Tows	Mean no./ $10m^2$	Standard Deviation	Mean Length (mm)	Standard Deviation	Length Range
Anton Dohrn 74-01	19 Nov. 1974	2	1.9	0.1	9.1	1.2	8 - 10

References:

Fischer 1978
Joakimsson 1978
Jordan et al. 1962

Figure 157. Composite distribution and abundance (greatest occurrence per station) of Scaridae collected during 30 autumn and winter cruises for the period Sep. 1971 - Feb. 1977.

Scaridae

Common Name: Parrotfishes

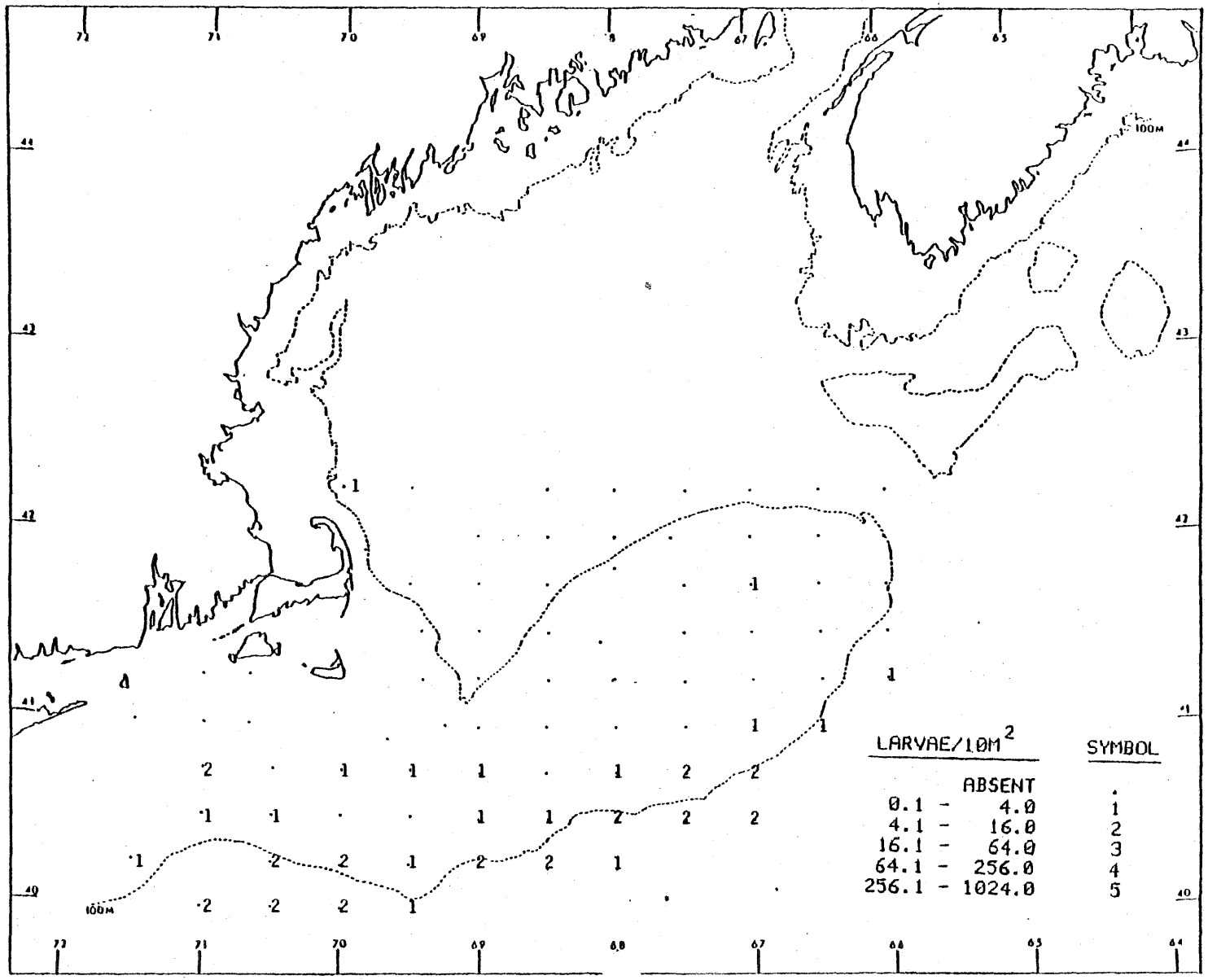


Table 157. Mean abundance (positive tows only) and mean length of Scaridae by cruise.

Cruise	Middate	Number of Positive Tows	Mean no./ $10m^2$	Standard Deviation	Mean Length (mm)	Standard Deviation	Length Range
Delaware II 71-04	27 Sep. 1971	10	2.7	2.5	9.1	1.2	7 - 12
Viandra 71-01	17 Oct. 1971	5	1.9	0.8	8.7	1.6	7 - 11
Wieczno 72-01	14 Oct. 1972	4	1.6	0.6	9.5	0.5	9 - 10
Anton Dohrn 72-01	05 Nov. 1972	4	1.8	0.7	8.8	1.6	6 - 10
Cryos 73-01	19 Sep. 1973	1	1.3	-	5.0	-	-
Wieczno 73-40	09 Oct. 1973	6	2.6	2.0	8.6	1.5	6 - 10
Belogorsk 73-01	23 Oct. 1973	7	3.7	3.0	7.9	1.5	5 - 10
Walther Herwig 73-43	02 Nov. 1973	7	6.6	4.4	8.9	1.2	7 - 12
Albatross IV 73-09	13 Dec. 1973	5	3.2	1.5	8.8	1.3	7 - 11
Cryos 74-04	16 Sep. 1974	2	4.5	4.5	6.4	1.5	5 - 9
Prognoz 74-01	24 Oct. 1974	9	1.9	0.8	7.9	1.4	6 - 11
Anton Dohrn 74-01	19 Nov. 1974	8	4.8	2.8	8.1	1.7	5 - 10
Albatross IV 74-13	13 Dec. 1974	2	0.7	0.1	8.3	0.6	8 - 9
Belogorsk 75-03	23 Oct. 1975	2	2.0	1.1	8.9	0.9	8 - 10
Anton Dohrn 75-187	09 Nov. 1975	6	2.9	1.2	7.9	1.4	6 - 11
Albatross IV 75-14	09 Dec. 1975	5	3.3	1.7	8.5	1.4	6 - 10
Belogorsk 76-03	08 Oct. 1976	1	1.2	-	10.0	-	-
Wieczno 76-03	24 Oct. 1976	2	3.3	0	8.2	1.6	6 - 10
Anton Dohrn 76-02	22 Nov. 1976	4	3.1	3.1	8.1	1.7	5 - 11
Researcher 76-01	04 Dec. 1976	2	1.5	0.4	7.2	1.2	6 - 8

References:

Berrien et al. 1978
Colton and Byron 1977
Fischer 1978
Grimm 1978
Joakimsson 1978
Markle et al. 1980

Figure 158. Composite distribution and abundance (greatest occurrence per station) of Apogonidae collected during 30 autumn and winter cruises for the period Sep. 1971 - Feb. 1977.

Apogonidae

Common Name: Cardinal fishes

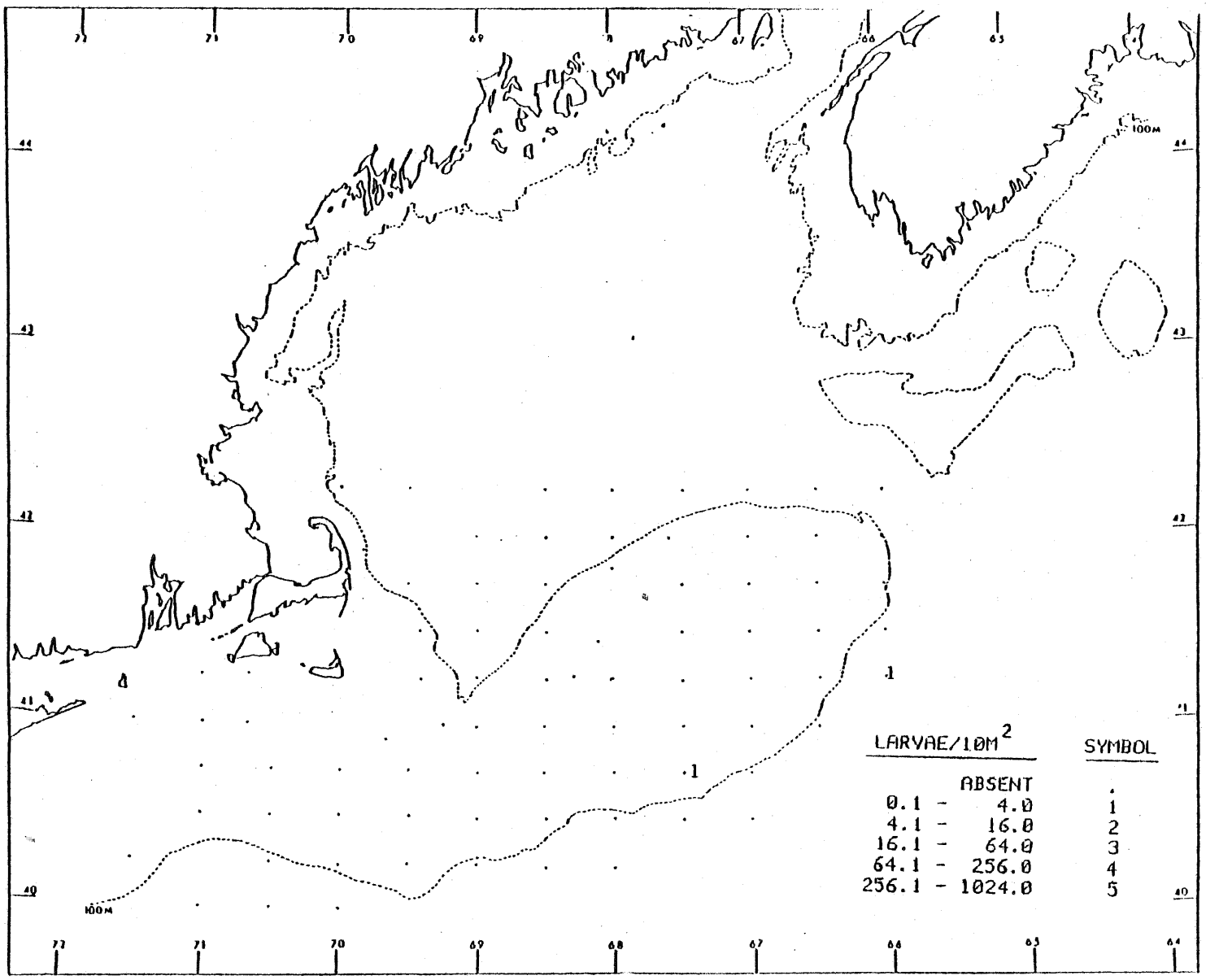


Table 158. Mean abundance (positive tows only) and mean length of Apogonidae by cruise.

Cruise	Middate	Number of Positive Tows	Mean no./ $10m^2$	Standard Deviation	Mean Length (mm)	Standard Deviation	Length Range
Belogorsk 73-01	23 Oct. 1973	1	2.5	-	8.5	1.9	7 - 10
Prognoz 74-01	24 Oct. 1974	1	1.3	-	18.0	-	-

References:

Berrien et al. 1978
Colton and Byron 1977
Fischer 1978
Grimm 1978
Joakimsson 1978
Jordan et al. 1962
Leim and Scott 1966

Figure 159. Composite distribution and abundance (greatest occurrence per station) of Apogon sp. collected during 30 autumn and winter cruises for the period Sep. 1971 - Feb. 1977.

Apogon sp.

Common Name:

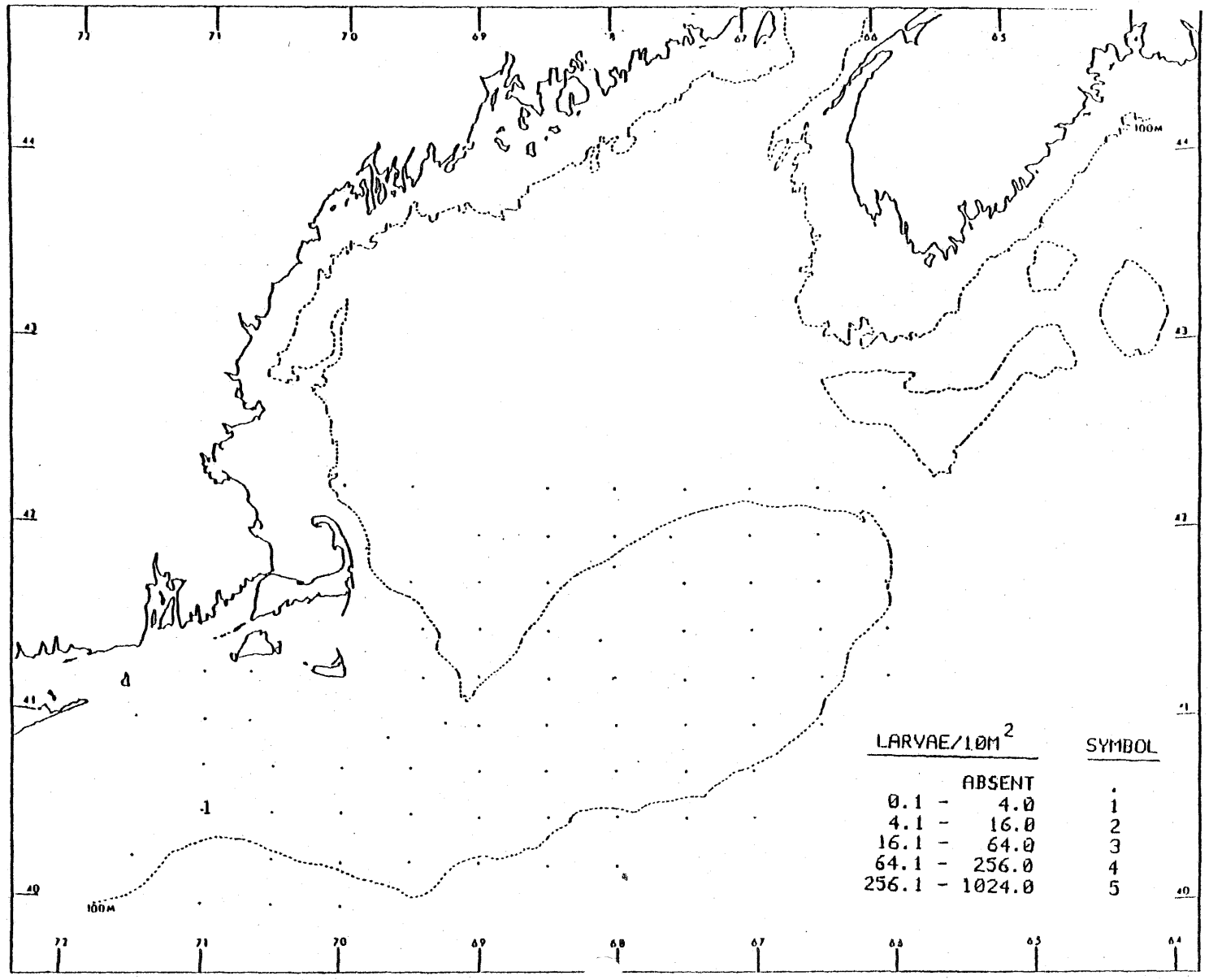


Table 159. Mean abundance (positive tows only) and mean length of *Apogon* sp. by cruise.

Cruise	Middate	Number of Positive Tows	Mean no./ $10m^2$	Standard Deviation	Mean Length (mm)	Standard Deviation	Length Range
Delaware II 71-04	27 Sep. 1971	1	0.8	-	16.0	-	-

References:

Fischer 1978
Jordan et al. 1962

Figure 160. Composite distribution and abundance (greatest occurrence per station) of Aspidophoroides monopterygius collected during 30 autumn and winter cruises for the period Sep. 1971 - Feb. 1977.

Aspidophoroides monopterygius

Common Name: Alligatorfish

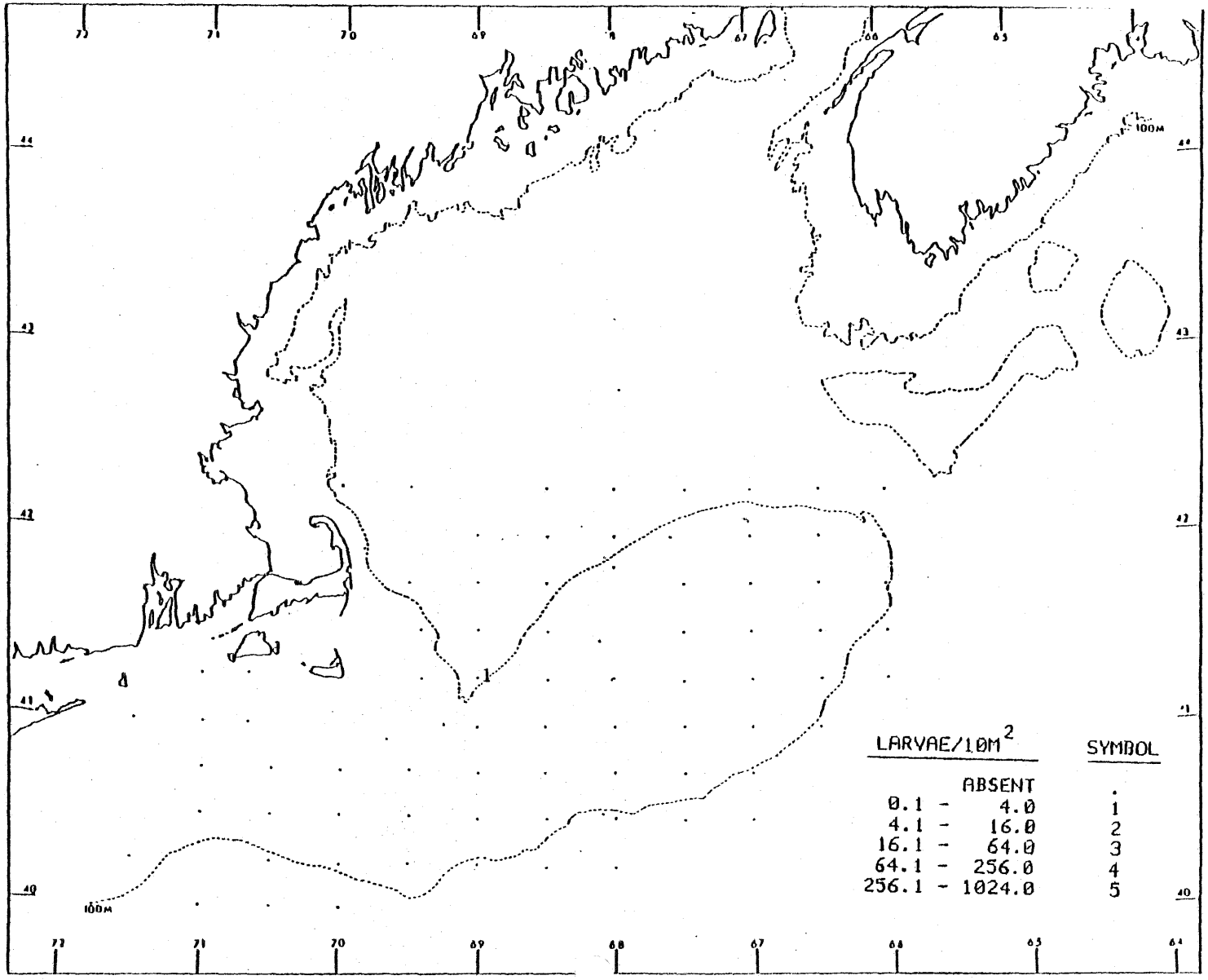


Table 160. Mean abundance (positive tows only) and mean length of Aspidophoroides monopterygius by cruise.

Cruise	Middate	Number of Positive Tows	Mean no./ $10m^2$	Standard Deviation	Mean Length (mm)	Standard Deviation	Length Range
Albatross IV 76-01	16 Feb. 1976	1	2.5	-	45.0	-	-

References:

Jordan et al. 1962
Leim and Scott 1966

Figure 161. Composite distribution and abundance (greatest occurrence per station) of Howella sp. collected during 30 autumn and winter cruises for the period Sep. 1971 - Feb. 1977.

Howella sp. Common Name:

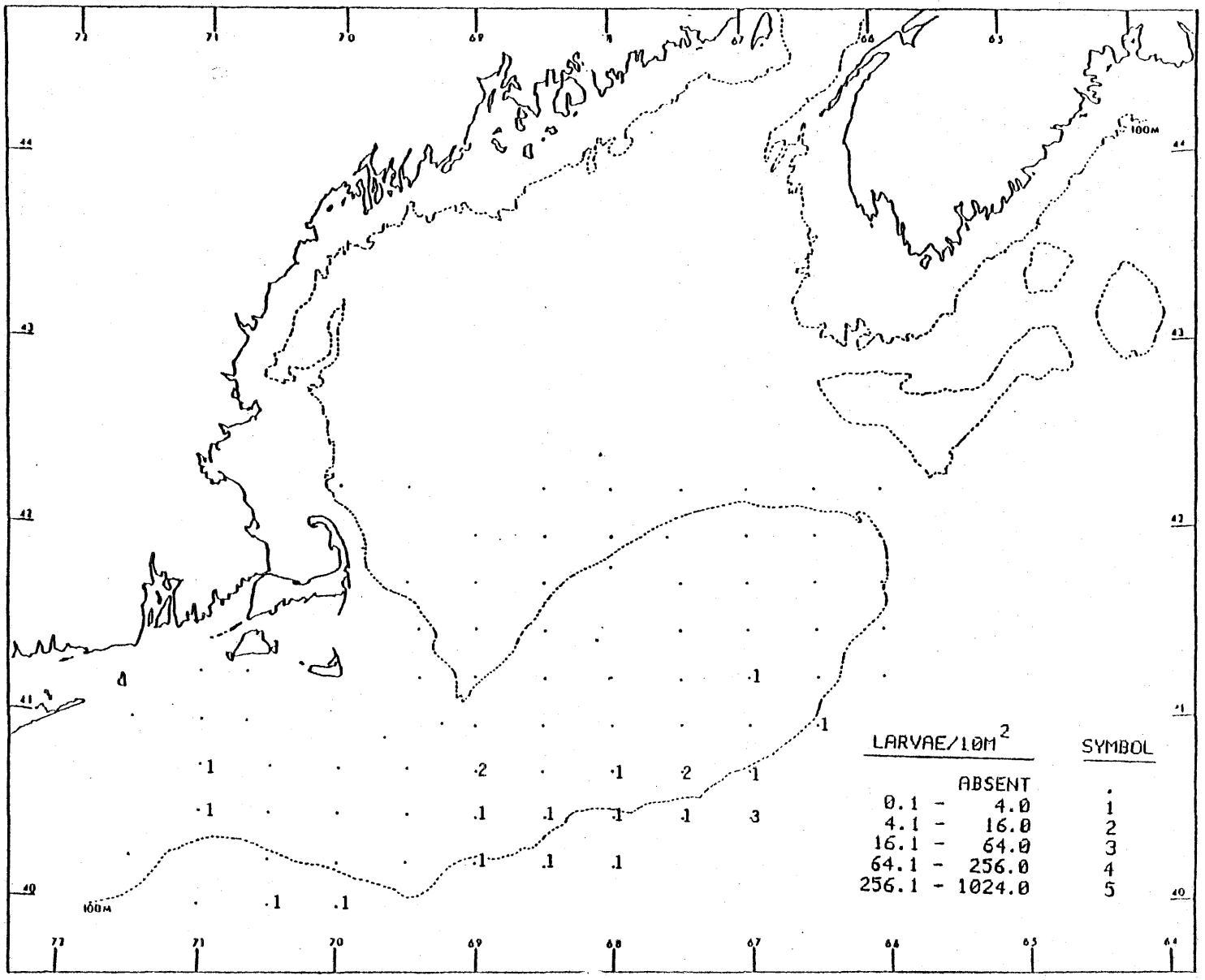


Table 161. Mean abundance (positive tows only) and mean length of Howella sp. by cruise.

Cruise	Middate	Number of Positive Tows	Mean no./ $10m^2$	Standard Deviation	Mean Length (mm)	Standard Deviation	Length Range
Delaware II 71-04	27 Sep. 1971	9	5.3	9.7	3.7	0.9	2 - 6
Viandra 71-01	17 Oct. 1971	4	1.8	0.7	3.9	1.0	3 - 5
Anton Dohrn 72-01	05 Nov. 1972	1	1.4	-	2.0	-	-
Wieczno 73-40	09 Oct. 1973	6	2.6	1.2	4.1	1.4	3 - 7
Belogorsk 73-01	23 Oct. 1973	4	1.9	0.4	6.4	1.3	4 - 7
Walther Herwig 73-43	02 Nov. 1973	2	1.6	0.4	5.1	1.0	4 - 6
Cryos 74-04	16 Sep. 1974	1	1.5	-	2.0	-	-
Prognoz 74-01	24 Oct. 1974	2	1.9	0.9	5.0	1.0	4 - 6
Anton Dohrn 75-187	09 Nov. 1975	2	1.8	0.4	5.9	3.2	3 - 12
Albatross IV 75-14	09 Dec. 1975	1	1.7	-	3.0	-	-
Belogorsk 76-03	08 Oct. 1976	2	3.1	1.5	6.2	1.0	5 - 7
Anton Dohrn 76-02	22 Nov. 1976	1	1.9	-	5.0	-	-

References:

Grimm 1978
Joakimsson 1978

Figure 162. Composite distribution and abundance (greatest occurrence per station) of Brama sp. collected during 30 autumn and winter cruises for the period Sep. 1971 - Feb. 1977.

Brama sp. Common Name:

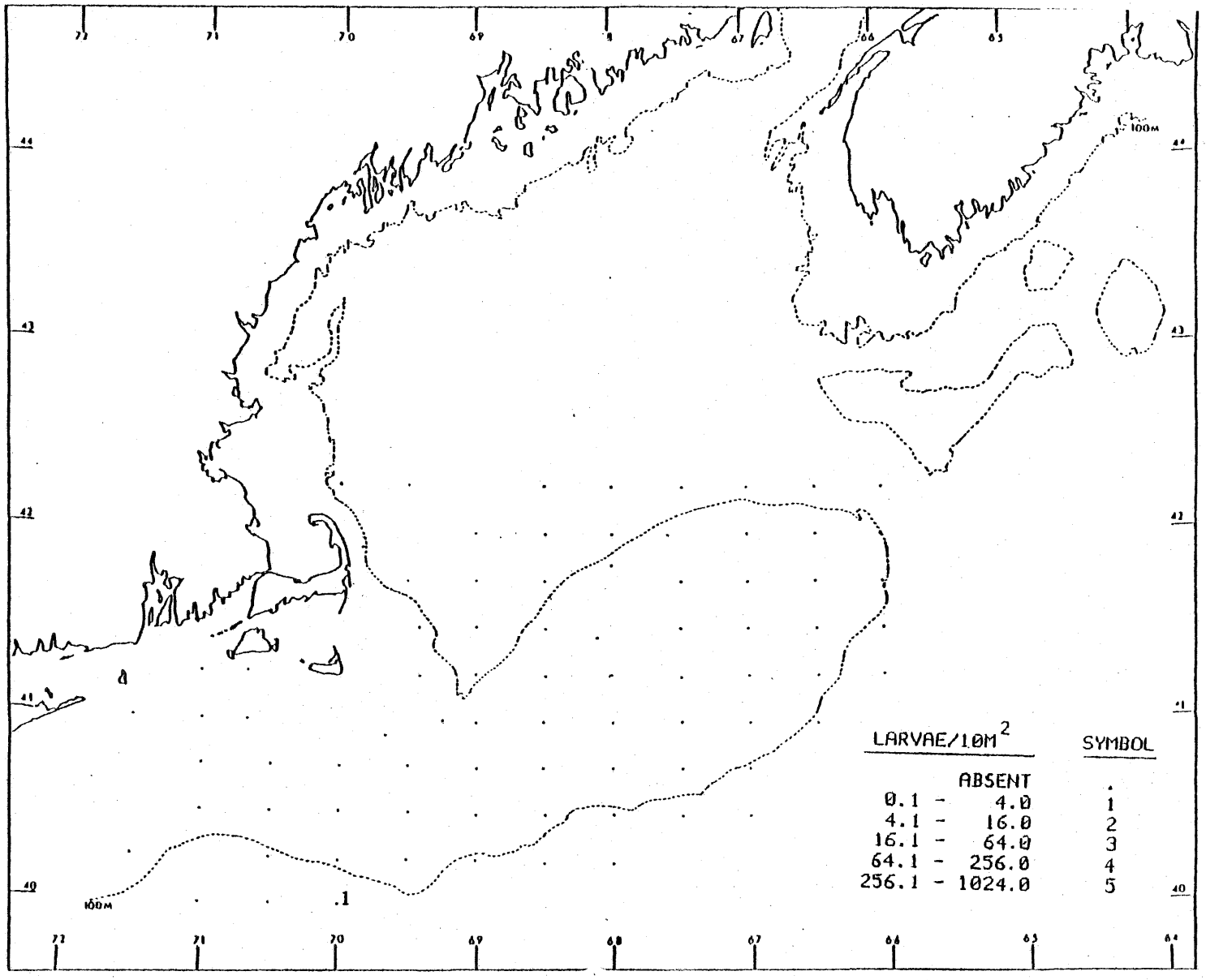


Table 162. Mean abundance (positive tows only) and mean length of *Brama* sp. by cruise.

Cruise	Middate	Number of Positive Tows	Mean no./ $10m^2$	Standard Deviation	Mean Length (mm)	Standard Deviation	Length Range
Anton Dohrn 72-01	05 Nov. 1972	1	1.4	-	17.0	-	-

References:

Fischer 1978
Joakimsson 1978
Jordan et al. 1962
Leim and Scott 1966

Figure 163. Composite distribution and abundance (greatest occurrence per station) of Carangidae collected during 30 autumn and winter cruises for the period Sep. 1971 - Feb. 1977.

Carangidae Common Name: Jacks and Pompanos

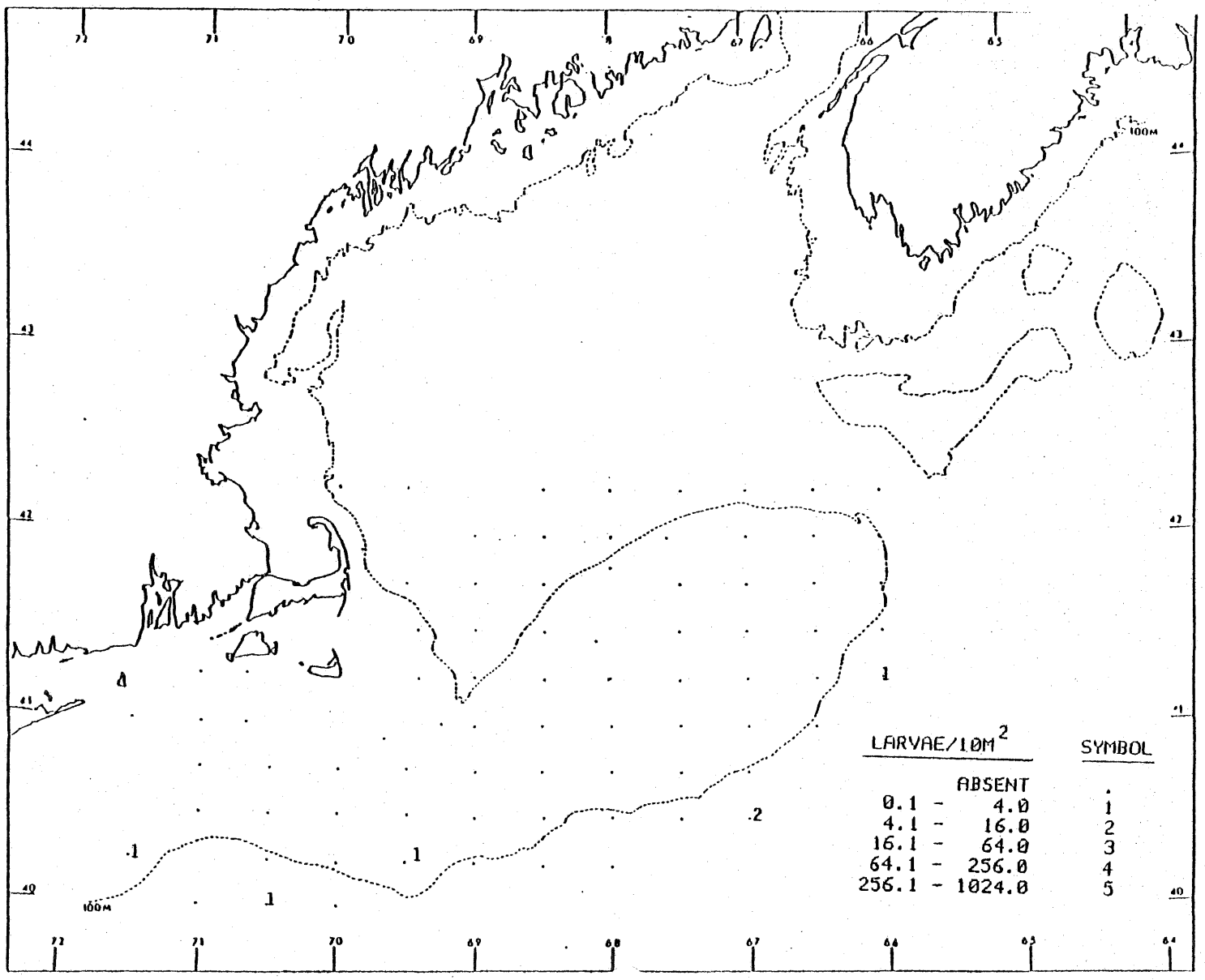


Table 163. Mean abundance (positive tows only) and mean length of Carangidae by cruise.

Cruise	Middate	Number of Positive Tows	Mean no./ $10m^2$	Standard Deviation	Mean Length (mm)	Standard Deviation	Length Range
Anton Dohrn 72-01	05 Nov. 1972	1	1.4	-	5.0	-	-
Cryos 74-04	16 Sep. 1974	2	3.0	2.3	4.4	0.5	4 - 5
Albatross IV 74-13	13 Dec. 1975	1	0.6	-	5.0	-	-
Belogorsk 75-03	23 Oct. 1975	1	1.4	-	7.0	-	-

References:

Berrien et al. 1978
Colton and Byron 1977
Fischer 1978
Joakimsson 1978
Jordan et al. 1962
Leim and Scott 1966

Figure 164. Composite distribution and abundance (greatest occurrence per station) of Selene vomer collected during 30 autumn and winter cruises for the period Sep. 1971 - Feb. 1977.

Selene vomer (Linnaeus) Common Name: Atlantic lookdown

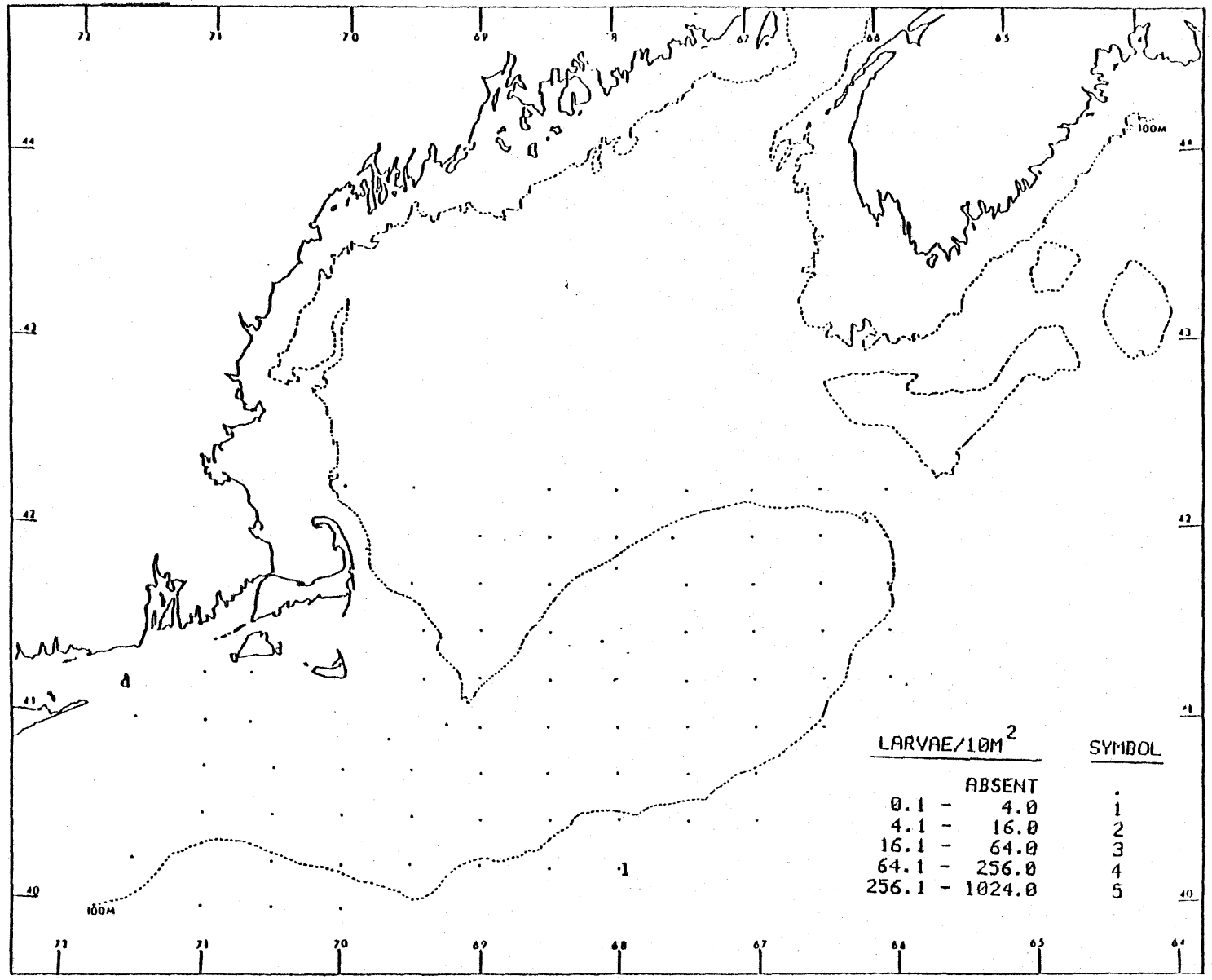


Table 164. Mean abundance (positive tows only) and mean length of *Selene vomer* by cruise.

Cruise	Middate	Number of Positive Tows	Mean no./ $10m^2$	Standard Deviation	Mean Length (mm)	Standard Deviation	Length Range
Anton Dohrn 74-01	19 Nov. 1974	1	1.8	-	11.0	-	-

References:

Fischer 1978
Joakimsson 1978
Jordan et al. 1962
Leim and Scott 1966

Figure 165. Composite distribution and abundance (greatest occurrence per station) of Enneacanthus sp. collected during 30 autumn and winter cruises for the period Sep. 1971 - Feb. 1977.

Enneacanthus sp. Common Name:

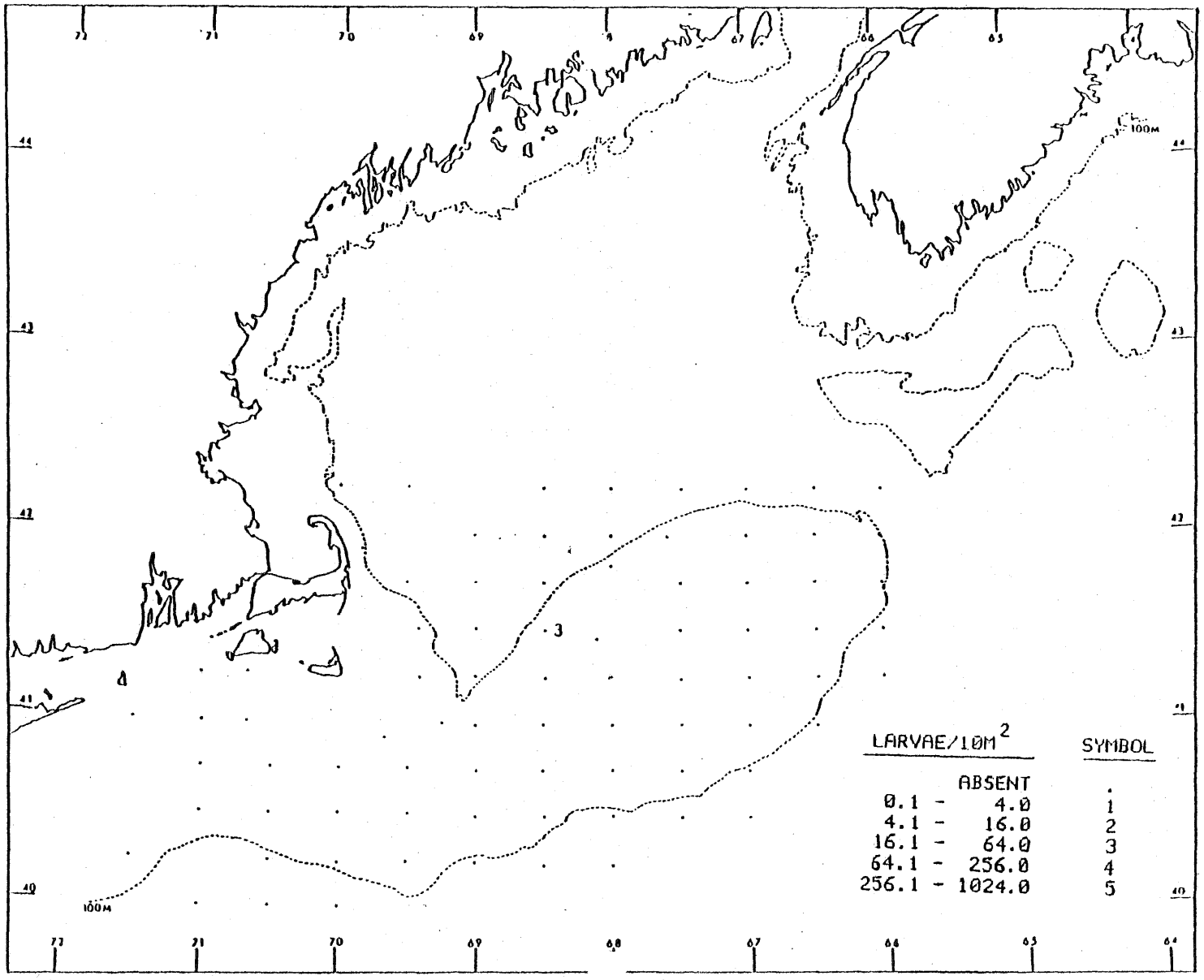


Table 165. Mean abundance (positive tows only) and mean length of *Enneacanthus* sp. by cruise.

Cruise	Middate	Number of Positive Tows	Mean no./ $10m^2$	Standard Deviation	Mean Length (mm)	Standard Deviation	Length Range
Albatross IV 75-02	14 Feb. 1975	1	33.2*	-	12.5	1.8	10 - 17

References:

Jordan et al. 1962

Figure 166. Composite distribution and abundance (greatest occurrence per station) of Kyphosidae collected during 30 autumn and winter cruises for the period Sep. 1971 - Feb. 1977.

Kyphosidae

Common Name: Pilotfishes

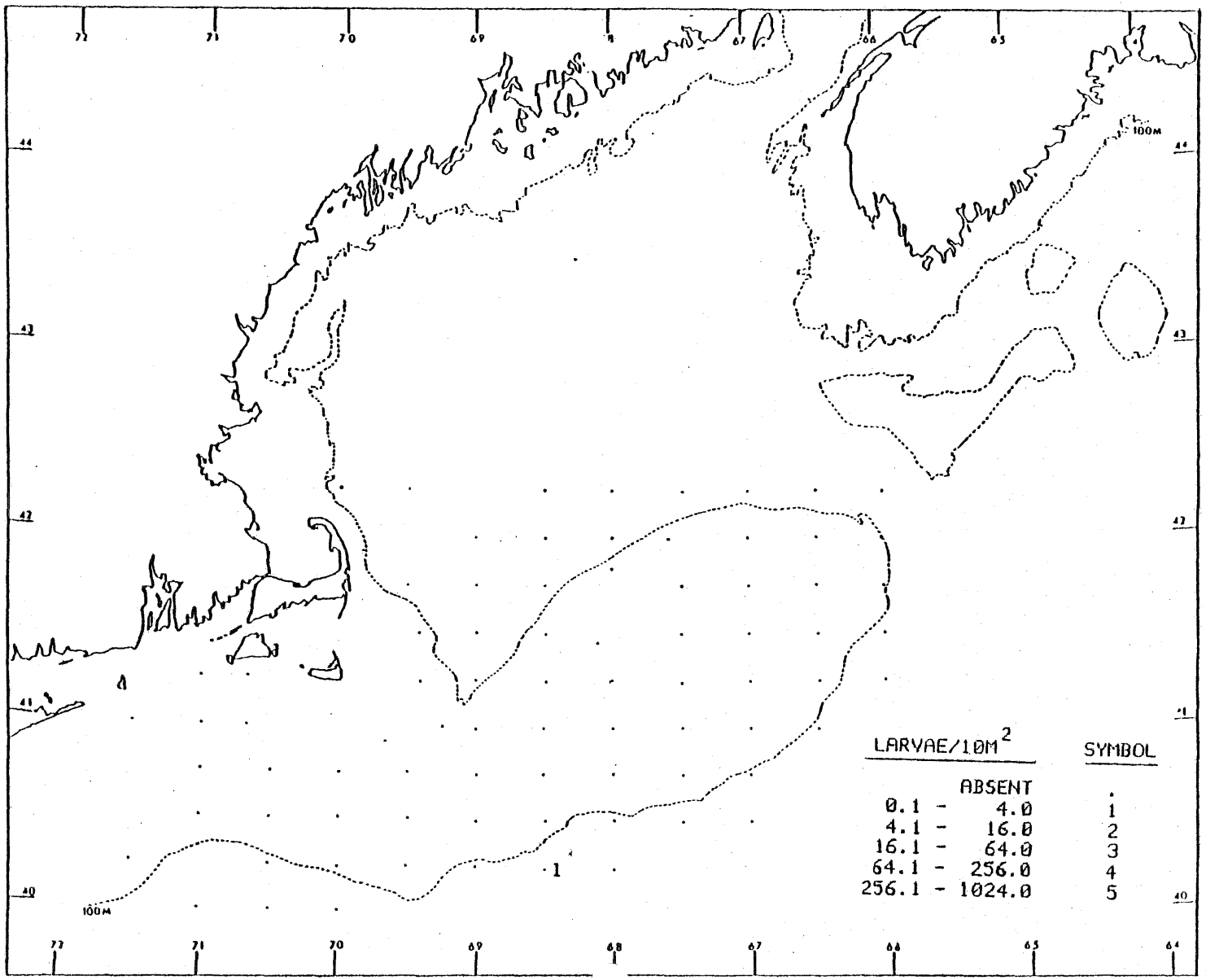


Table 166. Mean abundance (positive tows only) and mean length of Kyphosidae by cruise.

Cruise	Middate	Number of Positive Tows	Mean no./ $10m^2$	Standard Deviation	Mean Length (mm)	Standard Deviation	Length Range
Albatross IV 75-14	09 Dec. 1975	1	1.7	-	15.0	-	-

References:

Fischer 1978
Jordan et al. 1962

Figure 167. Composite distribution and abundance (greatest occurrence per station) of Lutjanidae collected during 30 autumn and winter cruises for the period Sep. 1971 - Feb. 1977.

Lutjanidae

Common Name: Snappers

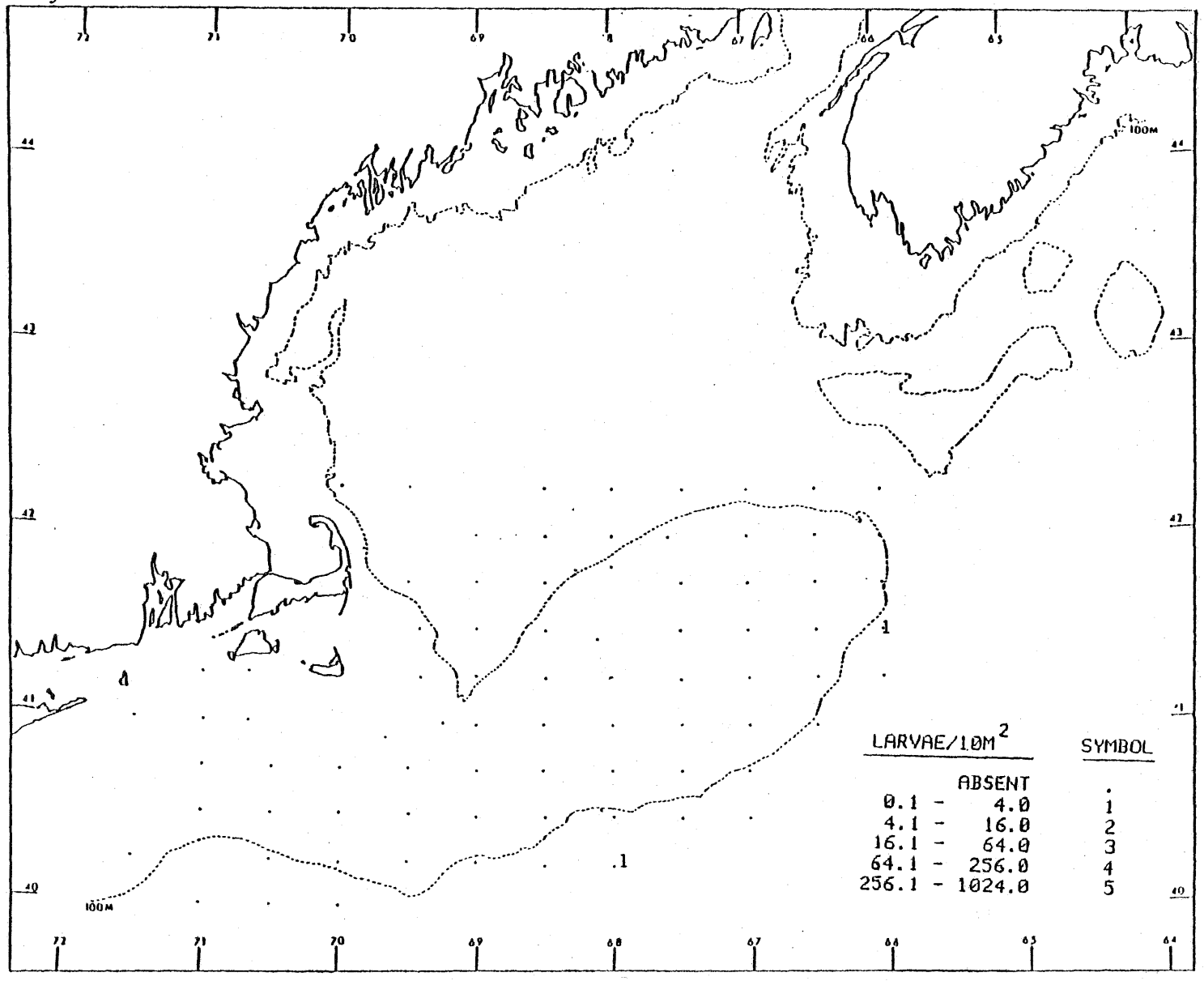


Table 167. Mean abundance (positive tows only) and mean length of Lutjanidae by cruise.

Cruise	Middate	Number of Positive Tows	Mean no./ $10m^2$	Standard Deviation	Mean Length (mm)	Standard Deviation	Length Range
Belogorsk 73-01	23 Oct. 1973	1	2.6	-	20.0	5.1	16 - 24
Anton Dohrn 74-01	19 Nov. 1974	1	1.8	-	10.0	-	-

References:

Fischer 1978
Joakimsson 1978
Jordan et al. 1962

Figure 168. Composite distribution and abundance (greatest occurrence per station) of Morone americana collected during 30 autumn and winter cruises for the period Sep. 1971 - Feb. 1977.

Morone americana (Gmelin) Common Name: White perch

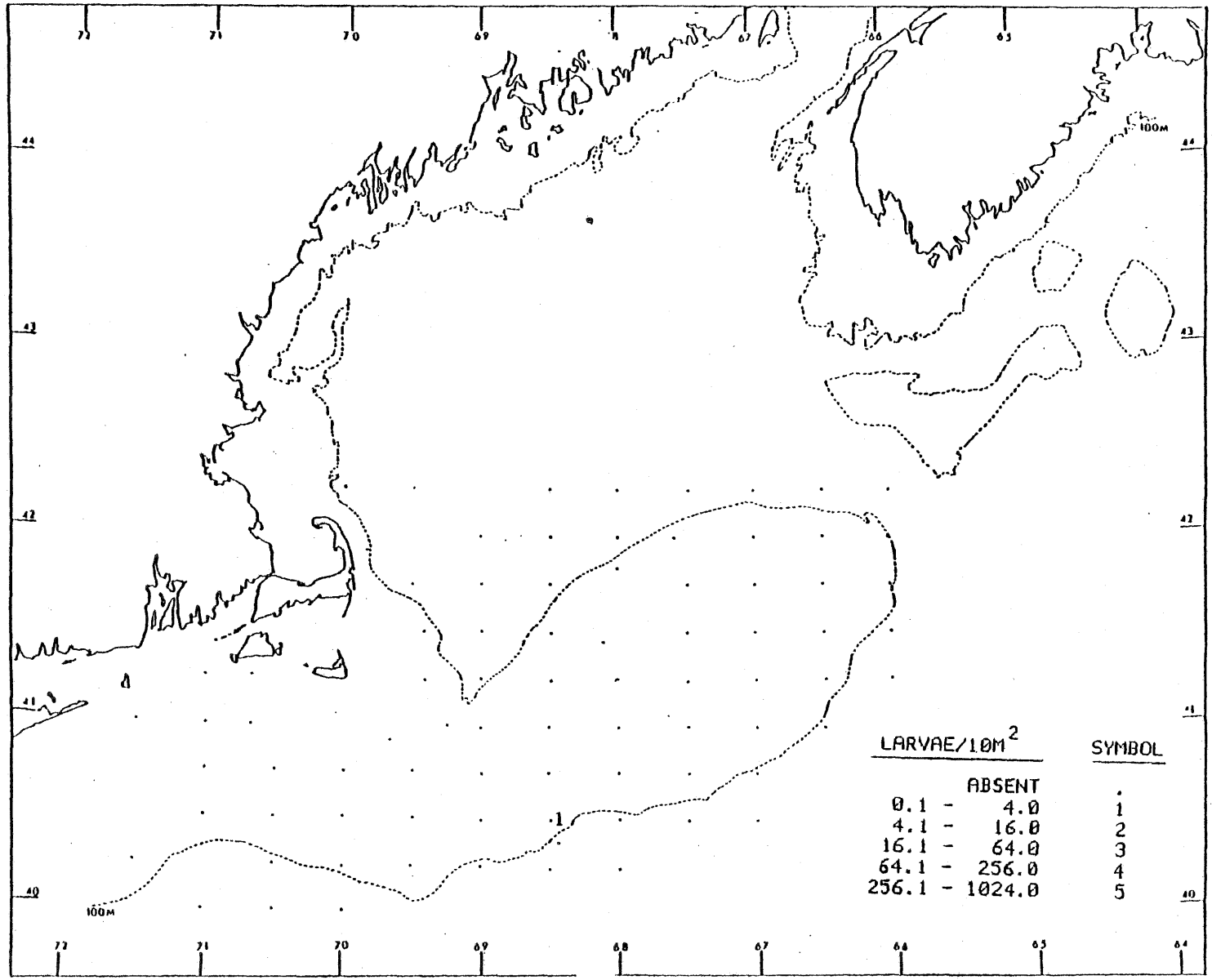


Table 168. Mean abundance (positive tows only) and mean length of *Morone americana* by cruise.

Cruise	Middate	Number of Positive Tows	Mean no./ $10m^2$	Standard Deviation	Mean Length (mm)	Standard Deviation	Length Range
Delaware II 71-04	27 Sep. 1971	1	0.5	-	31.0	-	-

References:

Fischer 1978
Jordan et al. 1962

Figure 169. Composite distribution and abundance (greatest occurrence per station) of Pomacentridae collected during 30 autumn and winter cruises for the period Sep. 1971 - Feb. 1977.

Pomacentridae

* Common Name: Damselfishes

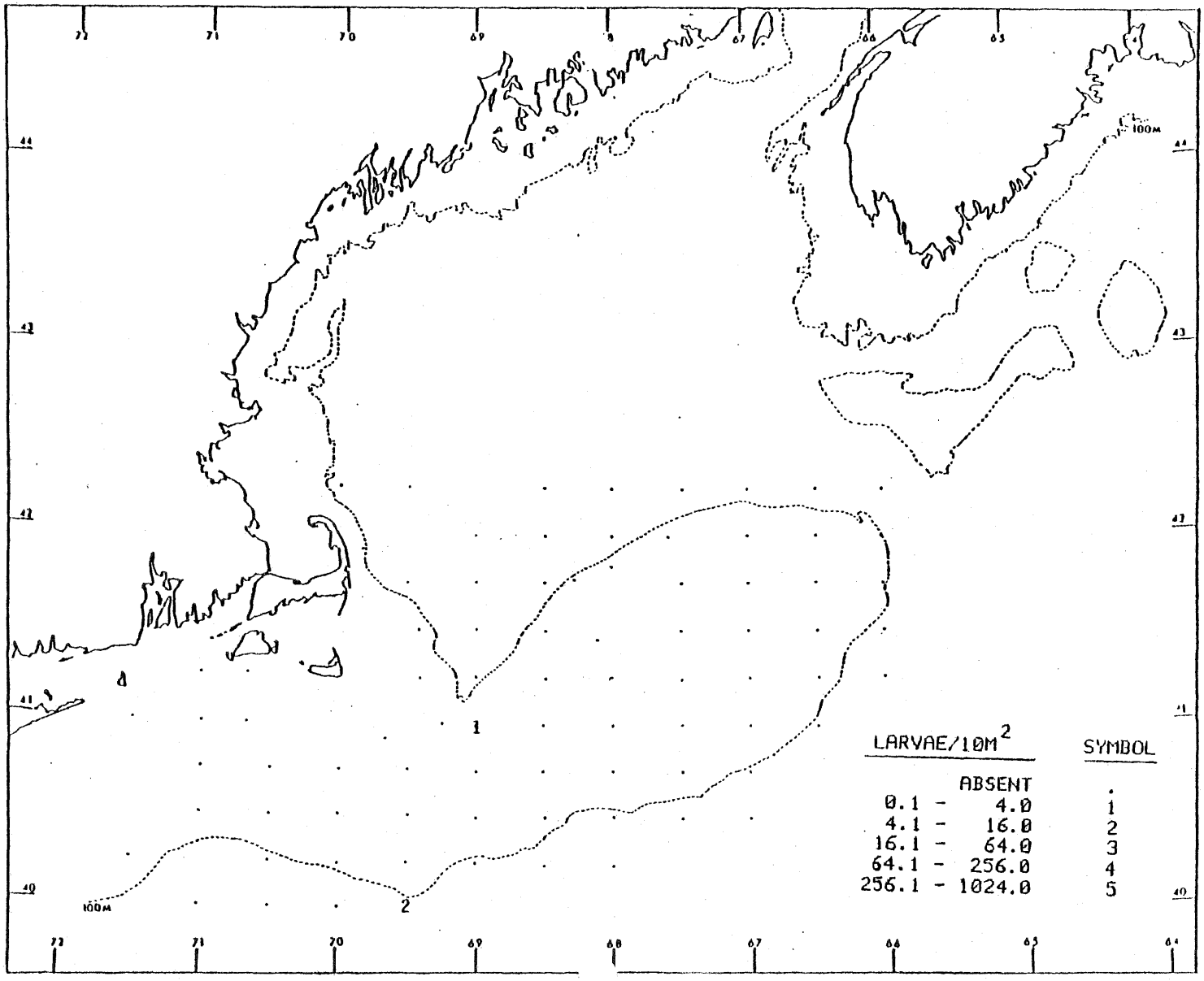


Table 169. Mean abundance (positive tows only) and mean length of Pomacentridae by cruise.

Cruise	Middate	Number of Positive Tows	Mean no./ $10m^2$	Standard Deviation	Mean Length (mm)	Standard Deviation	Length Range
Wieczno 73-40	09 Oct. 1973	2	4.5	3.0	14.4	3.9	10 - 19

References:

Berrien et al. 1978
Colton and Byron 1977
Fischer 1978
Jordan et al. 1962

Figure 170. Composite distribution and abundance (greatest occurrence per station) of Sciaenidae collected during 30 autumn and winter cruises for the period Sep. 1971 - Feb. 1977.

Sciaenidae

Common Name: Drums

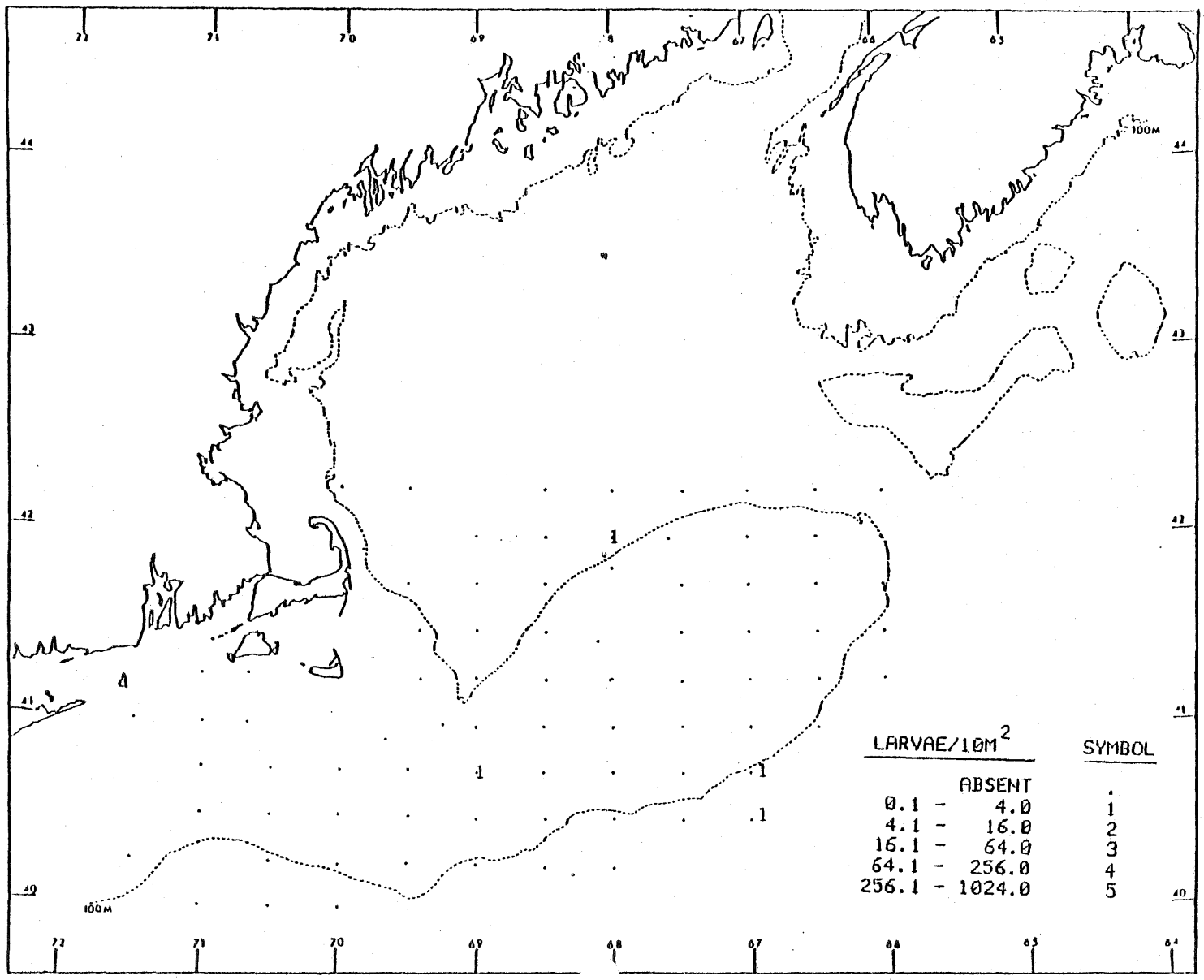


Table 170. Mean abundance (positive tows only) and mean length of Sciaenidae by cruise.

Cruise	Middate	Number of Positive Tows	Mean no./ $10m^2$	Standard Deviation	Mean Length (mm)	Standard Deviation	Length Range
Belogorsk 73-01	23 Oct. 1973	2	1.4	0.4	5.6	2.5	4 - 8
Walther Herwig 73-43	02 Nov. 1973	1	2.1	-	5.0	-	-
Cryos 74-04	16 Sep. 1974	1	3.1	-	3.0	-	-

References:

Berrien et al. 1978
Colton and Byron 1977
Fischer 1978
Grimm 1978
Jordan et al. 1962
Leim and Scott 1966

Figure 171. Composite distribution and abundance (greatest occurrence per station) of Serranidae collected during 30 autumn and winter cruises for the period Sep. 1971 - Feb. 1977.

Serranidae

Common Name: Sea basses

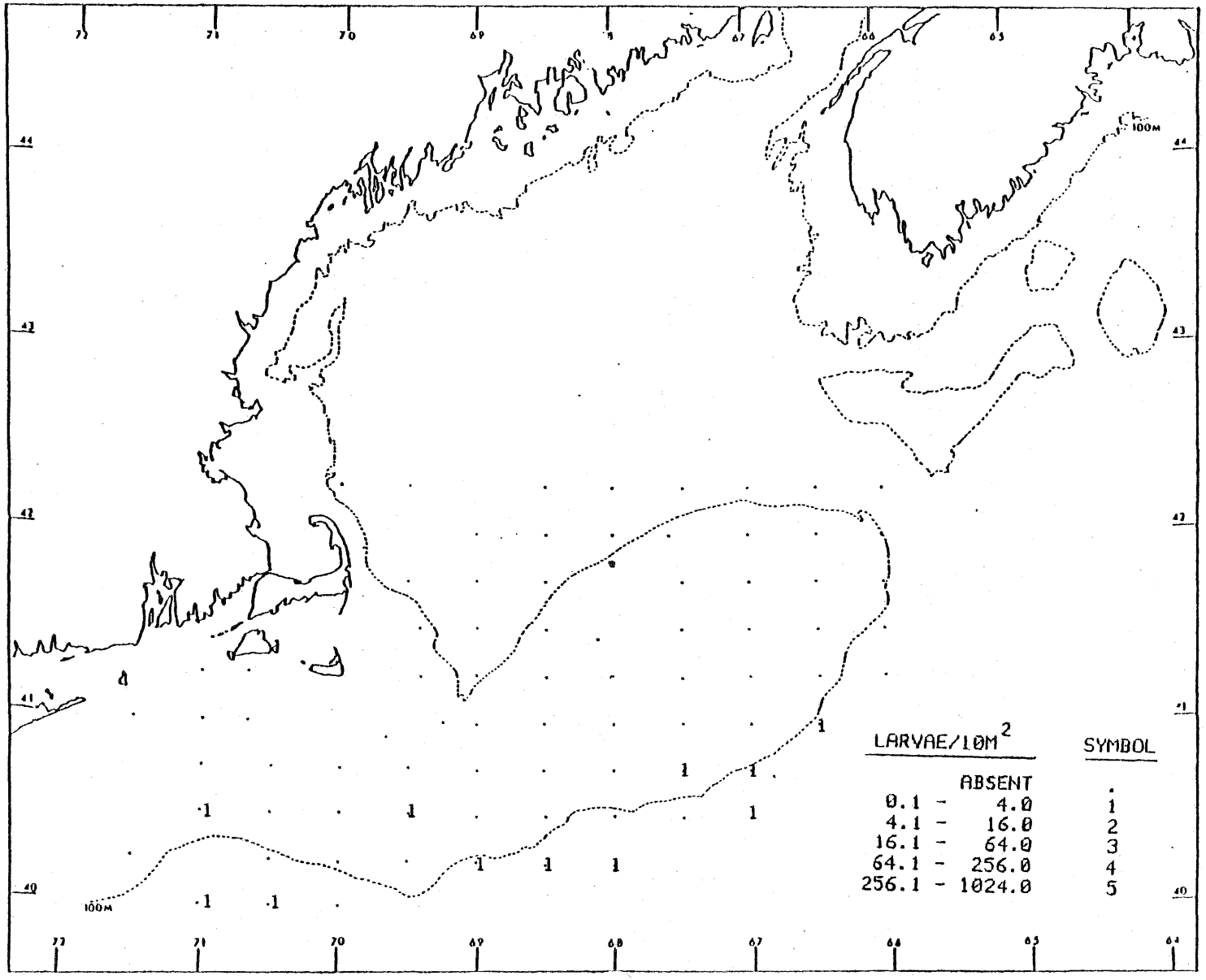


Table 171. Mean abundance (positive tows only) and mean length of Serranidae by cruise.

Cruise	Middate	Number of Positive Tows	Mean no./ $10m^2$	Standard Deviation	Mean Length (mm)	Standard Deviation	Length Range
Delaware II 71-04	27 Sep. 1971	3	1.6	0.6	6.1	1.6	5 - 9
Argus 72-02	20 Oct. 1972	1	3.5	-	13.0	-	-
Wieczno 73-40	09 Oct. 1973	2	2.4	1.3	6.0	0.9	5 - 7
Walther Herwig 73-43	02 Nov. 1973	1	3.3	-	6.0	-	-
Prognoz 74-01	24 Oct. 1974	2	1.2	0.1	8.0	0	-
Wieczno 76-03	24 Oct. 1976	2	1.6	0.1	3.5	1.8	2 - 5

References:

'Berrien et al. 1978
Colton and Byron 1977
Fischer 1978
Grimm 1978
Joakimsson 1978
Jordan et al. 1962
Leim and Scott 1966

Figure 172. Composite distribution and abundance (greatest occurrence per station) of Centropristis striata collected during 30 autumn and winter cruises for the period Sep. 1971 - Feb. 1977.

Centropristis striata (Linnaeus) Common Name: Black sea bass

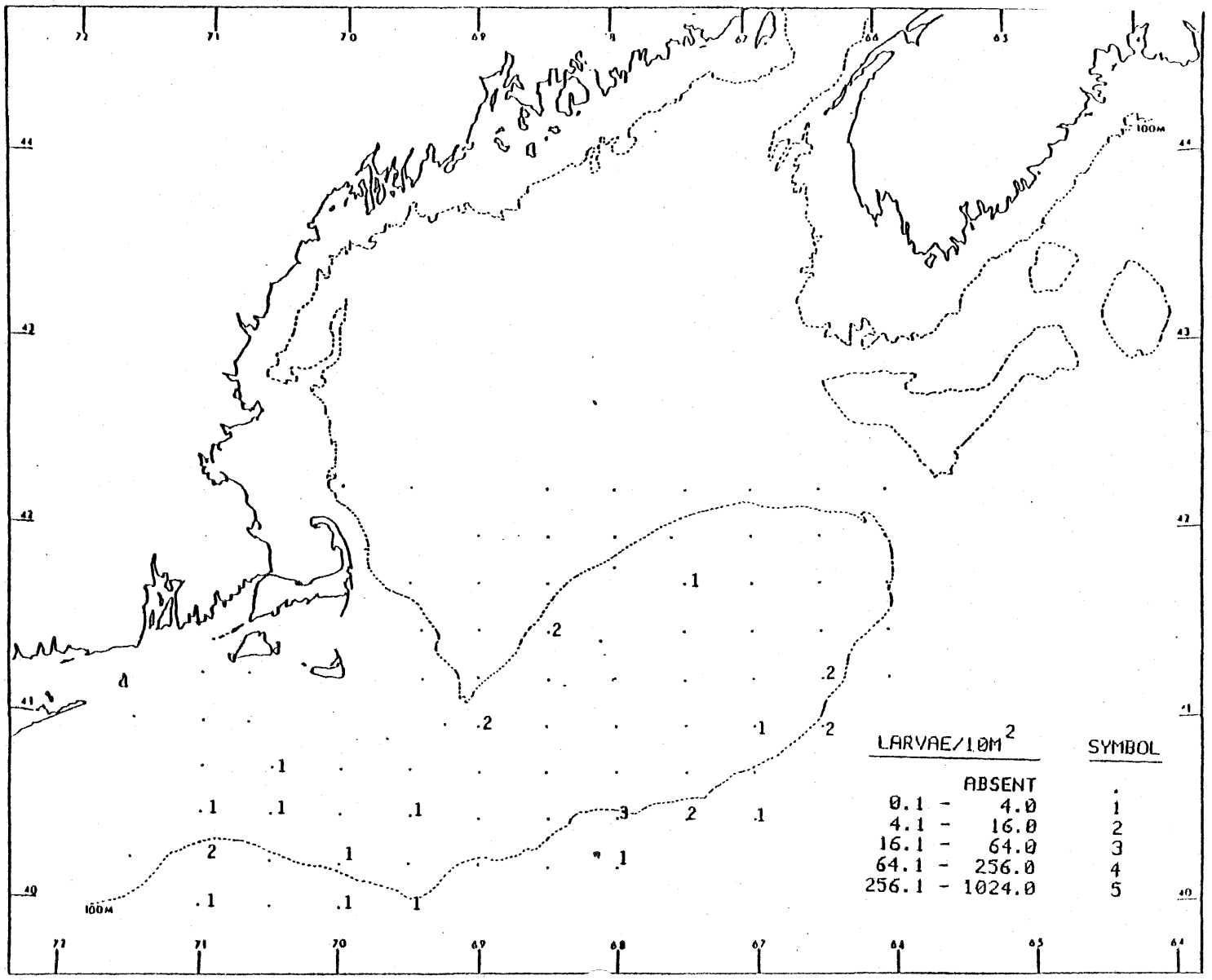


Table 172. Mean abundance (positive tows only) and mean length of Centropristis striata by cruise.

Cruise	Middate	Number of Positive Tows	Mean no./ $10m^2$	Standard Deviation	Mean Length (mm)	Standard Deviation	Length Range
Delaware II 71-04	27 Sep. 1971	1	1.0	-	6.0	-	-
Wieczno 73-40	09 Oct. 1973	2	2.6	1.8	5.5	0.6	5 - 6
Belogorsk 73-01	23 Oct. 1973	2	1.4	0.1	4.5	0.6	4 - 5
Walther Herwig 73-43	02 Nov. 1973	7	4.4	3.3	6.0	1.3	4 - 8
Cryos 74-04	16 Sep. 1974	1	3.1	-	5.0	-	-
Anton Dohrn 74-01	19 Nov. 1974	6	7.3	11.9	5.0	1.2	3 - 8
Albatross IV 74-13	13 Dec. 1974	1	1.2	-	6.0	-	-
Belogorsk 75-02	01 Oct. 1975	1	1.7	-	6.0	-	-
Belogorsk 75-03	23 Oct. 1975	1	0.9	-	8.0	-	-
Anton Dohrn 76-02	22 Nov. 1976	4	2.6	1.5	6.0	0.7	5 - 7
Researcher 76-01	04 Dec. 1976	1	1.4	-	6.0	-	-

References:

Berrien et al. 1978
Fischer 1978
Joakimsson 1978
Jordan et al. 1962

Figure 173. Composite distribution and abundance (greatest occurrence per station) of Centropristis sp. collected during 30 autumn and winter cruises for the period Sep. 1971 - Feb. 1977.

Centropristis sp. Common Name:

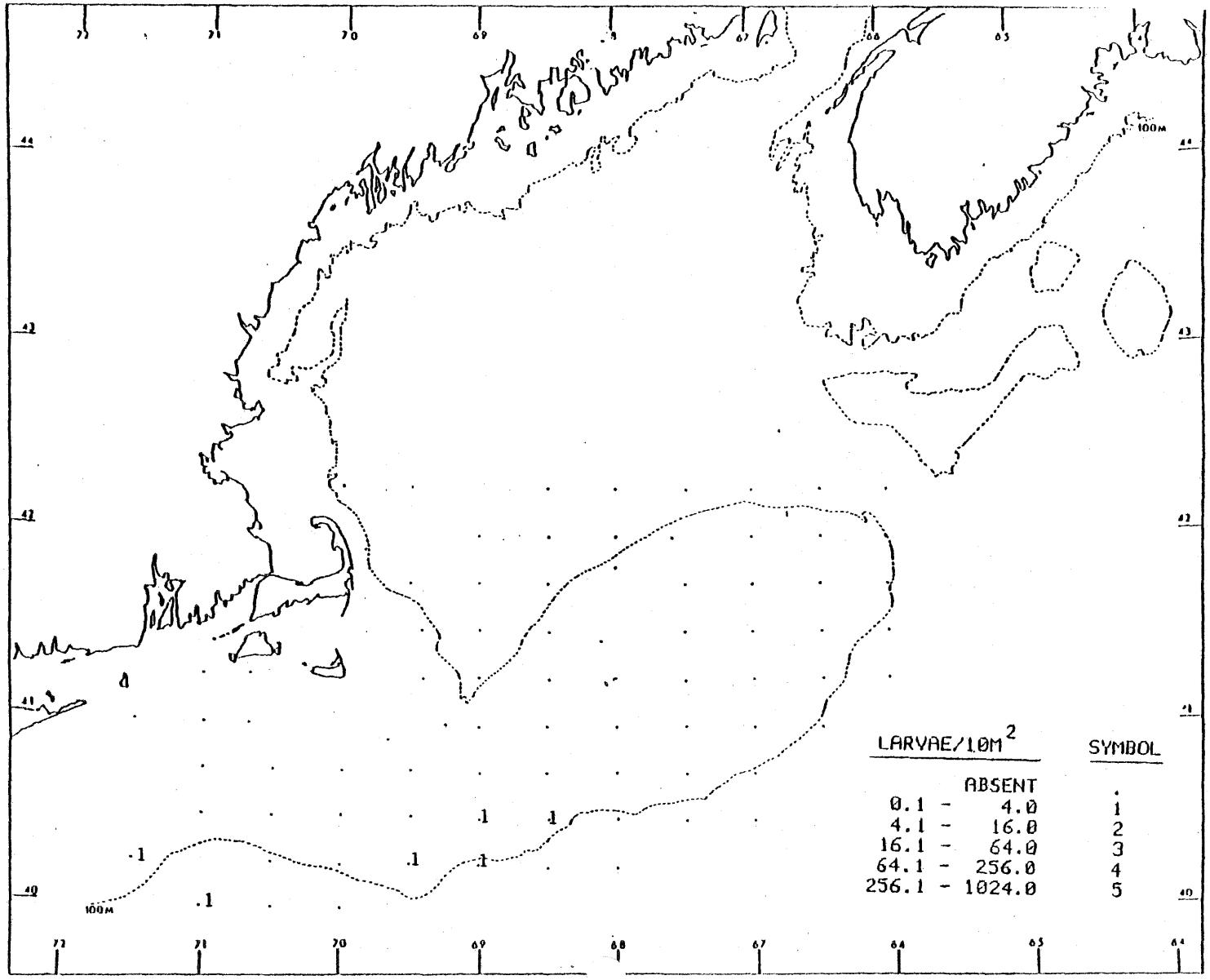


Table 173. Mean abundance (positive tows only) and mean length of *Centropristis* sp. by cruise.

Cruise	Middate	Number of Positive Tows	Mean no./ $10m^2$	Standard Deviation	Mean Length (mm)	Standard Deviation	Length Range
Albatross IV 74-13	13 Dec. 1974	1	0.6	-	7.0	-	-
Wieczno 76-03	24 Oct. 1976	4	1.9	0.7	4.5	0.5	4 - 5

References:

See *C. striata*

Figure 174. Composite distribution and abundance (greatest occurrence per station) of Gempylidae collected during 30 autumn and winter cruises for the period Sep. 1971 - Feb. 1977.

Gempylidae

Common Name: Snake mackerels

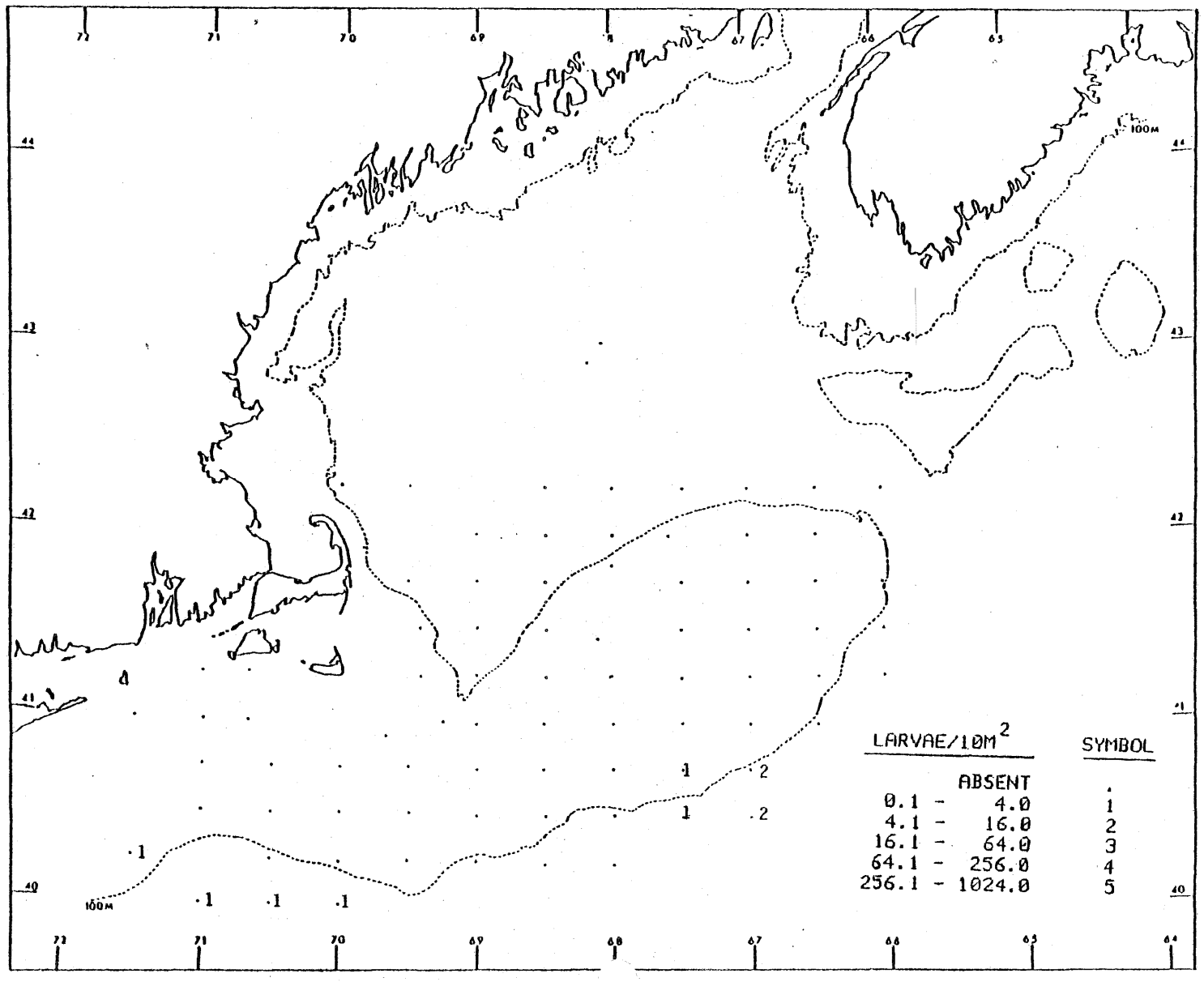


Table 174. Mean abundance (positive tows only) and mean length of Gempylidae by cruise.

Cruise	Middate	Number of Positive Tows	Mean no./ $10m^2$	Standard Deviation	Mean Length (mm)	Standard Deviation	Length Range
Delaware ii 71-04	27 Sep. 1971	1	0.9	-	6.0	-	-
Wieczno 73-40	09 Oct. 1973	1	1.3	-	8.0	-	-
Belogorsk 73-01	23 Oct. 1973	3	3.9	0.9	6.3	1.3	5 - 9
Walther Herwig 73-43	02 Nov. 1973	1	4.7	-	5.2	1.8	4 - 8
Albatross IV 74-13	13 Dec. 1974	1	0.6	-	6.0	-	-
Belogorsk 75-03	23 Oct. 1975	1	0.9	-	9.0	-	-
Albatross IV 75-14	09 Dec. 1975	1	3.3	-	7.0	-	-
Anton Dohrn 76-02	22 Nov. 1976	1	3.5	-	5.5	1.8	4 - 7

References:

Berrien et al. 1978
Colton and Byron 1977
Fischer 1978
Grimm 1978
Joakimsson 1978
Jordan et al. 1962
Leim and Scott 1966

Figure 175. Composite distribution and abundance (greatest occurrence per station) of Scombridae collected during 30 autumn and winter cruises for the period Sep. 1971 - Feb. 1977.

Scombridae

Common Name: Mackerels and tunas

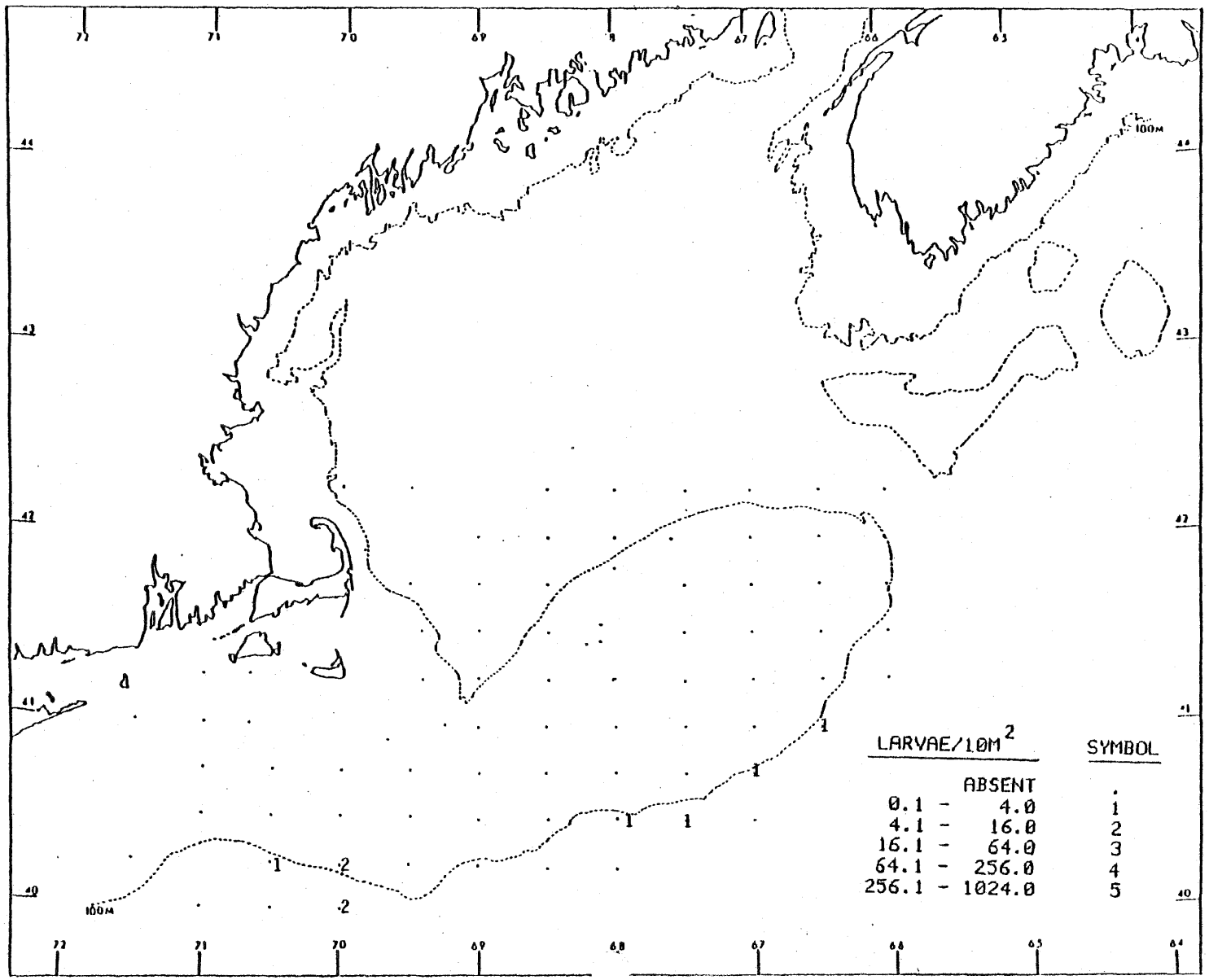


Table 175. Mean abundance (positive tows only) and mean length of Scombridae by cruise.

Cruise	Middate	Number of Positive Tows	Mean no./ $10m^2$	Standard Deviation	Mean Length (mm)	Standard Deviation	Length Range
Wieczno 73-40	09 Oct. 1973	4	1.6	0.3	5.5	3.1	3 - 10
Anton Dohrn 74-01	19 Nov. 1974	1	2.0	-	3.0	-	-
Wieczno 76-03	24 Oct. 1976	2	6.3	1.9	3.1	0.3	3 - 4

References:

Berrien et al. 1978
Fischer 1978
Grimm 1978
Joakimsson 1978
Jordan et al. 1962
Leim and Scott 1966

Figure 176. Composite distribution and abundance (greatest occurrence per station) of Trichiuridae collected during 30 autumn and winter cruises for the period Sep. 1971 - Feb. 1977.

Trichiuridae Common Name: Hairtails

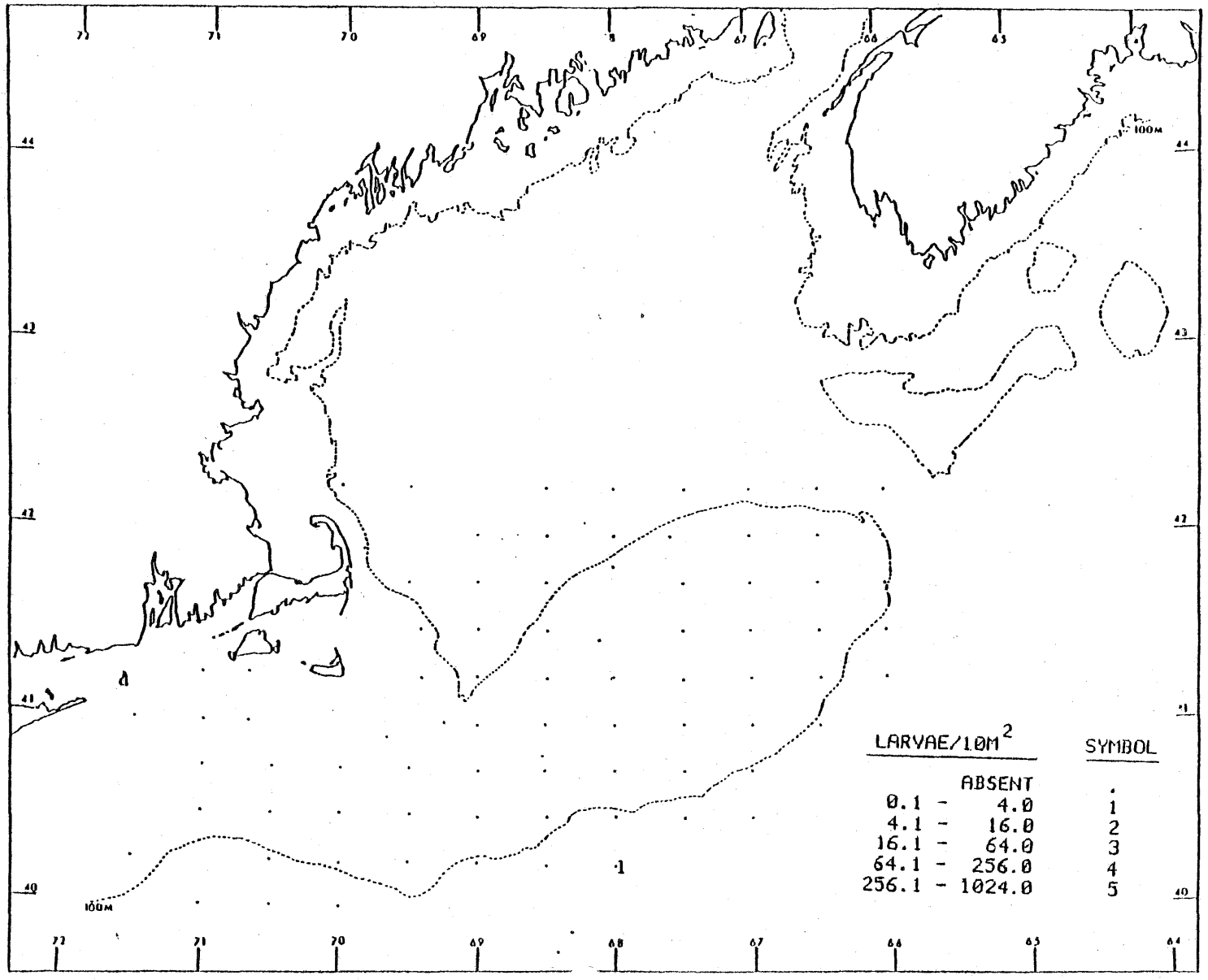


Table 176. Mean abundance (positive tows only) and mean length of Trichiuridae by cruise.

Cruise	Middate	Number of Positive Tows	Mean no./ $10m^2$	Standard Deviation	Mean Length (mm)	Standard Deviation	Length Range
Anton Dohrn 74-01	19 Nov. 1974	1	1.8	-	9.0	-	-

References:

Berrien et al. 1978
Fischer 1978
Grimm 1978
Joakimsson 1978
Jordan et al. 1962
Leim and Scott 1966

Figure 177. Composite distribution and abundance (greatest occurrence per station) of Nomeidae collected during 30 autumn and winter cruises for the period Sep. 1971 - Feb. 1977.

Nomeidae

Common Name: Man-of-war fishes

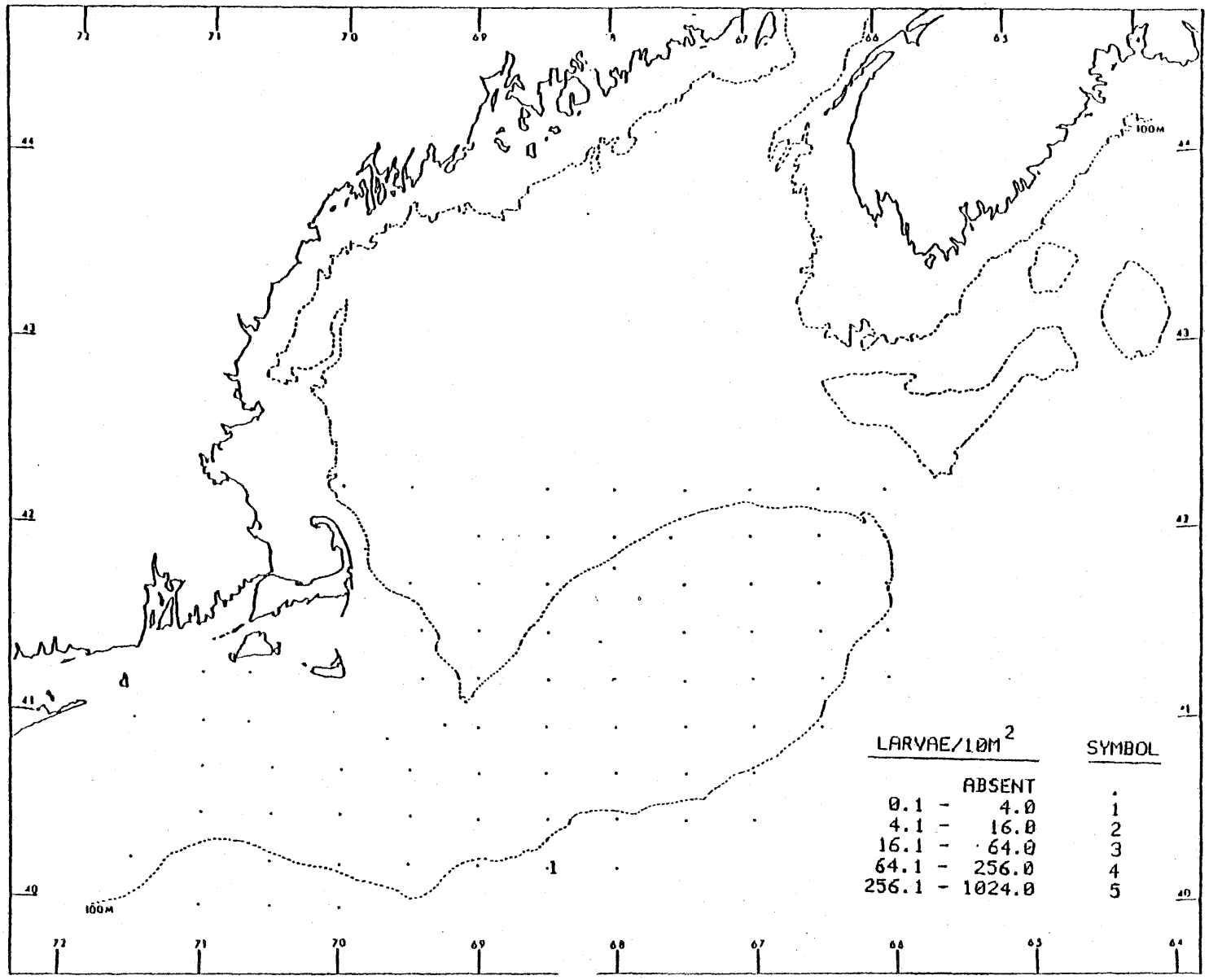


Table 177. Mean abundance (positive tows only) and mean length of Nomeidae by cruise.

Cruise	Middate	Number of Positive Tows	Mean no./ $10m^2$	Standard Deviation	Mean Length (mm)	Standard Deviation	Length Range
Anton Dohrn 74-01	19 Nov. 1974	1	2.7	-	4.0	-	-

References:

Colton and Byron 1977
Fischer 1978
Joakimsson 1978
Jordan et al. 1962

Figure 178. Composite distribution and abundance (greatest occurrence per station) of Cubiceps sp. collected during 30 autumn and winter cruises for the period Sep. 1971 - Feb. 1977.

Cubiceps sp. Common Name:

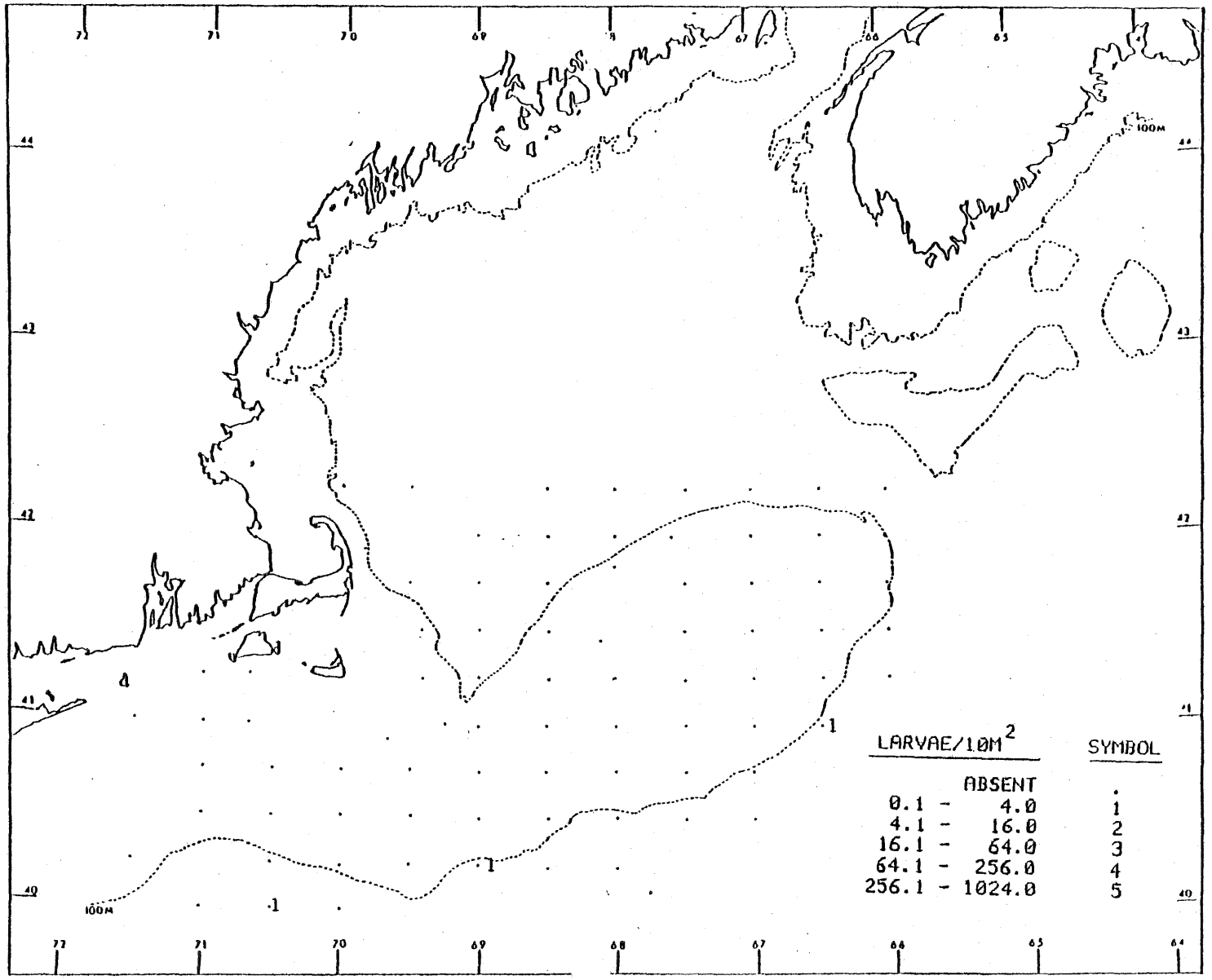


Table 178. Mean abundance (positive tows only) and mean length of Cubiceps sp. by cruise.

Cruise	Middate	Number of Positive Tows	Mean no./ $10m^2$	Standard Deviation	Mean Length (mm)	Standard Deviation	Length Range
Delaware II 71-04	27 Sep. 1971	1	0.9	-	5.0	-	-
Viandra 71-01	17 Oct. 1971	1	0.9	-	6.0	-	-
Belogorsk 73-01	23 Oct. 1973	1	1.4	-	4.0	-	-
Prognoz 74-01	24 Oct. 1974	1	2.3	-	4.0	-	-

References:

Fischer 1978
Grimm 1978

Figure 179. Composite distribution and abundance (greatest occurrence per station) of Peprilus alepidotus collected during 30 autumn and winter cruises for the period Sep. 1971 - Feb. 1977.

Peprilus alepidotus (Linnaeus) Common Name: Harvestfish

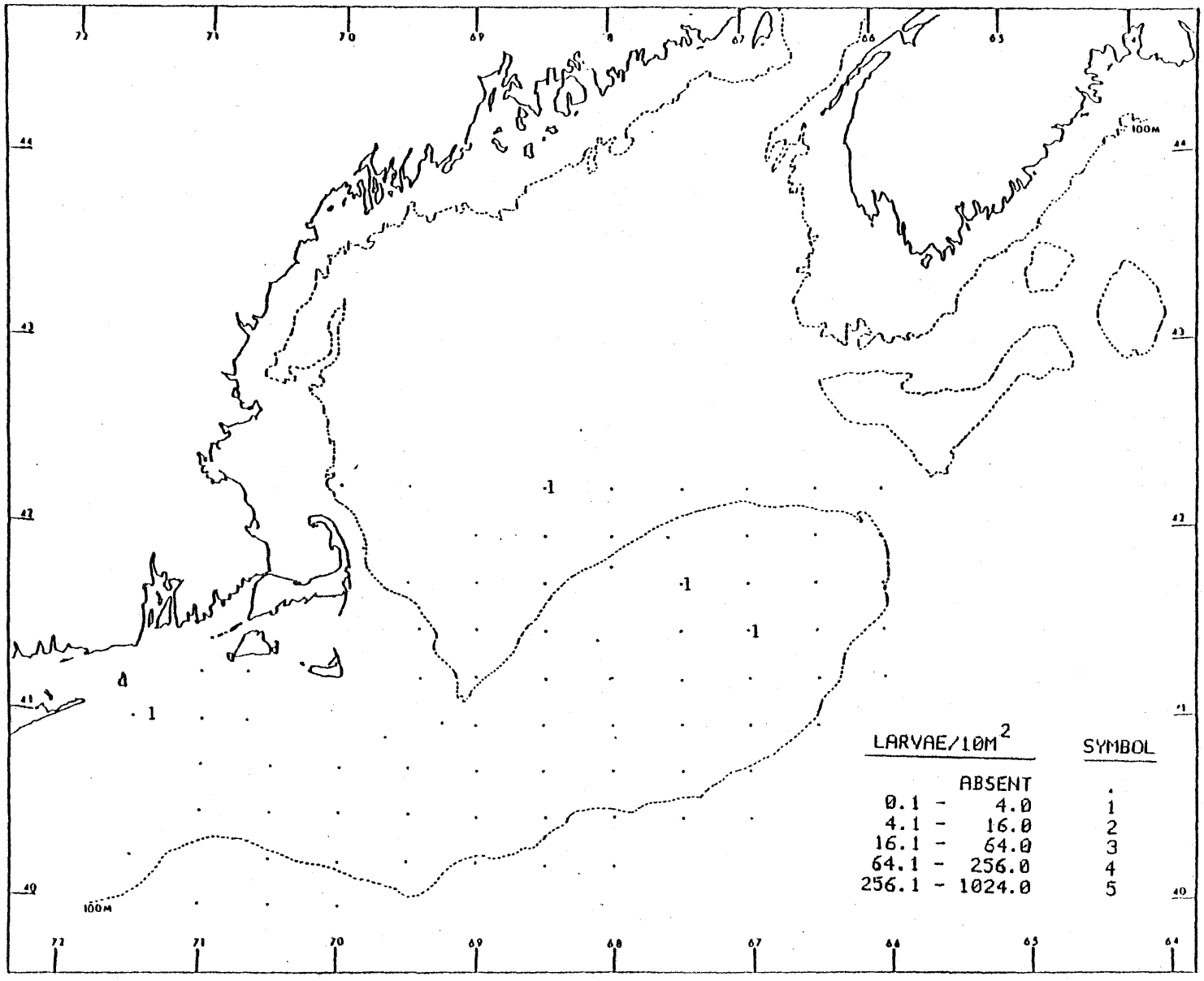


Table 179. Mean abundance (positive tows only) and mean length of *Peprilus alepidotus* by cruise.

Cruise	Middate	Number of Positive Tows	Mean no./ $10m^2$	Standard Deviation	Mean Length (mm)	Standard Deviation	Length Range
Wieczno 76-03	24 Oct. 1976	4	1.6	0.7	12.0	7.6	6 - 25

References:

Berrien et al. 1978
Colton and Byron 1977
Fischer 1978
Gordon 1960
Jordan et al. 1962

Figure 180. Composite distribution and abundance (greatest occurrence per station) of Peprilus triacanthus collected during 30 autumn and winter cruises for the period Sep. 1971 - Feb. 1977.

Peprilus triacanthus (Peck) Common Name: Butterfish

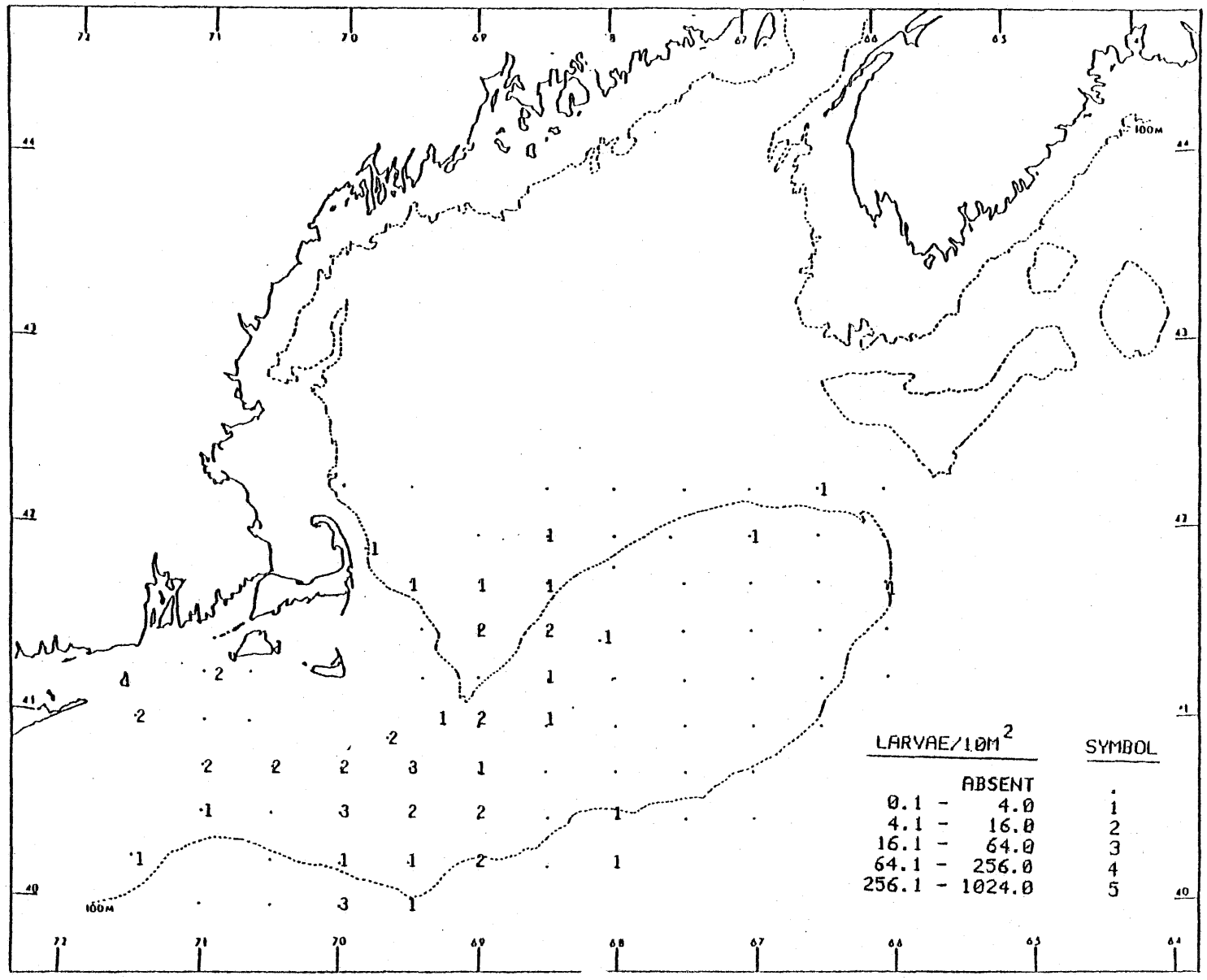


Table 180. Mean abundance (positive tows only) and mean length of *Peprilus triacanthus* by cruise.

Cruise	Middate	Number of Positive Tows	Mean no./ $10m^2$	Standard Deviation	Mean Length (mm)	Standard Deviation	Length Range
Delaware II 71-04	27 Sep. 1971	18	6.5	8.3	4.4	2.3	2 - 21
Viandra 71-01	17 Oct. 1971	8	3.0	2.1	7.8	6.7	3 - 33
Wieczno 72-01	14 Oct. 1972	1	1.9	-	9.0	-	-
Cryos 73-01	19 Sep. 1973	3	5.9	4.6	5.0	1.2	3 - 7
Wieczno 73-40	09 Oct. 1973	4	2.5	1.8	9.8	3.3	4 - 16
Belogorsk 73-01	23 Oct. 1973	1	2.8	-	14.0	2.5	12 - 16
Cryos 74-04	16 Sep. 1974	8	6.8	4.8	6.5	6.4	3 - 43
Prognoz 74-01	24 Oct. 1974	1	1.2	-	4.0	-	-
Anton Dohrn 74-01	19 Nov. 1974	1	1.8	-	4.0	-	-
Belogorsk 75-02	01 Oct. 1975	1	1.3	-	18.0	-	-
Albatross IV 76-01	16 Feb. 1976	1	2.9	-	2.0	-	-
Belogorsk 76-03	08 Oct. 1976	9	1.8	1.2	7.3	2.8	3 - 13

References:

Colton and Byron 1977
Fischer 1978
Joakimsson 1978
Jordan et al. 1962
Klima 1971
Leim and Scott 1966

Figure 181. Composite distribution and abundance (greatest occurrence per station) of Tetragonurus atlanticus collected during 30 autumn and winter cruises for the period Sep. 1971 - Feb. 1977.

Tetragonurus atlanticus Lowe Common Name: Squaretail

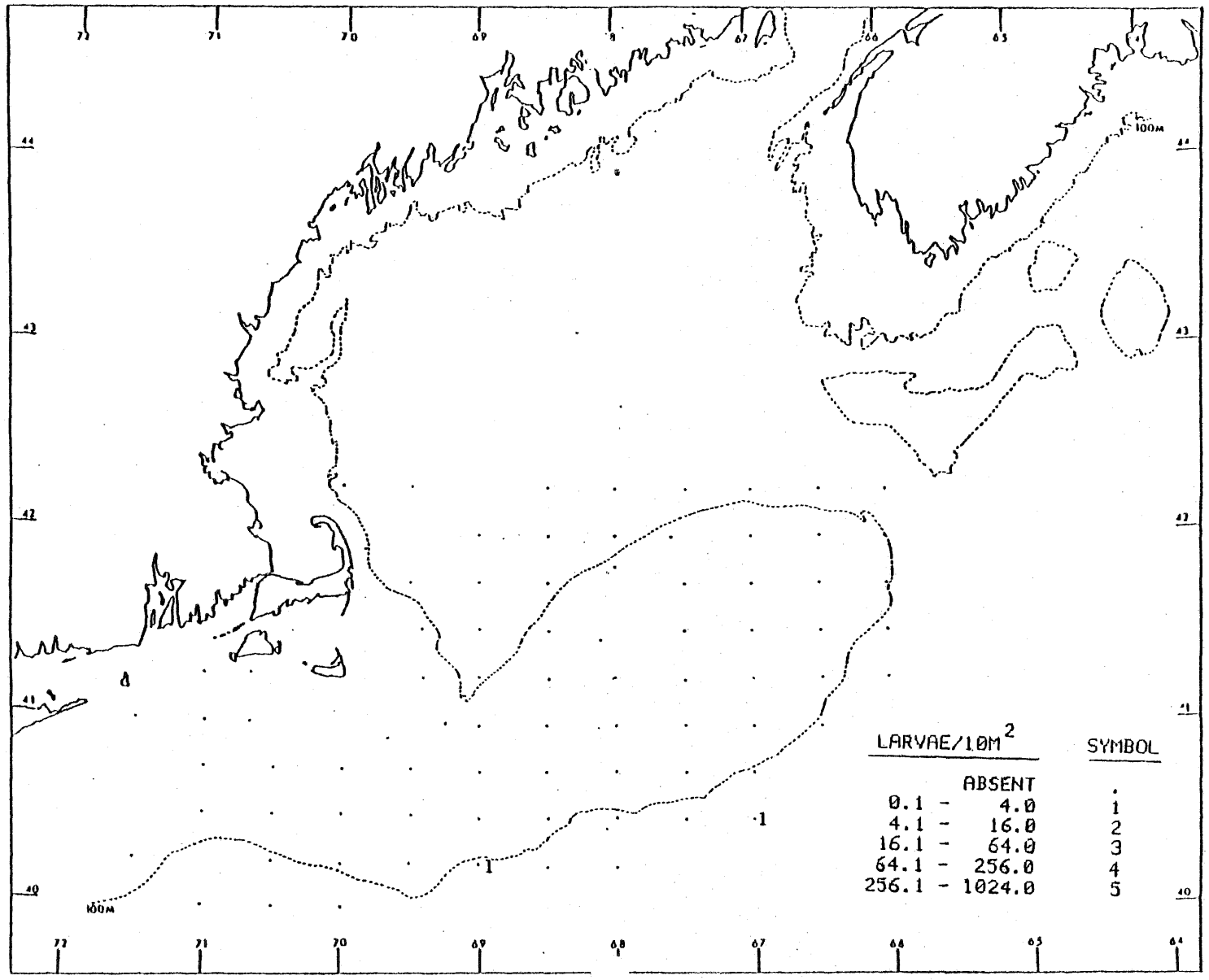


Table 181. Mean abundance (positive tows only) and mean length of *Tetragonurus atlanticus* by cruise.

Cruise	Middate	Number of Positive tows	Mean no./ $10m^2$	Standard Deviation	Mean Length (mm)	Standard Deviation	Length Range
Delaware II 71-04	27 Sep. 1971	2	4.5	5.2	3.9	1.5	2 - 6

References:

Jordan et al. 1962

Figure 182. Composite distribution and abundance (greatest occurrence per station) of Bothidae collected during 30 autumn and winter cruises for the period Sep. 1971 - Feb. 1977.

Bothidae

Common Name: Lefteyed flounders

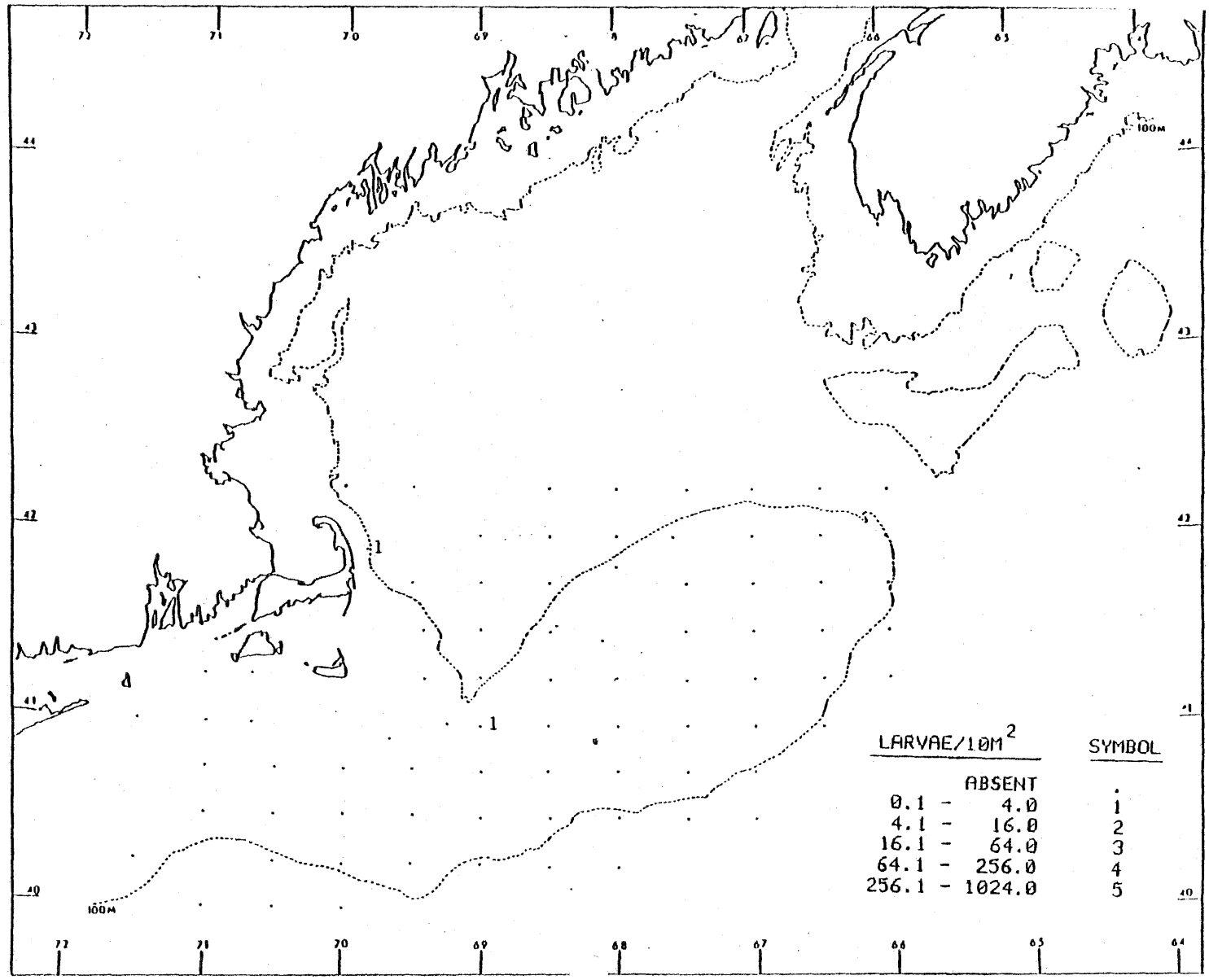


Table 182. Mean abundance (positive tows only) and mean length of Bothidae by cruise.

Cruise	Middate	Number of Positive Tows	Mean no./ $10m^2$	Standard Deviation	Mean Length (mm)	Standard Deviation	Length Range
Wieczno 72-01	14 Oct. 1972	1	1.1	-	3.0	-	-
Belogorsk 75-02	01 Oct. 1975	1	1.1	-	9.0	-	-

References:

Colton and Byron 1977
Fischer 1978
Grimm 1978

Figure 183. Composite distribution and abundance (greatest occurrence per station) of Bothus ocellatus collected during 30 autumn and winter cruises for the period Sep. 1971 - Feb. 1977.

Bothus ocellatus (Agassiz) Common Name: Eyed flounder

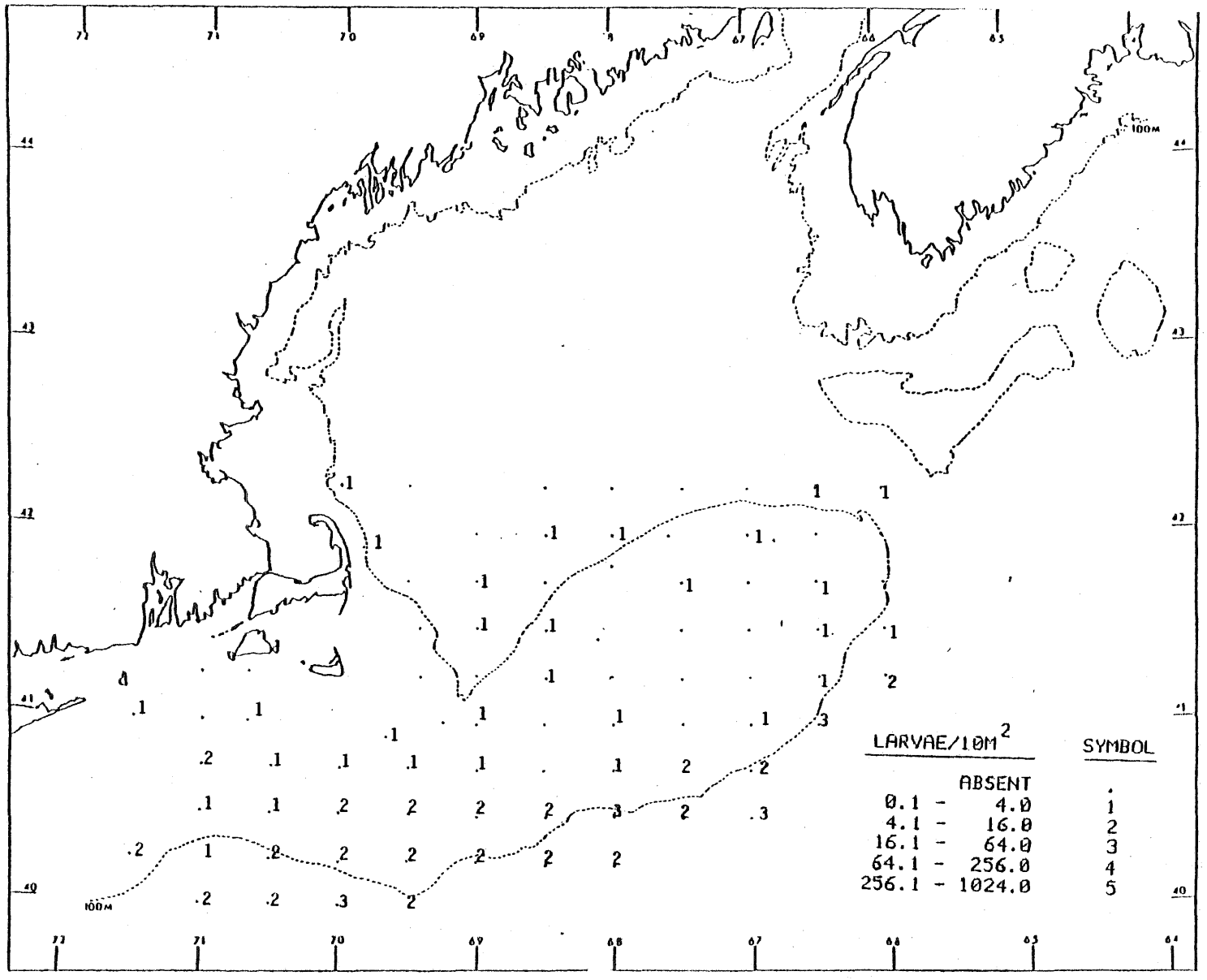


Table 183. Mean abundance (positive tows only) and mean length of Bothus ocellatus by cruise.

Cruise	Middate	Number of Positive Tows	Mean no./ $10m^2$	Standard Deviation	Mean Length (mm)	Standard Deviation	Length Range
Delaware II 71-04	27 Sep. 1971	17	4.8	3.8	11.0	3.3	5 - 23
Viandra 71-01	17 Oct. 1971	11	3.7	4.5	7.8	2.6	3 - 18
Wieczno 72-01	14 Oct. 1972	7	4.0	4.5	10.5	2.4	7 - 16
Argus 72-02	20 Oct. 1972	5	10.0	9.1	8.7	3.3	5 - 16
Anton Dohrn 72-01	05 Nov. 1972	6	3.1	2.2	9.7	4.3	5 - 20
Albatross IV 72-09	10 Dec. 1972	4	1.2	0.5	11.0	2.6	9 - 14
Cryos 73-01	19 Sep. 1973	1	1.1	-	17.0	-	-
Wieczno 73-40	09 Oct. 1973	4	2.8	1.9	11.0	4.5	6 - 21
Belogorsk 73-01	23 Oct. 1973	10	4.6	4.7	7.8	2.3	4 - 15
Walther Herwig 73-43	02 Nov. 1973	11	6.1	4.5	9.4	2.7	6 - 17
Albatross IV 73-09	13 Dec. 1973	6	7.4	5.2	10.6	3.3	7 - 22
Cryso 74-04	16 Sep. 1974	9	3.4	3.3	11.7	3.4	7 - 20
Prognoz 74-01	24 Oct. 1974	11	3.8	4.8	8.4	4.0	3 - 21
Anton Dohrn 74-01	19 Nov. 1974	9	12.5	11.7	6.5	2.7	3 - 14
Albatross IV 74-13	13 Dec. 1974	7	2.7	2.6	8.8	3.4	5 - 20
Belogorsk 75-02	01 Oct. 1975	8	3.3	3.8	8.5	3.0	4 - 17
Belogorsk 75-03	23 Oct. 1975	5	2.6	1.9	9.4	2.9	5 - 19
Anton Dohrn 75-187	09 Nov. 1975	11	4.8	5.0	7.8	2.6	3 - 17
Albatross IV 75-14	09 Dec. 1975	7	4.2	3.5	9.3	3.8	5 - 20
Belogrosk 76-03	08 Oct. 1976	13	1.5	0.5	12.5	2.8	8 - 18
Wieczno 76-03	24 Oct. 1976	12	2.1	1.4	10.4	3.9	7 - 20
Anton Dohrn 76-02	22 Nov. 1976	9	4.1	3.5	9.7	3.2	5 - 21
Researcher 76-01	04 Dec. 1976	5	3.9	3.9	10.1	2.7	6 - 16

References:

Berrien et al. 1978
Colton and Byron 1977
Fischer 1978
Grimm 1978
Joakimsson 1978
Jordan et al. 1962

Figure 184. Composite distribution and abundance (greatest occurrence per station) of Bothus sp. collected during 30 autumn and winter cruises for the period Sep. 1971 - Feb. 1977.

Bothus sp.

Common Name:

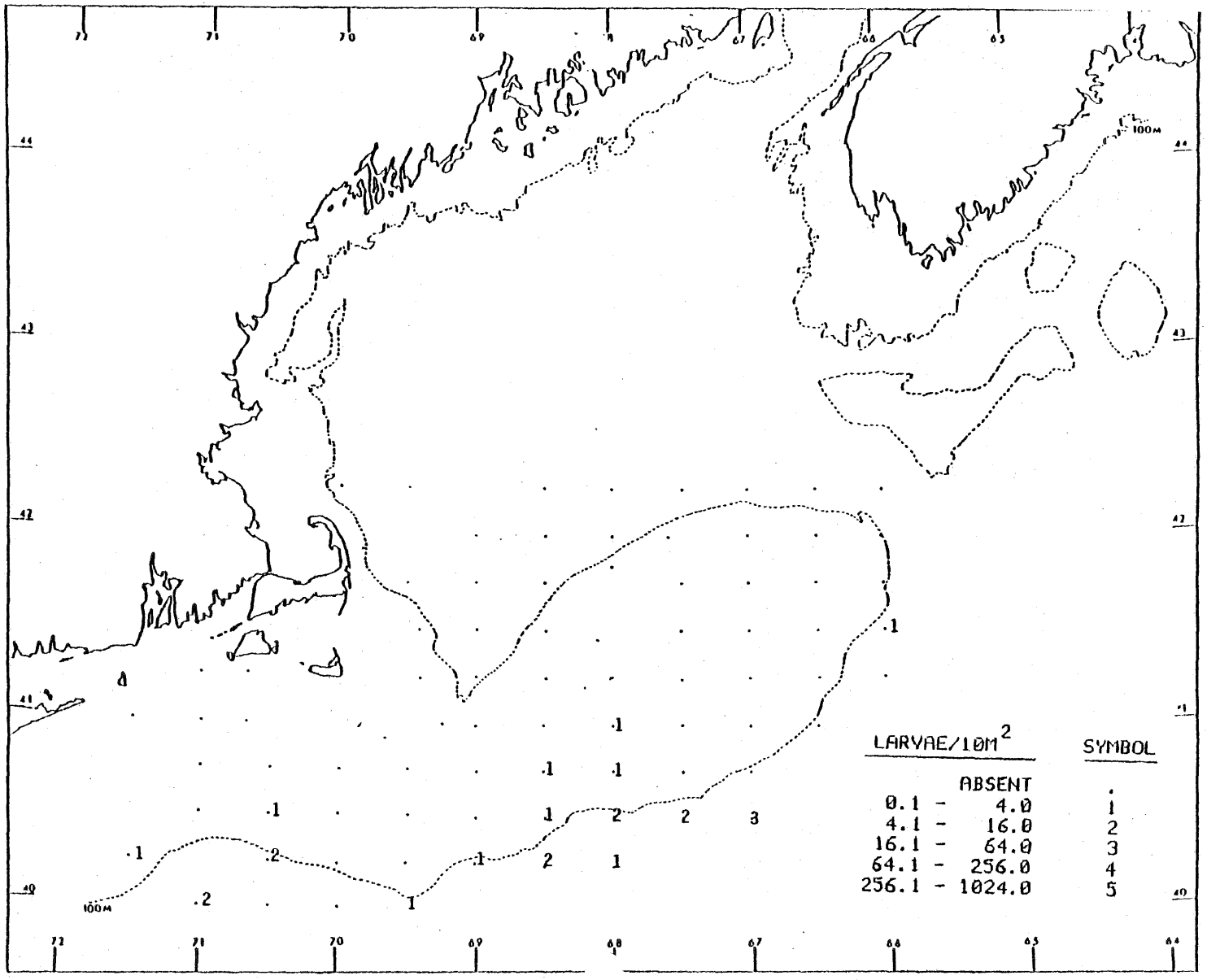


Table 184. Mean abundance (positive tows only) and mean length of Bothus sp. by cruise.

Cruise	Middate	Number of Positive Tows	Mean no./ $10m^2$	Standard Deviation	Mean Length (mm)	Standard Deviation	Length Range
Viandra 71-01	17 Oct. 1971	1	1.6	-	6.0	-	-
Anton Dohrn 72-01	05 Nov. 1972	1	7.2	-	11.0	4.5	8 - 19
Cryos 73-01	19 Sep 1973	1	2.4	-	8.3	1.5	7 - 10
Wieczno 73-40	09 Oct. 1973	5	5.2	5.2	7.7	1.7	4 - 10
Walther Herwig 73-43	02 Nov. 1973	3	12.3	9.2	8.2	1.5	6 - 11
Cryos 74-04	16 Sep. 1974	1	32.5	-	4.1	0.7	3 - 6
Prognoz 74-01	24 Oct. 1974	2	3.0	2.6	6.4	0.9	5 - 7
Anton Dohrn 74-01	19 Nov. 1974	2	5.0	4.2	5.9	2.1	4 - 9
Albatross IV 74-13	13 Dec. 1974	1	0.6	-	6.0	-	-
Belogorsk 75-02	01 Oct. 1975	3	1.5	1.1	6.5	2.2	4 - 9
Albatross IV 76-01	16 Feb. 1976	1	2.9	-	6.0	-	-
Wieczno 76-03	24 Oct. 1976	1	1.3	-	18.0	-	-
Researcher 76-01	04 Dec. 1976	2	3.2	0.8	8.1	0.8	7 - 9

References:

Colton and Byron 1977
Fischer 1978
Grimm 1978
Joakimsson 1978
Jordan et al. 1962

Figure 185. Composite distribution and abundance (greatest occurrence per station) of Citharichthys amblybregnathus collected during 30 autumn and winter cruises for the period Sep. 1971 - Feb. 1977.

Citharichthys amblybregnathus Gutherz and Blackman Common Name:

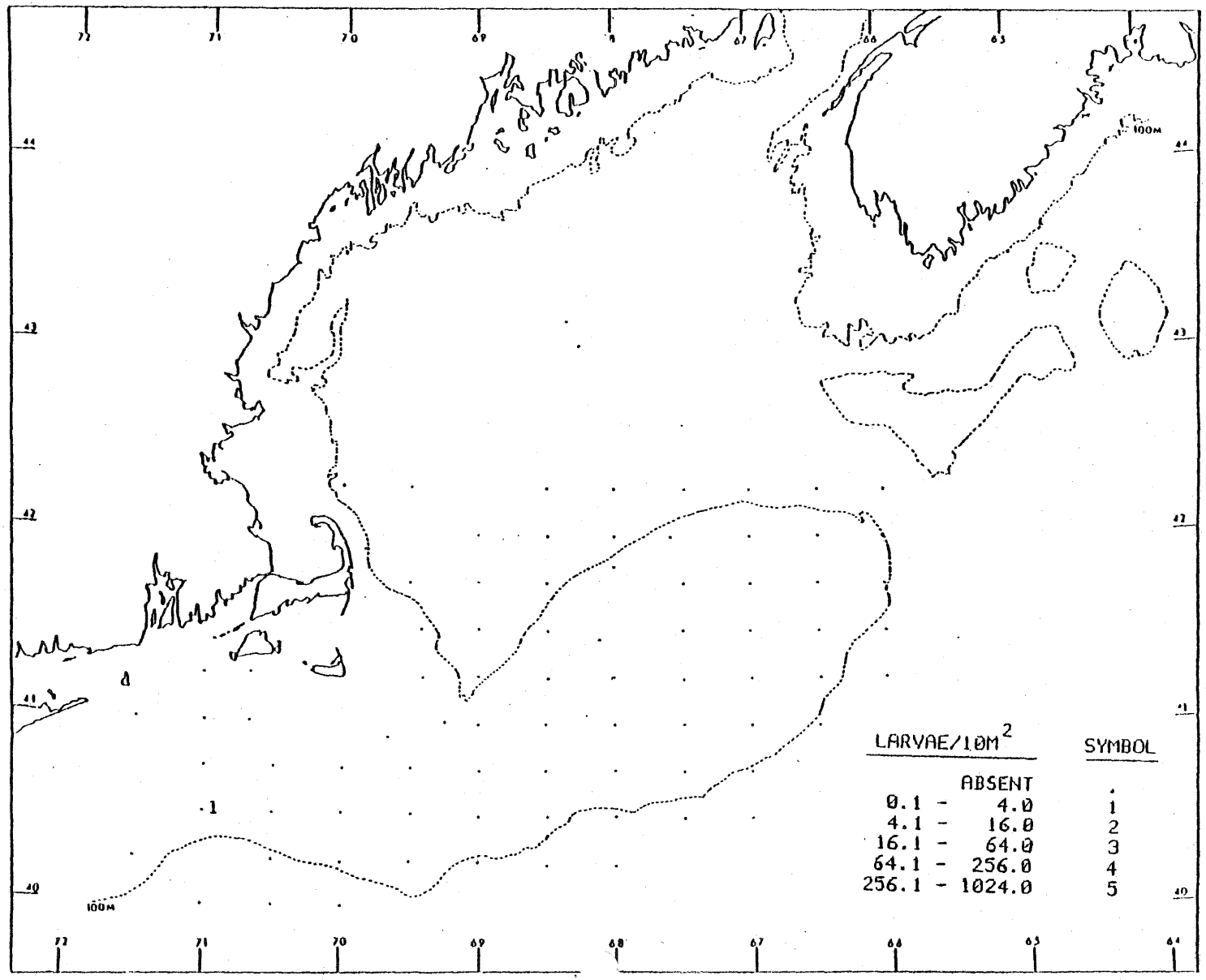


Table 185. Mean abundance (positive tows only) and mean length of *Citharichthys amblybregnathus* by cruise.

Cruise	Middate	Number of Positive Tows	Mean no./ $10m^2$	Standard Deviation	Mean Length (mm)	Standard Deviation	Length Range
Anton Dohrn 74-01	19 Nov. 1974	1	2.8	-	8.0	3.7	5 - 11

References:

Fischer 1978

Figure 186. Composite distribution and abundance (greatest occurrence per station) of Citharichthys arctifrons collected during 30 autumn and winter cruises for the period Sep. 1971 - Feb. 1977.

Citharichthys arctifrons Goode Common Name: Gulf Stream flounder

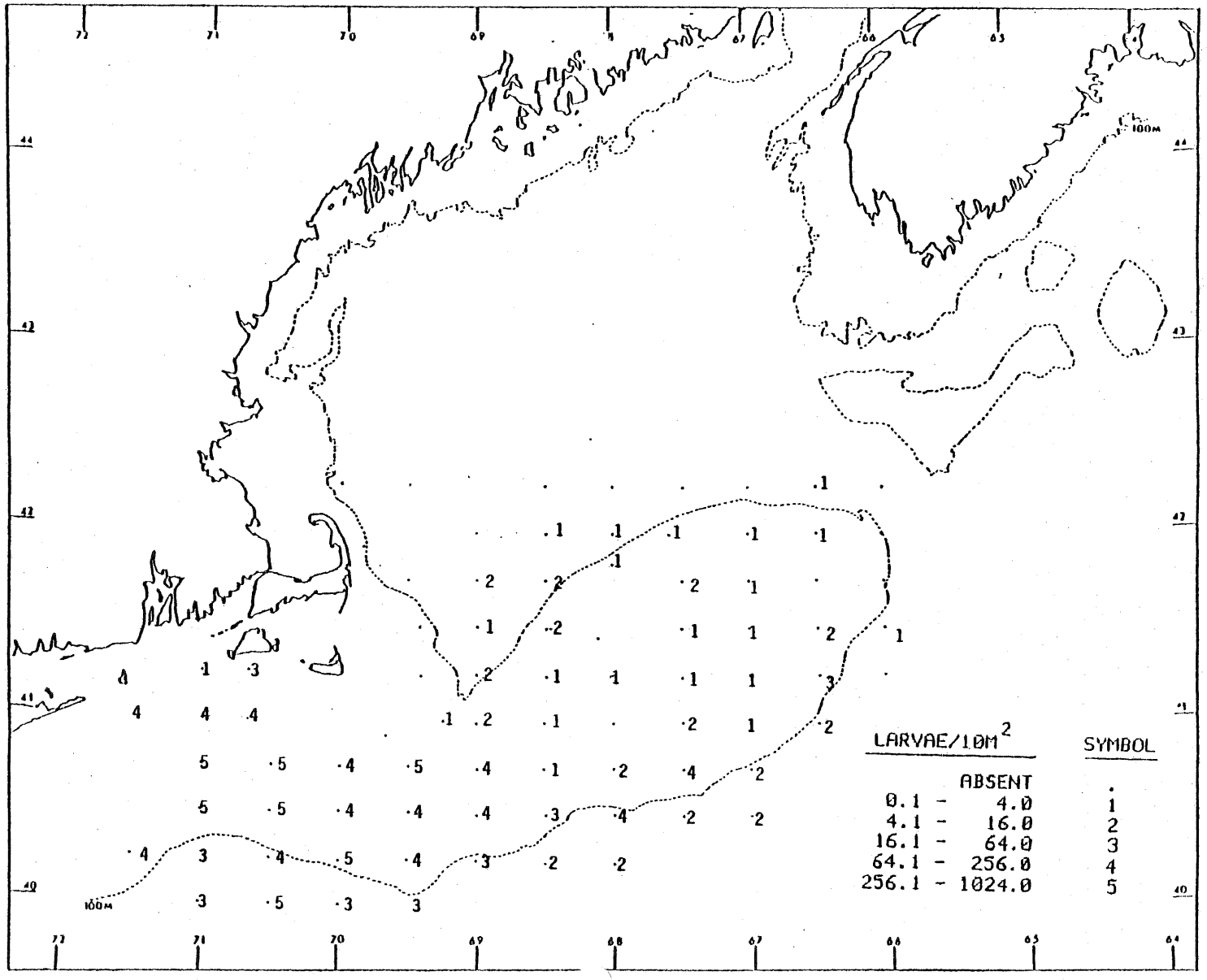


Table 186. Mean abundance (positive tows only) and mean length of *Citharichthys arctifrons* by cruise.

Cruise	Middate	Number of Positive Tows	Mean no./ $10m^2$	Standard Deviation	Mean Length (mm)	Standard Deviation	Length Range
Delaware II 71-04	27 Sep. 1971	22	33.8	54.7	5.0	2.2	2 - 16
Viandra 71-01	17 Oct. 1971	17	29.7	75.8	6.3	2.3	2 - 17
Walther Herwig 71-01	05 Nov. 1971	1	10.6	-	6.6	2.2	6 - 11
Wieczno 72-01	14 Oct. 1972	14	7.7	10.9	8.0	4.2	2 - 22
Anton Dohrn 72-01	05 Nov. 1972	3	1.2	0.3	12.1	5.0	8 - 19
Cryos 73-01	19 Sep. 1973	2	2.8	2.1	26.0	8.5	14 - 36
Wieczno 73-40	09 Oct. 1973	24	118.1	184.8	7.2	2.9	2 - 30
Belogorsk 73-01	23 Oct. 1973	20	37.2	80.1	7.4	3.2	2 - 26
Walther Herwig 73-43	02 Nov. 1973	15	12.9	19.6	9.8	7.0	3 - 33
Albatross IV 73-09	13 Dec. 1973	7	9.2	7.6	8.7	3.6	6 - 28
Cryos 74-04	16 Sep. 1974	16	76.3	113.9	9.0	5.0	2 - 40
Prognoz 74-01	24 Oct. 1974	13	29.4	74.7	8.3	3.3	3 - 18
Anton Dohrn 74-01	19 Nov. 1974	9	6.0	6.2	9.1	6.4	3 - 32
Albatross IV 75-02	14 Feb. 1975	2	1.6	0.1	27.4	5.5	23 - 32
Belogorsk 75-02	01 Oct. 1975	2	1.3	0.1	12.0	0	-
Anton Dohrn 75-187	09 Nov. 1975	3	3.0	2.8	5.8	3.0	3 - 11
Albatross IV 75-14	09 Dec. 1975	4	1.9	0.7	8.2	0.4	8 - 9
Belogorsk 76-03	08 Oct. 1976	18	21.8	68.0	5.4	2.3	2 - 17
Wieczno 76-03	24 Oct. 1976	28	76.7	121.8	5.3	2.7	2 - 25
Anton Dohrn 76-02	22 Nov. 1976	22	19.2	24.6	13.4	6.4	3 - 39
Researcher 76-01	04 Dec. 1976	11	18.7	25.2	10.1	4.0	3 - 24

References:

Berrien et al. 1978
Colton and Byron 1977
Fischer 1978
Grimm 1978
Joakimsson 1978
Jordan et al. 1962

Figure 187. Composite distribution and abundance (greatest occurrence per station) of Citharichthys cornutus collected during 30 autumn and winter cruises for the period Sep. 1971 - Feb. 1977.

Citharichthys cornutus (Gunther) Common Name:

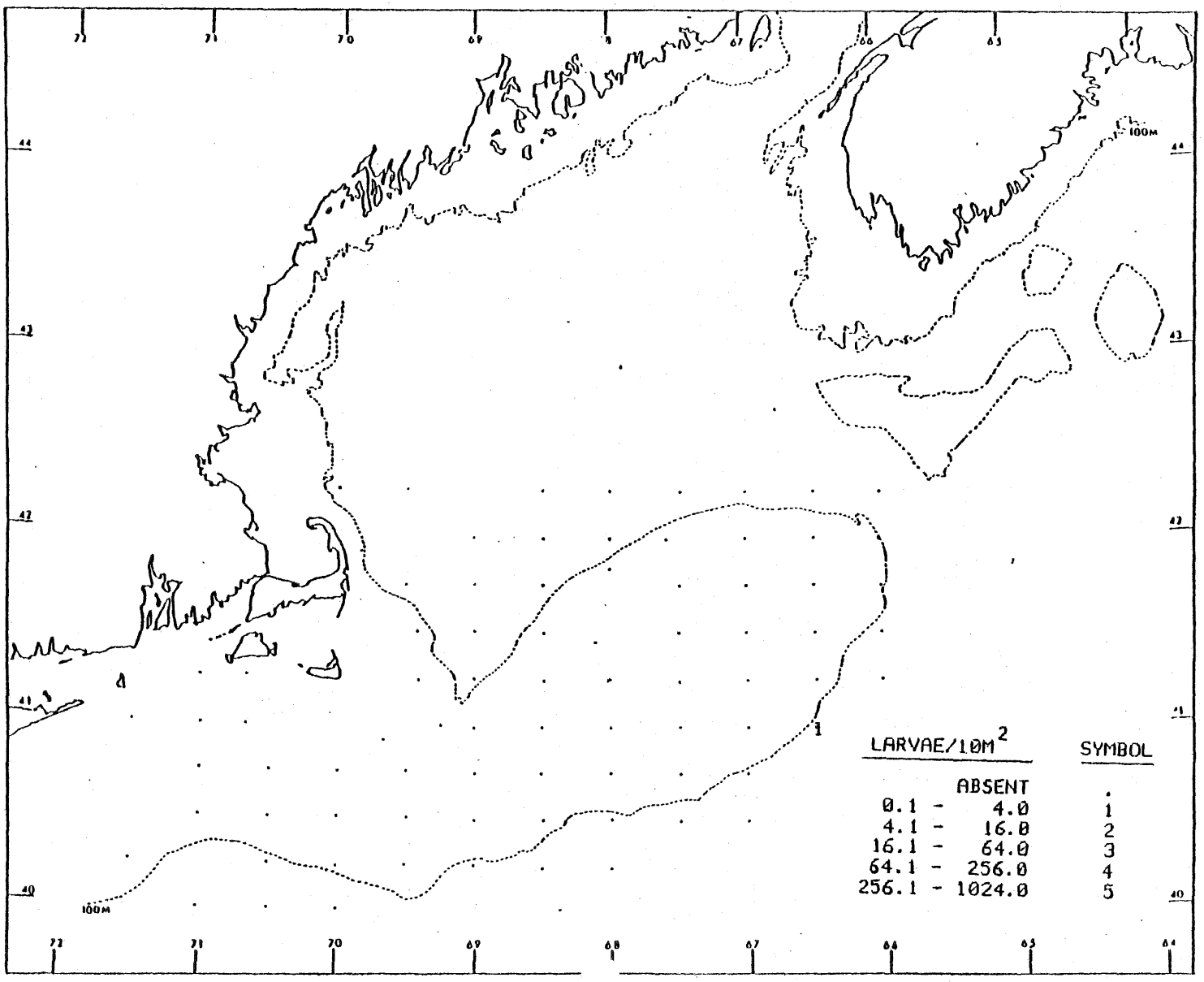


Table 187. Mean abundance (positive tows only) and mean length of *Citharichthys cornutus* by cruise.

Cruise	Middate	Number of Positive Tows	Mean no./ $10m^2$	Standard Deviation	Mean Length (mm)	Standard Deviation	Length Range
Prognoz 74-01	24 Oct. 1974	1	1.1	-	5.0	-	-

References:

Fischer 1978

Figure 188. Composite distribution and abundance (greatest occurrence per station) of Citharichthys spilopterus collected during 30 autumn and winter cruises for the period Sep. 1971 - Feb. 1977.

Citharichthys spilopterus Gunther Common Name:

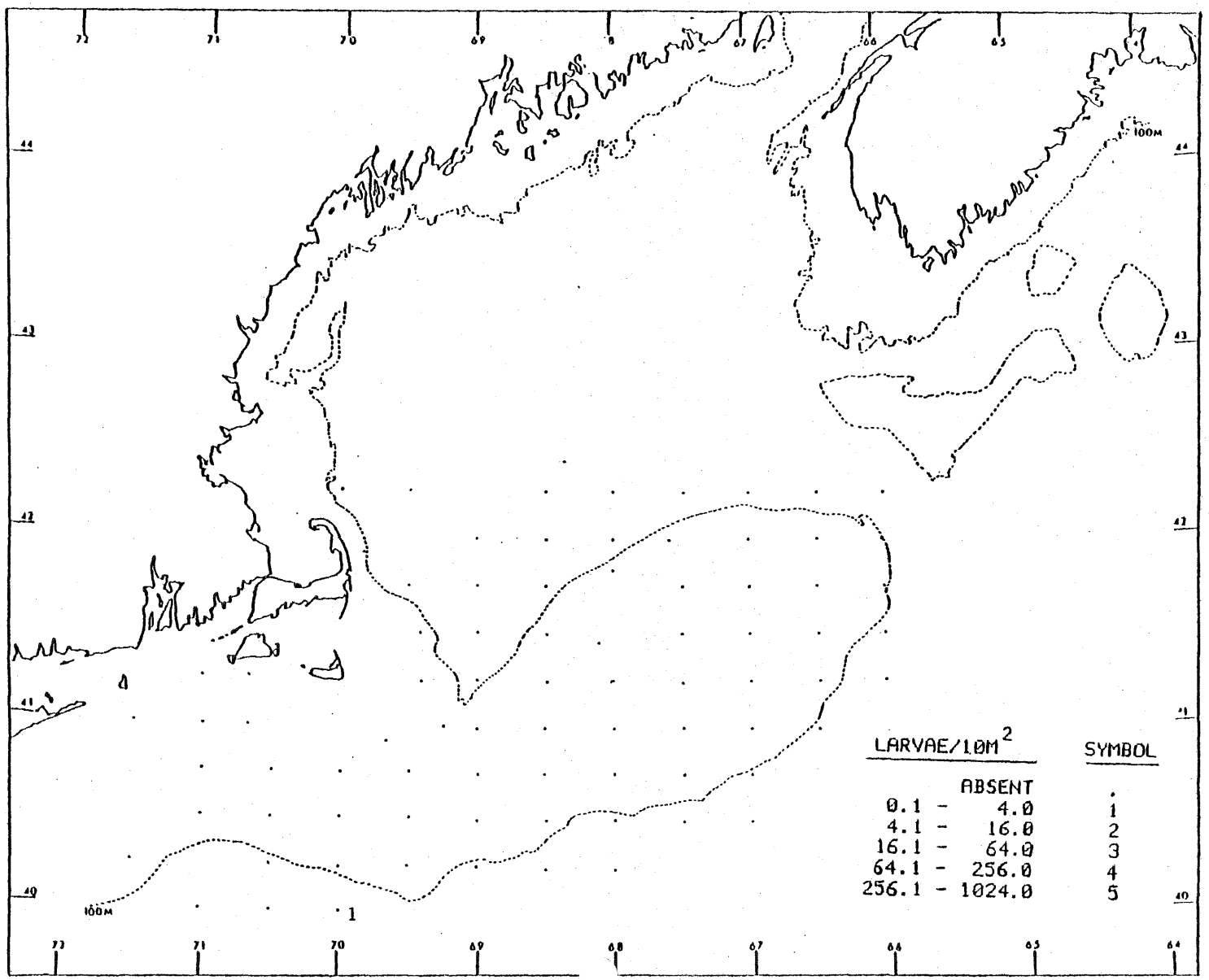


Table 188. Mean abundance (positive tows only) and mean length of *Citharichthys spilopterus* by cruise.

Cruise	Middate	Number of Positive Tows	Mean no./ $10m^2$	Standard Deviation	Mean Length (mm)	Standard Deviation	Length Range
Anton Dohrn 74-01	19 Nov. 1974	1	2.0	-	6.0	-	-

References:

Fischer 1978
Jordan et al. 1962

Figure 189. Composite distribution and abundance (greatest occurrence per station) of Citharichthys sp. collected during 30 autumn and winter cruises for the period Sep. 1971 - Feb. 1977.

Citharichthys sp. Common Name:

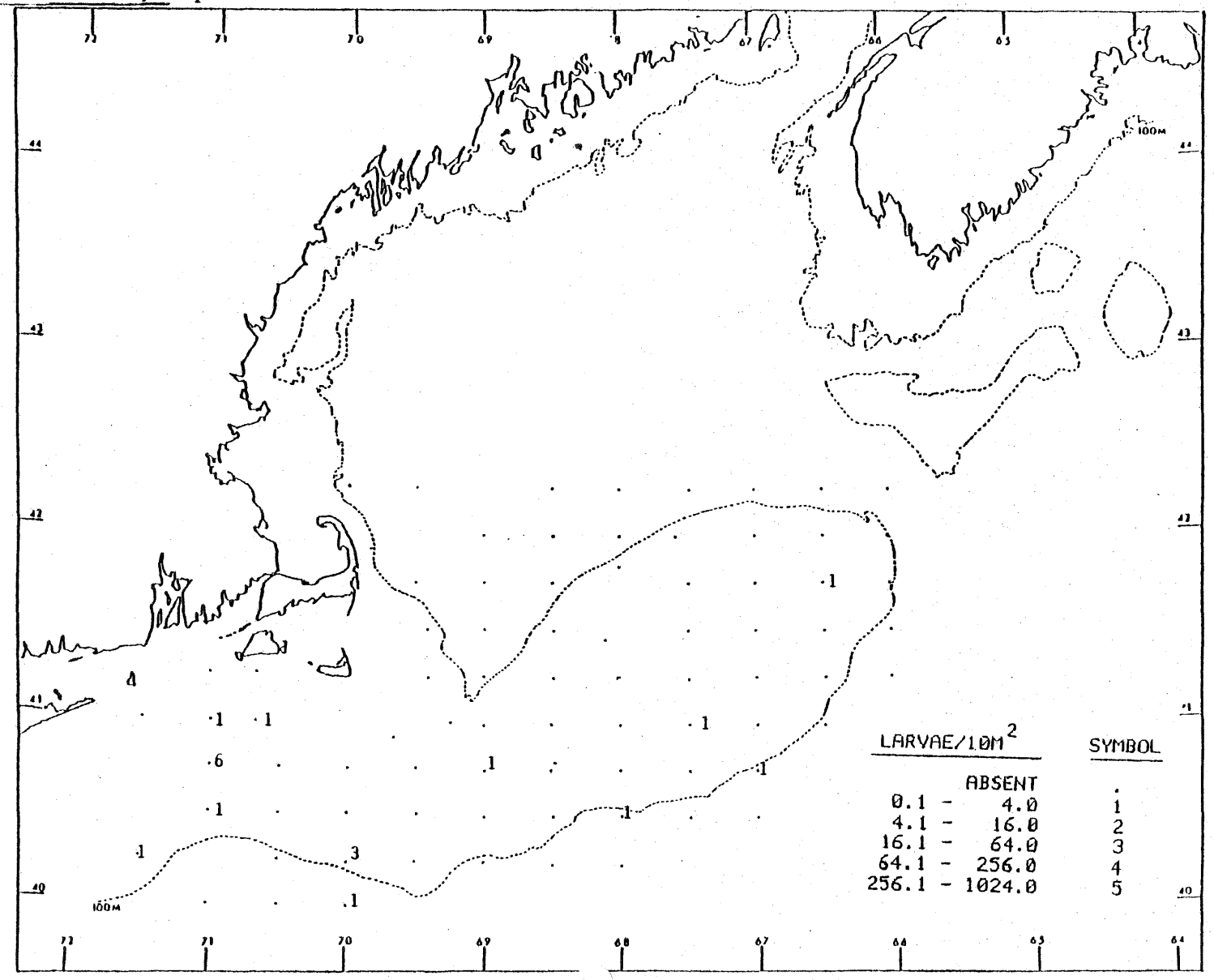


Table 189. Mean abundance (positive tows only) and mean length of *Citharichthys* sp. by cruise.

Cruise	Middate	Number of Positive Tows	Mean no./ $10m^2$	Standard Deviation	Mean Length (mm)	Standard Deviation	Length Range
Delaware II 71-04	27 Sep. 1971	1	2.3	-	2.0	-	-
Walther Herwig 71-01	05 Nov. 1971	1	3.6	-	2.8	0.4	2 - 3
Cryos 73-01	19 Sep. 1973	2	1.3	0.2	6.8	3.2	4 - 9
Wieczno 73-40	09 Oct. 1973	1	2358.6	-	5.2	1.7	2 - 10
Belogorsk 73-01	23 Oct. 1973	1	1.2	-	14.0	-	-
Walther Herwig 73-43	02 Nov. 1973	1	19.4	-	6.0	-	-
Albatross IV 74-13	13 Dec. 1974	4	1.2	0.4	12.8	6.0	8 - 21
Anton Dohrn 75-187	09 Nov. 1975	1	1.5	-	8.0	-	-
Anton Dohrn 76-02	22 Nov. 1976	1	3.7	-	7.0	-	-

References:

See *C. amblybregnathus*, *C. arctifrons*, *C. cornutus*, *C. spilopterus*

Figure 190. Composite distribution and abundance (greatest occurrence per station) of Cyclopsetta fimbriata collected during 30 autumn and winter cruises for the period Sep. 1971 - Feb. 1977.

Cyclopsetta fimbriata (Goode and Bean) Common Name: Spotfin flounder

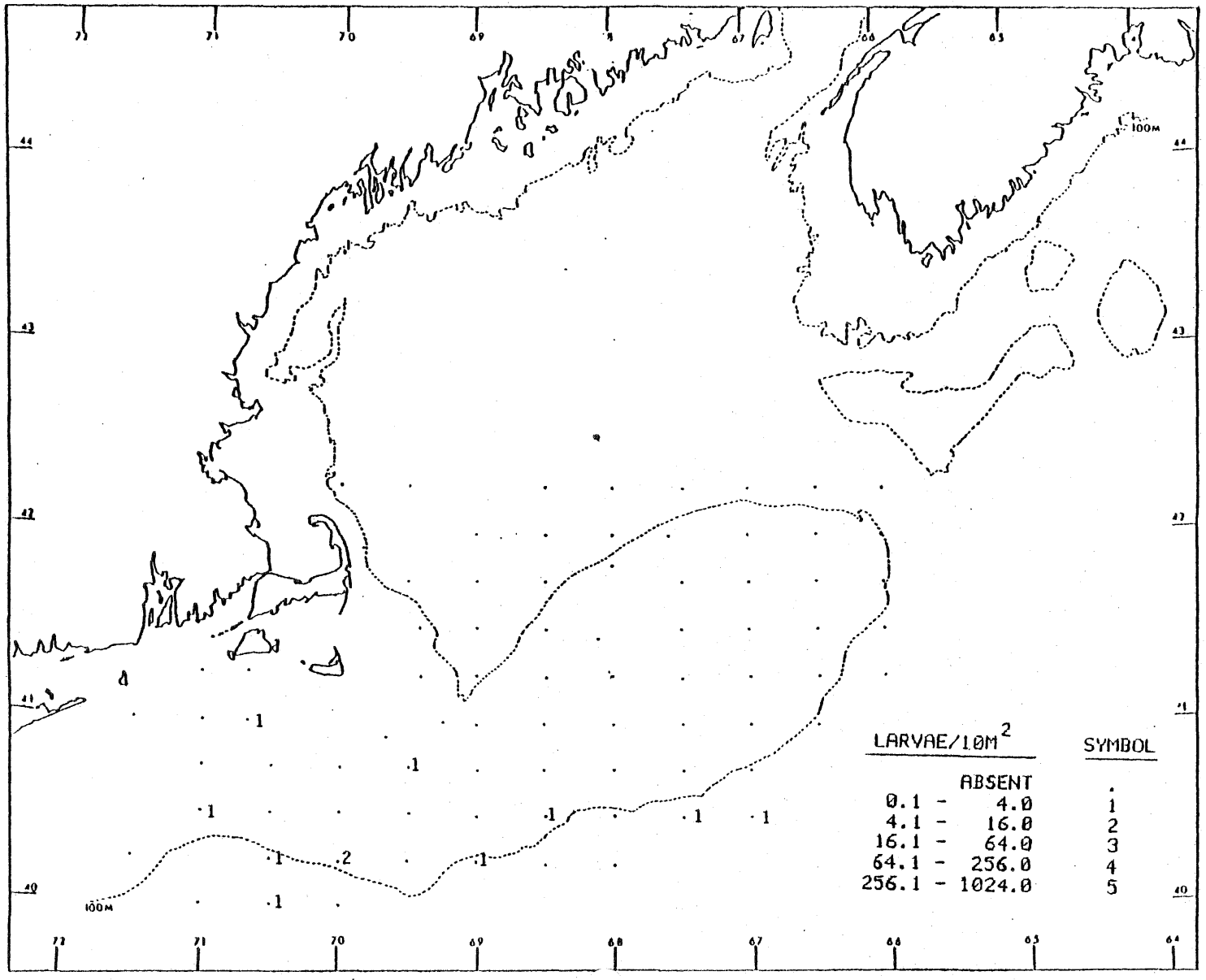


Table 190. Mean abundance (positive tows only) and mean length of *Cyclopsetta fimbriata* by cruise.

Cruise	Middate	Number of Positive Tows	Mean no./ $10m^2$	Standard Deviation	Mean Length (mm)	Standard Deviation	Length Range
Dealware II 71-04	27 Sep. 1971	2	0.9	0.1	9.8	4.7	7 - 13
Wieczno 73-40	09 Oct. 1973	3	2.1	0.1	10.3	2.4	7 - 14
Walther Herwig 73-43	02 Nov. 1973	1	4.9	-	13.0	-	-
Cryos 74-04	16 Sep. 1974	1	1.8	-	11.0	-	-
Anton Dohrn 74-01	19 Nov. 1974	1	2.1	0.1	8.5	0.6	8 - 9
Belogorsk 75-02	01 Oct. 1975	2	1.0	0	9.0	5.7	5 - 13
Belogorsk 75-03	23 Oct. 1975	1	1.3	-	7.0	-	-

References:

Berrien et al. 1978
Fischer 1978
Grimm 1978
Gutherz 1970
Joakimsson 1978
Jordan et al. 1962

Figure 191. Composite distribution and abundance (greatest occurrence per station) of Cyclopsetta sp. collected during 30 autumn and winter cruises for the period Sep. 1971 - Feb. 1977.

Cyclopsetta sp. Common Name:

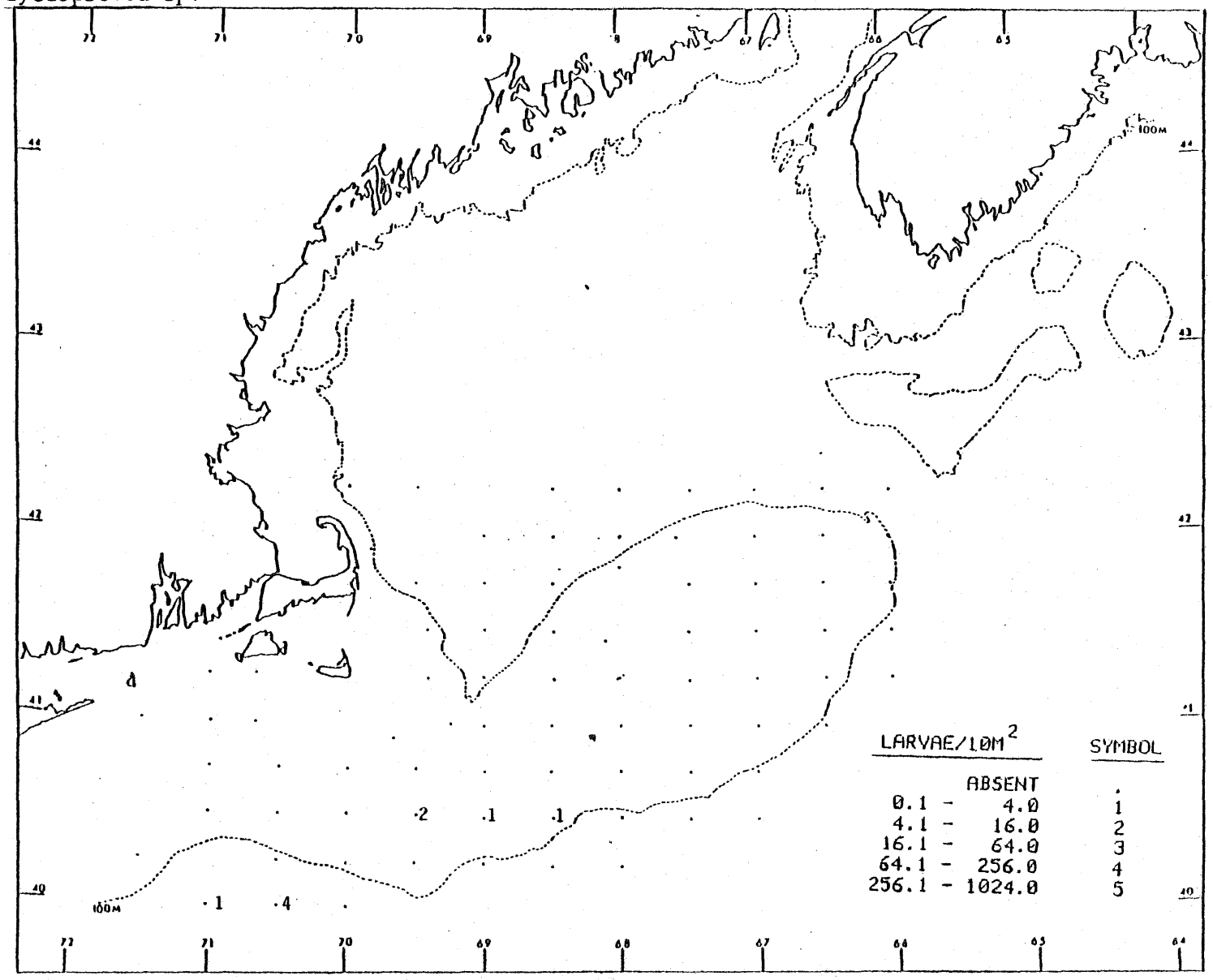


Table 191. Mean abundance (positive tows only) and mean length of *Cyclopsetta* sp. by cruise.

Cruise	Middate	Number of Positive Tows	Mean no./ $10m^2$	Standard Deviation	Mean Length (mm)	Standard Deviation	Length Range
Delaware II 71-04	27 Sep. 1971	1	0.5	-	11.0	-	-
Wieczno 73-40	09 Oct. 1973	1	1.5	-	8.0	-	-
Walther Herwig 73-43	02 Nov. 1973	1	7.2	-	14.0	-	-
Albatross IV 74-13	13 Dec. 1974	1	1.2	-	9.0	-	-
Wieczno 76-03	24 Oct. 1976	1	76.7	-	8.5	0.5	8 - 9

References:

See *C. fimbriata*

Figure 192. Composite distribution and abundance (greatest occurrence per station) of Etropus microstomus collected during 30 autumn and winter cruises for the period Sep. 1971 - Feb. 1977.

Etropus microstomus (Gill) Common Name: Smallmouth flounder

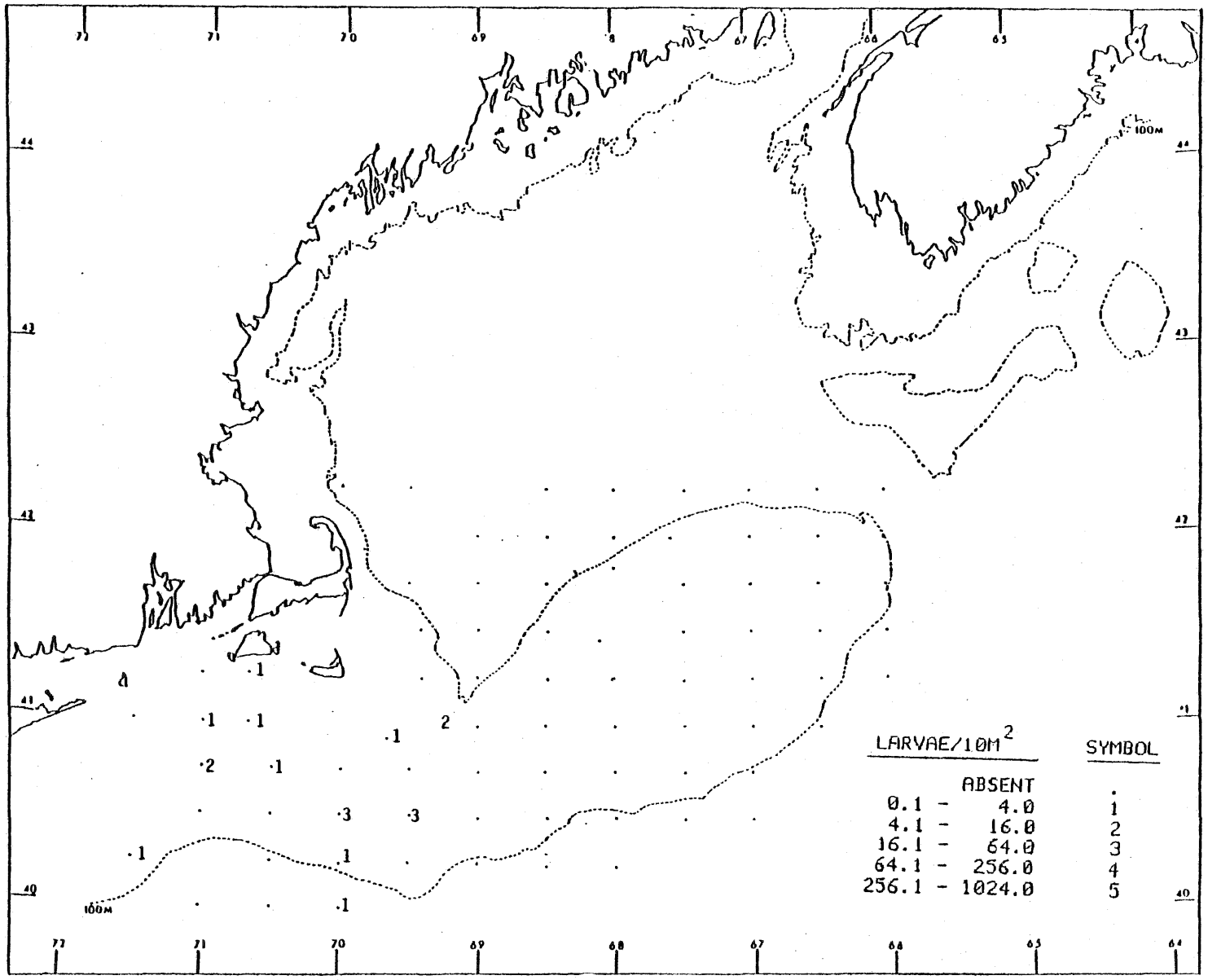


Table 192. Mean abundance (positive tows only) and mean length of *Etropus microstomus* by cruise.

Cruise	Middate	Number of Positive Tows	Mean no./ $10m^2$	Standard Deviation	Mean Length (mm)	Standard Deviation	Length Range
Viandra 71-01	17 Oct. 1971	1	0.4	-	4.0	-	-
Walther Herwig 71-01	05 Nov. 1971	1	1.8	-	4.0	-	-
Argus 72-02	20 Oct. 1972	1	4.7	-	11.0	-	-
Prognoz 74-01	24 Oct. 1974	1	1.4	-	6.0	-	-
Albatross IV 74-13	13 Dec. 1974	2	2.4	0.2	17.7	10.2	8 - 28
Albatross IV 75-14	09 Dec. 1975	1	1.5	-	9.0	-	-
Belogorsk 76-03	08 Oct. 1976	1	0.7	-	5.0	-	-
Wieczno 76-03	24 Oct. 1976	3	14.8	11.5	5.6	3.9	3 - 25
Anton Dohrn 76-02	22 Nov. 1976	3	4.3	4.4	9.4	4.0	5 - 16
Researcher 76-01	04 Dec. 1976	1	1.6	-	13.0	-	-

References:

Berrien et al. 1978
Colton and Byron 1977
Fischer 1978
Grimm 1978
Jordan et al. 1962

Figure 193. Composite distribution and abundance (greatest occurrence per station) of Etropus sp. collected during 30 autumn and winter cruises for the period Sep. 1971 - Feb. 1977.

Etropus sp. Common Name:

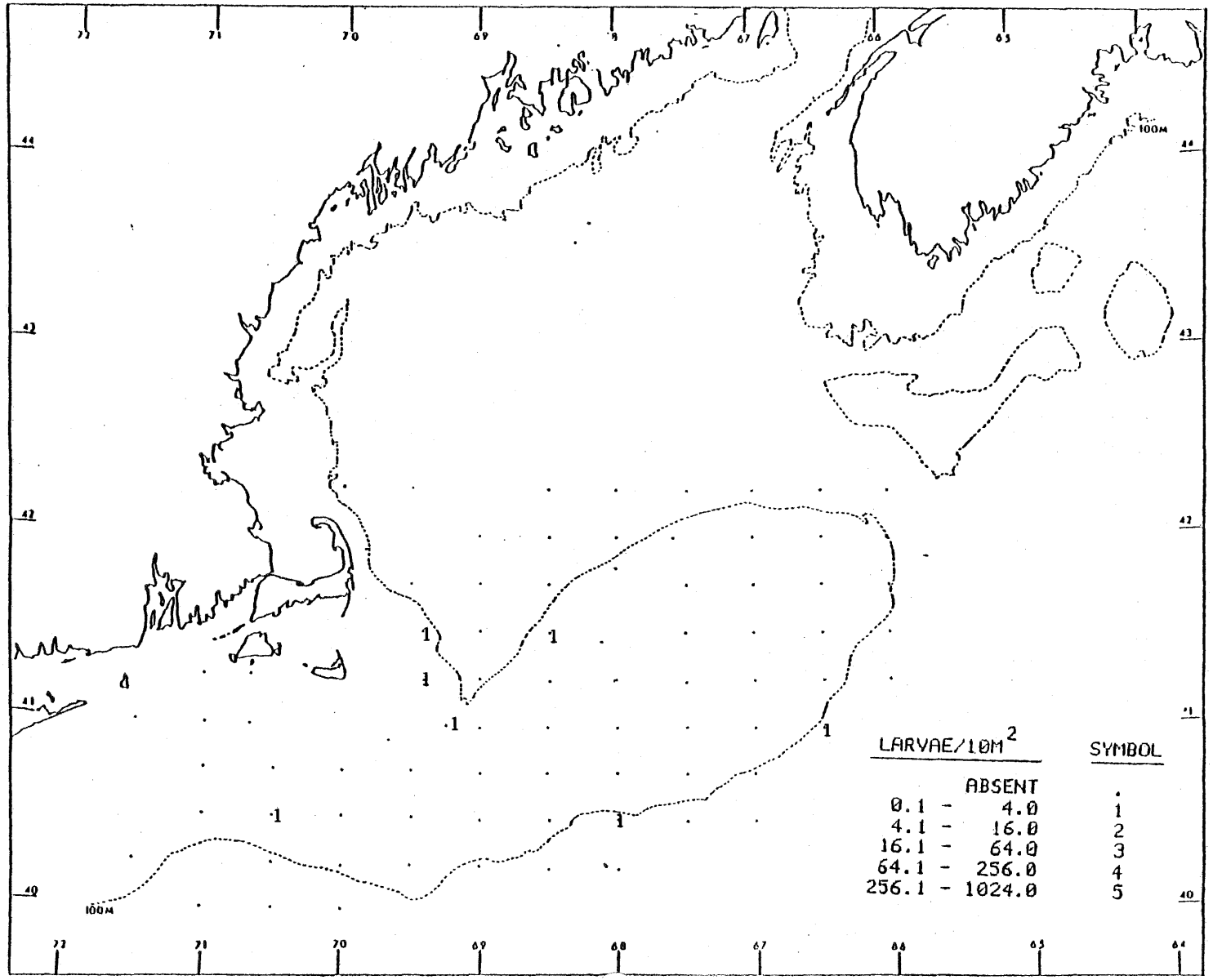


Table 193. Mean abundance (positive tows only) and mean length of *Etropus* sp. by cruise.

Cruise	Middate	Number of Positive Tows	Mean no./ $10m^2$	Standard Deviation	Mean Length (mm)	Standard Deviation	Length Range
Cryos 73-01	19 Sep. 1973	1	2.6	-	5.0	-	-
Anotn Dohrn 75-187	09 Nov. 1975	5	1.5	0.7	9.0	1.5	7 - 11
Wieczno 76-03	24 Oct. 1976	1	1.8	-	7.0	-	-

References:

See *E. microstomus*

Figure 194. Composite distribution and abundance (greatest occurrence per station) of Paralichthys dentatus collected during 30 autumn and winter cruises for the period Sep. 1971 - Feb. 1977.

Paralichthys dentatus (Linnaeus) Common Name: Summer flounder

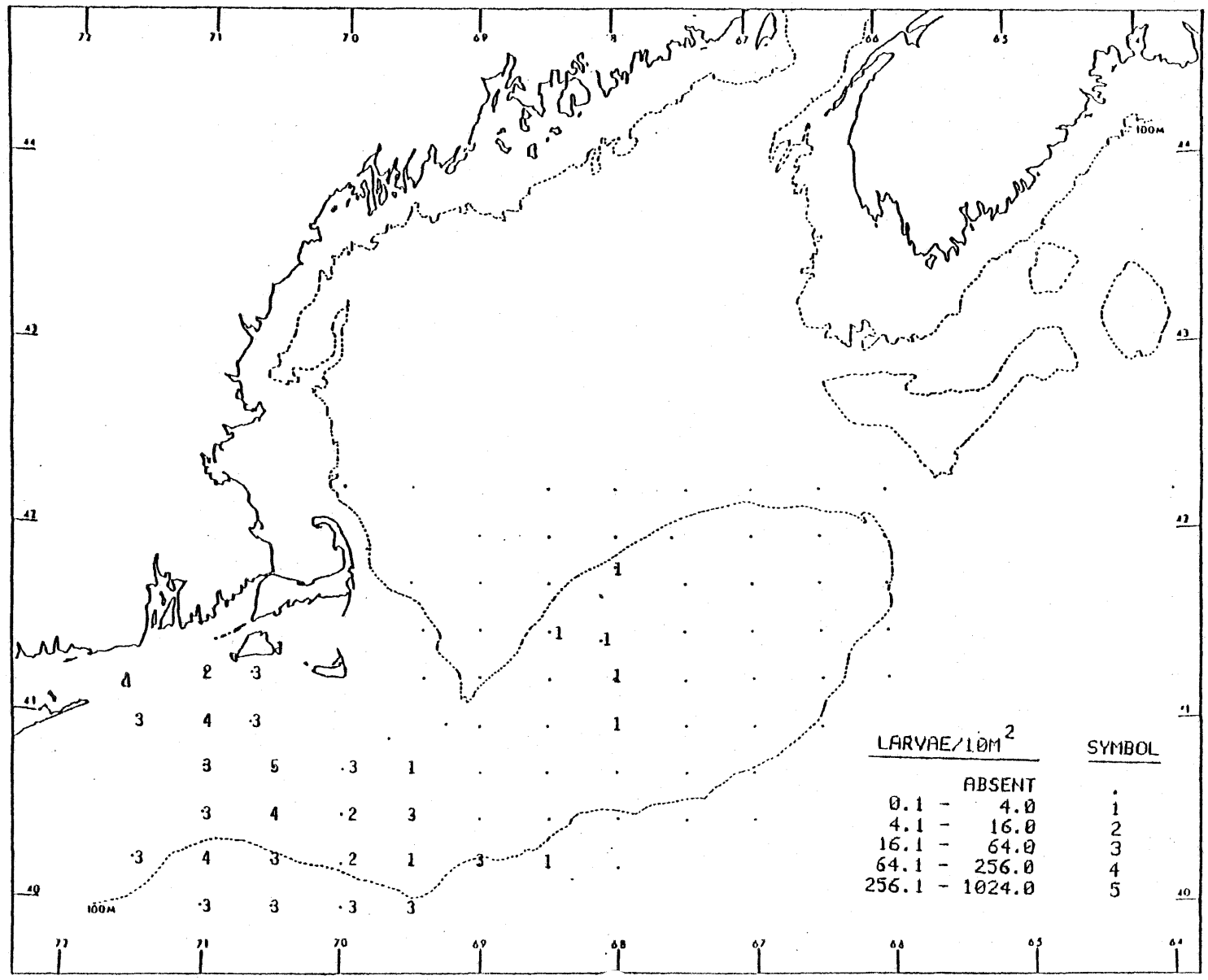


Table 194. Mean abundance (positive tows only) and mean length of *Paralichthys dentatus* by cruise.

Cruise	Middate	Number of Positive Tows	Mean no./ $10m^2$	Standard Deviation	Mean Length (mm)	Standard Deviation	Length Range
Delaware II 71-04	27 Sep. 1971	3	0.9	0.3	2.9	0.4	2 - 3
Viandra 71-01	17 Oct. 1971	3	5.4	4.8	3.6	0.9	2 - 5
Walther Herwig 71-01	05 Nov. 1971	3	6.8	5.0	3.4	0.6	3 - 5
Albatross IV 71-07	09 Dec. 1971	1	1.2	-	7.0	-	-
Anton Dohrn 72-01	05 Nov. 1972	3	6.3	5.1	2.7	0.5	2 - 4
Wieczno 73-40	09 Oct. 1973	4	6.5	4.2	3.7	1.1	3 - 7
Belogorsk 73-01	23 Oct. 1973	3	7.0	7.5	3.4	0.5	3 - 4
Walther Herwig 73-43	02 Nov. 1973	3	42.6	51.6	4.3	1.2	3 - 7
Albatross IV 73-09	13 Dec. 1973	10	17.2	14.2	5.3	1.9	2 - 12
Prognoz 74-01	24 Oct. 1974	5	11.0	8.8	3.6	1.2	2 - 6
Anton Dohrn 74-01	19 Nov. 1974	6	3.2	2.6	3.4	0.5	3 - 4
Albatross IV 74-13	13 Dec. 1974	10	7.8	8.4	4.5	1.5	2 - 8
Belogorsk 75-03	23 Oct. 1975	4	17.9	24.6	4.0	1.3	2 - 8
Anton Dohrn 75-187	09 Nov. 1975	7	7.2	7.5	5.8	1.6	3 - 8
Albatross IV 75-14	09 Dec. 1975	4	3.5	3.0	4.5	1.7	3 - 8
Belogorsk 76-03	08 Oct. 1976	3	2.6	1.4	2.6	0.5	2 - 3
Wieczno 76-03	24 Oct. 1976	17	56.5	130.0	3.5	0.7	2 - 6
Anton Dohrn 76-02	22 Nov. 1976	15	28.6	52.6	4.2	1.4	2 - 9
Researcher 76-01	04 Dec. 1976	10	10.6	10.4	4.9	1.7	2 - 9
Mt. Mitchell 77-01	18 Feb. 1977	1	1.5	-	10.0	-	-

References:

Berrien et al. 1978
Colton and Byron 1977
Fischer 1978
Grimm 1978
Hildebrand and Cable 1930
Joakimsson 1978
Jordan et al. 1962
Leim and Scott 1966

Figure 195. Composite distribution and abundance (greatest occurrence per station) of Paralichthys oblongus collected during 30 autumn and winter cruises for the period Sep. 1971 - Feb. 1977.

Paralichthys oblongus (Mitchill) Common Name: Fourspot flounder

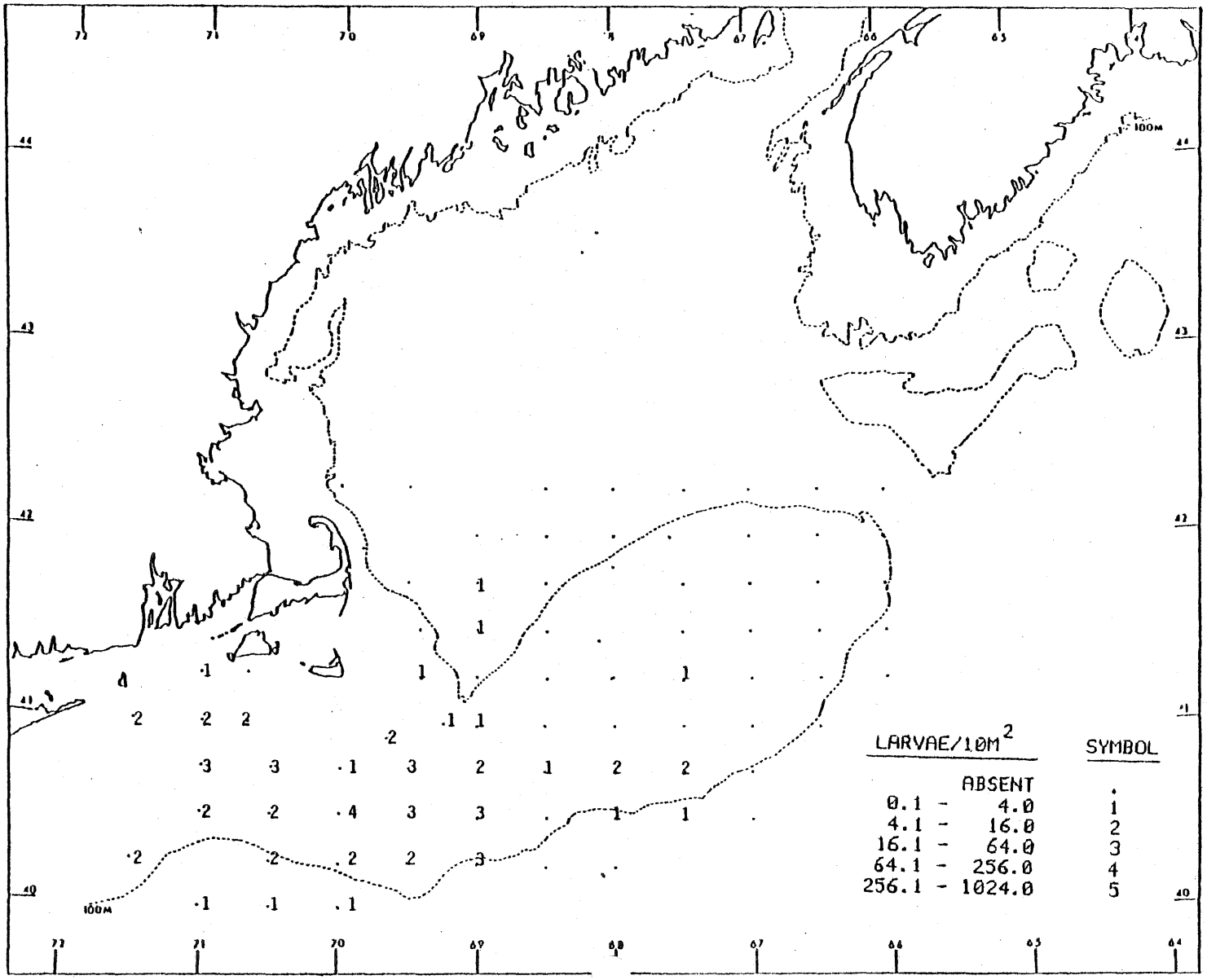


Table 195. Mean abundance (positive tows only) and mean length of *Paralichthys oblongus* by cruise.

Cruise	Middate	Number of Positive Tows	Mean no./ $10m^2$	Standard Deviation	Mean Length (mm)	Standard Deviation	Length Range
Delaware II 71-04	27 Sep. 1971	20	14.3	35.5	3.6	1.2	2 - 9
Viandra 71-01	17 Oct. 1971	3	4.1	4.9	6.7	2.2	4 - 12
Wieczno 72-01	14 Oct. 1972	5	3.5	3.3	3.8	1.2	2 - 7
Argus 72-02	20 Oct. 1972	1	5.7	-	4.0	-	-
Albatross IV 72-09	10 Dec. 1972	1	1.2	-	3.0	-	-
Cryos 73-01	19 Sep. 1973	3	2.5	0.9	6.1	1.8	3 - 8
Wieczno 73-40	09 Oct. 1973	12	7.7	9.6	6.3	2.3	2 - 12
Belogorsk 73-01	23 Oct. 1973	5	1.5	0.5	7.8	4.8	2 - 15
Walther Herwig 73-40	02 Nov. 1973	1	12.6	-	20.0	-	-
Cryos 74-04	16 Sep. 1974	8	17.5	17.2	4.9	1.8	2 - 10
Prognoz 74-01	24 Oct. 1974	3	3.7	3.1	5.9	1.8	3 - 9
Anton Dohrn 74-01	19 Nov. 1974	2	2.4	0.1	4.9	2.2	3 - 7
Albatross IV 74-13	13 Dec. 1974	1	1.9	-	3.0	-	-
Belogorsk 76-03	08 Oct. 1976	7	3.4	5.7	4.0	1.8	3 - 7
Wieczno 76-03	24 Oct. 1976	15	2.9	2.1	5.6	1.7	2 - 9
Anton Dohrn 76-02	22 Nov. 1976	1	1.9	-	3.0	-	-

References:

Berrien et al. 1978
Colton and Byron 1977
Fischer 1978
Grimm 1978
Joakimsson 1978
Jordan et al. 1962
Leim and Scott 1966

Figure 196. Composite distribution and abundance (greatest occurrence per station) of Paralichthys sp. collected during 30 autumn and winter cruises for the period Sep. 1971 - Feb. 1977.

Paralichthys sp. Common Name:

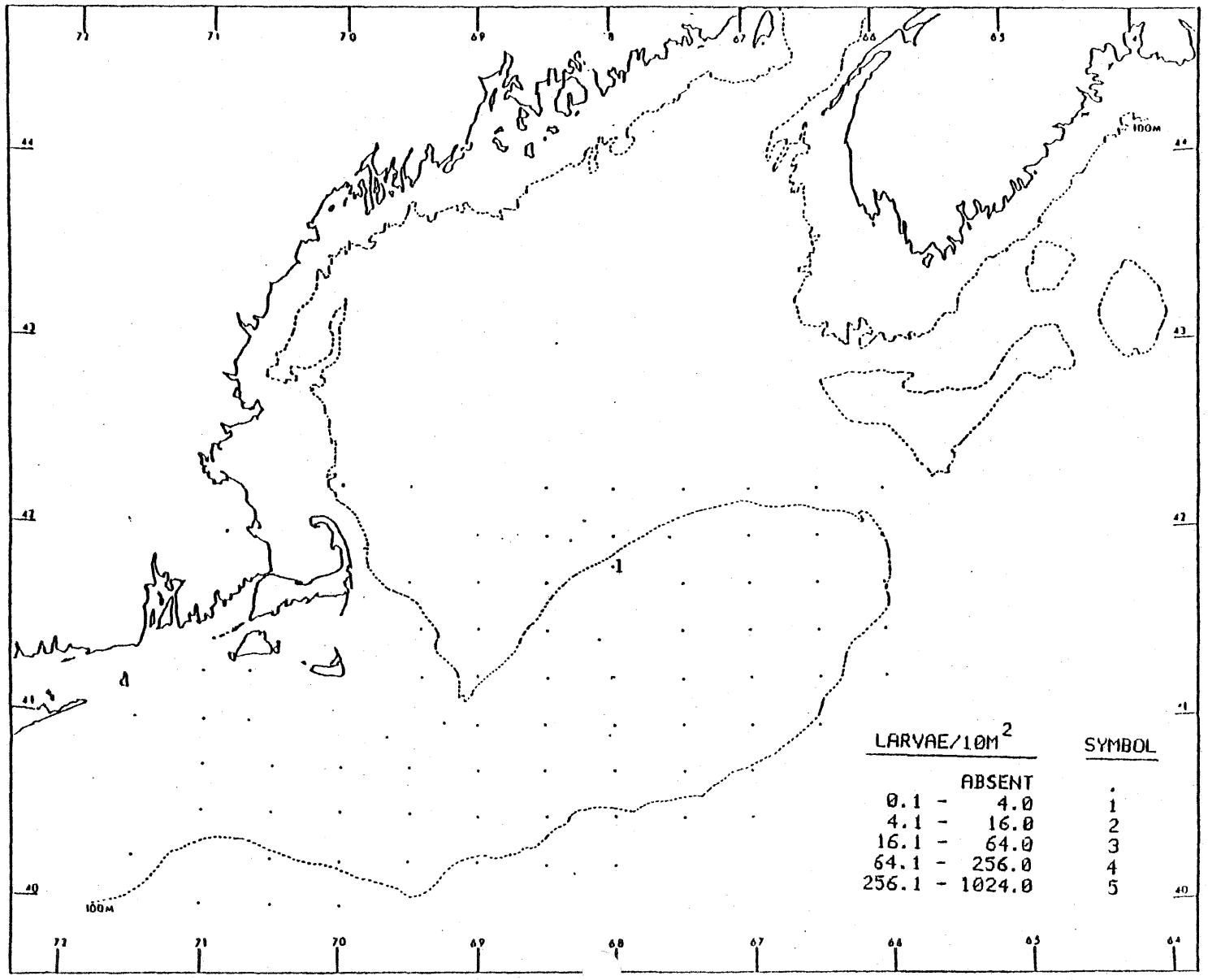


Table 196. Mean abundance (positive tows only) and mean length of *Paralichthys* sp. by cruise.

Cruise	Middate	Number of Positive Tows	Mean no./ $10m^2$	Standard Deviation	Mean Length (mm)	Standard Deviation	Length Range
Viandra 71-01	17 Oct. 1971	1	0.7	-	9.0	-	-

References:

Fischer 1978
Jordan et al. 1962
Leim and Scott 1966

Figure 197. Composite distribution and abundance (greatest occurrence per station) of Scophthalmus aquosus collected during 30 autumn and winter cruises for the period Sep. 1971 - Feb. 1977.

Scophthalmus aquosus (Mitchill) Common Name: Windowpane

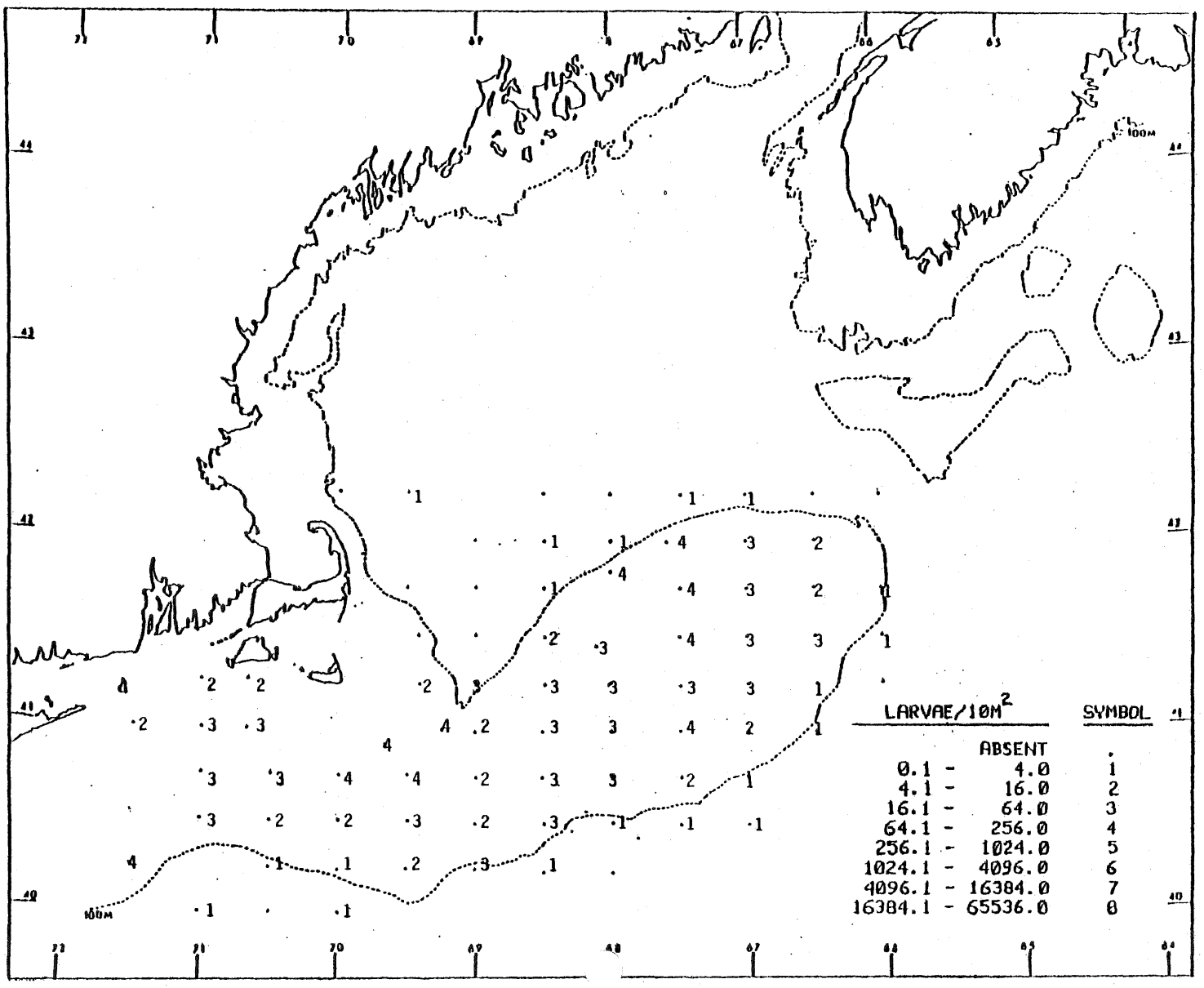


Table 197. Mean abundance (positive tows only) and mean length of Scophthalmus aquosus by cruise.

Cruise	Middate	Number of Positive Tows	Mean no./ $10m^2$	Standard Deviation	Mean Length (mm)	Standard Deviation	Length Range
Delaware II 71-04	27 Sep. 1971	19	13.3	37.5	4.1	1.5	2 - 10
Viandra 71-01	17 Oct. 1971	19	4.6	6.4	9.6	7.3	2 - 36
Walther Herwig 71-01	05 Nov. 1971	1	2.5	-	4.6	1.1	4 - 7
Argus 72-01	26 Sep. 1972	6	4.2	3.9	3.2	0.6	2 - 5
Wieczno 72-01	14 Oct. 1972	32	15.9	23.1	4.1	1.9	2 - 18
Argus 72-02	20 Oct. 1972	17	19.9	21.3	4.0	1.7	2 - 11
Anton Dohrn 72-01	05 Nov. 1972	22	3.5	3.9	4.4	2.0	2 - 14
Albatross IV 72-09	10 Dec. 1972	5	1.5	0.2	3.0	0	-
Cryos 73-01	19 Sep. 1973	11	11.0	9.1	4.4	2.8	2 - 22
Wieczno 73-40	09 Oct. 1973	40	26.5	43.8	4.0	2.3	2 -
Belogorsk 73-01	23 Oct. 1973	28	10.9	13.3	5.6	2.8	2 - 25
Walther Herwig 73-43	02 Nov. 1973	21	10.6	12.7	7.8	3.9	2 - 20
Albatross IV 73-09	13 Dec. 1973	7	3.5	1.8	9.2	8.8	3 - 29
Albatross IV 74-02	14 Feb. 1974	1	0.6	-	33.0	-	-
Cryos 74-04	16 Sep. 1974	17	18.0	17.8	3.9	4.6	2 - 60
Prognoz 74-01	24 Oct. 1974	37	14.8	20.9	4.6	2.4	2 - 29
Anton Dohrn 74-01	19 Nov. 1974	23	4.3	2.9	5.5	2.3	2 - 11
Albatross IV 74-13	13 Dec. 1974	12	2.3	1.3	7.2	3.2	2 - 15
Albatross IV 75-02	14 Feb. 1975	1	1.0	-	39.0	-	-
Belogorsk 75-02	01 Feb. 1975	16	14.1	21.8	7.0	5.4	2 - 26
Belogorsk 75-03	23 Oct. 1975	28	7.0	8.9	7.9	8.1	2 - 49
Anton Dohrn 75-187	09 Nov. 1975	13	3.8	3.3	13.1	13.0	2 - 81
Albatross IV 76-01	16 Feb. 1976	1	3.3	-	32.2	4.7	28 - 37
Belogorsk 76-03	08 Oct. 1976	25	18.9	43.6	4.5	2.4	2 - 24
Wieczno 76-03	24 Oct. 1976	28	9.4	11.8	3.6	2.8	2 - 31
Anton Dohrn 76-02	22 Nov. 1976	12	4.3	3.2	10.9	5.3	3 - 21
Researcher 76-01	04 Dec. 1976	6	19.0	40.5	5.3	2.6	2 - 17
Mt. Mitchell 77-01	18 Feb. 1977	1	1.1	-	29.0	-	-

Figure 198. Composite distribution and abundance (greatest occurrence per station) of Scophthalmus sp. collected during 30 autumn and winter cruises for the period Sep. 1971 - Feb. 1977.

Scophthalmus sp. Common Name:

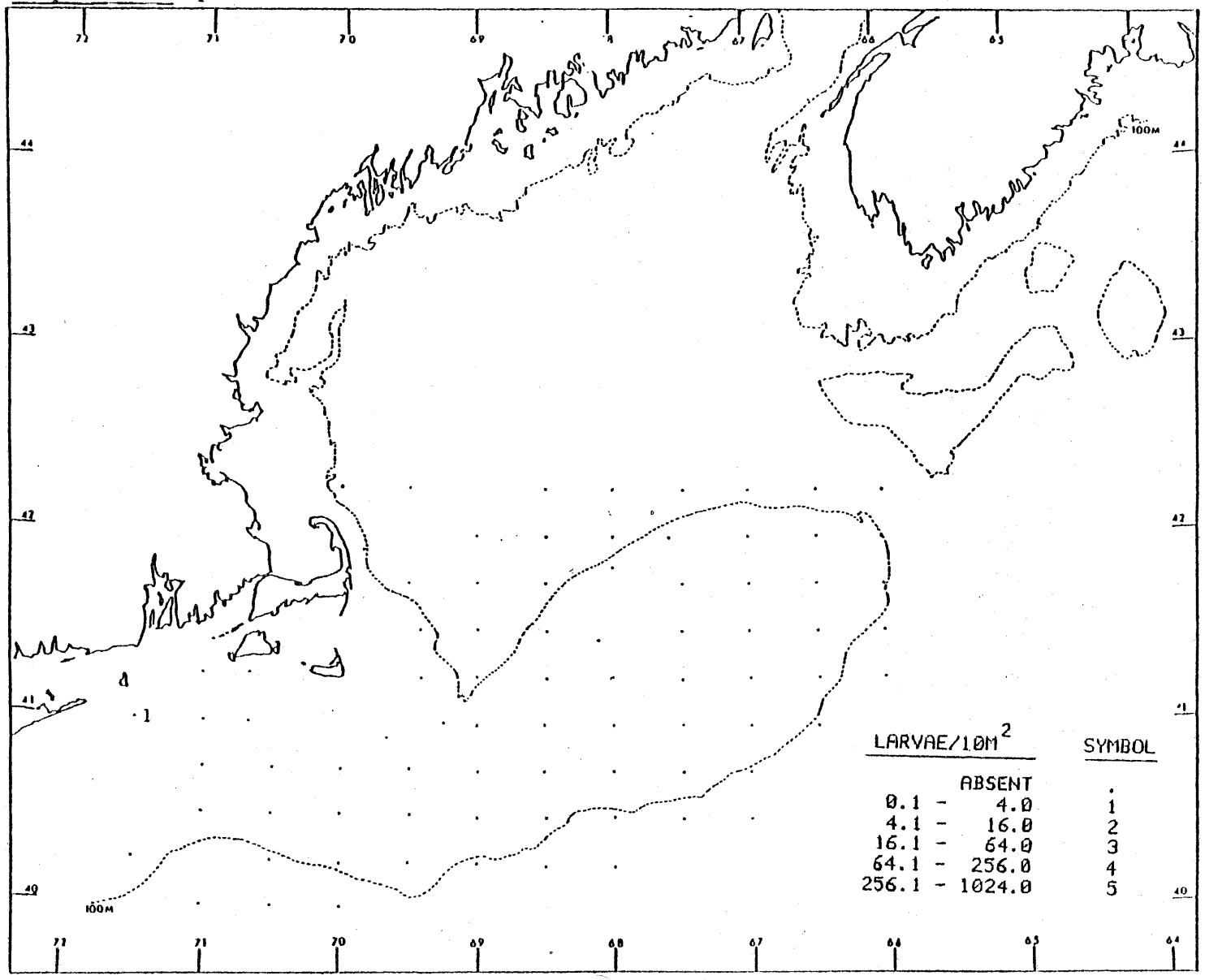


Table 198. Mean abundance (positive tows only) and mean length of *Scophthalmus* sp. by cruise.

Cruise	Middate	Number of Positive Tows	Mean no./ $10m^2$	Standard Deviation	Mean Length (mm)	Standard Deviation	Length Range
Anton Dohrn 72-01	05 Nov. 1972	1	3.5	-	3.0	-	-

Figure 199. Composite distribution and abundance (greatest occurrence per station) of Syacium sp. collected during 30 autumn and winter cruises for the period Sep. 1971 - Feb. 1977.

Syacium sp.

Common Name:

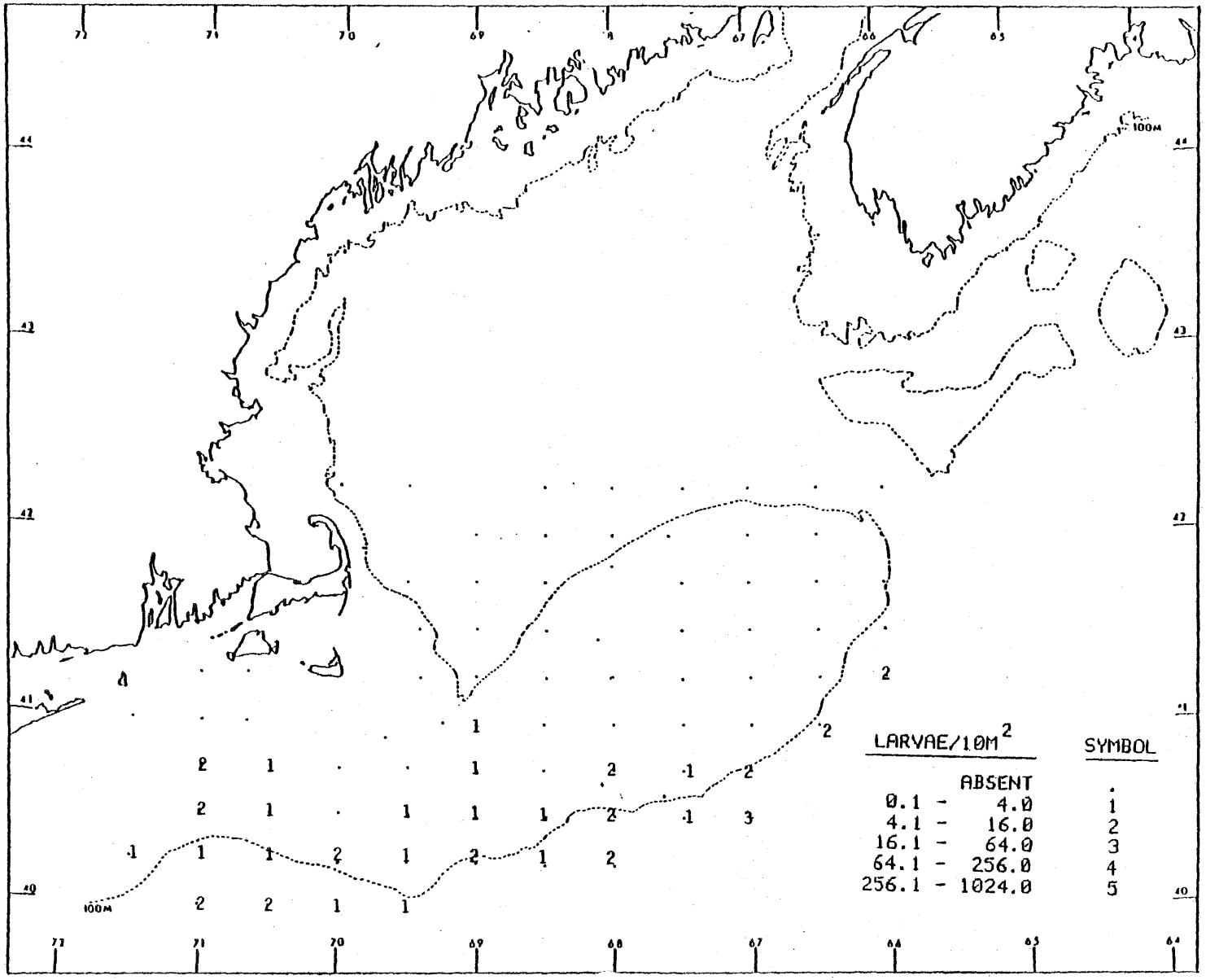


Table 199. Mean abundance (positive tows only) and mean length of Syacium sp. by cruise.

Cruise	Middate	Number of Positive Tows	Mean no./ $10m^2$	Standard Deviation	Mean Length (mm)	Standard Deviation	Length Range
Delaware II 71-04	27 Sep. 1971	14	3.3	2.6	8.8	2.5	5 - 14
Viandra 71-01	17 Oct. 1971	7	3.5	5.5	8.4	2.8	5 - 16
Wieczno 72-01	14 Oct. 1972	1	3.2	-	10.7	1.5	9 - 12
Anton Dohrn 72-01	05 Nov. 1972	8	1.4	0.5	7.1	1.8	4 - 11
Albatross IV 72-09	10 Dec. 1972	1	1.3	-	8.0	-	-
Wieczno 73-40	09 Oct. 1973	7	3.7	1.9	7.1	2.2	4 - 13
Belogorsk 73-01	23 Oct. 1973	10	3.1	3.5	7.5	2.6	4 - 13
Walther Herwig 73-43	02 Nov. 1973	5	2.4	1.7	8.1	1.7	7 - 12
Cryos 74-04	16 Sep. 1974	1	51.0	-	4.5	0.8	4 - 8
Prognoz 74-01	24 Oct. 1974	10	3.0	3.3	7.1	2.3	3 - 13
Anton Dohrn 74-01	19 Nov. 1974	4	4.6	5.2	7.9	2.6	4 - 12
Belogorsk 75-02	01 Oct. 1975	1	1.2	-	4.0	-	-
Anton Dohrn 75-187	09 Nov. 1975	4	6.4	9.5	5.9	1.5	3 - 13
Belogorsk 76-03	08 Oct. 1976	1	0.3	-	10.0	-	-
Wieczno 76-03	24 Oct. 1976	9	2.0	1.1	8.3	1.7	6 - 12
Anton Dohrn 76-02	22 Nov. 1976	1	11.1	-	7.3	1.4	5 - 9

References:

Berrien et al. 1978
Colton and Byron 1977
Fischer 1978
Grimm 1978
Joakimsson 1978
Jordan et al. 1962

Figure 200. Composite distribution and abundance (greatest occurrence per station) of Pleuronectidae collected during 30 autumn and winter cruises for the period Sep. 1971 - Feb. 1977.

Pleuronectidae

Common Name: Righteyed flounders

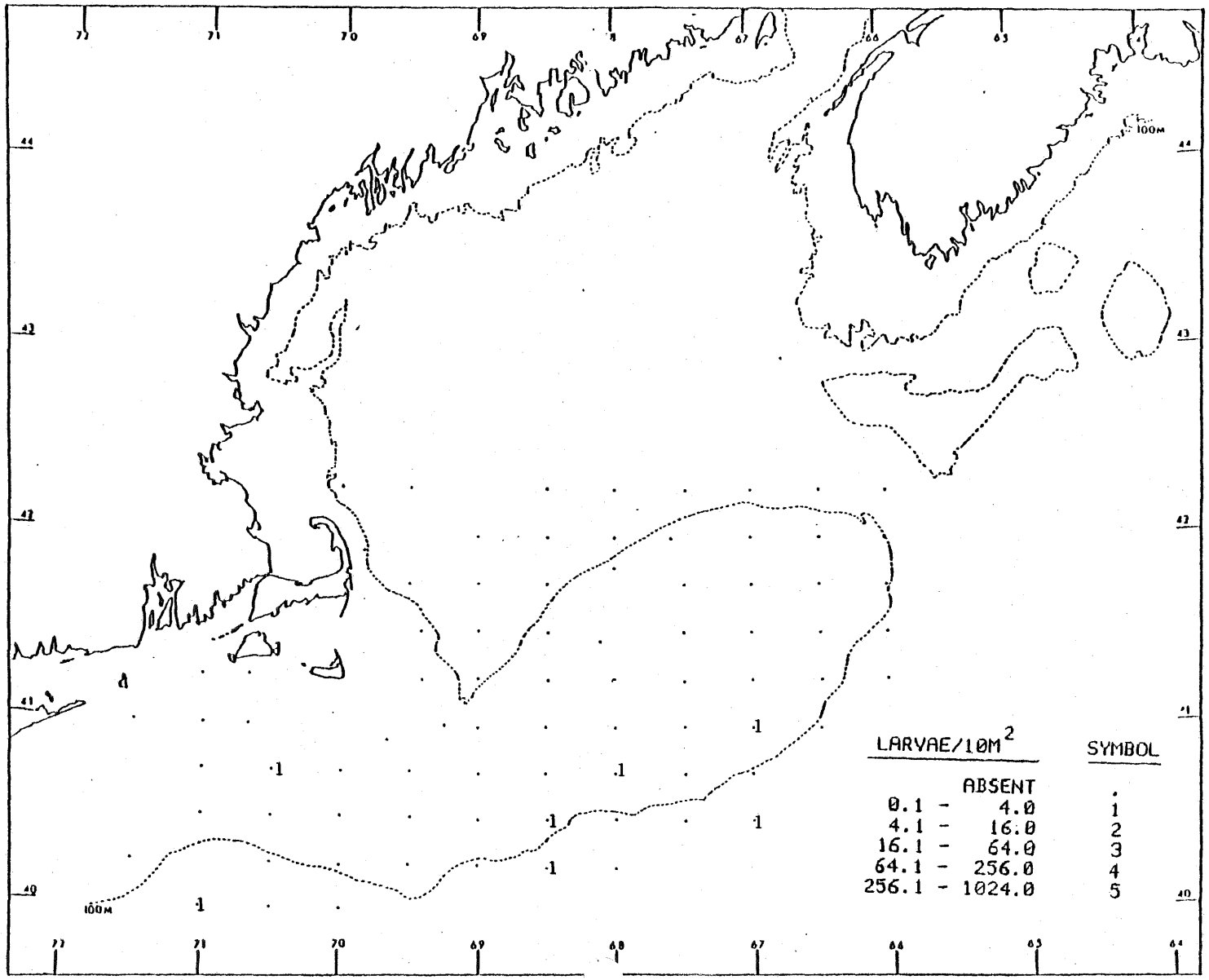


Table 200. Mean abundance (positive tows only) and mean length of Pleuronectidae by cruise.

Cruise	Middate	Number of Positive Tows	Mean no./ $10m^2$	Standard Deviation	Mean Length (mm)	Standard Deviation	Length Range
Delaware II 71-04	27 Sep. 1971	1	1.0	-	3.0	-	-
Wieczno 72-01	14 Oct. 1972	1	1.1	-	5.0	-	-
Anton Dohrn 72-01	05 Nov. 1972	1	0.8	-	3.0	-	-
Wieczno 73-40	09 Oct. 1973	1	2.9	-	3.0	-	-
Cryos 74-04	16 Sep. 1974	1	1.5	-	5.0	-	-
Albatross IV 75-02	14 Feb. 1975	1	3.0	-	8.0	-	-
Anton Dohrn 75-187	09 Nov. 1975	1	1.9	-	28.0	-	-

References:

Colton and Byron 1977
Joakimsson 1978

Figure 201. Composite distribution and abundance (greatest occurrence per station) of Glyptocephalus cynoglossus collected during 30 autumn and winter cruises for the period Sep. 1971 - Feb. 1977.

Glyptocephalus cynoglossus (Linnaeus) Common Name: Witch flounder

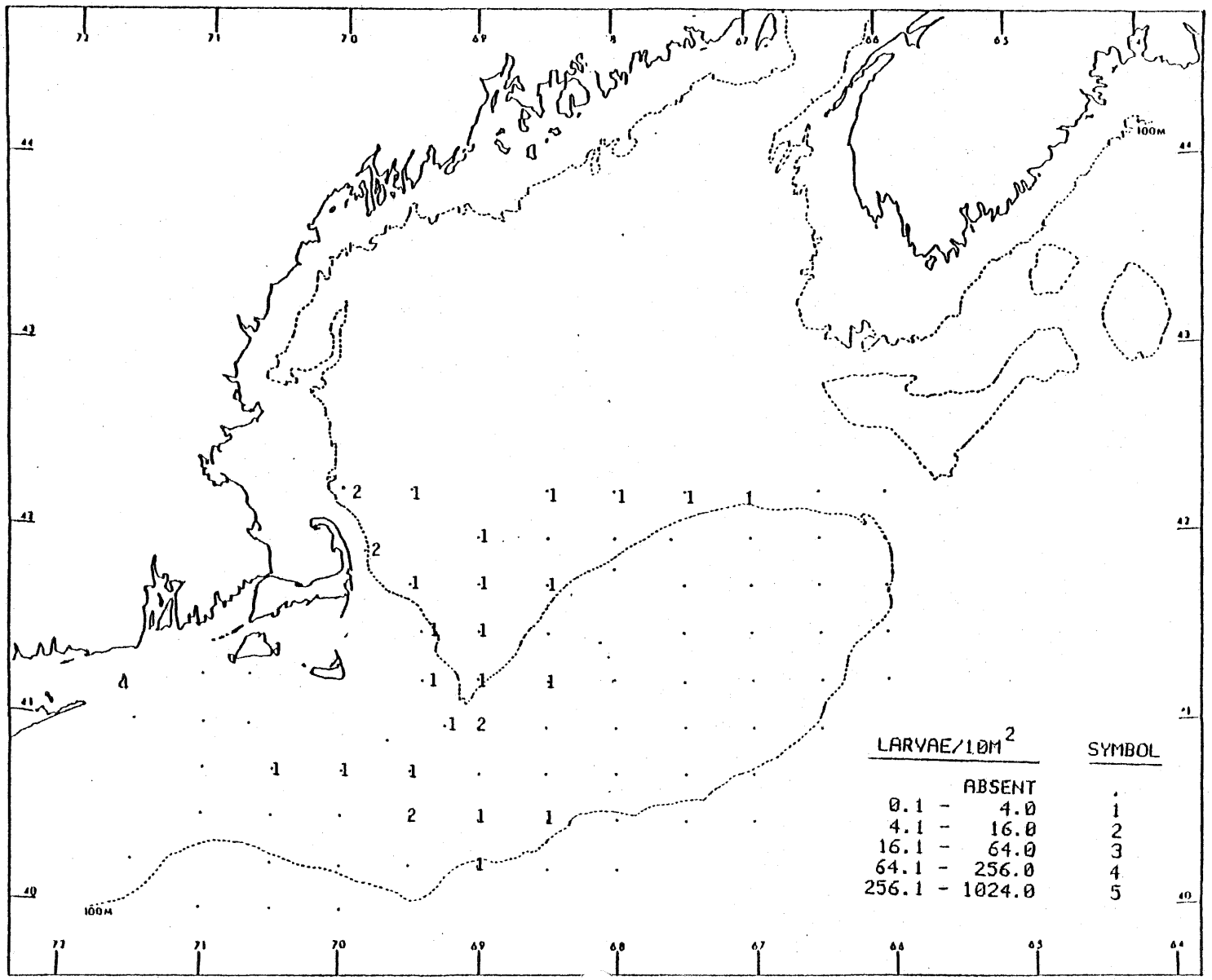


Table 201. Mean abundance (positive tows only) and mean length of Glyptocephalus cynoglossus by cruise.

Cruise	Middate	Number of Positive Tows	Mean no./ $10m^2$	Standard Deviation	Mean Length (mm)	Standard Deviation	Length Length
Delaware II 71-04	27 Sep. 1971	3	1.0	0.2	8.0	1.9	5 - 11
Viandra 71-01	17 Oct. 1971	1	0.4	-	4.0	-	-
Wieczno 72-01	14 Oct. 1972	2	2.3	2.0	12.5	3.5	8 - 17
Cryos 73-01	19 Sep. 1973	1	1.4	-	6.0	-	-
Wieczno 73-40	09 Oct. 1973	1	3.9	-	4.0	-	-
Cryos 74-04	16 Sep. 1974	5	4.7	3.5	12.1	10.1	3 - 45
Belogorsk 75-02	01 Oct. 1975	6	2.6	1.8	18.9	13.5	4 - 45
Belogorsk 75-03	23 Oct. 1975	6	2.2	1.1	18.8	9.1	4 - 34
Anton Dohrn 75-187	09 Nov. 1975	7	1.1	0.2	29.8	23.0	15 - 90
Belogorsk 76-03	08 Oct. 1976	7	1.9	1.4	19.3	10.4	5 - 35
Wieczno 76-03	24 Oct. 1976	5	3.2	3.4	25.1	9.5	11 - 47
Researcher 76-01	04 Dec. 1976	1	1.2	-	18.0	-	-

References:

Berrien et al. 1978
Colton and Byron 1977
Grimm 1978
Joakimsson 1978
Jordan et al. 1962
Leim and Scott 1966

Figure 202. Composite distribution and abundance (greatest occurrence per station) of Glyptocephalus sp. collected during 30 autumn and winter cruises for the period Sep. 1971 - Feb. 1977.

Glyptocephalus sp. Common Name:

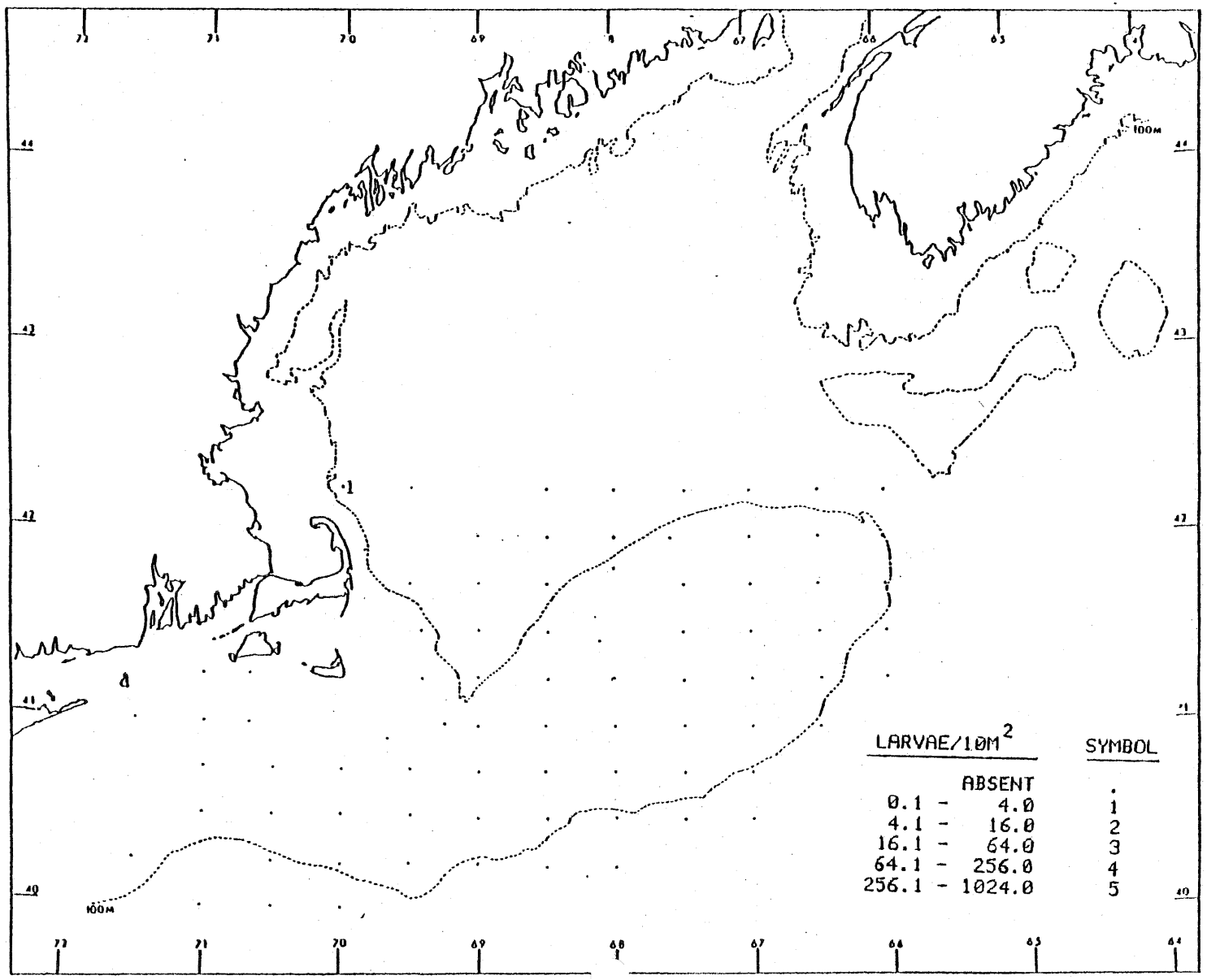


Table 202. Mean abundance (positive tows only) and mean length of *Glyptocephalus* sp. by cruise.

Cruise	Middate	Number of Positive Tows	Mean no./ $10m^2$	Standard Deviation	Mean Length (mm)	Standard Deviation	Length Range
Belogorsk 76-03	08 Oct. 1976	1	3.3	-	13.7	6.7	6 - 19

References:

See *G. cynoglossus*

Figure 203. Composite distribution and abundance (greatest occurrence per station) of Hippoglossoides platessoides collected during 30 autumn and winter cruises for the period Sep. 1971 - Feb. 1977.

Hippoglossoides platessoides (Fabricius) Common Name: American plaice

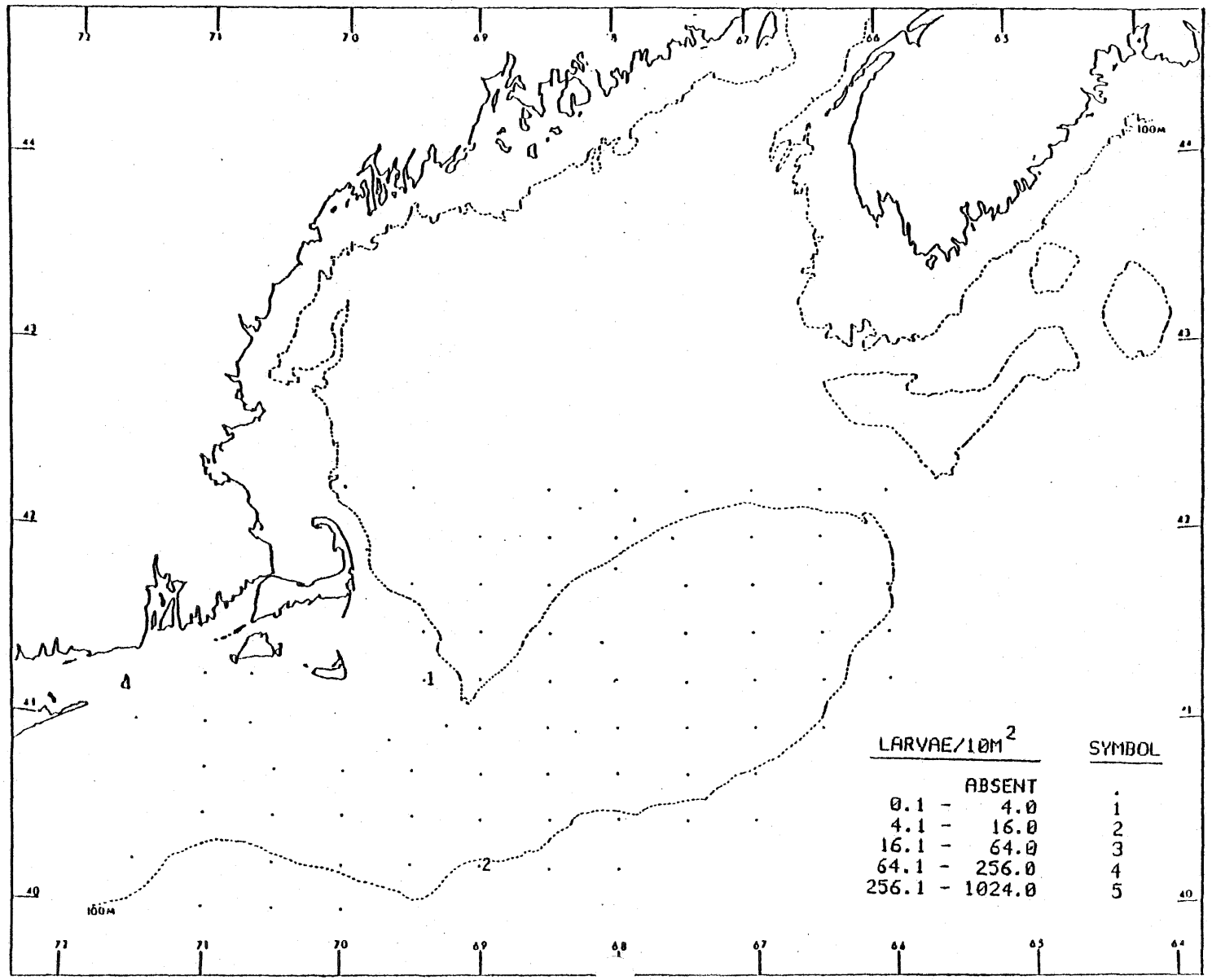


Table 203. Mean abundance (positive tows only) and mean length of *Hippoglossoides platessoides* by cruise.

Cruise	Middate	Number of Positive Tows	Mean no./ $10m^2$	Standard Deviation	Mean Length (mm)	Standard Deviation	Length Range
Cryos 74-04	16 Sep. 1974	1	4.4	-	6.0	-	-
Belogorsk 75-03	23 Oct. 1975	1	1.3	-	7.0	-	-

References:

Colton and Byron 1977
Grimm 1978
Jordan et al. 1962
Leim and Scott 1966

Figure 204. Composite distribution and abundance (greatest occurrence per station) of Limanda ferruginea collected during 30 autumn and winter cruises for the period Sep. 1971 - Feb. 1977.

Limanda ferruginea (Storer) Common Name: Yellowtail flounder

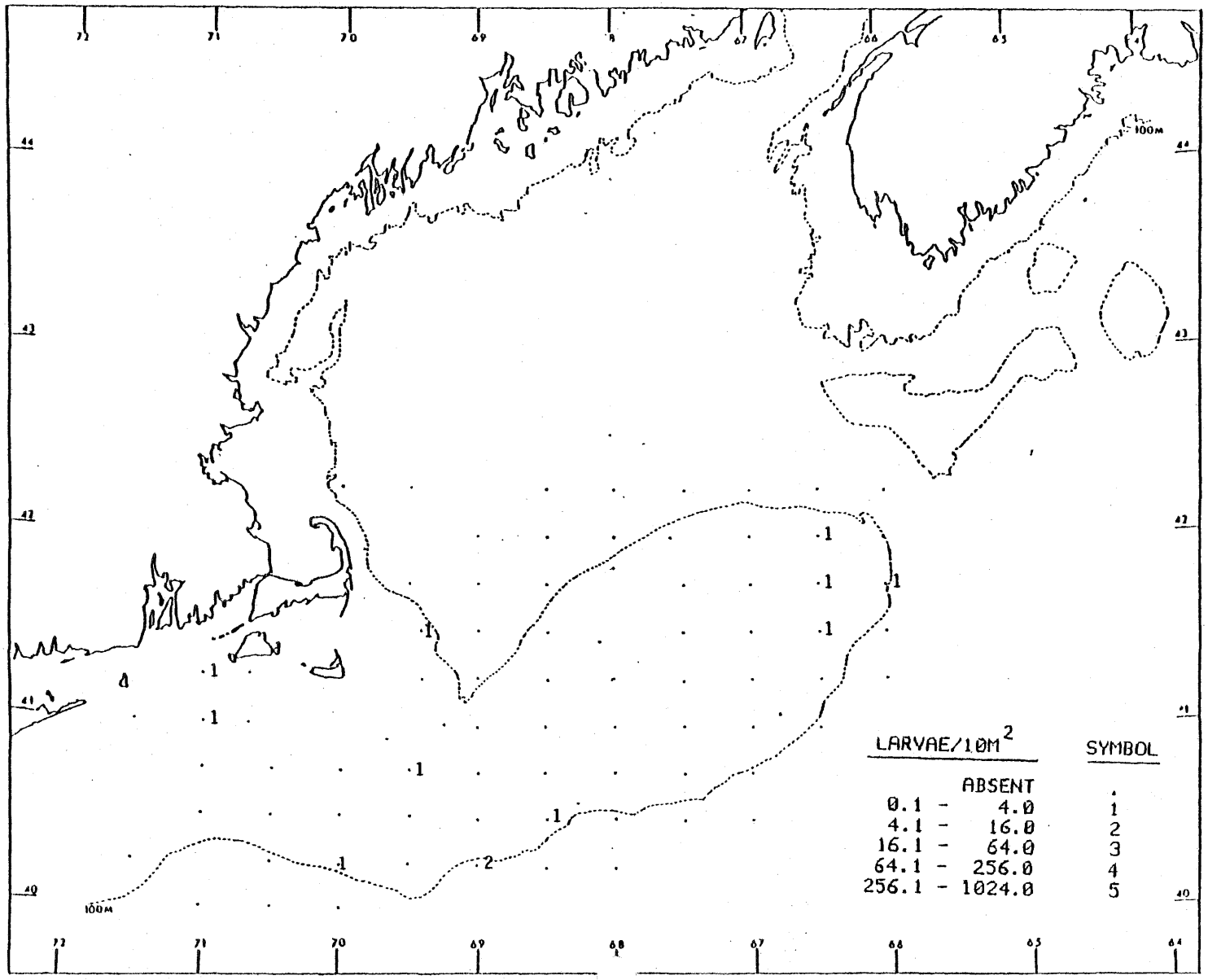


Table 204. Mean abundance (positive tows only) and mean length of *Limanda ferruginea* by cruise.

Cruise	Middate	Number of Positive Tows	Mean no./ $10m^2$	Standard Deviation	Mean Length (mm)	Standard Deviation	Length Range
Delaware II 71-04	27 Sep. 1971	4	2.1	1.5	4.6	0.8	3 - 6
Viandra 71-01	17 Oct. 1971	1	0.5	-	7.0	-	-
Walther Herwig 71-01	05 Nov. 1971	1	0.6	-	5.0	-	-
Cryos 73-01	19 Sep. 1973	2	2.4	1.3	26.4	2.3	24 - 30
Cryos 74-04	16 Sep. 1974	2	2.0	0.4	29.3	2.3	27 - 31
Prognoz 74-01	24 Oct. 1974	1	1.3	-	5.0	-	-

References:

Berrien et al. 1978
Colton and Byron 1877
Joakimsson 1978
Jordan et al. 1962
Leim and Scott 1966
Royce et al. 1959

Figure 205. Composite distribution and abundance (greatest occurrence per station) of Pseudopleuronectes americanus collected during 30 autumn and winter cruises for the period Sep. 1971 - Feb. 1977.

Pseudopleuronectes americanus (Walbaum) Common Name: Winter flounder

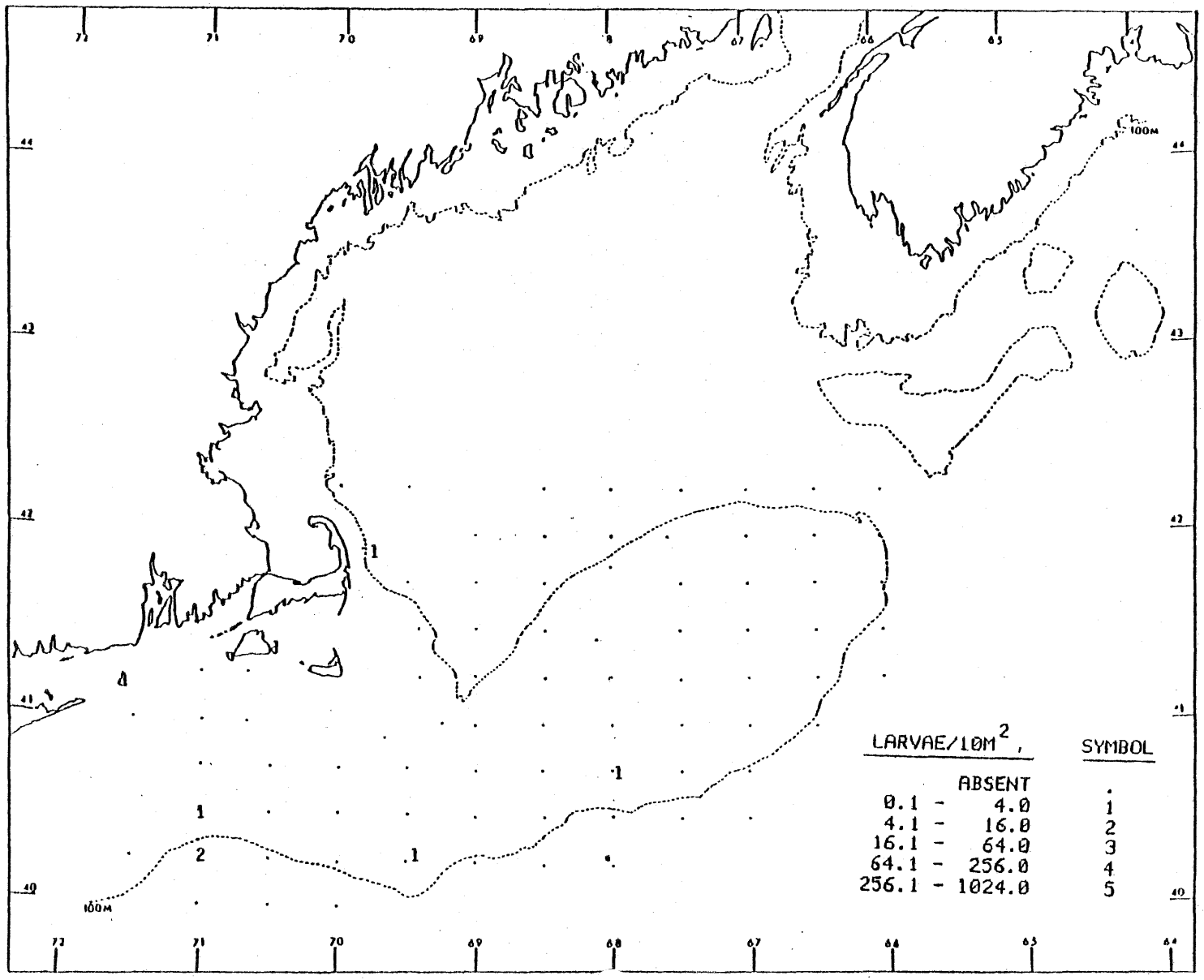


Table 205. Mean abundance (positive tows only) and mean length of *Pseudopleuronectes americanus* by cruise.

Cruise	Middate	Number of Positive Tows	Mean no./ $10m^2$	Standard Deviation	Mean Length (mm)	Standard Deviation	Length Range
Wieczno 73-40	09 Oct. 1973	1	1.8	-	4.0	-	-
Belogorsk 73-01	23 Oct. 1973	2	1.4	0.1	15.5	16.8	3 - 30
Belogorsk 75-02	01 Oct. 1975	1	2.2	-	6.0	-	-
Anton Dohrn 76-02	22 Nov. 1976	1	4.8	-	3.0	-	-

References:

Berrien et al. 1978
Jordan et al. 1962
Leim and Scott 1966

Figure 206. Composite distribution and abundance (greatest occurrence per station) of Cynoglossidae collected during 30 autumn and winter cruises for the period Sep. 1971 - Feb. 1977.

Cynoglossidae

Common Name: Tonguefishes

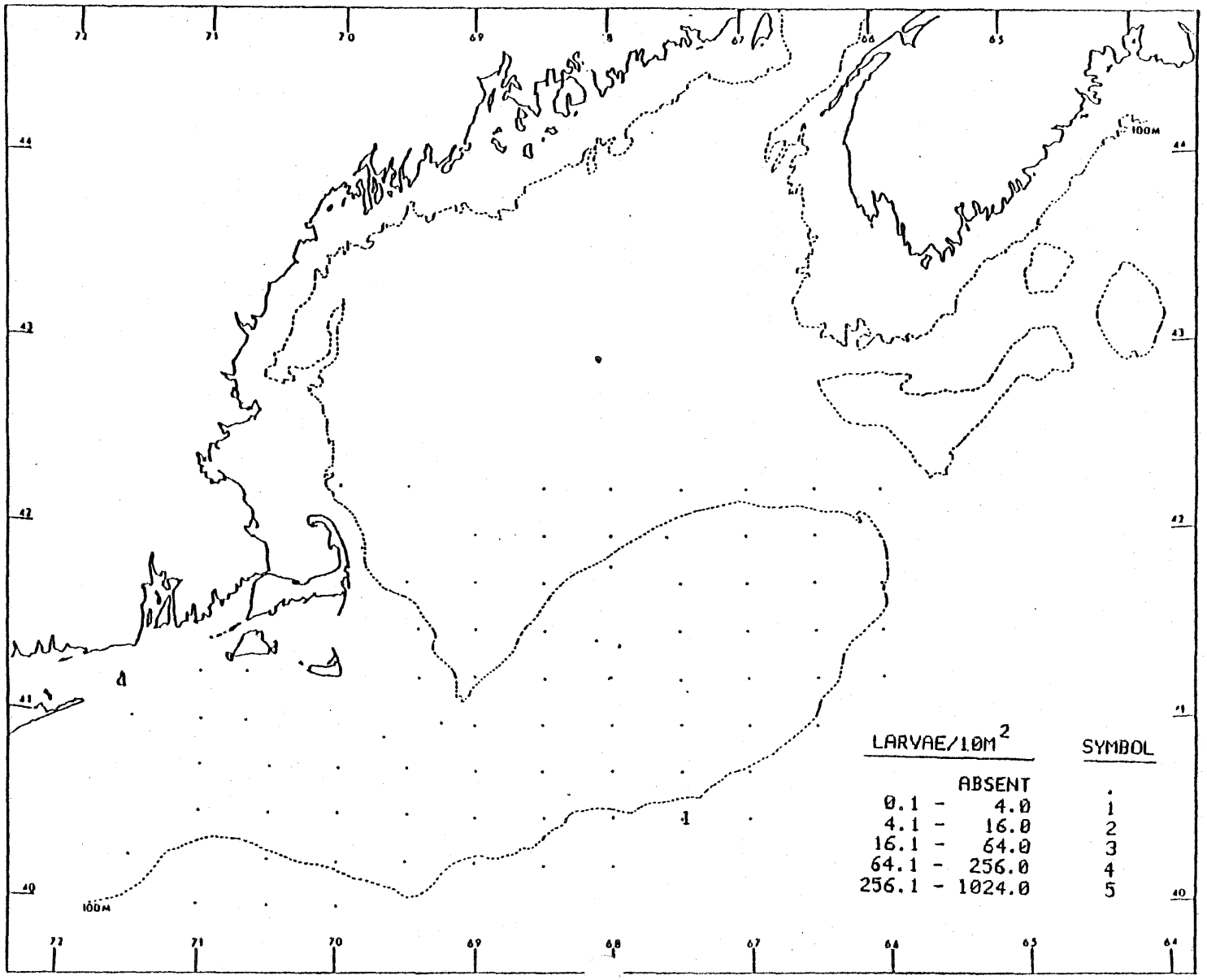


Table 206. Mean abundance (positive tows only) and mean length of Cynoglossidae by cruise.

Cruise	Middate	Number of Positive Tows	Mean no./ $10m^2$.	Standard Deviation	Mean Length (mm)	Standard Deviation	Length Range
Walther Herwig 73-43	02 Nov. 1973	1	0.7	-	13.0	-	-

References:

Colton and Byron 1977
Fischer 1978
Grimm 1978
Jordan et al. 1962

Figure 207. Composite distribution and abundance (greatest occurrence per station) of Symphurus plagiusa collected during 30 autumn and winter cruises for the period Sep. 1971 - Feb. 1977.

Symphurus plagiusa (Linnaeus) Common Name: Blackcheek tonguefish

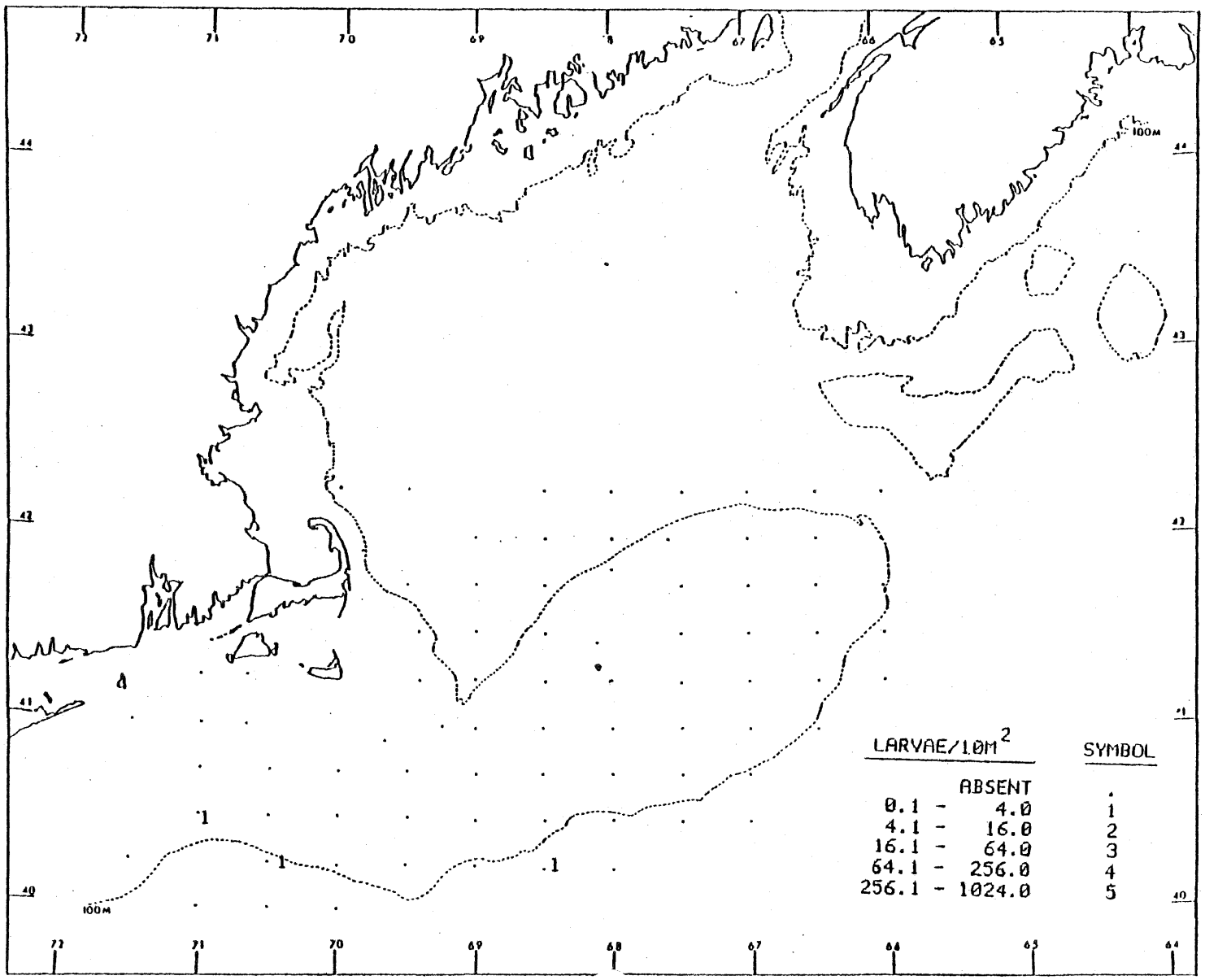


Table 207. Mean abundance (positive tows only) and mean length of *Symphurus plagiusa* by cruise.

Cruise	Middate	Number of Positive Tows	Mean no./ $10m^2$	Standard Deviation	Mean Length (mm)	Standard Deviation	Length Range
Anton Dohrn 74-01	19 Nov. 1974	1	1.4	-	13.0	-	-
Albatross IV 74-13	13 Dec. 1974	2	1.5	0.4	13.8	1.2	13 - 15

References:

Fischer 1978
Hildebrand and Cable 1930
Joakimsson 1978
Jordan et al. 1962

Figure 208. Composite distribution and abundance (greatest occurrence per station) of Symphurus sp. collected during 30 autumn and winter cruises for the period Sep. 1971 - Feb. 1977.

Symphurus sp. Common Name:

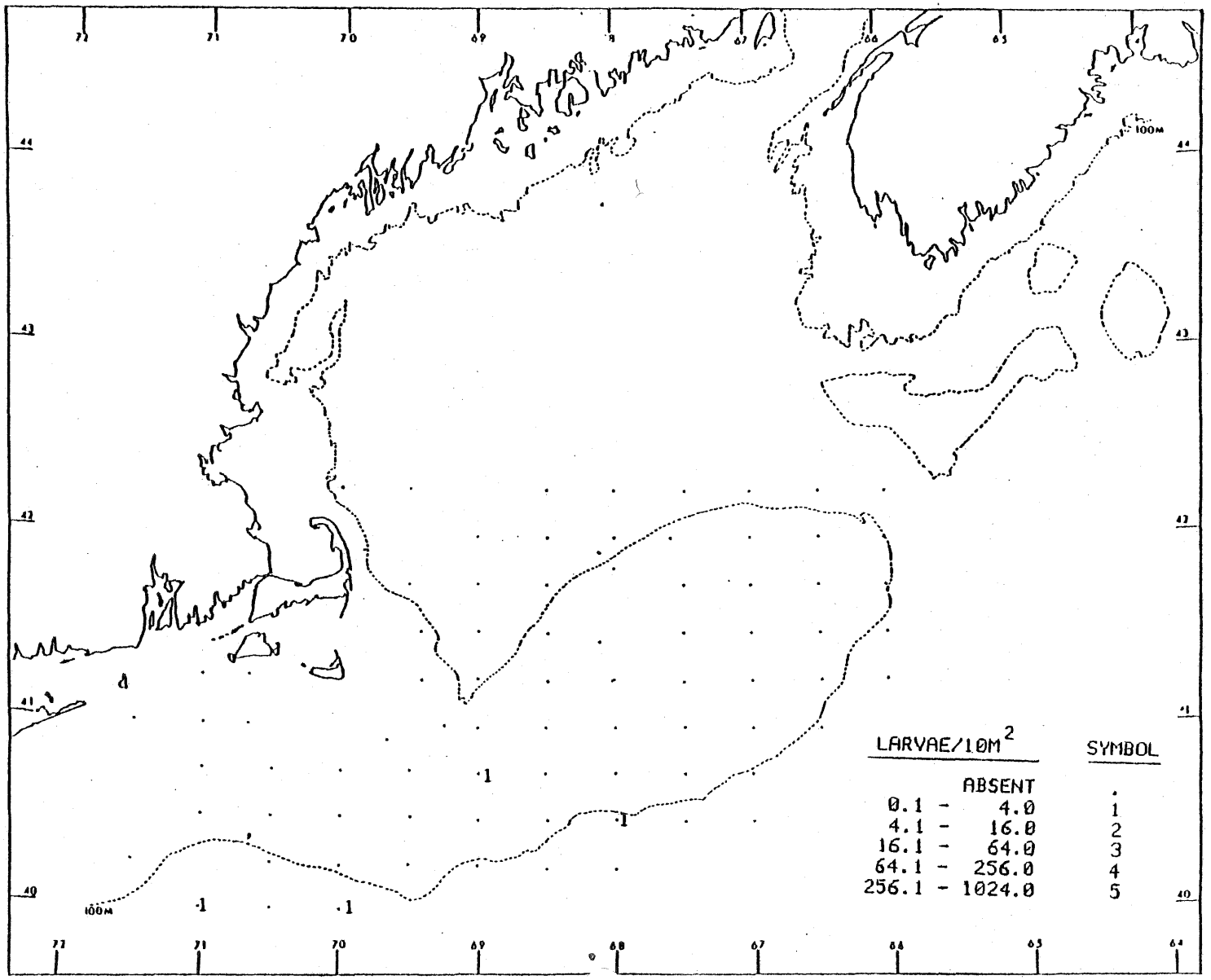


Table 208. Mean abundance (positive tows only) and mean length of *Symphurus* sp. by cruise.

Cruise	Middate	Number of Positive Tows	Mean no./ $10m^2$	Standard Deviation	Mean Length (mm)	Standard Deviation	Length Range
Belogorsk 73-01	23 Oct. 1973	1	1.2	-	8.0	-	-
Anton Dohrn 74-01	19 Nov. 1974	3	1.9	0.1	11.3	1.9	9 - 13

References:

Berrien et al. 1978
Colton and Byron 1977
Fischer 1978
Grimm 1978
Markle et al. 1980

Figure 209. Composite distribution and abundance (greatest occurrence per station) of Balistidae collected during 30 autumn and winter cruises for the period Sep. 1971 - Feb. 1977.

Balistidae

Common Name: Triggerfishes and Filefishes

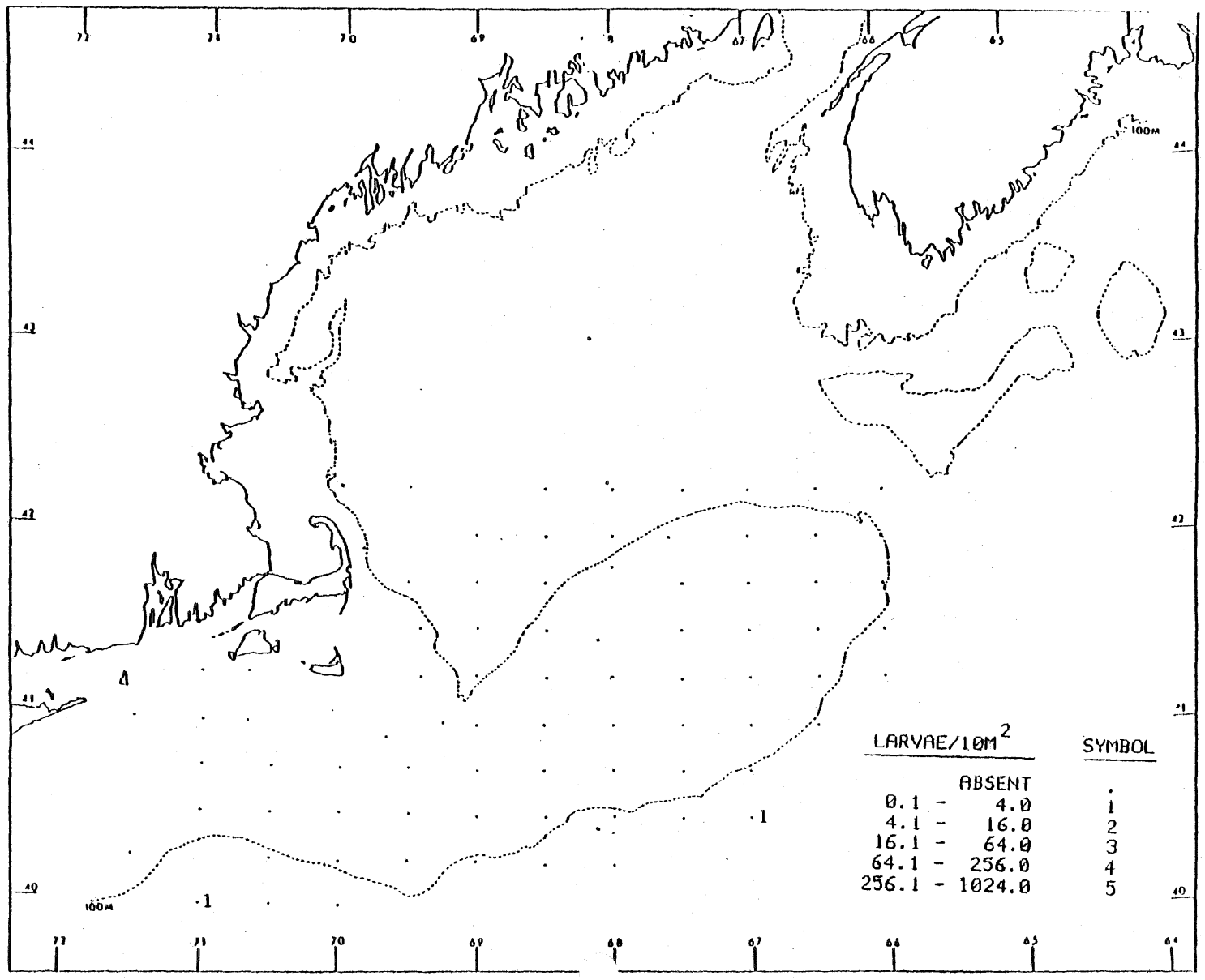


Table 209. Mean abundance (positive tows only) and mean length of Balistidae by cruise.

Cruise	Middate	Number of Positive Tows	Mean no./ $10m^2$	Standard Deviation	Mean Length (mm)	Standard Deviation	Length Range
Delaware II 71-04	27 Sep. 1971	1	1.0	-	6.0	-	-
Cryos 74-04	16 Sep. 1974	1	1.5	-	6.0	-	-

References:

Berrien et al. 1978
Colton and Byron 1977
Fischer 1978
Jordan et al. 1962
Leim and Scott 1966

Figure 210. Composite distribution and abundance (greatest occurrence per station) of Monacanthus hispidus collected during 30 autumn and winter cruises for the period Sep. 1971 - Feb. 1977.

Monacanthus hispidus (Linnaeus) Common Name: Planehead filefish

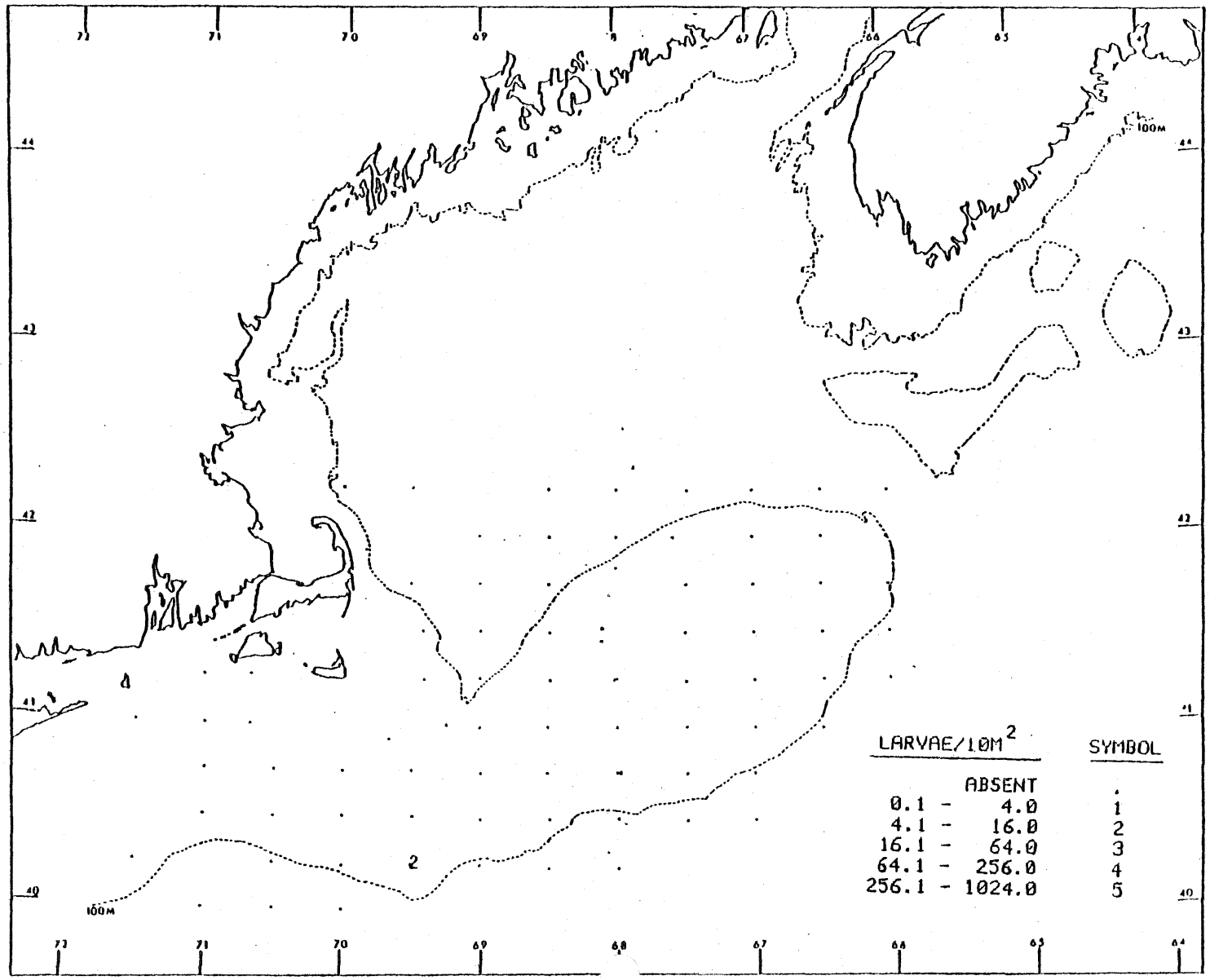


Table 210. Mean abundance (positive tows only) and mean length of *Monacanthus hispidus* by cruise.

Cruise	Middate	Number of Positive Tows	Mean no./ $10m^2$	Standard Deviation	Mean Length (mm)	Standard Deviation	Length Range
Anton Dohrn 75-187	09 Nov. 1975	1	4.7	-	17.3	0.5	17 - 18

References:

Hildebrand and Cable 1930
Joakimsson 1978
Jordan et al. 1962
Leim and Scott 1966

Figure 211. Composite distribution and abundance (greatest occurrence per station) of Tetraodontidae collected during 30 autumn and winter cruises for the period Sep. 1971 - Feb. 1977.

Tetraodontidae

Common Name: Puffers

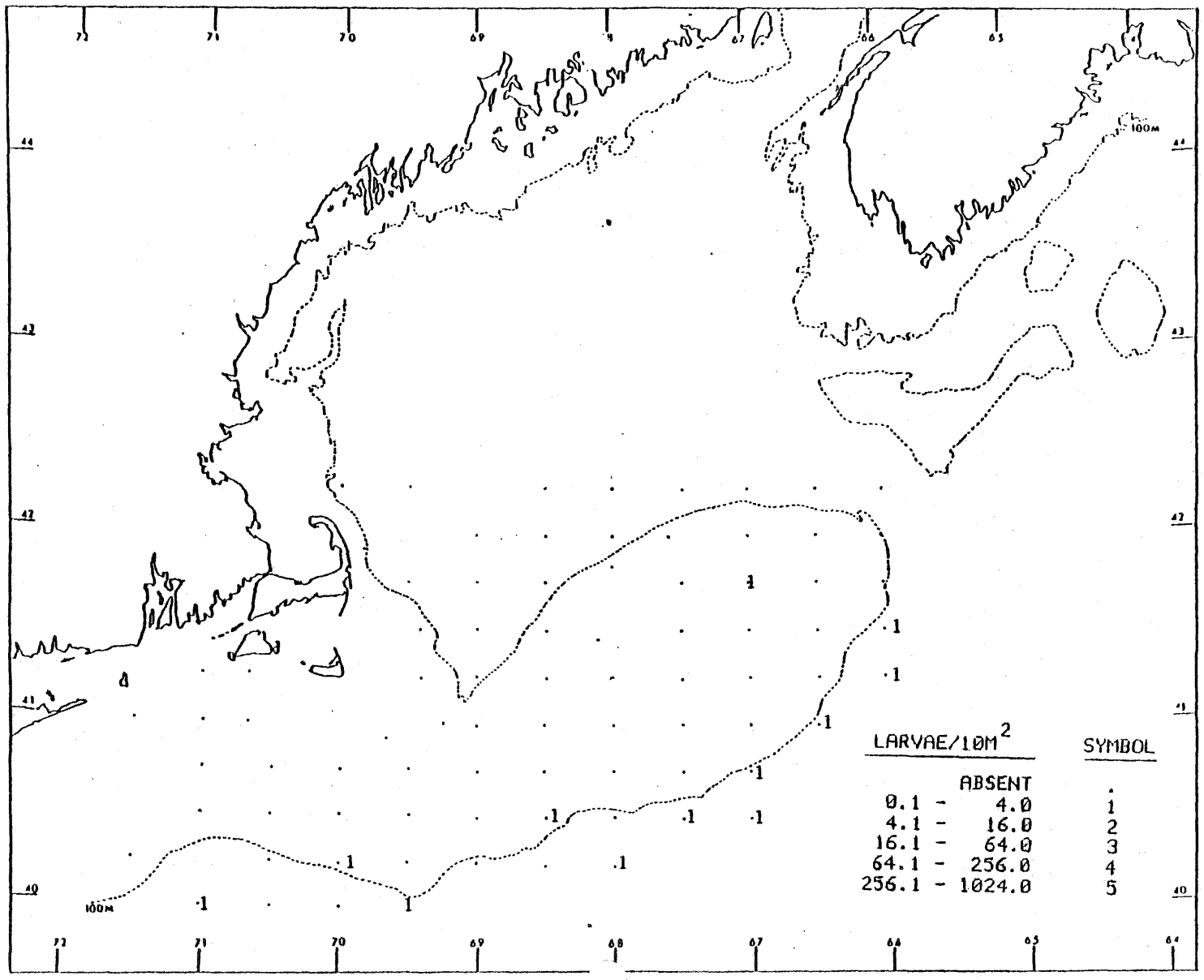


Table 211. Mean abundance (positive tows only) and mean length of Tetraodontidae by cruise.

Cruise	Middate	Number of Positive Tows	Mean no./ $10m^2$	Standard Deviation	Mean Length (mm)	Standard Deviation	Length Range
Wieczno 72-01	14 Oct. 1972	1	1.1	-	13.0	-	-
Anton Dohrn 72-01	05 Nov. 1972	1	1.4	-	21.0	-	-
Belogorsk 73-01	23 Oct. 1973	2	1.2	0.1	9.7	3.9	7 - 13
Walther Herwig 73-43	02 Nov. 1973	1	1.3	-	11.0	-	-
Prognoz 74-01	24 Oct. 1974	2	1.1	0	11.0	6.8	6 - 16
Anton Dohrn 74-01	19 Nov. 1974	1	1.8	-	5.0	-	-
Albatross IV 74-13	13 Dec. 1974	2	1.7	0.1	7.9	1.2	7 - 9
Albatross IV 75-02	14 Feb. 1975	1	0.5	-	12.0	-	-
Wieczno 76-03	24 Oct. 1976	2	1.5	0.1	11.3	4.9	7 - 15
Researcher 76-01	04 Dec. 1976	1	1.8	-	6.0	-	-

References:

Berrien et al. 1978
Colton and Byron 1977
Fischer 1978
Joakimsson 1978
Jordan et al. 1962

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