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A report to the Bureau of Land Management, Department of Interior, on work conducted under provisions of Interagency Agreement AA550-IA7-21 during calendar year 1977.

Ichthyoplankton/ Mackerel Eggs and Larvae

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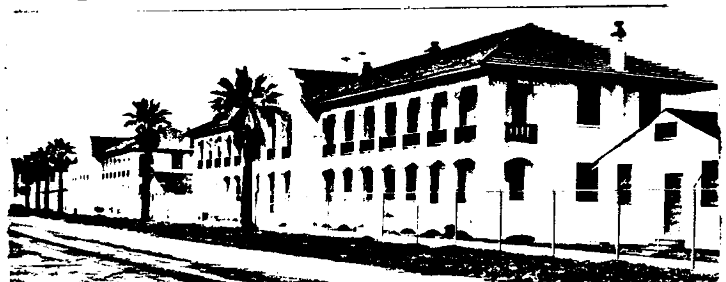
SOUTHEAST FISHERIES CENTER
GALVESTON LABORATORY



GALVESTON, TEXAS

ENVIRONMENTAL STUDIES OF THE SOUTH TEXAS OUTER CONTINENTAL SHELF

Ichthyoplankton/Mackerel Eggs and Larvae

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EXECUTIVE SUMMARY

During the 1977 survey, 90,222 fish larvae and 59,702 eggs were collected in the waters off the South Texas OCS. Both larval and egg numbers were higher than our 1976 catch which consisted of 75,082 larvae and 40,023 eggs. For the entire three year study from 1975-1977, 243,682 larvae and 156,651 eggs were collected and examined. Pelagic larvae representing 69 families, 117 genera and 80 species were identified in 1977. Larvae of the Spanish mackerel, king mackerel, bluefin tuna, cobia, mackerel, pompano and bluefish were documented for the first time during our studies in the northwestern Gulf of Mexico. The greatest number of species occurred in the myctophids (lanternfishes) followed by the sciaenids (drums) and scombrids (mackerels and tunas). The highest numbers of larvae were captured in May and the lowest in December. The highest numbers of eggs were also collected during May and the lowest during March and April. Family dominance varied on a seasonal basis. Our data indicate that no consistent larval or egg distribution was noted either inshore-offshore or in the north south directions. Fish eggs were more abundant in water depths less tha 45 m and were less abundant as water depths increased. Fish larvae generally were less abundant in the inshore waters. Spawning for many pelagic species probably occurred in water depths seaward of the continental shelf. Dragonets, lightfishes, mullets and tunas preferred the deeper offshore waters over the shelf while the herrings, anchovies and soles frequently spawned in water of intermediate depth. Generally, the spawning patterns, locations, and intensity varied between genera and species and between years. No specific spawning ground was noted for these fish. We were unable to obtain a ser-

ies of mackerel eggs from known captive or wild stock so identification of these eggs was not possible below family level.

During each year of this baseline survey, king mackerel larvae were captured in increasing numbers from May through September with at least 50 percent of the larvae being captured in September. King mackerel larvae were more abundant over the outer continental shelf (32 to 183 m). King mackerel larvae were taken in waters ranging from 20.2 to 29.8°C and were most abundant in waters ranging from 23.0 to 29.0°C. Spanish mackerel larvae were captured from May through September during each year of this study and were less abundant than king mackerel. Even though no sampling was done in October it is probable that both king and Spanish mackerel spawned during this month. Few larvae were captured in either May 1975 or 1976 but they were more abundant in May 1977 than for any other month. The stations from 12 to 34 m yielded the highest concentrations of larvae. Spanish mackerel were more abundant during the day while king mackerel were more abundant at night. Spanish mackerel larvae were taken in waters ranging from 19.6 to 29.8°C and were more abundant in waters ranging from 20.2 to 29.8°C.

During the three year period codlets were the highest in larval abundance during the winter of 1975 and 1976, while herrings were the most abundant in 1977. In the spring the anchovies were the most abundant during 1975 and 1976, while the lizardfish were the highest in 1977. The fall pattern showed the gobies the highest in 1975 and 1976 and the bothids in 1977.

In comparing the Buccaneer Oil Field with BLM stations of comparable depth, no precise larval and egg abundance differences were noted between the areas. Direct comparisons of selected zooplankton taxa and ichthyoplankton indicated some linear correlations at the 95% and 99% confidence level which suggests that fish egg and larval abundance may be related to zooplankton abundance. In comparing bongo and neuston catches marked differences were noted in the catch of the two gears. Species diversity was also greater in the bongo tows when compared to the neuston tows. The effects of salinity and temperature on ichthyoplankton abundance showed little positive correlation than what normally would be expected for our sampling area. Changes in temperature or salinity appeared to have no relationship to larval or egg mortality.

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ICHTHYOPLANKTON STUDIES OF THE SOUTH TEXAS OUTER CONTINENTAL SHELF 1/

INTRODUCTION

This report presents the results of the ichthyoplankton study of the South Texas OCS for 1977 and is a continuation of the baseline survey of this area which was initiated in December 1974. This research was part of a broad interdisciplinary study of the neritic and oceanic waters off the Texas coast that covered an area of about 100 by 300 km extending from Port Isabel, Texas near the Mexican border to Matagorda Bay (Figure 1). During the entire sampling period our primary purpose was to determine the species composition, relative abundance and seasonal and areal distribution of ichthyoplankton. In addition, spawning times and spawning locations of major fish species were documented to provide data on the ecology of the area and selected families were classified according to egg developmental stages which helped in determining the general location of main spawning sites.

During both 1976 and 1977 the sampling program was the same. Seasonal coverage was continued during Jan./Feb., May/June and September (Cruises 1, 4, and 7) at all the transects (I, II, III and IV) and the 16 stations originally sampled in 1976 (Figure 1). In addition, monthly sampling was conducted in March, April, July, August, November and December (Cruises 2, 3, 5, 6, 8 and 9) at only the 7 Transect II stations offshore from Port Aransas, Texas. No sampling was done in October during the entire 3 year period. The exact station locations and depths are listed in Table 1.

1/ All tables and figures except figure 1 discussed in the ichthyoplankton section of this report are found in Appendix A.

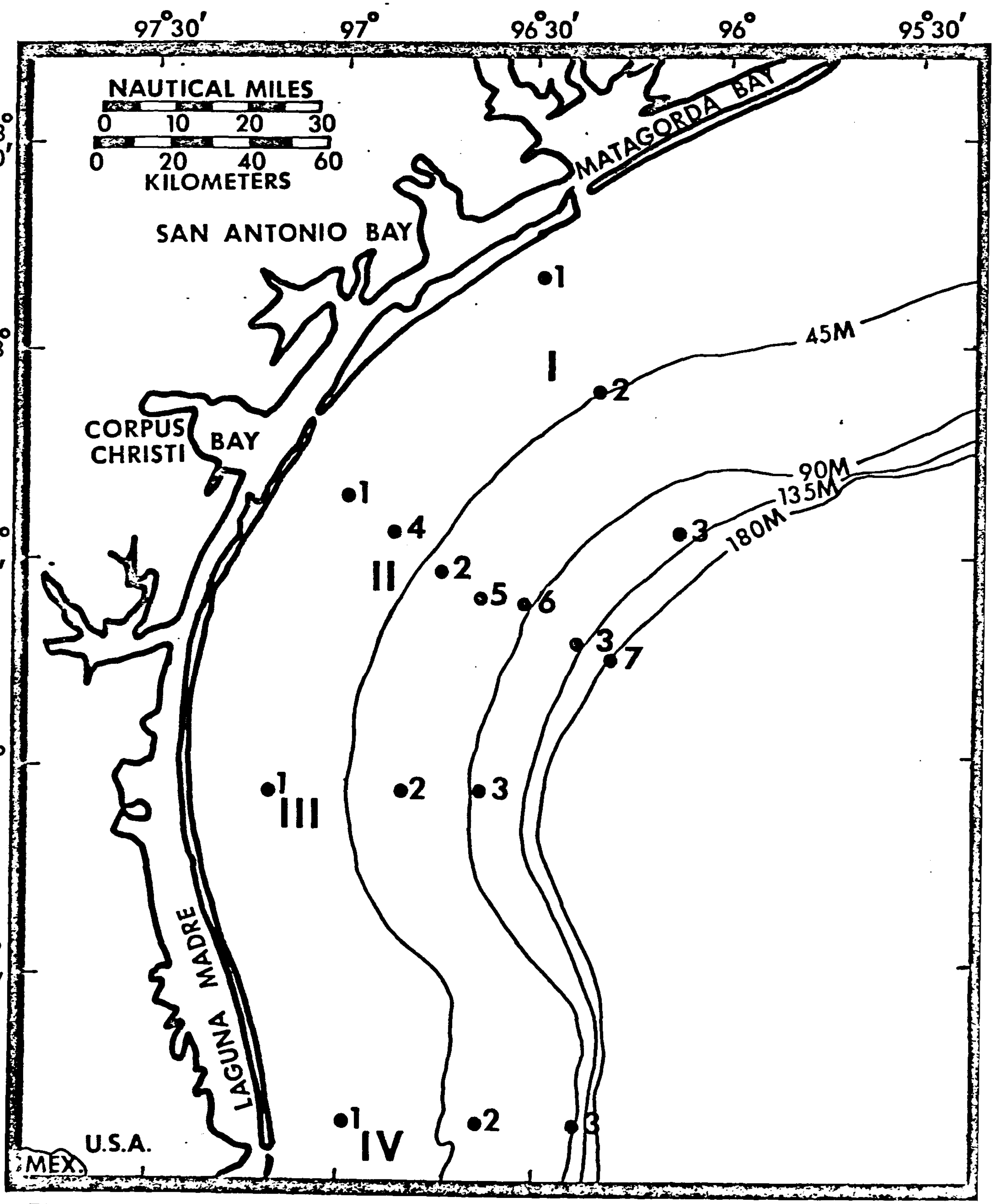

Figure 1. Location of ichthyoplankton sampling stations for 1977 by transects.

In this report our ichthyoplankton data were compared for the three year period from 1975-1977. Because of the similarity of gear and collecting techniques the comparison between 1976 and 1977 was stressed. When possible, our fish egg and larval data were also compared between the South Texas OCS and the Buccaneer Oil Field offshore from Galveston, Texas. Because of insufficient funding the Marine Resources Monitoring, Assessment and Prediction (MARMAP) program that was used to extend our Texas OCS coverage during 1976 was not continued after February 1977. The Environmental Protection Agency (EPA) did fund our Buccaneer Oil Field ichthyoplankton program on a seasonal basis from July 1977 to February 1978. The locations of these MARMAP and EPA stations are given in our 1976 Texas OCS final report (Finucane et al. 1976). In addition, a comparison was made to show average trends noted between the South Texas OCS zooplankton monitoring study and the ichthyoplankton study. We also compared our ichthyoplankton data from bongo (oblique) net tows and from neuston (surface) net tows, so that some of the differences between surface and subsurface ichthyoplankton could be documented. A comparison of salinity and temperature changes on the distribution and abundance of selected larval fish taxa was also made.

The published literature on ichthyoplankton in the Gulf of Mexico is still rather limited although much has been reported on the juvenile and adult marine fishes of Texas. The most systematic coverage of the fish eggs and larvae of the northwestern Gulf of Mexico is given in our BLM final reports for 1975 and 1976 and the 1976-77 EPA annual report (Finucane, 1976, Finucane, et al., 1977, and Finucane and Collins, 1977). The baseline ichthyoplankton studies for 1976 recorded 71 families, 108 genera and 71 identified species of fish larvae and covered almost the entire south Texas coast seaward to a depth of 182 meters. For comparison with our study area the report of Powles and Stender (1976) from MARMAP cruises in the South Atlantic Bight showed that 60 families were identified from bongo catches taken on a seasonal basis. Early studies by Gunter (1945, 1950, and 1959) established the species diversity and richness of the fish fauna off the south Texas coast. Hoese (1958) compiled a checklist of 424 species of marine fishes caught in Texas waters and Parker (1965) provided a checklist of the fishes of Galveston Bay, Texas. More reference material on the fishes of Texas and the northern gulf was given by Galloway et al. (1972), Walls (1975) and Hoese and Moore (1977). The spawning times of some marine fishes in the Port Aransas, Texas area were listed by Hoese (1965). The papers of Briggs (1958), Powell et al. (1972) and Pequegnat et al. (1977), were helpful in determining the known ranges of many fish species in the Gulf.

Most of the fish larvae during this study were identified from specimens in our own reference collection compiled from six years of ichthyoplankton studies in the Gulf of Mexico extending from the Florida Everglades to Texas. Since the early life history of many marine fishes in the Gulf of Mexico is still unknown, some larval identification was based on available references of the same or related species from other areas. The meristic characteristics of some marine fishes of the Western North Atlantic by Miller and Jorgenson (1973) was particularly useful especially to species level. Other papers covering the early life histories of certain species were helpful. They included Aprieto (1973) on the early development of some carangid fishes from the Gulf of Mexico and south Atlantic, Anderson (1967) on a field guide to the snappers, Kendall (1972) on the black sea bass, and Laroche (1977) on the larval and early juvenile stages of the vermilion snapper. Kendall (1977) also gives the relationship of some serranid fishes based on the morphology of their larvae. Additional references that were used to identify larvae were Leak (1977) on the distribution and abundance of carangid larvae in the eastern Gulf of Mexico, Jannke (1971) on the sciaenids of the Florida Everglades, Houde and Fore (1972) on the eggs and larvae of the clupeid fishes of the Gulf of Mexico, Wollam (1970) on Spanish and king mackerel, Mansueti and Hardy (1967) on the fishes of the Chesapeake Bay area, and Scotton et al. (1973) on the fish larvae of Delaware Bay.

Various groups such as the myctophids, gonostomatids, bregmacerotids, serranids and lutjanids were sent to specialists to verify our identification (see acknowledgments). Most larvae and some eggs were classified to at least family level. Many of the larvae were often too small or mutilated to positively identify them and were listed in this report as unknowns.

The classification of most larval fishes followed that given by Berg (1940) and Bailey et al. (1970). For archival of larval data the bionumeric code developed by Bullis et al. (1972) was used. All ichthyoplankton data have been sent to the Environmental Data Service (EDS) and to Dr. Nicholas K. Fowler of the University of Texas Marine Science Institute at the Port Aransas Marine Laboratory. All fish eggs and larvae are being archived at our National Marine Fisheries Service, Panama City Laboratory and the remaining plankton samples from our 1976 and 1977 cruises have been sent to Dr. Taisoo Park at the Moody College of the Texas A&M University System at Galveston, Texas. A complete tabulation of all larval taxa and egg abundance from bongo tows during this study is shown by date, transect, station, mesh size, numbers per 1,000 m^3 and size range (SL) in Appendix table 1.

METHODS AND MATERIALS

All ichthyoplankton collections during both the 1976 and 1977 surveys were made with bongo net samplers using standard MARMAP sampling techniques (Jossi et al. 1975 and Smith and Richardson 1977). The paired bongo samplers have a mouth opening of 61 cm and mesh sizes of 333 μ and 505 μ (Posgay et al. 1968). A General Oceanics digital flowmeter was placed in the mouth of each bongo net to determine the volume of filtered water. All flow meters were calibrated prior to each cruise. Net tows were made during both the day and night. Stations were sampled at whatever time they were reached by the ship. Neuston collections were made at the same stations but are covered in a separate study and are not a part of this report although a comparison between bongo and neuston catches was made.

Double oblique tows were made on all cruises with the bongo gear. The tows were designed to sample the depth strata equally from the surface to near the bottom. Each tow was made with the release of wire at 50 m per min until the desired depth was reached; wire retrieval was at 20 m per min. A constant monitoring of the wire angle during each bongo tow was done with an inclinometer. In this way ship speed and direction could be changed when necessary to maintain as close to a 45° wire angle as possible. A stopwatch was used to precisely time each tow. All nets were towed from the stern of the R/V "Longhorn".

Plankton nets were washed down with seawater from a deck hose before the cod-end buckets were removed at the end of each tow. The plankton was drained through a 100μ screen and transferred immediately to jars containing 7% buffered Formalin in seawater. In the laboratory displacement volumes (Table 2) were determined by means of a Yentsch plankton volume gauge after first removing large ctenophores, sargassum and detrital material (Yentsch and Hebard, 1957). Fish larvae and eggs were sorted to the lowest possible taxon from the entire sample; no aliquots were taken. Fish larvae were measured to the nearest 0.1 mm (standard length) or the nearest 1 mm when over 10 mm in size. All eggs and larvae were counted. Only a few eggs were identified to family, because we were unable positively to identify them. The developmental stages of some selected taxa to family level were determined to document more precisely the time and place of spawning. We were unable to successfully spawn either artifically or naturally Spanish or king mackerel at our Port Aransas Laboratory to obtain eggs from these fish of known parentage. Consequently, eggs of these fish could not be positively identified below family level.

The mesh size, date and time of collection, volume of filtered water and total and calculated numbers of eggs and larvae per 1,000 m^3 are shown in Tables 3-11 for each cruise.

Salinity and temperature data were collected by STD casts at each of the stations during these surveys on a separate hydro cruise. In this report salinity and temperature means are compared with selected larval fish taxon by cruise, transect and station (Appendix table 2).

RESULTS

Abundance and Species Composition

During the 1977 survey, 90,222 fish larvae and 59,702 eggs were collected in waters off the South Texas OCS. Both larval and egg numbers were higher than our 1976 catch which consisted of 75,082 larvae and 40,023 eggs. For the entire three year study from 1975-1977, 243,682 larvae and 156,651 eggs were examined. The numbers of eggs and larvae for each cruise in 1977 are given in Tables 3-11. The highest egg and larval abundance occurred during May (Cruise 4) while the least larvae occurred in November (Cruise 8) and the least eggs in August (Cruise 6). Pelagic larvae representing 69 families, 117 genera and 80 species were identified.

The occurrence of some of the important commercial and recreational larval fish, such as the Spanish mackerel, *Scomberomorus maculatus*, king mackerel, *Scomberomorus cavalla*, bluefin tuna, *Thunnus thynnus*, red snapper, *Lutjanus campechanus*, and the bluefish, *Pomatomus saltatrix*, were documented for the first time during our studies in the northwestern Gulf of Mexico. The ten most abundant families by cruise and for all cruises during 1976 and 1977 are given in numbers per 1,000 m^3 for all plankton samples (Table 12). These data show great variability between the two years and within the same year when family abundances are compared by cruise. For example, during Cruise 2 in 1977 the clupeids (herrings) were over 50 percent more abundant than the same cruise in 1976 and during Cruise 8 the sciaenids (drums) were six times as abundant in 1976 as they were in 1977. Engraulids (anchovies) were the most abundant during Cruise 5 of 1976 and only the fifth highest in abundance during the same cruise for 1977. Scombrids (tunas and mackerels were the second highest in abundance during Cruise 6 while they were only seventh in abundance for the same cruise in 1976. All taxa are given alphabetically for each of the nine cruises in Tables 13 to 21 by family, genera and species, and a complete listing of all taxa by transect and station for all cruises is given in Table 22. These data show that the greatest species diversity occurred in the myctophids (lanternfishes) followed by the sciaenids (drums) and scombrids (mackerels and tunas).

The distribution and abundance in number per 1,000 m^3 of six dominant families (Bothidae, Carangidae, Clupeidae, Sciaenidae, Scombridae and Serranidae) and some of their representative genera and species are shown in Figures 2 to 85 for 1976 and 1977. They were chosen because of their importance as commercial, sport or forage fishes. These data indicate that the abundance of larvae varied among families, genera, species, cruises, transects, stations and between the years 1976 and 1977. For example, the bothids (lefteye flounders) were most abundant during Cruise 7 for both years, while the carangids (jacks and pompanos) were least abundant during Cruise 8 for both years (Figs. 8 and 18). The clupeids (herrings) reached their peak abundance in 1976 during Cruise 3 and in 1977 during Cruise 1 (Figs. 19 and 21). The sciaenids (drums) were most abundant during Cruise 8 and 9 in 1976 and during Cruise 1 in 1977 (Figs. 28, 35, and 36). The scombrids (tunas and mackerels) were equally abundant for both 1976 and 1977 during Cruise 5 and were generally lower in abundance during Cruises 6 and 7 in 1977 when compared to the 1976 catch (Figs. 41, 42, and 43). In contrast, the serranids (sea basses) reached their peak of abundance during Cruise 4 in 1976 and were virtually absent from Cruise 4 in 1977. Their greatest abundance in 1977 occurred during

Cruise 1 (Figs. 44 and 47).

Relative abundance of representative genera and species from the six dominant families was also compared for 1976 and 1977 (Figs. 53 to 85). These larvae were the eyed flounder, *Bothus ocellatus*, the rough scad, *Trachurus lathami*, the found herring, *Etrumeus teres*, the croaker, *Micropogon undulatus*, the sea bass, *Diplectrum* sp., and the little tunny, *Euthynnus alletteratus*. The eyed flounder was least abundant during Cruise 1 and 2 and reached their peak abundance during both years in Cruise 7 (Figs. 53, 54, and 59). In contrast, the rough scad was more abundant during Cruise 1 and least abundant during Cruise 4 for both years (Figs. 62 and 65). The rough scad followed a similar pattern and was most abundant during Cruise 1 (Fig 66). The croaker reached its peak abundance during Cruises 8 and 9 (Figs. 71 and 72), while the little tunny showed two peaks of abundance in 1976 during Cruise 4 and again during Cruise 6. In contrast, during 1977 the little tunny was absent at all but one station during Cruise 4 (Figs. 73, 74, and 75). The sea bass was most abundant during Cruise 4 for both years, although they were present during all cruises throughout most of the year in numbers generally less than 100 per 1,000 m^3 (Figs: 77 to 85).

Seasonal occurrence

Sampling during 1977 covered all months of the year except June and October and provided full seasonal coverage of all stations during January/February, May and September (Cruise 1, 4, and 7). This was similar to our 1976 sampling, except during that year all months were covered but October. The highest numbers of larval species shown at the bottom of Table 12 occurred during May (Cruise 4) and the lowest during December (Cruise 8). This pattern was the same for 1976 except the lowest numbers of species were noted during March and April (Cruises 2 and 3). The highest larval numbers also occurred during May (Cruise 4) and the lowest during November (Cruise 8). For 1976 the highest numbers of larvae occurred during September (Cruise 7) and the lowest during January and February (Cruise 1).

The seasonal occurrence of eggs generally followed larval abundance for 1977. The highest numbers of eggs were collected during May (Cruise 4) and the lowest during March and April (Cruise 2). During 1976, the highest numbers of eggs were collected during March and April, while the lowest were collected in November and December.

Family dominance varied on a seasonal basis (Table 12). For example, the clupeids (herrings) were the dominant family during the sampling period from January-April (Cruises 1-3) and the synodontids (lizard fish) were the dominant family during May. From July to December family dominance changed during each cruise. In July (Cruise 5) the clupeids, (herrings) were again dominant; in August (Cruise 6) the carangids (jacks and pompanos); in September (Cruise 7) the bothids (lefteyed flounders); in November (Cruise 8) the gobiids (gobies) and in December (Cruise 9) the bregmacerotids (codlets). This family dominance was different than the 1976 seasonal pattern (Table 13). During 1976 the myctophids (lanternfishes) were the dominant family in January and February while the engraulids were the dominant family from May through August and from September through December the gobies were the dominant family.

Distribution

The distribution during 1976 and 1977 for all fish larvae from selected families, genera and species is shown in Figures 2-85 by cruise, transect and station and for all larvae collected from the 505μ plankton samples and all the eggs from the 333μ samples (Figs. 86-103). The percentages and numbers per 1,000 m^3 for larvae and eggs by cruise, transect and station were also plotted for 1977, (Figs. 104-119) and a comparison shown between 1976 and 1977 (Figs. 120-135). These data indicate that no consistent larval or egg distribution pattern was noted either inshore-offshore or in north-south directions.

Distribution of larvae by family, genera and species did vary throughout the year and between 1976 and 1977. For example, the sciaenids (drums) occurred more frequently and in greater abundance in the inshore waters of intermediate depths less than 45 m (Figs. 28-36) while the scombrids (tunas and mackerels) occurred more frequently and in greater abundance in the offshore waters at depths exceeding 45 m (Figs. 37, 38, and 39). When specific genera and species are compared from the same family the distribution pattern is often more precise than at family level. For example, the serranid, Diplectrum sp. was usually found in the offshore waters at depths exceeding 45 m (Figs. 77 to 85) while the family distribution pattern covered the inshore as well as the offshore waters (Figs. 44-52).

Larval and egg distributions are shown for 1976 and 1977 for all cruises, transects and stations in numbers per 1,000 m^3 in Figures 86-103. Fish egg and larval distribution varied throughout the year and followed no consistent pattern. Generally fish eggs were more abundant in water depths less than 45 m and were less abundant as water depths increased. This pattern was sometimes reversed for fish larvae which often showed fewer larvae in the inshore waters. These data indicate that for many pelagic species, spawning probably occurred in water depths seaward of the continental shelf. Seasonal spawning also influenced the distribution of most ichthyoplankton.

Spawning

To follow and document the spawning pulses and patterns of adult fishes during 1977, we showed the abundance in numbers per 1,000 m^3 by cruise, transect and station (Nos. 1, 2 and 3) for selected families that were considered as representative of the area (Table 24). Eggs of the callionymids (dragonets) occurred during all cruises but Cruise 1, 8 and 9 and primarily at station 3 over the shelf in depths from 91-182 m. In contrast, clupeids (herrings) were present during all cruises which suggests almost continual spawning for these fish throughout most of the year. The herrings also occurred mainly at the shallow and intermediate depth stations from 18-65 m. The engraulids (anchovies) were absent only during Cruise 8 and 9 and preferred the shallow and intermediate water depths for spawning. The gonostomatids (lightfishes) spawned only during January and February (Cruise 1) in water depths to 182 m over the continental shelf. Mugilid (mullet) spawning occurred mainly during the winter and spring (Cruises 1 to 4) and appeared to occur in the deeper water over the shelf. The scombrids (tunas and mackerels) were found in low numbers during Cruises 1 and 2. Their main spawning time occurred from April (Cruise 3) to August (Cruise 6) throughout the sampling area at mostly intermediate depths. The soleids (soles) spawned throughout most of the year during all cruises.

We again followed egg development of the same selected families given in Table 24 that could be reliably identified (Table 25). Egg stages, especially of early cleavage eggs, show approximately where spawning may have occurred, since most pelagic eggs at this stage are only a few hours old. For example, the dragonets, lightfishes and mullets and tunas preferred the deeper offshore waters over the continental shelf while the herrings, anchovies and soles frequently spawned in water of intermediate depth.

General egg abundance, percent of total catch and numbers per 1,000 m^3, are also given for all Transect II stations (Table 23). These data show the patchy distribution of eggs, but they also indicate the seasonal nature of spawning in general between inshore and offshore waters. For example, during Cruise I (January and February) and Cruise 9 (December) spawning was concentrated mainly in waters of intermediate depth or over the shelf, while during Cruises 6 and 7 spawning mainly occurred shoreward from Station 5.

The size range of larvae and their relative abundance is also another indicator of spawning time, place and intensity (Figs. 2-85). Length frequencies of representative genera and species, their size range, mean, and 95% confidence interval were also plotted (Figs. 136-141). To show some of the early larval developmental stages and sizes we have illustrated selected fish taxa (Figs. 142-146). In some cases these larvae such as red snapper, *Lutjanus campechanus*, bluefish, *Pomatomus saltatrix*, and cobia, *Rachycentron canadum*, are being recorded for the first time from plankton collections in the Gulf of Mexico.

The spawning patterns, locations, and intensity varied between genera and species and between years. For example, even though the eyed flounder, *B. ocellatus*, spawned throughout most of the year during 1976 and 1977, spawning was more intense during the spring and summer. Early stage larvae 3.0 mm or less were more frequently caught in shelf waters of intermediate depths (Figs. 56-59). In contrast, the rough scad, *T.*

lathami, appeared to spawn only during the winter and spring, and based on larval abundance and size, spawning was concentrated again in waters of intermediate depth (Figs. 62-64). The round herring, E. teres, has a shorter spawning cycle which occurred primarily during the winter and based on larval sizes these fish spawned over the shelf. The croaker, Micropogon undulatus, appears to spawn only during the late summer and fall in water depths generally exceeding 45 m (Figs. 70-73). Based on abundance of larvae of this species croaker spawning was concentrated in the sampling area off Port Aransas. In contrast the little tunny, E. alletteratus, spawned only during the summer and fall throughout most of the sampling area (Figs. 73-76). The seabass, Diplectrum sp., spawned throughout the year with a spawning peak during the summer (Figs. 77-85). Larval abundance and size indicated that most of the spawning occurred again in water depths exceeding 45 m.

The length frequencies of six represented fish species; the codlet, Bregmaceros atlanticus, the silver seatrout, Cynoscion nothus, the round scad, Decapterus punctatus, the silver anchovy, Engraulis eurystole, the little tunny, Euthynnus alletteratus, and the rough scad, Trachurus lathami, were plotted to show their spawning patterns by cruise (Figs. 136-141). These mean length data indicate that the codlets spawn with about equal intensity throughout most of the year, while the silver seatrout mean lengths show a bimodal spawning pattern in the spring and fall of the year. This same bimodal pattern was noted for the round scad. The spawning of the silver anchovy shows repeated spawnings throughout most of the year. In contrast, both the little tunny and the rough scad spawned for relatively short time periods, the little tunny in the late summer and fall, and the rough scad in the fall and winter.

Comparison of ichthyoplankton data for the period from 1975 to 1977.

A comparison of fish egg and larval data was made for the entire three year BLM baseline study (Tables 26-29). Even though our 1975 data were not collected using MARMAP gear and procedures, the sampling effort was considered as comparable to 1976 and 1977, which were identical in all respects and followed standard MARMAP requirements. Since only three stations were sampled during 1975 along Transect II offshore from Port Aransas, our data base for 1976 and 1977 covers only 12 stations instead of the 16 that were actually occupied. We also confined our comparisons to the seasonal cruises (I, IV, and VII) which gave us complete coverage of the entire sampling area.

All fish egg and larval data collected from bongo tows were computed to show their relative abundance in numbers per 1,000 m^3 and numbers under 10 m^2 of surface area (Tables 26 and 27). These data indicate that egg and larval abundance varied from year to year when comparing individual stations and transects on a seasonal basis. For example, at Transect I, Station 1 the number of eggs under 10 m^2 of surface area was 115.3 during Jan./Feb. 1974-75, 20.6 during 1976, and only 1.9 during 1977. Larval abundance at this transect and station also showed the same pattern of decreasing numbers of larvae from year to year. In contrast, egg abundance at Transect III, Station 3 during Jan./Feb. showed an increasing abundance of larvae from 93.5 under 10 m^2 of surface area in 1974-75 to 3,448.6 in 1977. For the same transect and station, larval abundance during Jan./Feb. was 1,495.4 in 1974-75, 827.9 in 1976, and 5,651.9 in 1977. No definite abundance pattern was noted, since some stations showed a decrease, while others showed an increase, and still others showed both an increase or decrease during this three year period.

A comparison of egg and larval abundance was also made for the entire three year period on a seasonal basis giving the number, percent of total catch, number per 1,000 m^3 and number under 10 m^2 of sea surface by transect and station on a seasonal basis (Table 28). During these years the highest numbers of eggs occurred during Aug./Sept. and the lowest during Dec./Feb. although the egg numbers for Apr./June were only slightly lower than Aug./Sept. When comparing larval numbers, their highest abundance occurred in Aug./Sept. and their lowest in Dec./Feb. On a seasonal basis this indicates that the winter period has the lowest egg and larval productivity while the spring showed the greatest egg abundance and the fall the greatest larval abundance. On a transect and station comparison during the winter, the deeper stations (2 and 3) of all transects had the most eggs and usually the most larvae. During the spring, egg and larval abundance increased at all the shoreward stations (I-1, II-1, III-1, and IV-1) as compared to the winter. In the fall with higher egg and larval numbers throughout the area, generally the greater abundance of eggs and larvae again occurred at the most seaward stations. In comparing individual stations, Transect I-3 during the winter showed the highest egg numbers and Transect IV-2 the highest larval numbers. During the spring Transect I-2 had the most egg production and Transect III-3 the most larval production, while in the fall, Transect I-1 had the most egg and larval production. These data indicate that pelagic fish have definite spawning sites in the study area, but their locations vary on a seasonal basis.

The ten most abundant larval fish families are shown in Table 29 and are recorded in their descending order of abundance for the entire three year sampling period on a seasonal basis. During the winter the bregmacerotids (codlets) were the highest in larval abundance for 1974-75 and 1976, while the clupeids (herrings) were the most abundant in 1977. In the spring the engraulids (anchovies) were the most abundant during 1974-75 and 1976, while the synodontids (lizardfish) were the highest in 1977. The family pattern was also different in the fall when the gobiids (gobies) were the highest in 1974-75 and 1976, and the bothids (lefteye flounders) were the highest in 1977. This variability in family dominance also occurred within years and illustrates the success or failures of egg or larval survival throughout the year.

Comparison of 1977-78 ichthyoplankton data between the South Texas OCS and the Buccaneer Oil Field.

Only a few stations were directly comparable between the two studies because of the different field sampling times and depths. The two areas do give a contrasting comparison between the pristine oil-free habitat of the BLM study area versus an area that has had an actively producing oil and gas field for over fifteen years. The data shown in Table 30 gives relative abundances of egg and larvae in numbers per 1,000 m^3 and the number of larvae under 10 m^2 surface area between the Buccaneer Oil Field, an adjacent area outside the field and our BLM stations of comparable depth. During the spring and summer of 1977-78 egg and larval abundance was generally higher in the Buccaneer Oil Field. When comparing the stations outside the oil field with the BLM stations, egg abundance was also generally higher but larval abundance was greater in the BLM area. During the late summer and fall the field stations showed lower egg numbers and slightly lower larval numbers when compared to the BLM sampling area. The stations outside the field had generally similar larval numbers but lower egg numbers than the BLM stations. In the winter the field stations had similar egg and larval numbers when compared to the BLM stations. The outside field stations had similar egg numbers and higher larval numbers when compared to the BLM stations. These data indicate no precise larval and egg abundance pattern between the different sampling areas at the average sampling depth of about 17 m.

Comparison between trends noted in the South Texas OCS zooplankton study and the ichthyoplankton study.

A direct comparison was made between selected zooplankton taxa and ichthyoplankton in numbers per 10 m^3 for all cruises and similar stations to determine if any relationship existed between the different groups of zooplankters (Gastropoda, Polychaeta, Amphipoda and Copepoda) and fish eggs and larvae in 1977 (Table 31). Linear correlations of these taxa were also made for the same cruises in 1976 and 1977 (Table 32). During 1976 some significant correlations were noted at the 95% and 99% confidence level. For example, during Cruise 4 a significant correlation was found between fish larvae and Amphipoda and between fish eggs and Copepoda. Also during Cruise 7 a significant correlation was found between fish larvae and Amphipoda and between fish larvae and Copepoda. In 1977 during Cruise 3 a significant correlation occurred between fish larvae and Gastropoda and fish eggs and Amphipoda and during Cruise 5 between fish eggs and Copepoda. Even though our nets, mesh size and tow patterns were different, these data suggest that fish egg and larval abundance may be related to zooplankton abundance .

Comparison of ichthyoplankton collected by bongo and neuston nets.

The top five larval fish families and their genera and species from our bongo collections in number per 1,000 m^3 were compared to the top five larval fish families from the neuston tows by cruise for 1977 in descending order of abundance (Table 33). A marked difference was found in the catch of the two gears in both similar taxa and their relative abundance. For example, during Cruise 1 bongo catches of clupeids (herring) were about four times higher than all clupeids taken in neuston tows. No bothids (lefteyed flounders), gadids (codfishes) or gerrids (mojarras) were collected in the bongo nets, while no gobiids (gobies), Myctophids (lanternfishes) or sparids (porgies) were taken in the neuston tows. During Cruise 3 the top three families (Sciaenidae, Mullidae, and Mugilidae) in the neuston tows were entirely absent in the bongo tows. In contrast, during Cruise 9 the top three families (Bothidae, Bregmacerotidae and Cynoglossidae) captured in the bongo tows were completely absent in the neuston tows. When relative abundance is compared between the two gears, generally greater numbers of engraulids (anchovies), sciaenids (drums), mullids (goatfishes), mugilids (mullets) and carangids (jacks and pompanos) were taken in the neuston tows, while greater numbers of bregmacerotids (codlets), synodontids (lizard fish) and gobiids (gobies) were caught in the bongo gear. During the entire year no myctophids (lanternfishes), moringuids (spaghetti eels) or sparids (drums) were collected in the neuston tows. Species diversity was also greater in the bongo tows when compared to the neuston tows. In general, the neuston tows caught fish larvae that preferred the surface or near surface waters, while the bongo tows caught larvae that were in some cases only found in the subsurface waters.

Comparison of salinity and temperature relationships with ichthyoplankton.

In order to show the relationship of larval abundance to temperature and salinity during 1977 the salinity range for the most abundant families and their genera and species was compared in their descending order or abundance for all cruises (Table 34). A comparison was also made showing the distribution and abundance of selected larval taxa by cruise, transect, and station in numbers per 1,000 m^3 and the salinity and temperature means at which they were caught (Appendix Table 2). These data show that many larval fish are captured at different salinities and temperatures throughout the year. For example, the clupeids (herrings) occurred at a salinity ranging from 32.6-36.6°/oo and at a temperature ranging from 11.0-19.1°C during Cruise 1 while during Cruise 7 they occurred at a salinity ranging from 34.2-36.3°/oo and at a temperature from 23.7-29.8°C. In contrast, the bothids (lefteyed flounders) were found during Cruise 4 at a salinity of 31.9-36.2°/oo and at a temperature of 20.2-24.7°C and during Cruise 7 at a salinity of 34.2-36.3°/oo and at a temperature of 21.9-29.8°C. Within the same family their is also variation in salinity and temperature preferences between genera and species. For example, during Cruise 1, Bothus ocellatus (eyed flounder) occurred at a salinity of 36.4°/oo and a temperature of 17.8-18.2°C while Paralichthys sp. was captured at a salinity ranging from 34.1-36.4°/oo and at a temperature ranging from 13.0-19.1°C. Similar variations were shown for families, genera and species when transect and station were compared by area and depth. Usually the deeper water stations are more stable throughout the year in regard to their temperatures and salinities and show typical oceanic salinities above 36°/oo and less temperature fluctuations. These stations generally have temperatures above 16°C while the shallow water stations often reach 11°C or below during the winter months. Since fish larvae are non-motile for part of their early developmental stages they are often unable to choose their temperature or salinity in the water column. In most cases these temperature and salinity changes are gradual and appear to have little affect on larval mortality.

DISCUSSION

We have documented for the past three years the ichthyoplankton of much of the Texas OCS and have provided systematic data on the seasonal occurrence, relative abundance, distribution and spawning cycles of fish eggs and larvae. This baseline survey is the most comprehensive of its type ever conducted in the northwestern Gulf of Mexico and provides much needed information on the pelagic eggs and larvae of this area and their relationships to water quality and to macrozooplankton. We feel that although much has been learned, much still remains to be done. It would be desireable to maintain monitoring stations for at least another 2-3 years to be able to document cyclic and other changes in the biota over a long time period. It would also be desirable to extend the sampling area to include intensive coverage of the main reef areas along the Texas coast as well as to cover the waters beyond the continental shelf where spawning of many pelagic species occur with greater intensity. We believe that the ichthyoplankton data that we have now should provide an excellent basis for determining the impact of an oil spill upon eggs and larvae of fishes.

This study has also provided early life history data that formally was unavailable for the Gulf of Mexico and has identified some larvae for the first time in these waters. Some of these fish include the bluefin tuna, bluefish, stripped mullet, cobia, Spanish mackerel, king mackerel, and pompano that are important to the commercial and recreational fisheries. As our aquaculture techniques and expertise become more efficient, our ability to identify the eggs and larvae of many fish that are presently unidentifiable will increase. It is important that ichthyoplankton research be expanded to cover the entire Gulf of Mexico. Only then will we be able to provide more meaningful life history data such as Ahlstrom (1968) did in his evaluation of the fishery resources available to California fishermen, that will, enable us to better manage our fisheries and provide supportive data to more effectively help with other research on fecundity, age, growth, food habits and migration of these fishes.

CONCLUSIONS

We have shown during our baseline ichthyoplankton survey that the northwestern Gulf of Mexico is an important spawning and nursery area for at least 69 families, 117 genera and 80 species of fish. Some of these larval fish such as the red snapper, bluefish and cobia have been identified for the first time from the Gulf. Larval abundance varied throughout the entire study on a family, genus and species level and by cruise, transect and station. Species diversity was highest in spring and lowest during late fall and early winter. The seasonal occurrence of eggs followed a similar pattern. Family dominance varied on a seasonal basis. No consistent larval or egg distribution pattern was noted either inshore-offshore or in north-south directions. Distribution of larvae by family, genera and species varied throughout the year. Fish eggs were generally more abundant in water depths less than 45 m, while larvae were more abundant in the inshore waters.

Most fish have a precise spawning pattern that follows a definite seasonal cycle but the intensity and location of spawning varied between genera and species and between different years. Early stage larvae 3.0 mm (SL) or less were more frequently caught in shelf waters of intermediate depths. Many fish probably spawned seaward of the continental shelf. Egg and larval abundances were generally higher in the Buccaneer Oil Field than in the BLM sampling area.

There was a significant correlation between fish eggs or fish larvae and some representative macrozooplankton. These data indicate the importance of the latter, since they often serve as food for fish larvae and may directly influence their abundance and survival.

The neuston tows generally captured larvae that preferred the surface waters, while the bongo tows captured larvae that were often only found in the subsurface waters. When relative abundance is compared between the two gears, generally greater numbers of anchovies, drums, goatfishes, mullets, jacks and pompanos were taken in the neuston tows while greater numbers of codlets, lizard fish, and gobies were caught in the bongo gear. Species diversity was also greater in the bongo catches as compared to the neuston catches.

The salinity and temperature relationships to ichthyoplankton show that many larval fish have a definite salinity and temperature preference and this often extends to the genus and species level. In most cases, temperature and salinity appear to have little effect in abundance and distribution of eggs and larvae.

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DISTRIBUTION, SEASONALITY, AND ABUNDANCE OF KING MACKEREL AND SPANISH MACKEREL LARVAE IN THE NORTHWESTERN GULF OF MEXICO [1/]

INTRODUCTION

King mackerel, *Scomberomorus cavalla*, and Spanish mackerel, *S. maculatus*, have been important fishery resources in the southeastern United States and eastern Gulf of Mexico since the latter part of the nineteenth century. King mackerel was caught commercially off Key West, Florida as early as 1880 (E. L. Nakamura, in lit.). Spanish mackerel supported a commercial fishery off Virginia in the late nineteenth century (Powell, 1975). The total recreational catch of king mackerel for the southeastern United States and the eastern Gulf of Mexico was estimated to be 83 million pounds in 1965 (Deuel and Clark, 1968) and 63 million pounds in 1970 (Deuel, 1973). Commercial landings of king mackerel were about 7 million pounds in 1970 (Wheeland, 1973). Commercial value of the Florida landings has increased from $600,000 in 1965 to over $1,000,000 in 1970 (Beaumariage, 1973).

Sport fishermen caught about 23 million pounds of Spanish mackerel in 1970 (Deuel, 1973). The average annual commercial landings of the Spanish mackerel since the mid-nineteenth century have been about 8 million pounds (Lyles, 1969). From 1968 through 1972, the dockside values of commercial landings have exceeded $1,000,000 each year (Powell, 1975).

At the present time, there is no commercial fishery for either species in Texas waters although they have been reported as abundant

1/ All tables and figures discussed in the mackerel section of this report are found in Appendix B.

(Gunter, 1945) and Trent (in lit.) stated that they are among the five most frequently captured sport fishes off south Texas.

Most of the studies of king and Spanish mackerels off the United States have been limited to Florida and the southeastern United States (Earll, 1882; Ryder, 1882; Hildebrand and Cable, 1938; Klima, 1959; Moe, 1963; Wollam, 1970; Dwinell and Futch, 1973; Beaumariage, 1969, 1973; Powell, 1975) where the species constitute important fisheries resources. Scomberomorus larvae have been reported from off the Texas coast (Pew, 1958; Hoese, 1965; Wollam, 1970) but there have been no published reports of the distribution, seasonality or abundance of king or Spanish mackerel larvae in this area. The objective of the present study is to determine the distribution, seasonal occurrence and abundance of the larvae of these species in order to estimate the importance of the northwestern Gulf of Mexico as a spawning and nursery ground. By estimating the extent of spawning of these species it will be possible to evaluate their fishing potentials in the northwestern of Gulf of Mexico.

Three species of Scomberomorus occur along the Atlantic and Gulf coasts of the United States. The cero, S. regalis, ranges from New England to Brazil and throughout the Gulf of Mexico (Bohlke and Chaplin, 1968) but is abundant in United States waters only off the southern tip of Florida (Nakamura, in lit.). The king mackerel occurs from the Gulf of Maine to Brazil (Beaumariage, 1973). The Spanish mackerel occurs from the Gulf of Maine to the Gulf of Mexico (Collette, et al., 1978). Tagging data suggests that the king mackerel, found along the east coast of the United States and northern Gulf of Mexico during the spring and summer, winter off southern Florida, the Florida Keys and around the oil platforms off Louisiana (Nakamura, in lit.; Williams, in lit.). Thus, within the Gulf of Mexico, the king mackerel seasonally migrates northwesterly during the spring and summer and southeasterly during the fall, except for the large individuals off Louisiana which apparently do not migrate. It is abundant along the coasts of North Carolina in the spring and fall (Taylor, 1951) and the northeastern and northwestern Gulf of Mexico during the warmer months of the year (Wollam, 1970; Dwinell and Futch, 1973; Beaumariage, 1973). The Spanish mackerel is likewise abundant along the east coast of the United States and northern Gulf of Mexico during the spring, summer and fall (Wollam, 1970; Dwinell and Futch, 1973; Powell, 1975) and is found in shallower water in the northwestern Gulf than the king mackerel (Hoese and Moore, 1977). The Spanish mackerel moves westerly in the northern Gulf of Mexico during the spring and summer and easterly during the fall (Nakamura, in lit.). However, a winter recapture of a specimen off Vera Cruz, Mexico tagged off Texas (Williams, in lit.) suggests that the Spanish mackerel may maintain two wintering grounds, one off southern Florida, for fish which summer in the eastern Gulf and one off the eastern coast of Mexico, for those fish which summer in the western Gulf. However, this hypothesis must be tested with further tagging studies.

Methods and Material

Specimens for this study were collected during a special mackerel larvae survey of the south Texas coast sponsored by the National Marine Fisheries Service, and a baseline survey of the ichthyoplankton of the south Texas outer continental shelf sponsored by the Bureau of Land Management (Table 35). The special mackerel survey of the south Texas coast consisted of monthly sampling of zooplankton from May through September 1975 at 16 stations located along four transects perpendicular to the coast off Port Aransas. Depths of stations ranged from 12 to 139 m. The baseline survey of the south Texas outer continental shelf was conducted during 1975, 1976 and 1977. During the first year, three seasonal surveys were conducted during December 1974 - January 1976, April - May 1975 and August - September 1975 at 12 stations along four transects. Station depths ranged from 18 to 134 m. Each station was sampled twice per cruise, once during daylight and once during night. During 1976, three seasonal cruises were made during January - February, May - June and September on which all transects were sampled. Transects and stations were the same as those sampled in 1975 except four additional stations were sampled along transect II. Also the second transect was separately sampled during March, April, July, August, November and December. Each station was sampled once per cruise. The sampling procedure for 1977 was identical to that for 1976. Seasonal cruises were made during January - February, May and September and transect II was separately surveyed during March, April, July, November and December.

Ichthyoplankton was collected with a pair of 61 cm diameter bongo nets on all but the 1975 baseline survey of the south Texas outer continental shelf; on the latter survey a one meter diameter net was used. The meter net of 250 micron mesh (μ) was towed obliquely through the water column from near the bottom to the surface. One of the pair of bongo nets was 333μ and the other was 505μ mesh (Posgay, et al., 1968). The bongo net tows were double oblique and made according to standard MARMAP techniques (Jossi, et al., 1975). A digital, direct reading General Oceanics flowmeter was mounted inside the frame of each net (both meter and bongo nets) to determine the amount of water filtered during each tow.

Plankton nets were rinsed down with seawater using a deck hose to collect entire samples at the cod end of the net. Samples were washed into jars containing 7% buffered Formalin in seawater. Mackerel larvae were removed from the 505μ samples in the special mackerel study of the south Texas coast. The meter net samples of the 1975 baseline survey of the south Texas outer continental shelf were split with a Folsom plankton splitter and mackerel larvae were removed from one of the two aliquots. Both the 333μ and 505μ bongo net samples collected on the 1976 and 1977 baseline surveys were examined for mackerel larvae. Both net samples were sorted in order to determine variability between the two types of gear (333μ and 505μ mesh nets). Larvae were identified to species and measured to the nearest 0.1 mm of standard length (SL).

A student's t test was used to test for significant differences in abundance of larvae caught within stations between night and day tows and differences in abundance of larvae within stations between mesh sizes (333μ and 505μ).

The number of larvae of each species captured with each gear type at each station were standardized to the number of larvae under 10 m^2 of seawater surface:

$$n_j = \frac{c_j z_j}{v_j} \cdot 10$$

where n_j = the number of larvae at station j under 10^2m of seawater surface.

c_j = the catch of larvae at station j

z_j = the depth of the tow in meters at station j

v_j = the volume of water filtered by the net in cubic meters at station j.

The number of larvae of each species captured with each gear type at each station were estimated in the area represented by each station:

$$p_j = \frac{c_j z_j}{v_j} \cdot A_j$$

where p_j = the estimated total number of larvae in the area represented by station j.

c_j, z_j and v_j as defined above

A_j = the area in square meters represented by station j determined according to Sette and Ahlstrom (1948).

Salinity and temperature data at each station were collected by STD casts, temperature-sensing bathythermographs (XBT's), hand thermometers, and Goldberg Refractometers. However, on the special mackerel survey only surface temperatures were taken and on the 1976 baseline survey of the south Texas outer continental shelf temperature and salinity data were collected on separate cruises which were made up to several weeks before or after the ichthyoplankton cruises.

Results

No cero (S. regalis) larvae were identified from samples and it is doubtful that this species spawns in the northern Gulf of Mexico.

King Mackerel: A total of 199 king mackerel larvae was captured on the special mackerel survey of 1975. Larvae became progressively more abundant during the sampling period (May through September) with nearly half of the larvae being captured during September (Table 35). Standardized abundance (number of larvae under 10 m^2) for all five cruises was greatest at stations of intermediate depths (Table 36). Mean length of larvae did not vary significantly during the sampling period; larvae did not become increasingly larger with progression of the sampling period (Table 35). Surface water temperatures during the sampling period ranged from 24.0 to 32.2^{o}C.

Larvae were captured during the April - May and August - September cruises of the 1975 baseline survey of the south Texas outer continental shelf. Over 97% of the 169 larvae were collected during the latter cruise (Table 35). Abundance of larvae was greater at the two deeper stations (42 to 132 m) of each transect (Table 36) than at the shallowest station (18-27 m) of each transect. Also, higher abundances occurred along the more southern transects (III and IV) than along the more northern transects (I and II). Within each station more larvae were captured during the night than during the day but the differences were not significant. There were no significant differences in mean lengths of larvae captured between the night and day, among stations of different depths nor among the four transects.

A total of 359 larvae were captured by the paired bongo nets during the May - June, July, August and September cruises of the 1976 baseline survey of the south Texas outer continental shelf (Table 35). Over half of the larvae were captured during September. Abundance of larvae (number of larvae under 10 m^2 of sea surface) along Transect II, the only transect sampled on all four cruises, progressively increased from June through September except that it was slightly lower in July than in June (Table 36). The greatest abundance of larvae on all four cruises occurred at the stations of greatest depth (106 to 183 m) and the lowest abundance was found at the shallowest stations (18 to 34 m) (Fig. 148). During May and June larval abundance was greater along the two more northern transects (I and II) than along the more southern transects (III and IV) with the most southern transect (IV) having the lowest abundance. In September, greater larval abundance occurred along Transects II and III than along transects I and IV and Transect I had the lowest abundance. More larvae were captured by the 333μ bongo net than by the 505μ bongo net but the difference was not significant. There were no significant differences between mean lengths of larvae captured by the two types of gear. Mean lengths of larve captured among the different depths and among the four transects did not vary significantly. Mean lengths of larvae did not progressively increase from June through September (Fig. 149). Mean temperature and salinity of the water column in which larvae were captured ranged from 22.4 to 29.2°C and 30.4 to 37.4‰, respectively. However, temperature and salinity data were collected on separate cruises, up to several weeks from when the larvae were collected thus it is not possible to directly correlate the distribution of larvae with temperature and/or salinity.

In the 1977 baseline survey of the south Texas outer continental shelf, 272 larvae were captured on the May, July, August and September cruises with 87% of the larvae being captured in September (Table 35). Abundance of larvae along Transect II, the only transect surveyed during the four cruises, progressively increased from May through September with a very rapid increase from August to September (Table 36). The greatest abundance of larvae occurred at the greatest depths (106 to 183 m) except in July when the greatest abundance was found in intermediate depths (40 to 100 m) (Fig. 150). The shallowest stations had the least abundance of larvae. Larvae were more abundant along Transect II then along the three other transects on both seasonal cruises (May and September). More larvae were captured by the 333μ bongo net than with 505μ bongo net but the differences were significant (P=0.05) only for the September cruise. There were no significant differences between mean lengths of larvae captured by the two types of gear, among larvae captured at different depths nor among larvae captured along the four transects. Mean lengths of larvae did not progressively increase from May through September (Fig. 151). Mean temperature and salinity of the water column in which larvae were captured ranged from 20.2 to 29.2°C and 32.6 to 36.33‰.

Estimates of abundance of larvae present in the area surveyed on the south Texas outer continental shelf during 1976 and 1977 were greater for the 333μ bongo net than for the 505μ bongo net on all but one of the eight cruises. Estimates for both gear types increased between May and September (only months in which all transects were sampled) for both years. In 1976, larvae were estimated to be nearly two times to nearly five times as abundant in September as in May by the 505μ and 333μ nets, respectively. Larvae were estimated to be 25 times to 23 times as abundant in September as in May by the 505μ and 333μ nets in 1977. Larvae were estimated to be 13 times to 7 times more abundant in May 1976 than in May 1977, 1.9 to 0.8 times as abundant in July 1976 and in July 1977, 1.4 to 3.1 times as abundant in August in 1976 as in August 1977 and 1.1 times to 1.5 times as abundant in September 1976 as in September 1977.

Spanish mackerel: A total of 32 Spanish mackerel larvae was captured on the June, July, August and September cruises of the 1975 special mackerel survey (Table 35). Except for May in which no larvae were collected, larvae were taken in nearly equal numbers on the monthly cruises. Standardized abundance (number of larvae under 10 m^2) was greater for the shallowest stations (18-32 m) than at the deeper stations and was lowest for the deepest stations (109-139 m) (Table 36). Mean lengths of larvae were significantly longer in September than during the previous months. Surface water temperatures during the sampling period ranged from 24.0 to 32.2°C.

In the 1975 baseline survey of the south Texas outer continental shelf, 99 larvae were captured during the April - May and August - September cruises with all but one larvae being captured on the latter cruise (Table 35). Greatest abundance of larvae occurred at shallowest depths (18-27 m) and lowest abundance occurred at the greatest depths (91 to 132 m) (Table 36). Larvae were more abundant along the northern most transect than along the three more southern transects. Within stations more larvae were captured during the day than during the night although the differences were not significant. Mean lengths of larvae captured during the night were significantly greater (P=0.05) than those captured during the day along Transects I and II but were less than those captured during the day along Transects III and IV. However, these correlations are probably spurious due to small sample sizes.

On the 1976 survey of the south Texas outer continental shelf, 45 larvae were captured during the May - June, July, August and September cruises (Table 35). Along Transect II the greatest abundance of larvae occurred during September (Table 36). On all four cruises greater abundance of larvae were captured at the shallowest stations (18 to 34 m) (Fig. 152). Within stations more larvae were captured with the 333μ bongo net than with the 505μ bongo net on all four cruises although the differences were significant for only the September cruise (P=0.05). There were no significant differences between mean lengths of larvae captured with the two mesh sizes. Mean lengths of larvae captured among the different depths and among the four transects did not vary significatnly. Mean size of larvae was slightly larger in August and September (3.6 and 3.8 mm SL) than in May - June and July (2.9 and 2.9 mm SL) (Fig. 153). Mean temperature and salinity of the water column in which larvae were captured ranged from 23.8 to 29.2^{o}C and 30.4 to 34.4‰. However, these data were collected on separate cruises, several weeks from when the larvae were collected.

On the 1977 survey of the south Texas outer continental shelf, 72 larvae were captured during May, July, August and September with the greatest number being captured in May and September (Table 35). The highest abundance along Transect II occurred in May (Table 36). Over all four cruises the greatest abundance of larvae was concentrated in the shallowest water sampled (18 to 34 m) except in September when larvae were more dispersed (Fig. 154). Larvae were more abundant along Transect II and III than along Transects I and IV in both May and September. More larvae were captured by the 333μ bongo net than with the 505μ bongo net although the differences were significant (P=0.05) only in May when all of the 32 larvae were collected by the 333μ mesh net. There was no significant difference in mean length of the larvae captured by the two types of gear. Mean lengths of larvae did not increase from May through September (Fig. 1-4). There were no significant differences in mean lengths of larvae captured at different depths or along the four transects. Mean temperature and salinity of the water column in which larvae were captured ranged from 20.2 to 29.2°C and 32.6 to 36.3‰.

Estimates of abundance of larvae present in the area surveyed on the south Texas outer continental shelf during 1976 were greater for the 333μ net than for the 505μ net on all cruises while in 1977 estimates were greater for the 333μ net on only two of the cruises (Table 36). Abundance increased from May to September, the only months in which all four transects were sampled, in 1976 but not in 1977. Larvae were estimated to be 0.7 and 1.0 times as abundant in May 1976 as in May 1977, 0.4 and 0.3 times in July 1976 as in July 1977, 1.2 and 1.4 in August 1976 as in August 1977 and 0.1 and 0.2 times as abundant in September 1976 as in September 1977 by the 333μ and 505μ gear, respectively.

Discussion

During each year of the survey, 1975 through 1977, king mackerel larvae were captured in increasing numbers from May through September with at least 50 percent of the larvae being captured in September. Unfortunately, no sampling was conducted in October so the availability of larvae is unknown for this month. Since larvae were abundant in mid to late September during two years of the survey it is likely that they were present in October. No larvae were found in November suggesting that peak abundance occurred during September. In the northeastern Gulf of Mexico, Dwinell and Futch (1973) caught king mackerel larvae from May through October with the greatest abundance occurring in September.

King mackerel larvae were more abundant over the outer continental shelf (32 to 183 m) than over the inner continental shelf (12 to 31 m) off Texas and large concentrations of larvae were found at depths of 42 to 183 m. Depths greater than 183 m were not sampled; thus availability of larvae seaward of the continental shelf is not known. Dwinell and Futch (1973) also reported higher abundance of larvae over the middle and outer continental shelf than over the inner continental shelf in the northeastern Gulf of Mexico.

Within stations larvae were more abundant at night than during the day and in the 333μ mesh samples than in the 505μ mesh samples. These differences were, in all but one case, nonsignificant. However, the differences may have been real and lack of significance the result of insufficient sampling to reduce the variance of sampled populations. As suggested by Dwinell and Futch (1973), the large-eyed larvae may be able to avoid collecting gear and thus would be more abundant in night than in day samples. Larger larvae were captured with meter nets than with the 61 cm bongo nets (this study; Dwinell and Futch, 1973) suggesting that large larvae can avoid smaller collecting gear. The more or less consistent although mostly nonsignificant differences in number of larvae captured with 333μ and 505μ mesh nets is more difficult to explain, because mean size of the larvae did not vary significantly. If smaller larvae were washed through the large mesh net (505μ), the mean length of larvae in the 333μ mesh sample should have been less than in the 505μ mesh sample. Possibly sample sizes were too small to discern subtle differences in mean lengths of larvae between mesh samples.

King mackerel were taken in water ranging from 20.2 to 29.8°C and were most abundant in water ranging from about 23.0 to 29.0°C. Temperature may not have been the only factor governing the presence of larvae, however, because no larvae were captured in November and December 1977 even though temperatures of the survey area ranged from 22.4 to 26.1°C and 21.3 to 32.8°C for the two months respectively.

For 1976 and 1977 off south Texas, the two years for which comparable data were collected, king mackerel larvae were more abundant in 1976, especially May 1976. Greater abundance in 1976 corresponded with a higher range of mean water column temperatures in 1976. Temperatures ranged two degrees warmer in May and July 1976 than in May and July 1977.

Spanish mackerel larvae were captured from May through September on each year of the study but were much less abundant than king mackerel. Few larvae were captured in May 1975 and 1976, but they were more abundant in May 1977 than for any other month of 1977. The shoalest stations (12 to 34 m) yielded the highest concentrations of larvae and the deepest stations (106 to 183 m) yielded the lowest abundance of larvae. However, high abundance of larvae was occasionally encountered as deep as 131 m, especially during the 1977 survey. In the northeastern Gulf of Mexico Spanish mackerel larvae were captured in June, August and September but not in May, July and October and the greatest number were captured in June (Dwinell and Futch, 1973). Dwinell and Futch (1973) also reported that larvae were most abundant over the inner continental shelf.

Within stations larvae were more abundant during the day than during the night and in the 333μ mesh samples than in the 505μ mesh samples although these differences were almost entirely nonsignificant. It is not known why Spanish mackerel larvae, unlike king mackerel larvae, were more available during the day than during the night. The greater number of larvae captured by the smaller mesh net suggests that smaller larvae were washed through the larger mesh net but the sample sizes were too small to indicate differences in mean length of larvae captured by the two mesh sizes.

Spanish mackerel larvae were taken in water ranging from 19.6 to 29.8°C and were most abundant in water ranging from 20.2 to 29.8°C. No larvae were captured during November and December 1977 when temperatures ranged from 22.4 to 26.1°C and 21.3 to 23.8°C respectively suggesting that factors in addition to temperature determined the presence and absence of larvae.

Unlike king mackerel, Spanish mackerel larvae were relatively more abundant in 1977 than in 1976 off south Texas for all months except August even though temperatures were colder in 1977. Possibly Spanish mackerel larvae are more tolerent of lower temperatures, which is likely since the inshore waters where Spanish mackerel is most abundant are cooler in spring than the offshore waters where king mackerel is most abundant.

Distribution of larvae of both mackerel species provides information on the distribution and seasonality of spawning of these species off the Texas coast. Larvae of both species ranged from about 1.8 to 11.7 mm standard length (SL) and a large portion of the larvae were less than 3.0 mm SL. Dwinell and Futch (1973), based on figures of Ryder (1882), estimated that Spanish mackerel larvae hatch at about 2.0 mm SL and attain a length of 2.8 mm SL within three days. King mackerel larvae are very similar to Spanish mackerel larvae (Wollam, 1970) and probably have a similar growth rate. Thus distribution of larvae less than 3.0 mm SL should fairly accurately reflect spawning time and location of the adult stocks. It follows, therefore, that the king mackerel spawns from May through at least September, with greatest intensity of spawning occurring in September over the middle and outer continental shelf (32 to 183 m) and that the Spanish mackerel spawns during the same period over the inner continental shelf (12-34 m). However, the Spanish mackerel appears to spawn less intensively and more irregularly off Texas than the king mackerel, or the major spawning locations of the Spanish mackerel were not sampled. The inshore water where the Spanish mackerel spawns were sampled less intensively than the offshore waters. Also the Spanish mackerel may terminate spawning earlier in the fall than the king mackerel since, for two of the years the Spanish mackerel larvae were longer in September or August and September than in May and June. Dwinell and Futch (1973) caught king but no Spanish mackerel larvae in October.

The two species may be responding differently to water temperatures, because the Spanish mackerel was relatively more abundant in May 1977 than later in the spawning season, Dwinell and Futch (1973) caught the highest abundance of Spanish mackerel larvae in June. Temperatures in May and June were less than during the latter part of the spawning season. Also, spawning intensity of the king mackerel appeared less during 1977 when temperatures were lower than in 1976 when temperatures were higher. Spawning intensity of the Spanish mackerel appeared greater during 1977 than during 1976.

It was not possible to identify eggs of either species in this study. Thus, it was not possible to estimate the biomass of the spawning populations. It is difficult to quantitatively compare the results of our study with those of Dwinell and Futch (1973), since they used a meter net, standardized all tows to 30 minutes and did not make double oblique tows. However, if it is assumed that equal sampling intensity was expended on both surveys (this assumption is conservative since a smaller diameter net was used and the average tow was less than 30 minutes in this study) it appears that the king mackerel is at least as abundant and the Spanish mackerel is slightly less abundant off the coast of Texas as in the northeastern Gulf of Mexico. If these approximations are accurate both species can be exploited at a higher rate off Texas than they are at present.

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APPENDIX A

(Ichthyoplankton)

Table 1. 1977 BLM station locations and depths for Texas outer continental shelf study.

Transect	Station	Latitude (N)	Longitude (W)	Depth (m)
I	1	28°12'	96°27'	18
	2	27°55'	96°20'	42
	3	27°34'	96°07'	134
II	1	27°40'	96°59'	22
	4	27°34'	96°50'	34
	2	27°30'	96°45'	49
	5	27°24'	96°36'	78
	6	27°24'	96°29'	98
	3	27°18'	96°23'	131
	7	27°15'	96°19'	182
III	1	26°58'	97°11'	25
	2	26°58'	96°48'	65
	3	26°58'	96°33'	106
IV	1	26°10'	97°01'	27
	2	26°10'	96°39'	47
	3	26°10'	96°24'	91

Table 2. Displacement volumes in milliliters for plankton collected during 1977 OCS ichthyoplankton monitoring study.

Cruise	Transect station	Mesh size (μ)	Date (1977)	Time (CST)	Displacement Vol. in ml
1	I-1	505	1/21	0535	4.6
		333	1/21		3.1
	I-2	505	1/21	1252	12.6
		333	1/21		22.4
	I-3	505	2/21	2100	98.3
		333	2/21		95.7
	II-1	505	1/11	1750	1.3
		333	1/11		2.9
	II-2	505	1/11	2251	6.5
		333	1/11		14.1
	II-3	505	1/21	2235	28.6
		333	1/21		34.8
	II-4	505	1/11	1635	4.8
		333	1/11		11.9
	II-5	505	1/12	1045	14.9
		333	1/12		20.2
	II-6	505	1/21	1935	24.1
		333	1/21		23.0
	II-7	505	1/21	2140	64.7
		333	1/21		53.3
	III-1	505	1/20	1810	4.9
		333	1/20		13.4
	III-2	505	1/20	1310	16.1
		333	1/20		21.1
	III-3	505	1/20	0200	21.2
		333	1/20		26.8
	IV-1	505	1/19	1354	0.4
		333	1/19		2.7
	IV-2	505	1/17	2134	7.6
		333	1/17		17.1
	IV-3	505	1/19	1955	22.2
		333	1/19		25.1

Table 2. (Continued)

Cruise	Transect station	Mesh size (μ)	Date (1977)	Time (CST)	Displacement Vol. in ml
2	II-1	505	3/15	0535	38.2
		333	3/15		36.8
	II-2	505	3/14	1445	73.3
		333	3/14		76.1
	II-3	505	3/14	1945	101.1
		333	3/14		119.6
	II-4	505	3/15	0834	50.1
		333	3/15		71.1
	II-5	505	3/15	0100	124.5
		333	3/15		119.3
	II-6	505	3/15	0025	158.0
		333	3/15		146.5
	II-7	505	3/14	2130	80.8
		333	3/14		79.6
3	II-1	505	4/21	0635	6.9
		333	4/21		11.6
	II-2	505	4/20	1330	8.2
		333	4/20		26.3
	II-3	505	4/20	2100	24.3
		333	4/20		28.5
	II-4	505	4/21	1135	6.5
		333	4/21		10.8
	II-5	505	4/21	0120	101.7
		333	4/21		186.7
	II-6	505	4/21	0045	66.2
		333	4/21		93.4
	II-7	505	4/20	2030	22.3
		333	4/20		33.0
4	I-1	505	5/20	1935	2.9
		333	5/20		10.0
	I-2	505	5/20	1410	30.2
		333	5/20		42.3

Table 2. (Continued)

Cruise	Transect station	Mesh size (μ)	Date (1977)	Time (CST)	Displacement Vol. in ml
4	I-3	505	5/19	2042	15.4
		333	5/19		20.6
	II-1	505	5/19	0517	15.9
		333	5/19		39.5
	II-2	505	5/19	0335	23.6
		333	5/19		63.2
	II-3	505	5/18	2102	23.4
		333	5/18		35.4
	II-4	505	5/19	0435	17.6
		333	5/19		39.3
	II-5	505	5/19	0210	44.8
		333	5/19		86.8
	II-6	505	5/19	0115	42.2
		333	5/19		72.5
	II-7	505	5/18	2325	53.3
		333	5/18		81.6
	III-1	505	5/17	1145	5.9
		333	5/17		19.8
	III-2	505	5/17	2222	13.1
		333	5/17		33.3
	III-3	505	5/18	1345	23.5
		333	5/18		45.0
	IV-1	505	5/16	2225	8.3
		333	5/16		23.8
	IV-2	505	5/16	1858	14.7
		333	5/16		40.0
	IV-3	505	5/16	1246	11.1
		333	5/16		24.5
5	II-1	505	7/6	0922	5.8
		333	7/6		9.3
	II-2	505	7/7	0305	10.6
		333	7/7		12.3

Table 2. (Continued)

Cruise	Transect station	Mesh size (μ)	Date (1977)	Time (CST)	Displacement Vol. in ml
5	II-3	505	7/6	2301	17.9
		333	7/6		26.2
	II-4	505	7/6	1132	5.2
		333	7/6		10.7
	II-5	505	7/6	1605	9.1
		333	7/6		12.2
	II-6	505	7/6	1743	12.8
		333	7/6		16.2
	II-7	505	7/6	2200	21.5
		333	7/6		28.8
6	II-1	505	8/4	0923	5.8
		333	8/4		2.1
	II-2	505	8/4	1351	0.3
		333	8/4		3.8
	II-3	505	8/4	2055	18.1
		333	8/4		24.0
	II-4	505	8/4	1115	0.8
		333	8/4		4.9
	II-5	505	8/5	0405	4.7
		333	8/5		13.5
	II-6	505	8/4	1750	6.6
		333	8/4		15.5
	II-7	505	8/4	2333	20.7
		333	8/4		32.1
7	I-1	505	9/11	2245	9.2
		333	9/11		28.5
	I-2	505	9/11	1210	14.1
		333	9/11		29.8
	I-3	505	9/10	1309	5.9
		333	9/10		16.7
	II-1	505	9/10	0410	5.5
		333	9/10		13.0

Table 2. (Continued)

Cruise	Transect station	Mesh size (μ)	Date (1977)	Time (CST)	Displacement Vol. in ml
7	II-2	505	9/10	1310	11.0
		333	9/10		15.5
	II-3	505	9/9	1940	3.5
		333	9/9		13.1
	II-4	505	9/10	1105	4.1
		333	9/10		9.1
	II-5	505	9/10	1600	5.1
		333	9/10		13.9
	II-6	505	9/10	1745	2.6
		333	9/10		12.9
	II-7	505	9/9	2235	9.9
		333	9/9		33.6
	III-1	505	9/8	1405	1.1
		333	9/8		2.9
	III-2	505	9/8	1910	6.7
		333	9/8		13.1
	III-3	505	9/9	1219	3.1
		333	9/9		15.3
	IV-1	505	9/7	1800	4.9
		333	9/7		11.4
	IV-2	505	9/7	1520	0.8
		333	9/7		4.3
	IV-3	505	9/7	0745	4.3
		333	9/7		12.7
8	II-1	505	11/6	0820	21.5
		333	11/6		50.0
	II-2	505	11/5	1140	19.3
		333	11/5		31.9
	II-3	505	11/5	1818	7.5
		333	11/5		15.0
	II-4	505	11/5	0942	21.3
		333	11/5		39.4

Table 2. (Continued)

Cruise	Transect station	Mesh size (μ)	Date (1977)	Time (CST)	Displacement Vol. in ml
8	II-5	505	11/5	1343	12.0
		333	11/5		20.1
	II-6	505	11/5	1520	7.4
		333	11/5		13.0
	II-7	505	11/5	1850	13.0
		333	11/5		24.2
9	II-1	505	12/3	1613	8.8
		333	12/3		16.3
	II-2	505	12/2	1313	8.3
		333	12/2		20.1
	II-3	505	12/2	1830	23.1
		333	12/2		42.1
	II-4	505	12/3	1435	12.5
		333	12/3		23.8
	II-5	505	12/3	1548	9.6
		333	12/3		16.3
	II-6	505	12/2	2235	11.1
		333	12/2		25.2
	II-7	505	12/2	2050	35.8
		333	12/2		62.9

Table 3. BLM ichthyoplankton data for Cruise 1 from January 11, 1977 to February 21, 1977, by transect, station, and time for 333μ and 505μ plankton samples.

Transect and Station	Mesh (μ)	Date (1977)	Time (CST)	Water filtered (m^3)	Total number eggs	Number eggs per 1,000 m^3	Total number larvae	Number larvae per 1,000 m^3
I-1	505	1/21	0535	47.3	0	0	2	42
	333	1/21		46.4	1	22	5	108
I-2	505	1/21	1252	101.3	135	1,332	445	4,393
	333	1/21		95.8	135	1,409	548	5,720
I-3	505	1/21	2100	350.6	217	619	479	1,366
	333	1/21		260.4	97	373	379	1,455
II-1	505	1/11	1750	54.2	1	18	9	166
	333	1/11		57.1	3	53	4	70
II-2	505	1/11	2251	115.7	126	1,089	173	1,495
	333	1/11		108.1	178	1,647	263	2,433
II-3	505	1/21	2235	351.6	333	947	126	358
	333	1/21		322.7	375	1,162	333	1,032
II-4	505	1/11	1635	99.7	75	752	142	1,424
	333	1/11		92.3	83	899	214	2,319
II-5	505	1/12	1045	174.8	264	1,510	113	646
	333	1/12		163.0	223	1,368	198	1,215
II-6	505	1/21	1935	298.6	63	211	147	492
	333	1/21		279.0	45	161	212	760

Table 3. (Continued)

Transect and station	Mesh (μ)	Date 1977	Time (CST)	Water filtered (m^3)	Total number eggs	Number eggs per 1,000 m^3	Total number larvae	Number larvae per 1,000 m^3
II-7	505	1/21	2140	404.9	304	751	300	741
	333	1/21		344.3	275	799	315	915
III-1	505	1/20	1810	97.8	33	337	38	389
	333	1/20		93.9	47	501	43	458
III-2	505	1/20	1310	310.1	520	2,314	321	1,035
	333	1/20		213.9	495	1,677	355	1,660
III-3	505	1/20	0200	329.6	1,081	3,280	104	316
	333	1/20		308.2	994	3,225	168	545
IV-1	505	1/19	1354	110.3	10	91	21	190
	333	1/19		103.3	9	87	31	300
IV-2	505	1/17	2134	151.9	297	1,955	328	2,159
	333	1/17		145.2	269	1,853	472	3,251
IV-3	505	1/19	1955	238.1	56	235	278	1,168
	333	1/19		221.4	64	289	200	903

Table 4 . BLM ichthyoplankton data for Cruise 2 from March 14-15, 1977, by transect, station and time for 333μ and 505μ plankton samples.

Transect and station	Mesh (μ)	Date 1977	Time (CST)	Water filtered (m^3)	Total number eggs	Number eggs per 1,000 m^3	Total number larvae	Number larvae per 1,000 m^3
II-1	505	3/15	0535	135.0	40	296	71	526
	333	3/15		123.2	61	495	57	463
II-2	505	3/14	1445	159.0	753	4,736	100	629
	333	3/14		163.0	744	4,564	77	472
II-3	505	3/14	1945	339.0	63	186	760	2,242
	333	3/14		304.9	54	177	792	2,598
II-4	505	3/15	0834	97.1	667	6,869	13	134
	333	3/15		88.3	773	8,754	8	91
II-5	505	3/15	0100	197.8	1,603	8,104	515	2,604
	333	3/15		158.0	1,311	8,297	439	2,778
II-6	505	3/15	0025	316.0	335	1,060	840	2,658
	333	3/15		288.6	281	974	697	2,415
II-7	505	3/14	2130	437.6	398	910	607	1,387
	333	3/14		396.4	323	815	850	2,144

Table 5. BLM ichthyoplankton data for Cruise 3 from April 20-21, 1977, by transect, station and time for 333μ and 505μ plankton samples.

Transect and station	Mesh (μ)	Date 1977	Time (CST)	Water filtered (m^3)	Total number eggs	Number eggs per 1,000 m^3	Total number larvae	Number larvae per 1,000 m^3
II-1	505	4/21	0635	91.0	97	1,066	99	1,088
	333	4/21		67.2	70	1,042	104	1,548
II-2	505	4/20	1330	146.3	746	5,099	115	786
	333	4/20		138.3	1,614	11,670	179	1,294
II-3	505	4/20	2100	279.4	41	147	777	2,781
	333	4/20		270.2	40	148	1,000	3,701
II-4	505	4/21	1135	104.3	334	3,202	39	374
	333	4/21		98.1	389	3,965	42	428
II-5	505	4/21	0120	218.2	1,149	5,266	2,061	9,445
	333	4/21		235.1	1,152	4,900	2,208	9,392
II-6	505	4/21	0045	292.9	179	611	2,910	9,935
	333	4/21		284.7	190	667	3,551	12,473
II-7	505	4/20	2030	334.7	74	221	316	944
	333	4/20		324.8	45	139	653	2,010

Table 6. BLM ichthyoplankton data for Cruise 4 from May 16, 1977, to May 20, 1977, by transect, station and time for 333μ and 505μ plankton samples.

Transect and station	Mesh (μ)	Date 1977	Time (CST)	Water filtered (m^3)	Total number eggs	Number eggs per 1,000 m^3	Total number larvae	Number larvae per 1,000 m^3
I-1	505	5/20	1936	73.3	71	969	52	709
	333	5/20		71.3	39	547	62	870
I-2	505	5/20	1410	140.8	3,545	25,178	90	639
	333	5/20		136.5	3,851	28,212	262	1,918
I-3	505	5/19	2042	368.8	26	71	614	1,665
	333	5/19		344.7	43	125	1,243	3,606
II-1	505	5/19	0517	85.3	105	1,231	447	5,240
	333	5/19		84.5	202	2,391	567	6,710
II-2	505	5/19	0335	182.4	545	2,988	235	1,288
	333	5/19		177.7	691	3,889	733	4,125
II-3	505	5/18	2102	372.9	32	86	835	2,239
	333	5/18		356.8	23	65	1,046	2,932
II-4	505	5/19	0435	120.8	385	3,187	148	1,225
	333	5/19		116.9	409	3,499	377	3,225
II-5	505	5/19	0210	271.8	662	2,436	936	3,444
	333	5/19		261.8	727	2,777	1,652	6,310
II-6	505	5/19	0115	348.6	97	278	696	1,997
	333	5/19		333.9	145	434	1,492	4,468

Table 6. (Continued)

Transect and station	Mesh (μ)	Date 1977	Time (CST)	Water filtered (m^3)	Total number eggs	Number eggs per 1,000 m^3	Total number larvae	Number larvae per 1,000 m^3
II-7	505	5/18	2325	637.7	21	33	2,018	3,165
	333	5/18		682.9	95	139	2,733	4,002
III-1	505	5/17	1645	111.6	92	824	43	385
	333	5/17		108.7	405	3,726	108	994
III-2	505	5/17	2222	193.8	485	2,503	226	1,167
	333	5/17		181.2	476	2,627	532	2,936
III-3	505	5/18	1345	338.5	144	425	1,262	3,730
	333	5/18		319.6	157	491	2,247	7,031
IV-1	505	5/16	2225	107.6	445	4,136	162	1,506
	333	5/16		108.7	841	7,737	320	2,935
IV-2	505	5/16	1858	154.1	268	1,739	161	1,045
	333	5/16		149.8	459	3,064	1,308	8,732
IV-3	505	5/16	1246	317.1	196	618	293	924
	333	5/16		294.1	275	935	709	2,410

Table 7. BLM ichthyoplankton for Cruise 5, Transect II from July 6-7, 1977, by transect, station and time for 333μ and 505μ plankton samples.

Transect station	Mesh (μ)	Date 1977	Time (CST)	Water filtered (m^3)	Total number eggs	Number eggs per 1,000 m^3	Total number larvae	Number larvae per 1,000 m^3
II-1	505	7/6	0922	113.9	232	2,037	230	2,019
	333	7/6		115.8	1,531	13,221	1,092	9,430
II-2	505	7/7	0305	176.8	70	396	673	3,807
	333	7/7		177.1	83	469	912	5,149
II-3	505	7/6	2301	561.3	106	189	506	901
	333	7/6		569.1	76	134	950	1,669
II-4	505	7/6	1132	177.3	341	1,923	136	767
	333	7/6		175.7	1,148	6,534	575	3,272
II-5	505	7/6	1605	237.9	199	837	212	891
	333	7/6		239.5	233	973	245	1,023
II-6	505	7/6	1743	367.9	184	500	332	902
	333	7/6		367.0	263	717	594	1,618
II-7	505	7/6	2200	727.7	6	8	671	922
	333	7/6		741.0	39	53	1,774	2,394

Table 8. BLM ichthyoplankton data for Cruise 6, Transect II from August 4-5, 1977, by transect, station and time for 333μ and 505μ plankton samples.

Transect station	Mesh (μ)	Date 1977	Time (CST)	Water filtered (m^3)	Total number eggs	Number eggs per 1,000 m^3	Total number larvae	Number larvae per 1,000 m^3
II-1	505	8/4	0923	109.2	13	119	142	1,299
	333	8/4		97.3	343	3,525	477	4,902
II-2	505	8/4	1351	140.0	33	236	59	421
	333	8/4		127.6	454	3,558	233	1,826
II-3	505	8/4	2055	329.5	8	24	244	741
	333	8/4		295.4	14	47	534	1,807
II-4	505	8/4	1115	109.2	59	540	153	1,401
	333	8/4		98.0	217	2,214	532	5,429
II-5	505	8/5	0405	295.8	106	358	544	1,839
	333	8/5		257.0	122	475	1,254	4,879
II-6	505	8/4	1750	265.4	31	117	159	599
	333	8/4		238.2	48	202	511	2,145
II-7	505	8/4	2333	508.8	58	114	294	577
	333	8/4		452.5	109	241	600	1,325

Table 9. BLM ichthyoplankton data for Cruise 7 from September 6-12, 1977, by transect, station and time for 333μ and 505μ plankton samples.

Transect and station	Mesh (μ)	Date 1977	Time (CST)	Water filtered (m^3)	Total number eggs	Number eggs per 1,000 m^3	Total number larvae	Number larvae per 1,000 m^3
I-1	505	9/11	2245	65.5	9	137	167	2,550
	333	9/11		65.3	21	322	369	5,650
I-2	505	9/11	1210	155.2	71	458	162	1,044
	333	9/11		153.5	331	2,156	616	4,013
I-3	505	9/10	2310	343.8	31	90	333	969
	333	9/10		337.1	38	113	762	2,261
II-1	505	9/10	0410	99.3	33	332	186	187
	333	9/10		97.3	150	1,542	222	2,282
II-2	505	9/10	1310	157.0	130	828	299	1,904
	333	9/10		154.8	230	1,486	896	5,788
II-3	505	9/9	1940	324.6	37	114	448	1,380
	333	9/9		315.0	53	168	1,084	3,441
II-4	505	9/10	1105	129.7	47	362	52	401
	333	9/10		129.7	296	2,282	159	1,226
II-5	505	9/10	1600	233.4	141	604	229	981
	333	9/10		218.6	247	1,130	586	2,681
II-6	505	9/10	1745	234.5	32	137	207	882
	333	9/10		232.1	73	315	1,259	5,424

Table 9. (Continued)

Transect and station	Mesh (μ)	Date 1977	Time (CST)	Water filtered (m^3)	Total number eggs	Number eggs per 1,000 m^3	Total number larvae	Number larvae per 1,000 m^3
II-7	505	9/9	2235	570.0	13	23	815	1,430
	333	9/9		557.2	38	68	1,880	3,374
III-1	505	9/8	1405	107.3	3	28	66	615
	333	9/8		103.9	19	183	177	1,704
III-2	505	9/8	1910	248.6	25	101	167	672
	333	9/8		245.2	70	286	690	2,814
III-3	505	9/9	1219	345.7	116	336	488	1,412
	333	9/9		338.7	126	372	997	2,944
IV-1	505	9/7	1800	113.2	90	795	187	1,652
	333	9/7		116.8	188	1,610	500	4,281
IV-2	505	9/7	1520	164.0	29	177	110	670
	333	9/7		167.4	138	824	452	2,700
IV-3	505	9/7	0745	375.3	170	453	66	176
	333	9/7		357.5	375	1,049	473	1,323

Table 10. BLM ichthyoplankton data for Cruise 8 from November 5-6, 1977, by transect, station and time for 333μ and 505μ plankton samples.

Transect and station	Mesh (μ)	Date 1977	Time (CST)	Water Filtered (m^3)	Total number eggs	Number eggs per 1,000 m^3	Total number larvae	Number larvae per 1,000 m^3
II-1	505	11/6	0820	65.0	1	15	11	169
	333	11/6		66.7	5	75	25	375
II-2	505	11/5	1140	209.3	65	311	208	994
	333	11/5		200.0	69	345	514	2,570
II-3	505	11/5	1810	498.4	12	24	36	72
	333	11/5		480.0	19	40	51	106
II-4	505	11/5	0942	134.9	808	5,990	308	2,283
	333	11/5		130.5	802	6,631	1,375	10,536
II-5	505	11/5	1343	315.1	33	105	191	606
	333	11/5		301.6	28	93	518	1,718
II-6	505	11/5	1520	332.4	6	18	238	716
	333	11/5		313.2	7	22	399	1,274
II-7	505	11/5	1850	540.4	103	191	161	298
	333	11/5		510.5	105	206	229	449

Table 11. BLM ichthyoplankton data for Cruise 9 from December 2-3, 1977, by transect, station and time for 333μ and 505μ plankton samples.

Transect and station	Mesh (μ)	Date 1977	Time (CST)	Water filtered (m^3)	Total number eggs	Number eggs per 1,000 m^3	Total number larvae	Number larvae per 1,000 m^3
II-1	505	12/3	1613	100.8	13	129	57	664
	333	12/3		97.5	11	113	104	1,067
II-2	505	12/2	1313	172.9	277	1,602	93	538
	333	12/2		166.8	358	2,146	246	1,475
II-3	505	12/2	1830	396.0	1,258	3,177	886	2,231
	333	12/2		372.3	1,161	3,118	1,347	3,618
II-4	505	12/3	1435	128.5	28	218	57	444
	333	12/3		124.4	20	161	99	1,294
II-5	505	12/2	1548	213.1	23	108	325	1,525
	333	12/2		202.5	31	153	636	3,141
II-6	505	12/2	2235	283.4	168	593	118	416
	333	12/2		267.1	57	213	212	794
II-7	505	12/2	2050	602.3	4,304	72	1,017	1,689
	333	12/2		579.3	4,143	7,152	1,457	2,515

Table 12. Comparison of ten most abundant larval families expressed in No./1,000 m^3 and numbers of taxa and larvae by sampling cruises in 1976 and 1977 for all plankton samples.

Cruise 1*				Cruise 2			
1976		1977		1976		1977	
Family	No./ 1,000 m^3	Family	No./ 1,000 m^3	Family	No./ 1,000 m^3	Family	No./ 1,000 m^3
Myctophidae	83	Clupeidae	284	Clupeidae	318	Clupeidae	689
Bregmacerotidae	81	Sparidae	127	Bregmacerotidae	291	Myctophidae	267
Clupeidae	67	Myctophidae	126	Myctophidae	185	Gonostomatidae	173
Gobiidae	50	Gobiidae	122	Gobiidae	76	Carangidae	145
Carangidae	39	Carangidae	95	Gonostomatidae	61	Bregmacerotidae	101
Gonostomatidae	25	Stromateidae	74	Synodontidae	45	Serranidae	101
Serranidae	13	Serranidae	66	Serranidae	30	Gobiidae	98
Stromateidae	12	Gonostomatidae	61	Carangidae	29	Sparidae	95
Bothidae	11	Bregmacerotidae	36	Engraulidae	24	Synodontidae	78
Synodontidae	10	Bothidae	28	Triglidae	19	Stromateidae	69
42 families 43 genera 25 species (3,471 larvae)		34 families 49 genera 28 species (6,766 larvae)		29 families 38 genera 21 species (4,385 larvae)		30 families 40 genera 22 species (5,826 larvae)	

Table 12. (Continued)

Cruise 3				Cruise 4*			
1976		1977		1976		1977	
Family	No./ 1,000 m^3	Family	No./ 1,000 m^3	Family	No./ 1,000 m^3	Family	No./ 1,000 m^3
Clupeidae	431	Gobiidae	1,555	Engraulidae	308	Synodontidae	869
Gobiidae	225	Synodontidae	976	Bregmacerotidae	207	Gobiidae	576
Synodontidae	201	Bregmacerotidae	492	Gobiidae	161	Engraulidae	319
Bregmacerotidae	165	Myctophidae	400	Bothidae	128	Myctophidae	191
Myctophidae	155	Clupeidae	324	Microdesmidae	112	Bregmacerotidae	182
Serranidae	110	Engraulidae	246	Myctophidae	112	Bothidae	143
Carangidae	100	Carangidae	173	Carangidae	83	Cynoglossidae	137
Triglidae	38	Paralepididae	151	Scombridae	68	Serranidae	133
Mugilidae	33	Serranidae	139	Serranidae	58	Gonostomatidae	81
Cynoglossidae	29	Sparidae	132	Synodontidae	38	Microdesmidae	60
34 families 44 genera 21 species (6,128 larvae)		36 families 51 genera 29 species (14,054 larvae)		48 families 63 genera 35 species (10,852 larvae)		48 families 66 genera 41 species (23,607 larvae)	

Table 12. (Continued)

	Cruise 5				Cruise 6		
1976		1977		1976		1977	
Family	No./ 1,000 m^3	Family	No./ 1,000 m^3	Family	No./ 1,000 m^3	Family	No./ 1,000 m^3
Engraulidae	627	Clupeidae	328	Engraulidae	856	Carangidae	256
Bregmacerotidae	229	Bothidae	310	Gobiidae	669	Scombridae	185
Bothidae	202	Gobiidae	155	Bothidae	496	Clupeidae	171
Gobiidae	149	Myctophidae	148	Synodontidae	197	Bregmacerotidae	170
Myctophidae	134	Engraulidae	109	Bregmacerotidae	186	Myctophidae	150
Synodontidae	92	Synodontidae	96	Clupeidae	120	Gobiidae	129
Gonostomatidae	51	Gonostomatidae	81	Scombridae	99	Bothidae	113
Scombridae	47	Lutjanidae	70	Cynoglossidae	91	Lutjanidae	75
Microdesmidae	30	Scombridae	65	Microdesmidae	76	Gonostomatidae	51
Carangidae	30	Microdesmidae	39	Ophichthidae	64	Engraulidae	43
40 families 57 genera 28 species (6,475 larvae)		43 families 49 genera 23 species (8,902 larvae)		36 families 46 genera 22 species (11,390 larvae)		31 families 41 genera 22 species (5,732 larvae)	

Table 12. (Continued)

Cruise 7*				Cruise 8			
1976		1977		1976		1977	
Family	No./ 1,000 m^3	Family	No./ 1,000 m^3	Family	No./ 1,000 m^3	Family	No./ 1,000 m^3
Gobiidae	480	Bothidae	267	Gobiidae	1,571	Gobiidae	519
Engraulidae	396	Engraulidae	259	Bregmacerotidae	385	Bothidae	83
Bregmacerotidae	360	Gobiidae	153	Sciaenidae	274	Bregmacerotidae	57
Bothidae	335	Carangidae	148	Bothidae	134	Sciaenidae	45
Cynoglossidae	112	Moringuidae	148	Congridae	51	Serranidae	34
Myctophidae	88	Cynoglossidae	145	Cynoglossidae	50	Cynoglossidae	31
Synodontidae	69	Scombridae	124	Ophidiidae	31	Myctophidae	29
Scombridae	66	Ophichthidae	65	Clupeidae	27	Gonostomatidae	25
Carangidae	54	Bregmacerotidae	64	Synodontidae	25	Ophichthidae	12
Sciaenidae	46	Clupeidae	51	Moringuidae	23	Ophidiidae	10
45 families 59 genera 34 species (17,201 larvae)		38 families 54 genera 34 species (15,104 larvae)		38 families 44 genera 25 species (9,718 larvae)		33 families 45 genera 20 species (4,264 larvae)	

Table 12. (Continued)

Cruise 9				All Cruises			
1976		1977		1976		1977	
Family	No./ 1,000 m	Family	No./ 1,000 m	Family	No./ 1,000 m	Family	No./ 1,000 m
Gobiidae	414	Bregmacerotidae	557	Gobiidae	362	Bothidae	414
Mugilidae	281	Cynoglossidae	228	Engraulidae	245	Gobiidae	343
Sciaenidae	210	Gobiidae	210	Bregmacerotidae	223	Clupeidae	156
Bregmacerotidae	141	Sciaenidae	148	Bothidae	152	Bregmacerotidae	144
Clupeidae	64	Bothidae	69	Clupeidae	97	Engraulidae	143
Stromateidae	58	Synodontidae	51	Myctophidae	94	Synodontidae	127
Bothidae	41	Serranidae	49	Synodontidae	65	Carangidae	100
Myctophidae	35	Sparidae	37	Sciaenidae	52	Cynoglossidae	78
Gonostomatidae	31	Clupeidae	34	Carangidae	48	Serranidae	49
Congridae	27	Mugilidae	32	Microdesmidae	35	Myctophidae	47
31 families 47 genera 24 species (5,462 larvae)		37 families 40 genera 13 species (6,667 larvae)		71 families 108 genera 71 species (75,082 larvae)		69 families 111 genera 80 species (90,222 larvae)	

*Seasonal cruises covering all transects.

Table 13. Fish larvae from Cruise 1 showing family, genera and species (January 11 - February 21, 1977).

Family	Genus	Species
BATHYLAGIDAE (deepsea smelts)	Bathylagus	sp.
BOTHIDAE (lefteye flounders)	Bothus	ocellatus
	Citharichthys	sp.
	Cyclopsetta	sp.
	Paralichthys	sp.
	--	--
BRANCHIOSTEGIDAE (tilefishes)	Caulolatilus	sp.
BREGMACEROTIDAE (codlets)	Bregmaceros	atlanticus
	Bregmaceros	sp.
CARANGIDAE (jacks and pompanos)	Trachurus	lathami
CARAPIDAE (pearlfishes)	Carapus	bermudensis
CENTRISCIDAE (snipefishes)	Macrorhamphosus	sp.
CHAULIODONTIDAE (viperfishes)	Chauliodus	sp.
CLUPEIDAE (herrings)	Brevoortia	sp.
	Etrumeus	teres
	--	--
CONGRIDAE (conger eels)	Ariosoma	balearicum
	Hildebrandia	sp.
CYNOGLOSSIDAE (tonguefishes)	Symphurus	sp.
ENGRAULIDAE (anchovies)	Engraulis	eurystole
	--	--
EPHIPPIDAE (spadefishes)	--	--
GADIDAE (codfishes)	Urophycis	floridanus
	Urophycis	sp.
GOBIIDAE (gobies)	--	--

Table 13. (Continued)

Family	Genus	Species
GONOSTOMATIDAE (lightfishes)	Cyclothone	sp.
	Gonostomus	atlanticum
	Gonostomus	elongatum
	Ichthyococcus	sp.
	Maurolicus	muelleri
	Maurolicus	sp.
	Vinciguerria	sp.
	--	--
KYPHOSIDAE (sea chubs)	Kyphosus	sp.
MELAMPHAIDAE	Melamphais	sp.
MELANOSTOMIATIDAE (scaleless dragonfishes)	Bathyphilus	sp.
MUGILIDAE (mullets)	Mugil	cephalus
	Mugil	sp.
MYCTOPHIDAE (lanternfishes)	Benthosema	suborbitale
	Ceratoscopelus	maderensis
	Ceratoscopelus	warmingi
	Ceratoscopelus	sp.
	Diaphus	sp.
	Diogenichthys	atlanticus
	Hygophum	reinhardti
	Hygophum	sp.
	Lampanyctus	sp.
	Myctophum	nitidulum
	Myctophum	obtusirostre
	Myctophum	sp.
	Notolychnus	valdiviae
	Notoscopelus	resplendens
	Notoscopelus	sp.
	Symbolophorus	sp.
	--	--
NETTASTOMIDAE	--	--
OPHICHTHIDAE (snake eels)	--	--
OPHIDIIDAE (cusk-eels and brotulas)	--	--
PARALEPIDIDAE	Lestidiops	sp.

Table 13. (Continued)

Family	Genus	Species
SCIAENIDAE (drums)	Leiostomus	xanthurus
	Micropogon	undulatus
	--	--
SCOMBRIDAE (mackerels and tunas)	Scomber	japonicus
	--	--
SCOPELARCHIDAE (pearleyes)	--	--
SERRANIDAE (sea basses)	Centropristis	sp.
	Diplectrum	sp.
	--	--
SPARIDAE (porgies)	Lagodon	rhomboides
	--	--
STROMATEIDAE (butterfishes)	Peprilus	burti
	--	--
SYNODONTIDAE (lizardfishes)	Saurida	sp.
	Synodus	sp.
	--	--
TRIGLIDAE (searobins)	Prionotus	stearnsi
	Prionotus	sp.
URANOSCOPIDAE (stargazers)	Gnathagnus	egregius

Table 14. Fish larvae from Cruise 2 showing family, genera and species (March 14-15, 1977).

Family	Genus	Species
APOGONIDAE (cardinalfishes)	--	--
BOTHIDAE (lefteye flounders)	Cyclopsetta	sp.
	--	--
BRANCHIOSTEGIDAE (tilefishes)	Caulolatilus	sp.
BREGMACEROTIDAE (codlets)	Bregmaceros	atlanticus
	Bregmaceros	sp.
CARANGIDAE (jacks and pompanos)	Trachurus	lathami
CHAULIODONTIDAE (viperfishes)	Chauliodus	sp.
CHIASMODONTIDAE	--	--
CLUPEIDAE (herrings)	Brevoortia	sp.
	Etrumeus	teres
	Sardinella	anchovia
	--	--
CONGRIDAE (conger eels)	Hildebrandia	sp.
CYNOGLOSSIDAE (tonguefishes)	Symphurus	sp.
ENGRAULIDAE (anchovies)	--	--
GADIDAE (codfishes)	Urophycis	sp.
GOBIIDAE (gobies)	--	--
GONOSTOMATIDAE (lightfishes)	Cyclothone	sp.
	Gonostomus	atlanticum
	Gonostomus	elongatum
	Maurolicus	muelleri
	Maurolicus	sp.
	Sternoptyx	sp.
	Vinciguerria	sp.

Table 14. (Continued)

Family	Genus	Species
LABRIDAE (wrasses)	--	--
MELAMPHAIDAE	Melamphais	sp.
MUGILIDAE (mullets)	Mugil	sp.
MYCTOPHIDAE (lanternfishes)	Benthosema	suborbitale
	Ceratoscopelus	warmingi
	Ceratoscopelus	sp.
	Diaphus	sp.
	Diogenichthys	atlanticus
	Gonichthys	coccoi
	Hygophum	reinhardti
	Hygophum	sp.
	Lampanyctus	sp.
	Myctophum	sp.
	Notolychnus	valdiviae
	Notoscopelus	resplendens
	--	--
NETTASTOMIDAE	--	--
OPHICHTHIDAE (snake eels)	--	--
OPHIDIIDAE (cusk-eels and brotulas)	Lepophidium	sp.
	--	--
SCARIDAE (parrotfishes)	--	--
SCIAENIDAE (drums)	Leiostomus	xanthurus
	Micropogon	undulatus
	Pogonias	cromis
SCOMBRIDAE (mackerels and tunas)	Scomber	japonicus
SERRANIDAE (sea basses)	Centropristis	sp.
	Diplectrum	sp.
SPARIDAE (porgies)	Lagodon	rhomboides
	--	--
STROMATEIDAE (butterfishes)	Peprilus	burti
	--	--

Table 14. (Continued)

Family	Genus	Species
SYNODONTIDAE (lizardfishes)	Saurida	brasiliensis
	Saurida	sp.
	Synodus	foetens
	Synodus	sp.
	--	--
TRIGLIDAE (searobins)	Prionotus	sp.
URANOSCOPIDAE (stargazers)	--	--

Table 15. Fish larvae from Cruise 3 showing family, genera and species (April 20-21, 1977).

Family	Genus	Species
BATHYLAGIDAE (deepsea smelts)	*Bathylagus*	sp.
BOTHIDAE (lefteye flounders)	*Bothus*	*ocellatus*
	Bothus	sp.
	Paralichthys	sp.
	--	--
BREGMACEROTIDAE (codlets)	*Bregmaceros*	*atlanticus*
	Bregmaceros	sp.
CARANGIDAE (jacks and pompanos)	*Decapterus*	*punctatus*
	Trachurus	*lathami*
	--	--
CHAULIODONTIDAE (viperfishes)	*Chauliodus*	sp.
CLUPEIDAE (herrings)	*Etrumeus*	*teres*
	Sardinella	*anchovia*
	--	--
CONGRIDAE (conger eels)	*Hildebrandia*	sp.
CYNOGLOSSIDAE (tonguefishes)	*Symphurus*	sp.
ENGRAULIDAE (anchovies)	*Anchoa*	sp.
	Engraulis	*eurystole*
	--	--
EPHIPPIDAE (spadefishes)	*Chaetodipterus*	*faber*
GOBIIDAE (gobies)	--	--
GONOSTOMATIDAE (lightfishes)	*Cyclothone*	sp.
	Gonostomus	*atlanticum*
	Ichthyococcus	sp.
	Maurolicus	*muelleri*
	Maurolicus	sp.
	Sternoptyx	sp.
	Vinciguerria	sp.
	--	--

Table 15. (Continued)

Family	Genus	Species
LABRIDAE (wrasses)	--	--
LUTJANIDAE (snappers)	*Lutjanus*	sp.
MELAMPHAIDAE	*Melamphais*	sp.
	--	--
MICRODESMIDAE (wormfishes)	*Microdesmus*	sp.
MUGILIDAE (mullets)	*Mugil*	sp.
	--	--
MULLIDAE (goatfishes)	--	--
MYCTOPHIDAE (lanternfishes)	*Benthosema*	*suborbitale*
	Ceratoscopelus	*maderensis*
	Ceratoscopelus	*warmingi*
	Ceratoscopelus	sp.
	Diaphus	sp.
	Diogenichthys	*atlanticus*
	Hygophum	*reinhardti*
	Hygophum	sp.
	Lampanyctus	sp.
	Myctophum	*asperum*
	Myctophum	*obtusirostre*
	Myctophum	sp.
	Notolychnus	*valdiviae*
	Notoscopelus	*resplendens*
	--	--
NETTASTOMIDAE	--	--
OGCOCEPHALIDAE (batfishes)	--	--
OPHIDIIDAE (cusk-eels and brotulas)	*Rissola*	*marginata*
	--	--
PARALEPIDIDAE	*Lestidiops*	sp.
	Lestrolopis	sp.
	--	--
SCIAENIDAE (drums)	*Menticirrhus*	sp.
	Micropogon	*undulatus*
	--	--

Table 15. (Continued)

Family	Genus	Species
SCOMBRIDAE	*Auxis*	sp.
(mackerels and tunas)	*Katsuwonus*	*pelamis*
	Scomber	*japonicus*
	--	--
SCOPELARCHIDAE	--	--
SERRANIDAE	*Centropristis*	sp.
(sea basses)	*Diplectrum*	sp.
	--	--
SOLEIDAE	*Gymnachirus*	sp.
(soles)		
SPARIDAE	--	--
(porgies)		
SPHYRAENIDAE	*Sphyraena*	sp.
(barracudas)		
SPHYRNIDAE	--	--
(hammerhead sharks)		
STROMATEIDAE	*Cubiceps*	*pauciradiatus*
(butterfishes)	*Peprilus*	*burti*
	--	--
SYNODONTIDAE	*Saurida*	*brasiliensis*
(lizardfishes)	*Saurida*	sp.
	Synodus	*foetens*
	Synodus	*poeyi*
	Synodus	sp.
	--	--
TETRAODONTIDAE	--	--
(puffers)		
TRICHIURIDAE	*Diplospinus*	*multistriatus*
(cutlassfishes)		
TRIGLIDAE	*Prionotus*	sp.
(searobins)		

Table 16. Fish larvae from Cruise 4 showing family, genera and species (May 16-20, 1977).

Family	Genus	Species
BATHYLAGIDAE (deepsea smelts)	Bathylagus	sp.
BLENNIIDAE (combtooth blennies)	Hypleurochilus	geminatus
	--	--
BOTHIDAE (lefteye flounders)	Bothus	sp.
	Bothus	ocellatus
	Citharichthys	sp.
	Cyclopsetta	sp.
	Syacium	sp.
	--	--
BRANCHIOSTEGIDAE (tilefishes)	Caulolatilus	sp.
BREGMACEROTIDAE (codlets)	Bregmaceros	sp.
	Bregmaceros	atlanticus
CARANGIDAE (jacks and pompanos)	Chloroscombrus	sp.
	Chloroscombrus	chrysurus
	Decapterus	punctatus
	Trachurus	lathami
	Vomer	setapinnis
	--	--
CARAPIDAE (pearlfishes)	Carapus	bermudensis
CHAULIODONTIDAE (viperfishes)	Chauliodus	sp.
CLUPEIDAE (herrings)	Etrumeus	teres
	Harengula	jaguana
	Opisthonema	oglinum
	--	--
CONGRIDAE (conger eels)	--	--
CYNOGLOSSIDAE (tonguefishes)	Symphurus	sp.
ENGRAULIDAE (anchovies)	Anchoa	sp.
	Engraulis	eurystole
	--	--

Table 16. (Continued)

Family	Genus	Species
EXOCOETIDAE (flyingfishes and halfbeaks)	Hirundichthys	affinis
GERREIDAE (mojarras)	Eucinostomus	sp.
	--	--
GOBIIDAE (gobies)	--	--
GONOSTOMATIDAE (lightfishes)	Cyclothone	sp.
	Gonostomus	atlanticum
	Maurolicus	sp.
	Maurolicus	muelleri
	Vinciguerria	sp.
	--	--
KYPHOSIDAE (sea chubs)	Kyphosus	sp.
LABRIDAE (wrasses)	Halichoeres	sp.
	--	--
LUTJANIDAE (snappers)	Lutjanus	sp.
MELAMPHAIDAE	Melamphais	sp.
MICRODESMIDAE (wormfishes)	Microdesmus	sp.
	--	--
MUGILIDAE (mullets)	Mugil	sp.
	Mugil	curema
	--	--
MULLIDAE (goatfishes)	--	--
MURAENIDAE (morays)	Gymnothorax	sp.
	--	--
MYCTOPHIDAE (lanternfishes)	Benthosema	suborbitale
	Ceratoscopelus	sp.
	Ceratoscopelus	maderensis
	Diaphus	sp.
	Diogenichthys	atlanticus
	Hygophum	sp.
	Hygophum	reinhardti
	Lampanyctus	sp.
	Lampanyctus	cuprarius

Table 16. (Continued)

Family	Genus	Species
MYCTOPHIDAE (Cont'd)	Myctophum	sp.
	Myctophum	obtusirostre
	Myctophum	selenops
	Notolychnus	valdiviae
	Notoscopelus	resplendens
	Symbolophorus	sp.
	--	--
NETTASTOMIDAE	--	--
OGCOCEPHALIDAE (batfishes)	--	--
OPHICHTHIDAE (snake eels)	--	--
OPHIDIIDAE (cusk-eels and brotulas)	Lepophidium	sp.
	--	--
PARALEPIDIDAE	Lestidiops	sp.
	Sudis	hyalina
	--	--
POMADASYIDAE (grunts)	Haemulon	sp.
PRIACANTHIDAE (bigeyes)	--	--
SCIAENIDAE (drums)	Bairdiella	chrysura
	Cynoscion	sp.
	Cynoscion	nothus
	Menticirrhus	sp.
	Micropogon	undulatus
	--	--
SCOMBRIDAE (mackerels and tunas)	Euthynnus	alletteratus
	Scomberomorus	cavalla
	Scomberomorus	maculatus
	--	--
SCOPELARCHIDAE (pearleyes)	--	--
SCORPAENIDAE (scorpionfishes)	Scorpaena	sp.
	--	--

Table 16. (Continued)

Family	Genus	Species
SERRANIDAE (sea basses)	Centropristis	sp.
	Diplectrum	sp.
	Serraniculus	pumilio
	--	--
SOLEIDAE (soles)	Gymnachirus	sp.
SPARIDAE (porgies)	--	--
SPHYRAENIDAE (barracudas)	Sphyraena	sp.
STROMATEIDAE (butterfishes)	Peprilus	sp.
	Peprilus	alepidotus
	Peprilus	burti
	--	--
SYNODONTIDAE (lizardfishes)	Saurida	sp.
	Saurida	brasiliensis
	Synodus	sp.
	Synodus	foetens
	Synodus	poeyi
	--	--
TETRAODONTIDAE (puffers)	Sphoeroides	sp.
	--	--
TRICHIURIDAE (cutlassfishes)	Diplospinus	multistriatus
	Trichiurus	lepturus
TRIGLIDAE (searobins)	Prionotus	sp.
	Prionotus	stearnsi

Table 17. Fish larvae from Cruise 5 showing family, genera, and species (July 6 and 7, 1977).

Family	Genus	Species
ACANTHURIDAE (surgeonfishes)	--	--
APOGONIDAE (cardinalfishes)	--	--
BOTHIDAE (lefteye flounders)	--	--
	Bothus	sp.
	Bothus	*ocellatus*
	Cyclopsetta	sp.
	Citharichthys	sp.
	Syacium	sp.
	Syacium	*gunteri*
BRANCHIOSTEGIDAE (tilefishes)	*Caulolatilus*	sp.
BREGMACEROTIDAE (codlets)	--	--
	Bregmaceros	*atlanticus*
CARANGIDAE (jacks and pompanos)	--	--
	Caranx	sp.
	Chloroscombus	*chrysurus*
	Decapterus	*punctatus*
	Trachinotus	sp.
CHIASMODONTIDAE	--	--
CLUPEIDAE (herrings)	--	--
	Harengula	*jaguana*
CONGRIDAE (congor eels)	--	--
	Ariosoma	*balearicum*
CYNOGLOSSIDAE (tonguefishes)	*Symphurus*	sp.
ENGRAULIDAE (anchovies)	--	--
	Anchoa	sp.
	Engraulis	*eurystole*
EXOCOETIDAE (flyingfishes and halfbeaks)	--	--

Table 17. (Continued)

Family	Genus	Species
GEMPYLIDAE	--	--
(snake mackerels)		
GERREIDAE	--	--
(mojarras)	Eucinostomus	sp.
GOBIIDAE	--	--
(gobies)	Ioglossus	calliurus
GONOSTOMATIDAE	Cyclothone	sp.
(lightfishes)	Vinciguerria	sp.
GRAMMISTIDAE	Rypticus	sp.
(soapfishes)		
HOLOCENTRIDAE	--	--
(squirrelfishes)		
ISTIOPHORIDAE	--	--
(billfishes)		
LABRIDAE	--	--
(wrasses)		
LUTJANIDAE	--	--
(snappers)	Etelis	oculatus
	Lutjanus	sp.
MELANOSTOMIATIDAE	Eustomias	sp.
(scaleless dragonfishes)		
MICRODESMIDAE	Microdesmus	sp.
(wormfishes)		
MULLIDAE	--	--
(goatfishes)		
MURAENIDAE	--	--
(morays)	Gymnothorax	sp.
MYCTOPHIDAE	--	--
(lanternfishes)	Bolinichthys	sp.
	Ceratoscopelus	sp.
	Ceratoscopelus	maderensis
	Ceratoscopelus	warmingi

Table 17. (Continued)

Family	Genus	Species
MYCTOPHIDAE (Cont'd)	Diaphus	sp.
	Hygophum	sp.
	Lampadena	sp.
	Myctophum	sp.
NETTASTOMIDAE	--	--
OGCOCEPHALIDAE (batfishes)	--	--
OPHICHTHIDAE (snake eels)	--	--
	Myrophis	sp.
OPHIDIIDAE (cusk-eels and brotulas)	--	--
	Lepophidium	sp.
PARALEPIDIDAE	--	--
	Lestrolopis	sp.
POMACENTRIDAE (damselfishes)	Abudefduf	saxatilis
PRIACANTHIDAE (bigeyes)	--	--
RACHYCENTRIDAE (cobias)	Rachycentron	canadum
SCIAENIDAE (drums)	--	--
	Cynoscion	sp.
	Larimus	fasciatus
SCOMBRIDAE (mackerels and tunas)	--	--
	Auxis	sp.
	Euthynnus	alletteratus
	Katsuwonus	pelamis
	Scomberomorus	cavalla
	Scomberomorus	maculatus
	Thunnus	sp.
	Thunnus	albacares
SCORPAENIDAE (scorpionfishes)	--	--
	Scorpaena	sp.

Table 17. (Continued)

Family	Genus	Species
SERRANIDAE (sea basses)	--	--
	Diplectrum	sp.
	Hemanthias	vivanus
	Liopropoma	sp.
	Serraniculus	pumilio
SOLEIDAE (soles)	Gymnachirus	sp.
SPHRAENIDAE (barracudas)	Sphyraena	sp.
SYNODONTIDAE (lizardfishes)	--	--
	Saurida	sp.
	Saurida	brasiliensis
	Synodus	sp.
	Synodus	poeyi
	Trachinocephalus	myops
TETRAODONTIDAE (puffers)	--	--
TRICHIURIDAE (cutlassfishes)	Trichiurus	lepturus

Table 18. Fish larvae from Cruise 6 showing family, genera, and species (August 4 and 5, 1977).

Family	Genus	Species
ALLEPISAURIDAE (lancetfishes)	*Alepisaurus*	sp.
BATHYLAGIDAE (deepsea smelts)	--	--
BOTHIDAE (lefteye flounders)	--	--
	Bothus	sp.
	Bothus	*ocellatus*
	Cyclopsetta	sp.
	Syacium	sp.
BREGMACEROTIDAE (codlets)	*Bregmaceros*	sp.
	Bregmaceros	*atlanticus*
CARANGIDAE (jacks and pompanos)	--	--
	Caranx	sp.
	Chloroscombrus	*chrysurus*
	Decapterus	*punctatus*
CLUPEIDAE (herrings)	--	--
	Harengula	*jaguana*
	Opisthonema	*oglinum*
CYNOGLOSSIDAE (tonguefishes)	*Symphurus*	sp.
ENGRAULIDAE (anchovies)	--	--
EPHIPPIDAE (spadefishes)	--	--
EVERMANNELLIDAE	--	--
GERREIDAE (mojarras)	--	--
GOBIIDAE (gobies)	--	--
GONOSTOMATIDAE (lightfishes)	*Cyclothone*	sp.
	Vinciguerria	*nimbaria*
GRAMMISTIDAE (soapfishes)	*Rypticus*	sp.

Table 18. (Continued)

Family	Genus	Species
ISTIOPHORIDAE (billfishes)	Istiophorus	platypterus
LUTJANIDAE (snappers)	--	--
	Etelis	oculatus
	Lutjanus	sp.
MICRODESMIDAE (wormfishes)	Microdesmus	sp.
MURAENIDAE (morays)	Gymnothorax	sp.
MYCTOPHIDAE (lanternfishes)	--	--
	Benthosema	suborbitale
	Ceratoscopelus	sp.
	Diaphus	sp.
	Hygophum	sp.
	Hygophum	reinhardti
	Lampadena	sp.
	Lampanyctus	sp.
	Myctophum	sp.
	Myctophum	obtusirostre
	Notolychnus	valdiviae
NETTASTOMIDAE	--	--
OPHICHTHIDAE (snake eels)	--	--
OPHIDIIDAE (cusk-eels and brotulas)	--	--
PARALEPIDIDAE	--	--
PRIACANTHIDAE (bigeyes)	--	--
SCOMBRIDAE (mackerels and tunas)	--	--
	Auxis	sp.
	Euthynnus	alletteratus
	Katsuwonus	pelamis
	Scomberomorus	cavalla
	Scomberomorus	maculatus
	Thunnus	atlanticus

Table 18. (Continued)

Family	Genus	Species
SCORPAENIDAE (scorpionfishes)	*Scorpaena*	sp.
SERRANIDAE (sea basses)	--	--
	Diplectrum	sp.
	Serraniculus	*pumilio*
SPHYRAENIDAE (barracudas)	*Sphyraena*	sp.
SYNODONTIDAE (lizardfishes)	--	--
	Saurida	sp.
	Saurida	*brasiliensis*
	Synodus	sp.
TETRAODONTIDAE (puffers)	--	--

Table 19. Fish larvae from Cruise 7 showing family, genera, and species (September 7-11, 1977).

Family	Genus	Species
APOGONIDAE (cardinalfishes)	--	--
BALISTIDAE (triggerfishes and filefishes)	--	--
BATHYLAGIDAE (deepsea smelts)	--	--
BOTHIDAE (lefteye flounders)	--	--
	Bothus	sp.
	Bothus	*ocellatus*
	Cyclopsetta	sp.
	Cyclopsetta	*fimbriata*
	Paralichthys	sp.
	Syacium	sp.
	Syacium	*gunteri*
BREGMACEROTIDAE (codlets)	*Bregmaceros*	sp.
	Bregmaceros	*atlanticus*
CARANGIDAE (jacks and pompanos)	--	--
	Caranx	sp.
	Chloroscombrus	*chrysurus*
	Decapterus	*punctatus*
CLUPEIDAE (herrings)	--	--
	Harengula	*jaguana*
	Ophisthonema	*oglinum*
	Sardinella	sp.
	Sardinella	*anchovia*
CYNOGLOSSIDAE (tonguefishes)	*Symphurus*	sp.
ELOPIDAE (tarpons)	*Elops*	*saurus*
ENGRAULIDAE (anchovies)	--	--
	Anchoa	sp.
	Engraulis	*eurystole*
EPHIPPIDAE (spadefishes)	*Chaetodipterus*	*faber*

Table 19. (Continued)

Family	Genus	
GEMPYLIDAE (snake mackerels)	--	--
GERREIDAE (mojarras)	*Eucinostomus*	sp.
GOBIIDAE (gobies)	--	--
GONOSTOMATIDAE (lightfishes)	--	--
	Cyclothone	sp.
	Gonostomus	*atlanticum*
	Gonostomus	*elongatum*
	Vinciguerria	sp.
GRAMMISTIDAE (soapfishes)	*Rypticus*	sp.
LUTJANIDAE (snappers)	--	--
	Etelis	*oculatus*
	Lutjanus	sp.
MICRODESMIDAE (wormfishes)	*Microdesmus*	sp.
MORINGUIDAE (spaghetti eels)	*Neoconger*	*mucronatus*
MURAENIDAE (morays)	*Gymnothorax*	sp.
MYCTOPHIDAE (lanternfishes)	--	--
	Benthosema	*suborbitale*
	Ceratoscopelus	sp.
	Diaphus	sp.
	Hygophum	sp.
	Lampadena	sp.
	Myctophum	sp.
	Notolychnus	*valdiviae*
NETTASTOMIDAE	--	--
OGCOCEPHALIDAE (batfishes)	--	--

Table 19. (Continued)

Family	Genus	Species
OPHICHTHIDAE	--	--
(snake eels)	Myrophis	sp.
OPHIDIIDAE	--	--
(cusk-eels and brotulas)		
PARALEPIDIDAE	--	--
PRIACANTHIDAE	--	--
(bigeyes)		
RACHYCENTRIDAE	Rachycentron	canadum
(cobias)		
SCIAENIDAE	--	--
(drums)	Cynoscion	sp.
	Cynoscion	nothus
	Larimus	fasciatus
	Menticirrhus	sp.
	Micropogon	sp.
	Sciaenops	ocellata
SCOMBRIDAE	--	--
(mackerels and tunas)	Auxis	sp.
	Euthynnus	alletteratus
	Katsuwonus	pelamis
	Scomberomorus	cavalla
	Scomberomorus	maculatus
SCORPAENIDAE	Scorpaena	sp.
(scorpionfishes)		
SERRANIDAE	--	--
(sea basses)	Diplectrum	sp.
	Serraniculus	pumilio
SPARIDAE	--	--
(porgies)		
SPHYRAENIDAE	Sphyraena	sp.
(barracudas)	Sphyraena	guachancho
STROMATEIDAE	Peprilus	alepidotus
(butterfishes)		

Table 19. (Continued)

Family	Genus	
SYNODONTIDAE	--	--
(lizardfishes)	*Saurida*	sp.
	Saurida	*brasiliensis*
	Synodus	sp.
	Synodus	*foetens*
TETRAODONTIDAE	--	--
(puffers)	*Sphoeroides*	sp.
TRICHIURIDAE	*Diplospinus*	*multistriatus*
(cutlassfishes)	*Trichiurus*	*lepterus*
TRIGLIDAE	*Prionotus*	sp.
(searobins)		

Table 20. Fish larvae from Cruise 8 showing family, genera, and species (November 5 and 6, 1977)

Family	Genus	Species
BOTHIDAE (lefteye flounders)	--	--
	Bothus	sp.
	Bothus	ocellatus
	Citharichthys	sp.
	Cyclopsetta	sp.
	Paralichthys	sp.
	Syacium	sp.
	Syacium	gunteri
BREGMACEROTIDAE (codlets)	Bregmaceros	sp.
	Bregmaceros	atlanticus
CARANGIDAE (jacks and pompanos)	--	--
	Seriola	sp.
	Trachurus	lathami
	Vomer	setapinnis
CHAULIODONTIDAE (viperfishes)	Chauliodus	sp.
CLUPEIDAE (herrings)	Brevoortia	sp.
CONGRIDAE (conger eels)	Ariosoma	balearicum
CYNOGLOSSIDAE (tonguefishes)	Symphurus	sp.
ENGRAULIDAE (anchovies)	--	--
	Engraulis	eurystole
GEMPYLIDAE (snake mackerels)	--	--
GOBIIDAE (gobies)	--	--
GONOSTOMATIDAE (lightfishes)	--	--
	Cyclothone	sp.
	Maurolicus	sp.
	Maurolicus	muelleri
	Polymetme	corytheole
	Vinciguerria	sp.

Table 20. (Continued)

Family	Genus	
LUTJANIDAE (snappers	--	--
	<u>Etelis</u>	<u>oculatus</u>
MICRODESMIDAE (wormfishes)	<u>Microdesmus</u>	sp.
MUGILIDAE (mullets)	<u>Mugil</u>	sp.
MULLIDAE (goatfishes)	--	--
MYCTOPHIDAE (lanternfishes)	--	--
	<u>Benthosema</u>	<u>suborbitale</u>
	<u>Ceratoscopelus</u>	sp.
	<u>Diaphus</u>	sp.
	<u>Hygophum</u>	sp.
	<u>Hygophum</u>	<u>reinhardti</u>
	<u>Lampanyctus</u>	sp.
	<u>Myctophum</u>	sp.
OPHICHTHIDAE (snake eels)	--	--
	<u>Myrophis</u>	sp.
OPHIDIIDAE (cusk-eels and brotulas)	--	--
	<u>Rissola</u>	<u>marginata</u>
OPISTOGNATHIDAE (swordtail jawfishes)	--	--
PARALEPIDIDAE	--	--
POMATOMIDAE (bluefish)	<u>Pomatomus</u>	<u>saltatrix</u>
PRIACANTHIDAE (bigeyes)	--	--
SCARIDAE (parrotfishes)	--	--
SCIAENIDAE (drums)	--	--
	<u>Cynoscion</u>	sp.
	<u>Cynoscion</u>	<u>nothus</u>
	<u>Larimus</u>	<u>fasciatus</u>

Table 20. (Continued)

Family	Genus	Species
	Menticirrhus	sp.
	Menticirrhus	americanus
	Micropogon	undulatus
	Sciaenops	ocellata
SCOMBRIDAE (mackerels and tunas)	--	--
SCORPAENIDAE (scorpionfishes)	--	--
	Scorpaena	sp.
SERRANIDAE (sea basses)	--	--
	Anthias	sp.
	Centropristis	sp.
	Diplectrum	sp.
	Serranus	sp.
SPARIDAE (porgies)	--	--
SPHYRAENIDAE (barracudas)	--	--
	Sphyraena	sp.
STROMATEIDAE (butterfishes)	Peprilus	alepidotus
	Peprilus	burti
SYNODONTIDAE (lizardfishes)	--	---
	Saurida	sp.
TETRAODONTIDAE (puffers)	--	--
TRIGLIDAE (searobins)	Prionotus	sp.

Table 21. Fish larvae from Cruise 9 showing family, genera, and species (December 2 and 3, 1977).

Family	Genus	Species
BATHYLIGIDAE (deepsea smelts)	*Bathylagus*	sp.
BOTHIDAE (lefteye flounders)	--	--
	Bothus	sp.
	Bothus	*ocellatus*
	Paralichthys	sp.
	Syacium	sp.
BRANCHIOSTEGIDAE (tilefishes)	*Caulolatilus*	sp.
BREGMACEROTIDAE (codlets)	--	--
	Bregmaceros	sp.
	Bregmaceros	*atlanticus*
CARANGIDAE (jacks and pompanos)	--	--
	Caranx	sp.
	Chloroscombrus	*chrysurus*
CLUPEIDAE (herrings)	--	--
	Brevoortia	sp.
CYNOGLOSSIDAE (tonguefishes)	*Symphurus*	sp.
ENGRAULIDAE (anchovies)	--	--
	Engraulis	sp.
	Engraulis	*eurystole*
GADIDAE (codfishes)	*Urophycis*	sp.
GEMPYLIDAE (snake mackerels)	--	--
GERREIDAE (mojarras)	--	--
GOBIIDAE (gobies)	--	--
GONOSTOMATIDAE (lightfishes)	--	--
	Cyclothone	sp.
	Maurolicus	sp.

Table 21. (Continued)

Family	Genus	Species
LABRIDAE	--	--
(wrasses)	Halichoeres	sp.
LUTJANIDAE	--	--
(snappers)		
MICRODESMIDAE	Microdesmus	sp.
(wormfishes)		
MORINGUIDAE	Neoconger	mucronatus
(spaghetti eels)		
MUGILIDAE	Mugil	sp.
(mullets)		
MULLIDAE	--	--
(goatfishes)		
MYCTOPHIDAE	--	--
(lanternfishes)	Benthosema	suborbitale
	Ceratoscopelus	sp.
	Diaphus	sp.
	Hygophum	sp.
	Lampanyctus	sp.
OGCOCEPHALIDAE	--	--
(batfishes)		
OPHICHTHIDAE	--	--
(snake eels)	Myrophis	sp.
OPHIDIIDAE	--	--
(cusk-eels and brotulas)	Rissola	marginata
PARALEPIDIDAE	--	--
PRIACANTHIDAE	--	--
(bigeyes)		
SCARIDAE	--	--
(parrotfishes)		
SCIAENIDAE	--	--
(drums)	Cynoscion	sp.
	Cynoscion	arenarius
	Leiostomus	xanthurus
	Micropogon	undulatus

Table 21. (Continued)

Family	Genus	Species
SCOPELARCHIDAE	--	--
SCOPELOSAURIDAE	Scopelosarus	sp.
SCORPAENIDAE	--	--
(scorpionfishes)	Scorpaena	sp.
SERRANIDAE	--	--
(sea basses)	Anthias	sp.
	Centropristis	sp.
	Diplectrum	sp.
	Hemanthias	vivanus
	Serranus	sp.
SPARIDAE (porgies)	--	--
STROMATEIDAE	Peprilus	sp.
(butterfishes)	Peprilus	alepidotus
	Peprilus	burti
SYNODONTIDAE	--	--
(lizardfishes)	Saurida	sp.
TRICHIURIDAE (cutlassfishes)	Trichiurus	lepturus
TRIGLIDAE	--	--
(searobins)	Prionotus	sp.
URANOSCOPIDAE (stargazers)	--	--

Table 22. Occurence of larvae by family, genera, and species by transect and station for all cruises in 1977.

			Transect I			Transect II							Transect III			Transect IV		
			Station			Station							Station			Station		
Family	Genus	Species	1	2	3	1	2	3	4	5	6	7	1	2	3	1	2	3
Aoanthuridae	--	--						X										
Alepisauridae	Alepisaurus	sp.						X										
Apogonidae	--	--			X					X	X							
Balistidae	Monacanthus	sp.									X							
	--	--													X			
Bathylagidae	Bathylagus	sp.			X			X				X						
	--	--			X							X						
Blenniidae	Hypleurochilus	geminatus									X			X		X		
	--	--		X		X	X			X				X				
Bothidae	Bothus	ocellatus		X	X		X	X	X	X	X	X		X	X		X	X
	Bothus	sp.			X		X	X	X	X	X	X		X	X		X	X
	Citharichthys	sp.			X				X	X	X						X	
	Cyclopsetta	fimbriata								X								
	Cyclopsetta	sp.		X	X		X	X	X	X	X	X		X			X	X
	Paralichthys	sp.		X			X	X	X	X	X	X	X	X			X	
	Syacium	gunteri			X		X			X	X							
	Syacium	sp.		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
	--	--	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Branchiostegidae	Caulolatilus	sp.		X	X		X	X		X	X	X		X			X	X
Bregmacerotidae	Bregmaceros	atlanticus	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
	Bregmaceros	sp.		X	X		X	X		X	X	X		X	X		X	X
	--	--								X	X							
Carangidae	Caranx	sp					X				X	X		X				
	Chloroscombrus	chrysurus				X	X			X	X	X	X	X	X	X		

Table 22. (Continued)

Family	Genus	Species	Transect I Station 1	2	3	Transect II Station 1	2	3	4	5	6	7	Transect III Station 1	2	3	Transect IV Station 1	2	3
Carangidae (Continued)	Chloroscombrus	sp.									X							
	Decapterus	punctatus		X		X	X	X	X	X	X	X		X	X			X
	Seriola	sp.								X	X							
	Trachinotus	sp.										X						
	Trachurus	lathami		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
	Vomer	setapinnis								X			X					
	--	--	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Carapidae	Carapus	bermudensis			X													X
Centriscidae	Macrorhamphosus	sp.													X			
Chauliodontidae	Chauliodus	sp.			X			X		X	X	X						X
Chiasmodontidae	--	--										X						
Clupeidae	Brevoortia	sp.	X	X		X	X	X	X	X	X		X	X		X	X	
	Etrumeus	teres		X	X	X	X	X	X	X	X	X		X	X	X	X	X
	Harengula	jaguana	X			X	X	X	X		X	X	X	X		X	X	X
	Opisthonema	oglinum	X			X	X		X					X		X		
	Sardinella	anchovia	X					X	X	X								
	Sardinella	sp.	X															
	--	--	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Congridae	Ariosoma	balearicum										X						X
	Hildebrandia	sp.		X				X			X	X						X
	--	--						X				X						
Cynoglossidae	Symphurus	sp.	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Elopidae	Elops	Saurus									X							
Engraulidae	Anchoa	sp.	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	

Table 22. (Continued)

Family	Genus	Species	Transect I Station 1	2	3	Transect II Station 1	2	3	4	5	6	7	Transect III Station 1	2	3	Transect IV Station 1	2	3
Engraulidae (Continued)	*Engraulis*	*eurystole*		X	X	X		X	X	X	X	X		X	X	X	X	
	Engraulis	sp.							X									
	--	--	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Ephippidae	*Chaetodipterus*	*faber*	X							X	X							
	--	--		X							X							
Evermannellidae	--	--								X								
Exocoetidae	*Hirundichthys*	*affinis*										X						
	--	--						X		X								
Gadidae	*Urophycis*	*floridanus*						X										
	Urophycis	sp.			X	X	X	X		X	X	X		X	X		X	X
Gempylidae	--	--						X				X						
Gerreidae	*Eucinostomus*	sp.						X			X	X						X
	--	--				X	X		X	X		X					X	
Gobiidae	*Ioglossus*	*calliurus*								X		X						
	--	--	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Gonostomatidae	*Cyclothone*	sp.			X		X	X		X	X	X		X	X		X	X
	Gonostomus	*atlanticum*			X			X				X			X			X
	Gonostomus	*elongatum*			X			X			X							X
	Ichthyococcus	sp.						X										
	Maurolicus	*muelleri*			X			X		X	X	X			X			X
	Maurolicus	sp.			X		X	X	X		X	X		X	X		X	X
	Polymetme	*corythaeola*										X						
	Sternoptyx	sp.										X						
	Vinciguerria	*nimbaria*										X						
	Vinciguerria	sp.		X	X		X	X		X	X	X			X		X	X
	--	--			X			X		X	X	X			X			

Table 22. (Continued)

Family	Genus	Species	Transect I Station 1	2	3	Transect II Station 1	2	3	4	5	6	7	Transect III Station 1	2	3	Transect IV Station 1	2	3
Grammistidae	*Rypticus*	sp.				X	X					X						
Holocentridae	*Holocentrus*	sp.										X						
	--	--						X		X		X						
Istiophoridae	*Istiophorus*	*platypterus*								X								
	--	--						X										
Kyphosidae	*Kyphosus*	sp.										X						
Labridae	Halichoeres	sp.						X		X								X
	--	--					X	X	X	X	X	X			X			
Lutjanidae	*Etelis*	*oculatus*					X	X		X	X	X						X
	Lutjanus	sp.				X	X	X		X	X							X
	--	--		X	X	X	X	X	X	X	X	X		X	X			X
Melamphaidae	*Melamphais*	sp.			X			X				X						
	--	--						X										
Melanostomiatidae	*Bathophilus*	sp.													X			
	Eustomias	sp.										X						
Microdesmidae	*Microdesmus*	sp.		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
	--	--		X											X		X	
Moringuidae	*Neoconger*	*mucronatus*		X	X	X	X	X	X	X	X	X		X	X	X		
Mugilidae	*Mugil*	*cephalus*								X		X			X			X
	Mugil	*curema*							X									
	Mugil	sp.			X	X		X		X	X	X		X	X			X
	--	--							X						X			

Table 22. (Continued)

Family	Genus	Species	Transect I Station 1	2	3	Transect II Station 1	2	3	4	5	6	7	Transect III Station 1	2	3	Transect IV Station 1	2	3
Mullidae	--	--		X		X	X	X		X	X	X					X	X
Muraenidae	*Gymnothorax*	sp.		X			X			X		X						
	--	--						X			X	X						
Myctophidae	*Benthosema*	*suborbitale*			X		X	X		X	X	X			X		X	X
	Bolinichthys	sp.										X						
	Ceratoscopelus	*maderensis*			X			X				X						
	Ceratoscopelus	*warmingi*			X		X	X		X	X	X						
	Ceratoscopelus	sp.			X			X	X	X	X	X	X					X
	Diaphus	sp.		X	X		X	X	X	X	X	X	X	X			X	X
	Diogenichthys	*atlanticus*			X			X		X	X	X		X				X
	Gonichthys	*coccoi*										X						
	Hygophum	*reinhardti*			X			X		X	X	X						
	Hygophum	sp.		X	X		X	X	X	X	X	X	X	X			X	X
	Lampadena	sp.					X				X	X						
	Lampanyctus	*cuprarius*										X						
	Lampanyctus	sp.		X	X			X		X	X	X	X	X				X
	Myctophum	*asperum*						X										
	Myctophum	*nitidulum*			X													
	Myctophum	*obtusirostre*			X			X		X	X							
	Myctophum	*selenops*			X							X					X	
	Myctophum	sp.		X	X		X	X		X	X	X	X	X				X
	Notolychnus	*valdiviae*			X			X			X	X						X
	Notoscopelus	*resplendens*						X			X	X		X				
	Notoscopelus	sp.			X													X
	Symbolophorus	sp.			X			X										X
	--	--			X		X	X		X	X	X	X	X			X	X
Nettastomidae	--	--			X			X		X	X	X						X
Ogcocephalidae	--	--			X		X	X		X	X	X	X	X				X

Table 22. (Continued)

Family	Genus	Species	Transect I Station 1	2	3	Transect II Station 1	2	3	4	5	6	7	Transect III Station 1	2	3	Transect IV Station 1	2	3
Ophichthidae	Myrophis	sp.					X	X		X	X	X						
	--	--		X	X	X	X	X	X	X	X	X		X	X	X	X	X
Ophidiidae	Lepophidium	sp.						X		X	X						X	
	Rissola	marginata							X									
	--	--		X	X	X	X	X	X	X	X	X		X	X	X	X	X
Opistognathidae	--	--					X											
Paralepididae	Lestidiops	sp.						X			X	X			X			X
	Lestrolopis	sp.										X						
	Sudis	hyalina										X						
	--	--			X			X		X	X	X						X
Pomacentridae	Abudefduf	saxatilis										X						
Pomadasyidae	Haemulon	sp.																X
Pomatomidae	Pomatomus	saltatrix					X			X								
Priacanthidae	--	--			X		X	X		X	X	X		X	X			
Rachycentridae	Rachycentron	canadum			X			X						X				X
Scaridae	--	--								X		X						
Sciaenidae	Bairdiella	chrysura								X								
	Cynoscion	arenarius						X			X	X						
	Cynoscion	nothus	X			X			X					X		X		
	Cynoscion	sp.				X	X		X		X		X	X		X		
	Larimus	fasciatus		X		X			X			X			X			
	[illegible]	xanthurus	X	X		X	X	X	X	X	X	X		X			X	

Table 22. (Continued)

			Transect I			Transect II							Transect III			Transect IV		
			Station			Station							Station			Station		
Family	Genus	Species	1	2	3	1	2	3	4	5	6	7	1	2	3	1	2	3
Sciaenidae (Continued)	*Menticirrhus*	*americanus*							X									
	Menticirrhus	sp.	X	X		X	X	X	X	X	X	X	X	X	X	X		
	Micropogon	*undulatus*	X			X	X	X	X	X	X	X	X	X		X	X	
	Micropogon	sp.										X						
	Pogonias	*cromis*								X								
	Sciaenops	*ocellata*		X			X		X	X								
	--	--	X	X		X	X	X	X	X	X	X	X	X	X	X	X	
Scombridae	*Auxis*	sp.					X			X	X	X			X			X
	Euthynnus	*alletteratus*		X	X	X	X	X	X	X	X	X			X			X
	Katsuwonus	*pelamis*					X	X	X	X	X	X						X
	Scomber	*japonicus*			X		X	X		X	X	X						X
	Scomberomorus	*cavalla*		X	X	X	X	X	X	X	X	X		X	X			X
	Scomberomorus	*maculatus*	X	X		X	X	X	X	X			X	X	X		X	
	Thunnus	*albacares*						X			X							
	Thunnus	*atlanticus*						X										
	Thunnus	sp.					X											
	--	--	X	X	X	X	X	X	X	X	X	X		X	X		X	X
Scopelarchidae	--	--			X			X			X	X						
Scopelosauridae	*Scopelosaurus*	sp.										X						
Scorpaenidae	*Scorpaena*	sp.		X			X	X		X	X	X		X	X			
	--	--						X		X	X							
Serranidae	*Anthias*	sp.						X										
	Centropristis	sp.		X	X	X	X	X	X	X	X	X	X	X				
	Diplectrum	sp.		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
	Hemanthias	*vivanus*						X		X		X						
	Liopropoma	sp.										X						
	Serraniculus	*pumilio*				X	X		X		X			X	X			X

Table 22. (Continued)

Family	Genus	Species	Transect I Station 1	2	3	Transect II Station 1	2	3	4	5	6	7	Transect III Station 1	2	3	Transect IV Station 1	2	3
Serranidae (Continued)	Serranus	sp.						X			X	X						
	--	--		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Soleidae	Gymnachirus	sp.		X			X			X	X	X		X			X	X
Sparidae	Lagodon	rhomboides		X		X			X									
	--	--		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Sphyraenidae	Sphyraena	guachancho								X								
	Sphyraena	sp.		X		X	X	X	X	X	X	X		X	X		X	X
	--	--								X								
Sphyrnidae	--	--										X						
Stromateidae	Cubiceps	pauciradiatus										X						
	Peprilus	alepidotus					X	X	X				X		X	X		
	Peprilus	burti		X	X	X	X	X	X	X	X	X	X	X		X	X	
	Peprilus	sp.								X		X		X				
	--	--			X			X			X	X		X	X		X	X
Synodontidae	Saurida	brasiliensis			X		X	X	X	X	X	X		X	X	X		
	Saurida	sp.		X	X	X	X	X	X	X	X	X		X	X	X	X	X
	Synodus	foetens		X		X	X	X	X	X	X	X		X	X	X		
	Synodus	poeyi						X	X	X	X				X	X		
	Synodus	sp.		X	X	X	X	X	X	X	X	X		X	X	X	X	X
	Trachinocephalus	myops						X										
	--	--		X	X	X	X	X	X	X	X	X		X	X	X	X	X
Tetraodontidae	Sphoeroides	sp.		X													X	
	--	--		X	X	X	X	X	X	X	X	X		X	X		X	
Trichiuridae	Diplospinus	multistriatus		X	X			X				X		X				
	Trichiurus	lepturus					X	X	X	X	X	X		X	X			

Table 22. (Continued)

Family	Genus	Species	Transect I Station 1	2	3	Transect II Station 1	2	3	4	5	6	7	Transect III Station 1	2	3	Transect IV Station 1	2	3
Triglidae	Prionotus	stearnsi					X			X								
	Prionotus	sp.		X	X	X	X	X	X	X	X	X		X	X	X	X	X
	--	--					X											
Uranoscopidae	Gnathagnus	egregius												X				
	--	--								X	X							

Table 23. Abundance and occurrence of fish eggs from bongo samples collected by cruise at Transect II for all stations during 1977.

Transect and station	Cruise 1 (Jan./Feb.) No.	Cruise 1 Percent of total catch	Cruise 1 No. per 1,000 m^3	Cruise 2 (March) No.	Cruise 2 Percent of total catch	Cruise 2 No. per 1,000 m^3	Cruise 3 (April) No.	Cruise 3 Percent of total catch	Cruise 3 No. per 1,000 m^3
II-1	4	0.2	36	101	1.4	391	167	2.7	1,056
II-4	158	6.7	823	1,440	19.5	7,767	723	11.8	3,572
II-2	304	12.9	1,358	1,497	20.2	4,649	2,360	38.6	8,292
II-5	487	20.7	1,442	2,914	39.4	8,190	2,301	37.6	5,076
II-6	108	4.6	187	606	8.2	1,002	369	6.0	639
II-3	708	30.2	1,050	117	1.6	182	81	1.3	147
II-7	579	24.7	773	721	9.7	665	119	1.9	180
Totals	2,348	100.0	5,669	7,396	100.0	22,846	6,120	99.9	18,962
	Cruise 4 (May/June)			Cruise 5 (July)			Cruise 6 (August)		
II-1	307	7.4	1,808	1,763	39.1	7,675	356	22.0	1,724
II-4	794	19.2	3,340	1,489	33.0	4,218	276	17.1	1,332
II-2	1,236	29.9	3,432	153	3.4	432	487	30.2	1,820
II-5	1,389	33.6	2,603	432	9.6	905	228	14.1	412
II-6	242	5.8	355	447	9.9	608	79	4.9	157
II-3	55	1.3	75	182	4.0	161	22	1.4	35
II-7	116	2.8	88	45	1.0	31	167	10.3	174
Totals	4,139	100.0	11,701	4,511	100.0	14,030	1,615	100.0	5,654
	Cruise 7 (Sept.)			Cruise 8 (Nov.)			Cruise 9 (Dec.)		
II-1	183	12.0	931	6	0.3	46	24	0.2	122
II-4	343	22.5	1,322	1,670	78.7	6,292	48	0.4	190
II-2	333	21.9	1,068	134	6.3	327	635	5.3	1,869
II-5	388	25.5	858	61	2.9	99	104	0.9	250
II-6	105	6.9	225	13	0.5	20	225	1.9	409
II-3	90	5.9	141	31	1.5	32	2,419	20.3	3,148
II-7	81	5.3	72	208	9.8	198	8,447	71.0	7,149
Totals	1,523	100.0	4,617	2,123	100.0	7,014	11,902	100.0	12,137

Table 24. Egg abundance and distribution by selected families, cruise and station for 1977 in numbers per 1,000 m^3.

Transect-station	Cruise 1												Cruise 2			Cruise 3		
	I			II			III			IV			II			II		
	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3
(Family)																		
Callionymidae	0	0	0	*	*	3	0	0	0	0	0	0	0	331	59	0	846	7
Clupeidae	0	814	77	*	*	0	362	2001	7	29	386	0	195	110	0	0	0	0
Engraulidae	22	10	0	*	*	0	0	0	0	0	0	0	171	37	0	179	5741	11
Gonostomatidae	0	0	23	*	*	725	0	28	2232	0	0	5	0	0	0	0	0	0
Mugilidae	0	0	0	*	*	0	0	0	7	0	0	140	0	3387	0	15	318	7
Scombridae	0	0	4	*	*	0	0	0	10	0	0	0	0	0	0	0	58	4
Soleidae	0	0	0	*	*	19	0	0	0	0	0	0	0	442	7	952	0	26

Transect-station	Cruise 4												Cruise 5			Cruise 6		
	I			II			III			IV			II			II		
	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3
(Family)																		
Callionymidae	0	161	46	0	338	59	9	77	60	193	407	214	0	141	0	0	*	3
Clupeidae	0	0	0	0	0	0	0	0	0	0	60	0	967	0	0	0	*	0
Engraulidae	0	0	0	675	225	0	1104	17	0	0	107	48	1442	0	0	216	*	0
Gonostomatidae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	*	0
Mugilidae	14	19348	0	0	1047	0	0	0	0	0	0	10	389	0	0	113	*	0
Scombridae	28	601	0	0	0	0	0	0	0	0	67	0	1416	0	0	0	*	37
Soleidae	0	154	0	0	777	0	0	55	0	0	0	14	5294	0	19	0	*	0

Transect-station	Cruise 7												Cruise 8			Cruise 9		
	I			II			III			IV			II			II		
	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3
(Family)																		
Callionymidae	0	0	3	0	0	10	0	12	3	0	0	8	0	0	0	0	0	0
Clupeidae	0	0	15	0	19	51	0	20	6	43	0	0	0	0	6	10	0	0
Engraulidae	0	0	0	0	0	0	0	0	0	0	36	0	0	0	0	0	0	0
Gonostomatidae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Mugilidae	0	0	0	0	0	54	0	61	0	0	0	0	0	0	6	0	0	261
Scombridae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Soleidae	0	0	0	0	0	0	0	0	0	26	0	0	0	35	0	0	36	0

* Data missing

Table 25. Egg stages of selected fish families by cruise, transect and station during 1977.

	CRUISE 1												CRUISE 2			CRUISE 3		
TRANSECTS	I			II			III			IV			II			II		
STATIONS	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3
CALLIONYMIDAE						EE								EC EE	EC EE		EC,EE LE	BG LE
CLUPEIDAE		LE	BG LE				EC EE	BG,EE LE	LE	LE	LE		BG EE	EC BG				
ENGRAULIDAE	LE	LE											EC EE	EE		EC LE	EC,BG LE	LE
GONOSTOMATIDAE			EE			BG		EC	EC			EC						
MUGILIDAE									EE			EC		EC BG		LE	EE LE	LE
SCOMBRIDAE			LE						LE								LE	LE
SOLEIDAE						EE LE								EC,BG EE	EE		EC BG,LE	EC,BG LE

	CRUISE 4												CRUISE 5			CRUISE 6		
TRANSECTS	I			II			III			IV			II			II		
STATIONS	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3
CALLIONYMIDAE		EC,BG EE,LE	BG EE		EC	EC EE	EE	EC BG	BG	EE	EC EE	EE		BG LE				EC
CLUPEIDAE				BG							EE		EC					
ENGRAULIDAE				EC	EC EE		BG	BG			BG	EC	EC			EC		
GONOSTOMATIDAE																		
MUGILIDAE	EC	EC EE			EC							EE	BG		EE	EE		
SCOMBRIDAE	EE	EE									LE		EE					EC EE
SOLEIDAE	EC,BG EE				BG,EE LE			BG				EE	BG	LE	LE			

	CRUISE 7												CRUISE 8			CRUISE 9		
TRANSECTS	I			II			III			IV			II			II		
STATIONS	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3
CALLIONYMIDAE			BG			EE		EC BG	BG			EE						
CLUPEIDAE			BG		BG LE	BG		EE	BG	EE					LE	LE		
ENGRAULIDAE											EC							
GONOSTOMATIDAE																		
MUGILIDAE						LE		LE							EE			LE
SCOMBRIDAE																		
SOLEIDAE										EE				BG			EE	

EC=EARLY CLEAVAGE BG=BLASTULA-GASTRULA EE=EARLY EMBRYO LE=LATE EMBRYO

Table 26 Comparison of 1974-77 BLM fish egg data by time, transect, and stations for all seasonal bongo samples.

Transect Sta.	(Dec./Jan. 1974-75) No. per 1,000 m3 1/	No. under 10 m2	(Jan./Feb. 1976) No. per 1,000 m3	No. under 10 m2 2/	(Jan./Feb. 1977) No. per 1,000 m3	No. under 10 m2 2/
I-1	1,814	115.3	158	20.6	11	1.9
I-2	712	140.1	1,406	520.2	1,370	123.5
I-3	456	418.1	591	762.9	514	688.6
II-1	4,566	1,035.1	754	128.1	36	7.9
II-2	1,992	729.7	1,666	733.2	1,358	665.6
II-3	508	1,155.4	1,680	2,117.0	1,050	1,375.5
III-1	428	85.1	331	66.1	417	104.3
III-2	1,054	830.6	1,464	878.1	2,004	1,259.1
III-3	112	93.5	926	934.8	3,253	3,448.6
IV-1	242	43.7	574	126.3	89	24.0
IV-2	5,342	1,110.2	1,107	464.9	1,905	895.4
IV-3	1,334	598.5	956	822.3	261	237.7
	(April/May 1975)		(May/June 1976)		(May 1977)	
I-1	270	34.1	2,251	292.7	761	136.9
I-2	432	121.2	2,499	924.6	26,672	11,202.0
I-3	348	264.2	216	279.1	97	129.6
II-1	3,488	854.5	2,037	346.2	1,808	397.8
II-2	7,070	2,199.7	3,063	1,347.6	3,432	1,681.9
II-3	390	243.6	730	920.1	75	98.7
III-1	70	19.8	2,452	490.5	2,256	564.0
III-2	1,246	475.5	1,693	1,015.7	2,563	1,665.7
III-3	960	553.4	320	323.1	457	484.6
IV-1	424	133.9	4,635	1,024.0	5,945	1,605.3
IV-2	1,050	337.5	676	283.7	2,392	1,124.4
IV-3	282	202.7	308	265.1	771	701.3
	(Aug./Sept. 1975)		(Sept. 1976)		(Sept. 1977)	
I-1	4,018	589.4	2,947	383.1	229	41.3
I-2	2,472	1,079.2	95	35.1	1,302	546.9
I-3	334	279.6	318	410.4	101	135.8
II-1	2,388	1,272.2	854	145.2	931	204.8
II-2	364	121.5	217	95.7	1,068	523.3
II-3	328	414.4	260	327.6	141	184.3
III-1	2,866	799.3	709	141.8	104	26.0
III-2	290	143.9	1,430	858.1	192	125.1
III-3	380	405.1	358	361.7	354	374.8
IV-1	6,894	1,408.3	3,792	834.1	1,209	326.4
IV-2	2,286	1,157.8	98	41.0	1,154	378.7
IV-3	506	395.7	413	355.0	757	689.2

1/ Day and night samples combined.

2/ 333μ and 505μ samples combined.

Table 27. Comparison of 1974-77 BLM fish larvae data by time, transect, and stations for all seasonal bongo samples.

Transect Sta.	(Dec./Jan. 1974-75) No. per 1,000 m^3 1/	No. under 10 m^2	(Jan./Feb. 1976) No. per 1,000 m^3	No. under 10 m^2 2/	(Jan./Feb. 1977) No. per 1,000 m^3	No. under 10 m^2 2/
I-1	824	52.4	133	17.3	75	13.5
I-2	2,434	478.8	1,045	387.0	5,038	2,116.0
I-3	3,560	3,264.2	186	240.1	1,404	1,881.7
II-1	470	106.6	31	9.3	117	25.7
II-2	2,334	855.0	2,158	949.5	1,948	96.1
II-3	608	1,382.8	289	364.1	681	891.7
III-1	158	31.4	84	16.8	423	105.6
III-2	842	663.5	300	180.0	1,290	838.6
III-3	1,232	1,028.1	306	308.8	583	618.3
IV-1	74	13.4	159	35.0	243	65.7
IV-2	3,734	776.0	1,361	571.5	2,693	1,265.6
IV-3	4,664	2,092.5	326	280.6	1,040	945.6
	(April/May 1975)		(May/June 1976)		(May 1977)	
I-1	4,098	51.7	2,083	270.7	788	141.9
I-2	754	211.5	5,235	197.0	1,269	533.1
I-3	3,758	2,853.5	1,452	1,872.7	2,628	3,487.6
II-1	2,218	543.4	744	126.5	5,972	1,313.8
II-2	1,648	512.7	5,680	2,499.1	2,668	1,317.2
II-3	638	398.4	1,492	1,880.1	2,578	3,376.7
III-1	316	89.5	1,094	1,095.1	685	171.4
III-2	2,116	807.4	1,853	1,111.9	2,021	1,313.9
III-3	2,594	1,495.4	820	827.9	5,332	5,651.9
IV-1	2,046	646.1	403	88.6	2,228	601.7
IV-2	1,924	618.4	1,992	836.6	4,834	2,271.9
IV-3	936	672.7	1,071	921.3	1,639	1,491.9
	(Aug./Sept. 1975)		(Sept. 1976)		(Sept. 1977)	
I-1	6,264	918.8	4,350	565.5	4,098	737.6
I-2	3,102	1,354.3	4,420	1,635.4	2,520	1,058.5
I-3	2,326	151.0	365	470.8	1,608	2,154.9
II-1	1,404	748.0	2,453	417.0	2,075	456.6
II-2	4,520	1,508.1	1,213	533.5	3,833	1,678.0
II-3	1,286	1,624.6	2,976	3,749.8	2,395	3,313.7
III-1	2,587	720.1	8,903	1,780.6	1,151	287.8
III-2	2,384	1,183.2	3,389	2,033.3	1,736	1,128.1
III-3	1,370	1,460.5	2,093	2,114.0	2,155	2,284.5
IV-1	1,750	357.5	362	79.7	2,987	806.5
IV-2	4,136	2,094.7	1,098	461.3	1,696	797.0
IV-3	3,374	2,638.6	2,154	1,852.5	736	669.3

1/ Day and night samples combined.

2/ 333μ and 505μ samples combined.

Table 28 Comparison of fish egg and larval abundance for the period from 1974-1977 by transect and station.

Transect and station	FISH EGGS No.	FISH EGGS % of total catch	FISH EGGS No./1,000 m^3	FISH EGGS No. under 10 m^2	FISH LARVAE No.	FISH LARVAE % of total catch	FISH LARVAE No./1,000 m^3	FISH LARVAE No. under 10 m^2
			(Dec./Feb.)				(Dec./Feb.)	
I-1	850	2.66	369.9	48.1	852	2.98	371	48.2
I-2	3,032	9.51	1,370.5	507.1	3,671	12.84	1,659	614.0
I-3	4,249	13.33	1,602.1	2,066.8	4,536	15.86	1,710	2,206.4
II-1	519	1.62	492.5	83.7	389	1.36	369	62.8
II-2	3,292	10.33	1,812.3	797.5	3,617	12.65	1,887	876.2
II-3	2,915	9.14	1,337.1	1,243.6	1,442	5.04	661	615.2
III-1	309	0.96	204.3	40.9	257	0.89	170	34.0
III-2	2,335	7.32	1,448.6	389.2	1,616	5.65	1,003	601.5
III-3	4,097	12.85	1,516.4	1,531.6	1,865	6.52	690	697.2
IV-1	176	0.55	111.5	24.6	149	0.52	94	20.8
IV-2	4,631	14.53	1,832.7	1,102.6	4,818	16.85	1,907	800.8
IV-3	5,455	17.12	1,772.1	1,524.0	5,371	18.79	1,745	1,500.6
	31,860	99.92	1,263.1	527.5	28,583	99.95	1,133	6,844.7
			(Apr./June)				(Apr./June)	
I-1	4,569	10.96	3,421.9	444.9	4,545	10.19	3,404	442.5
I-2	8,702	20.88	4,759.8	1,761.2	2,337	5.24	1,278	473.0
I-3	3,930	9.43	13,626.9	1,755.2	6,306	14.14	21,865	2,816.4
II-1	2,879	6.91	2,801.4	476.2	3,354	7.52	3,263	554.9
II-2	3,846	9.23	1,841.6	810.3	4,401	9.86	2,107	927.2
II-3	1,131	2.71	337.9	314.3	3,414	7.65	1,020	948.6
III-1	1,277	3.06	1,145.8	229.2	674	1.51	605	121.0
III-2	3,658	8.77	1,596.9	958.2	3,510	7.87	1,532	919.4
III-3	3,096	7.43	1,018.9	1,029.2	6,672	14.96	2,196	2,217.9
IV-1	4,060	9.74	3,796.5	835.2	2,591	5.81	2,423	533.0
IV-2	2,904	6.97	1,462.8	614.4	4,139	9.28	2,085	875.7
IV-3	1,611	3.86	652.3	430.5	2,649	5.94	1,073	707.9
	41,663	99.95	1,701.7	10,278.5	44,592	99.97	1,821	11,001.1
			(Aug./Sept)				(Aug./Sept.)	
I-1	6,799	16.82	5,736.6	745.8	7,516	13.43	6,360	826.8
I-2	3,537	8.77	2,351.1	689.9	5,419	9.68	36	1,332.8
I-3	2,694	6.68	852.1	1,099.2	3,764	6.72	1,191	1,535.8
II-1	1,851	4.59	2,615.5	444.6	2,283	4.08	3,226	548.4
II-2	4,925	12.22	2,680.7	1,179.5	5,966	10.66	3,247	1,428.8
II-3	1,540	3.82	679.1	631.6	4,695	8.39	2,070	1,925.5
III-1	2,769	6.93	2,328.6	465.7	5,236	9.36	4,403	880.7
III-2	2,969	7.36	1,526.2	915.8	4,402	7.87	2,263	1,357.7
III-3	1,786	4.43	843.2	851.7	3,862	6.90	1,823	1,841.7
IV-1	2,792	6.92	1,850.8	407.2	2,510	4.48	1,664	366.1
IV-2	4,430	10.99	3,312.1	1,391.1	5,002	8.94	3,740	1,570.7
IV-3	4,190	10.39	1,699.9	1,122.0	5,275	9.43	2,140	1,412.5
	40,289	99.92	1,888.4	11,412.1	55,930	99.94	2,623	15,842.6

Table 29. Comparison of the ten most abundant larval families by similar cruises for 1975, 1976, and 1977, expressed in percentage of total number.

Seasonal Cruises					
1974-75 1/ (Dec. 4-Jan.25)		1976 2/ (Jan. 14-Feb.2)		1977 2/ (Jan. 11-Feb. 21)	
Family	%	Family	%	Family	%
Bregmacerotidae	33.7	Bregmacerotidae	17.2	Clupeidae	28.1
Gobiidae	11.0	Myctophidae	16.5	Myctophidae	9.8
Clupeidae	7.7	Clupeidae	13.4	Gobiidae	9.4
Sciaenidae	4.3	Gobiidae	10.0	Carangidae	8.2
Mugilidae	3.4	Carangidae	7.7	Sparidae	8.0
Carangidae	3.4	Gonostomatidae	5.1	Stromateidae	5.7
Bothidae	2.7	Serranidae	2.9	Serranidae	4.8
Myctophidae	1.9	Stromateidae	2.7	Gonostomatidae	4.5
Stromateidae	1.9	Synodontidae	2.6	Bregmacerotidae	3.1
Synodontidae	1.8	Bothidae	1.9	Bothidae	2.3
Total	71.8	Total	80.0	Total	83.9
(20,834 larvae)		(3,471 larvae)		(6,766 larvae)	
1974-75 (Apr. 16-May 15)		1976 (May 30-June 7)		1977 (May 16-20)	
Engraulidae	26.4	Engraulidae	19.5	Synodontidae	27.8
Clupeidae	20.6	Bregmacerotidae	16.0	Gobiidae	18.4
Bregmacerotidae	13.9	Gobiidae	10.6	Engraulidae	10.2
Synodontidae	8.9	Bothidae	8.3	Myctophidae	6.1
Myctophidae	6.3	Microdesmidae	7.7	Bregmacerotidae	5.8
Sciaenidae	4.5	Myctophidae	6.9	Bothidae	4.6
Gobiidae	3.2	Carangidae	5.1	Cynoglossidae	4.4
Bothidae	2.0	Scombridae	4.1	Serranidae	4.3
Serranidae	1.3	Serranidae	4.0	Gonostomatidae	2.6
Nettastomidae	1.0	Synodontidae	2.5	Microdesmidae	1.9
Total	94.0	Total	84.7	Total	86.1
(23,046 larvae)		(10,852 larvae)		(23,607 larvae)	
1974-75 (Aug. 26-Sept. 30)		1976 (Sept. 10-12)		1977 (Sept. 6-12)	
Gobiidae	28.5	Gobiidae	19.8	Bothidae	12.8
Engraulidae	21.0	Engraulidae	16.7	Engraulidae	12.4
Carangidae	8.4	Bregmacerotidae	14.5	Gobiidae	7.4
Bothidae	7.4	Bothidae	12.7	Carangidae	7.1
Sciaenidae	6.4	Cynoglossidae	4.7	Moringuidae	7.1
Bregmacerotidae	4.3	Myctophidae	3.7	Cynoglossidae	7.0
Synodontidae	3.0	Synodontidae	2.8	Scombridae	6.0
Cynoglossidae	2.8	Scombridae	2.8	Ophichthidae	3.1
Scombridae	2.8	Carangidae	2.5	Bregmacerotidae	3.1
Serranidae	2.7	Sciaenidae	2.0	Clupeidae	2.5
Total	87.3	Total	82.2	Total	68.5
(34,498 larvae)		(17,201 larvae)		(15,104 larvae)	

1/ day and night samples combined.
2/ 333μ and 505μ samples combined.

Table 30 . Comparison of fish egg and larval abundance from bongo samples at selected EPA and BLM stations during 1977 and 1978.

Sampling Season	1977 BLM Station	Date	EGGS No./1,000 m^3	EGGS No. Under 10 m^2	LARVAE No./1,000 m^3	LARVAE No. Under 10 m^2	1977-78 EPA Station	Date	EGGS No./1,000 m^3	EGGS No. Under 10 m^2	LARVAE No./1,000 m^3	LARVAE No. Under 10 m^2
Spring & Summer							(Outside field)					
	I-1	5/20/77	761	99	788	103	I	7/14/77	343	48	1,352	189
	II-1	5/19/77	1,808	307	5,972	1,015	VI	7/14/77	3,208	449	1,495	209
							(Inside field)					
	III-1	5/17/77	2,256	451	685	137	II-D	7/14/77	285	40	335	47
	IV-1	5/16/77	5,945	1,308	2,224	489	IV-D	7/12/77	16,742	2,344	5,492	770
Summer & Fall							(Outside field)					
	I-1	9/11/77	229	30	4,098	533	I	10/13/77	1,006	141	1,230	172
	II-1	9/10/77	931	158	2,075	353	VI	10/14/77	204	29	902	126
							(Inside field)					
	III-1	9/8/77	104	21	1,151	230	II-D	10/13/77	160	23	2,834	397
	IV-1	9/7/77	1,209	266	2,987	370	IV-D	10/14/77	103	15	1,360	190
Winter							(Outside field)					
	I-1	1/21/77	11	1	75	10	I	2/20/78	76	11	0	0
	II-1	1/11/77	36	6	117	20	VI	2/22/78	650	91	1,377	193
							(Inside field)					
	III-1	1/20/77	417	83	423	85	II-D	2/20/78	13	2	26	4
	IV-1	1/19/77	89	20	243	54	IV-D	2/22/78	228	32	379	53

Table 31. Comparison of selected zooplankter numbers with ichthyoplankters taken during same cruises in 1977.

Mesh size:	(250μ)				(333μ)	(505μ)
Transect/ station	Copepoda No./m³	Amphipoda No./m³	Polychaeta No./m³	Gastropoda larvae No./m³	Fish eggs No./m³	Fish larvae No./m³
		Cruise 1 - January/February				
I-1	898.2	4.7	2.6	57.8	0.02	0.04
I-2	754.7	10.0	3.5	11.4	1.41	4.39
I-3	997.5	5.6	1.9	7.3	0.37	1.37
II-1	462.7	11.2	5.2	16.1	0.05	0.17
II-2	758.1	6.8	9.8	8.5	1.65	1.50
II-3	1,410.4	50.5	14.4	22.4	1.16	0.36
III-1	994.4	54.9	8.7	15.1	0.50	0.39
III-2	467.9	3.7	1.5	4.4	1.68	1.04
III-3	883.5	3.3	5.5	13.9	3.23	0.32
IV-1	1,318.3	8.7	0.0	10.6	0.09	0.19
IV-2	890.1	8.0	12.4	8.0	1.85	2.16
IV-3	516.0	2.8	2.9	6.4	0.29	0.90
		Cruise 2 - March				
II-1	1,120.1	38.6	4.9	26.9	0.50	0.53
II-2	934.3	64.8	1.3	4.0	4.56	0.63
II-3	533.5	29.6	2.0	7.6	0.18	2.24
		Cruise 3 - April				
II-1	2,304.8	6.9	3.9	49.0	1.04	1.09
II-2	853.0	68.8	9.7	50.5	11.67	0.79
II-3	335.1	8.8	1.4	21.1	0.15	2.78
		Cruise 4 - May/June				
I-1	2,832.6	30.7	0.7	43.7	0.55	0.71
I-2	1,702.9	106.4	3.1	138.1	28.21	0.64
I-3	291.8	5.2	2.2	6.2	0.13	1.67
II-1	4,745.5	13.6	24.9	158.4	2.39	5.24
II-2	1,747.5	119.9	8.0	171.2	3.89	1.29
II-3	355.0	11.4	2.0	15.4	0.07	2.24
III-1	1,628.1	60.1	0.0	107.9	3.73	0.38
III-2	1,272.6	29.3	6.7	83.7	2.63	1.17
III-3	460.5	13.5	2.3	11.9	0.49	3.73
IV-1	2,354.2	45.3	21.6	50.9	7.74	1.51
IV-2	1,459.7	34.4	10.1	24.8	3.06	8.73
IV-3	740.0	17.8	1.7	10.3	0.94	0.92
		Cruise 5 - July				
II-1	1,051.8	1.9	3.4	37.1	13.22	2.02
II-2	494.8	2.2	2.2	8.8	0.47	3.81
II-3	522.1	7.4	2.4	14.5	0.13	0.90
		Cruise 6 - August				
II-1	1,001.7	0.9	1.7	24.1	3.53	1.30
II-2	769.1	1.9	1.3	5.2	3.56	0.42
II-3	474.6	1.0	1.9	5.1	0.47	0.74

Table 31. (Continued)

Mesh size:	(250μ)				(333μ)	(505μ)
Transect/ station	Copepoda No./m^3	Amphipoda No./m^3	Polychaeta No./m^3	Gastropoda larvae No./m^3	Fish eggs No./m^3	Fish larvae No./m^3
		Cruise 7 - September				
I-1	6,743.3	1.4	1.4	24.9	0.32	2.55
I-2	1,066.0	5.8	3.5	371.8	2.16	1.04
I-3	918.7	2.3	7.7	23.3	0.13	0.97
II-1	1,411.4	1.1	5.9	19.6	1.54	0.19
II-2	1,744.2	24.3	2.2	254.3	1.49	1.90
II-3	995.2	6.3	1.7	11.5	0.17	1.38
III-1	246.4	1.2	0.0	4.3	0.18	0.62
III-2	467.8	8.0	12.9	15.1	0.07	0.67
III-3	539.5	5.6	2.4	16.4	0.37	1.41
IV-1	672.3	19.5	8.7	17.7	1.61	1.65
IV-2	130.6	0.9	13.5	82.5	0.82	0.67
IV-3	483.9	1.6	2.4	10.8	1.05	0.18
		Cruise 8 - November				
II-1	2,044.3	0.9	6.6	2.3	0.08	0.17
II-2	1,420.3	17.5	8.3	7.9	0.35	2.57
II-3	367.7	2.4	1.2	4.8	0.04	0.11
		Cruise 9 - December				
II-1	1,489.1	2.2	7.7	3.3	0.11	0.66
II-2	767.3	10.3	1.7	27.8	2.15	0.54
II-3	369.7	16.4	2.4	16.6	3.12	3.62

Table 32. Linear correlation between fish eggs and larvae or between fish larvae and eggs and macrozooplankton taken on the same cruises during 1976 and 1977.

Cruise	#	Fish larvae[1]/ Fish eggs[2]	Fish larvae/ Gastropoda[3]	Fish larvae/ Polychaeta[3]	Fish larvae/ Amphipoda[3]	Fish larvae/ Copepoda[3]	Fish eggs/ Gastropoda	Fish eggs/ Polychaeta	Fish eggs/ Amphipoda	Fish eggs/ Copepoda
1976	1	r= .59[4]	r= .28	r= .00	r= .01	r= .17	r= .52	r= .22	r= .01	r= .37
	2	.02	.96	.91	.75	.90	.26	.44	.64	.68
	3	.57	.98*	.98*	.98*	.67	.37	.39	.37	.23
	4	.25	.68*	.39	.81**	.67*	.27	.66*	.43	.75**
	5	.39	.07	.98*	.41	.75	.89	.58	.999**[5]	.87
	6	.997**	.23	.51	.90	.95	.31	.58	.86	.973
	7	.05	.35	.69*	.88**	.78**	.10	.15	.03	.05
	8	.66	.26	.06	.94	.42	.89	.79	.36	.40
	9	.95	.87	.74	.66	.41	.29	.08	.03	.92
1977	1	r= .28	r= .35	r= .03	r= .21	r= .20	r= .31	r= .34	r= .14	r= .60
	2	.51	.42	.38	.66	.57	.57	.60	.98*	.27
	3	.67	.995**	.82	.59	.60	.60	.974	.995**	.60
	4	.21	.14	.42	.30	.18	.997**	.03	.66*	.12
	5	.11	.32	.28	.76	.17	.977*	.984*	.56	.998**
	6	.15	.93	.53	.83	.57	.50	.76	.43	.89
	7	.21	.17	.30	.47	.70*	.68*	.01	.40	.09
	8	.995**	.89	.70	.995**	.17	.84	.77	.98*	.26
	9	.72	.02	.37	.80	.75	.70	.91	.993*	.999**

1/ 505μ mesh
2/ 333μ mesh
3/ 250μ mesh

4/ degrees of freedom for Cruises 1, 4, & 7 (with 12 stations) were 11 and 2 for the remaining cruises (with 3 stations).
5/ correlations were taken to 3 decimal places when degree of correlation was in doubt.

* significant at .05

** significant at .01

Table 33. Comparison of BLM neuston and bongo larval abundance for top five families during 1977 by cruise in descending order of abundance.

	Neuston		Bongo	
Cruise	Family - Genus Species	No. per 1,000 m^3	Family - Genus Species	No. per 1,000 m^3
1	Clupeidae	233	Clupeidae	6,696
	Clupeidae - *Brevoortia* sp.	33	Clupeidae - *Brevoortia* sp.	153
	Clupeidae - *Brevoortia patronus*	594	Clupeidae - *Etrumeus teres*	1,415
	Clupeidae - *Etrumeus teres*	1,052	Total	8,264
	Total	1,912	Carangidae - *Trachurus lathami*	2,171
	Gerreidae - *Eucinostomus* sp.	1,885	Total	2,171
	Total	1,885	Gobiidae	2,034
	Bothidae	132	Total	2,034
	Bothidae - *Etropus crossotus*	424	Myctophidae	393
	Bothidae - *Paralichthys* sp.	118	Myctophidae - *Benthosema suborbitale*	259
	Total	674	Myctophidae - *Ceratoscopelus* sp.	193
	Carangidae - *Trachurus lathami*	222	Myctophidae - *Ceratoscopelus maderensis*	11
	Total	222	Myctophidae - *Ceratoscopelus warmingi*	11
	Gadidae - *Urophycis* sp.	380	Myctophidae - *Diaphus* sp.	117
	Total	380	Myctophidae - *Diogenichthys atlanticus*	60
			Myctophidae - *Hygophum* sp.	204
			Myctophidae - *Lampanyctus* sp.	186
			Myctophidae - *Myctophum* sp.	250
			Myctophidae - *Myctophum nitidulum*	3
			Myctophidae - *Notolychnus valdiviae*	24
			Myctophidae - *Notoscopelus* sp.	39
			Myctophidae - *Symbolophorus* sp.	5
			Total	1,755
			Sparidae	1,508
			Sparidae - *Lagodon rhomboides*	94
			Total	1,602

Table 33 (Continued)

Cruise	Neuston: Family - Genus Species	No. per 1,000 m^3	Bongo: Family - Genus Species	No. per 1,000 m^3
2	Clupeidae	59	Clupeidae	317
	Clupeidae - *Etrumeus teres*	8,563	Clupeidae - *Brevoortia* sp.	10
	Total	8,622	Clupeidae - *Etremeus teres*	1,577
	Bothidae	20	Total	1,904
	Bothidae - *Etropus crossotus*	167	Myctophidae	106
	Total	187	Myctophidae - *Benthosema suborbitale*	6
	Stromateidae	53	Myctophidae - *Ceratoscopelus* sp.	58
	Stromateidae - *Peprilus* sp.	46	Myctophidae - *Ceratoscopelus warmingi*	6
	Stromateidae - *Peprilus burti*	35	Myctophidae - *Diaphus* sp.	215
	Total	134	Myctophidae - *Diogenichthys atlanticus*	22
	Triglidae - *Prionotus* sp.	114	Myctophidae - *Hygophum* sp.	483
	Total	114	Myctophidae - *Hygophum reinhardti*	6
			Myctophidae - *Lampanyctus* sp.	29
			Myctophidae - *Myctophum* sp.	31
			Myctophidae - *Notolychnus valdiviae*	10
			Myctophidae - *Notoscopelus resplendens*	77
			Total	1,048
			Gobiidae	521
			Total	521
			Bregmacerotidae - *Bregmaceros* sp.	3
			Bregmacerotidae - *Bregmaceros atlanticus*	204
			Total	207
			Gonostomatidae - *Cyclothone* sp.	37
			Gonostomatidae - *Gonostomus atlanticum*	3
			Gonostomatidae - *Maurolicus* sp.	50
			Gonostomatidae - *Maurolicus muelleri*	23
			Gonostomatidae - *Vinciguerria* sp.	13
			Total	126

Table 33. (Continued)

Cruise	Neuston Family - Genus Species	No. per 1,000 m3	Bongo Family - Genus Species	No. per 1,000 m3
3	Sciaenidae	3,568	Synodontidae	406
	Sciaenidae - *Cynoscion* sp.	55	Synodontidae - *Saurida* sp.	806
	Total	3,623	Synodontidae - *Saurida brasilensis*	245
	Mullidae	646	Synodontidae - *Synodus* sp.	197
	Total	646	Synodontidae - *Synodus foetens*	7
	Mugilidae - *Mugil* sp.	291	Synodontidae - *Synodus poeyi*	7
	Mugilidae - *Mugil curema*	219	Total	1,668
	Total	510	Gobiidae	1,588
	Clupeidae	214	Total	1,588
	Clupeidae - *Etrumeus teres*	258	Myctophidae	197
	Total	472	Myctophidae - *Benthosema suborbitale*	109
	Synodontidae	328	Myctophidae - *Ceratoscopelus* sp.	11
	Total	328	Myctophidae - *Ceratoscopelus warmingi*	4
			Myctophidae - *Diaphus* sp.	963
			Myctophidae - *Diogenichthys atlanticus*	70
			Myctophidae - *Hygophum* sp.	105
			Myctophidae - *Hygophum reinhardti*	22
			Myctophidae - *Lampanyctus* sp.	33
			Myctophidae - *Myctophum* sp.	37
			Myctophidae - *Myctophum asperum*	4
			Myctophidae - *Notoscopelus resplendens*	4
			Total	1,559
			Clupeidae	571
			Clupeidae - *Etrumeus teres*	79
			Clupeidae - *Sardinella anchovia*	7
			Total	657
			Bregmacerotidae - *Bregmaceros* sp.	4
			Bregmacerotidae - *Bregmaceros atlanticus*	228
			Total	232

Table 33. (Continued)

Cruise	Neuston Family - Genus Species	No. per 1,000 m^3	Bongo Family - Genus Species	No. per 1,000 m^3
5	Clupeidae	16,410	Bothidae	369
	Total	16,410	Bothidae - *Bothus* sp.	52
	Synodontidae	9,869	Bothidae - *Bothus ocellatus*	80
	Total	9,869	Bothidae - *Cyclopsetta* sp.	62
	Mullidae	4,957	Bothidae - *Syacium* sp.	3,802
	Total	4,957	Bothidae - *Syacium gunteri*	17
	Sciaenidae	547	Total	4,382
	Total	547	Clupeidae	6,623
	Gerreidae - *Eucinostomus* sp.	461	Clupeidae - *Harengula jaguana*	143
	Total	461	Total	6,766
			Engraulidae	3,733
			Engraulidae - *Anchoa* sp.	17
			Engraulidae - *Engraulis eurystole*	2
			Total	3,752
			Gobiidae	1,988
			Total	1,988
			Myctophidae	11
			Myctophidae - *Ceratoscopelus* sp.	53
			Myctophidae - *Ceratoscopelus maderensis*	4
			Myctophidae - *Ceratoscopelus warmingi*	4
			Myctophidae - *Diaphus* sp.	128
			Myctophidae - *Myctophum* sp.	2
			Total	202

Table 33. (Continued)

Cruise	Neuston Family - Genus Species	No. per 1,000 m^3	Bongo Family - Genus Species	No. per 1,000 m^3
4	Mullidae	3,635	Bregmacerotidae - *Bregmaceros* sp.	3,801
	Total	3,635	Bregmacerotidae - *Bregmaceros atlanticus*	60
	Engraulidae	3,324	Total	3,861
	Engraulidae - *Anchoa hepsetus*	64	Engraulidae	6,459
	Engraulidae - *Engraulis eurystole*	68	Engraulidae - *Anchoa* sp.	2,379
	Total	3,456	Engraulidae - *Engraulis eurystole*	329
	Clupeidae	327	Total	9,167
	Clupeidae - *Etrumeus teres*	257	Gobiidae	6,473
	Clupeidae - *Harengula jaguana*	713	Total	6,473
	Clupeidae - *Opisthonema oglinum*	55	Myctophidae	513
	Total	1,352	Myctophidae - *Benthosema suborbitale*	153
	Sciaenidae	1,198	Myctophidae - *Ceratoscopelus* sp.	7
	Total	1,198	Myctophidae - *Ceratoscopelus maderensis*	3
	Carangidae - *Trachurus lathami*	1,075	Myctophidae - *Diaphus* sp.	761
	total	1,075	Myctophidae - *Diogenichthys atlanticus*	142
			Myctophidae - *Hygophum* sp.	99
			Myctophidae - *Hygophum reinhardti*	22
			Myctophidae - *Lampanyctus* sp.	18
			Myctophidae - *Myctophum* sp.	74
			Myctophidae - *Myctophum obstusirostre*	3
			Myctophidae - *Notolychnus valdiviae*	60
			Myctophidae - *Notoscopelus resplendens*	3
			Myctophidae - *Symbolophorus* sp.	6
			Total	1,879
			Synodontidae	1,440
			Synodontidae - *Saurida* sp.	4,999
			Synodontidae - *Saurida brasiliensis*	349
			Synodontidae - *Synodus* sp.	2,195
			Synodontidae - *Synodus foetens*	289
			Synodontidae - *Synodus poeyi*	30
			Total	7,862

Table 33 (Continued)

	Neuston		Bongo	
Cruise	Family - Genus Species	No. per 1,000 m^3	Family - Genus Species	No. per 1,000 m^3
6	Clupeidae	4,355	Bregmacerotidae - *Bregmaceros* sp.	16
	Clupeidae - *Etrumeus teres*	543	Bregmacerotidae - *Bregmaceros atlanticus*	273
	Clupeidae - *Harengula jaguana*	881	Total	289
	Total	5,779	Carangidae	766
	Engraulidae	5,233	Carangidae - *Chloroscombrus chrysurus*	46
	Engraulidae - *Anchoa* sp.	27	Carangidae - *Decapterus punctatus*	76
	Engraulidae - *Anchoa hepsetus*	114	Total	888
	Total	5,374	Clupeidae	2,269
	Carangidae - *Trachurus* sp.	274	Clupeidae - *Harengula jaguana*	14
	Total	274	Clupeidae - *Opisthonema oglinum*	46
	Sciaenidae	241	Total	2,329
	Total	241	Myctophidae	9
	Synodontidae	214	Myctophidae - *Benthosema suborbitale*	3
	Total	214	Myctophidae - *Ceratoscopelus* sp.	49
			Myctophidae - *Diaphus* sp.	532
			Myctophidae - *Hygophum* sp.	3
			Myctophidae - *Hygophum reinhardti*	3
			Myctophidae - *Lampadena* sp.	7
			Myctophidae - *Lampanyctus* sp.	3
			Myctophidae - *Myctophum* sp.	6
			Myctophidae - *Myctophum obtusirostre*	3
			Total	618

Table 33. (Continued)

Cruise	Neuston: Family - Genus Species	No. per 1,000 m^3	Bongo: Family - Genus Species	No. per 1,000 m^3
7	Engraulidae	8,076	Bothidae	140
	Engraulidae - Anchoa sp.	300	Bothidae - Bothus sp.	390
	Engraulidae - Anchoa hepsetus	76	Bothidae - Bothus ocellatus	264
	Engraulidae - Engraulis eurystole	10	Bothidae - Cyclopsetta sp.	38
	Total	8,462	Bothidae - Syacium sp.	4,534
	Sciaenidae	3,204	Bothidae - Syacium gunteri	28
	Sciaenidae - Menticirrhus sp.	1,461	Total	5,394
	Sciaenidae - Micropogon undulatus	228	Engraulidae	11,077
	Total	4,893	Engraulidae - Anchoa sp.	1,118
	Clupeidae	772	Engraulidae - Engraulis eurystole	71
	Clupeidae - Brevoortia sp.	22	Total	12,206
	Clupeidae - Harengula jaguana	2,638	Carangidae	6,334
	Clupeidae - Sardinella anchovia	124	Carangidae - Caranx sp.	41
	Total	3,556	Carangidae - Chloroscombrus punctatus	3
	Carangidae - Trachurus lathami	1,241	Carangidae - Decapterus punctatus	9
	Total	1,241	Total	6,387
	Bothidae	293	Gobiidae	3,661
	Bothidae - Paralichthys sp.	55	Total	3,661
	Total	348	Moringuidae - Neoconger mucronatus	3,053
			Total	3,053

Table 33. (Continued)

Cruise	Neuston Family - Genus Species	No. per 1,000 m^3	Bongo Family - Genus Species	No. per 1,000 m^3
8	Bregmacerotidae - *Bregmaceros atlanticus*	931	Bregmacerotidae - *Bregmaceros atlanticus*	171
	Total	931	Total	171
	Mullidae	656	Bothidae	548
	Total	656	Bothidae - *Bothus* sp.	30
	Carangidae	267	Bothidae - *Syacium* sp.	29
	Carangidae - *Seriola dumerili*	9	Bothidae - *Syacium gunteri*	5
	Total	276	Total	612
	Gobiidae	267	Gobiidae	1,487
	Total	267	Total	1,487
	Sciaenidae - *Micropogon undulatus*	252	Sciaenidae	5
	Total	252	Sciaenidae - *Cynoscion nothus*	30
			Sciaenidae - *Menticirrhus* sp.	95
			Sciaenidae - *Micropogon undulatus*	61
			Sciaenidae - *Sciaenops ocellata*	10
			Total	201
			Serranidae	238
			Serranidae - *Anthias* sp.	2
			Serranidae - *Diplectrum* sp.	10
			Total	250

Table 33. (Continued)

	Neuston		Bongo	
Cruise	Family - Genus Species	No. per 1,000 m^3	Family - Genus Species	No. per 1,000 m^3
9	Mugilidae - *Mugil cephalus*	1,792	Bothidae	229
	Total	1,792	Bothidae - *Bothus* sp.	37
	Clupeidae	157	Bothidae - *Bothus ocellatus*	3
	Total	157	Bothidae - *Paralichthys* sp.	3
	Gobiidae	96	Total	272
	Total	96	Bregmacerotidae - *Bregmaceros atlanticus*	2,632
	Exocoetidae	64	Total	2,632
	Total	64	Cynoglossidae - *Symphurus* sp.	1,241
	Stromateidae	38	Total	1,241
	Total	38	Gobiidae	1,216
			Total	1,216
			Sciaenidae	397
			Sciaenidae - *Cynoscion arenarius*	40
			Sciaenidae - *Leiostomus xanthurus*	232
			Sciaenidae - *Micropogon undulatus*	345
			Total	1,014

Table 34. Temperature and salinity range for the most abundant families from all bongo collections during 1977 by cruise.

Cruise	Taxon	No.	Salinity range(°/oo)	Temperature range(°C)
1	CLUPEIDAE	1,615	32.6-36.6	11.0-19.1
	Brevoortia sp.	14	32.6-36.6	11.0-19.1
	Etrumeus teres	281	34.1-36.6	13.0-19.1
	MYCTOPHIDAE	190	36.3-36.4	17.4-19.1
	Benthosema suborbitale	93	36.0-36.4	16.5-19.1
	Ceratoscopelus maderensis	4	36.4-36.4	17.9-17.9
	Ceratoscopelus warmingi	4	36.4-36.4	17.9-17.9
	Ceratoscopelus sp.	58	36.4-36.4	17.4-19.1
	Diaphus sp.	33	36.3-36.4	17.4-19.1
	Diogenichthys atlanticus	26	36.3-36.4	17.8-19.1
	Hygophum reinhardti	4	36.3-36.4	17.8-18.6
	Hygophum sp.	88	36.0-36.4	16.5-19.1
	Lampanyctus sp.	79	36.3-36.4	17.4-19.1
	Myctophum nitidulum	1	36.4-36.4	17.9-17.9
	Myctophum obtusirostre	1	36.4-36.4	18.2-18.2
	Myctophum sp.	76	36.0-36.4	16.5-19.1
	Notolychnus valdiviae	15	36.4-36.4	17.8-19.1
	Notoscopelus resplendens	1	36.4-36.4	18.3-18.3
	Notoscopelus sp.	8	36.4-36.4	17.9-19.1
	Symbolophorus sp.	1	36.1-36.1	19.1-19.1
	GOBIIDAE	632	34.1-36.4	13.0-19.1
	CARANGIDAE			
	Trachurus lathami	558	34.1-36.6	13.0-19.1
	SPARIDAE	530	34.1-36.6	13.0-19.1
	Lagodon rhomboides	15	36.3-36.4	17.4-17.4
	STROMATEIDAE	16	36.3-36.4	17.4-19.1
	Peprilus burti	364	34.1-36.6	17.4-19.1
	SERRANIDAE	261	34.1-36.6	13.0-19.1
	Centropristis sp.	62	36.4-36.4	17.4-18.3
	Diplectrum sp.	2	36.4-36.4	17.4-19.1
	GONOSTOMATIDAE	25	36.3-36.4	17.8-18.6
	Cyclothone sp.	31	36.3-36.4	17.4-19.1
	Gonostomus atlanticum	8	36.3-36.4	17.9-19.1
	Gonostomus elongatum	2	36.4-36.4	19.1-19.1
	Ichthyococcus sp.	1	36.4-36.4	17.8-17.8
	Maurolicus muelleri	4	36.4-36.4	19.1-19.1
	Maurolicus sp.	167	36.0-36.4	16.5-19.1
	Vinciguerria sp.	57	36.0-36.4	16.5-19.1
	BREGMACEROTIDAE			
	Bregmaceros atlanticus	187	32.6-36.6	11.0-19.1
	Bregmaceros sp.	24	36.0-36.4	17.4-19.1
	BOTHIDAE	78	36.0-36.6	16.5-19.1
	Bothus ocellatus	2	36.4-36.4	17.8-18.2
	Citharichthys sp.	1	36.4-36.4	17.9-17.9
	Cyclopsetta sp.	2	36.4-36.4	18.2-18.3
	Paralichthys sp.	75	34.1-36.4	13.0-19.1

Table 34. (Continued)

Cruise	Taxon	No.	Salinity range(°/oo)	Temperature range(°C)
2	CLUPEIDAE	365	35.7-36.4	16.6-17.9
	Brevoortia sp.	5	33.1-36.4	15.0-17.9
	Etrumeus teres	1,912	33.1-26.4	15.0-17.9
	Sardinella anchovia	3	35.7-36.4	17.0-17.8
	MYCTOPHIDAE	187	36.3-36.4	17.5-17.9
	Benthosema suborbitale	24	36.3-36.4	17.5-17.9
	Ceratoscopelus warmingi	39	35.8-36.4	16.6-17.9
	Ceratoscopelus sp.	43	36.3-36.4	17.5-17.9
	Diaphus sp.	116	35.8-36.4	16.6-17.9
	Diogenichthys atlanticus	22	36.3-36.4	17.5-17.9
	Gonichthys coccoi	2	36.3-36.3	17.5-17.5
	Hygophum reinhardti	5	36.3-36.3	17.5-17.7
	Hygophum sp.	248	35.8-36.4	16.6-17.9
	Lampanyctus sp.	15	36.3-36.4	17.5-17.9
	Myctophum sp.	23	36.3-36.4	17.5-17.8
	Notolychnus valdiviae	4	36.3-36.3	17.5-17.7
	Notoscopelus resplendens	34	36.3-36.3	17.5-17.9
	CARANGIDAE			
	Trachurus lathami	438	33.1-36.4	15.0-17.9
	SERRANIDAE			
	Centropristis sp.	292	33.1-36.4	15.0-17.9
	Diplectrum sp.	5	36.3-36.3	17.7-17.9
	GOBIIDAE	284	33.1-36.3	15.0-17.9
	SPARIDAE	273	35.8-36.4	16.6-17.9
	Lagodon rhomboides	1	33.1-33.1	15.0-15.0
	BREGMACEROTIDAE			
	Bregmaceros atlanticus	261	33.1-36.4	15.0-17.9
	Bregmaceros sp.	7	36.3-36.3	17.5-17.7
	SYNODONTIDAE	2	36.4-36.4	17.8-17.8
	Saurida brasiliensis	43	36.3-36.3	17.5-17.5
	Saurida sp.	56	36.3-36.4	17.5-17.9
	Synodus foetens	26	33.1-36.4	15.0-17.9
	Synodus sp.	97	33.1-36.4	15.0-17.9
	STROMATEIDAE	3	36.3-36.3	17.5-17.7
	Peprilus burti	187	33.1-36.4	15.0-17.9
3	GOBIIDAE	3,853	31.5-36.3	19.6-21.1
	SYNODONTIDAE	420	31.5-36.3	19.6-21.1
	Saurida brasiliensis	386	36.1-36.2	19.6-20.6
	Saurida sp.	892	31.5-36.3	19.6-21.1
	Synodus foetens	34	35.5-36.2	19.9-21.1
	Synodus poeyi	13	35.5-36.2	19.9-21.1
	Synodus sp.	743	31.5-36.3	19.6-21.1
	BREGMACEROTIDAE			
	Bregmaceros atlanticus	1,321	31.5-36.3	19.6-21.1
	Bregmaceros sp.	5	36.1-36.3	19.6-20.6
	MYCTOPHIDAE	303	36.0-36.3	19.6-20.6
	Benthosema suborbitale	80	36.2-36.3	19.6-20.6
	Ceratoscopelus maderensis	2	36.3-36.3	19.6-19.6
	Ceratoscopelus warmingi	5	36.2-36.3	19.6-20.6

Table 34. (Continued)

Cruise	Taxon	No.	Salinity range(°/oo)	Temperature range(°C)
3	MYCTOPHIDAE (Continued)			
	Ceratoscopelus sp.	10	36.1-36.3	19.6-20.6
	Diaphus sp.	366	35.6-36.3	19.6-21.1
	Diogenichthys atlanticus	44	36.2-36.3	19.6-20.6
	Hygophum reinhardti	16	36.1-36.3	19.6-20.6
	Hygophum sp.	94	36.2-36.3	19.6-20.6
	Lampanyctus sp.	26	36.1-36.3	19.6-20.6
	Myctophum asperum	1	36.2-36.2	20.6-20.6
	Myctophum obtusirostre	1	36.1-36.1	20.2-20.2
	Myctophum sp.	24	36.2-36.3	19.6-20.6
	Notolychnus valdiviae	8	36.3-36.3	19.6-19.6
	Notoscopelus resplendens	2	36.2-36.2	20.6-20.6
	CLUPEIDAE	501	31.5-36.3	19.6-21.1
	Etrumeus teres	312	35.5-36.1	19.9-21.1
	Sardinella anchovia	2	36.2-36.2	20.6-20.6
	ENGRAULIDAE	694	31.5-36.3	19.6-21.1
	Anchoa sp.	4	31.5-36.2	20.6-21.1
	Engraulis eurystole	12	36.1-36.2	19.9-20.6
	CARANGIDAE	91	36.0-36.1	19.9-20.2
	Decapterus punctatus	30	35.6-36.3	19.6-21.1
	Trachurus lathami	322	36.0-36.3	19.6-20.6
	SERRANIDAE	108	36.1-36.3	19.6-20.6
	Centropristis sp.	103	36.0-36.3	19.6-20.2
	Diplectrum sp.	129	36.0-36.3	19.6-20.6
	SPARIDAE	276	31.5-36.2	19.9-21.1
	PARALEPIDIDAE	245	36.1-36.1	20.2-20.2
	Lestidiops sp.	22	36.2-36.3	19.6-20.6
	Lestrolopis sp.	2	36.3-36.3	19.6-19.6
4	SYNODONTIDAE	960	32.6-36.2	20.2-24.3
	Saurida sp.	4,243	32.6-36.2	20.2-24.3
	Saurida brasiliensis	153	32.6-36.2	20.2-24.3
	Synodus sp.	1,112	33.4-36.2	20.2-23.8
	Synodus foetens	37	32.6-36.1	20.7-24.3
	Synodus poeyi	20	32.6-36.1	20.7-24.3
	GOBIIDAE	4,348	28.3-36.2	20.2-25.5
	ENGRAULIDAE	1,865	28.3-36.2	20.2-25.5
	Anchoa sp.	476	28.3-36.1	21.0-25.5
	Engraulis eurystole	72	31.9-36.2	20.2-24.7
	MYCTOPHIDAE	537	35.6-36.2	20.2-21.6
	Benthosema suborbitale	59	35.9-36.2	20.2-21.6
	Ceratoscopelus sp.	4	35.8-36.1	20.8-21.6
	Ceratoscopelus maderensis	1	35.9-35.9	21.0-21.0
	Diaphus sp.	483	34.9-36.2	20.2-22.2
	Diogenichthys atlanticus	77	35.6-36.2	20.2-21.2
	Hygophum sp.	87	35.1-36.2	20.2-22.1
	Hygophum reinhardti	17	35.9-36.2	20.2-21.2
	Lampanyctus sp.	13	35.9-36.1	21.0-21.2
	Lampanyctus cuprarius	1	36.2-36.2	20.2-20.2
	Myctophum sp.	96	35.1-36.2	20.2-22.1

Table 34. (Continued)

Cruise	Taxon	No.	Salinity range(°/oo)	Temperature range(°C)
4	MYCTOPHIDAE (Continued)			
	Myctophum obtusirostre	1	36.1-36.1	21.2-21.2
	Myctophum selenops	4	35.3-36.1	21.2-22.2
	Notolychnus valdiviae	54	36.1-36.2	20.2-21.2
	Notoscopelus resplendens	3	35.6-36.2	20.2-20.7
	Symbolophorus sp.	2	35.9-36.2	21.0-21.2
	BREGMACEROTIDAE			
	Bregmaceros sp.	34	35.9-36.2	20.2-21.6
	Bregmaceros atlanticus	1,347	32.6-36.2	20.2-24.3
	BOTHIDAE	398	31.9-36.2	20.2-24.7
	Bothus sp.	101	35.1-35.2	20.2-22.1
	Bothus ocellatus	43	34.3-36.2	20.2-23.4
	Citharichthys sp.	18	35.1-35.3	22.1-22.2
	Cyclopsetta sp.	18	35.1-36.2	20.2-22.2
	Syacium sp.	507	32.6-36.2	20.2-24.3
	CYNOGLOSSIDAE			
	Symphurus sp.	1,039	28.3-36.2	20.2-25.5
	SERRANIDAE	29	32.6-36.2	20.2-24.3
	Centropristis sp.	2	32.6-36.1	21.6-23.8
	Diplectrum sp.	959	32.6-36.2	20.2-24.3
	Serraniculus pumilio	16	31.9-36.1	20.7-24.7
	GONOSTOMATIDAE	19	35.1-36.2	20.2-22.1
	Cyclothone sp.	44	35.6-36.2	20.2-21.6
	Gonostomus atlanticum	12	35.6-36.9	20.2-21.2
	Maurolicus sp.	11	36.2-36.2	20.2-20.2
	Maurolicus muelleri	331	35.1-36.2	20.2-22.1
	Vinciguerria sp.	192	35.3-36.2	20.2-22.2
	MICRODESMIDAE			
	Microdesmus sp.	500	31.9-36.2	20.2-24.7
5	CLUPEIDAE	1,377	36.1-36.3	20.6-25.4
	Harengula jaguana	183	36.2-36.3	20.6-25.4
	BOTHIDAE	105	36.1-36.3	20.6-24.9
	Bothus ocellatus	56	36.1-36.3	20.6-24.9
	Bothus sp.	39	36.1-36.3	20.6-24.9
	Citharichthys sp.	6	36.2-36.2	22.6-22.6
	Cyclopsetta sp.	15	36.2-36.3	22.6-24.9
	Syacium gunteri	7	36.1-36.3	22.6-24.9
	Syacium sp.	1,243	36.1-36.3	20.6-25.4
	GOBIIDAE	724	36.1-36.3	20.6-25.4
	Ioglossus calliurus	12	36.3-36.3	20.6-20.6
	MYCTOPHIDAE	77	36.1-36.3	20.6-23.4
	Bolinichthys sp.	3	36.3-36.3	20.6-20.6
	Ceratoscopelus maderensis	20	36.2-36.3	20.6-21.9
	Ceratoscopelus warmingi	8	36.2-36.3	20.6-21.9
	Ceratoscopelus sp.	108	36.1-36.2	20.6-23.4
	Diaphus sp.	465	36.1-36.3	20.6-23.4
	Hygophum sp.	4	36.1-36.3	20.6-23.4
	Lampedena sp.	14	36.2-36.3	20.6-22.6
	Myctophum sp.	5	36.2-36.3	20.6-22.6

Table 34. (Continued)

Cruise	Taxon	No.	Salinity range(°/oo)	Temperature range(°C)
5	ENGRAULIDAE	512	36.1-36.3	20.6-25.4
	Anchoa sp.	2	36.3-36.3	25.4-25.4
	Engraulis eurystole	1	36.2-36.2	21.9-21.9
	SYNODONTIDAE	129	36.2-36.3	20.6-24.9
	Saurida brasiliensis	54	36.1-36.3	20.6-24.9
	Saurida sp.	141	36.1-36.3	20.6-24.9
	Synodus poeyi	3	36.3-36.3	21.9-22.6
	Synodus sp.	127	36.1-36.3	20.6-24.9
	Trachinocephalus myops	1	36.3-36.3	21.9-21.9
	GONOSTOMATIDAE			
	Cyclothone sp.	384	36.3-36.3	20.6-24.9
	Vinciguerria sp.	2	36.2-36.3	20.6-21.9
	LUTJANIDAE	174	36.1-36.3	20.6-25.4
	Etelis oculatus	156	36.2-36.3	20.6-21.9
	Lutjanus sp.	4	36.2-36.3	22.6-24.9
	SCOMBRIDAE	193	36.1-36.3	20.6-25.4
	Auxis sp.	20	36.1-36.3	20.6-24.9
	Euthynnus alletteratus	73	36.1-36.3	20.6-25.4
	Katsuwonus pelamis	4	36.2-36.3	22.6-24.9
	Scomberomorus cavalla	9	36.1-36.3	20.6-25.4
	Scomberomorus maculatus	6	36.2-36.3	21.9-25.4
	Thunnus albacares	2	36.2-36.2	21.9-22.6
	Thunnus sp.	1	36.3-36.3	24.9-24.9
	MICRODESMIDAE			
	Microdesmus sp.	184	36.1-36.3	20.6-25.4
6	CARANGIDAE	161	34.2-36.3	21.9-29.8
	Caranx sp.	12	36.3-36.3	25.0-25.0
	Chloroscombrus chrysurus	5	34.2-36.2	26.9-29.8
	Decapterus punctatus	673	34.2-36.2	23.9-29.8
	SCOMBRIDAE	498	34.2-36.3	21.9-29.8
	Auxis sp.	7	36.3-36.3	26.2-26.2
	Euthynnus alletteratus	63	34.2-36.3	23.9-29.8
	Katsuwonus pelamis	2	36.3-36.3	26.2-27.3
	Scomberomorus cavalla	26	34.2-36.3	21.9-29.8
	Scomberomorus maculatus	7	34.2-36.3	23.9-29.8
	Thunnus atlanticus	1	36.3-36.3	23.9-23.9
	CLUPEIDAE	557	34.2-36.3	21.9-29.8
	Harengula jaguana	6	36.2-36.3	21.9-27.3
	Opisthonema oglinum	5	34.2-34.2	29.8-29.8
	BREGMACEROTIDAE			
	Bregmaceros atlanticus	552	36.2-36.3	21.9-26.9
	Bregmaceros sp.	9	36.3-36.3	21.9-25.0
	MYCTOPHIDAE	40	36.3-36.3	21.9-26.2
	Benthosema suborbitale	1	36.3-36.3	23.9-23.9
	Ceratoscopelus sp.	52	36.3-36.3	21.9-26.2
	Diaphus sp.	383	36.3-36.3	21.9-26.2
	Hygophum reinhardti	3	36.3-36.3	21.9-23.9
	Hygophum sp.	4	36.3-36.3	21.9-25.0
	Lampadena sp.	2	36.2-36.3	21.9-26.9

Table 34. (Continued)

Cruise	Taxon	No.	Salinity range(°/oo)	Temperature range(°C)
6	MYCTOPHIDAE (Continued)			
	Lampanyctus sp.	5	36.3-36.3	21.9-25.0
	Myctophum obtusirostre	1	36.3-36.3	23.9-23.9
	Myctophum sp.	6	36.3-36.3	21.9-23.9
	Notolychnus valdiviae	2	36.3-36.3	21.9-21.9
	GOBIIDAE	427	34.2-36.3	21.9-29.8
	BOTHIDAE	5	36.3-36.3	21.9-25.0
	Bothus ocellatus	16	36.3-36.3	21.9-26.2
	Bothus sp.	30	36.3-36.3	21.9-26.2
	Cyclopsetta sp.	1	36.3-36.3	23.9-23.9
	Syacium sp.	325	34.2-36.3	21.9-29.8
	LUTJANIDAE	242	34.2-36.2	21.9-29.8
	Etelis oculatus	6	36.3-36.3	21.9-23.9
	Lutjanus sp.	2	34.2-36.3	26.2-29.8
	GONOSTOMATIDAE	7	36.3-36.3	21.9-23.9
	Cyclothone sp.	156	36.2-36.5	21.9-26.9
	Vinciguerria nimbaria	1	36.3-36.3	21.9-21.9
	ENGRAULIDAE	142	34.2-36.3	21.9-29.8
7	BOTHIDAE	19	34.2-36.3	23.7-24.2
	Bothus sp.	180	36.1-36.3	23.7-29.1
	Bothus ocellatus	82	36.1-36.3	23.7-29.2
	Cyclopsetta sp.	17	35.8-36.3	23.7-29.2
	Cyclopsetta fimbriata	1	36.2-36.2	27.2-27.2
	Paralichthys sp.	7	36.2-36.2	23.7-23.7
	Syacium sp.	1,596	34.4-36.3	23.7-29.3
	Syacium gunteri	6	35.8-36.2	24.2-29.2
	ENGRAULIDAE	1,762	34.2-36.3	23.7-29.8
	Anchoa sp.	90	34.2-36.3	23.7-29.8
	Engraulis eurystole	25	36.2-36.3	23.7-29.1
	GOBIIDAE	1,111	34.2-36.3	23.7-29.8
	CARANGIDAE	1,052	34.2-36.3	23.7-29.8
	Caranx sp.	10	36.2-36.2	28.2-28.2
	Chloroscombrus chrysurus	1	36.0-36.0	29.2-29.2
	Decapterus punctatus	12	36.1-36.2	23.7-27.2
	CYNOGLOSSIDAE			
	Symphurus sp.	1,056	35.2-36.3	23.7-29.2
	MORINGUIDAE			
	Neoconger mucronatus	1,046	34.4-36.2	23.7-29.3
	SCOMBRIDAE	476	34.4-36.3	23.7-29.8
	Auxis sp.	3	36.2-36.3	23.7-26.4
	Euthynnus alletteratus	149	35.2-36.2	23.7-29.2
	Katsuwonus pelamis	15	36.2-36.3	23.7-26.4
	Scomberomorus cavalla	228	35.2-36.3	23.7-29.2
	Scomberomorus maculatus	30	34.2-36.3	24.1-29.8
	OPHICHTHIDAE	465	34.4-36.3	23.7-29.3
	Myrophis sp.	10	35.8-35.8	29.2-29.2
	BREGMACEROTIDAE			
	Bregmaceros sp.	6	36.2-36.2	23.7-24.2
	Bregmaceros atlanticus	457	36.1-36.3	23.7-29.1

Table 34. (Continued)

Cruise	Taxon	No.	Salinity range(°/oo)	Temperature range(°C)
7	CLUPEIDAE	329	34.2-36.3	23.7-29.8
	Harengula jaguana	3	34.2-36.3	29.1-29.8
	Ophisthonema oglinum	13	34.4-35.8	29.2-29.3
	Sardinella sp.	15	34.2-34.2	29.8-29.8
	Sardinella anchovia	1	34.2-34.2	29.8-29.8
8	GOBIIDAE	2,126	35.4-36.5	22.4-26.1
	BOTHIDAE	214	35.4-36.5	22.4-26.1
	Bothus ocellatus	10	36.4-36.5	22.4-26.1
	Bothus sp.	36	35.4-36.5	22.4-26.1
	Citharichthys sp.	10	35.4-35.4	24.9-24.9
	Cyclopsetta sp.	2	36.4-36.4	23.8-25.9
	Paralichthys sp.	5	35.4-35.4	24.9-24.9
	Syacium gunteri	1	36.5-36.5	26.1-26.1
	Syacium sp.	62	35.2-36.5	23.8-26.1
	BREGMACEROTIDAE			
	Bregmaceros atlanticus	229	35.2-36.5	22.4-26.1
	Bregmaceros sp.	5	36.5-36.5	22.4-22.4
	SCIAENIDAE	111	35.4-36.5	23.8-26.1
	Cynoscion nothus	18	35.2-35.4	24.3-24.9
	Cynoscion sp.	4	35.4-36.4	23.8-24.9
	Larimus fasciatus	7	35.4-36.5	22.4-24.9
	Menticirrhus americanus	2	35.4-35.4	24.9-24.9
	Menticirrhus sp.	12	35.2-36.5	24.3-26.1
	Micropogon undulatus	26	35.2-36.5	24.3-26.4
	Sciaenops ocellata	5	36.4-36.5	25.9-26.1
	SERRANIDAE	103	35.4-36.5	22.4-26.1
	Anthias sp.	1	36.3-36.3	23.8-23.8
	Centropristis sp.	5	36.4-36.4	23.8-23.8
	Diplectrum sp.	21	36.4-36.5	22.8-26.1
	Serranus sp.	1	36.5-36.5	22.4-22.4
	CYNOGLOSSIDAE			
	Symphurus sp.	125	36.3-36.5	22.4-26.1
	MYCTOPHIDAE	55	36.3-36.5	22.4-23.8
	Benthosema suborbitale	1	36.5-36.5	22.4-22.4
	Ceratoscopelus sp.	11	35.4-36.5	22.4-24.9
	Diaphus sp.	24	35.4-36.5	22.4-25.9
	Hygophum reinhardti	1	36.5-36.5	22.4-22.4
	Hygophum sp.	5	36.5-36.5	22.4-22.4
	Lampanyctus sp.	8	36.0-36.5	22.4-23.8
	Myctophum sp.	3	36.4-36.5	22.4-23.8
	GONOSTOMATIDAE	1	36.5-36.5	22.4-22.4
	Cyclothone sp.	89	36.3-36.5	22.4-23.8
	Maurolicus muelleri	1	36.5-36.5	22.4-22.4
	Maurolicus sp.	8	36.5-36.5	22.4-22.4
	Polymetme corytheale	1	36.5-36.5	22.4-22.4
	Vinciguerria sp.	3	36.3-36.5	22.4-23.8
	OPHICHTHIDAE	47	36.3-36.3	22.4-23.8
	Myrophis sp.	2	36.3-36.3	23.8-23.8

Table 34. (Continued)

Cruise	Taxon	No.	Salinity range(°/oo)	Temperature range(°C)
8	OPHIDIIDAE	38	35.4-36.5	23.8-26.1
	Rissola marginata	2	35.4-35.4	24.9-24.9
9	BREGMACEROTIDAE	49	36.4-36.4	23.3-23.3
	Bregmaceros sp.	3	36.4-36.4	21.3-21.3
	Bregmaceros atlanticus	2,012	33.4-36.4	21.3-23.8
	CYNOGLOSSIDAE			
	Symphurus sp.	843	34.6-36.4	21.3-23.8
	GOBIIDAE	778	33.4-36.4	21.3-23.8
	SCIAENIDAE	260	33.4-36.4	21.3-23.8
	Cynoscion sp.	1	36.4-36.4	21.3-21.3
	Cynoscion arenarius	22	36.4-36.4	22.2-22.8
	Leiostomus xanthurus	163	33.4-36.4	21.3-23.8
	Micropogon undulatus	101	34.6-36.4	21.3-23.8
	BOTHIDAE	196	33.4-36.4	21.3-23.8
	Bothus sp.	45	36.4-36.4	21.3-23.3
	Bothus ocellatus	9	34.6-36.4	21.3-22.7
	Paralichthys sp.	6	36.4-36.4	21.3-22.2
	Syacium sp.	1	36.4-36.4	21.3-21.3
	SERRANIDAE	142	33.4-36.4	21.3-23.8
	Anthias sp.	1	36.4-36.4	22.2-22.2
	Centropristis sp.	2	35.9-36.4	23.3-23.8
	Diplectrum sp.	11	34.6-36.4	21.3-22.7
	Hemanthias vivanus	4	36.4-36.4	21.3-22.2
	Serranus sp.	21	36.4-36.4	21.3-22.8
	SYNODONTIDAE	2	35.9-36.4	23.3-23.8
	Saurida sp.	129	34.6-36.4	21.3-23.8
	SPARIDAE	132	33.4-36.4	21.3-23.3
	MUGILIDAE			
	Mugil sp.	119	33.4-36.4	21.3-23.3
	CLUPEIDAE	86	33.4-36.4	21.3-23.8
	Brevoortia sp.	8	36.4-36.4	22.8-22.8

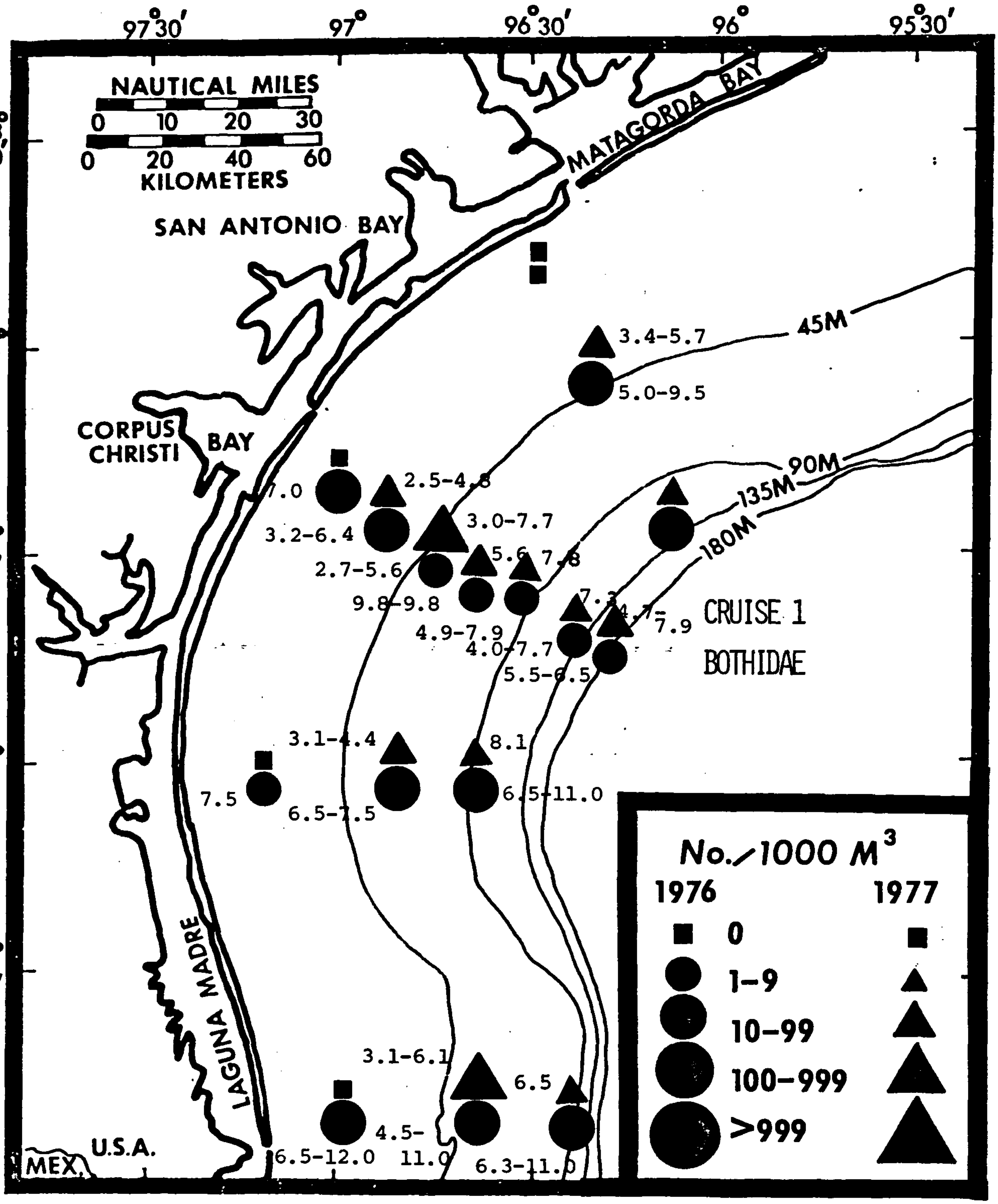


Figure 2. Distribution, abundance and size range (SL) in mm of bothid larvae during Cruise 1.

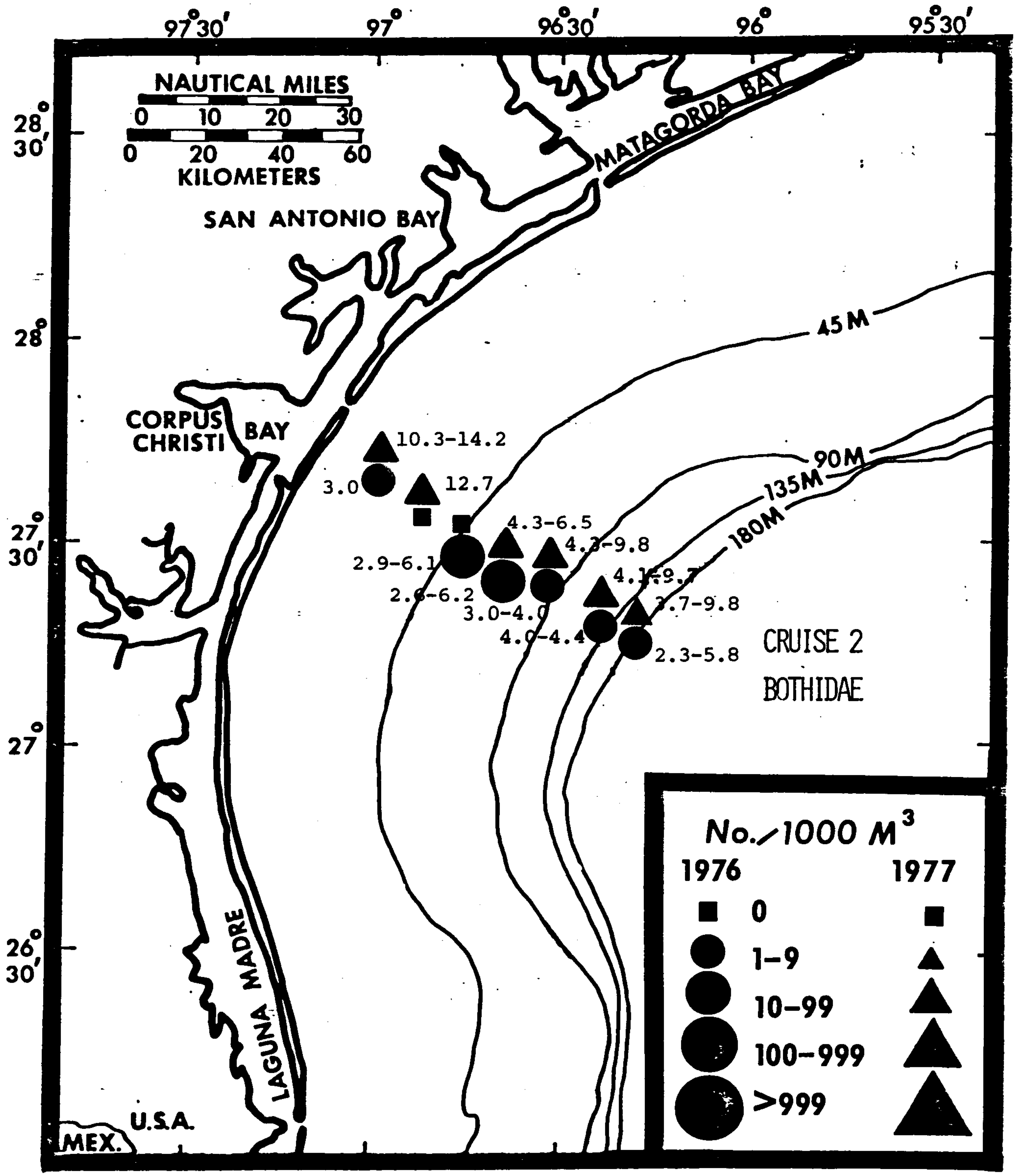


Figure 3. Distribution, abundance and size range (SL) in mm of bothid larvae during Cruise 2

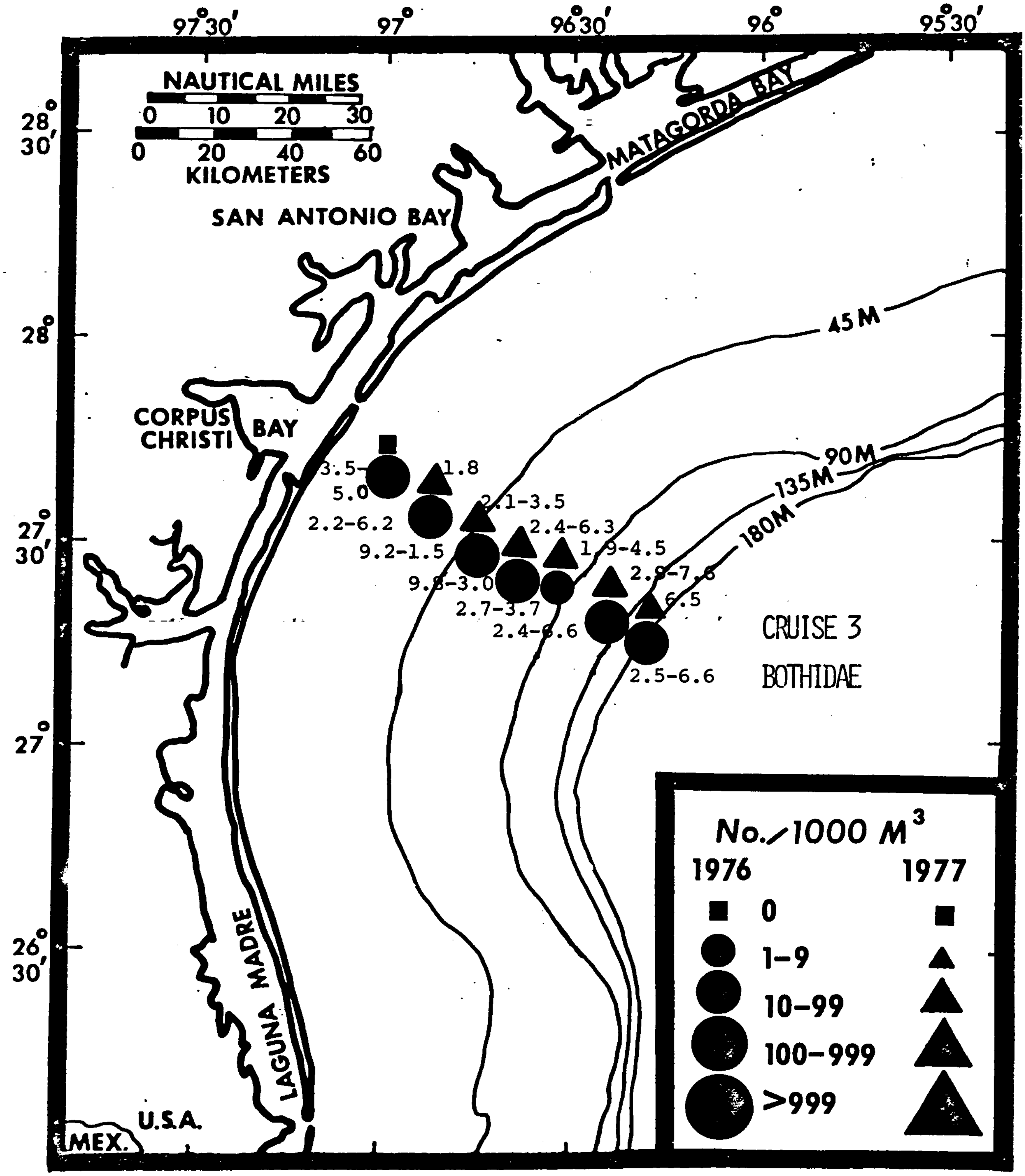


Figure 4. Distribution, abundance and size range (SL) in mm of bothid larvae during Cruise 3.

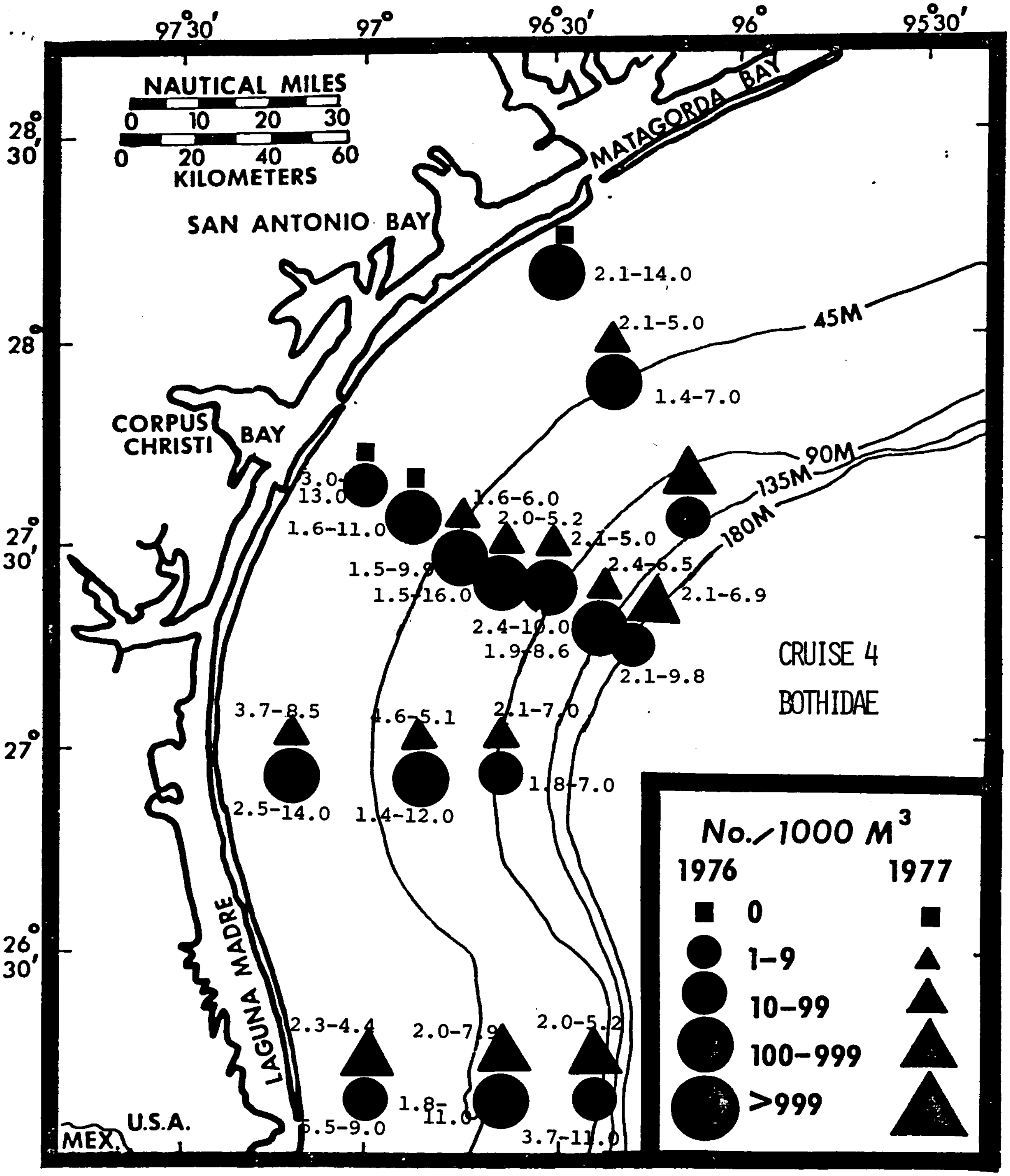


Figure 5. Distribution, abundance and size range (SL) in mm of bothid larvae during Cruise 4.

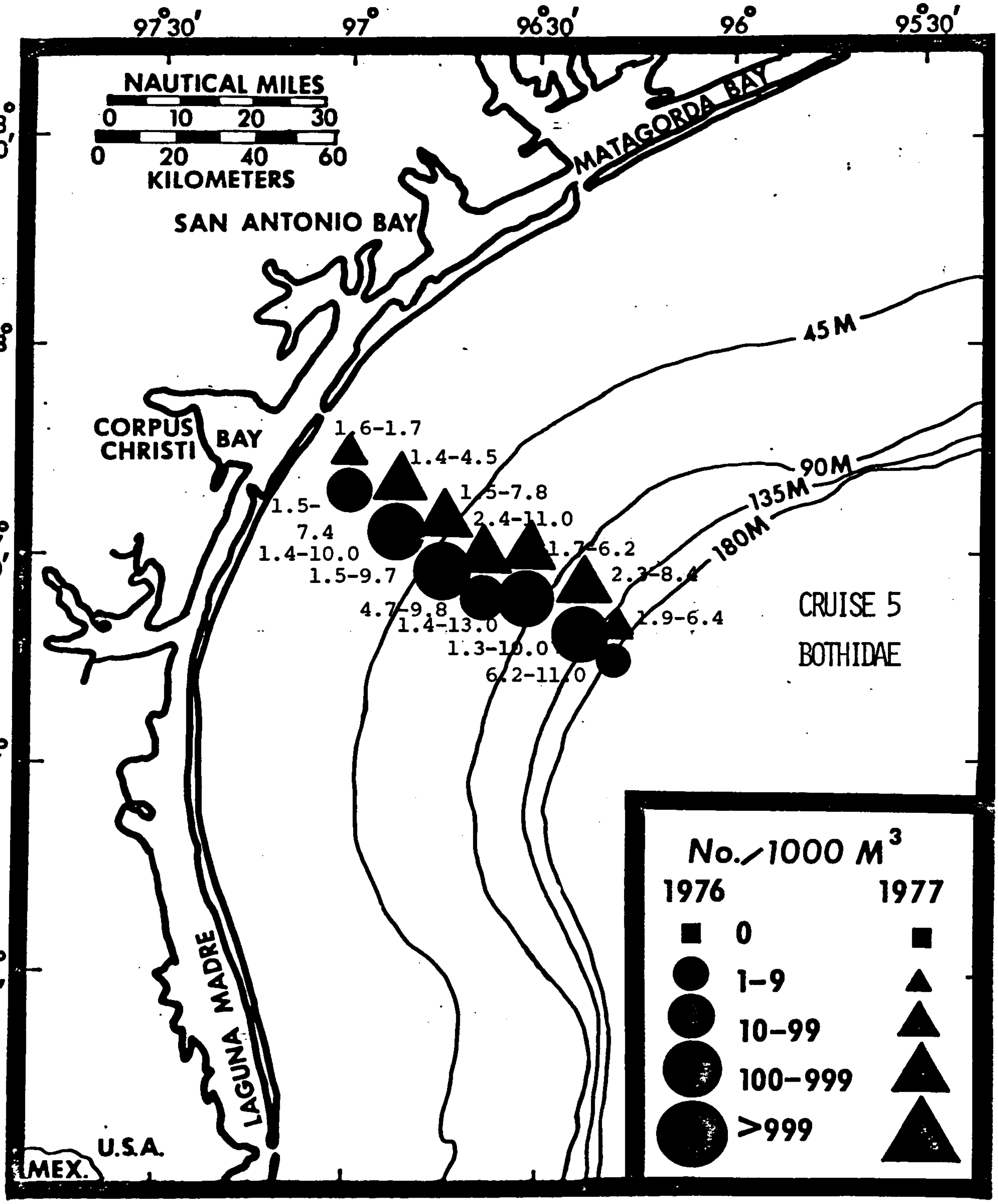


Figure 6. Distribution, abundance and size range (SL) in mm of bothid larvae during Cruise 5.

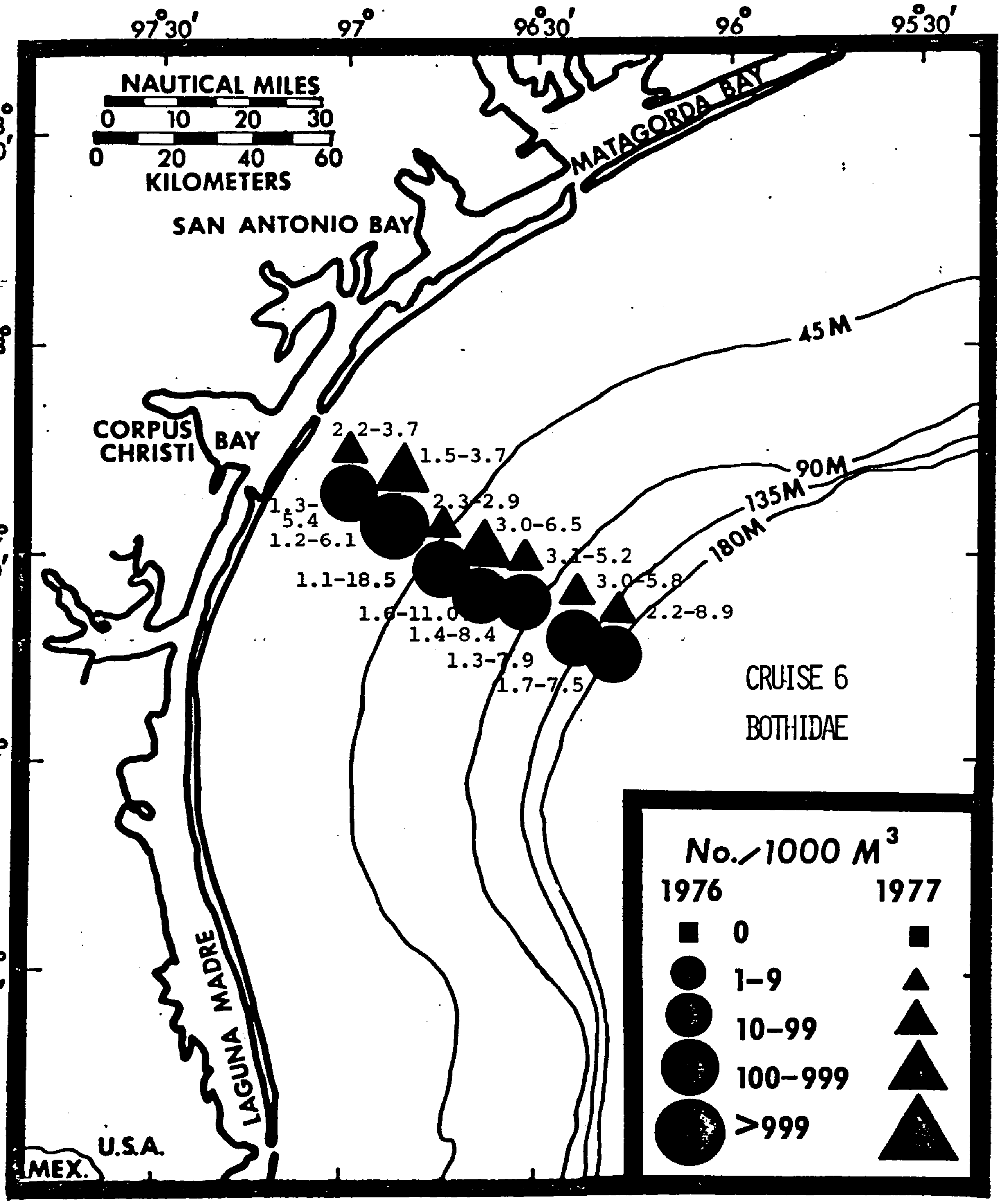


Figure 7. Distribution, abundance and size range (SL) in mm of bothid larvae during Cruise 6.

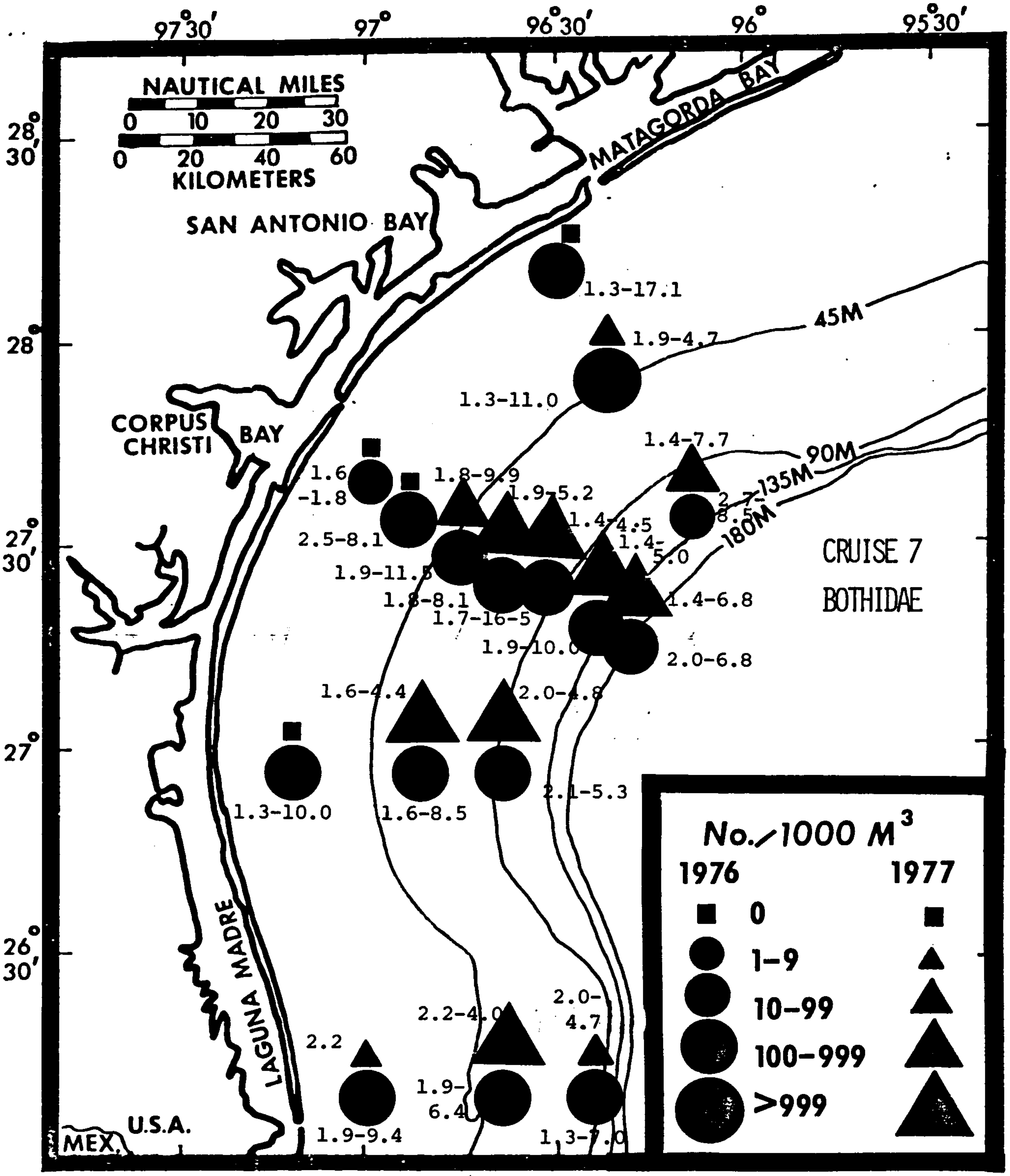


Figure 8. Distribution, abundance and size range (SL) in mm of bothid larvae during Cruise 7.

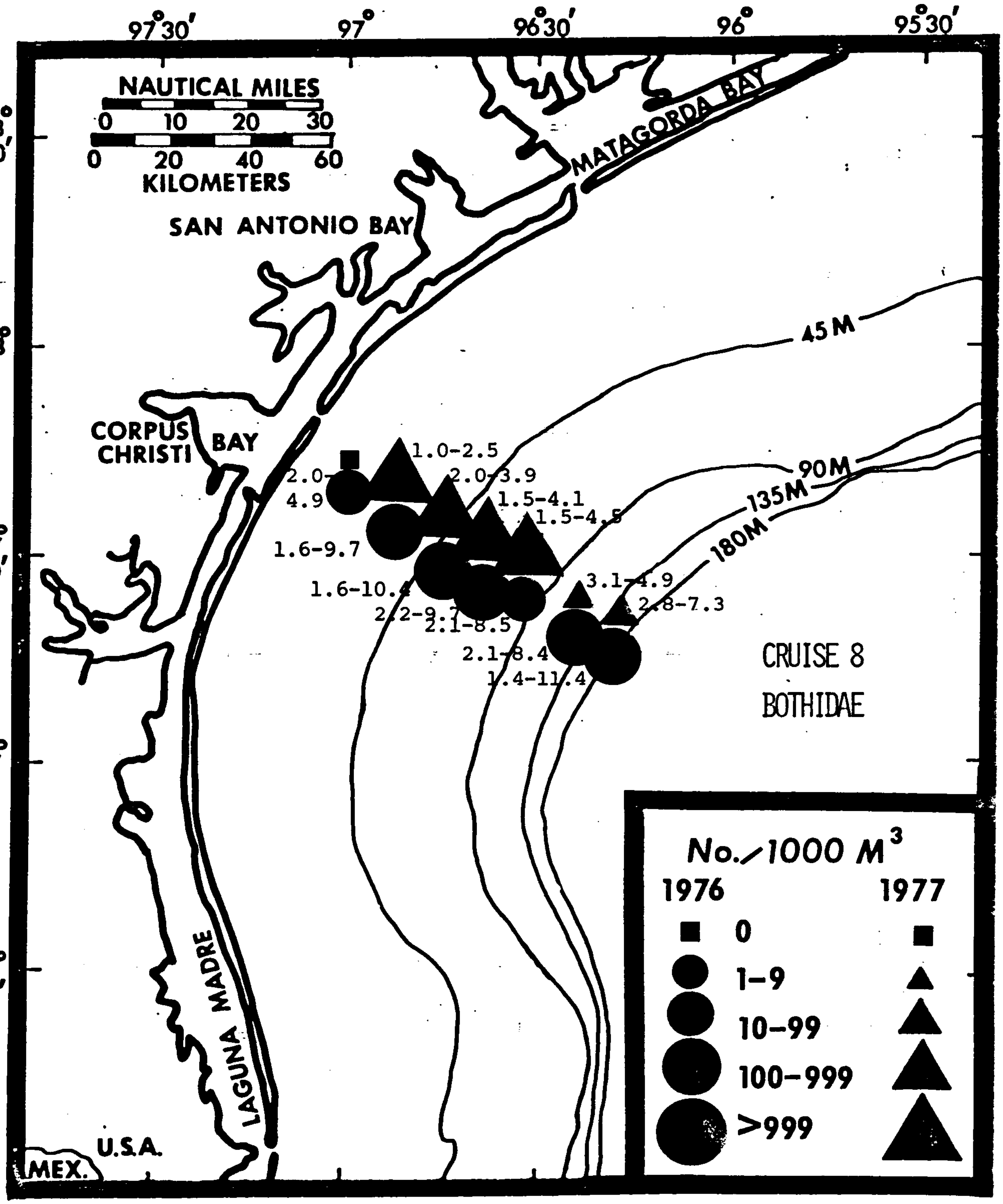


Figure 9. Distribution, abundance and size range (SL) in mm of bothid larvae during Cruise 8.

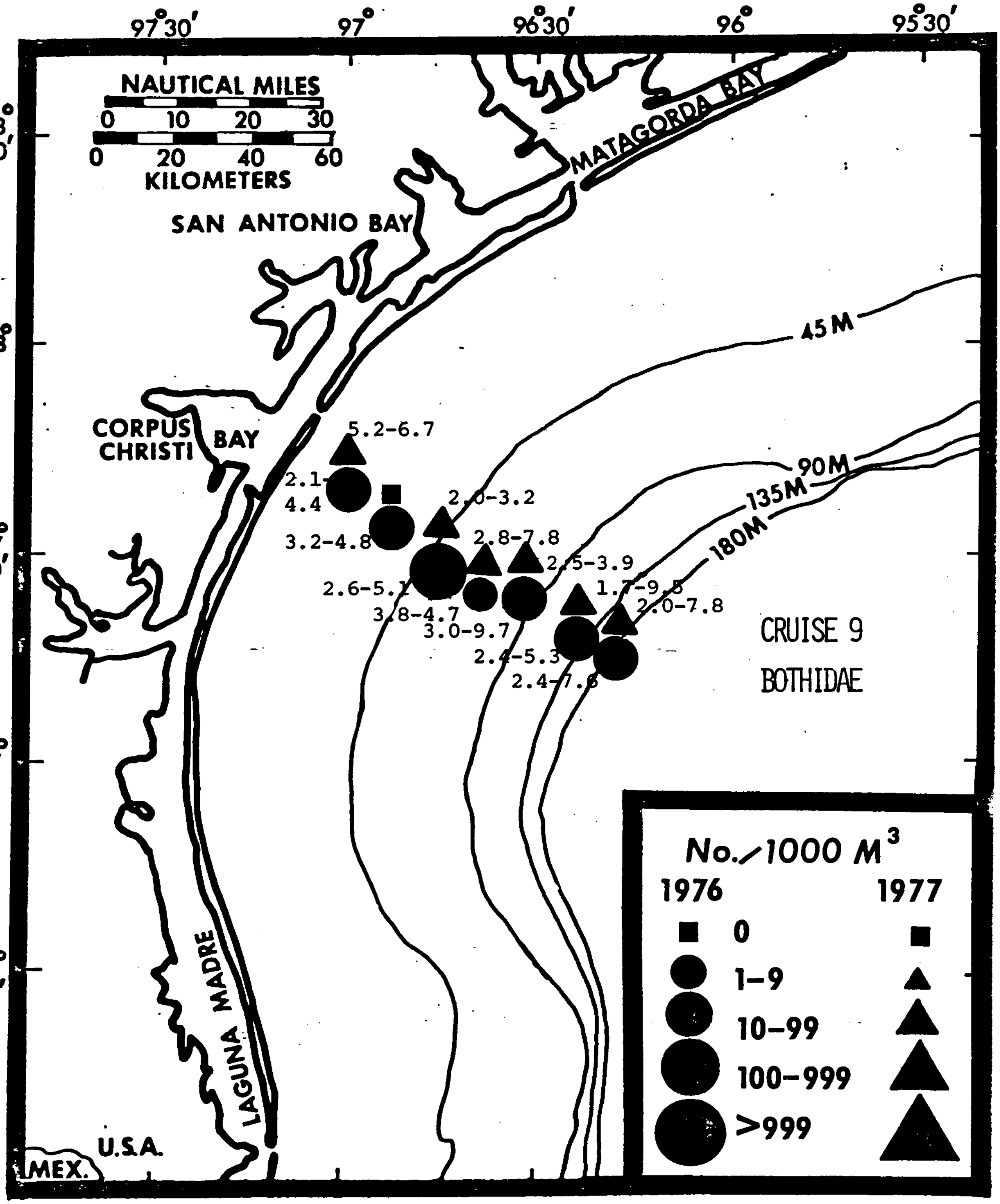


Figure 10. Distribution, abundance and size range (SL) in mm of bothid larvae during Cruise 9.

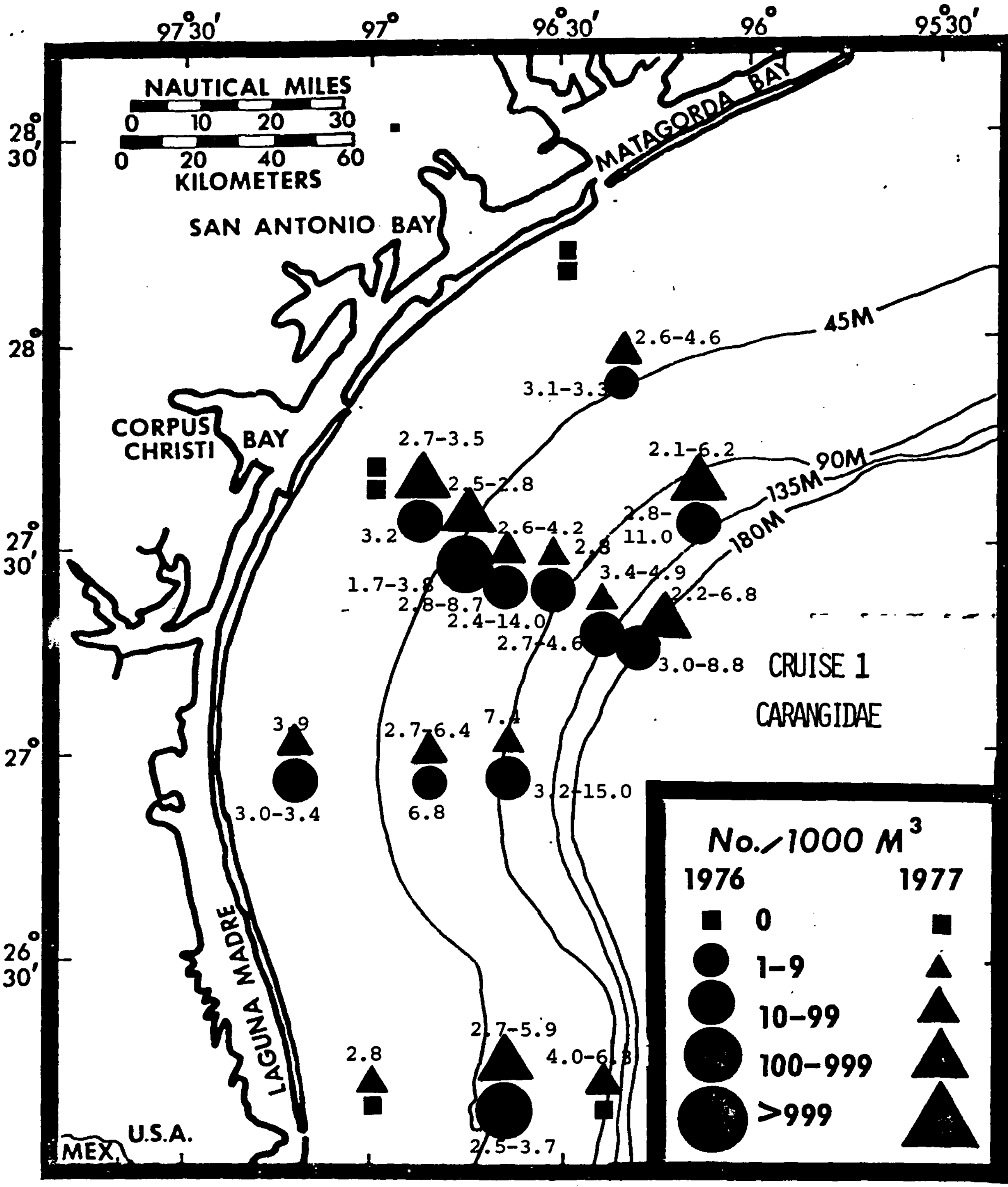


Figure 11 Distribution, abundance and size range (SL) in mm of carangid larvae during Cruise 1.

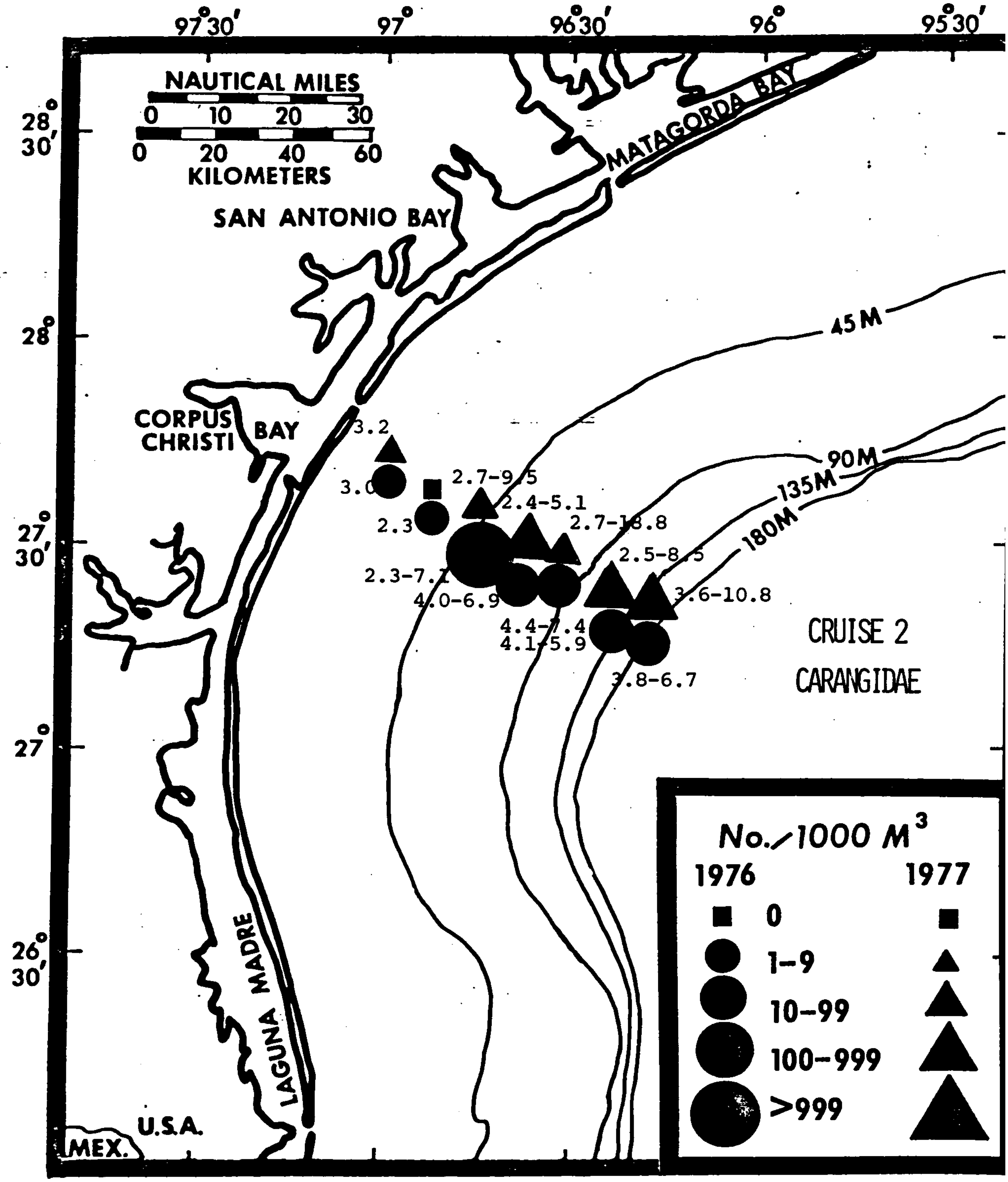


Figure 12. Distribution, abundance and size range (SL) in mm of carangid larvae during Cruise 2.

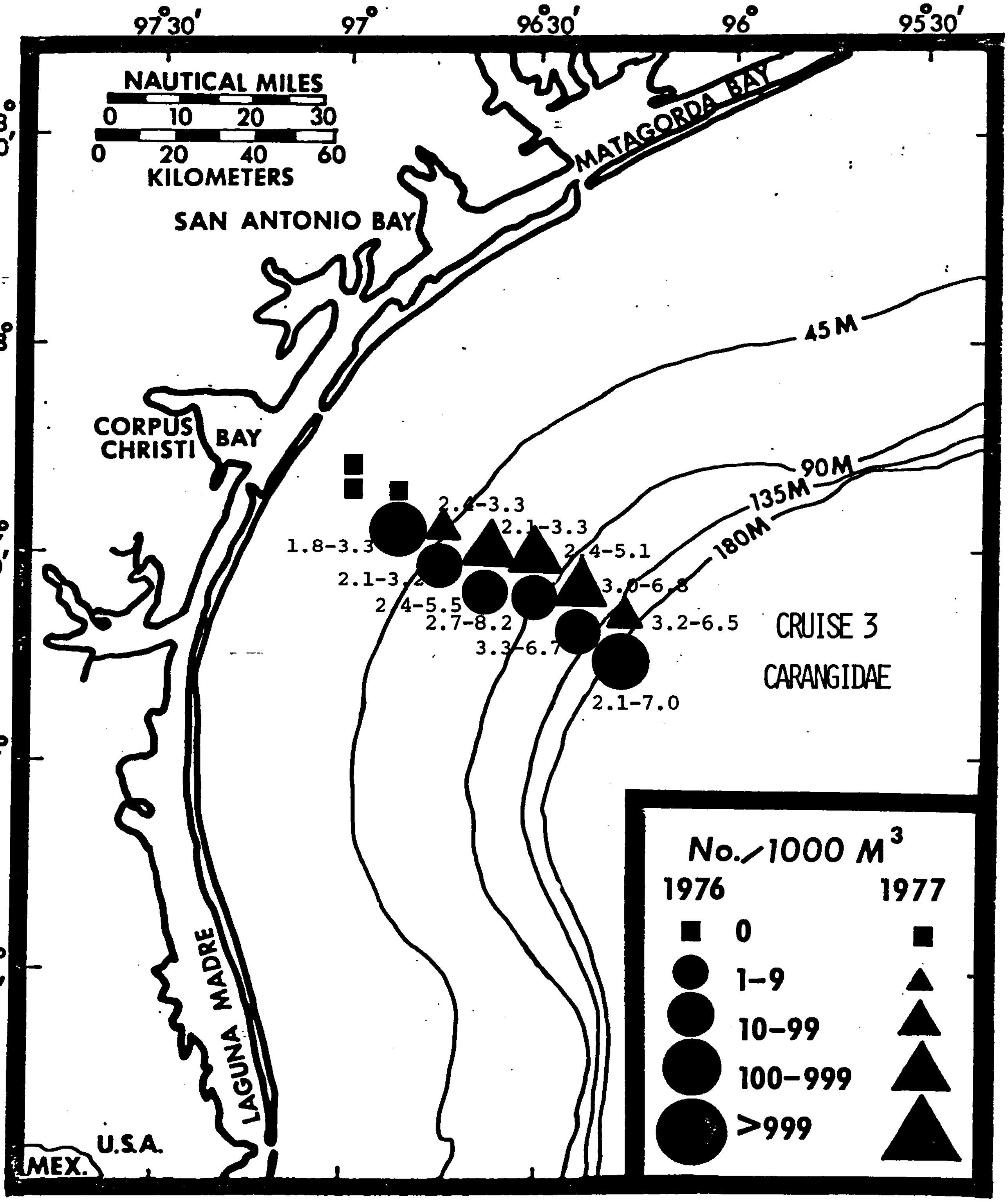


Figure 13. Distribution, abundance and size range (SL) in mm of carangid larvae during Cruise 3.

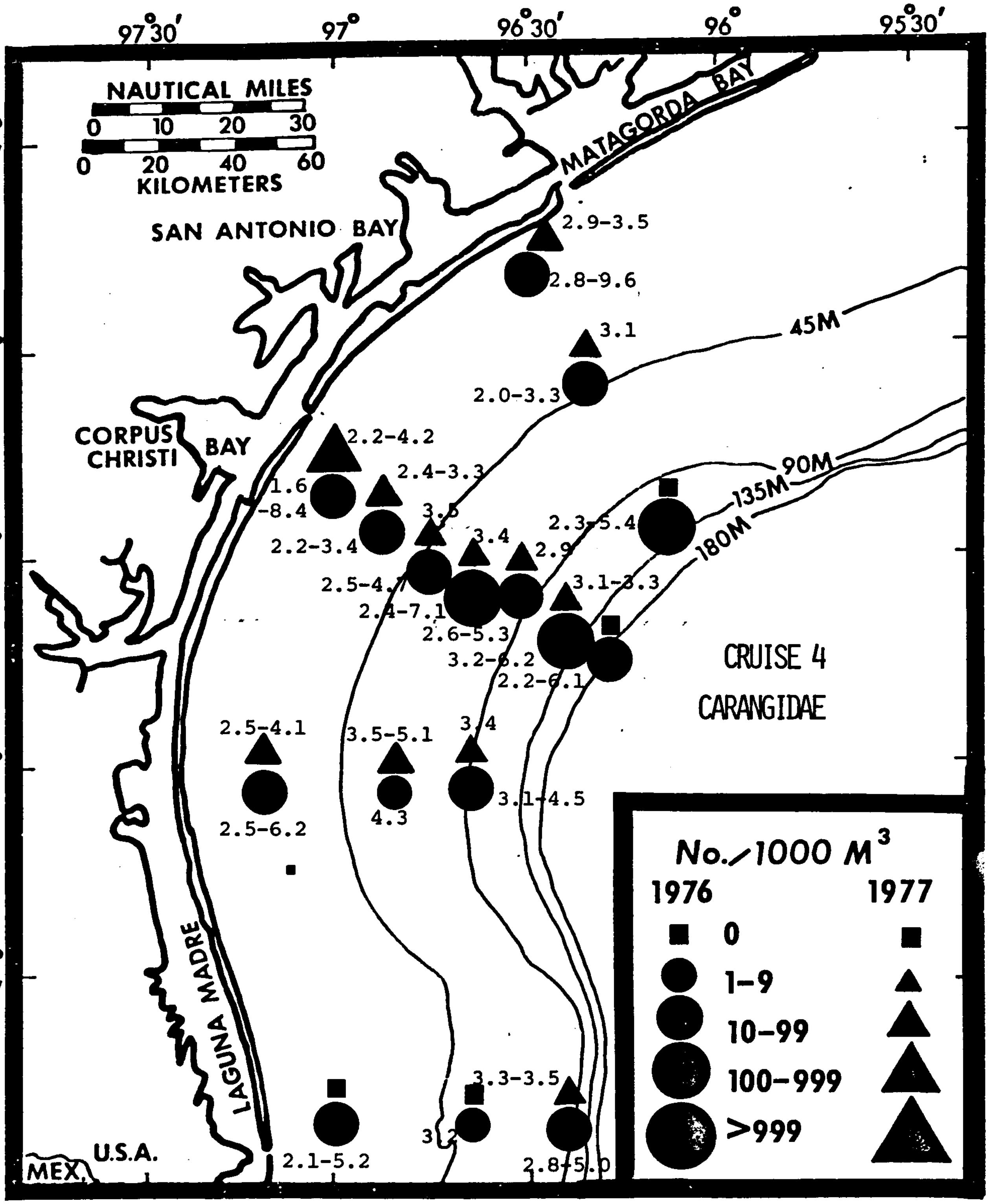


Figure 14 Distribution, abundance and size range (SL) in mm of carangid larvae during Cruise 4.

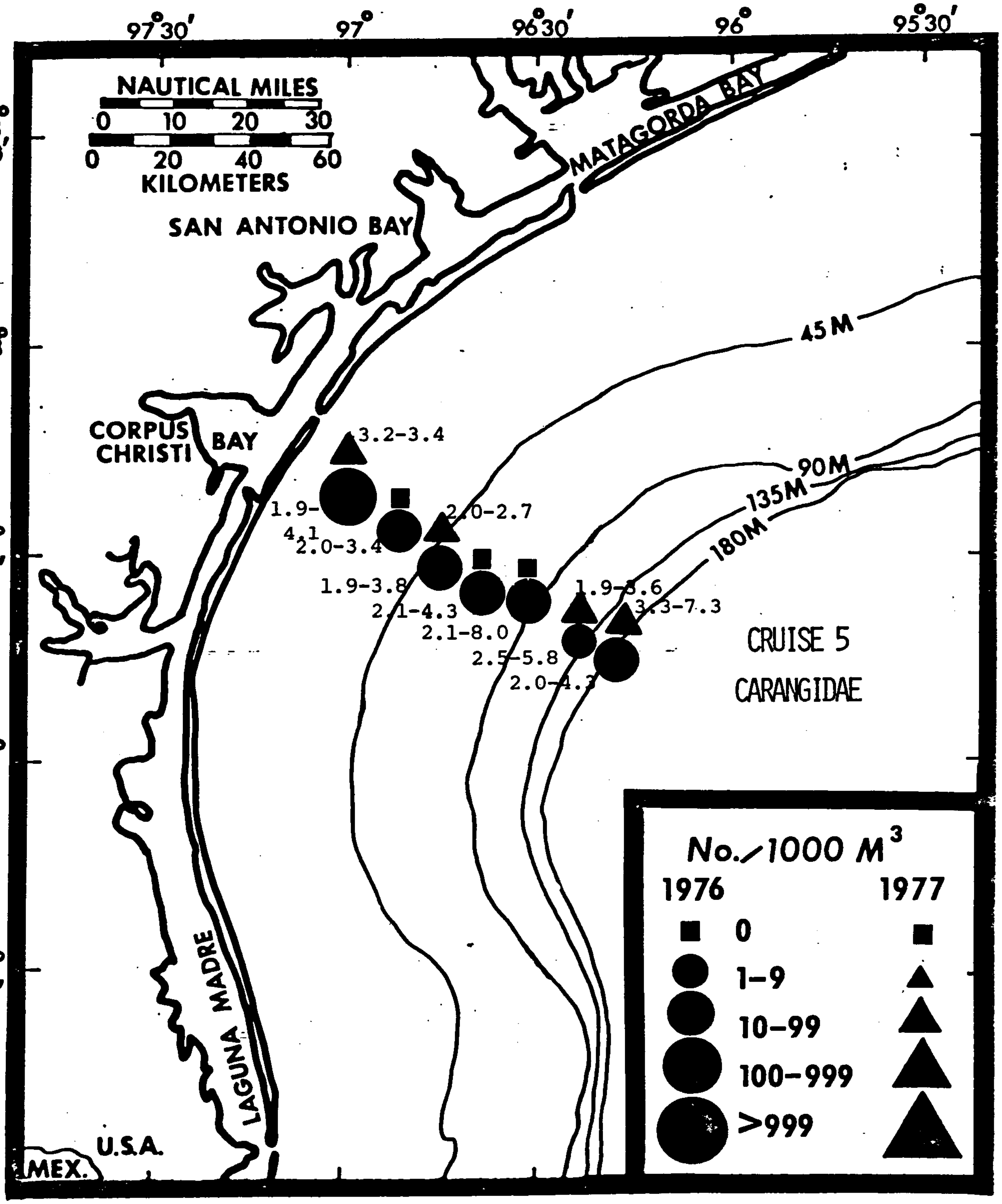


Figure 15. Distribution, abundance and size range (SL) in mm of carangid larvae during Cruise 5.

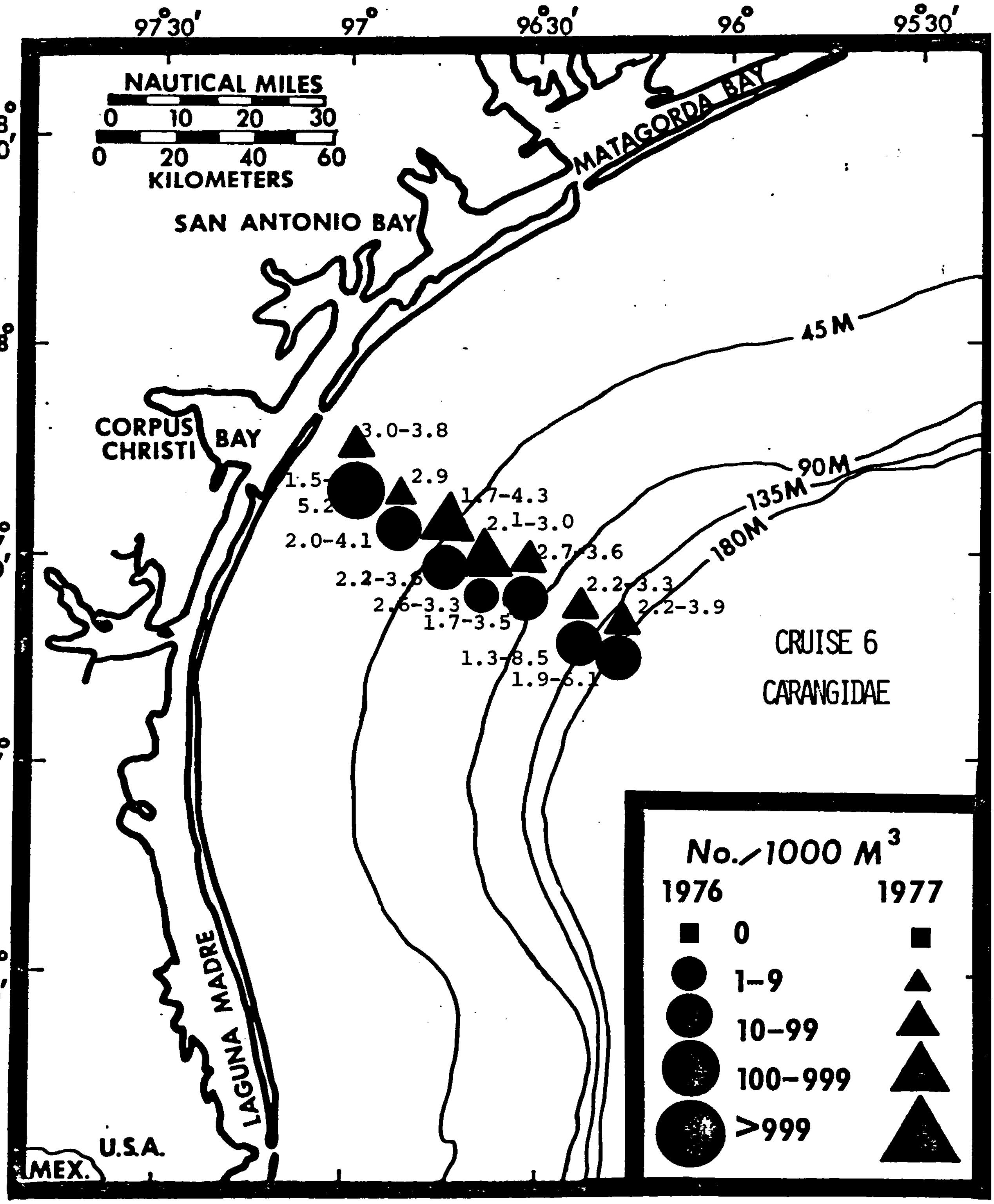


Figure 16. Distribution, abundance and size range (SL) in mm of carangid larvae during Cruise 6.

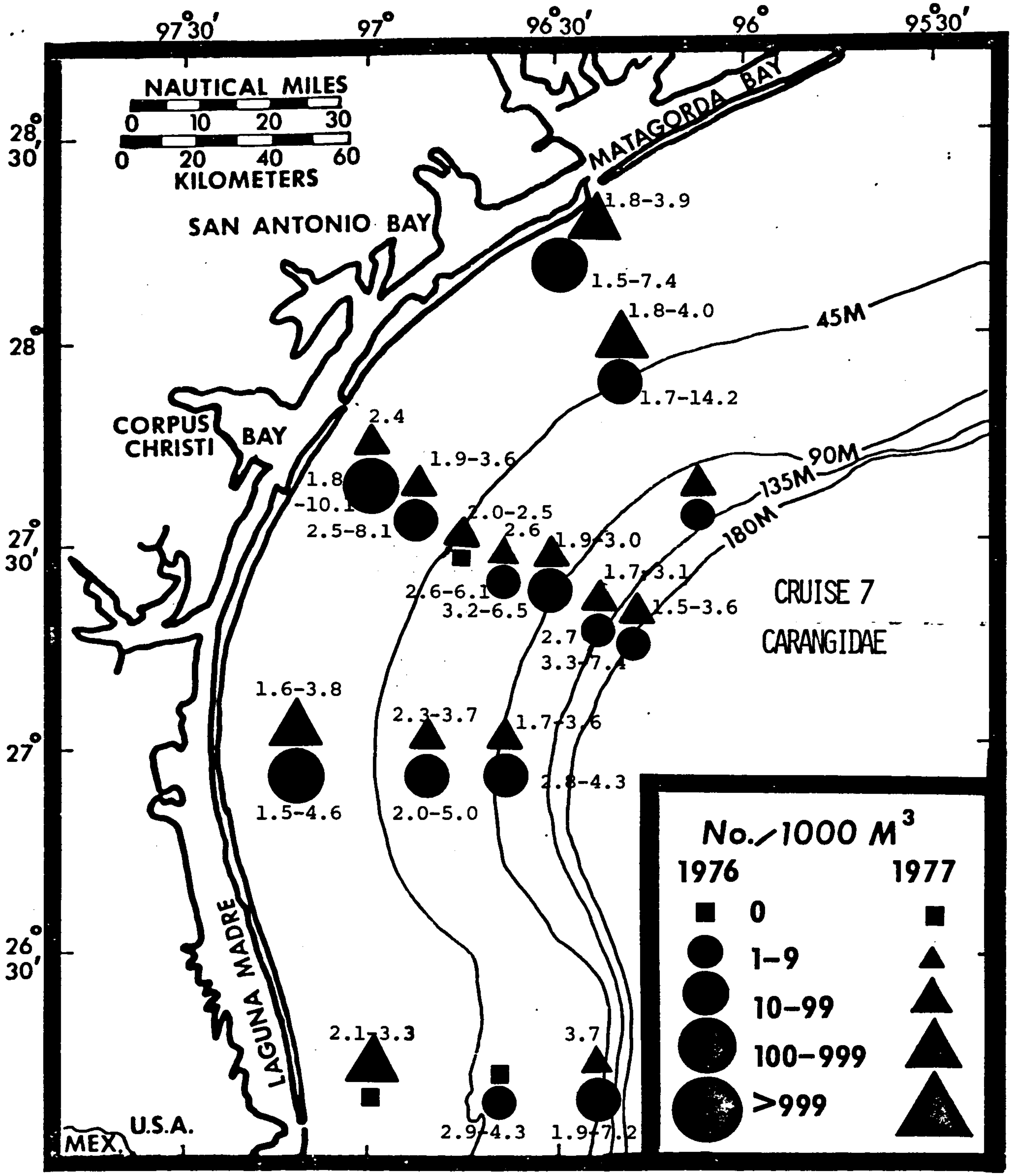


Figure 17. Distribution, abundance and size range (SL) in mm of carangid larvae during Cruise 7.

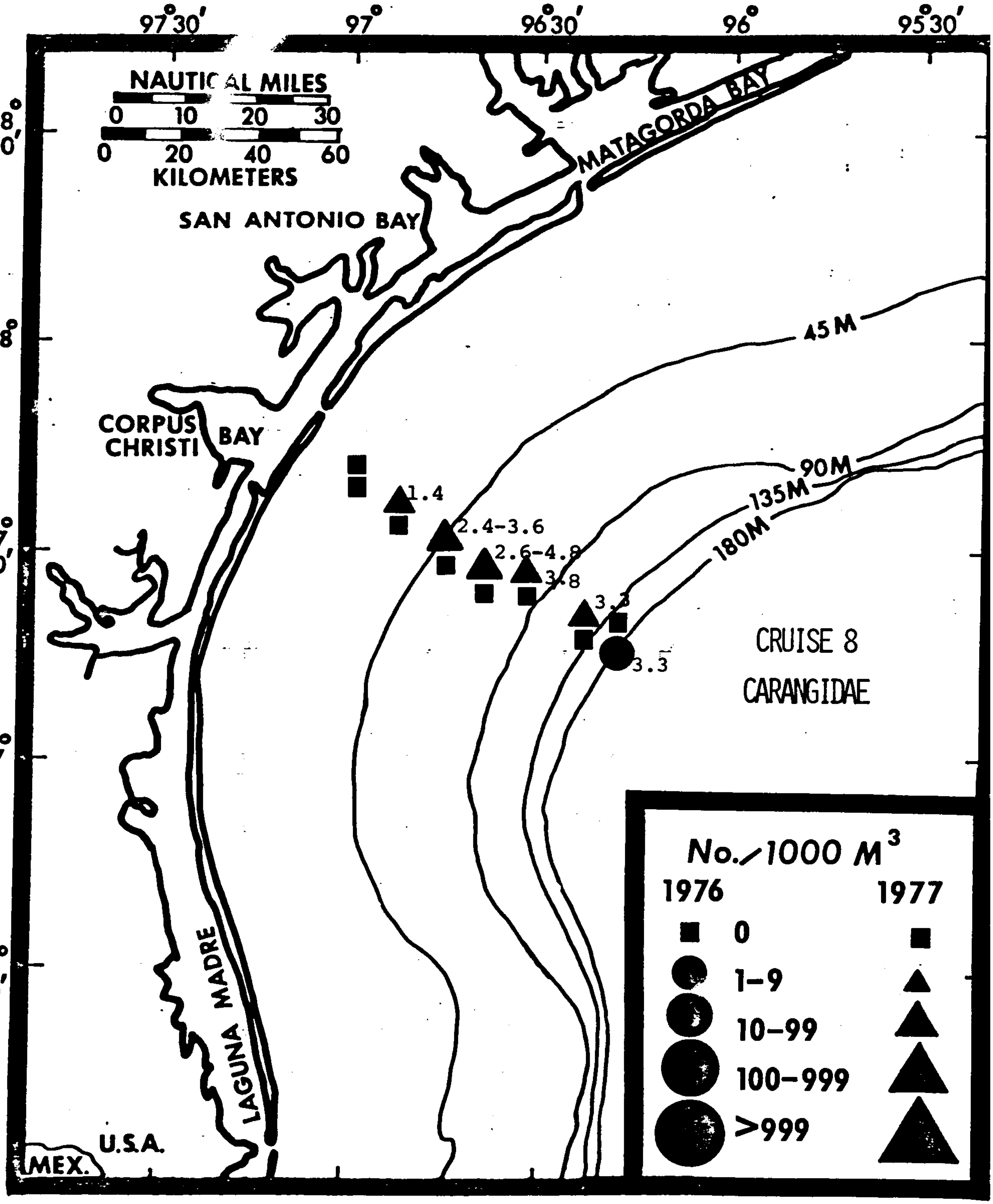


Figure 18. Distribution, abundance and size range (SL) in mm of carangid larvae during Cruise 8.

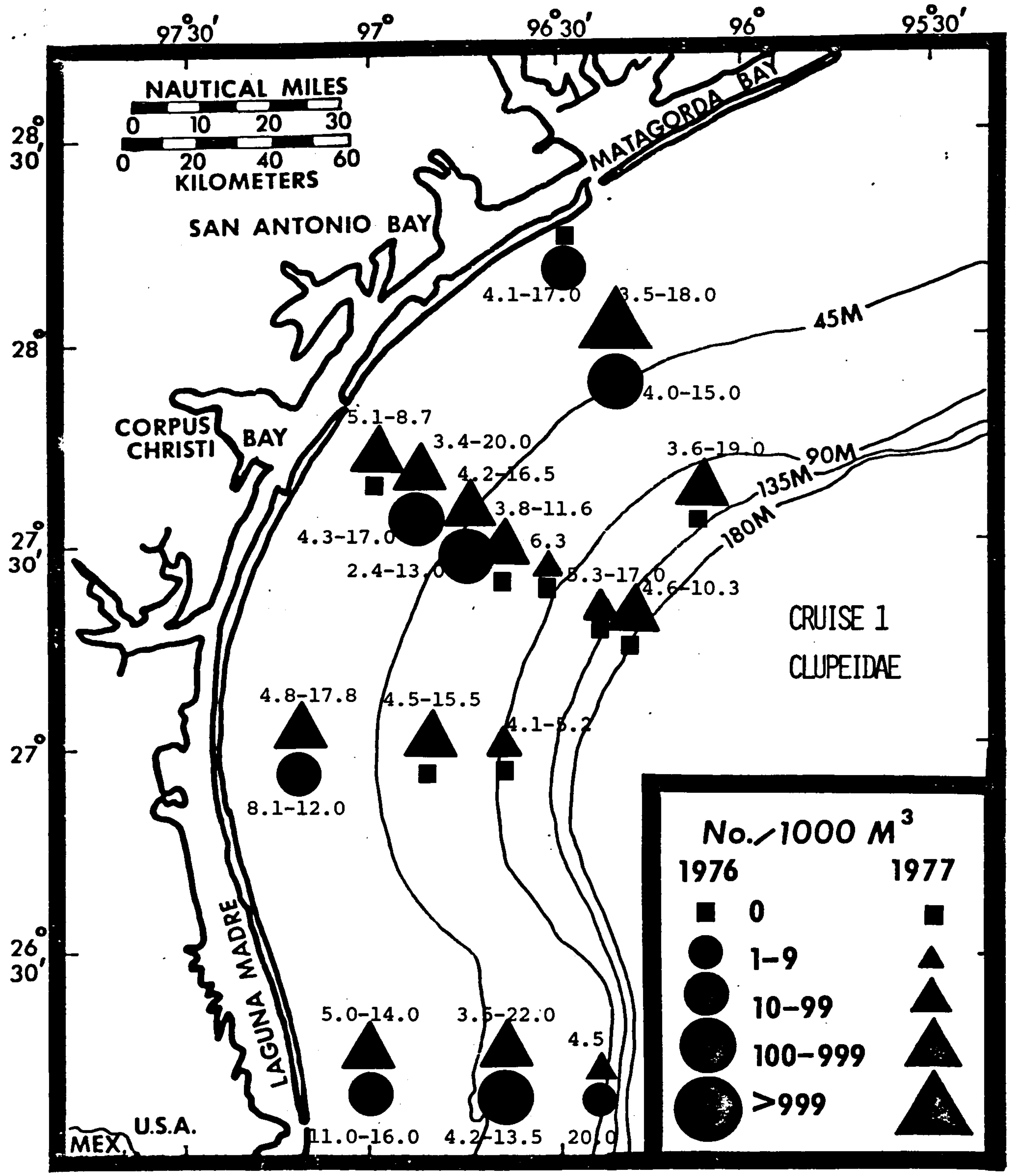


Figure 19. Distribution, abundance and size range (SL) in mm of clupeid larvae during Cruise 1.

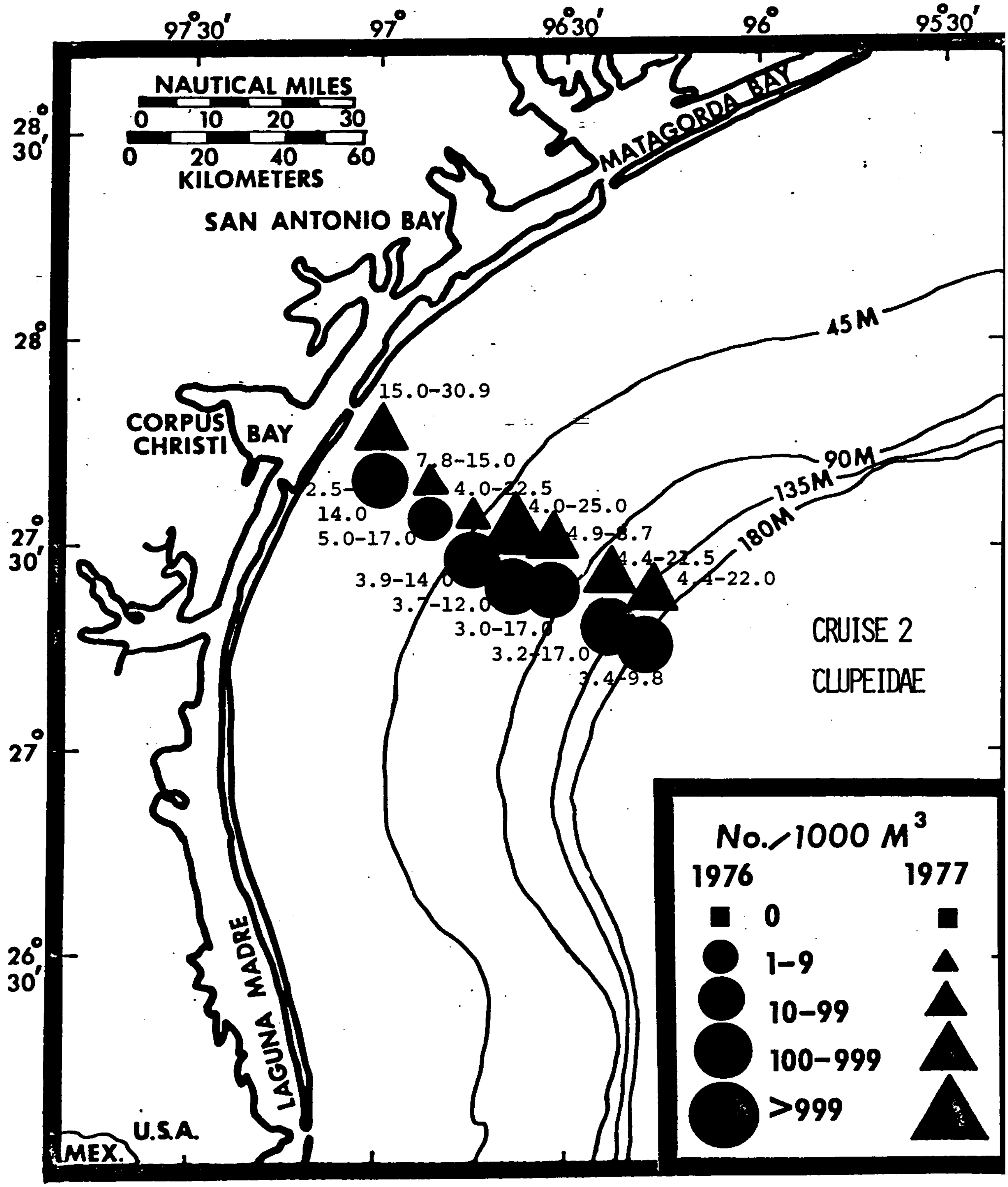


Figure 20. Distribution, abundance and size range (SL) in mm of clupeid larvae during Cruise 2.

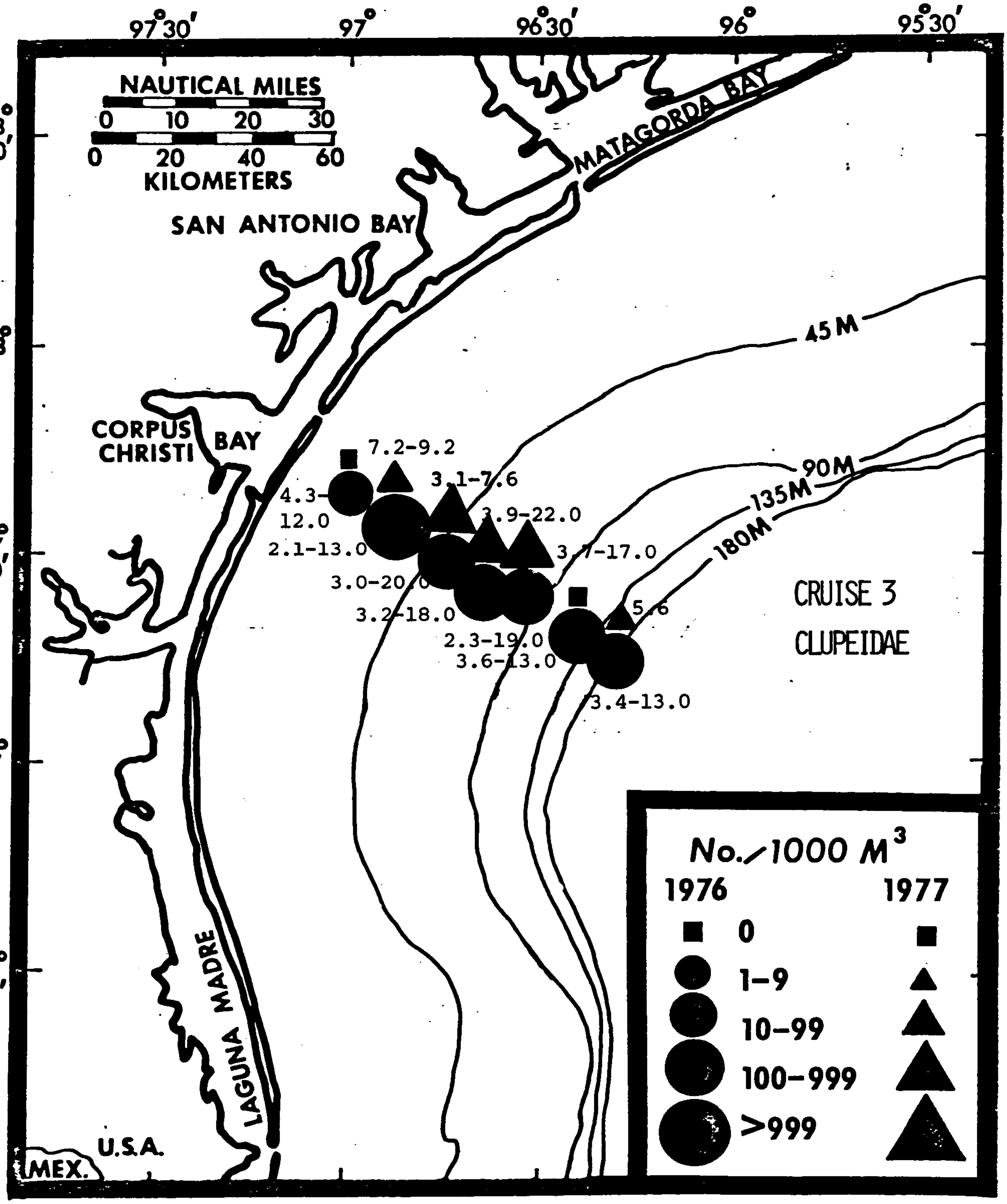


Figure 21. Distribution, abundance and size range (SL) in mm of clupeid larvae during Cruise 3.

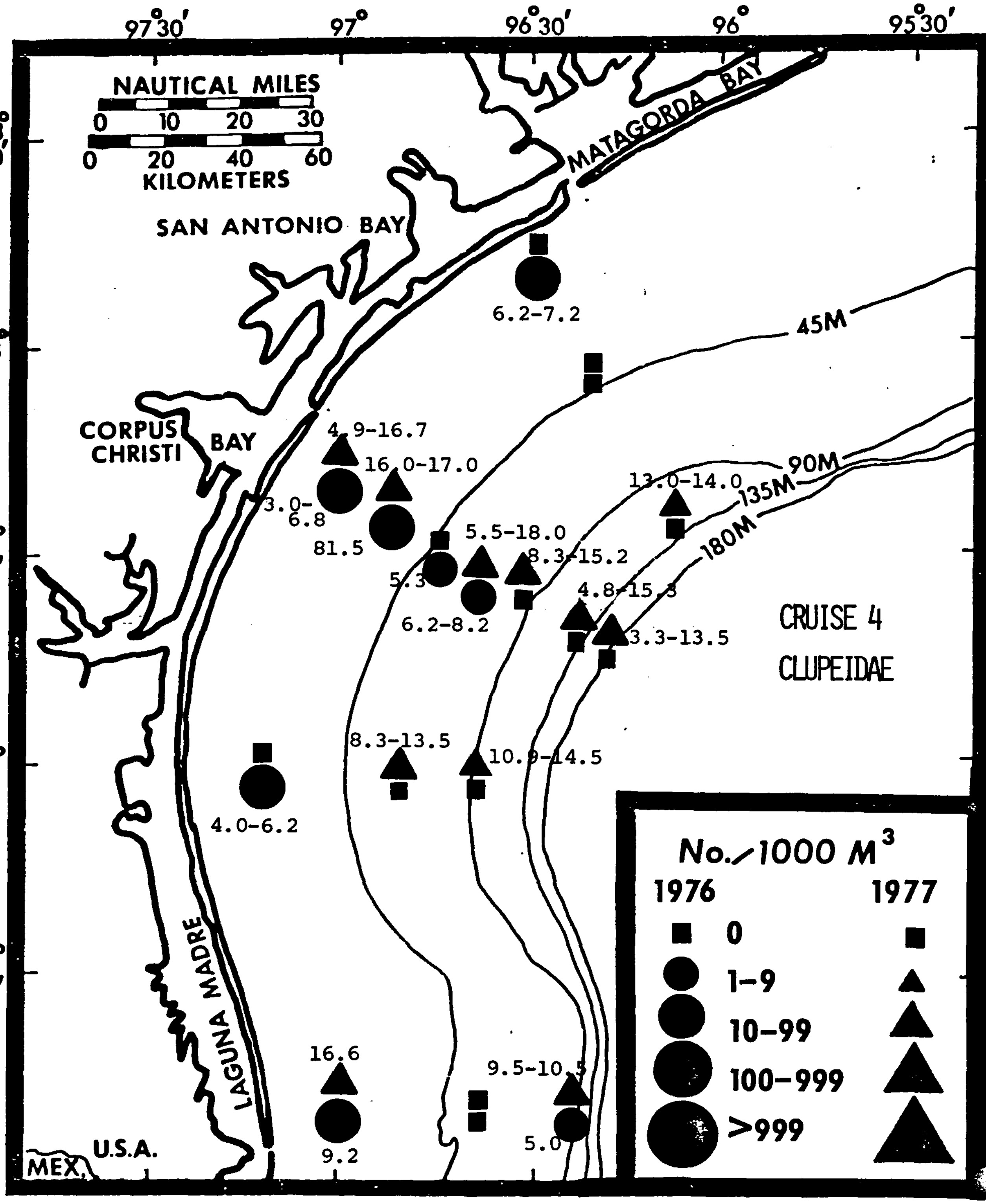


Figure 22. Distribution, abundance and size range (SL) in mm of clupeid larvae during Cruise 4.

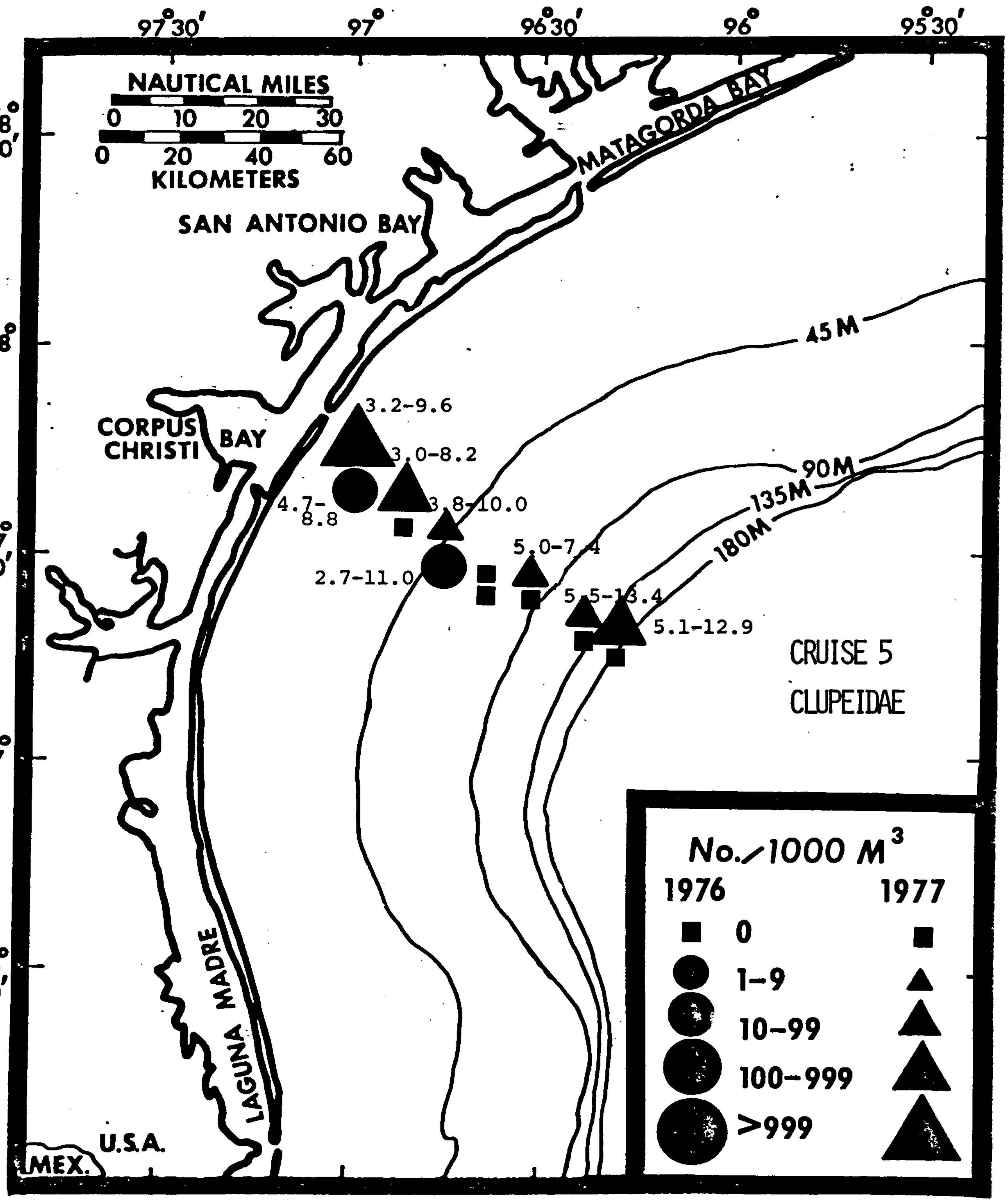


Figure 23. Distribution, abundance and size range (SL) in mm of clupeid larvae during Cruise 5.

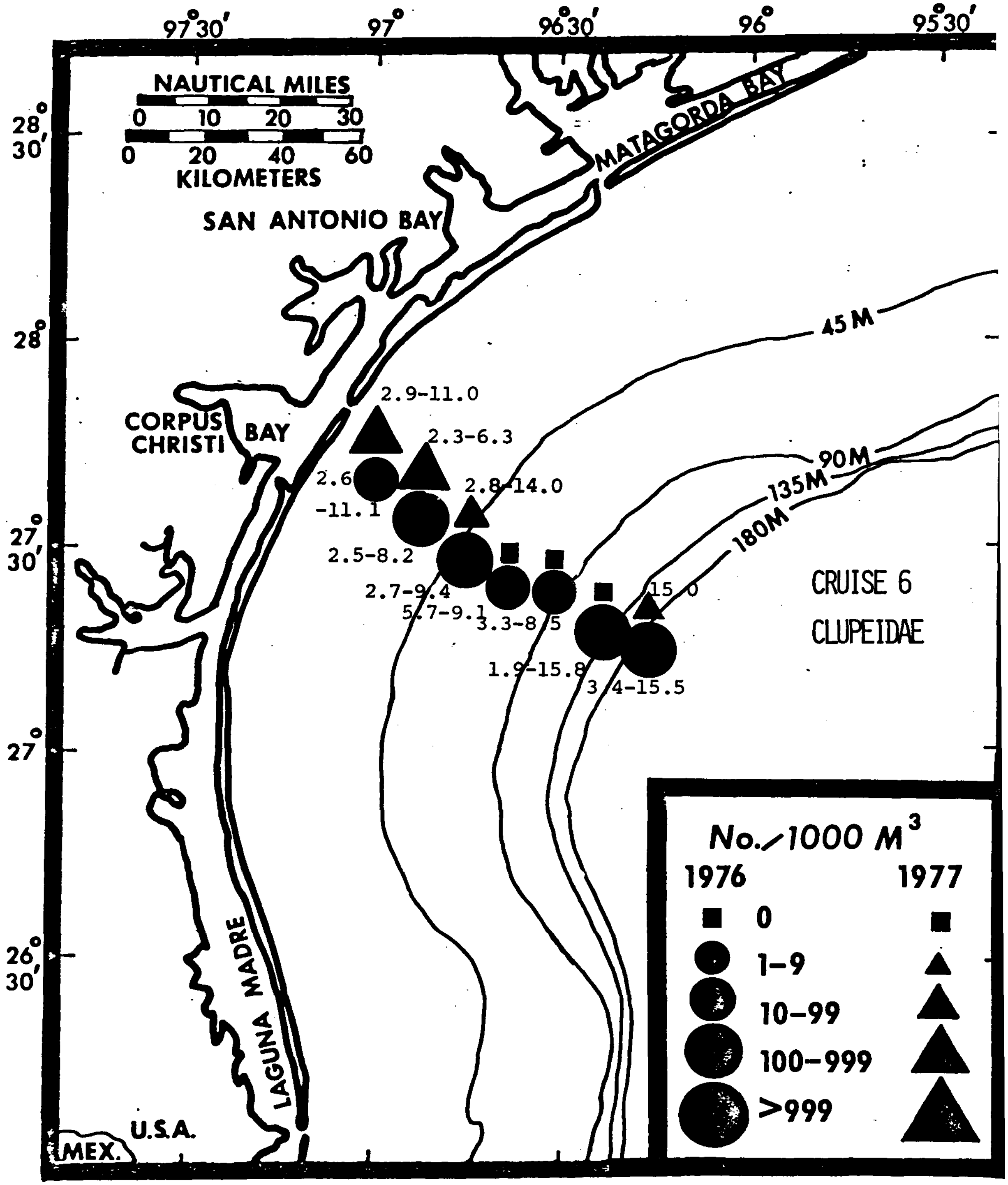


Figure 24. Distribution, abundance and size range (SL) in mm of clupeid larvae during Cruise 6.

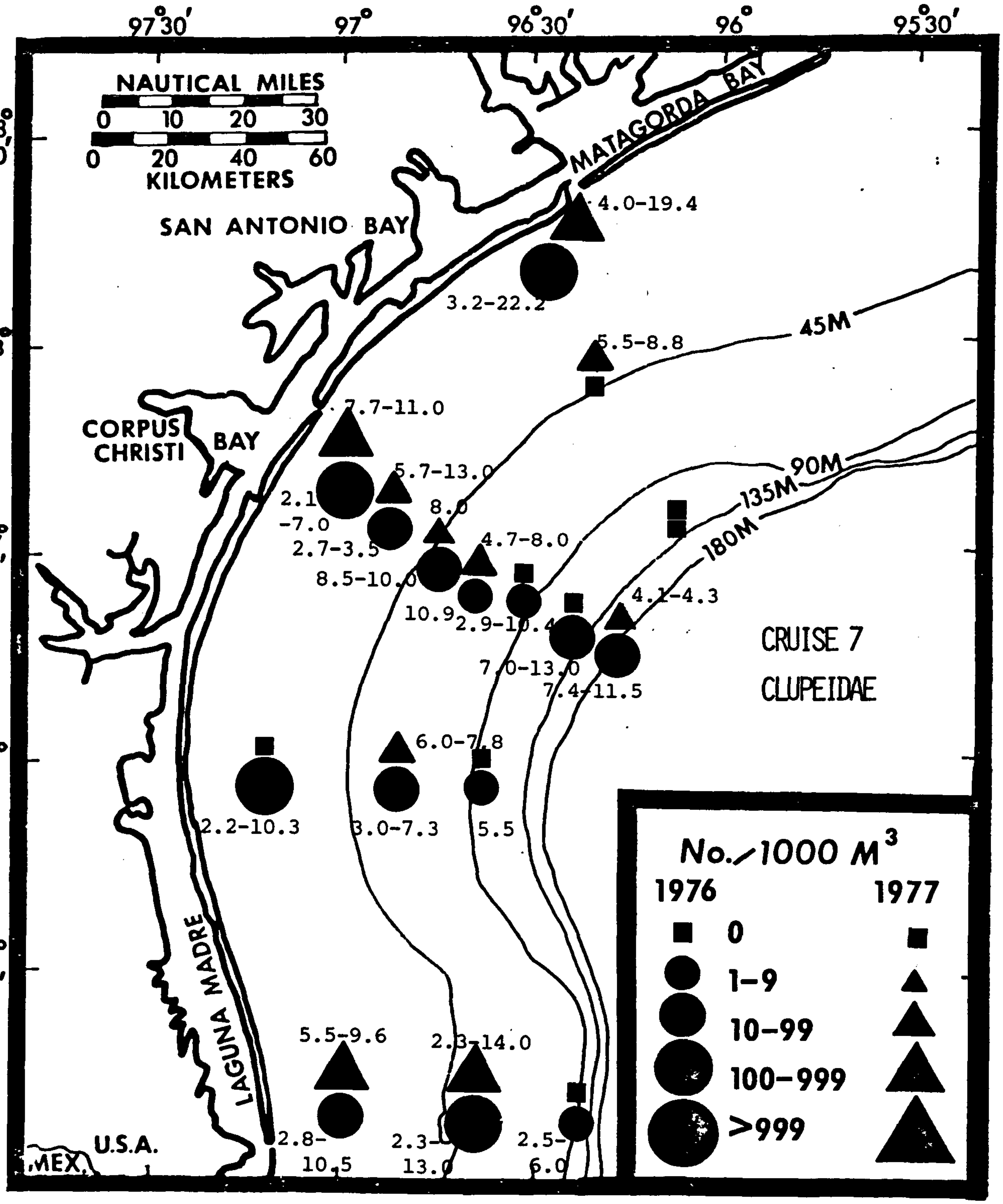


Figure 25. Distribution, abundance and size range (SL) in mm of clupeid larvae during Cruise 7.

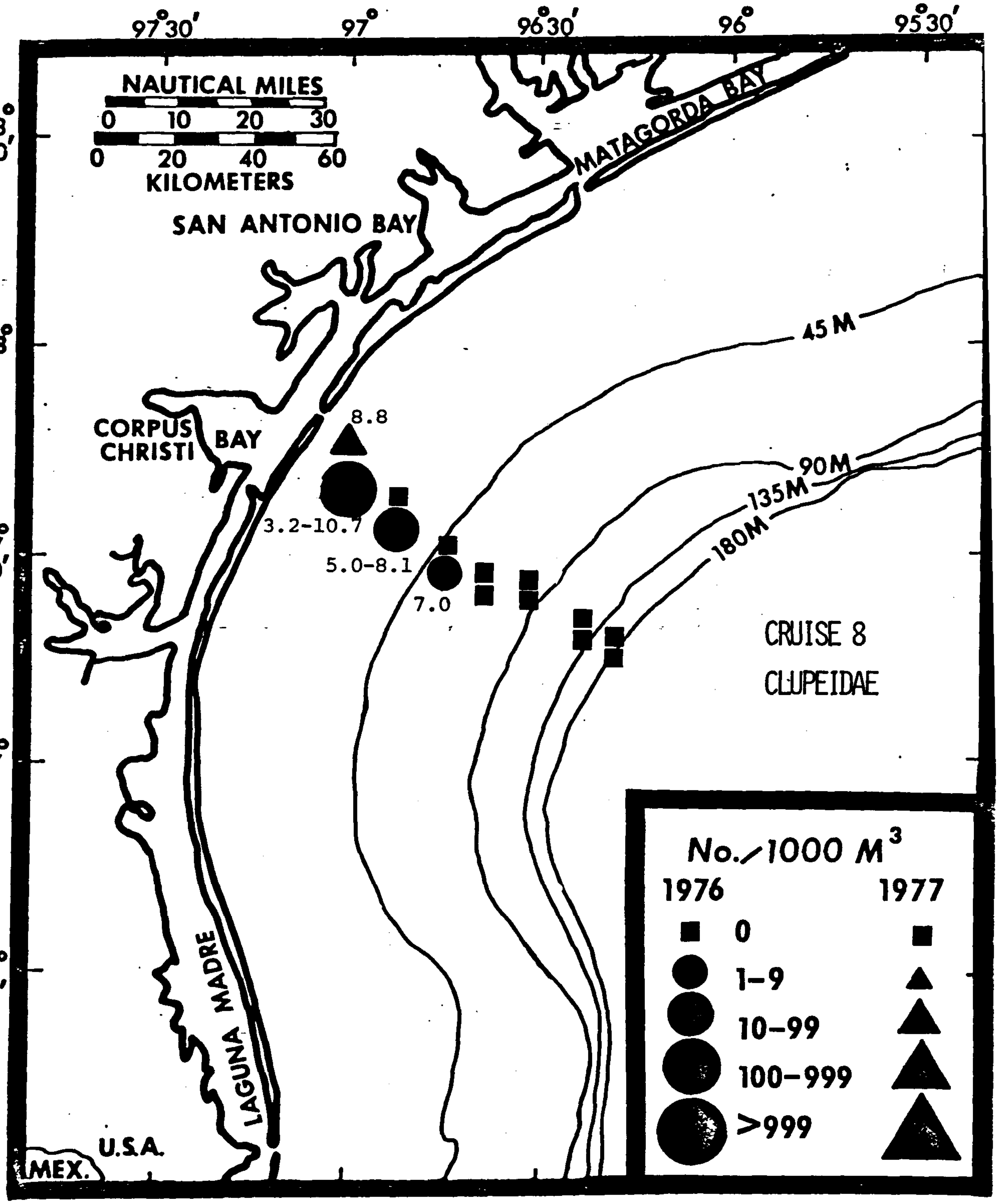


Figure 26. Distribution, abundance and size range (SL) in mm of clupeid larvae during Cruise 8.

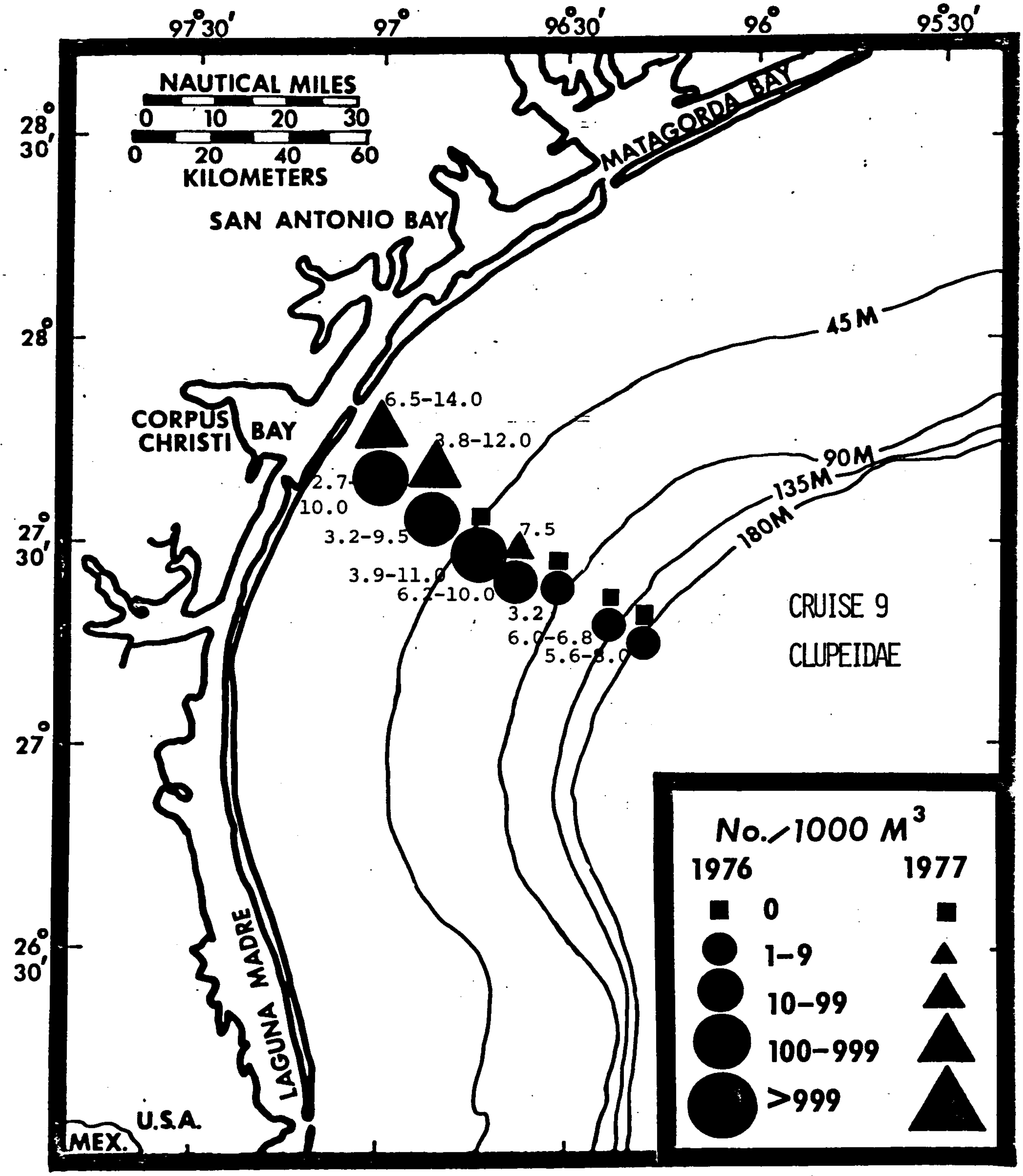


Figure 27. Distribution, abundance and size range (SL) in mm of clupeid larvae during Cruise 9.

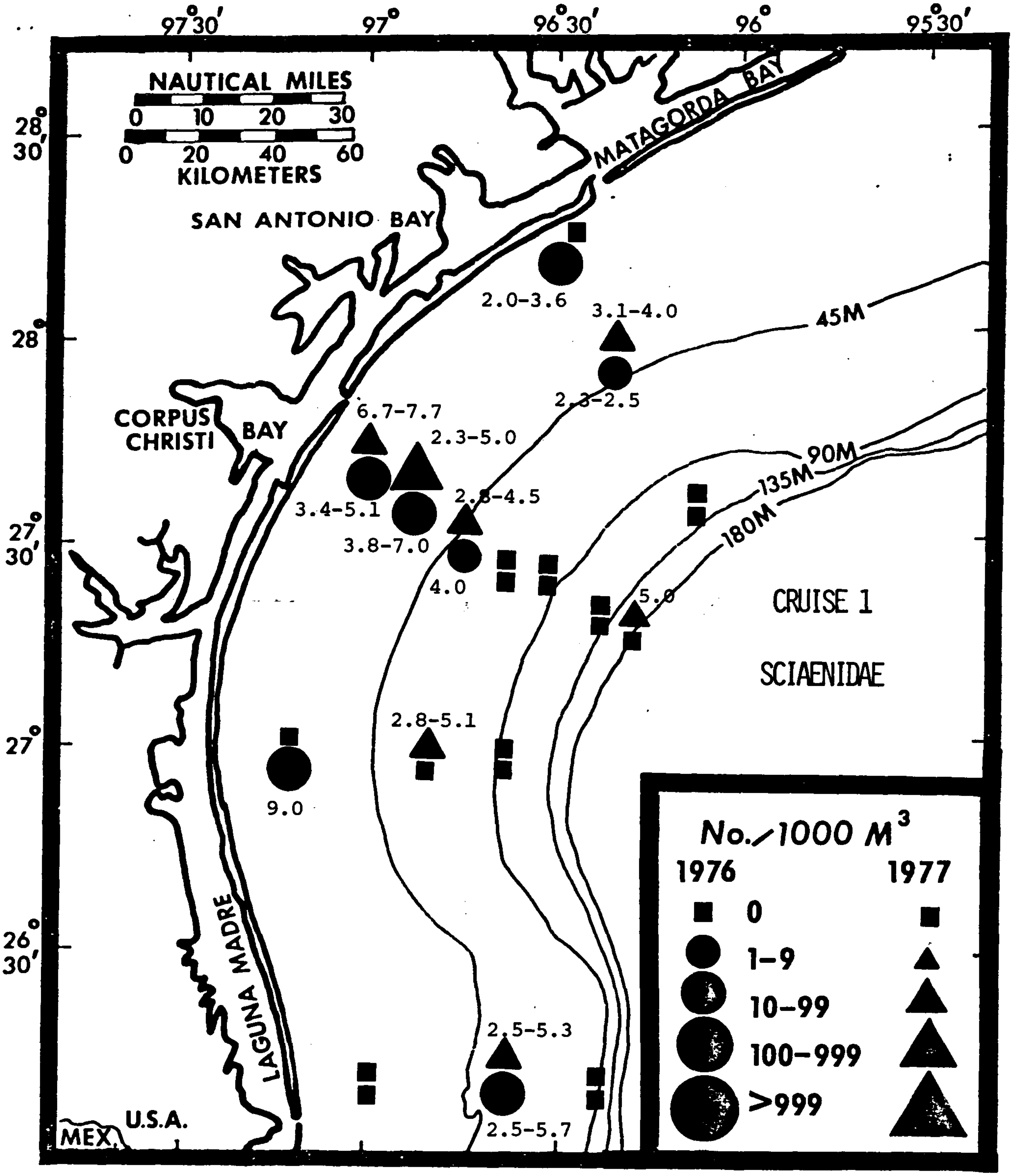


Figure 28. Distribution, abundance and size range (SL) in mm of sciaenid larvae during Cruise 1.

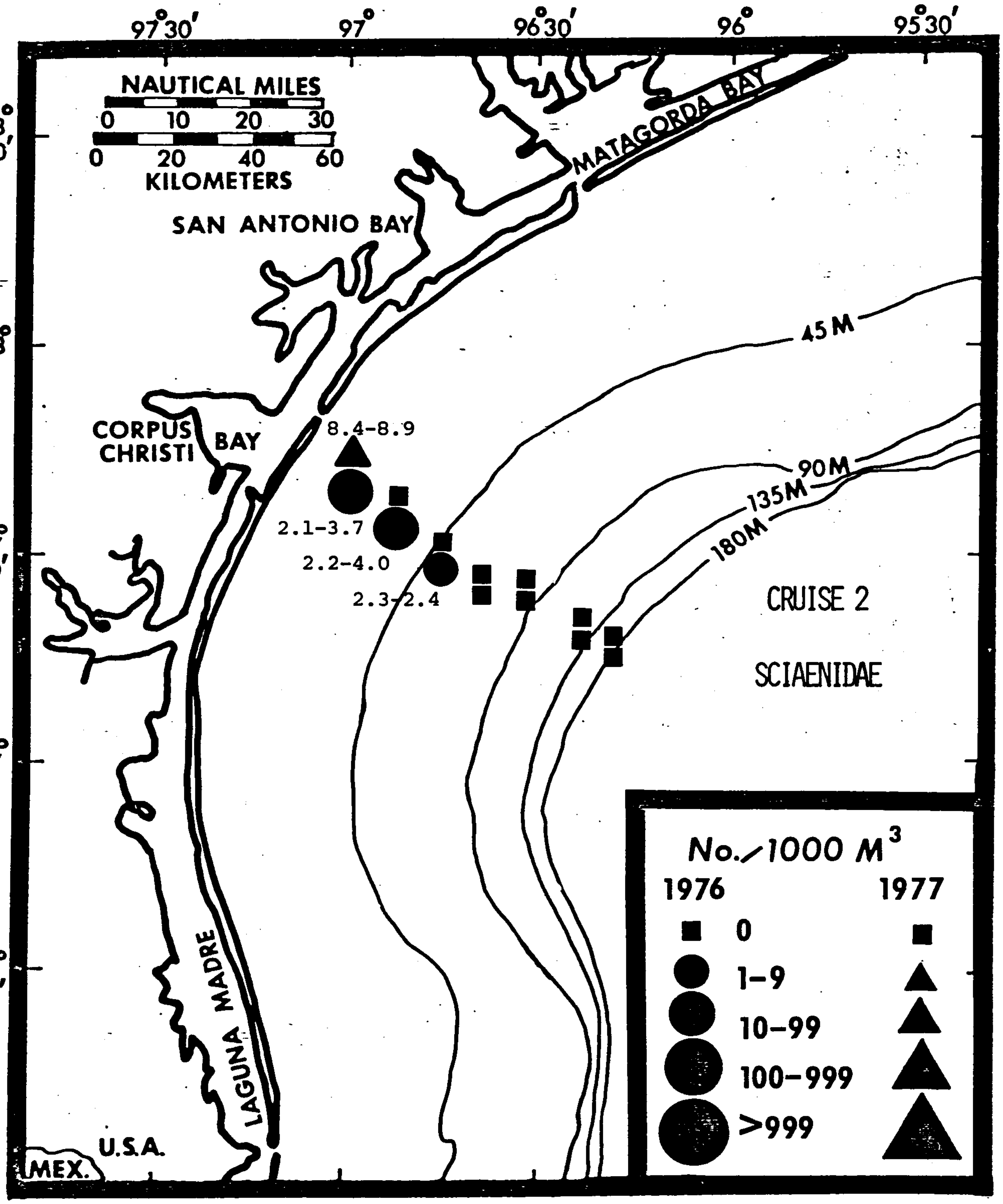


Figure 29. Distribution, abundance and size range (SL) in mm of sciaenid larvae during Cruise 2.

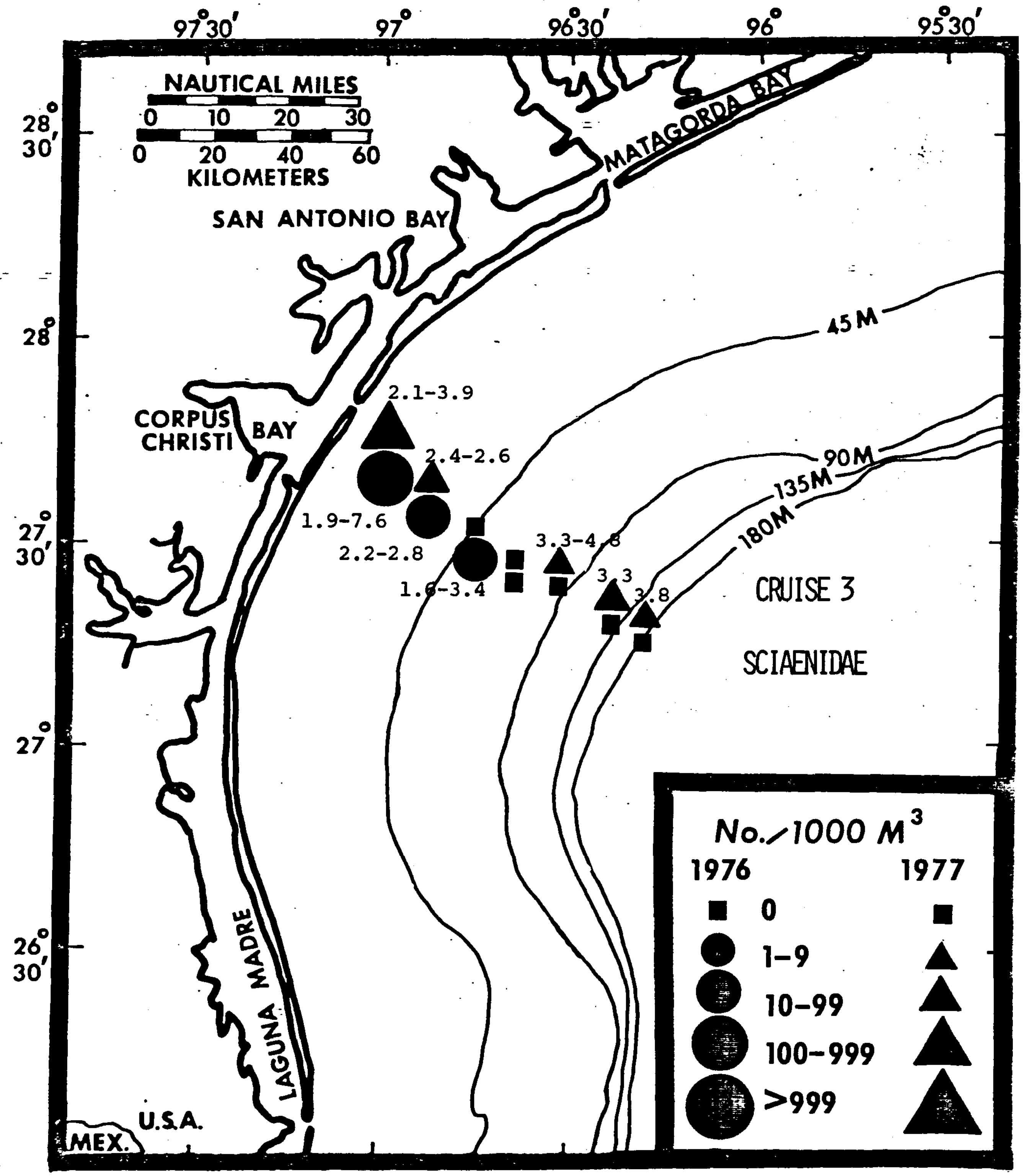


Figure 30. Distribution, abundance and size range (SL) in mm of sciaenid larvae during Cruise 3.

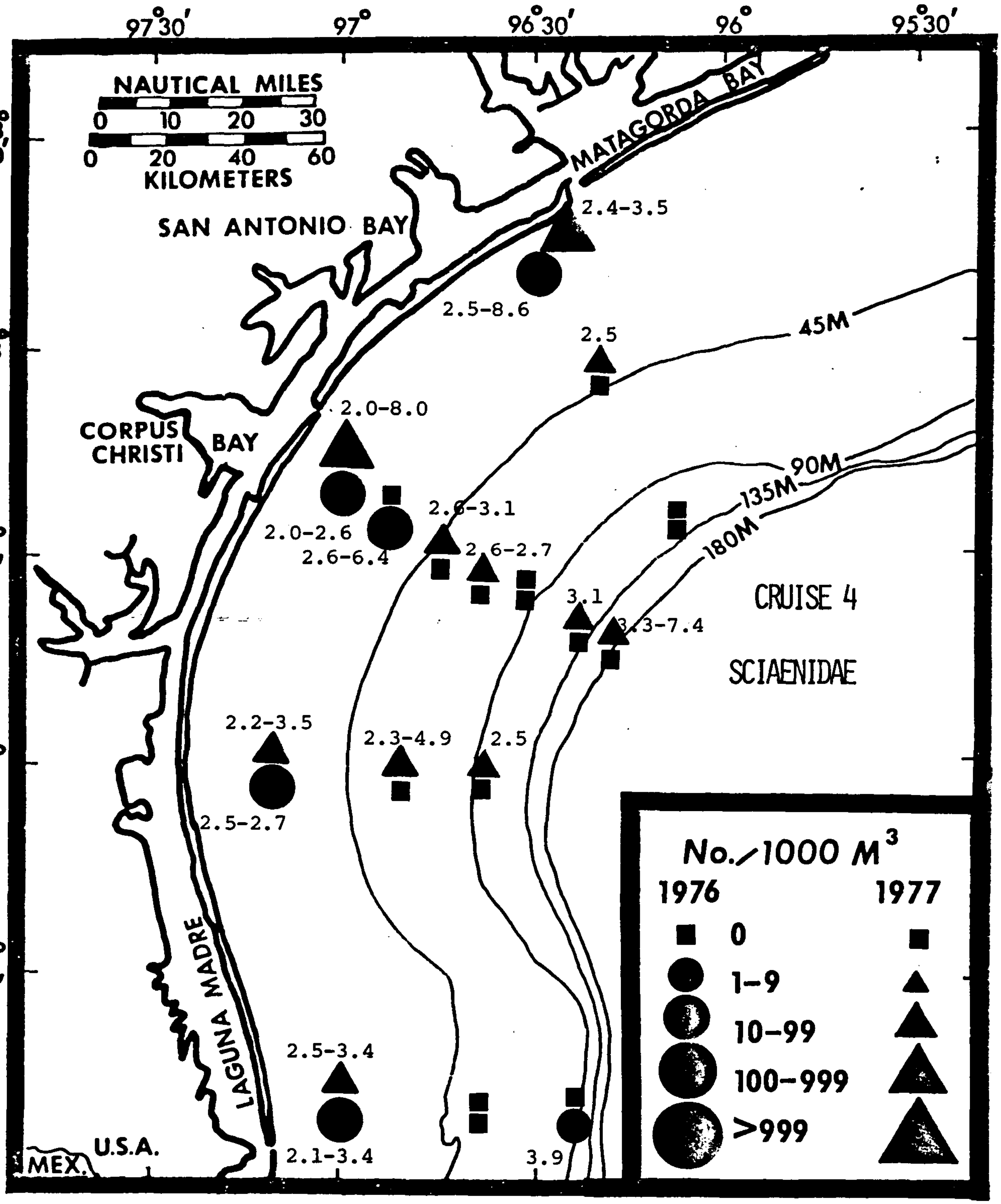


Figure 31. Distribution, abundance and size range (SL) in mm of sciaenid larvae during Cruise 4.

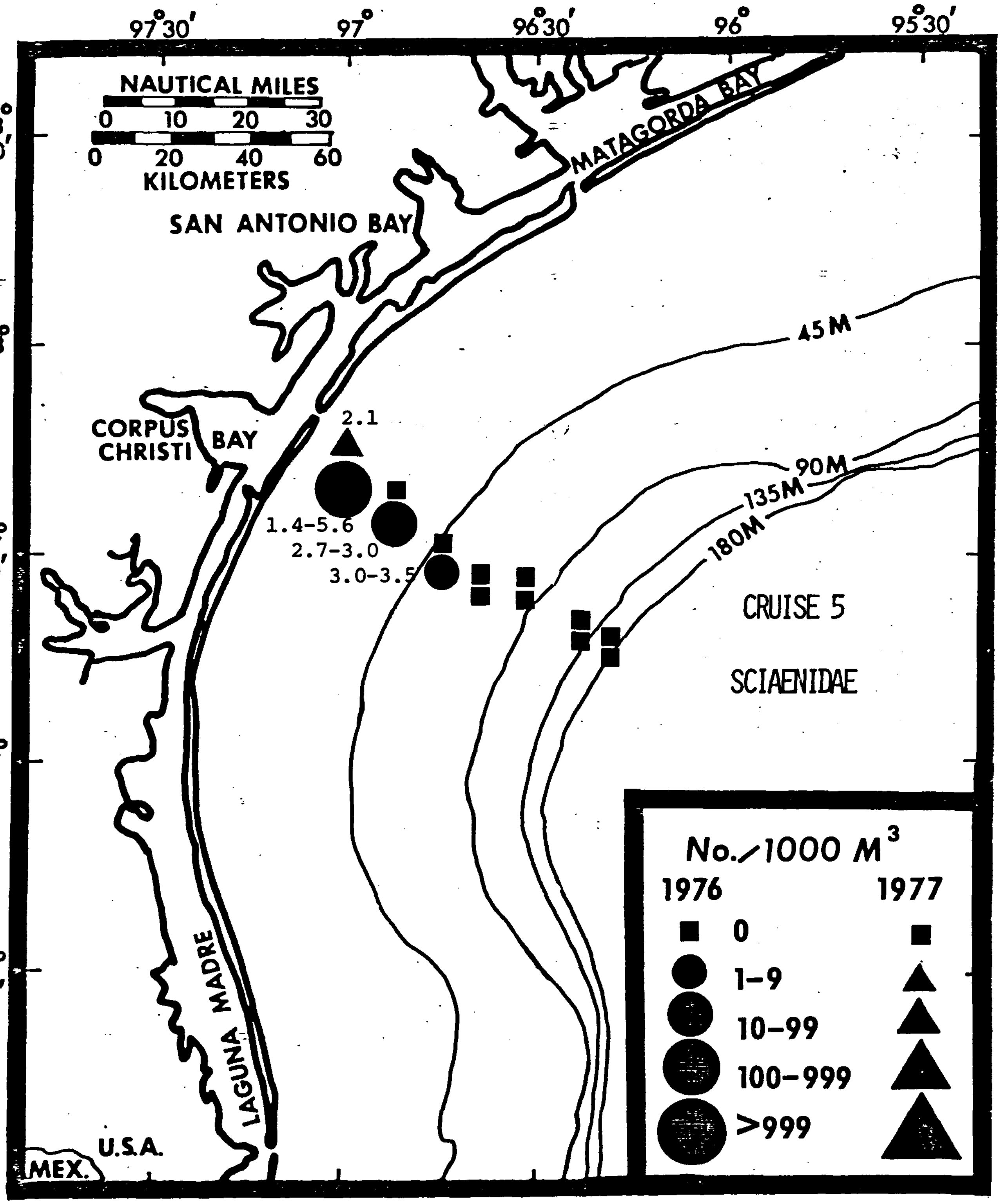


Figure 32. Distribution, abundance and size range (SL) in mm of sciaenid larvae during Cruise 5.

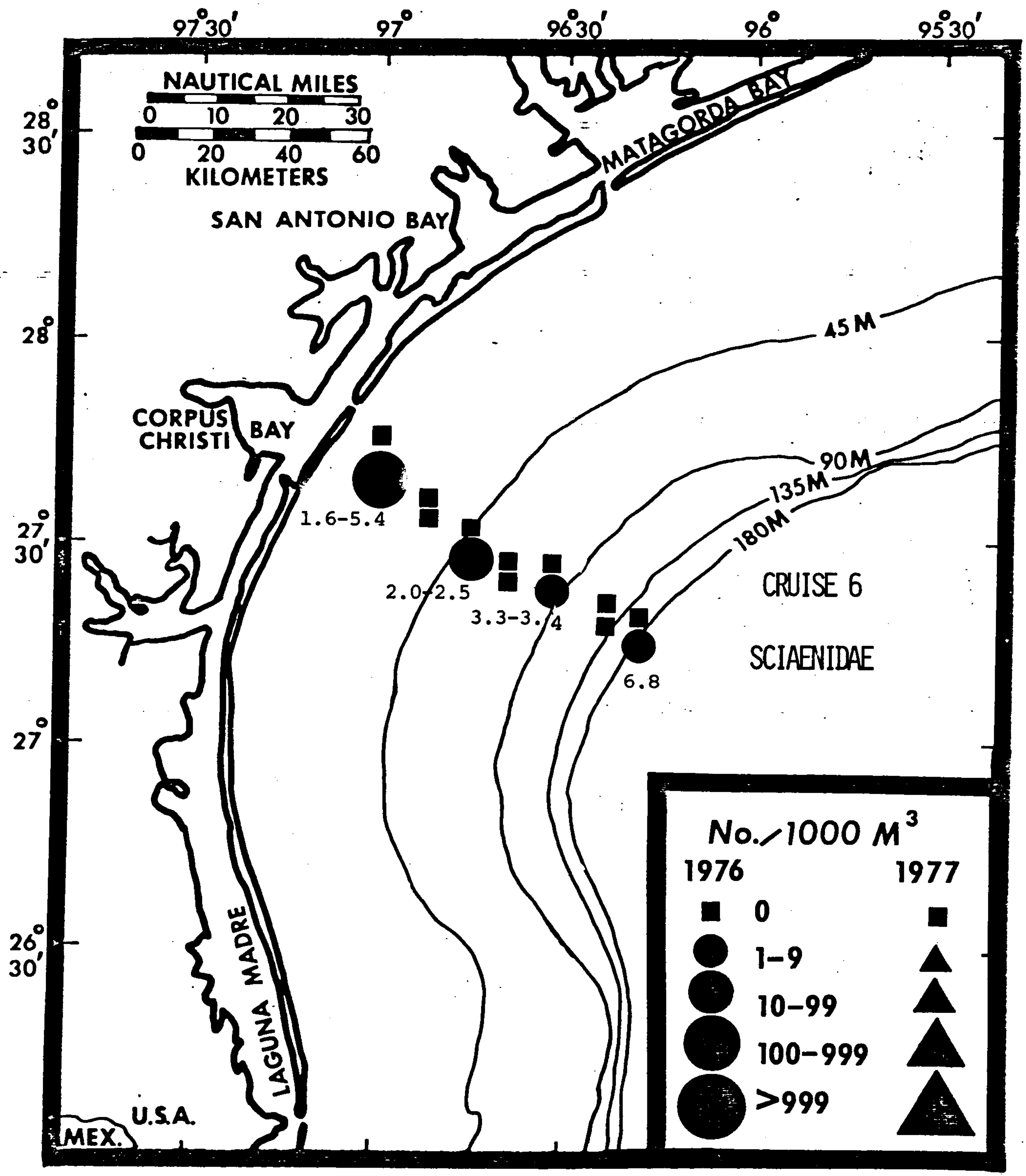


Figure 33. Distribution, abundance and size range (SL) in mm of sciaenid larvae during Cruise 6.

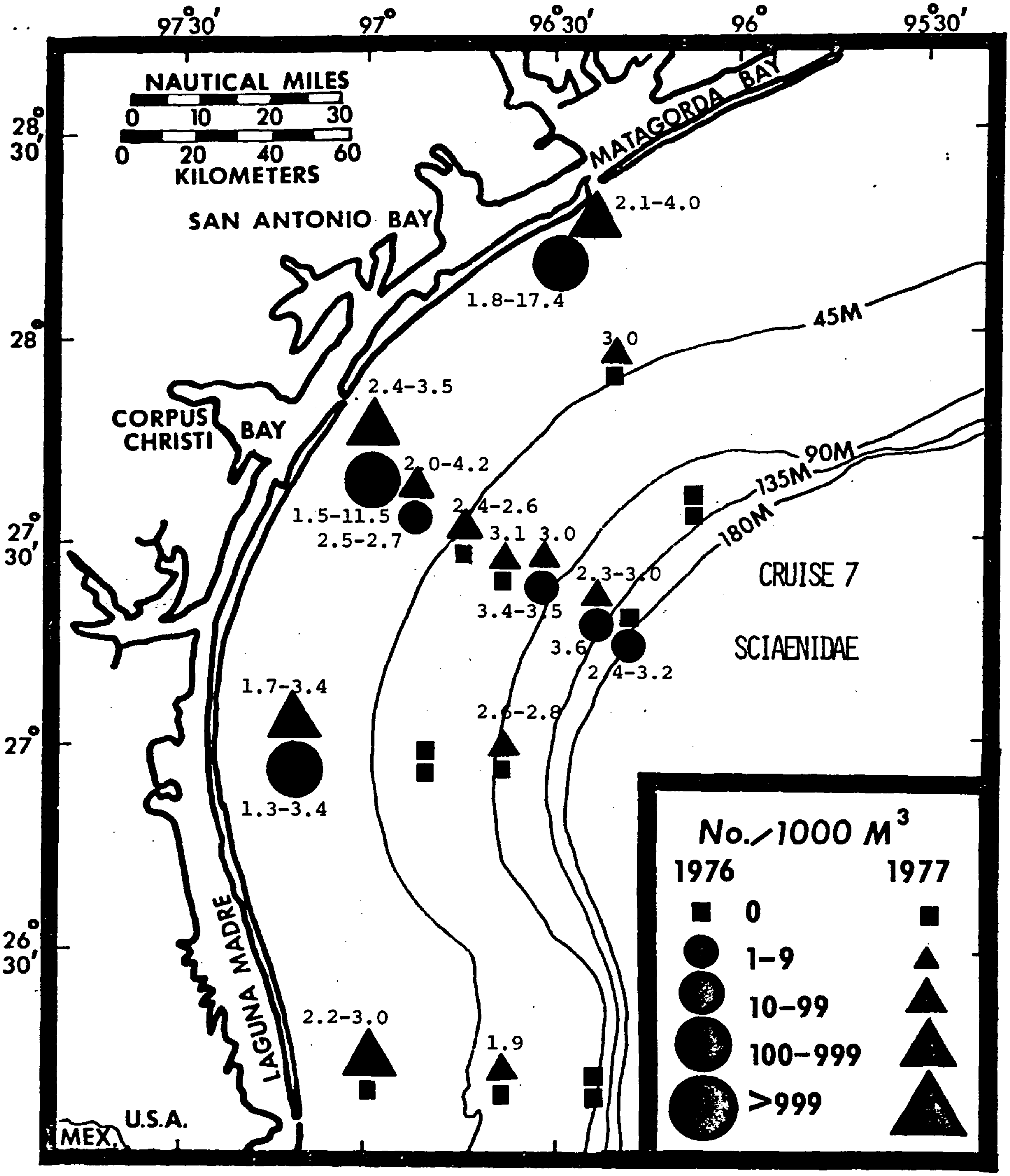


Figure 34. Distribution, abundance and size range (SL) in mm of sciaenid larvae during Cruise 7.

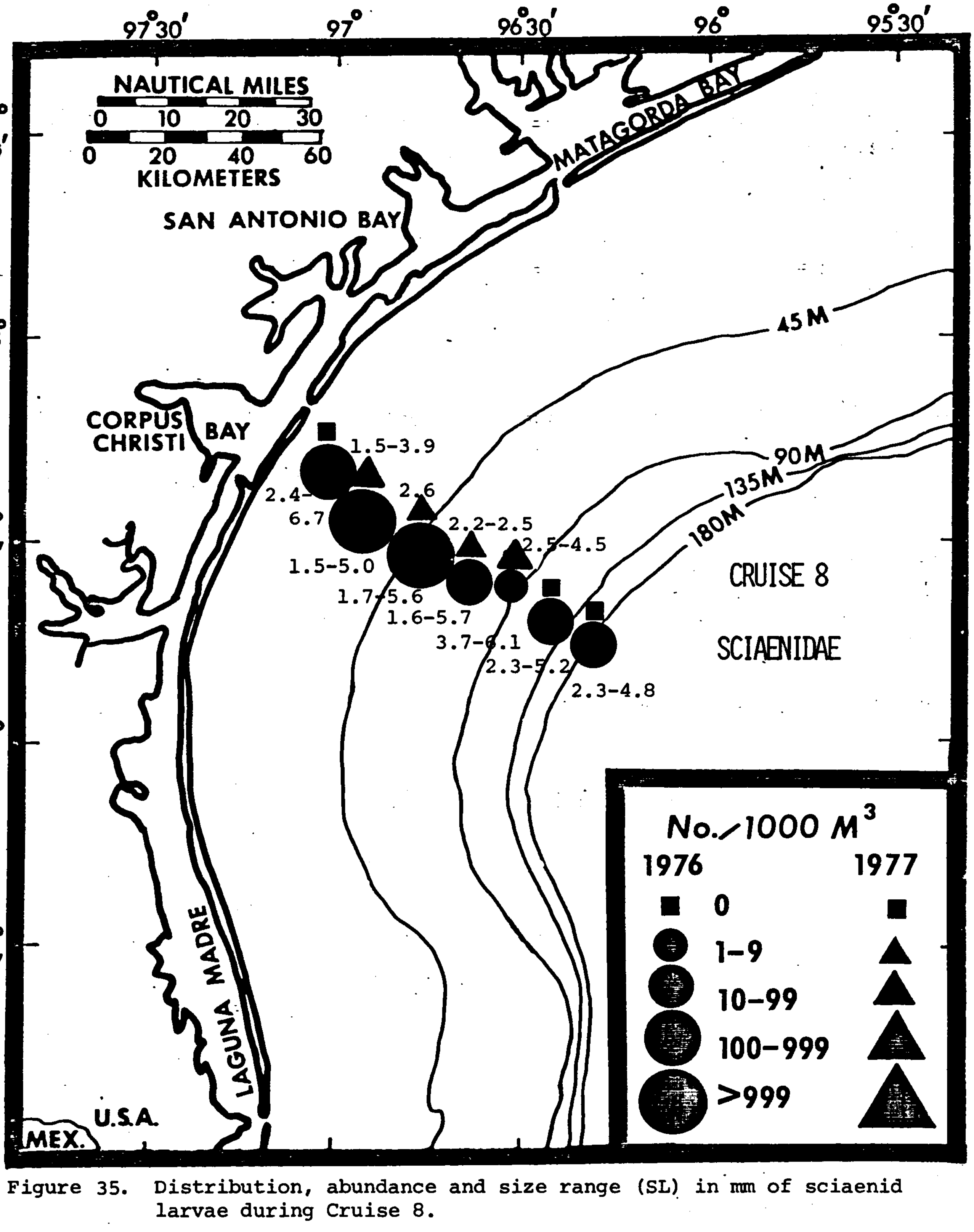


Figure 35. Distribution, abundance and size range (SL) in mm of sciaenid larvae during Cruise 8.

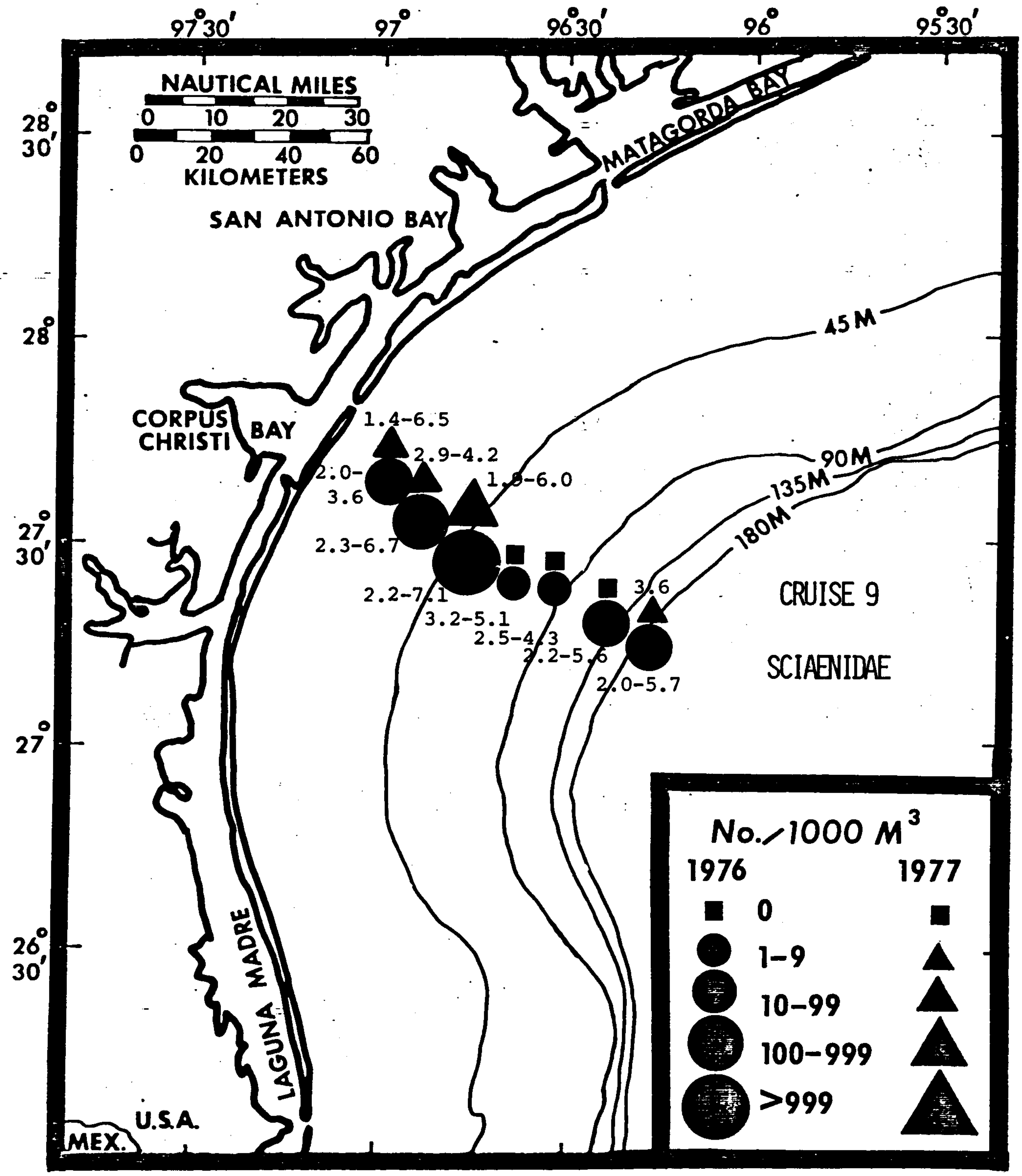


Figure 36. Distribution, abundance and size range (SL) in mm of sciaenid larvae during Cruise 9.

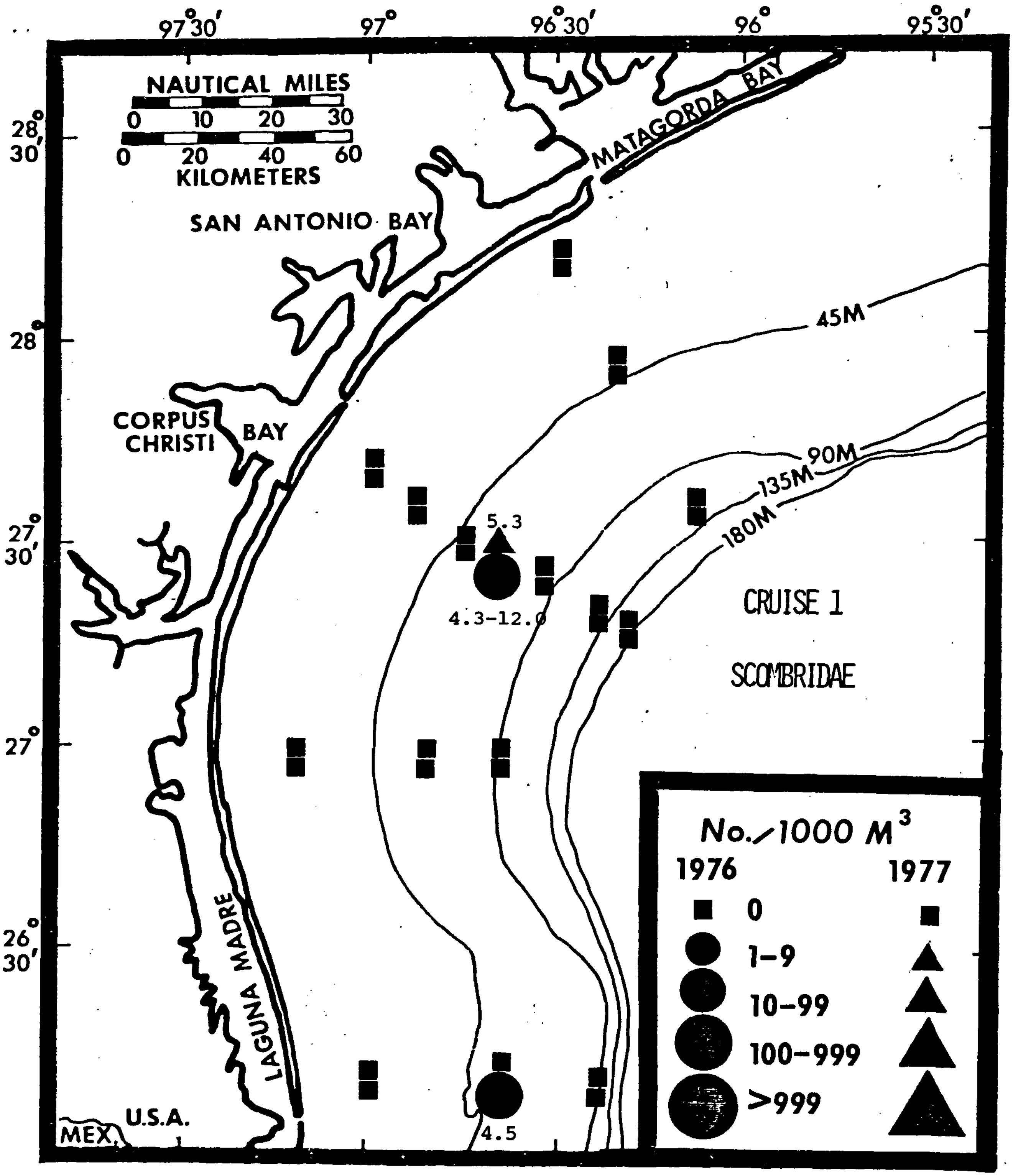


Figure 37. Distribution, abundance and size range (SL) in mm of scombrid larvae during Cruise 1.

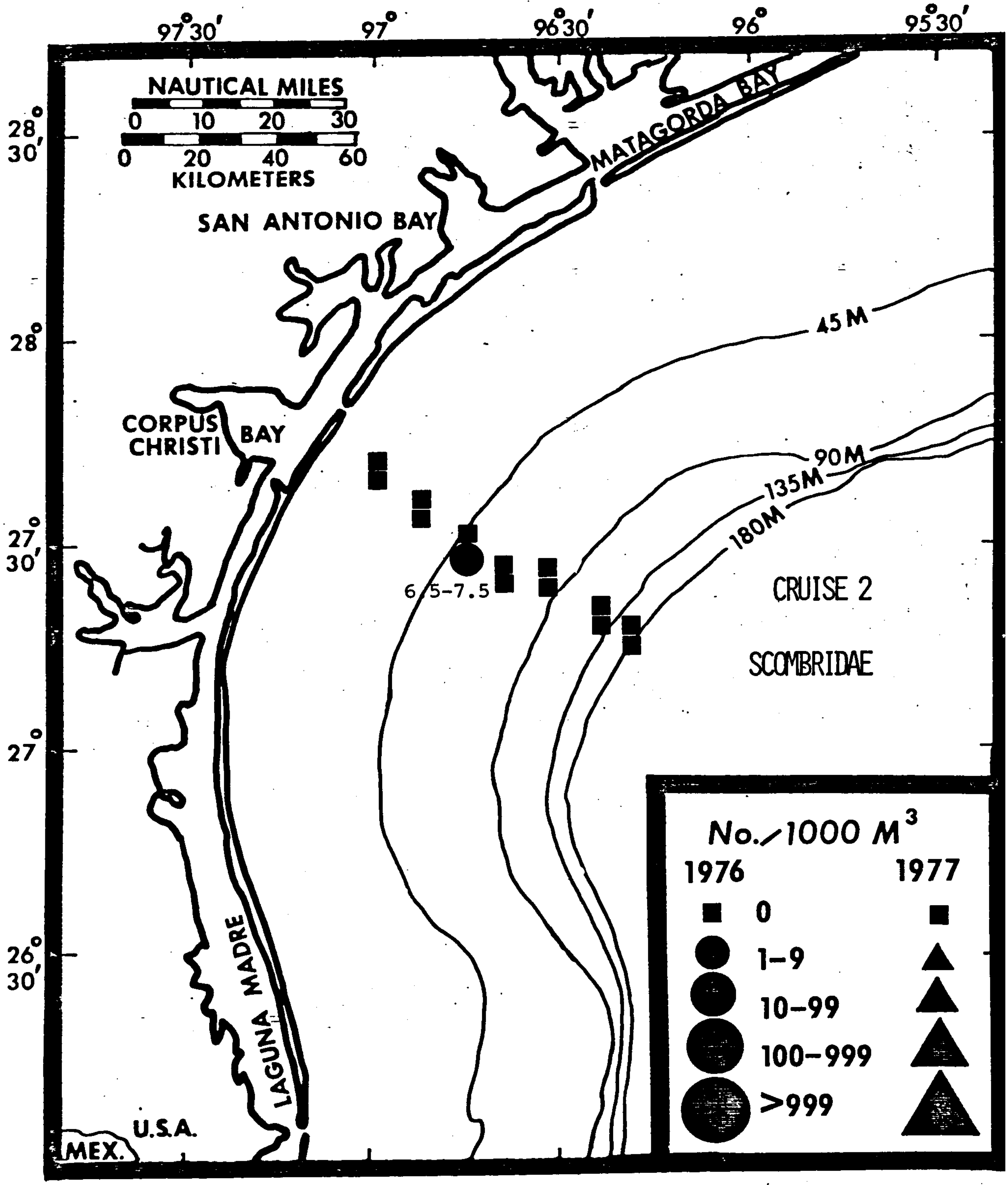


Figure 38. Distribution, abundance and size range (SL) in mm of scombrid larvae during Cruise 2.

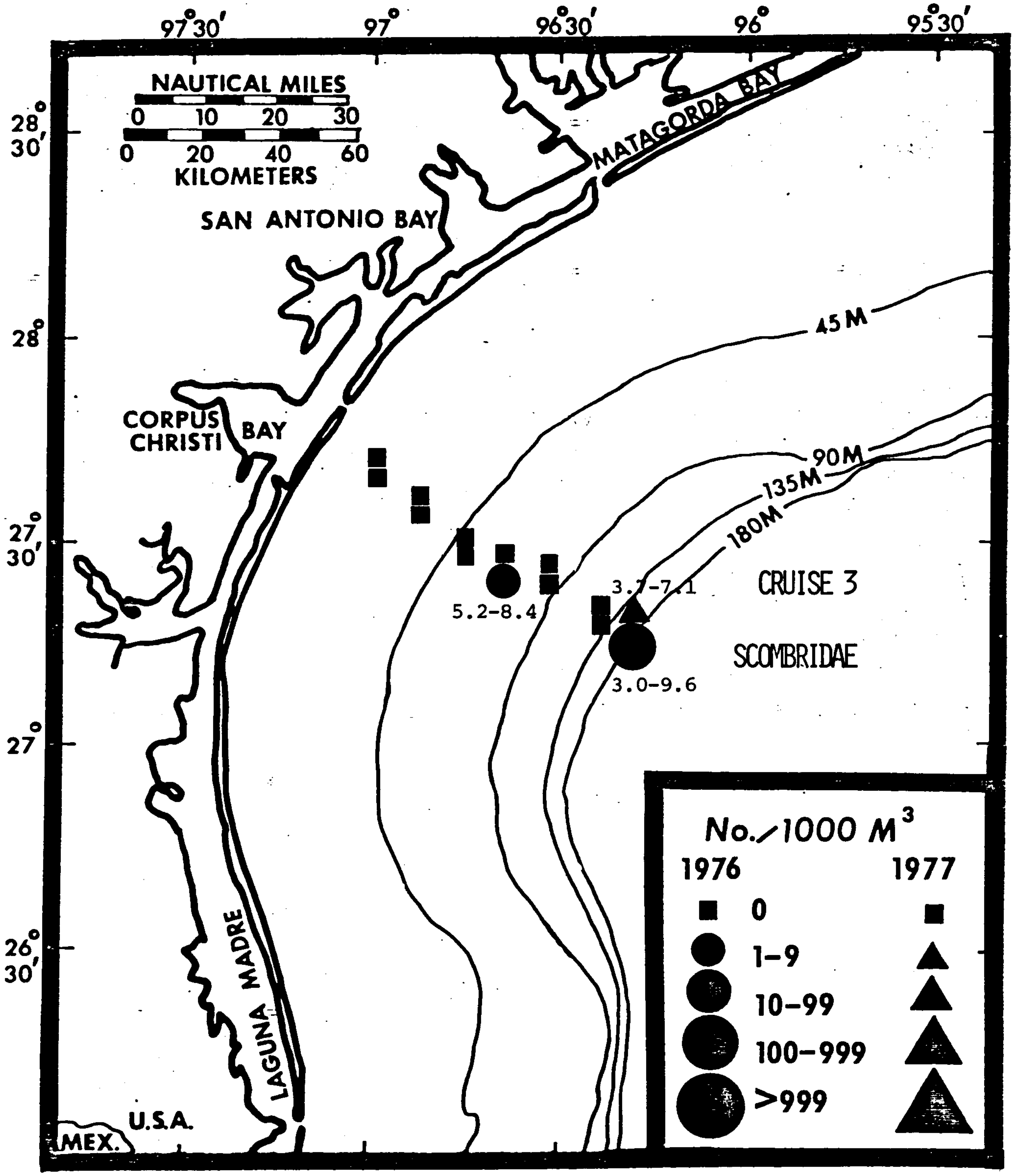


Figure 39. Distribution, abundance and size range (SL) in mm of scombrid larvae during Cruise 3.

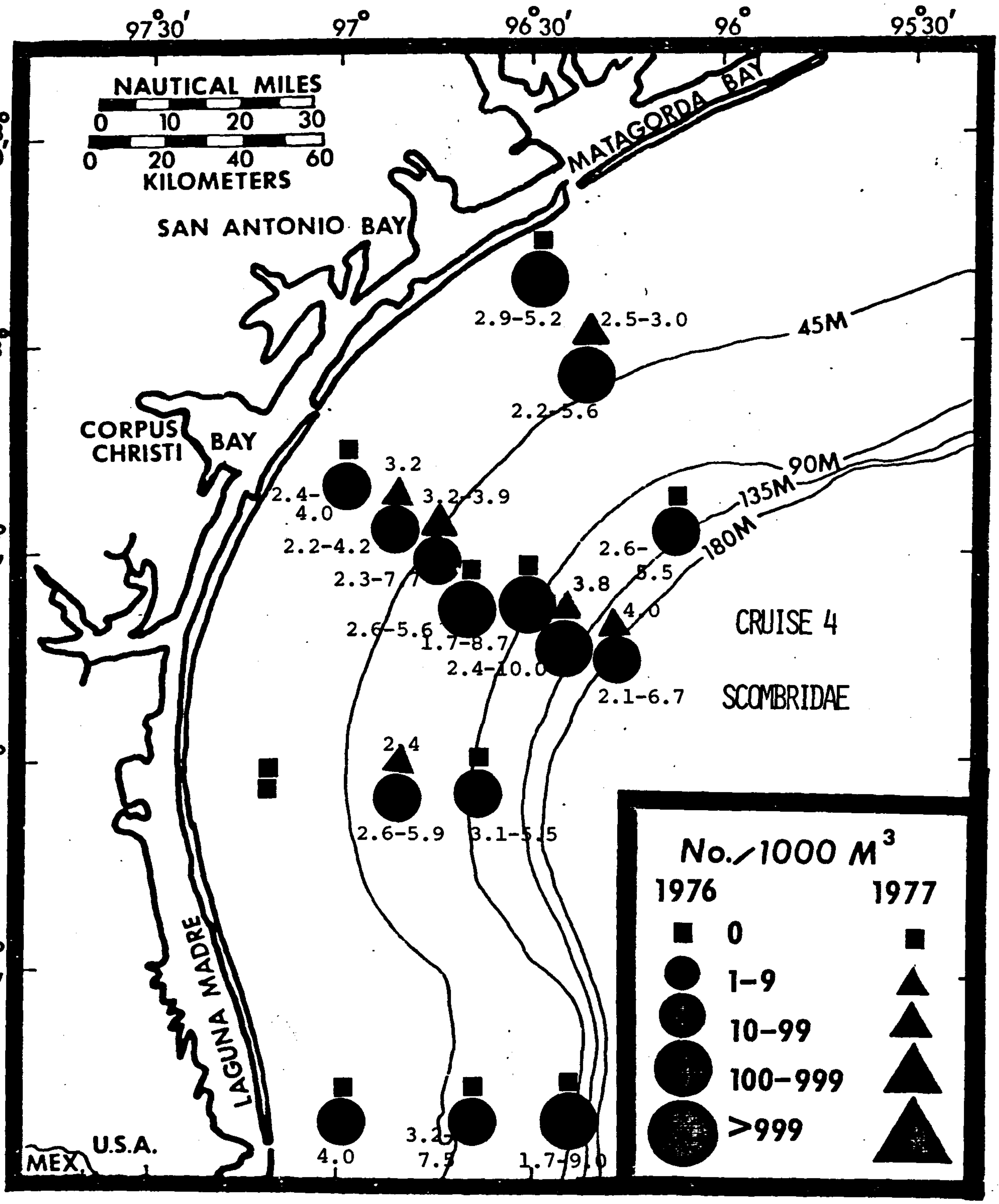


Figure 40. Distribution, abundance and size range (SL) in mm of scombrid larvae during Cruise 4.

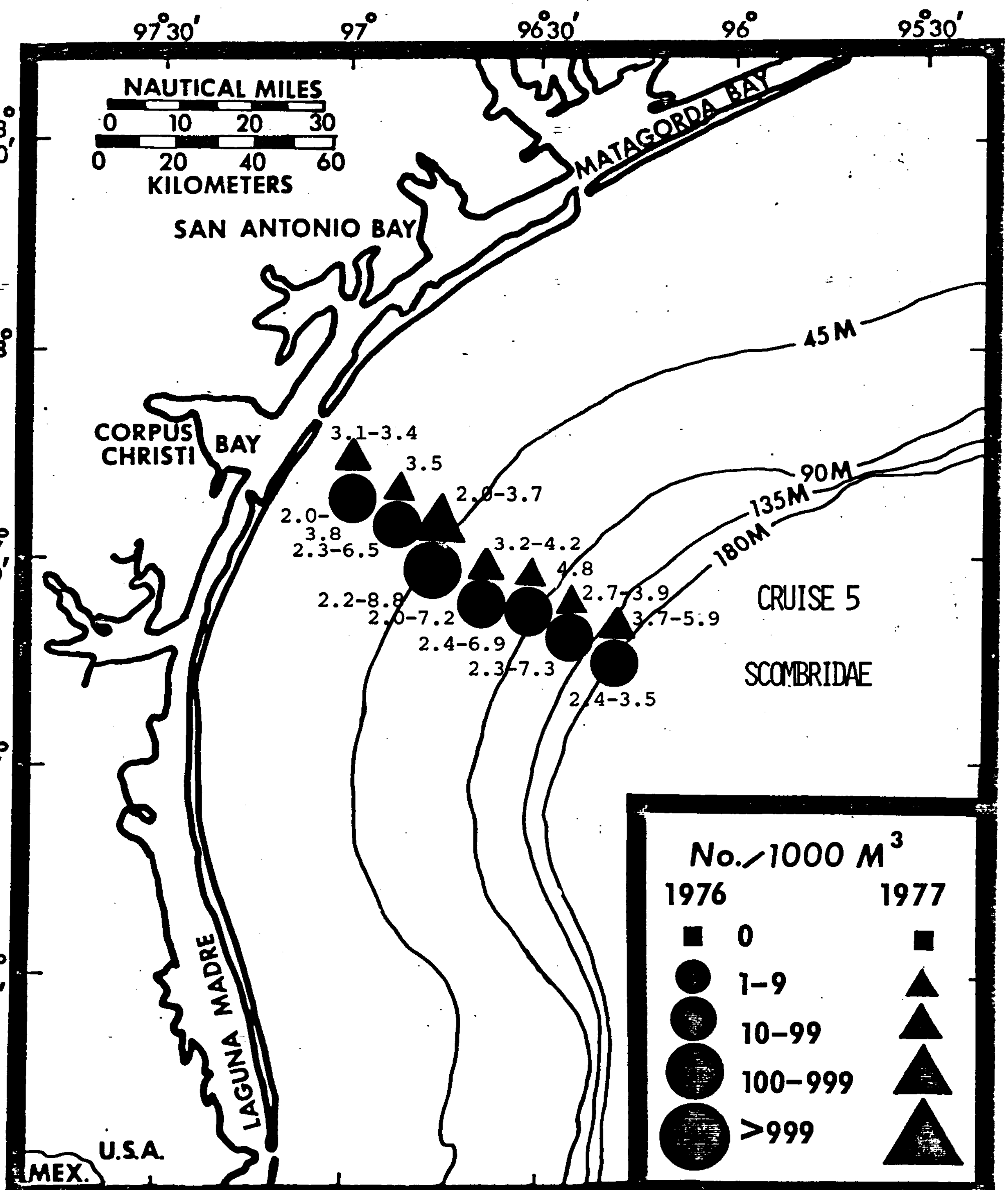


Figure 41. Distribution, abundance and size range (SL) in mm of scombrid larvae during Cruise 5.

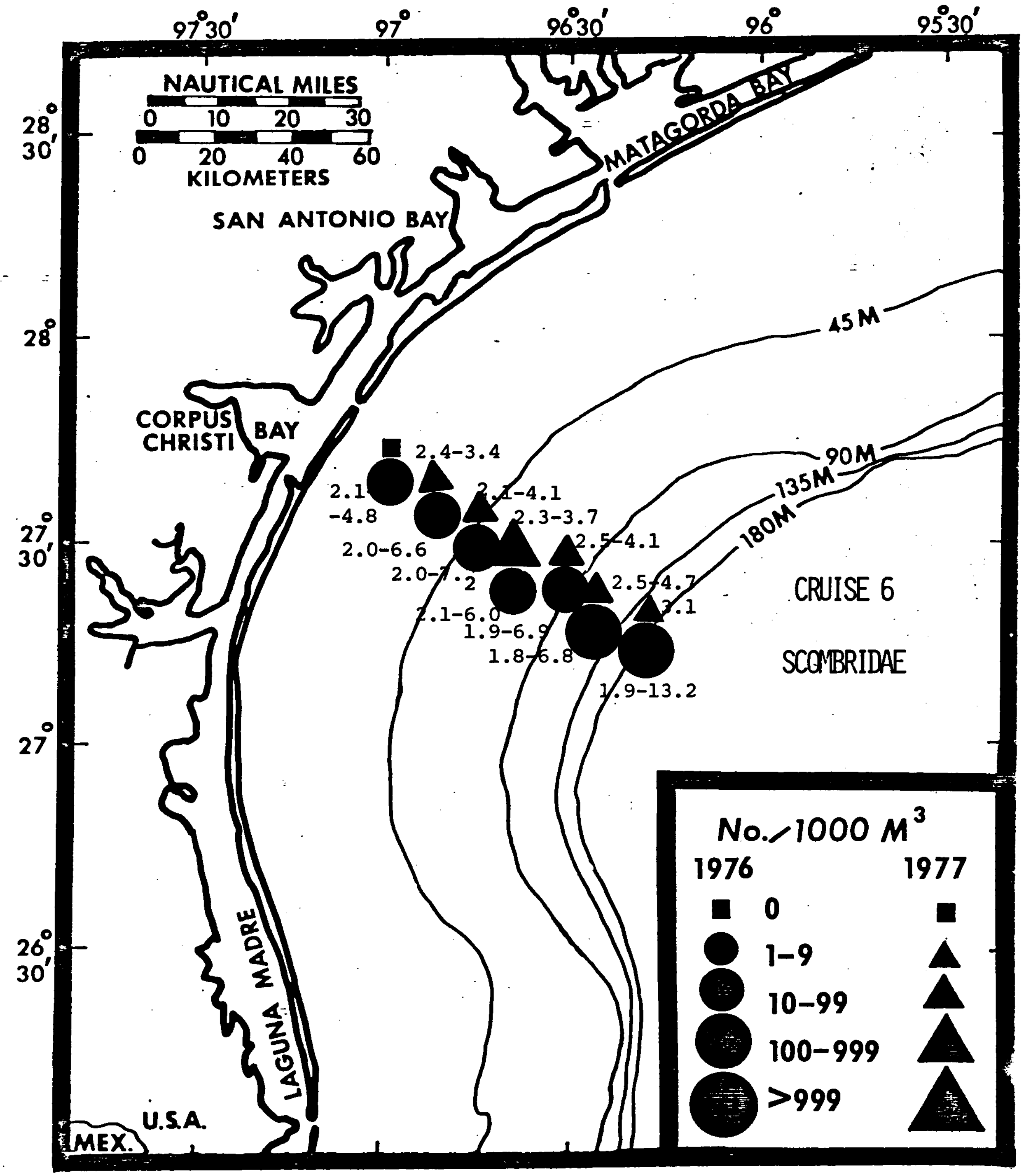


Figure 42. Distribution, abundance and size range (SL) in mm of scombrid larvae during Cruise 6.

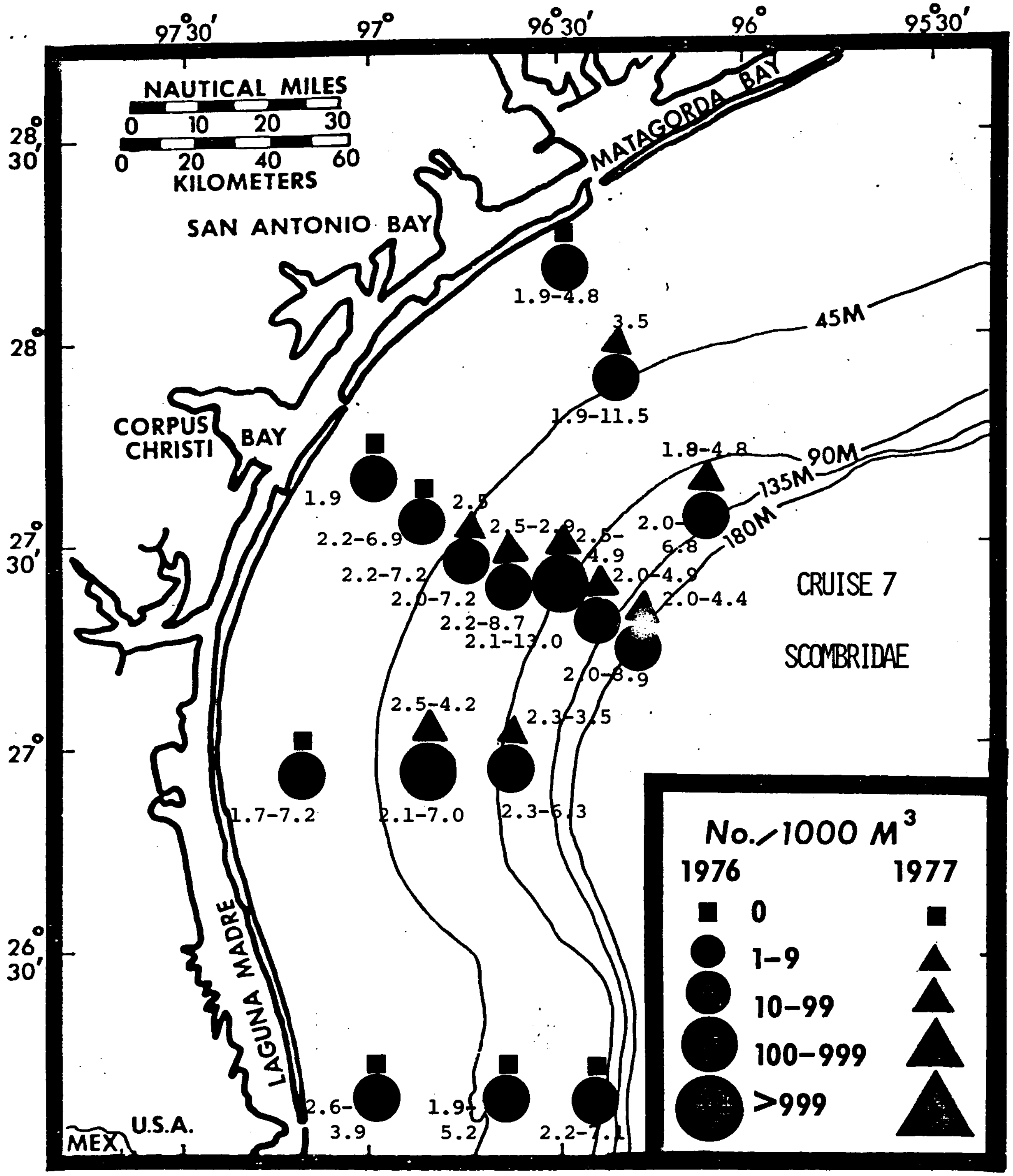


Figure 43. Distribution, abundance and size range (SL) in mm of scombrid larvae during Cruise 7.

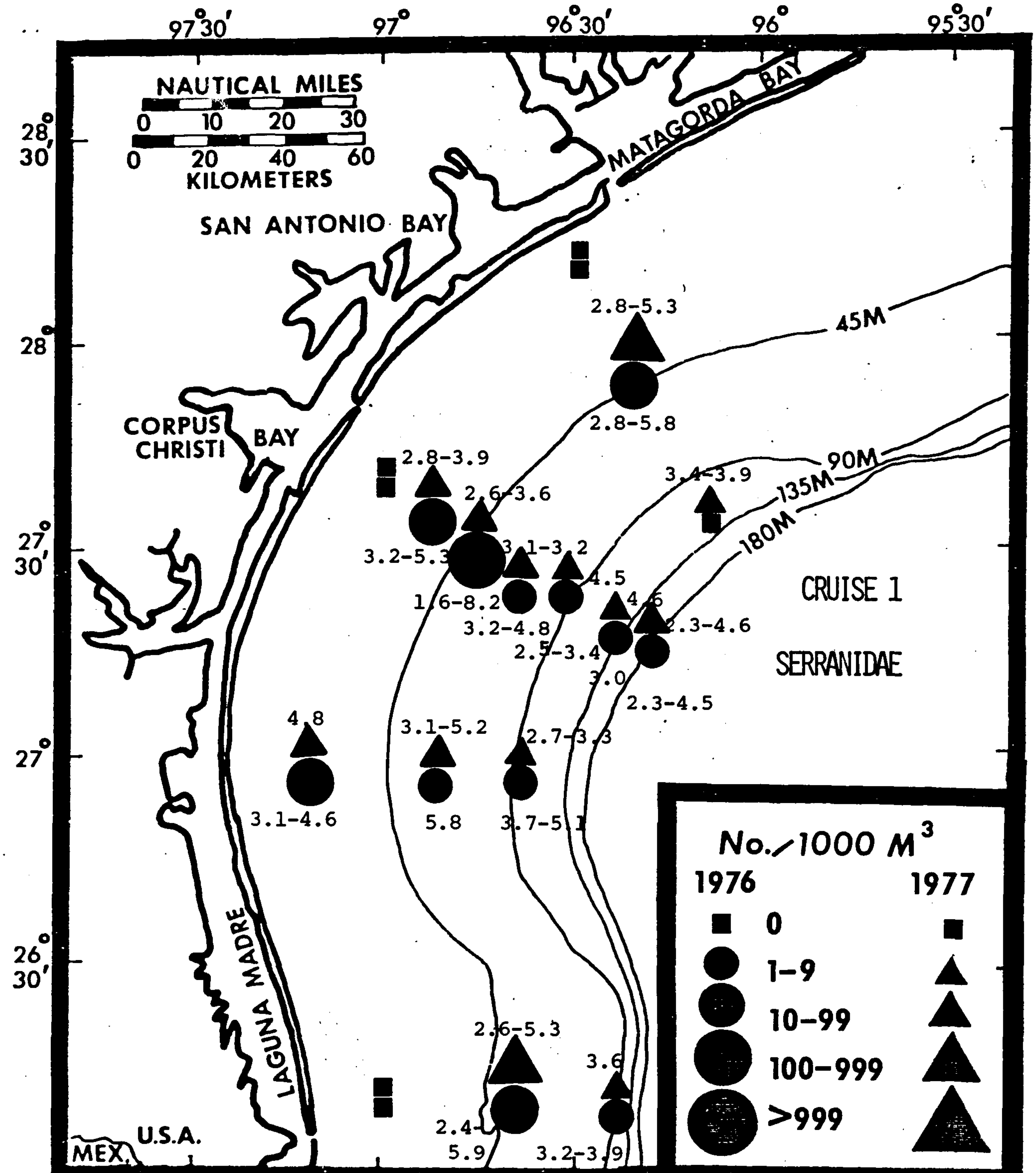


Figure 44. Distribution, abundance and size range (SL) in mm of serranid larvae during Cruise 1.

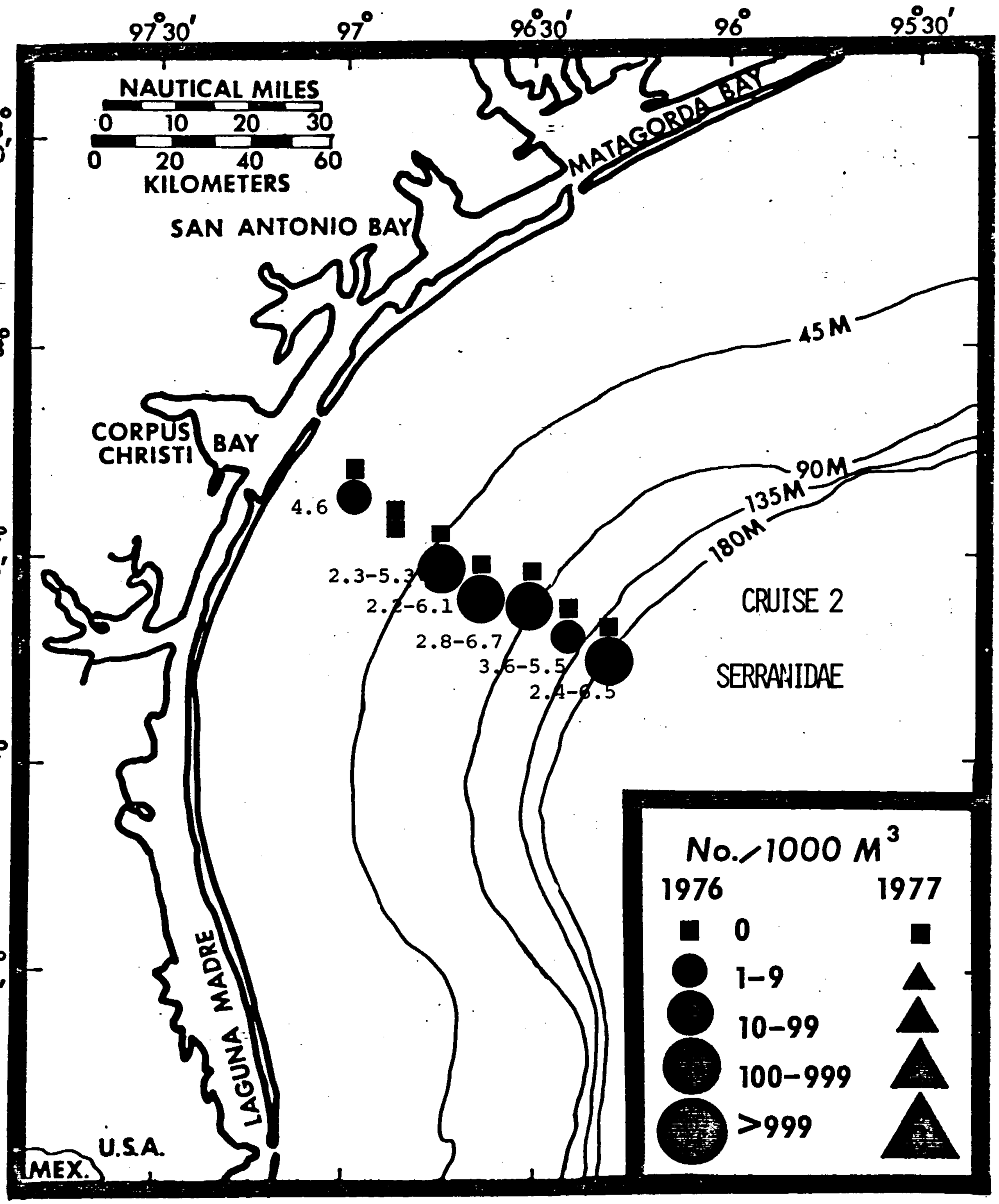


Figure 45. Distribution, abundance and size range (SL) in mm of serranid larvae during Cruise 2.

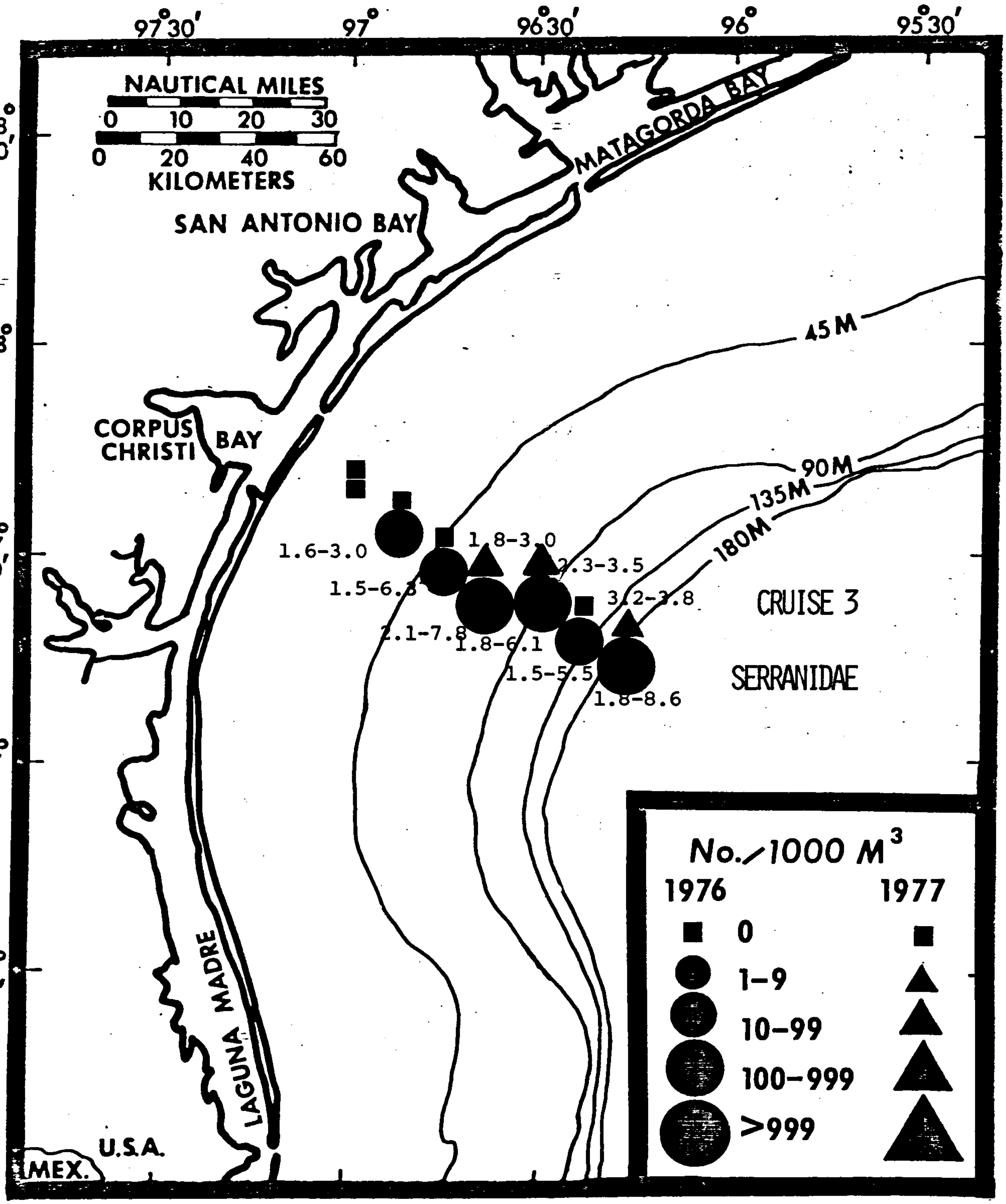


Figure 46. Distribution, abundance and size range (SL) in mm of serranid larvae during Cruise 3.

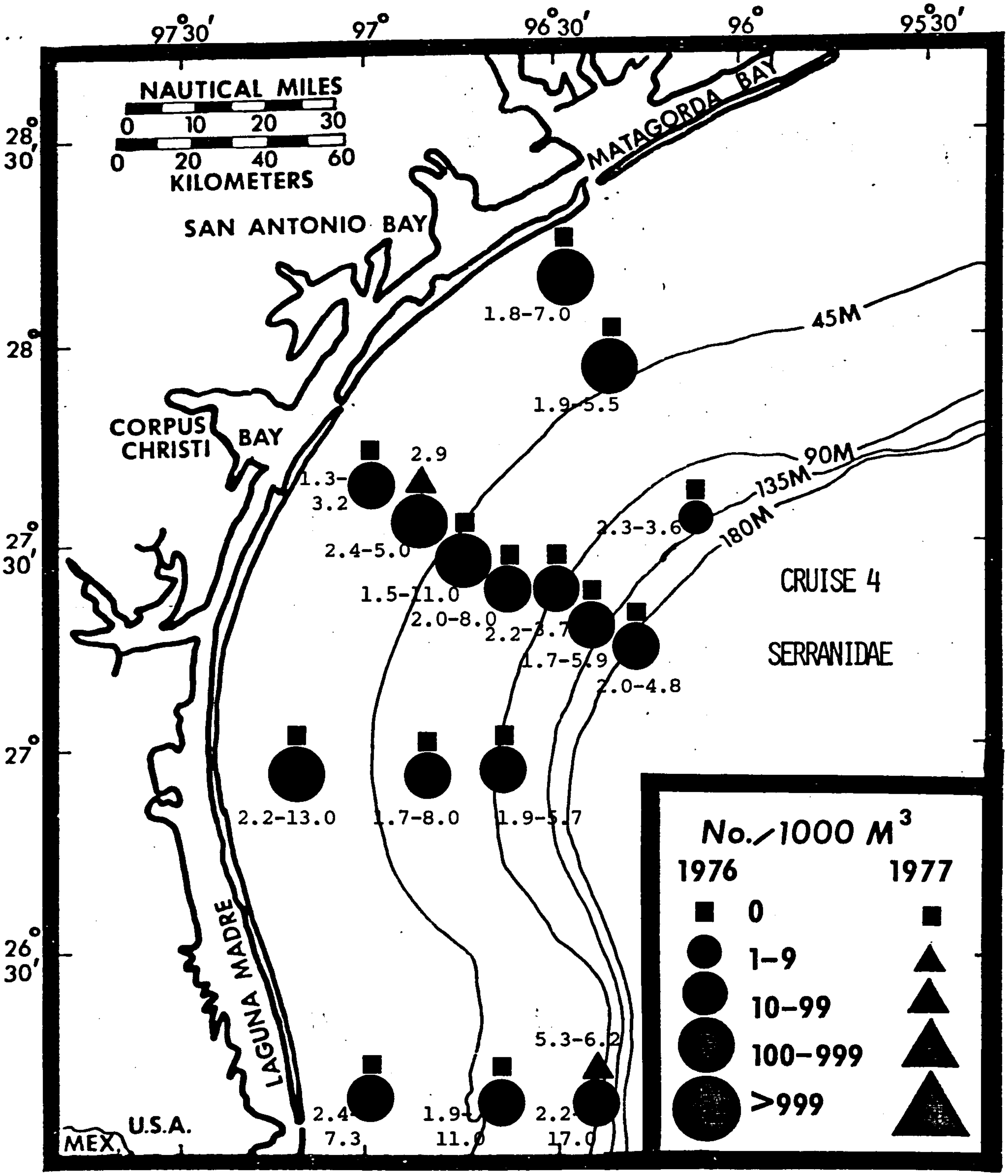


Figure 47. Distribution, abundance and size range (SL) in mm of serranid larvae during Cruise 4.

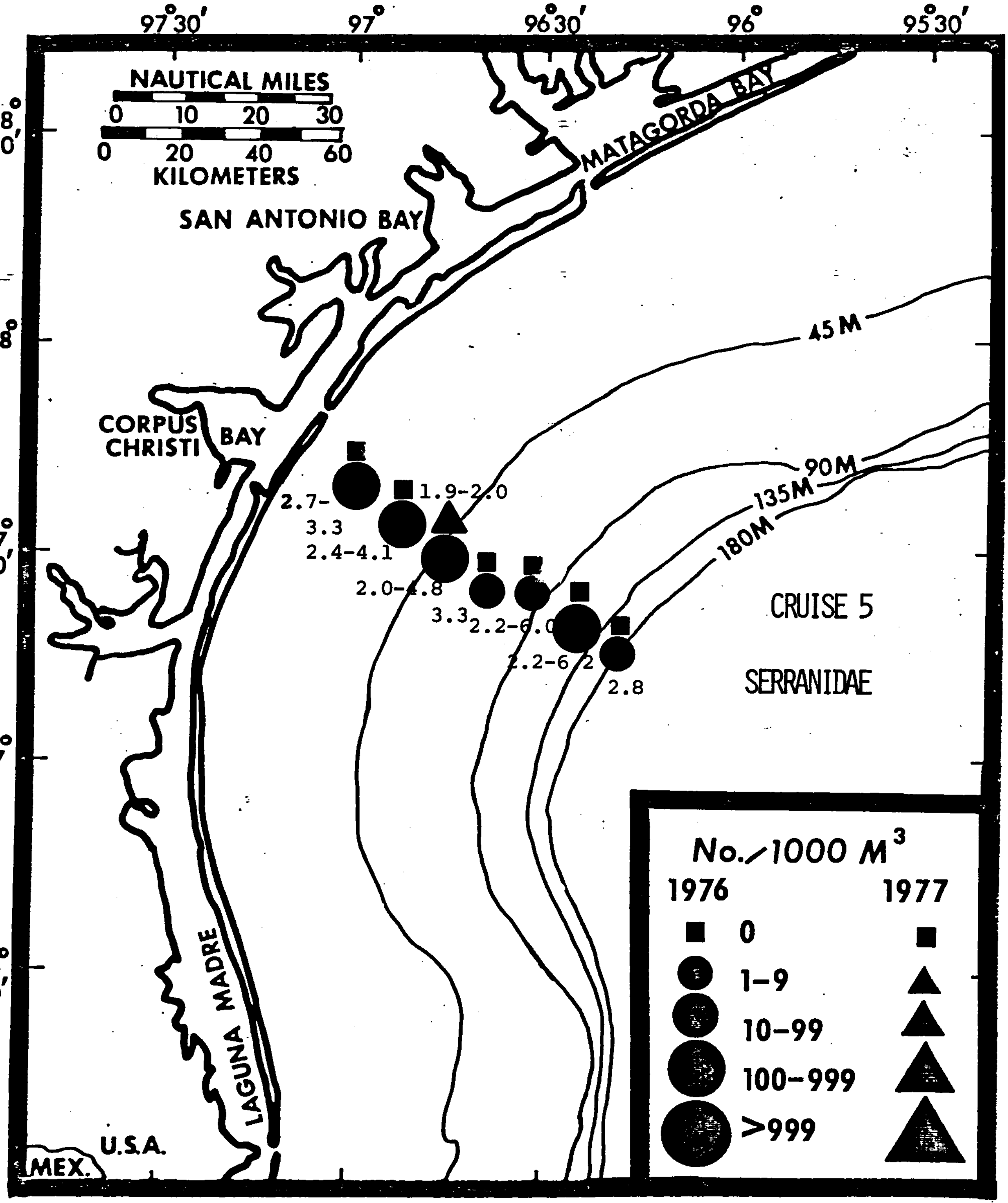


Figure 48. Distribution, abundance and size range (SL) in mm of serranid larvae during Cruise 5.

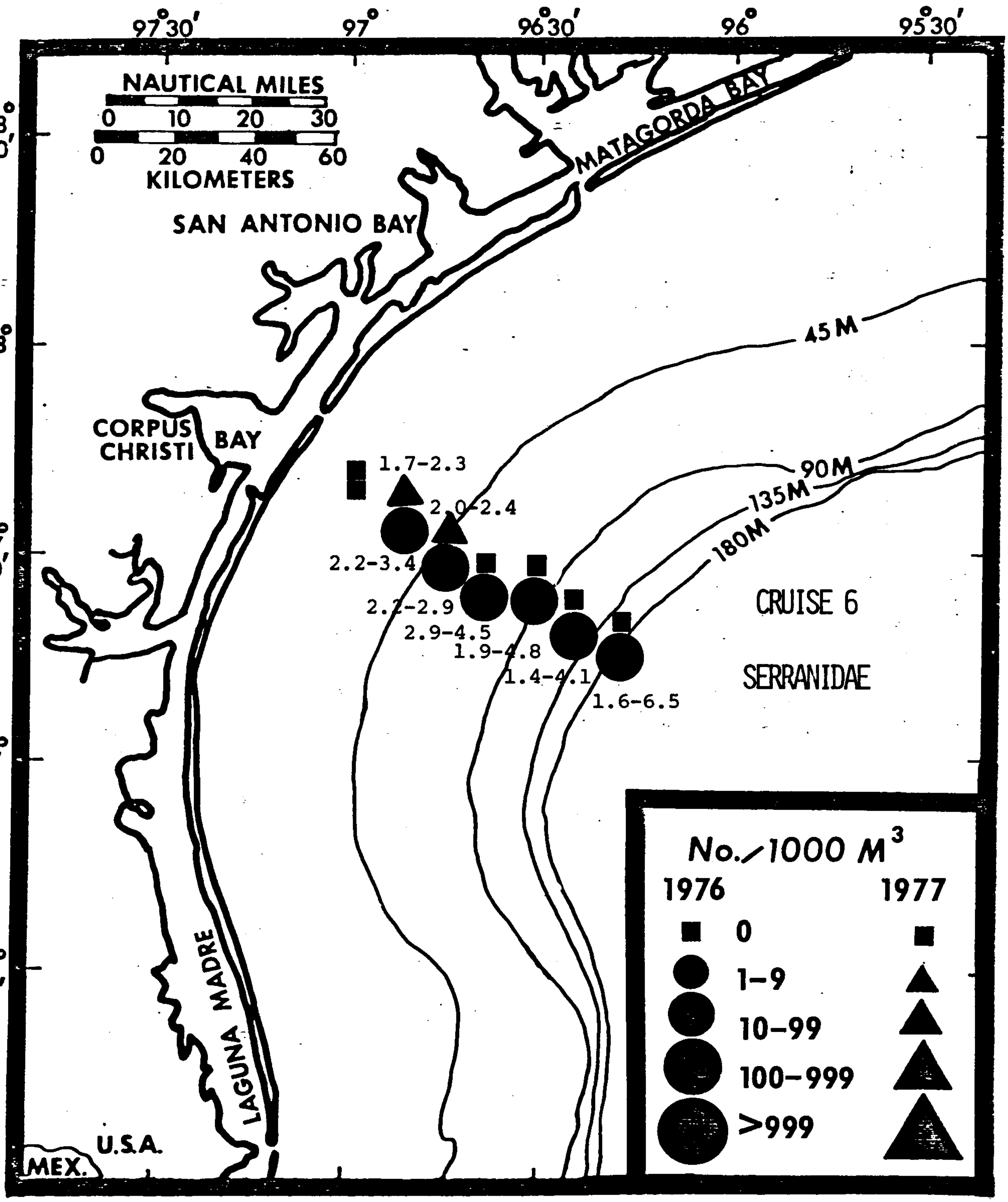


Figure 49. Distribution, abundance and size range (SL) in mm of serranid larvae during Cruise 6.

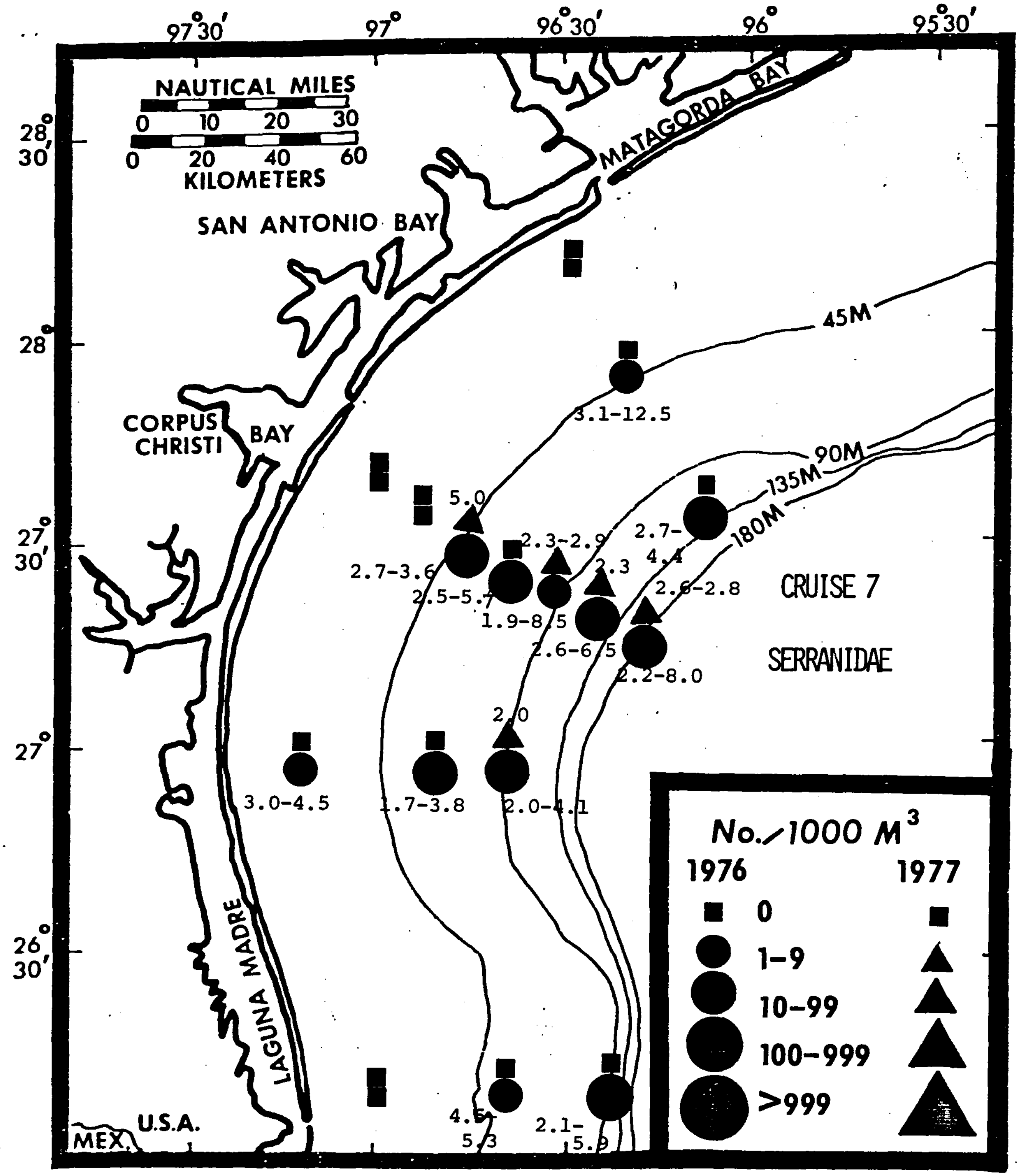


Figure 50. Distribution, abundance and size range (SL) in mm of serranid larvae during Cruise 7.

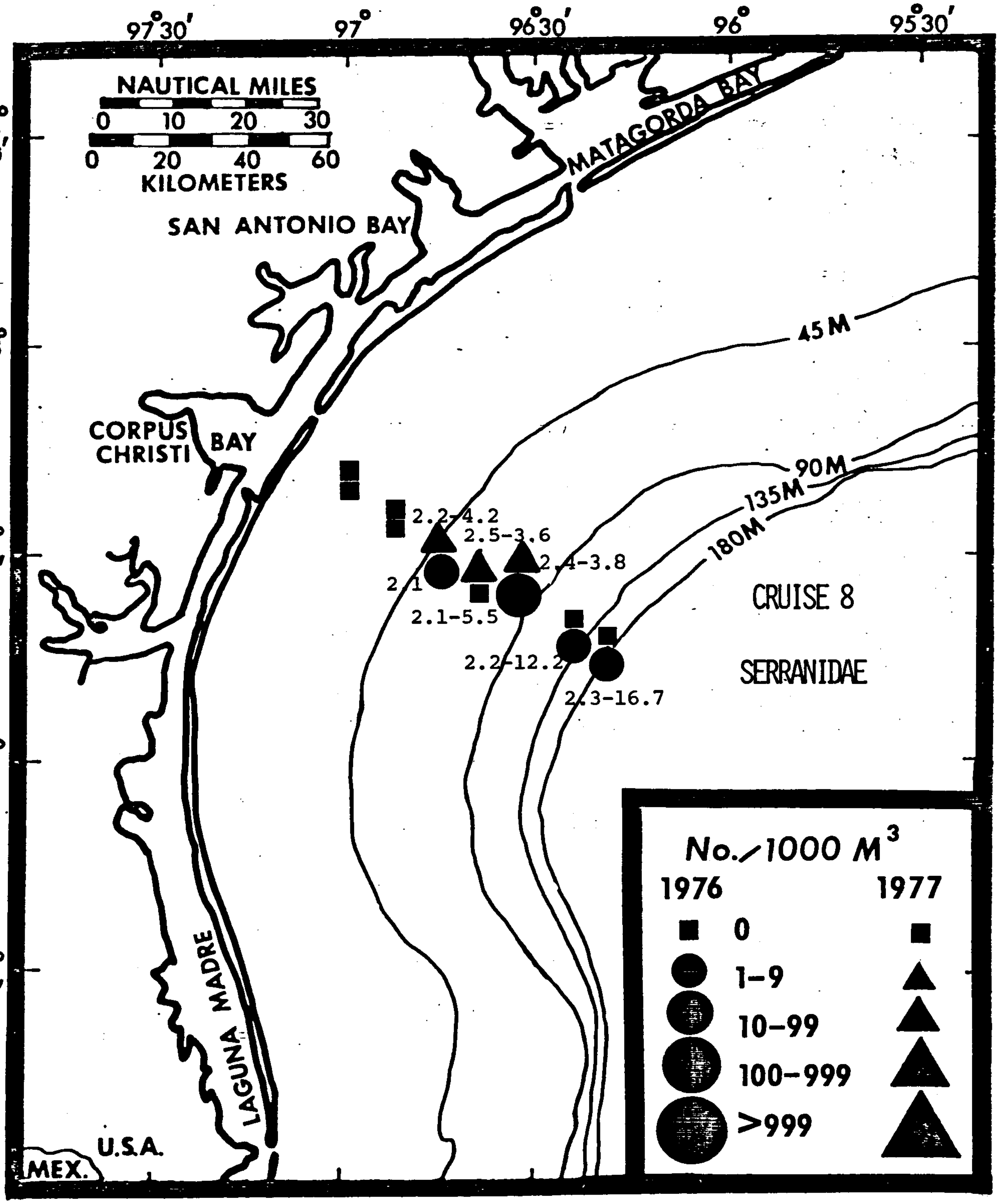


Figure 51. Distribution, abundance and size range (SL) in mm of serranid larvae during Cruise 8.

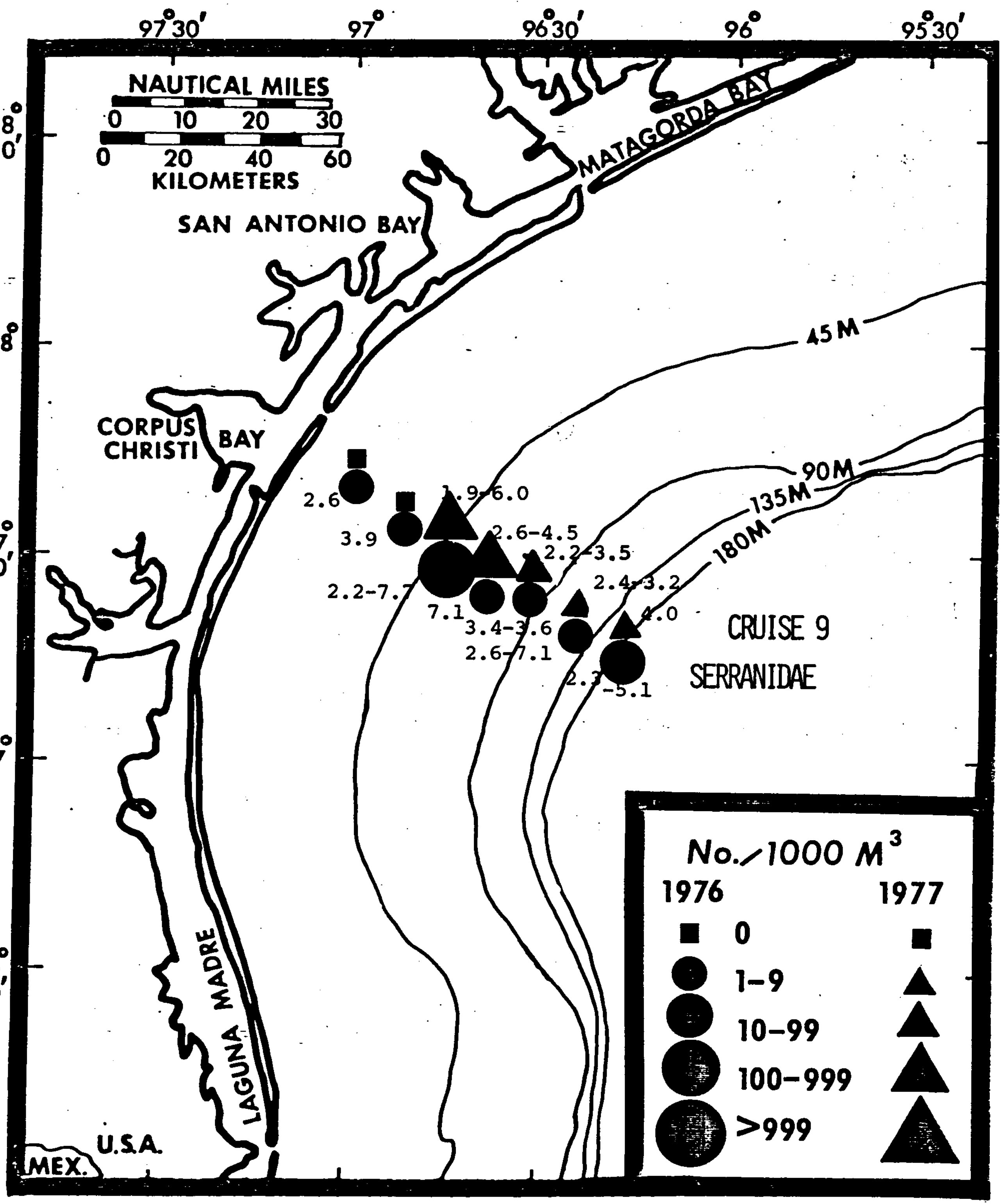


Figure 52. Distribution, abundance and size range (SL) in mm of serranid larvae during Cruise 9.

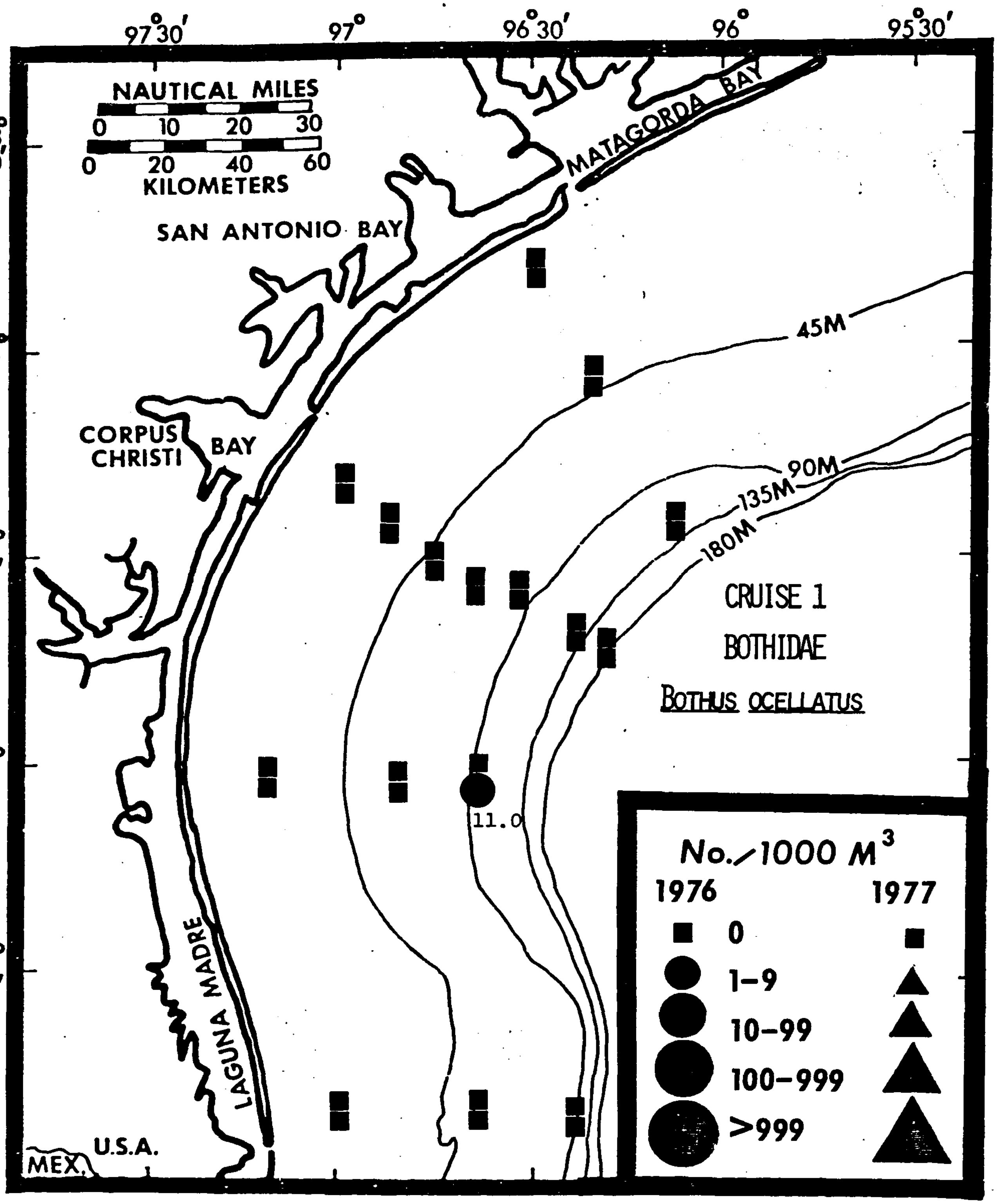


Figure 53. Distribution, abundance and size range (SL) in mm of Bothus ocellatus larvae during Cruise 1.

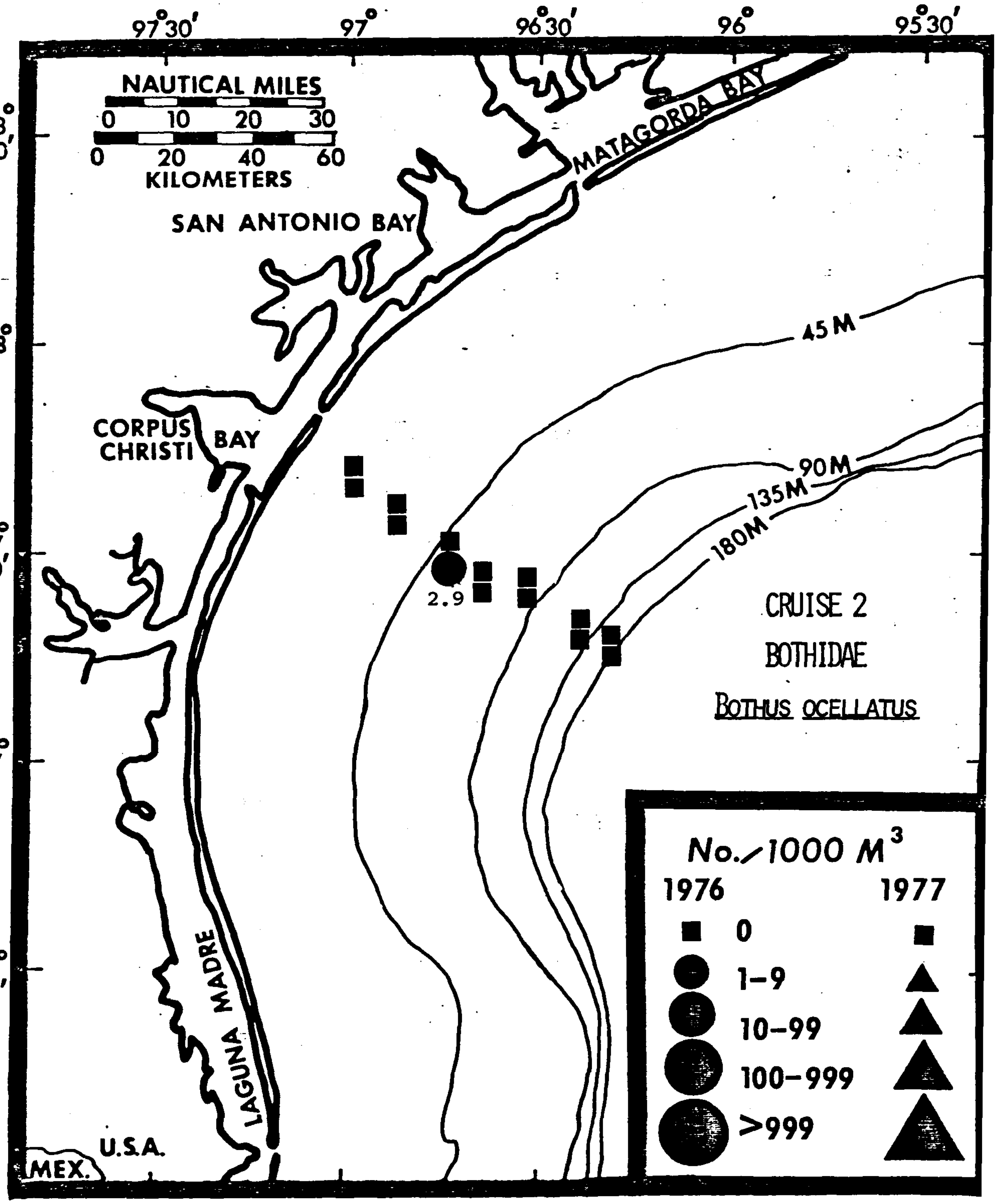


Figure 54 . Distribution, abundance and size range (SL) in mm of Bothus ocellatus larvae during Cruise 2.

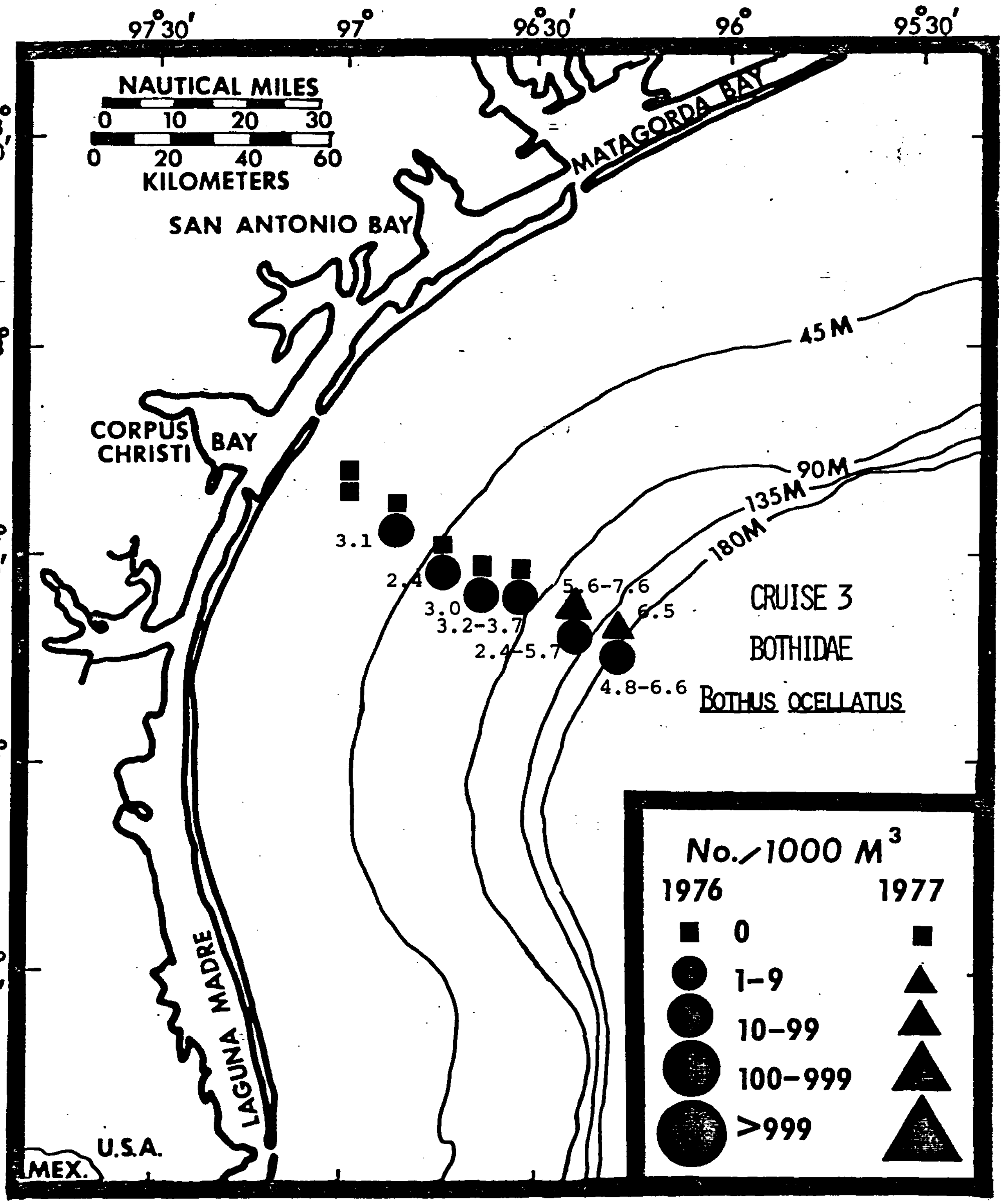


Figure 55. Distribution, abundance and size range (SL) in mm of Bothus ocellatus larvae during Cruise 3.

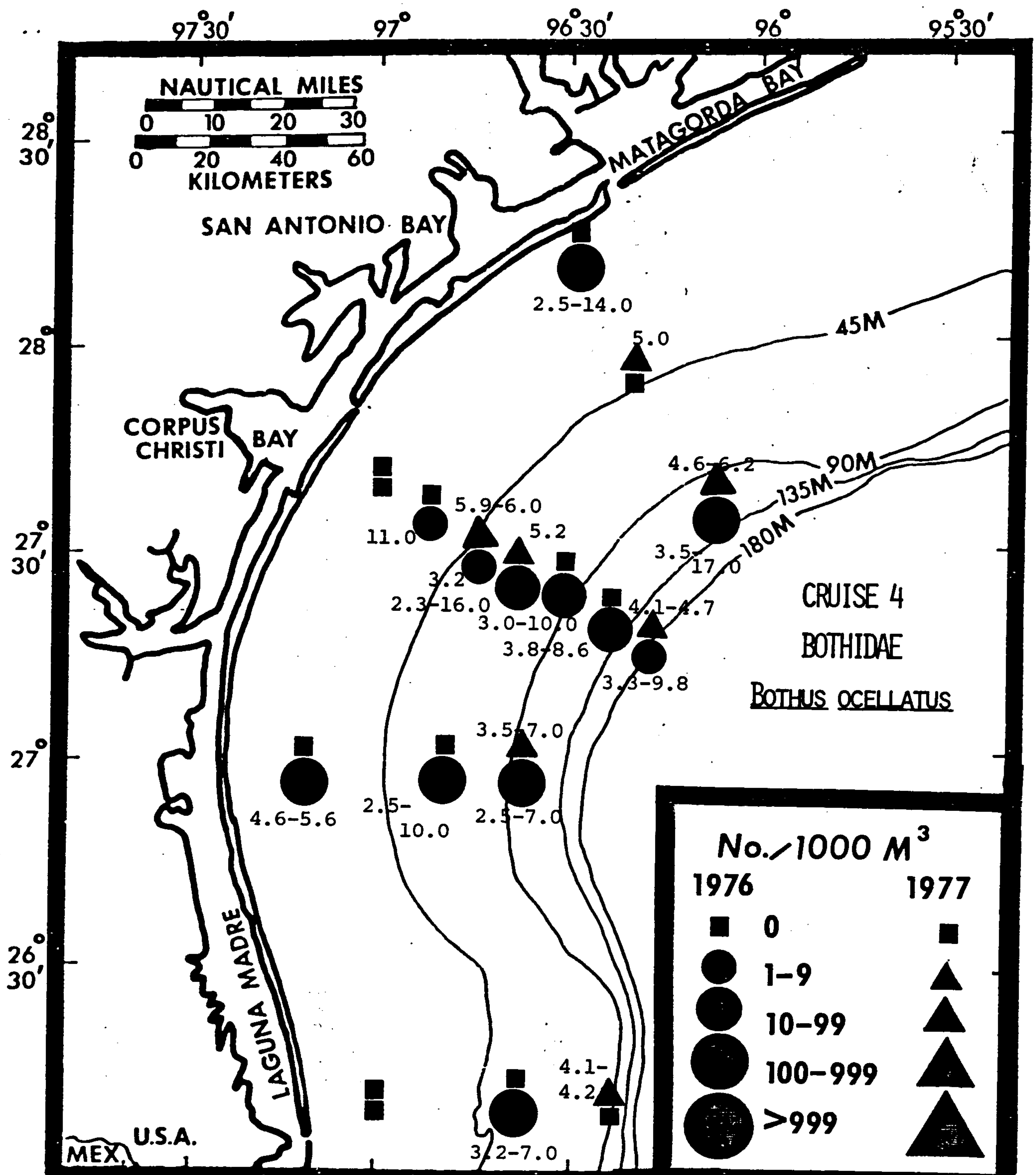


Figure 56. Distribution, abundance and size range (SL) in mm of Bothus ocellatus larvae during Cruise 4.

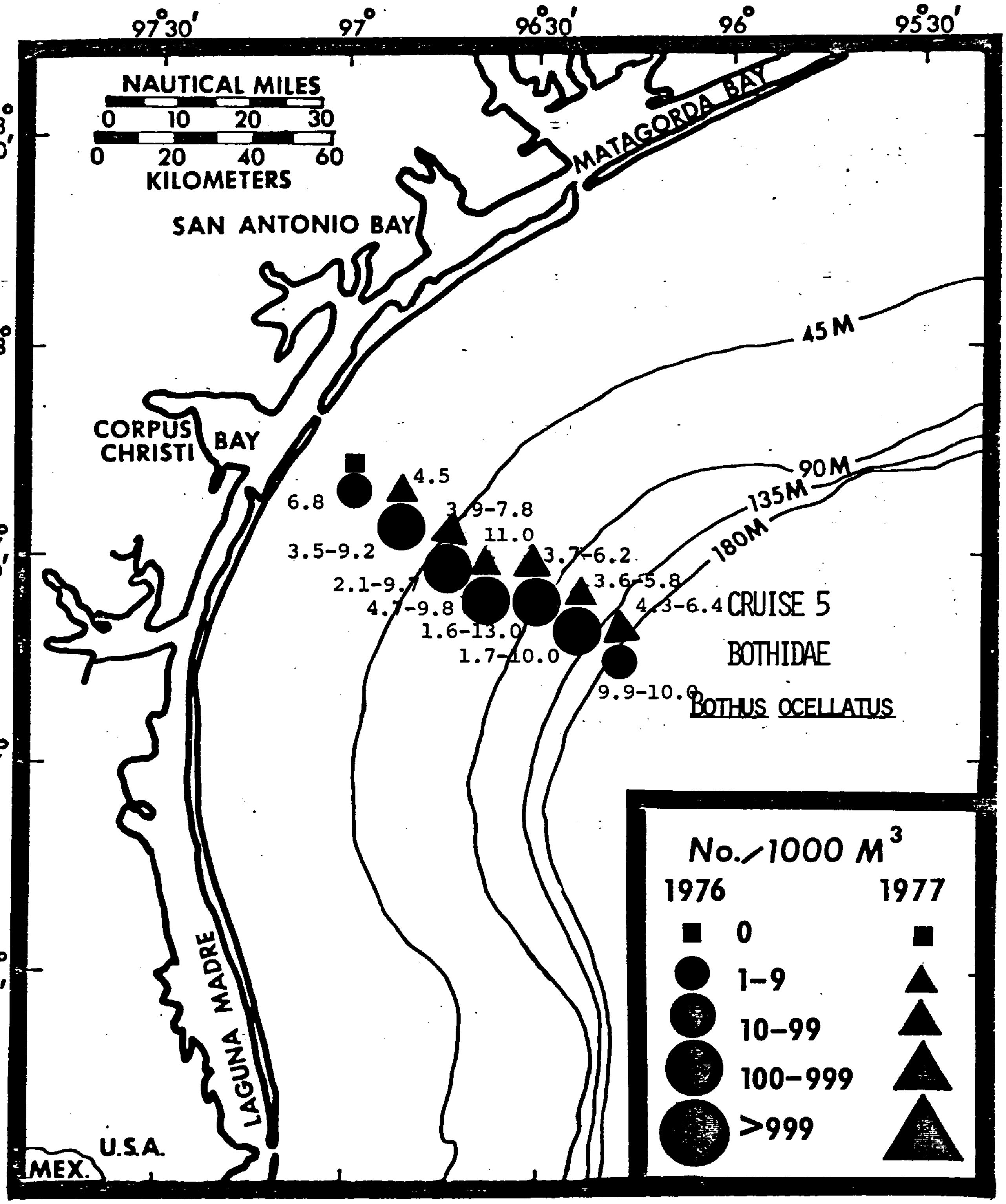


Figure 57. Distribution, abundance and size range (SL) in mm of Bothus ocellatus larvae during Cruise 5.

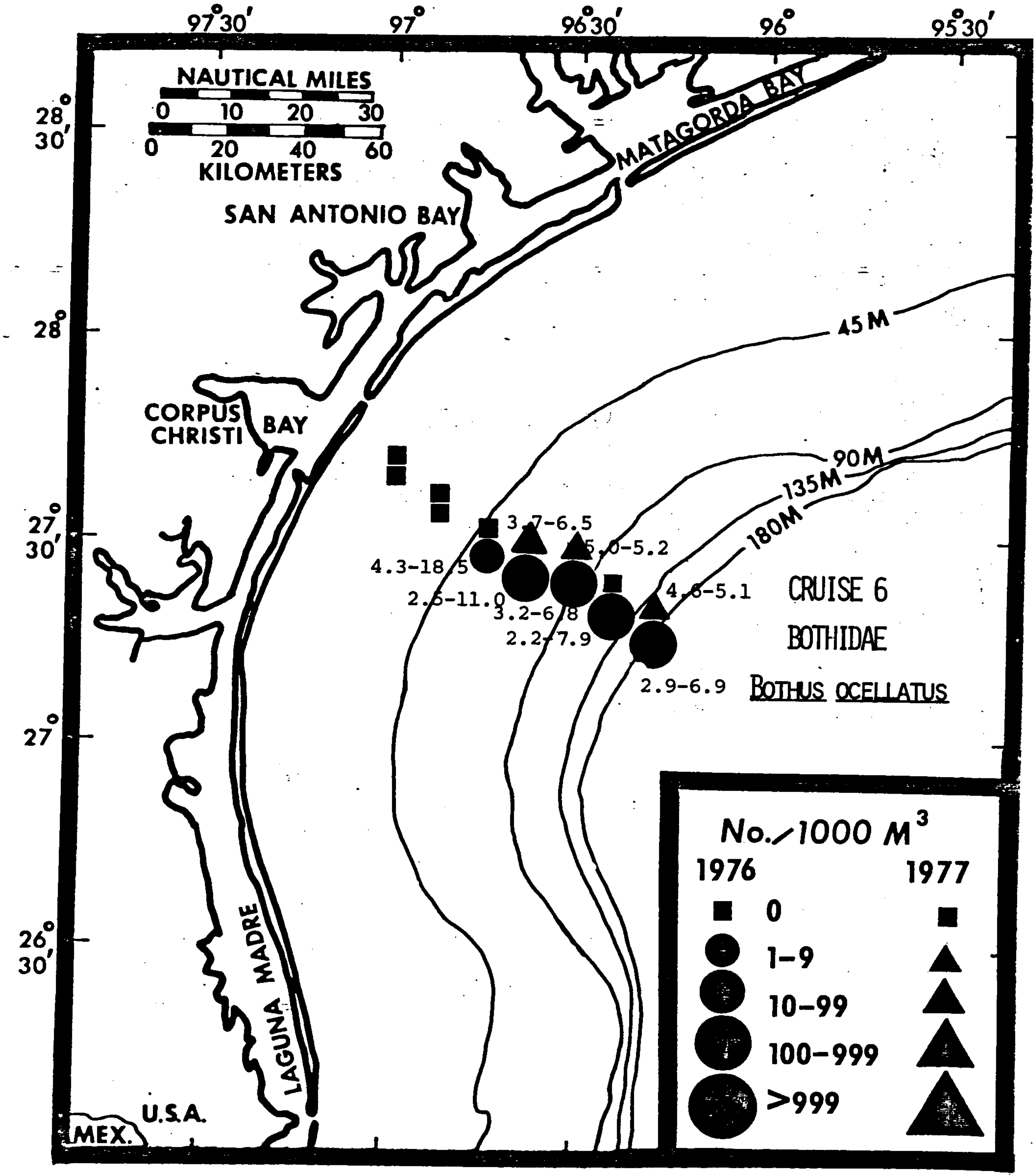


Figure 58. Distribution, abundance and size range (SL) in mm of Bothus ocellatus larvae during Cruise 6.

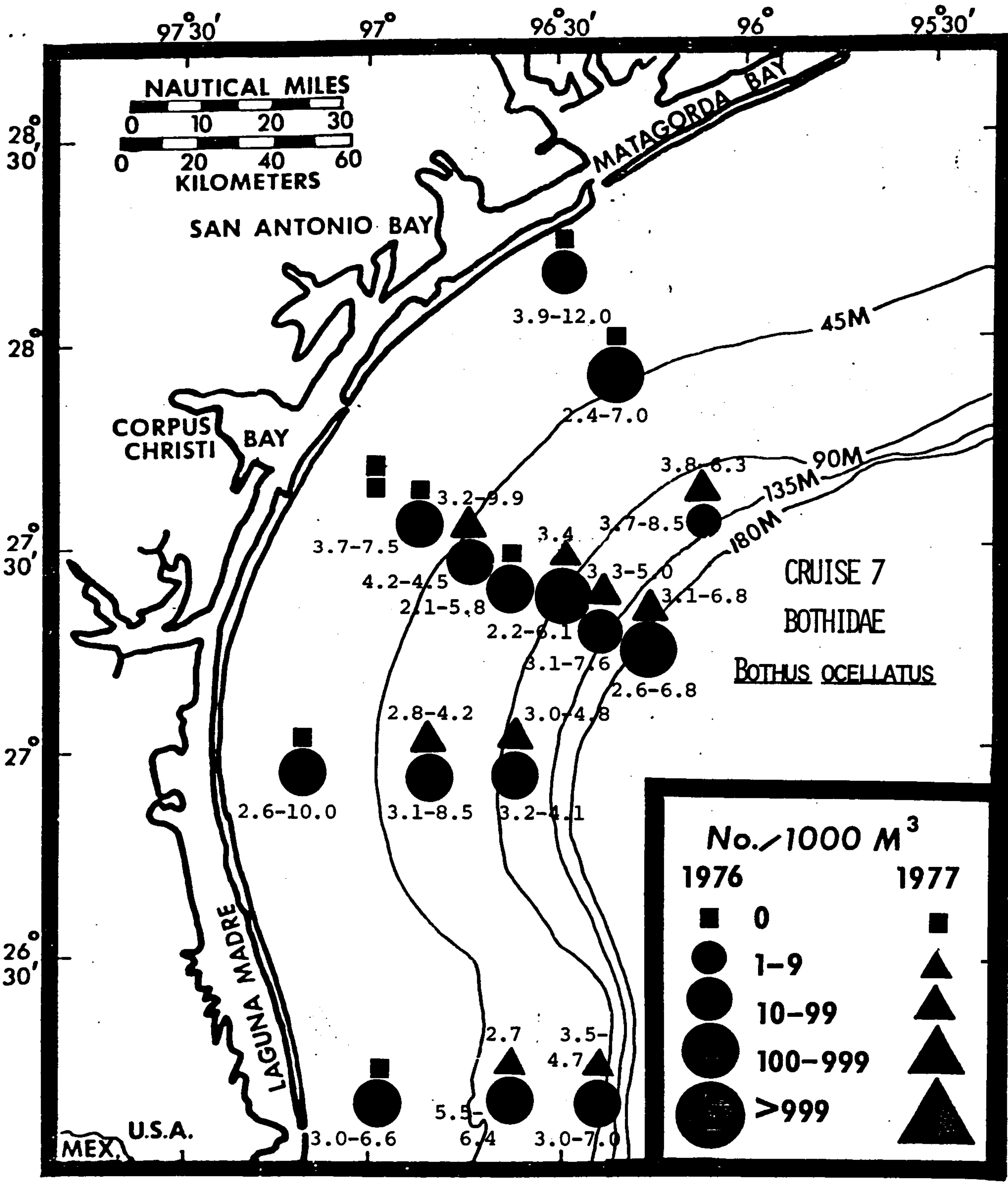


Figure 59. Distribution, abundance and size range (SL) in mm of Bothus ocellatus larvae during Cruise 7.

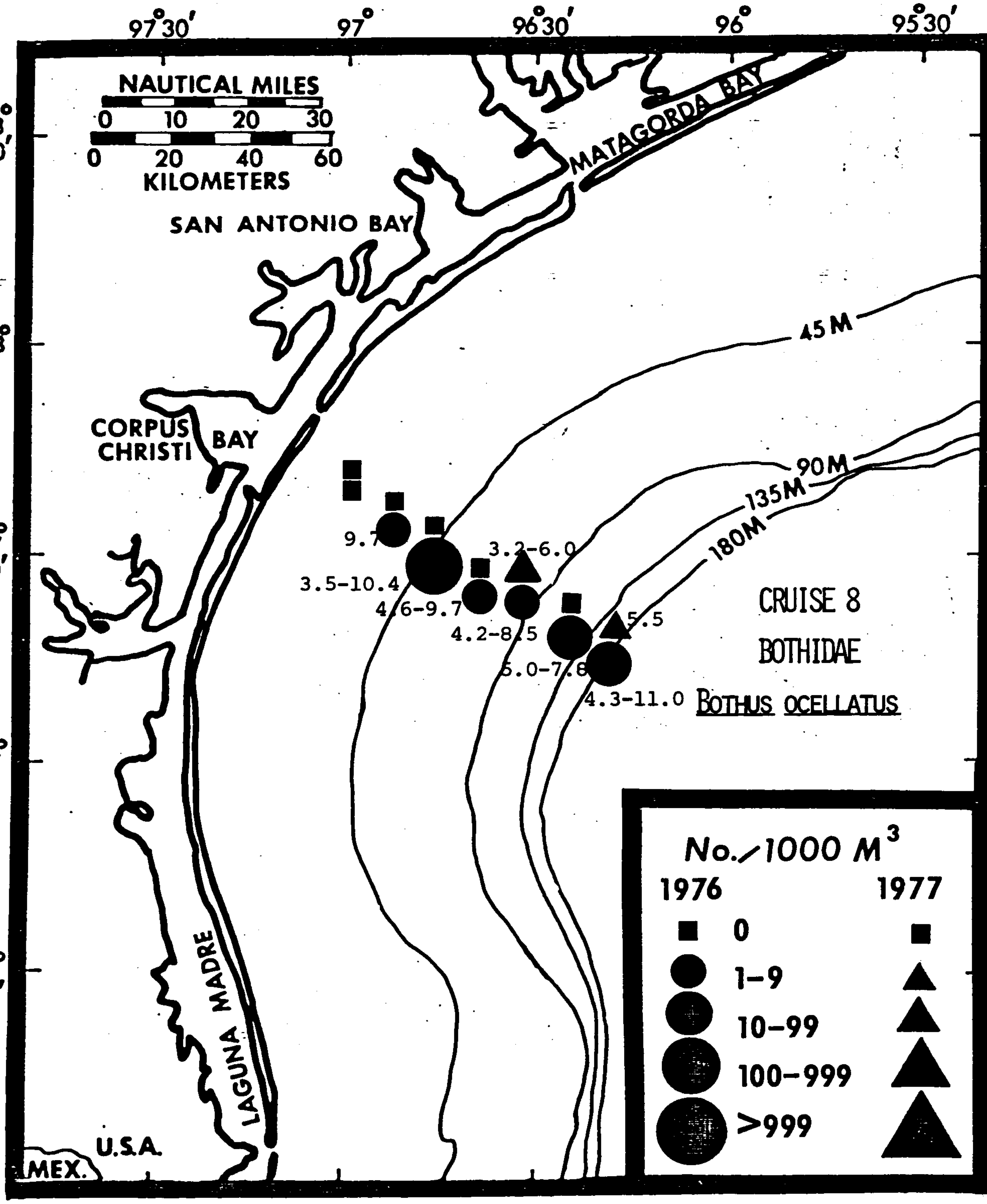


Figure 60. Distribution, abundance and size range (SL) in mm of *Bothus ocellatus* larvae during Cruise 8.

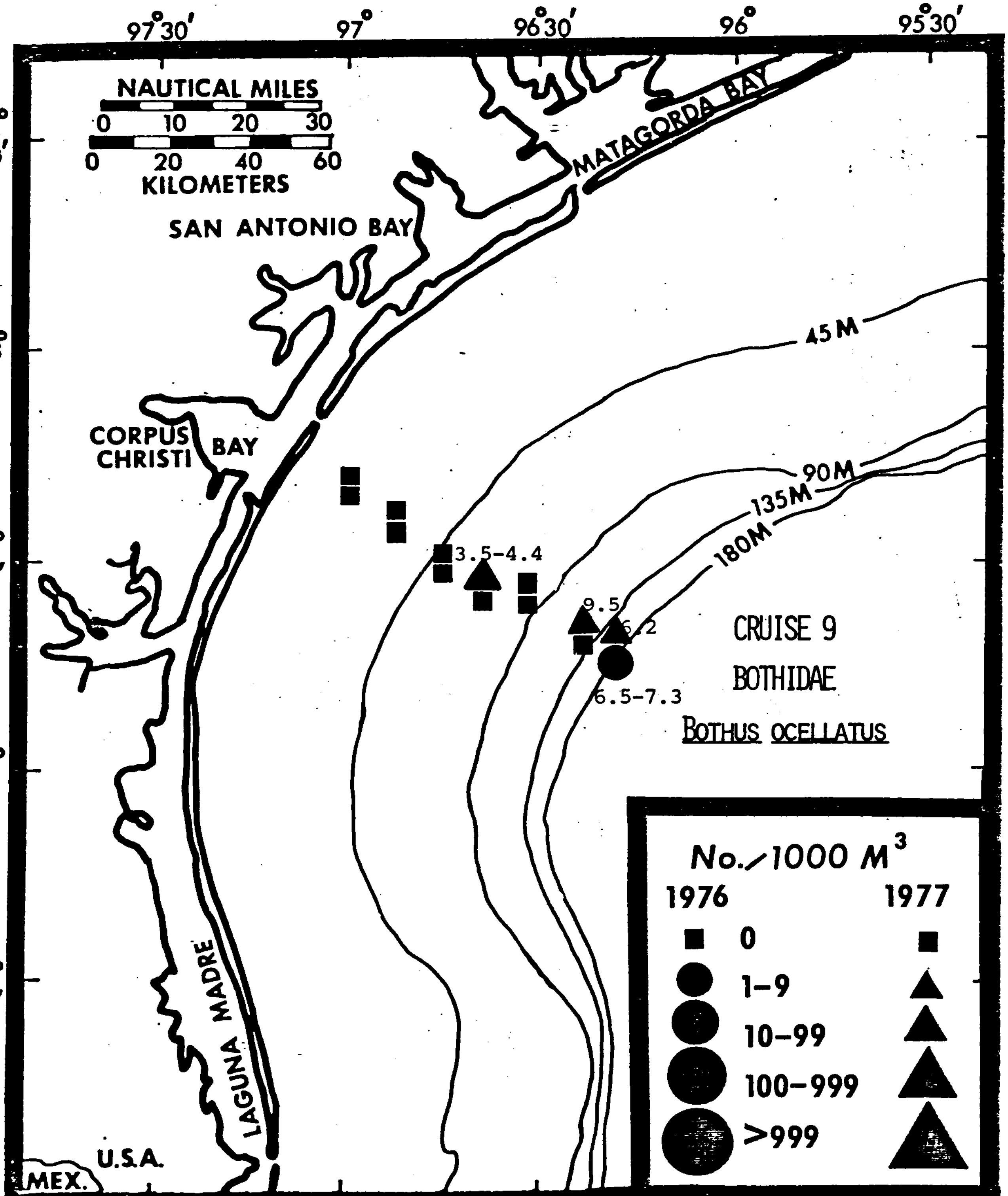


Figure 61. Distribution, abundance and size range (SL) in mm of Bothus ocellatus larvae during Cruise 9.

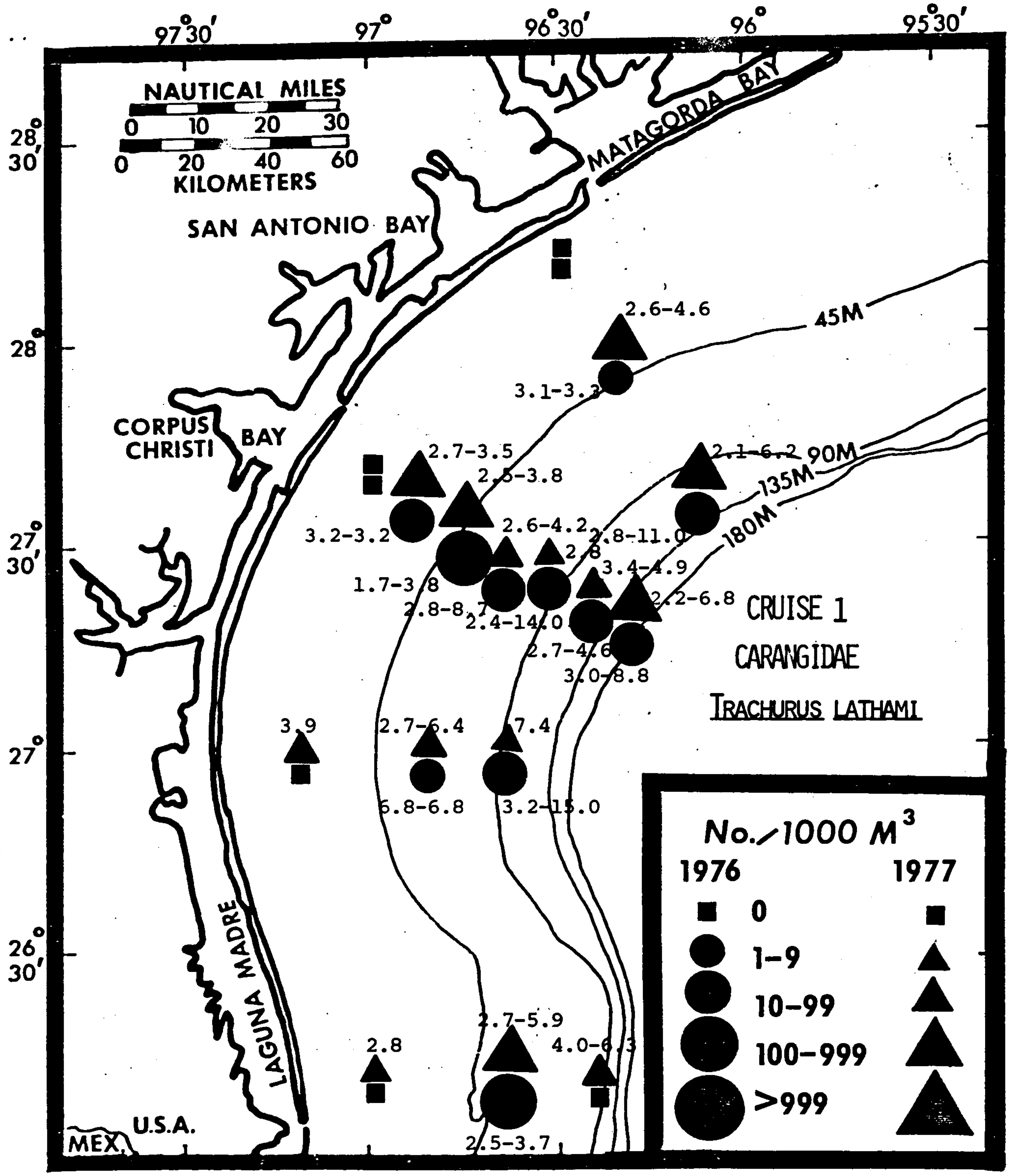


Figure 62. Distribution, abundance and size range (SL) in mm of *Trachurus lathami* larvae during Cruise 1.

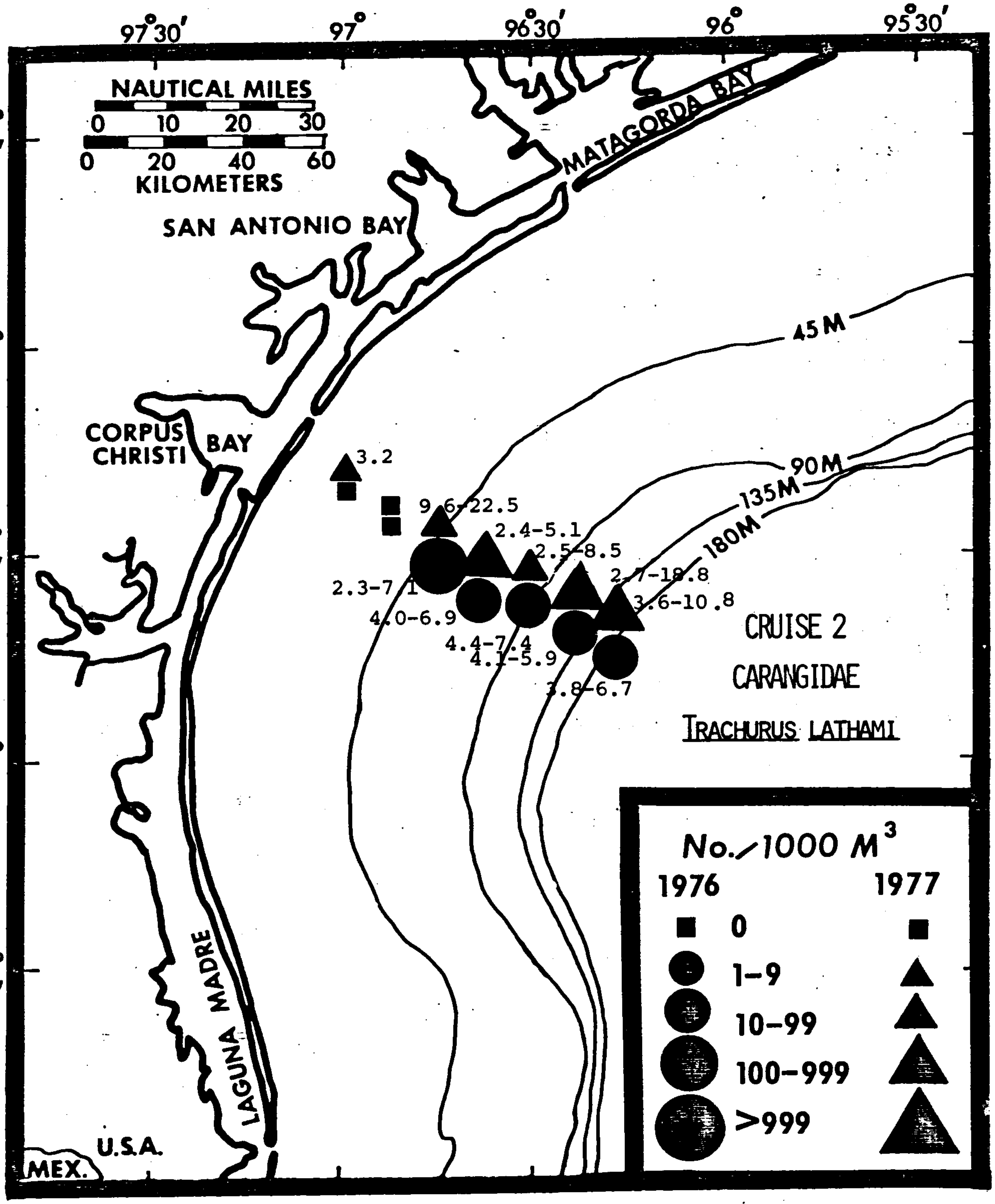


Figure 63. Distribution, abundance and size range (SL) in mm of Trachurus lathami larvae during Cruise 2.

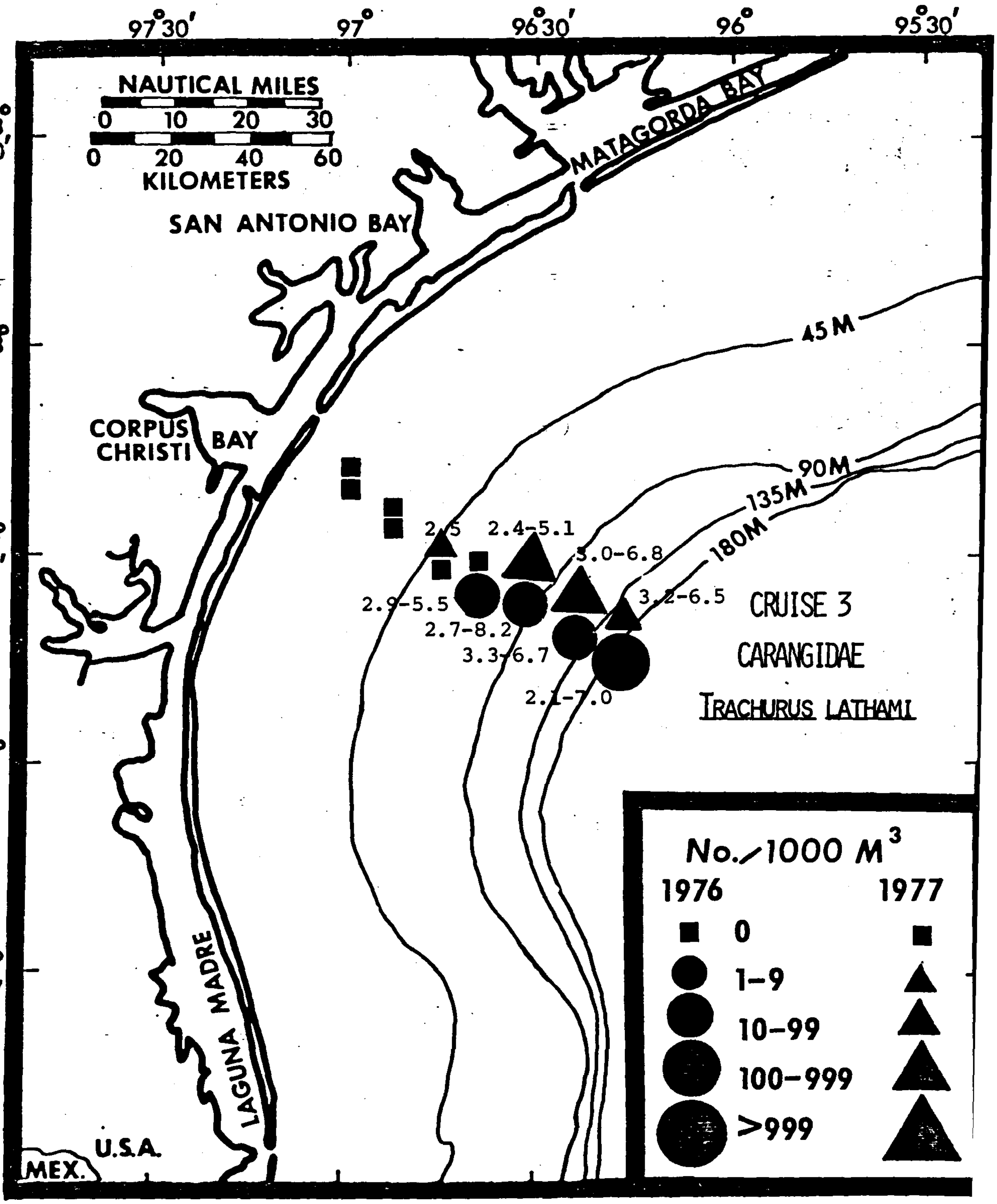


Figure 64. Distribution, abundance and size range (SL) in mm of <u>Trachurus lathami</u> larvae during Cruise 3.

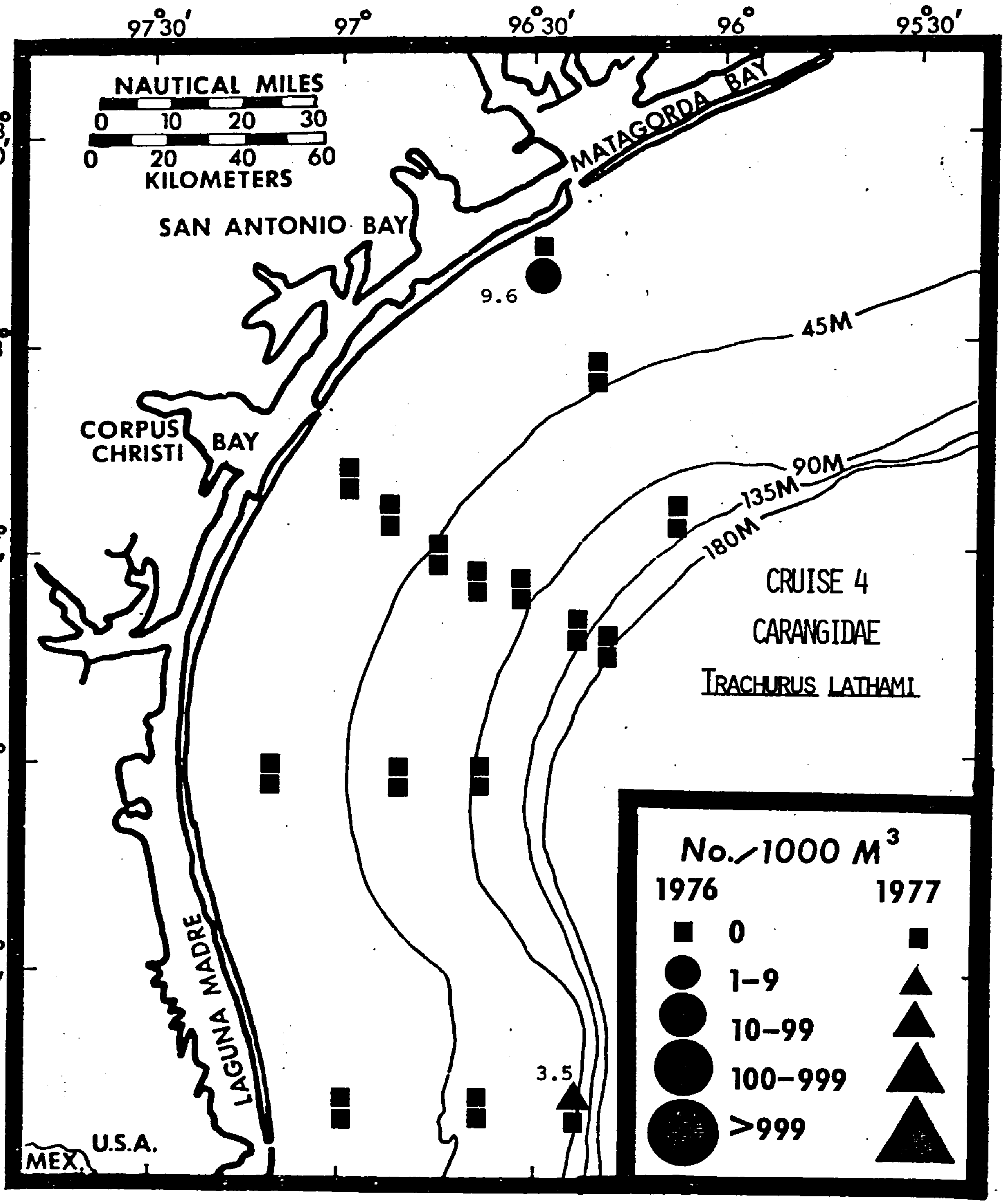


Figure 65. Distribution, abundance and size range (SL) in mm of Trachurus lathami larvae during Cruise 4.

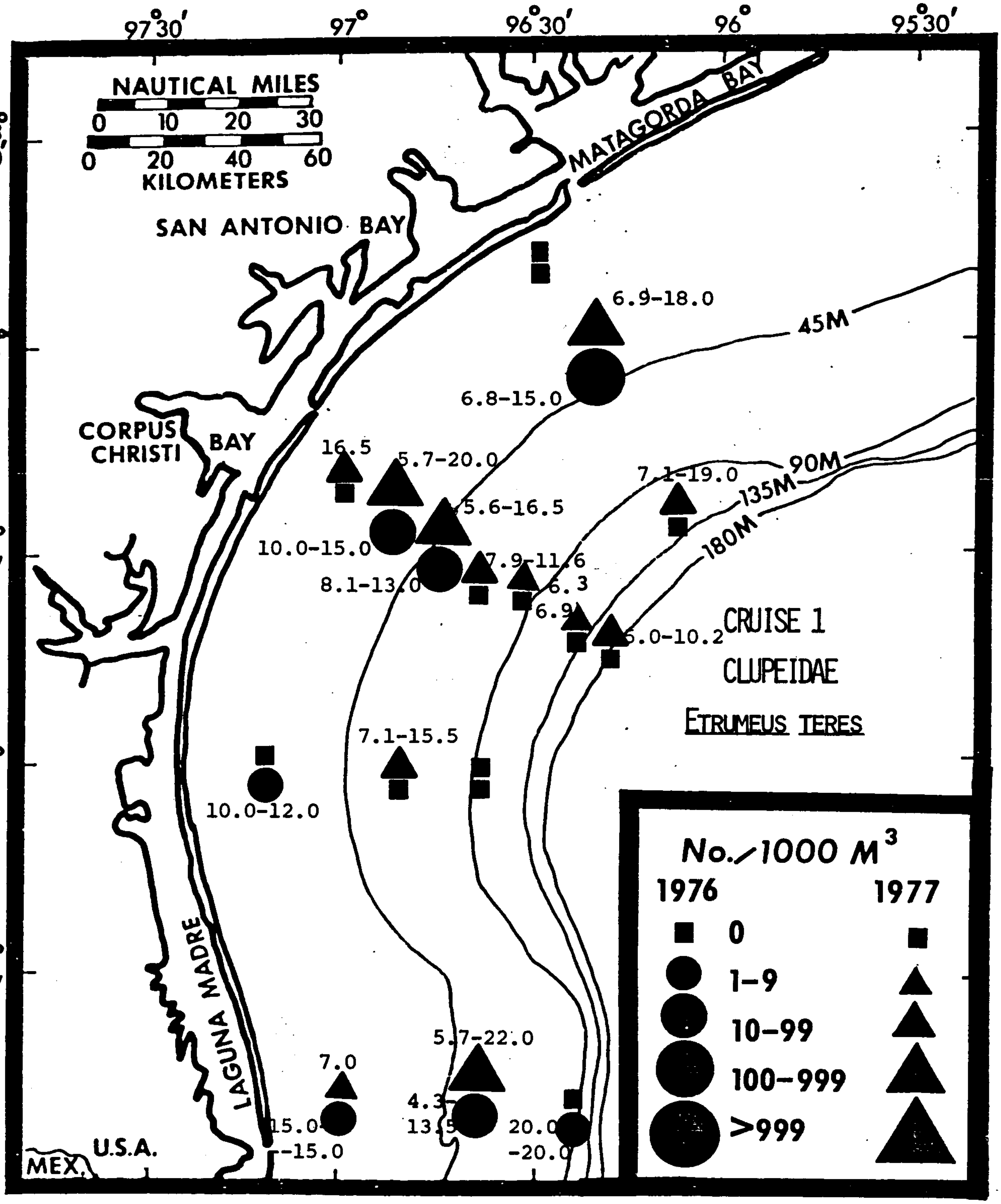


Figure 66. Distribution, abundance and size range (SL) in mm of Etrumeus teres larvae during Cruise 1.

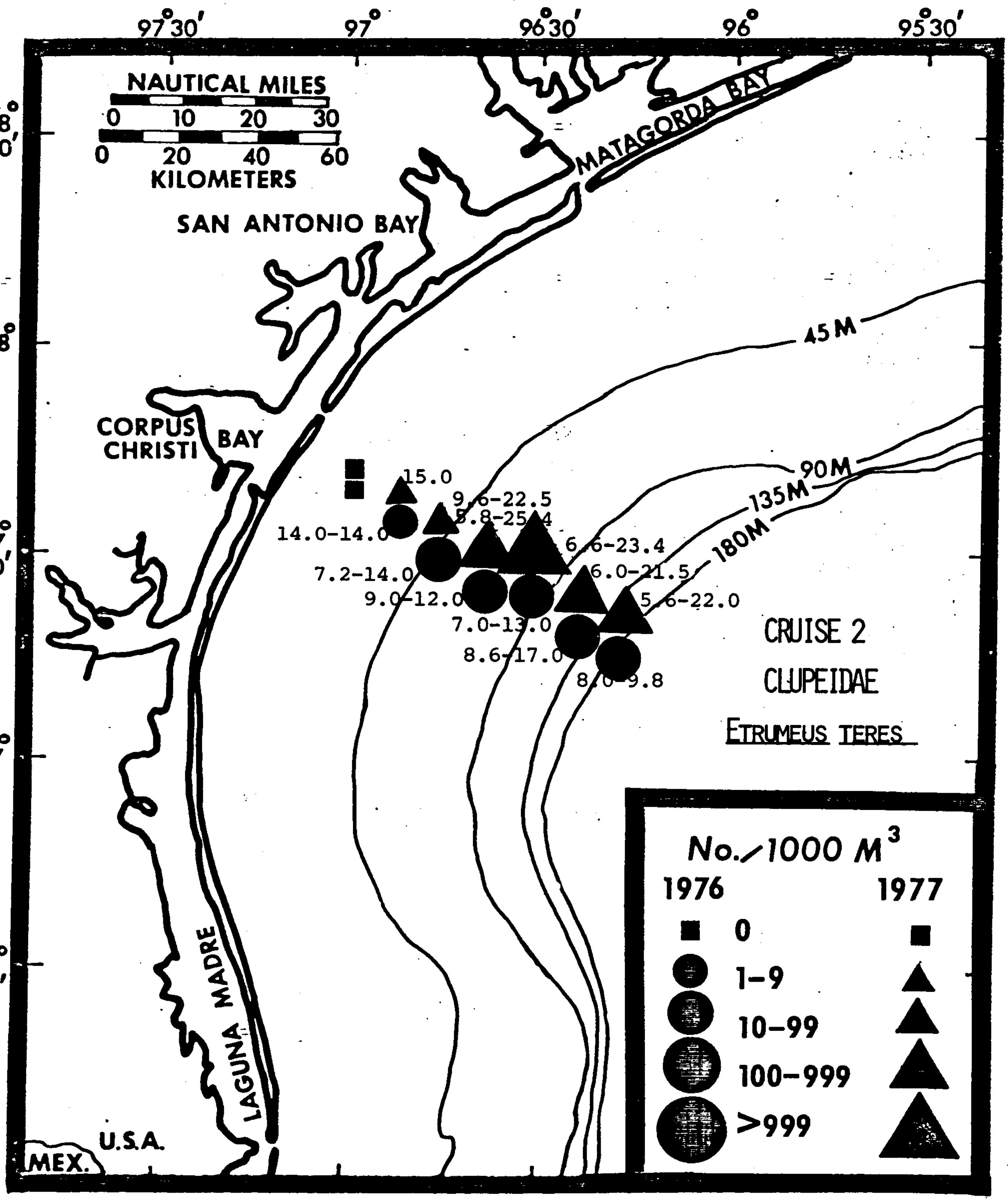


Figure 67. Distribution, abundance and size range (SL) in mm of <u>Etrumeus teres</u> larvae during Cruise 2.

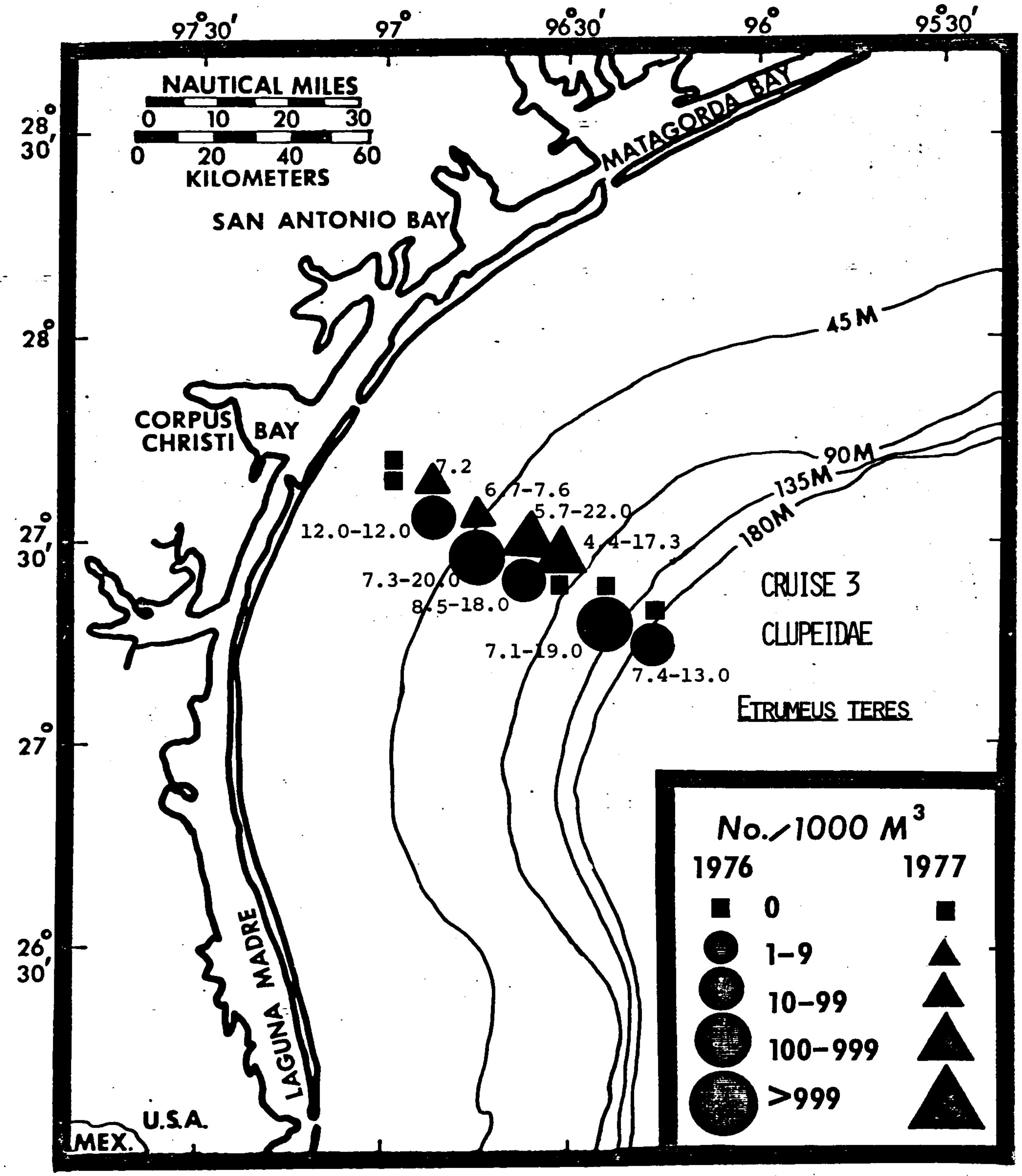


Figure 68. Distribution, abundance and size range (SL) in mm of _Etrumeus teres_ larvae during Cruise 3.

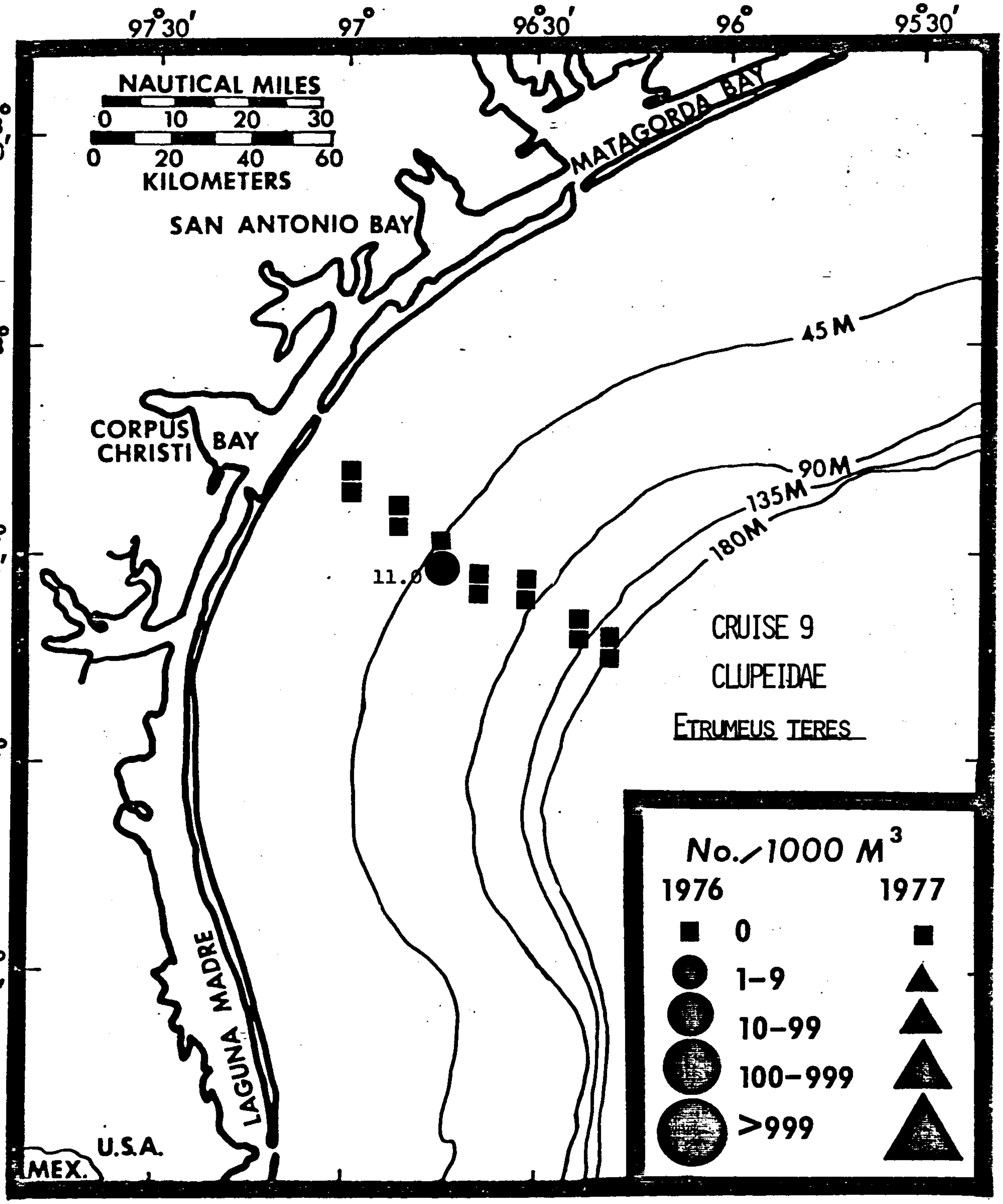


Figure 69. Distribution, abundance and size range (SL) in mm of _Etrumeus teres_ larvae during Cruise 9.

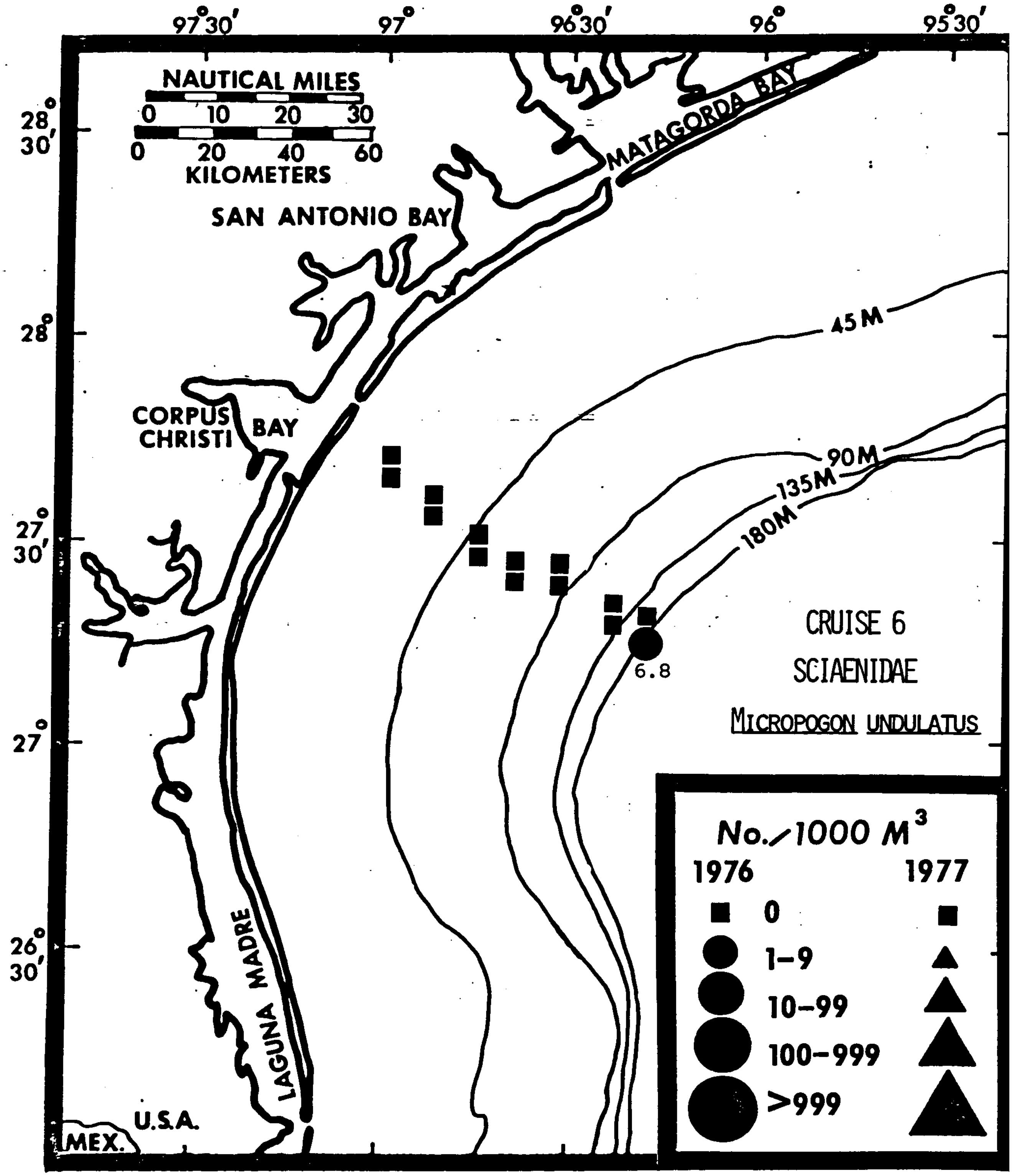


Figure 70 Distribution, abundance and size range (SL) in mm of Micropogon undulatus larvae during Cruise 6.

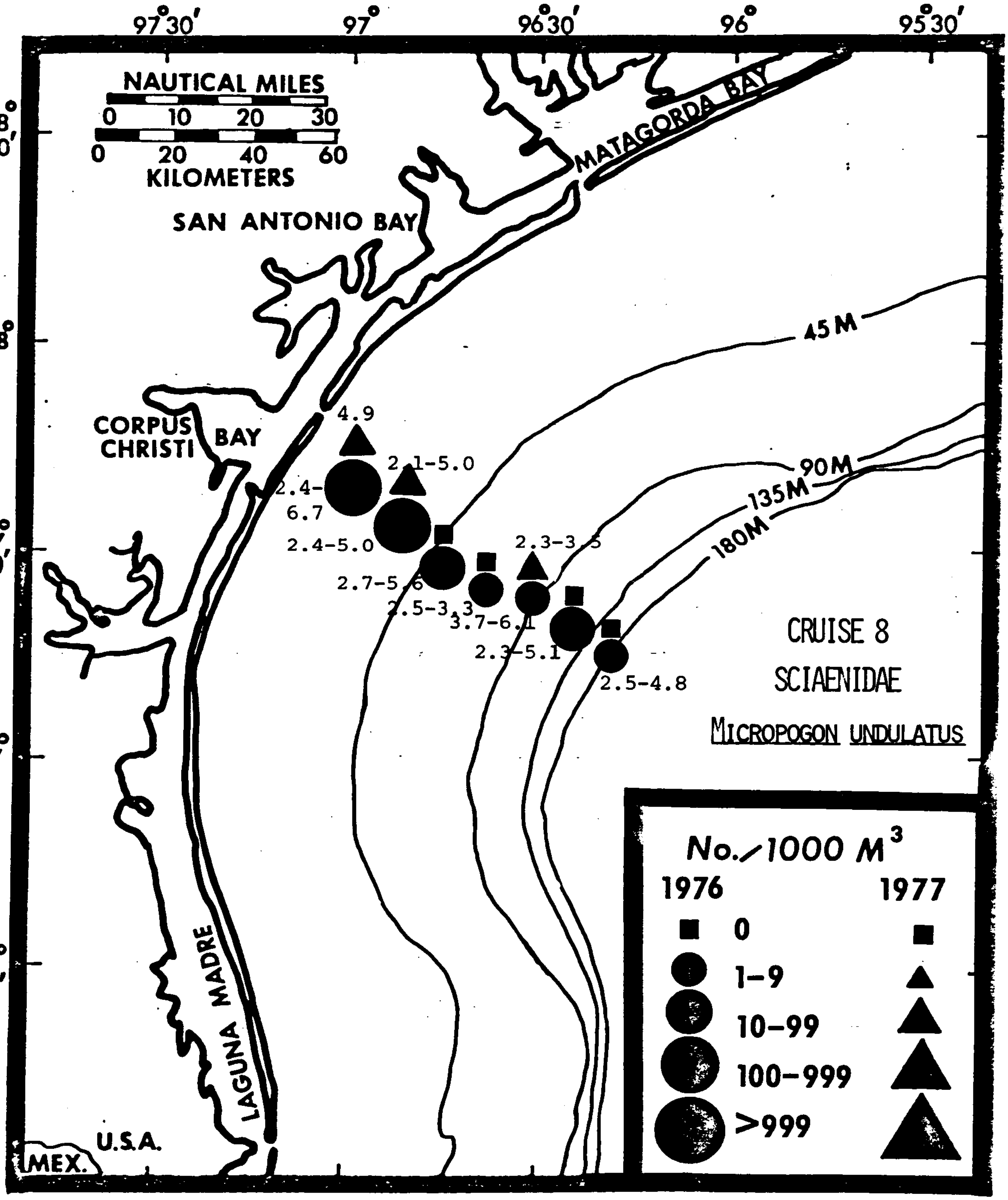


Figure 71 Distribution, abundance and size range (SL) in mm of *Micropogon undulatus* larvae during Cruise 8.

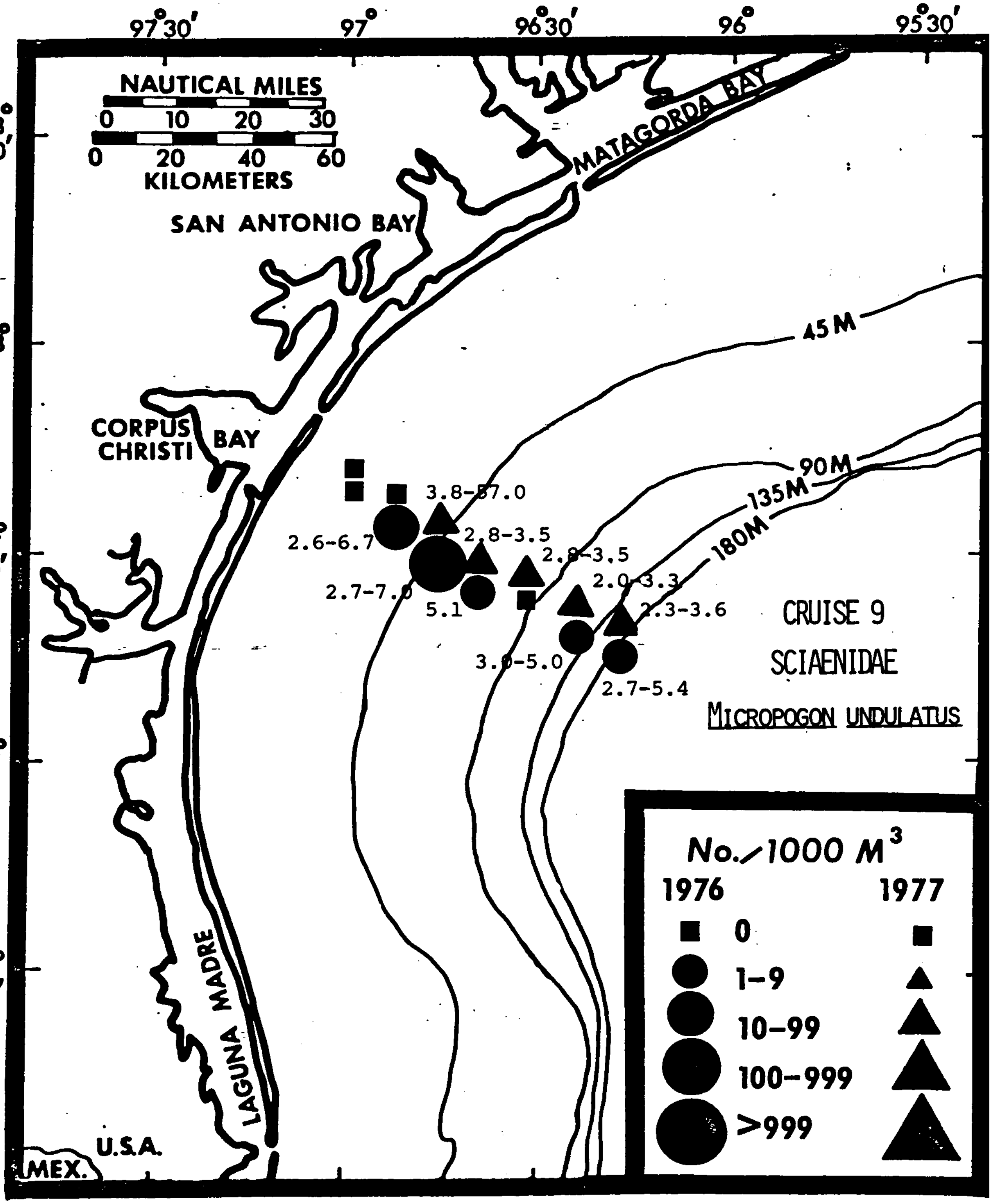


Figure 72. Distribution, abundance and size range (SL) in mm of Micropogon undulatus larvae during Cruise 9.

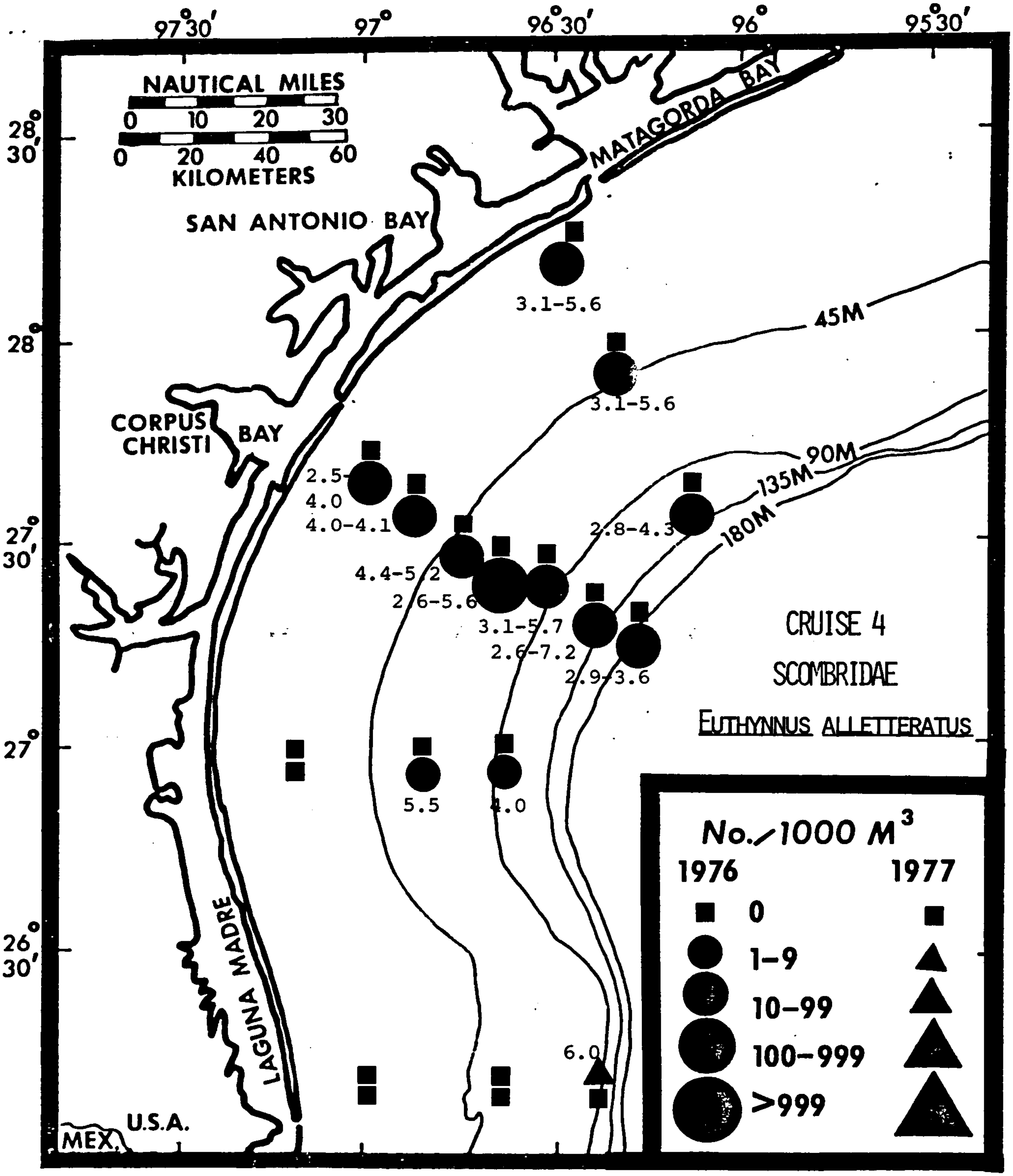


Figure 73. Distribution, abundance and size range (SL) in mm of Euthynnus alletteratus larvae during Cruise 4.

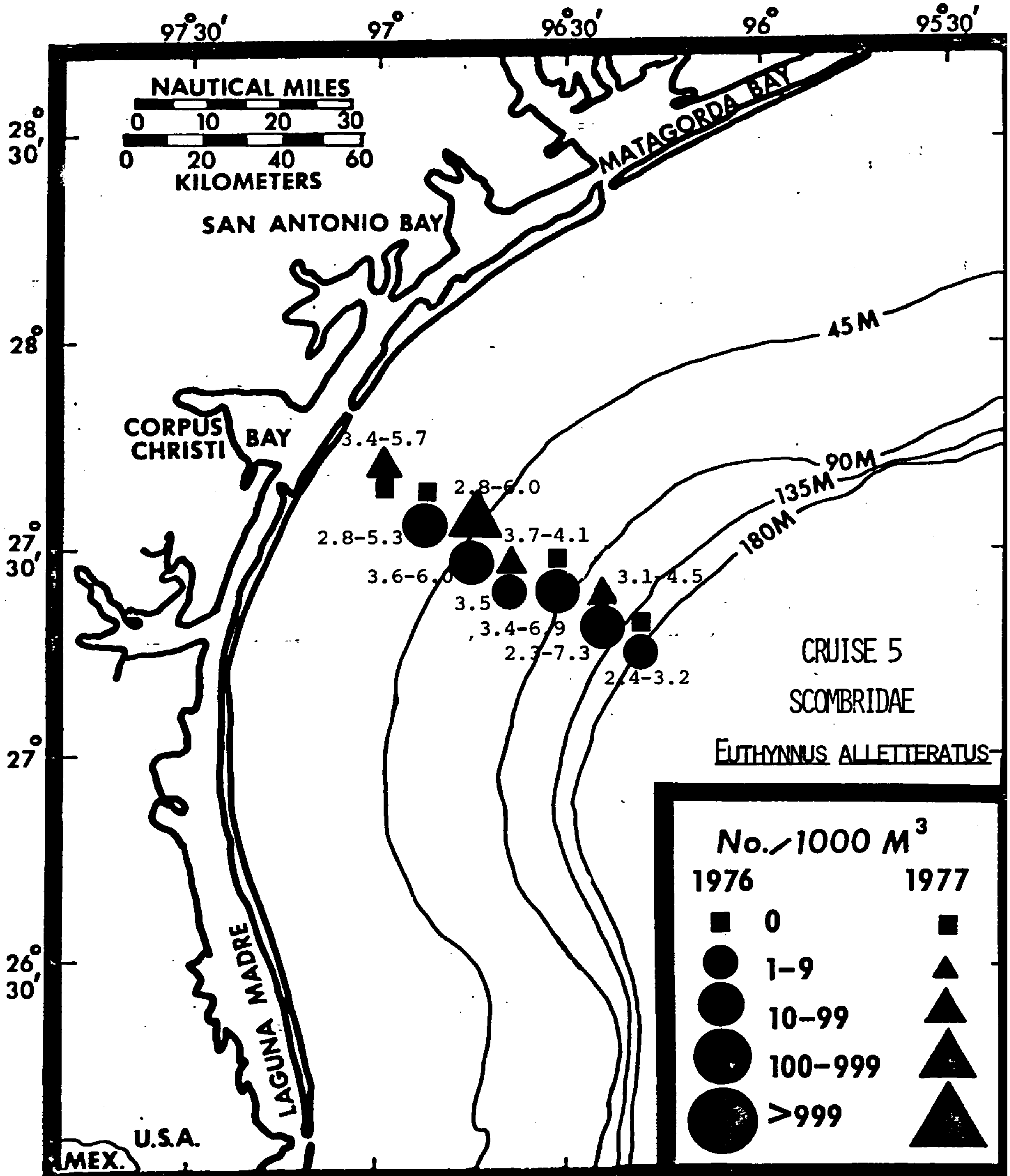


Figure 74. Distribution, abundance and size range (SL) in mm of *Euthynnus alletteratus* larvae during Cruise 5.

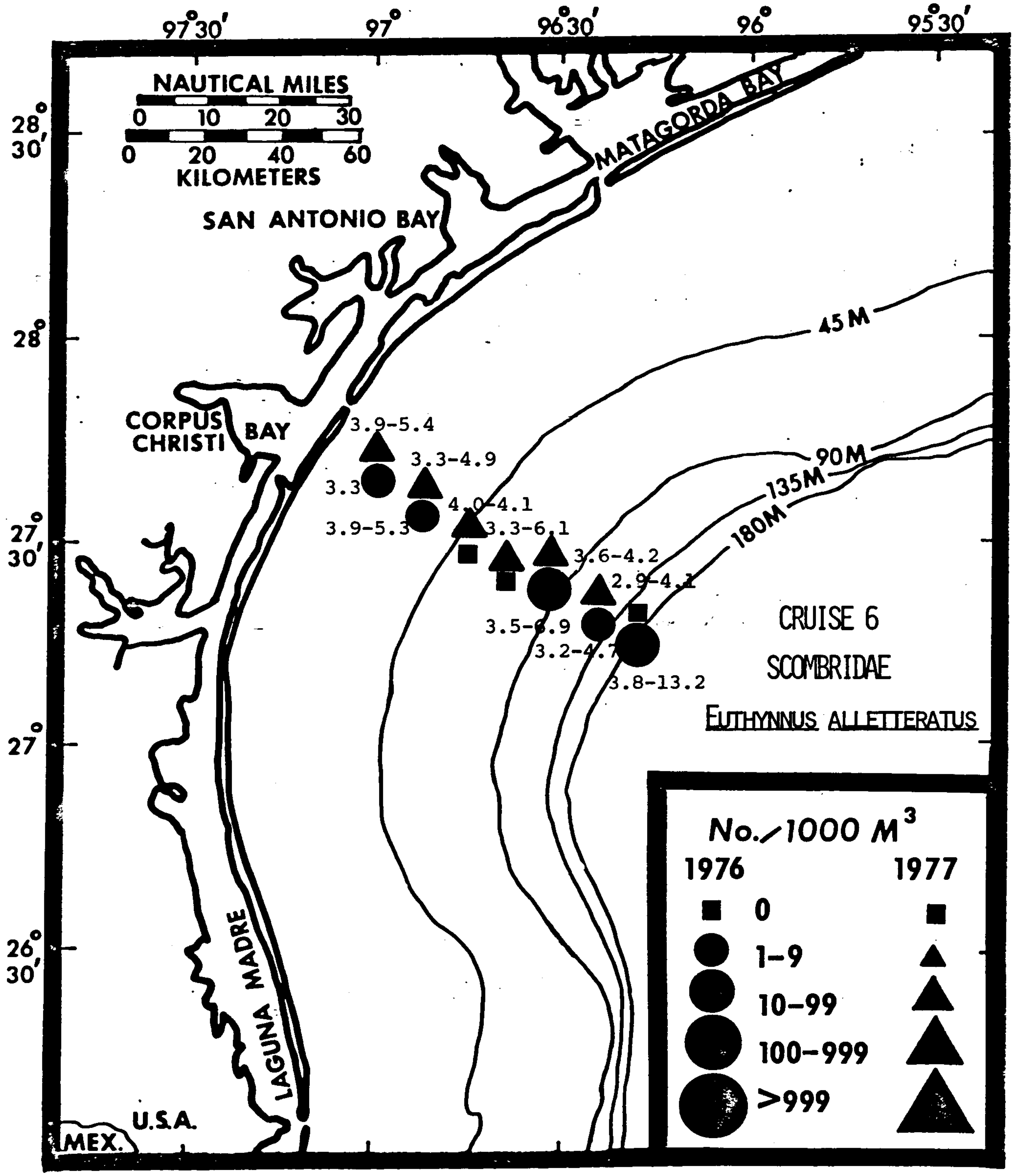


Figure 75 . Distribution, abundance and size range (SL) in mm of Euthynnus alletteratus larvae during Cruise 6.

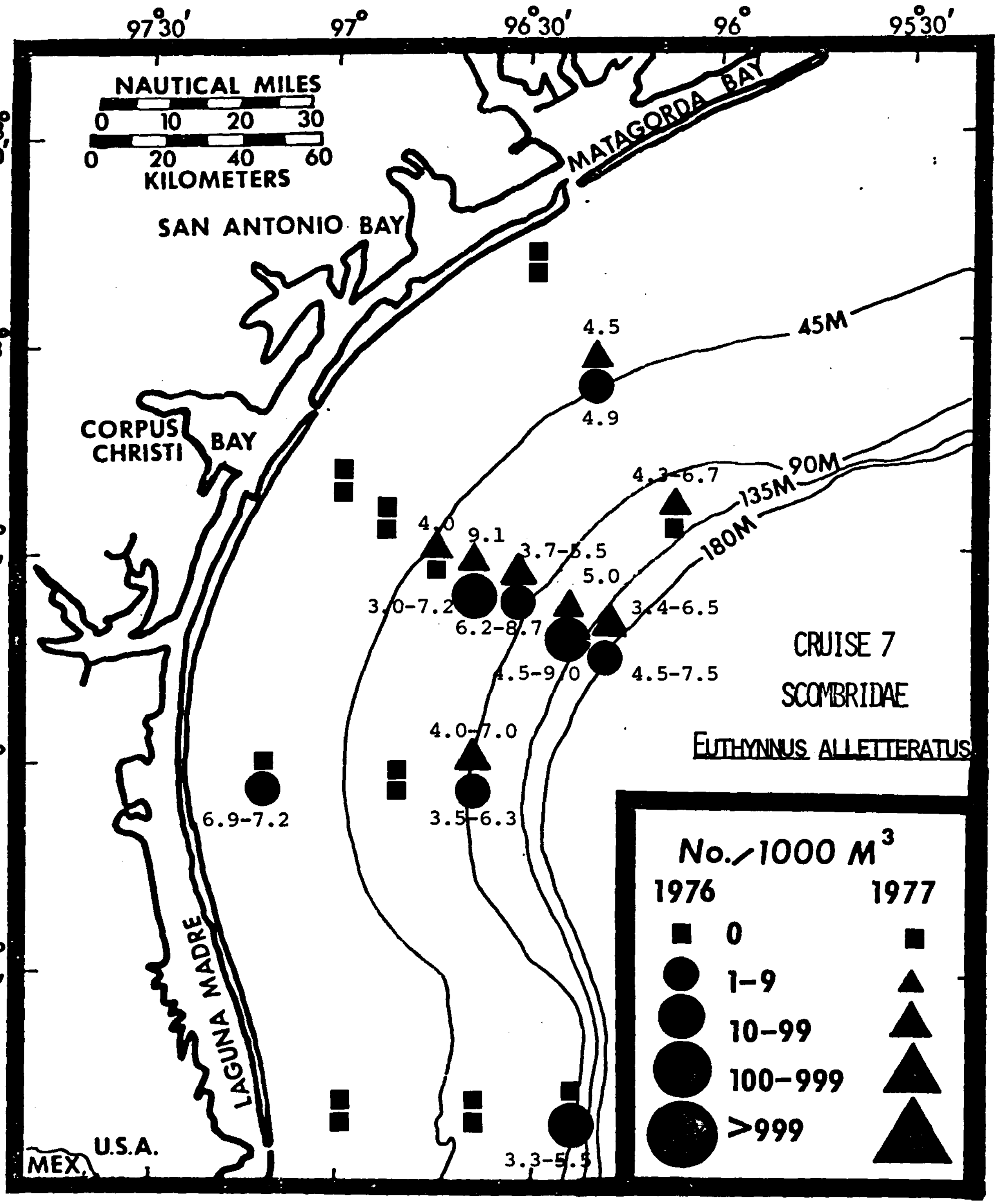


Figure 76 Distribution, abundance and size range (SL) in mm of *Euthynnus alletteratus* larvae during Cruise 7.

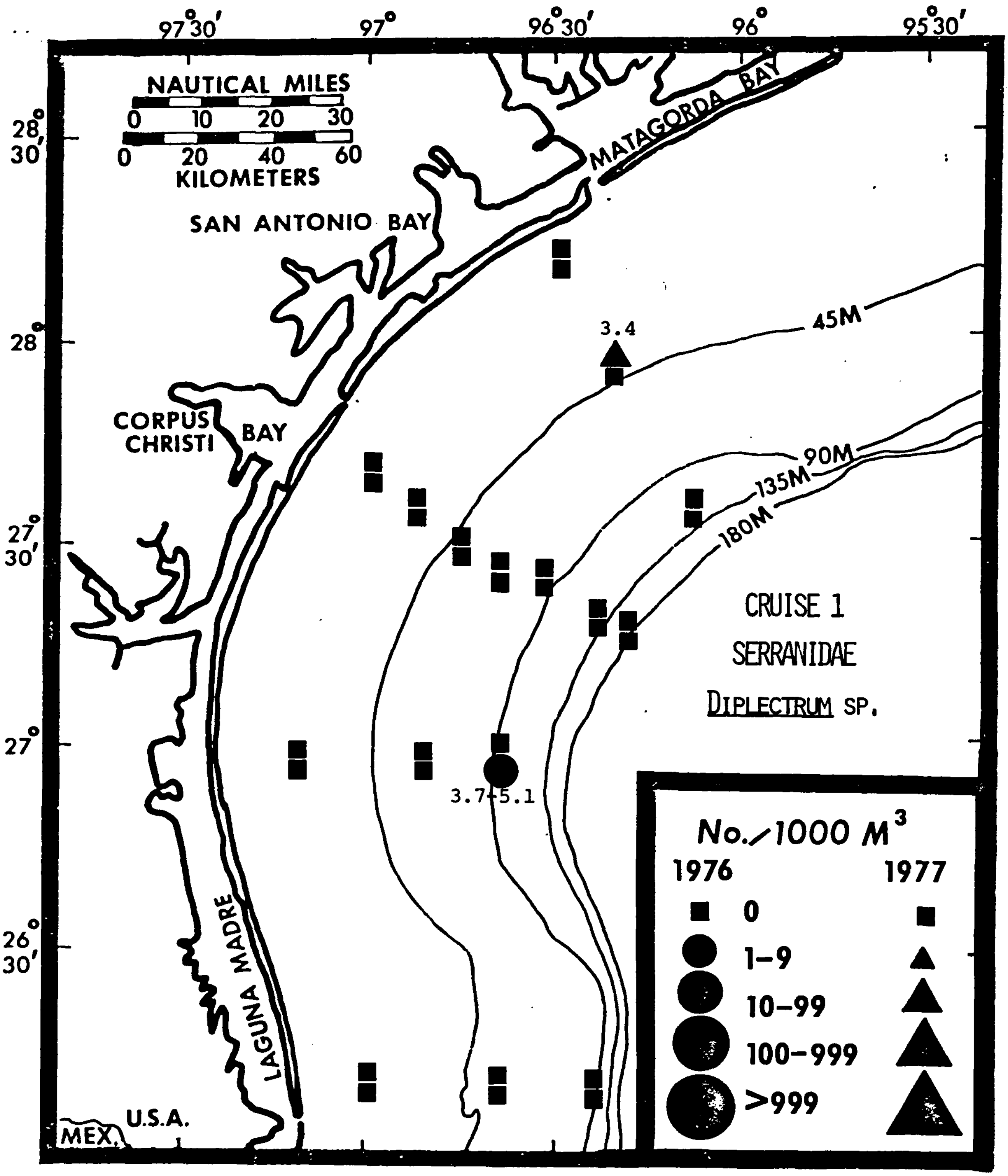


Figure 77. Distribution, abundance and size range (SL) in mm of Diplectrum sp. larvae during Cruise 1.

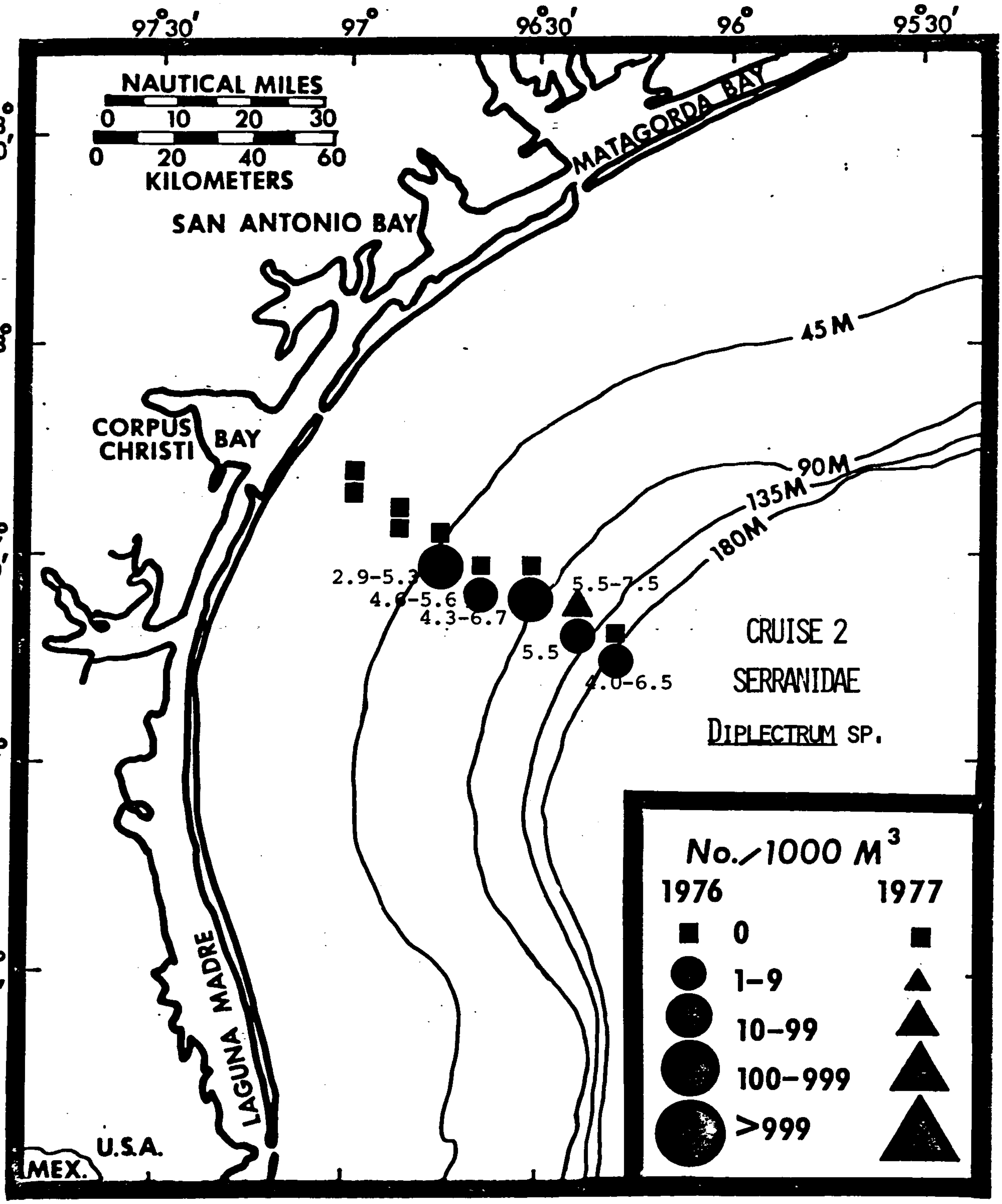


Figure 78. Distribution, abundance and size range (SL) in mm of Diplectrum sp. larvae during Cruise 2.

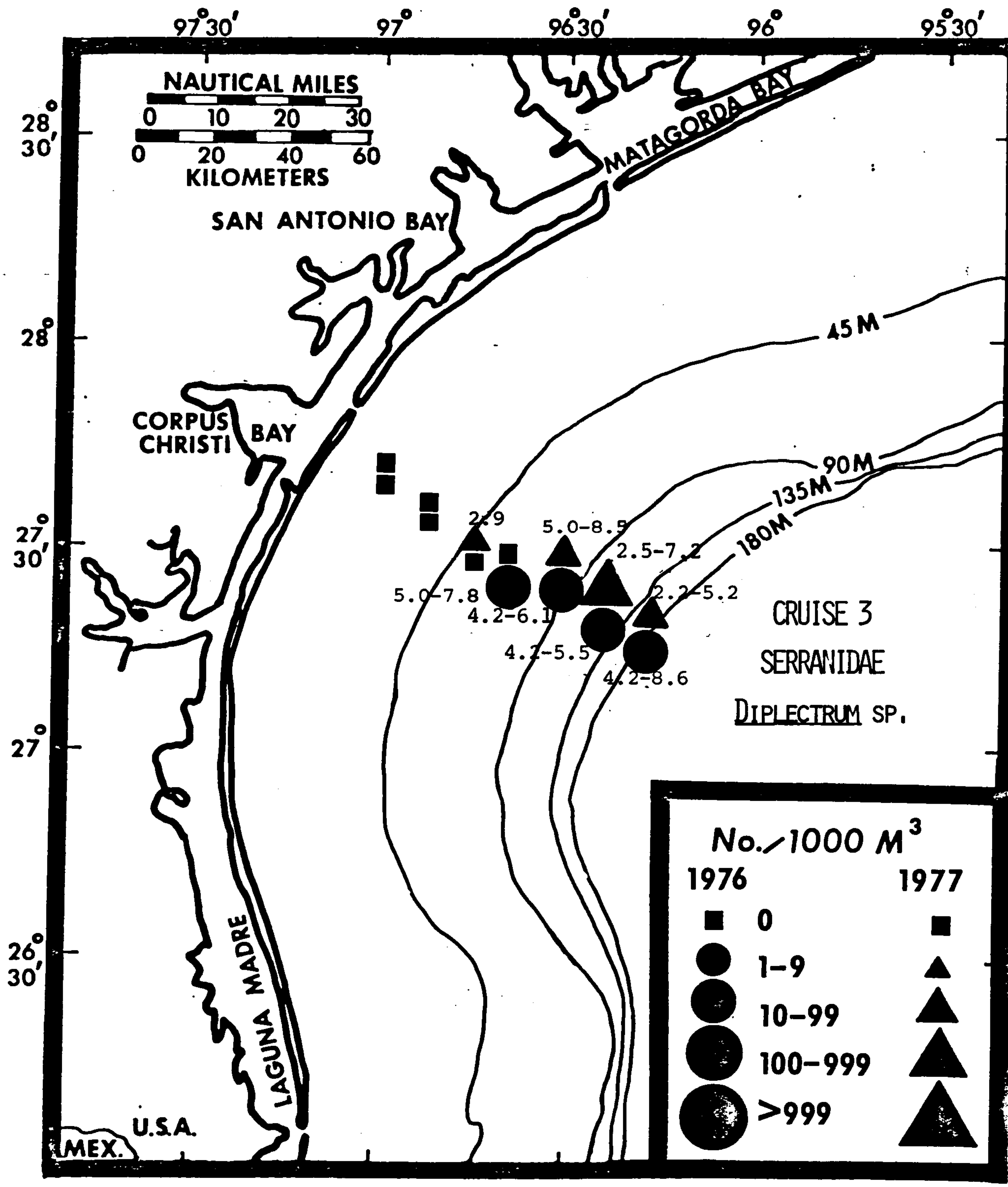


Figure 79. Distribution, abundance and size range (SL) in mm of Diplectrum sp. larvae during Cruise 3.

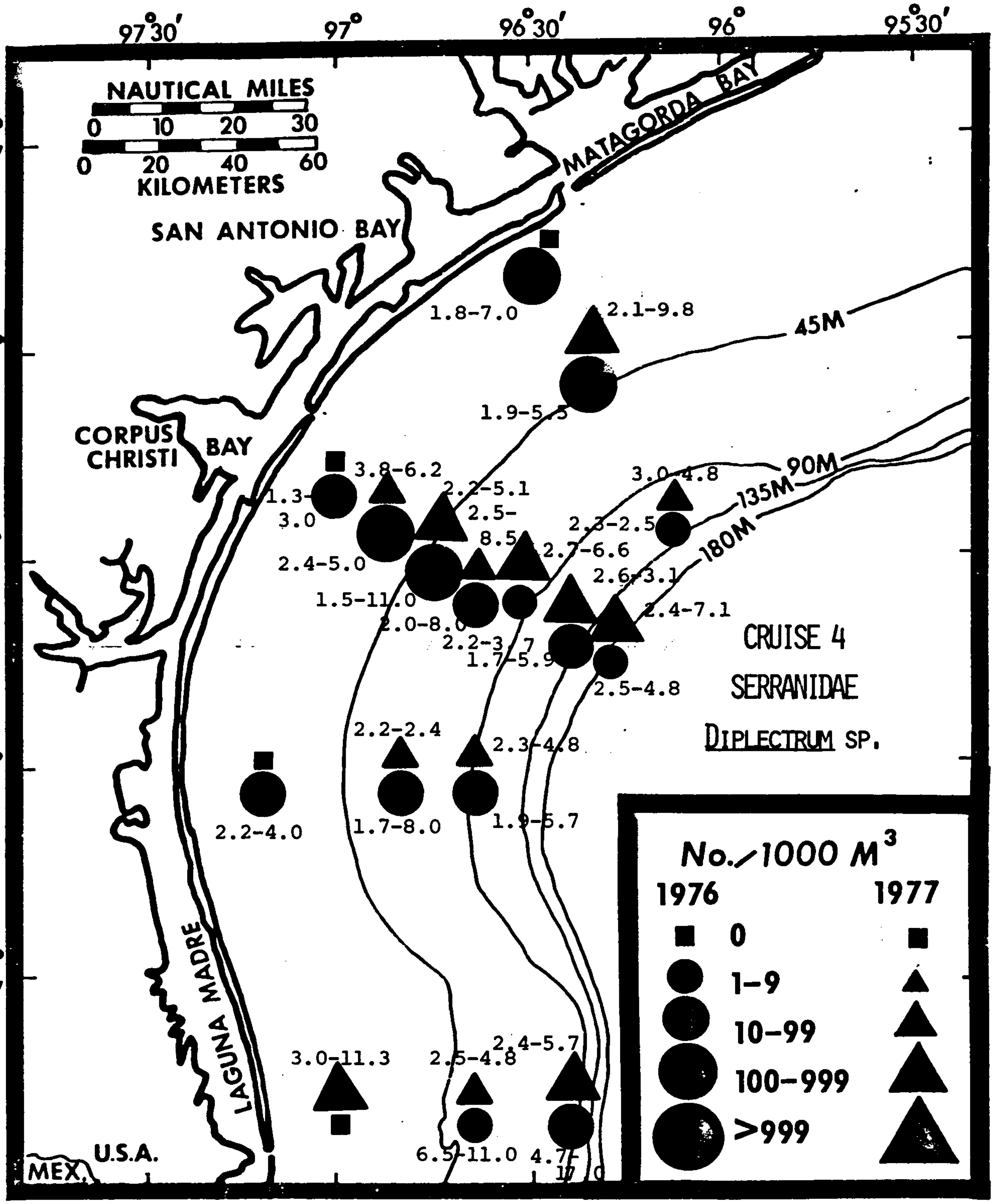


Figure 80 Distribution, abundance and size range (SL) in mm of Diplectrum sp. larvae during Cruise 4.

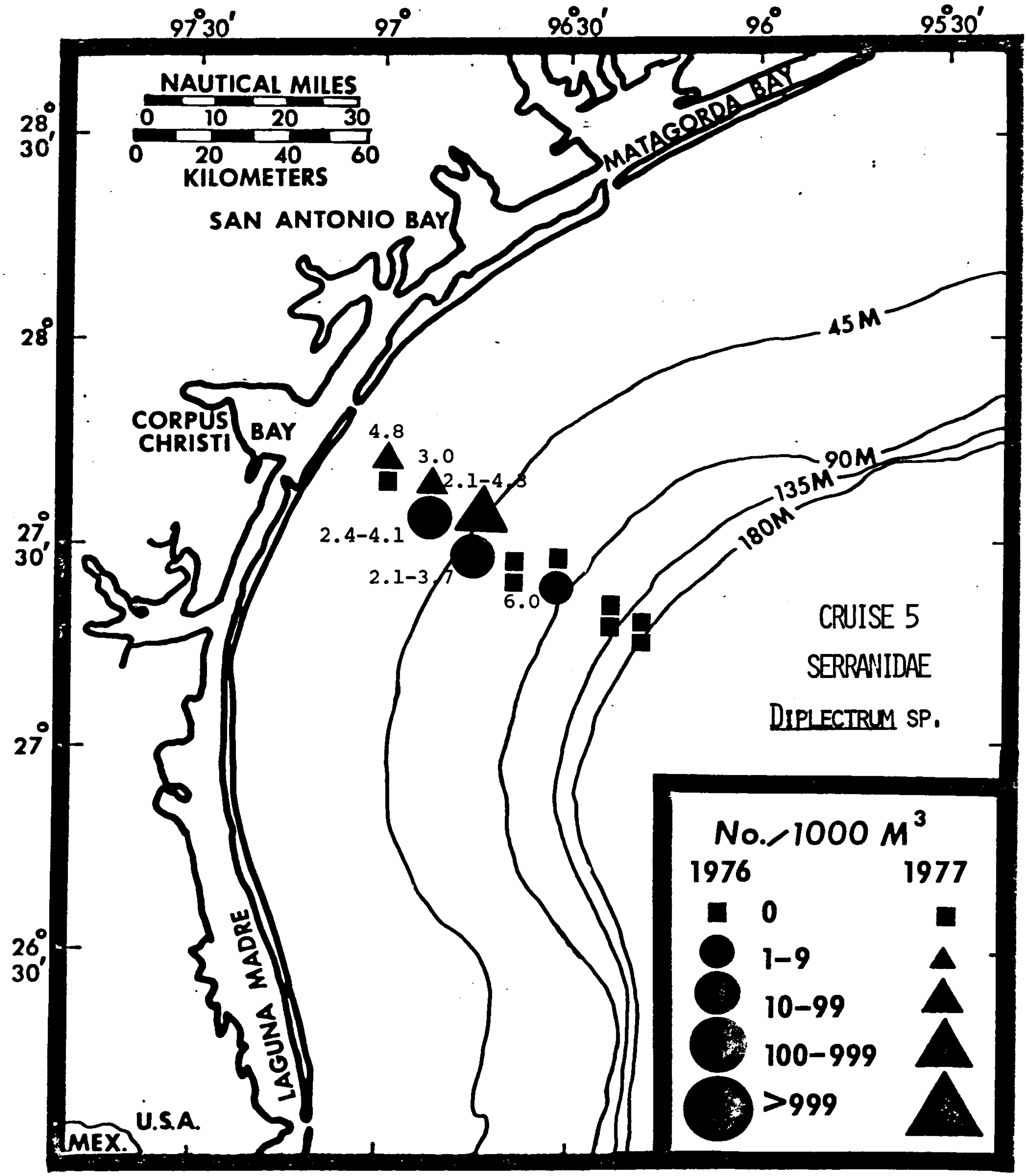


Figure 81. Distribution, abundance and size range (SL) in mm of Diplectrum sp. larvae during Cruise 5.

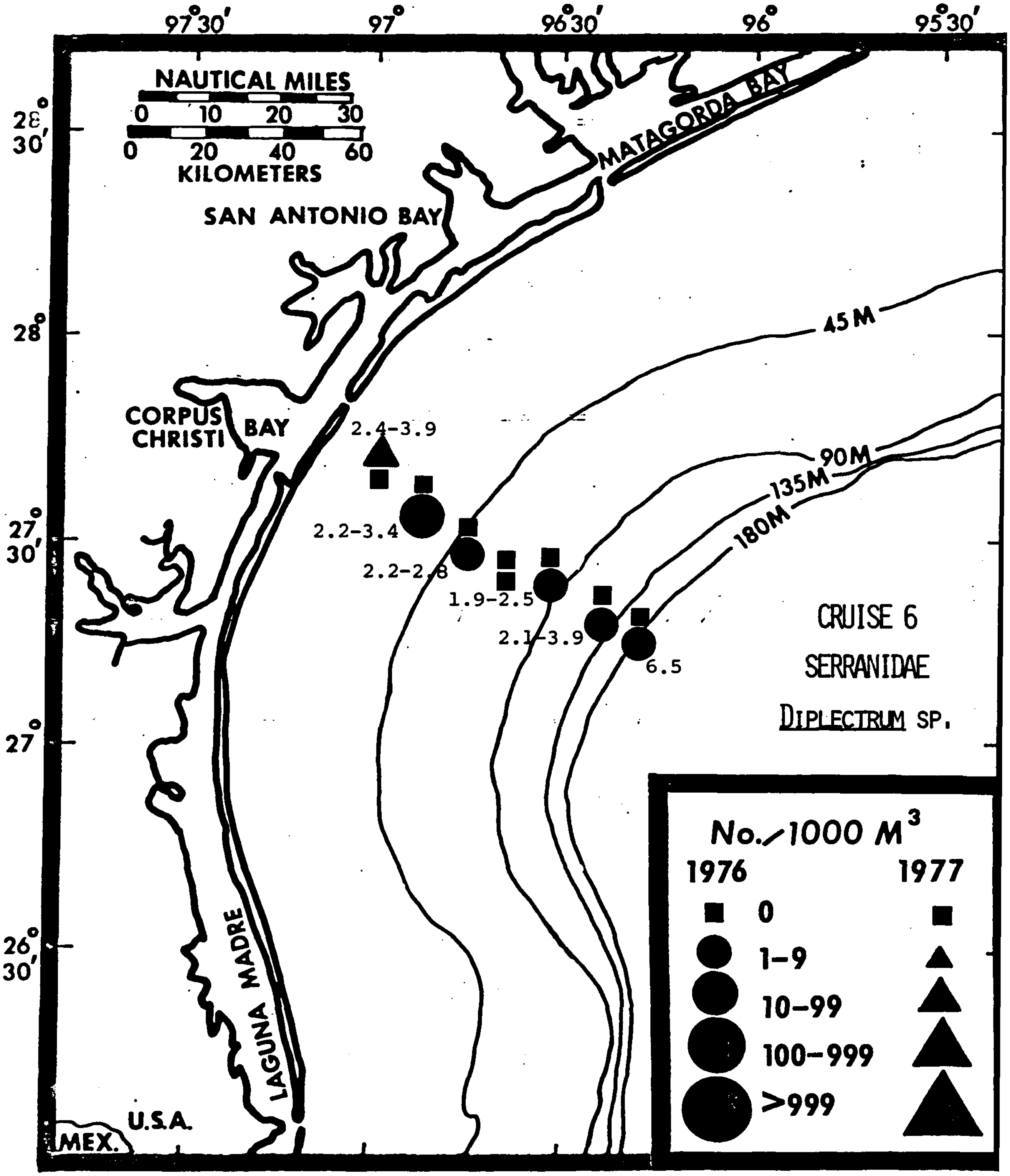


Figure 82 Distribution, abundance and size range (SL) in mm of Diplectrum sp larvae during Cruise 6.

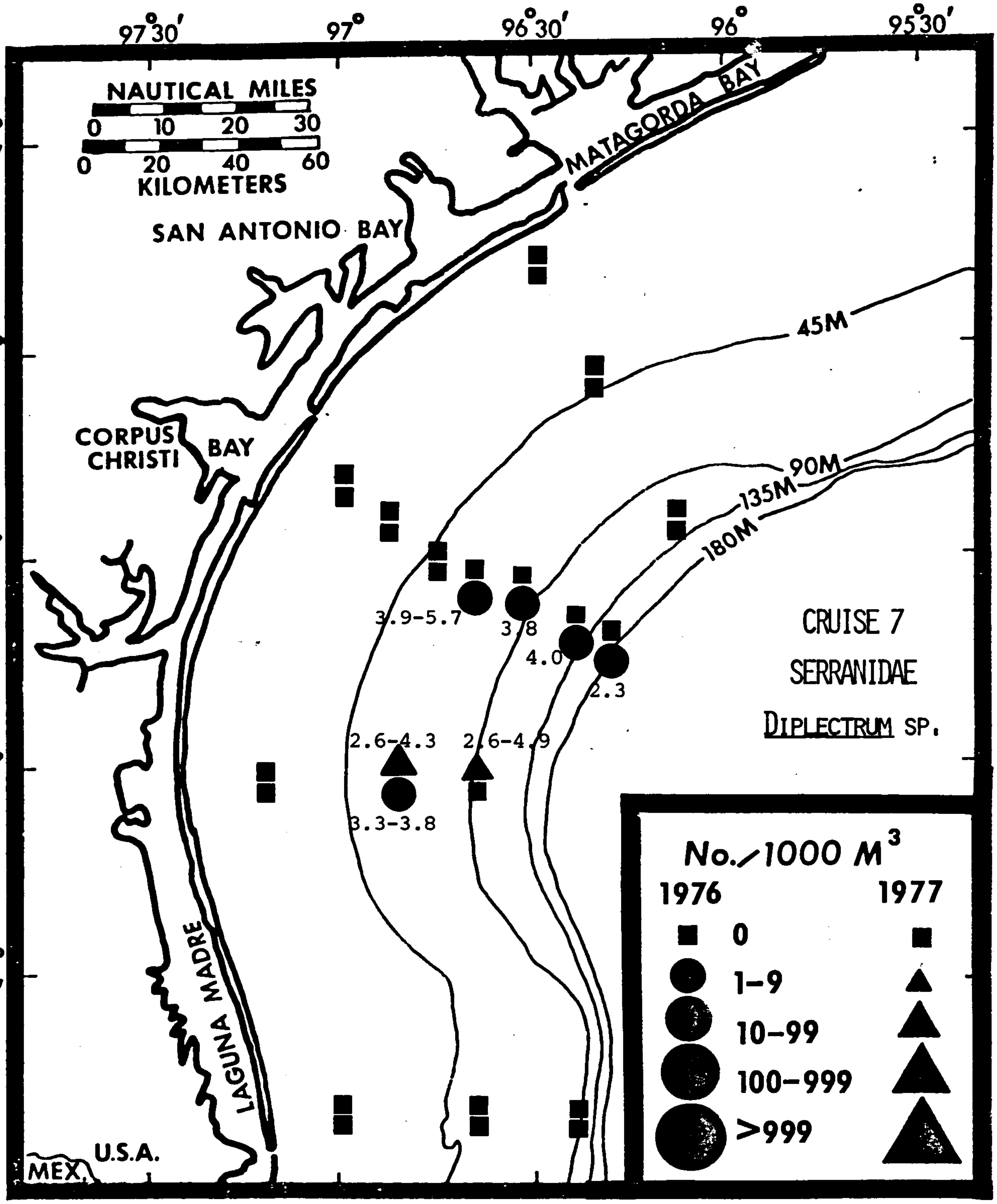


Figure 83 . Distribution, abundance and size range (SL) in mm of Diplectrum sp. larvae during Cruise 7.

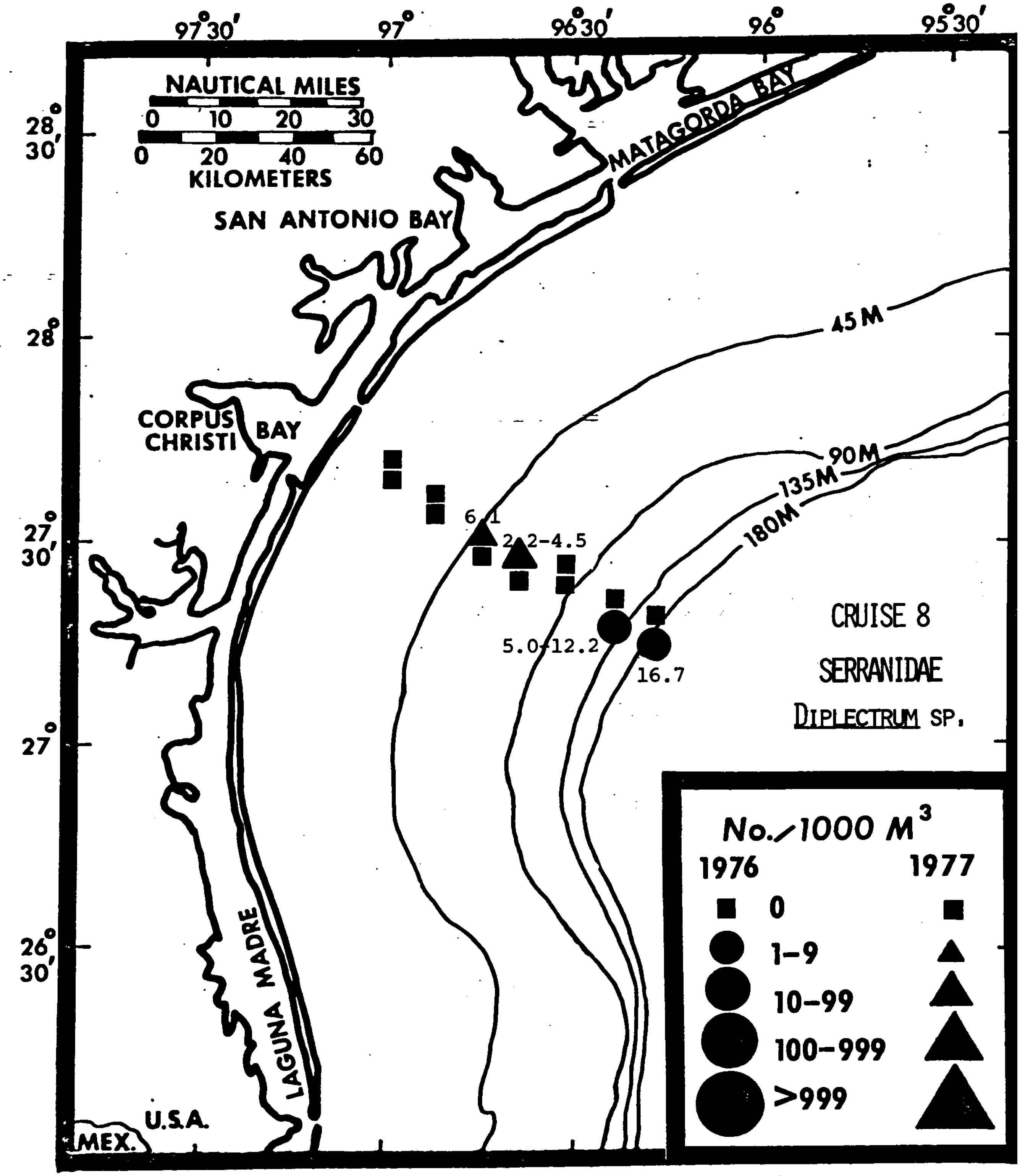


Figure 84. Distribution, abundance and size range (SL) in mm of Diplectrum sp. larvae during Cruise 8.

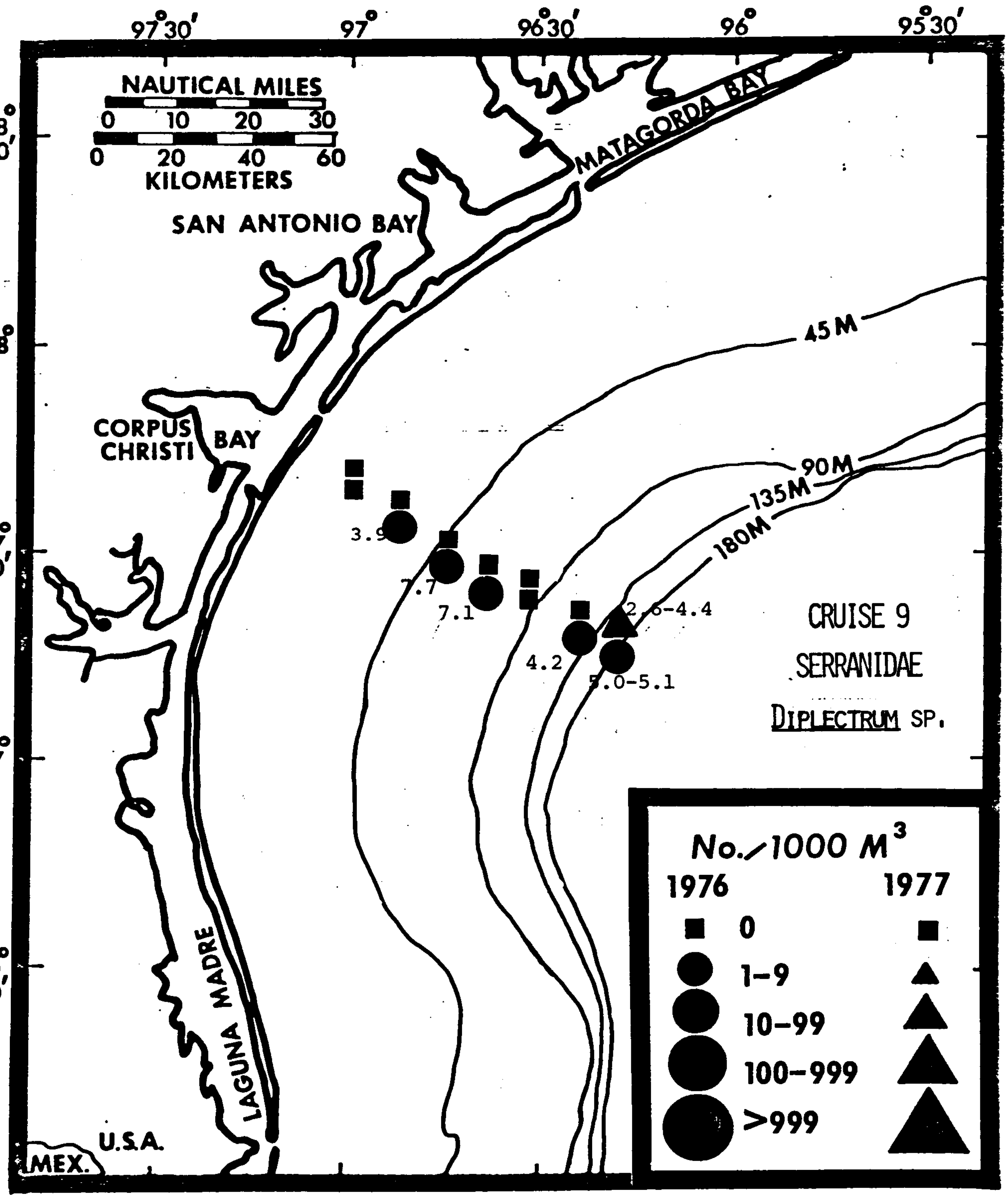


Figure 85 . Distribution, abundance and size range (SL) in mm of Diplectrum sp. larvae during Cruise 9.

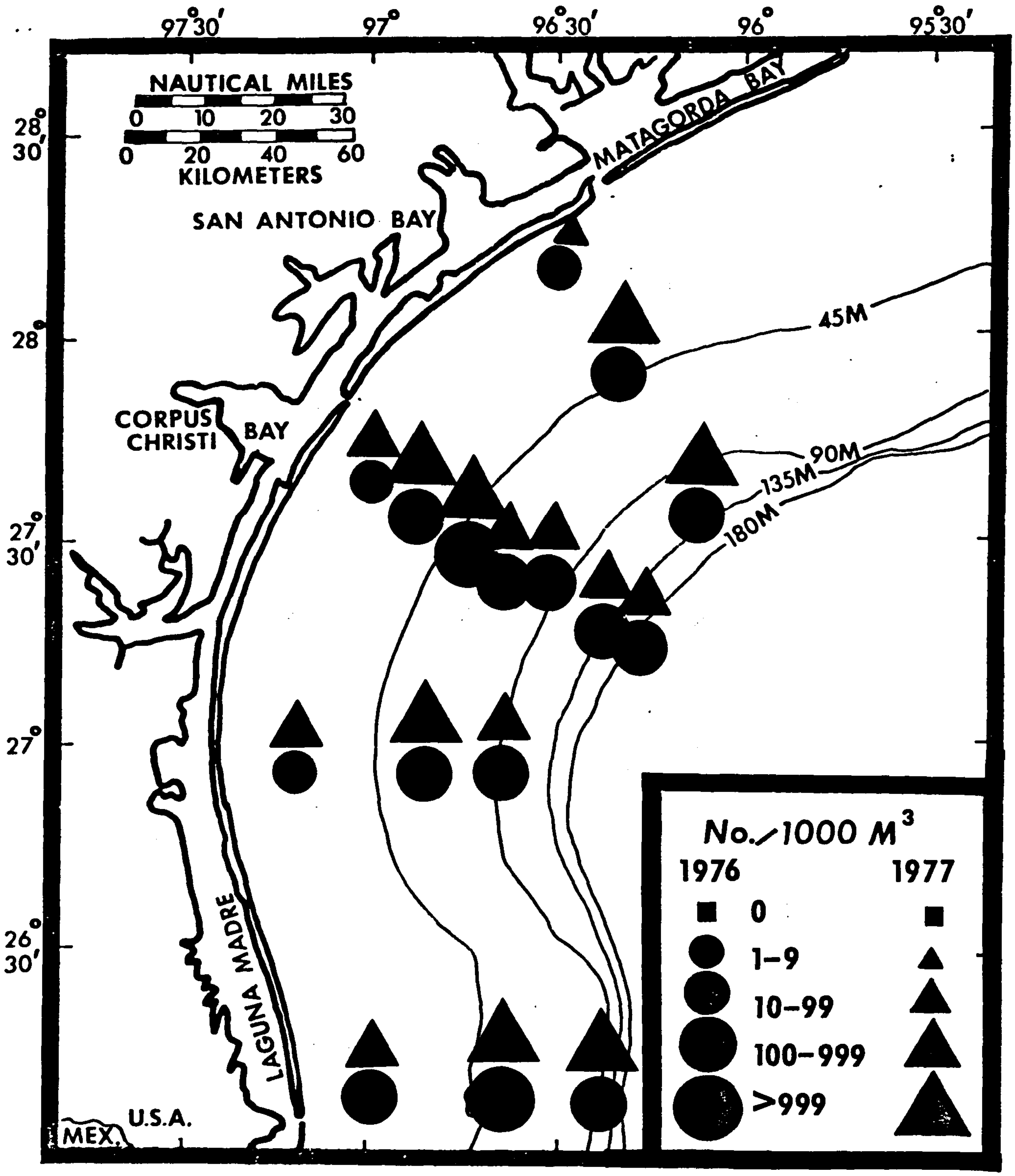


Figure 86. Distribution and abundance of fish larvae during Cruise 1 taken from 505μ samples.

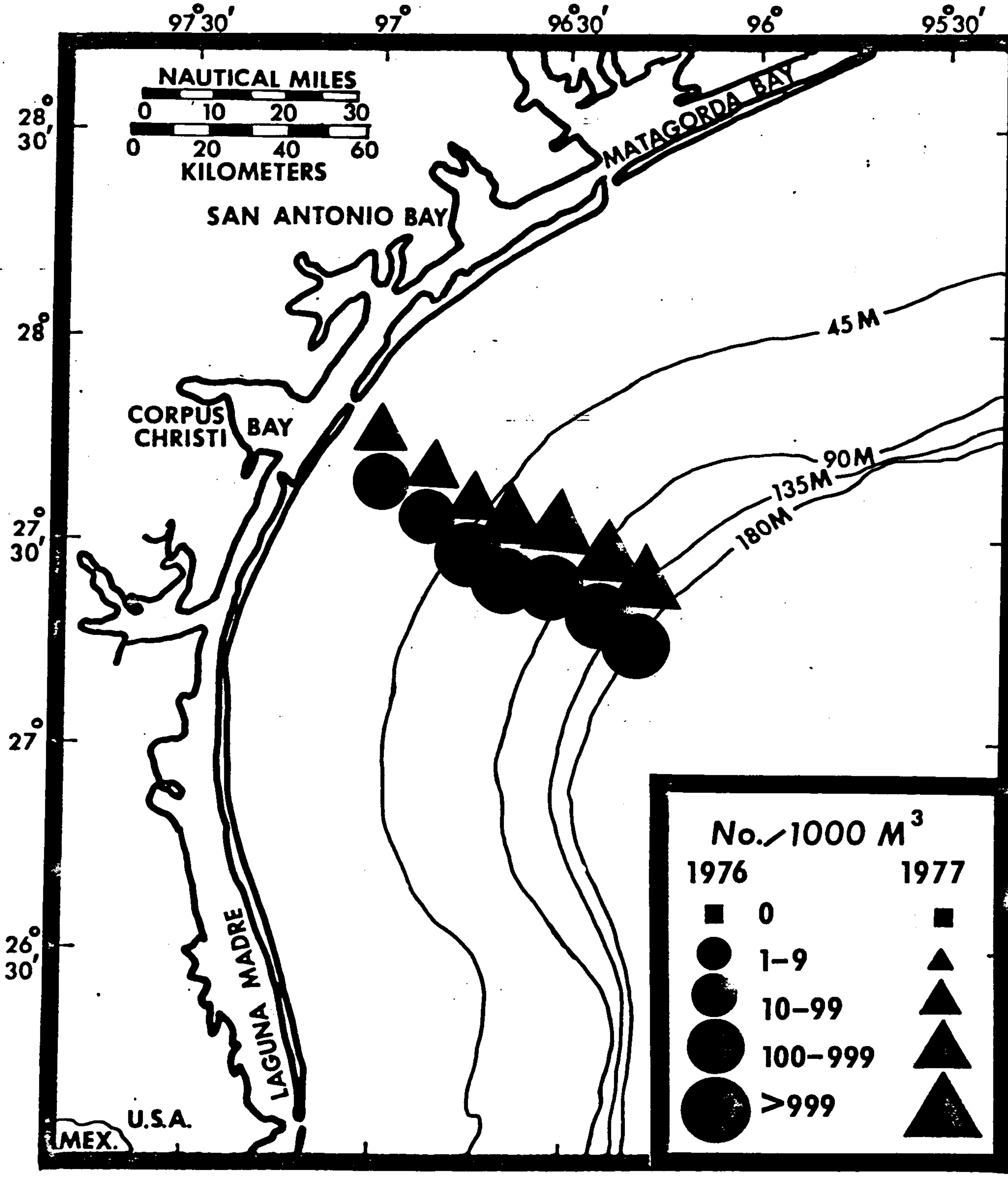


Figure 87. Distribution and abundance of fish larvae during Cruise 2 taken from 505μ samples.

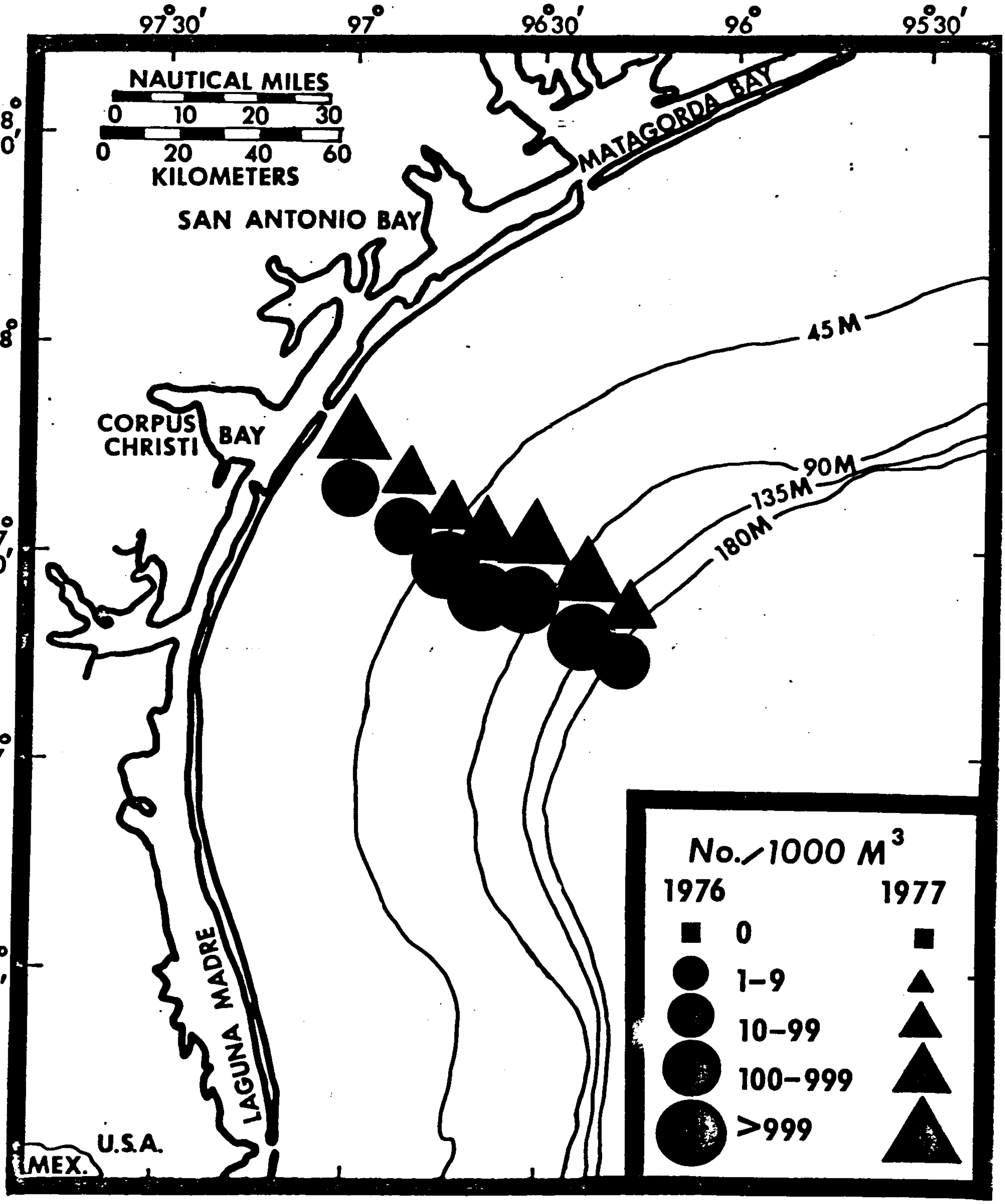


Figure 88. Distribution and abundance of fish larvae during Cruise 3 taken from 505μ samples.

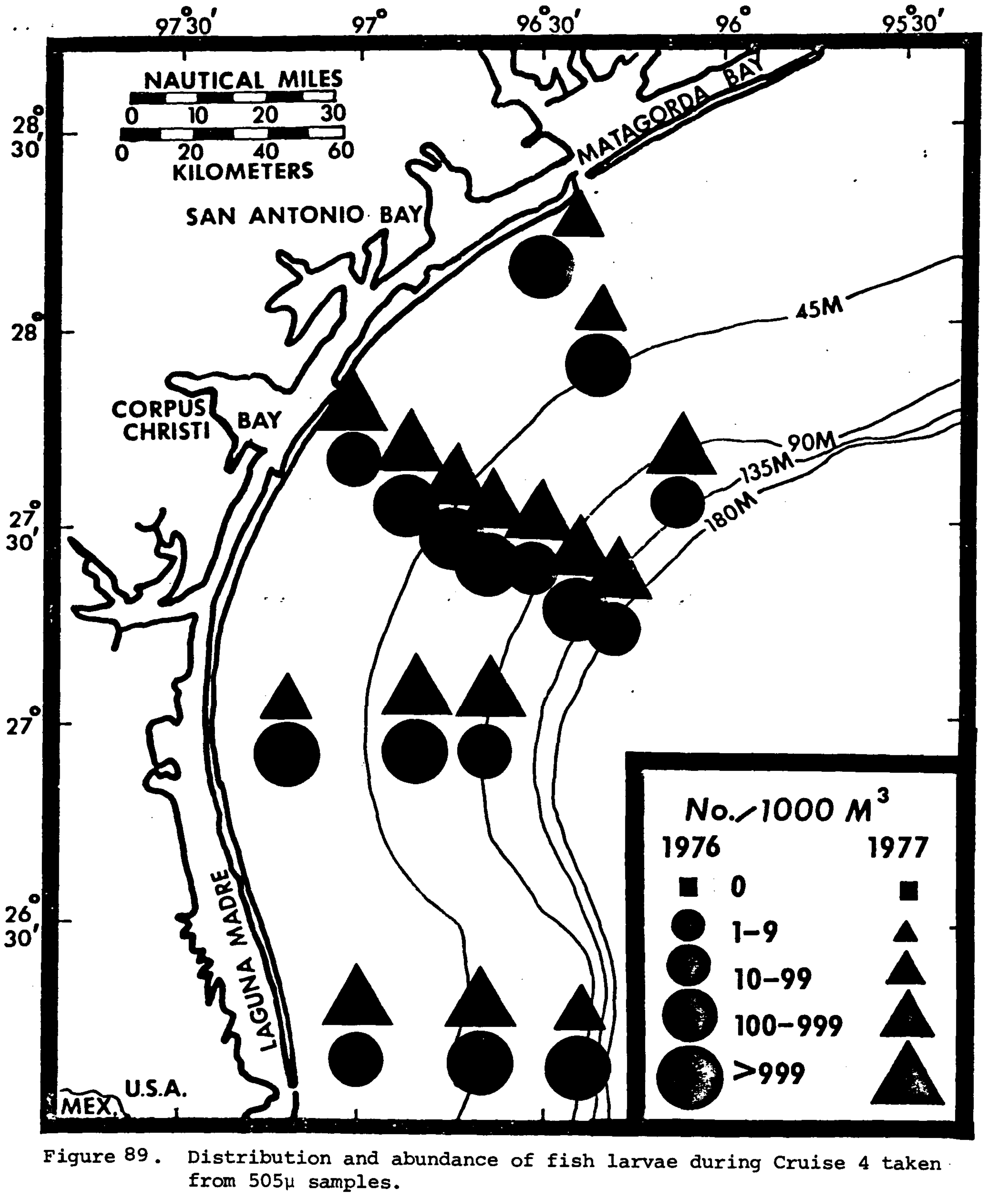


Figure 89. Distribution and abundance of fish larvae during Cruise 4 taken from 505μ samples.

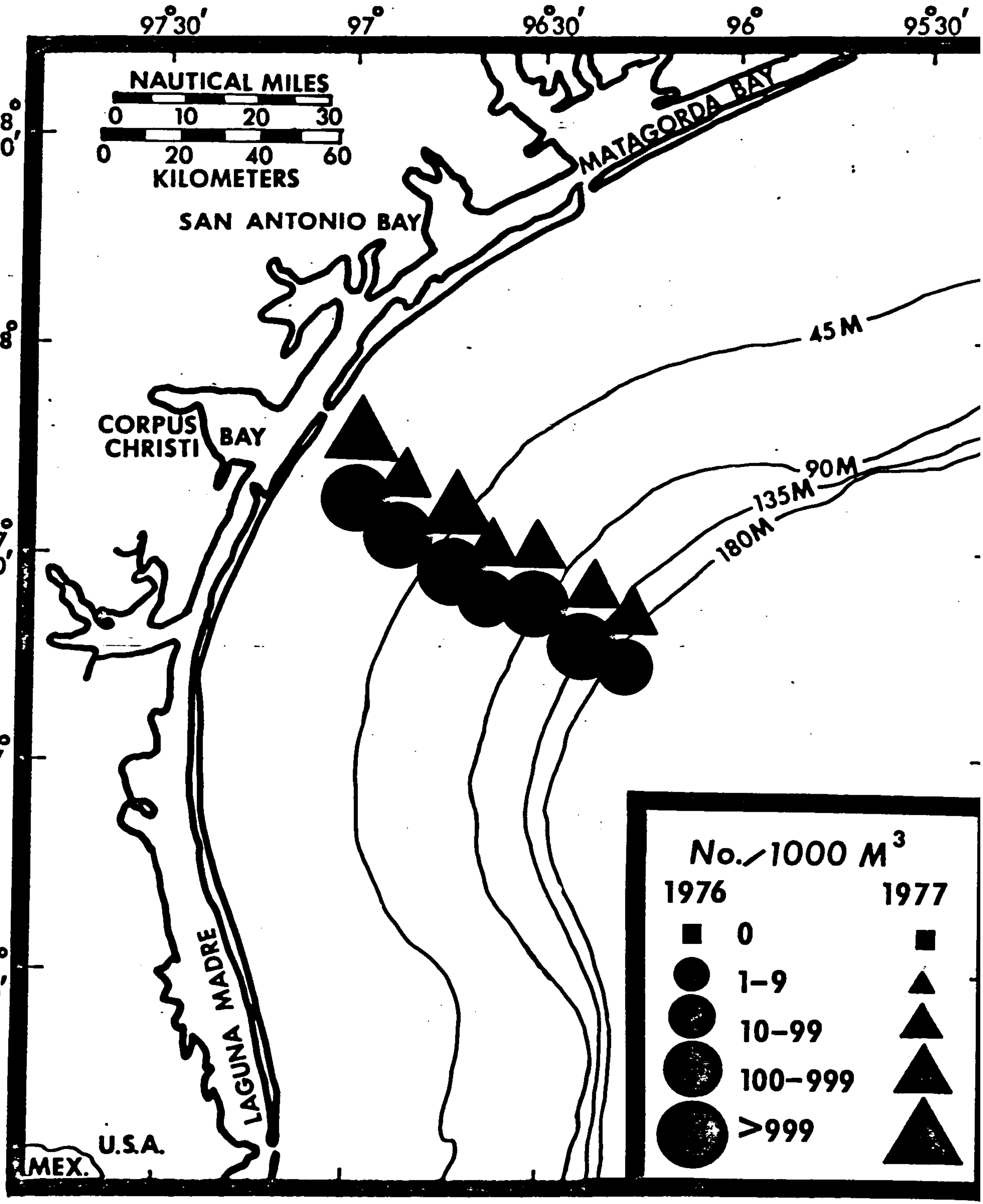


Figure 90 Distribution and abundance of fish larvae during Cruise 5 taken from 505μ samples.

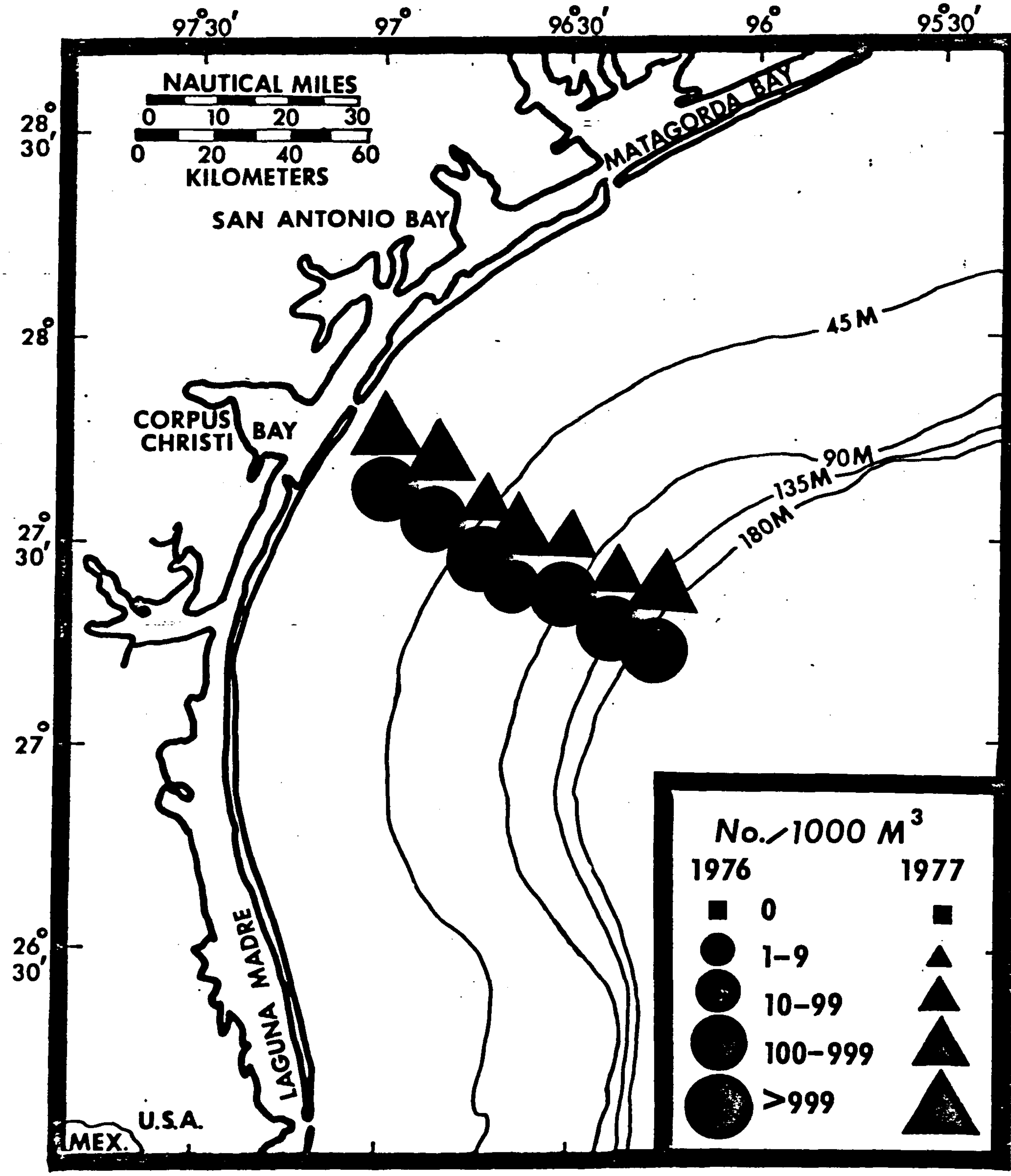


Figure 91 Distribution and abundance of fish larvae during Cruise 6 taken from 505μ samples.

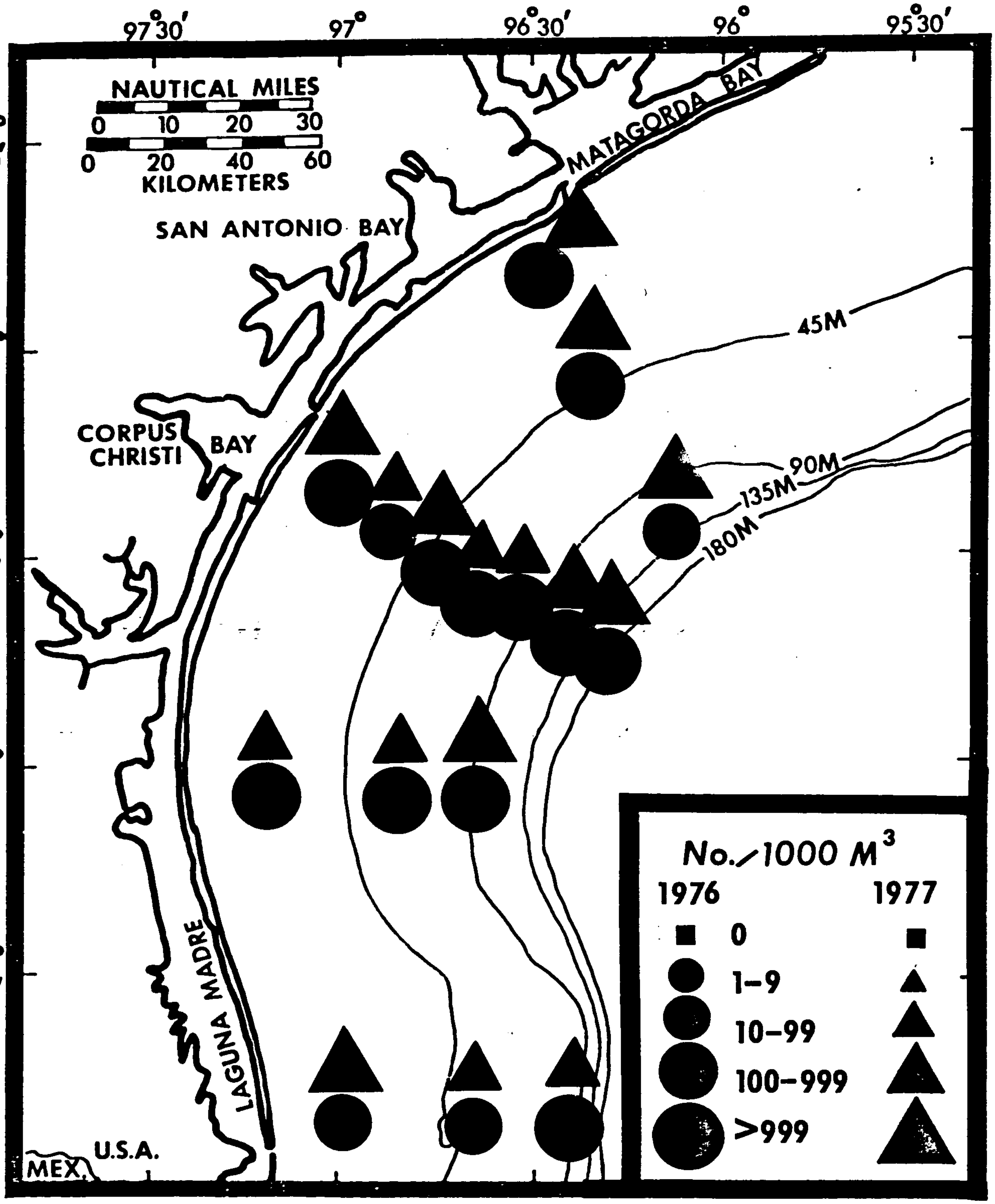


Figure 92 Distribution and abundance of fish larvae during Cruise 7 taken from 505μ samples.

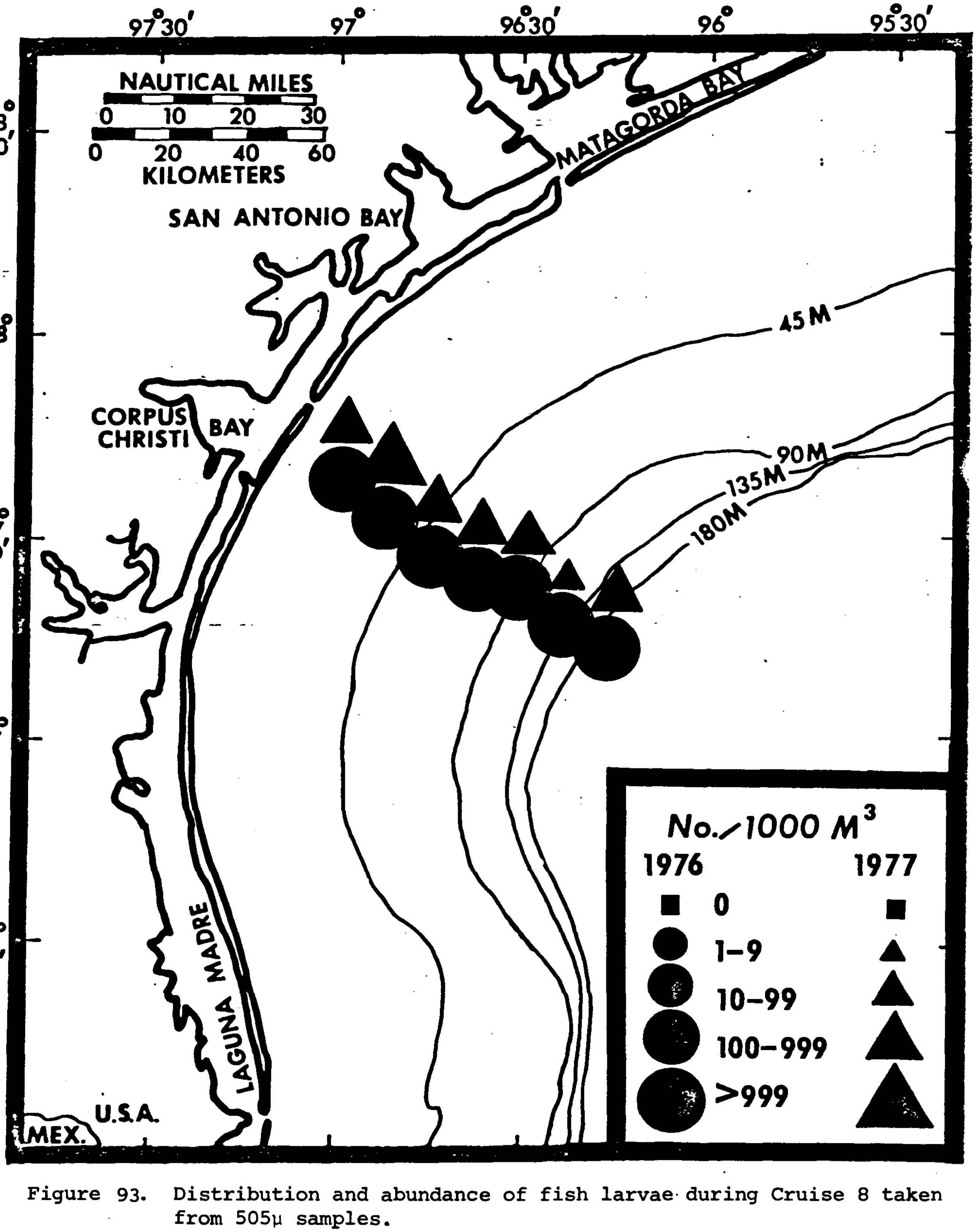


Figure 93. Distribution and abundance of fish larvae during Cruise 8 taken from 505μ samples.

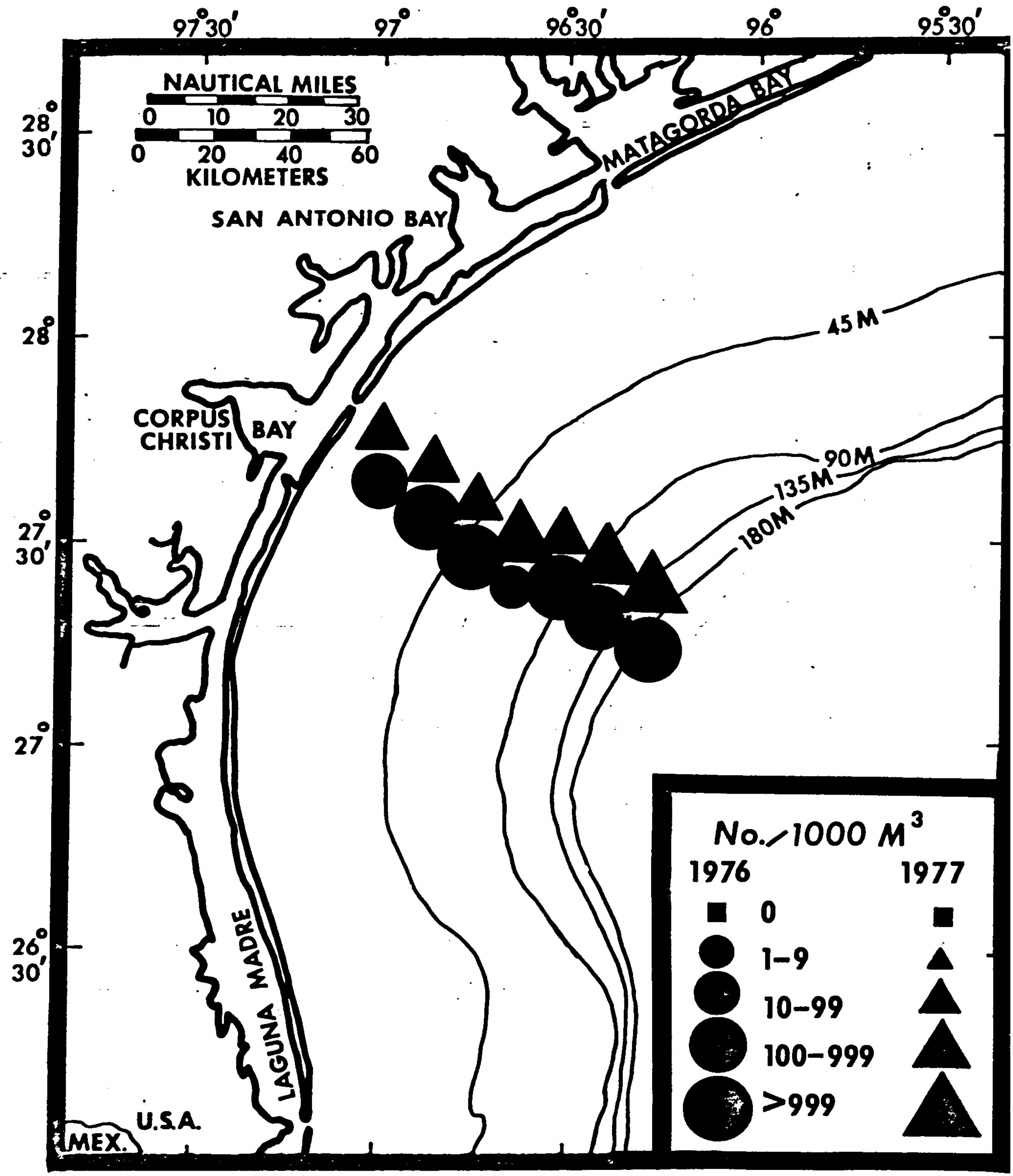


Figure 94. Distribution and abundance of fish larvae during Cruise 9 taken from 505μ samples.

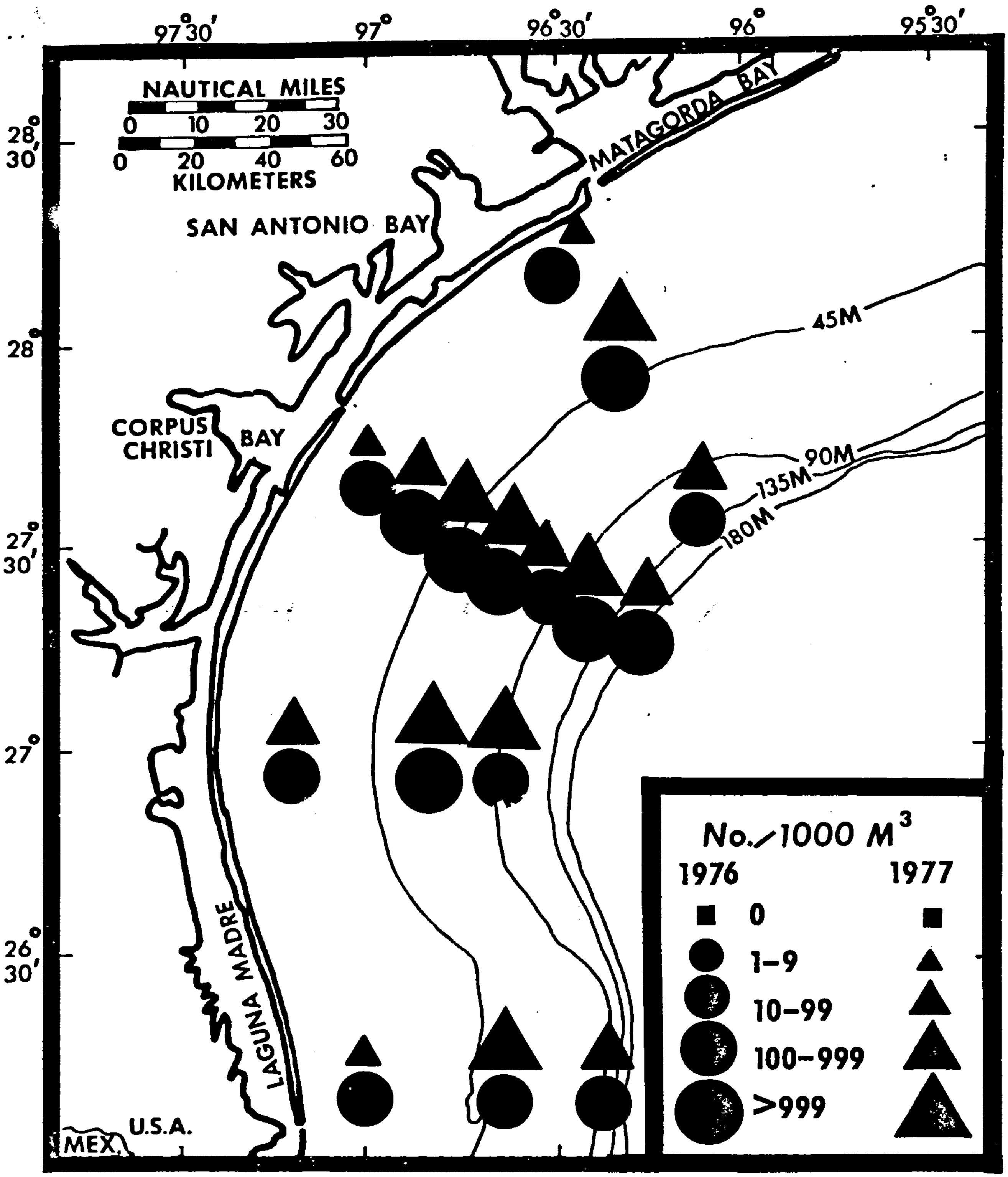


Figure 95. Distribution and abundance of fish eggs during Cruise 1 taken from 333μ samples.

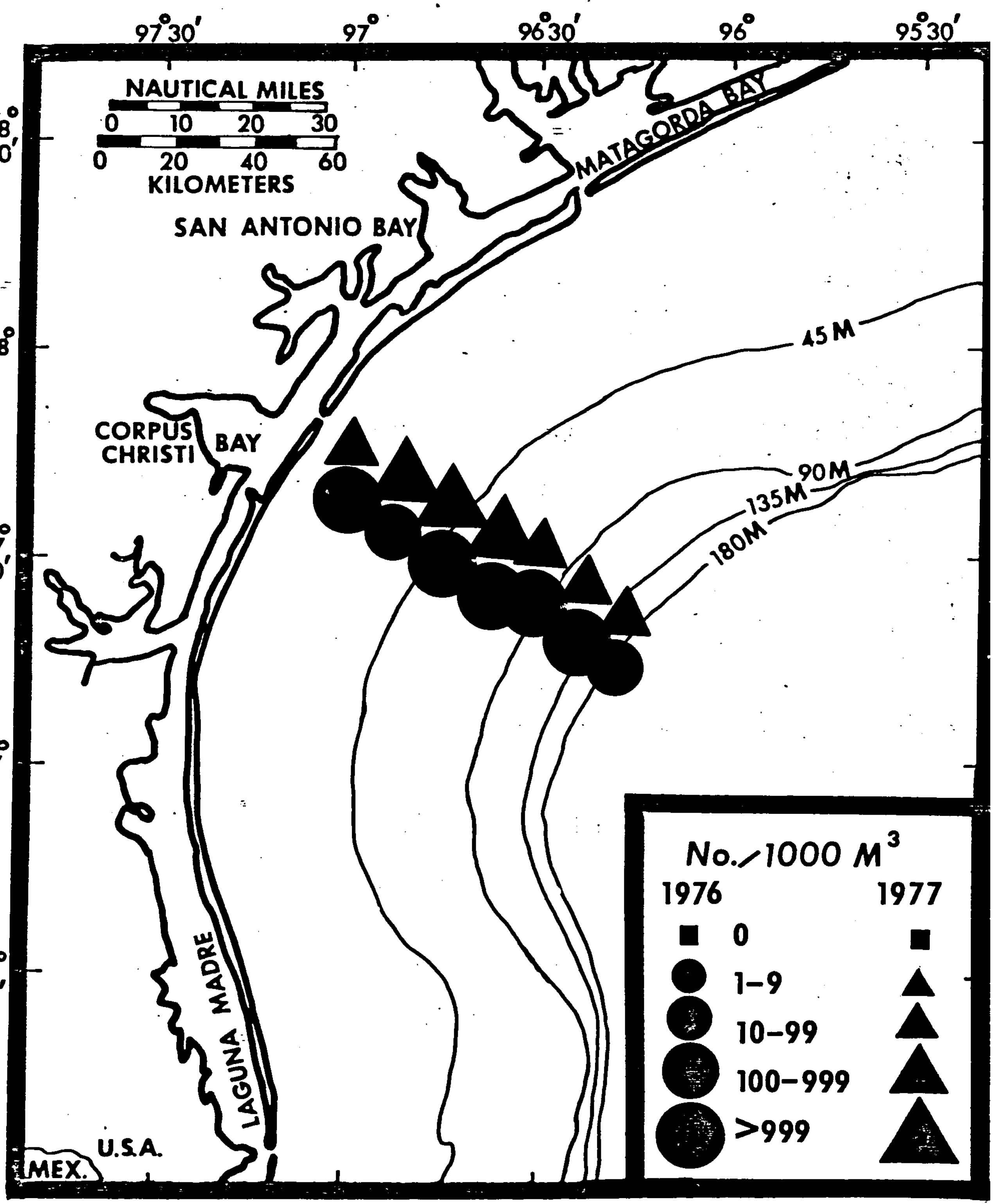


Figure 96. Distribution and abundance of fish eggs during Cruise 2 taken from 333μ samples.

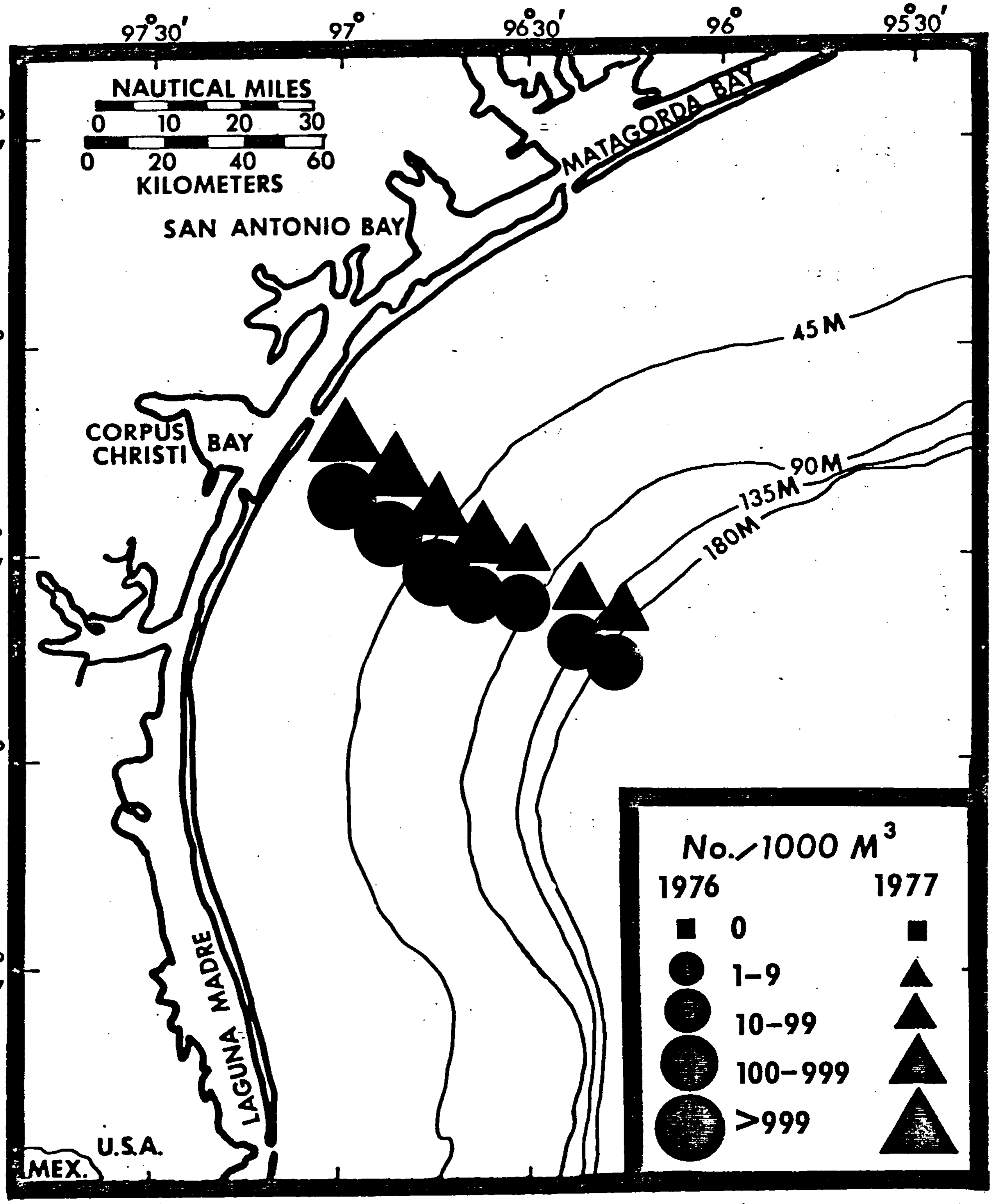


Figure 97. Distribution and abundance of fish eggs during Cruise 3 taken from 333μ samples.

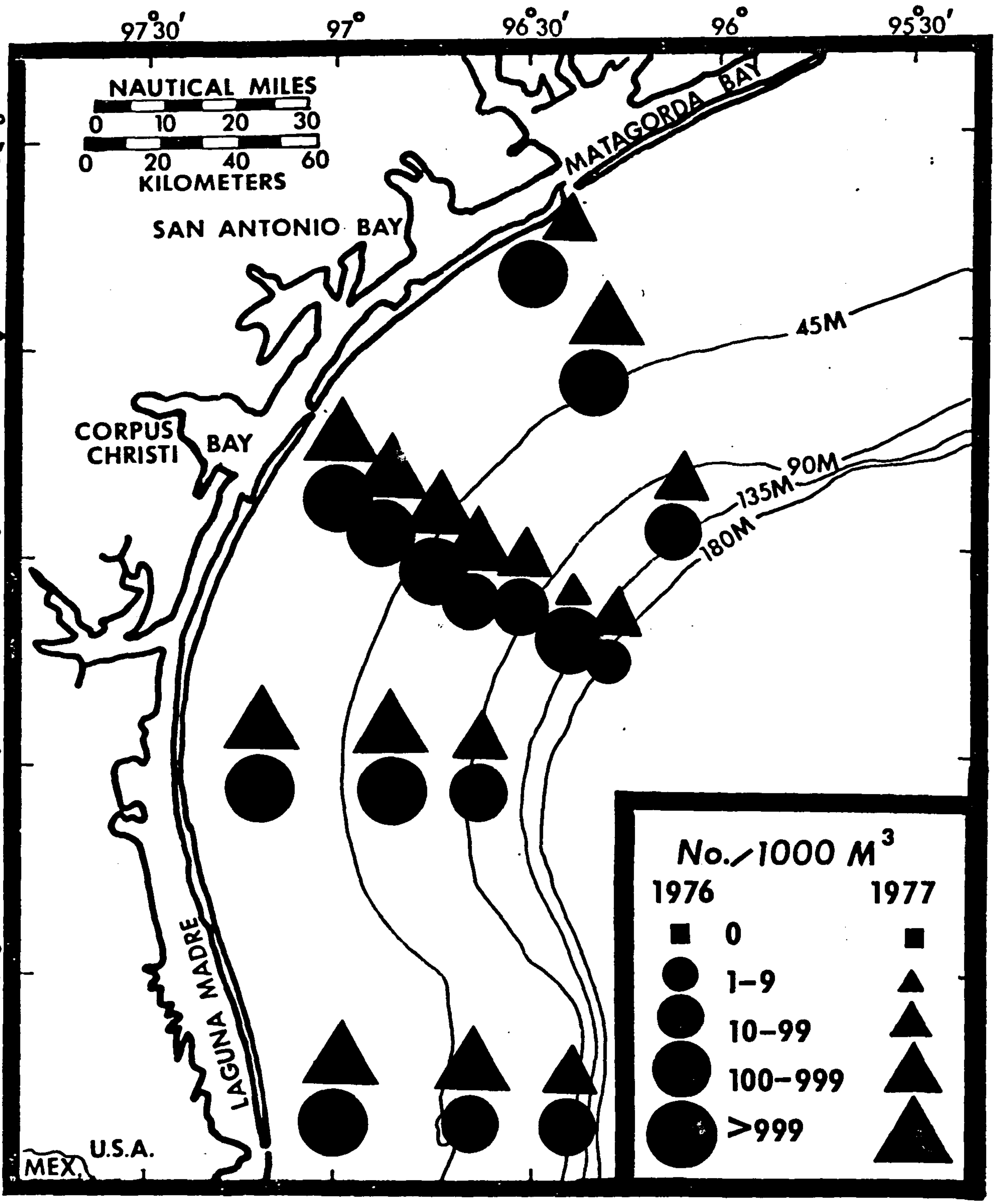


Figure 98. Distribution and abundance of fish eggs during Cruise 4 taken from 333μ samples.

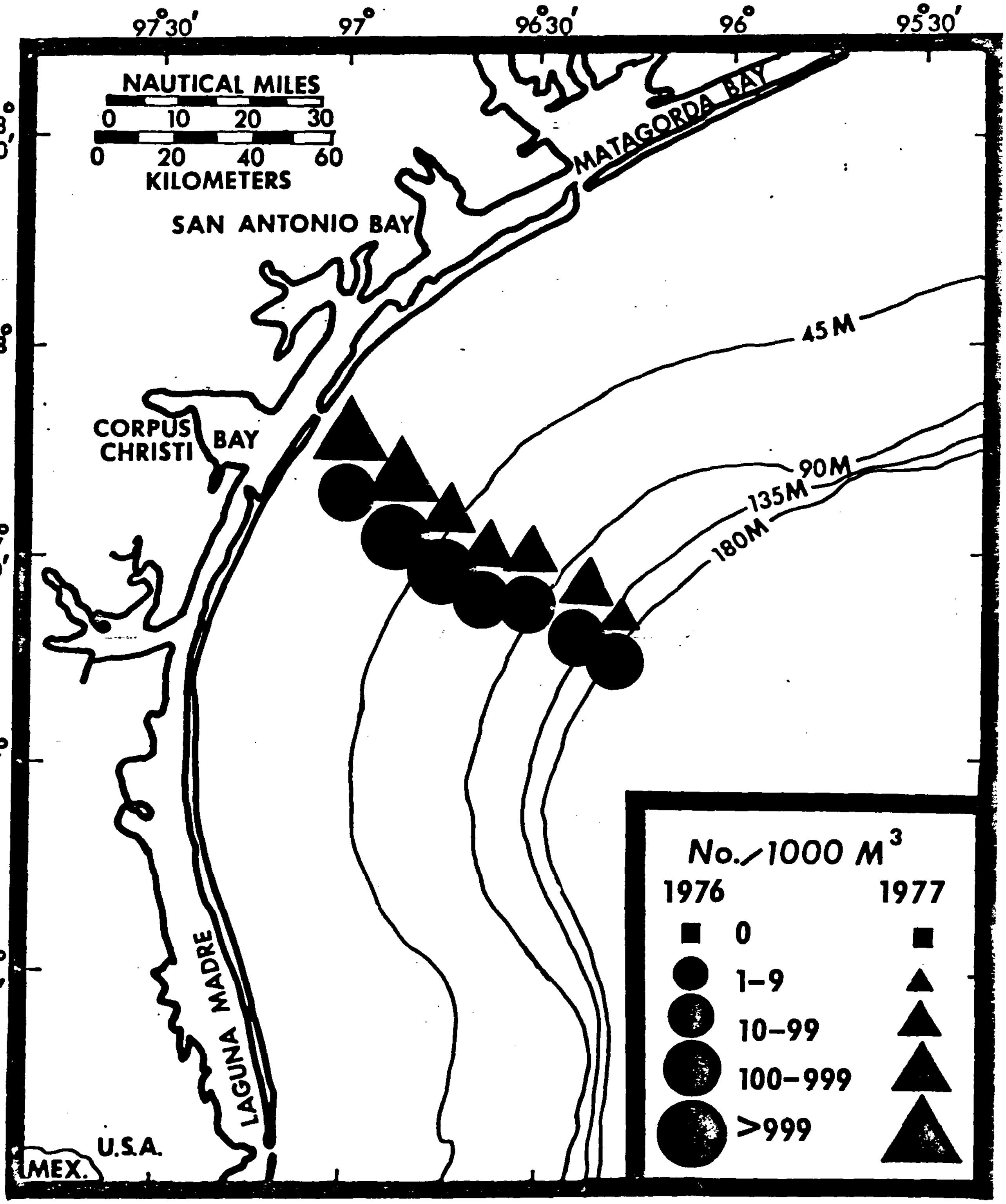


Figure 99. Distribution and abundance of fish eggs during Cruise 5 taken from 333μ samples.

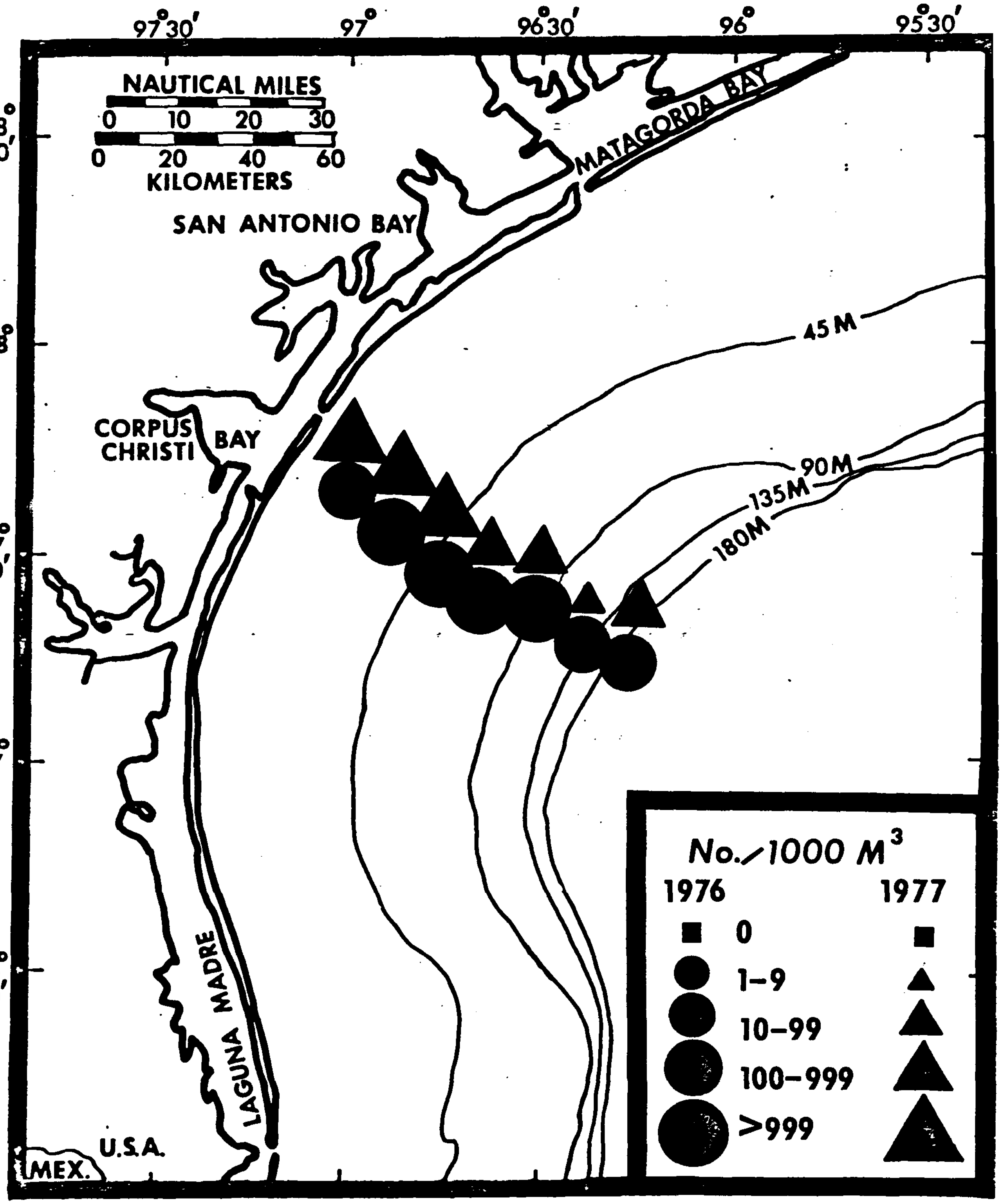


Figure 100. Distribution and abundance of fish eggs during Cruise 6 taken from 333μ samples.

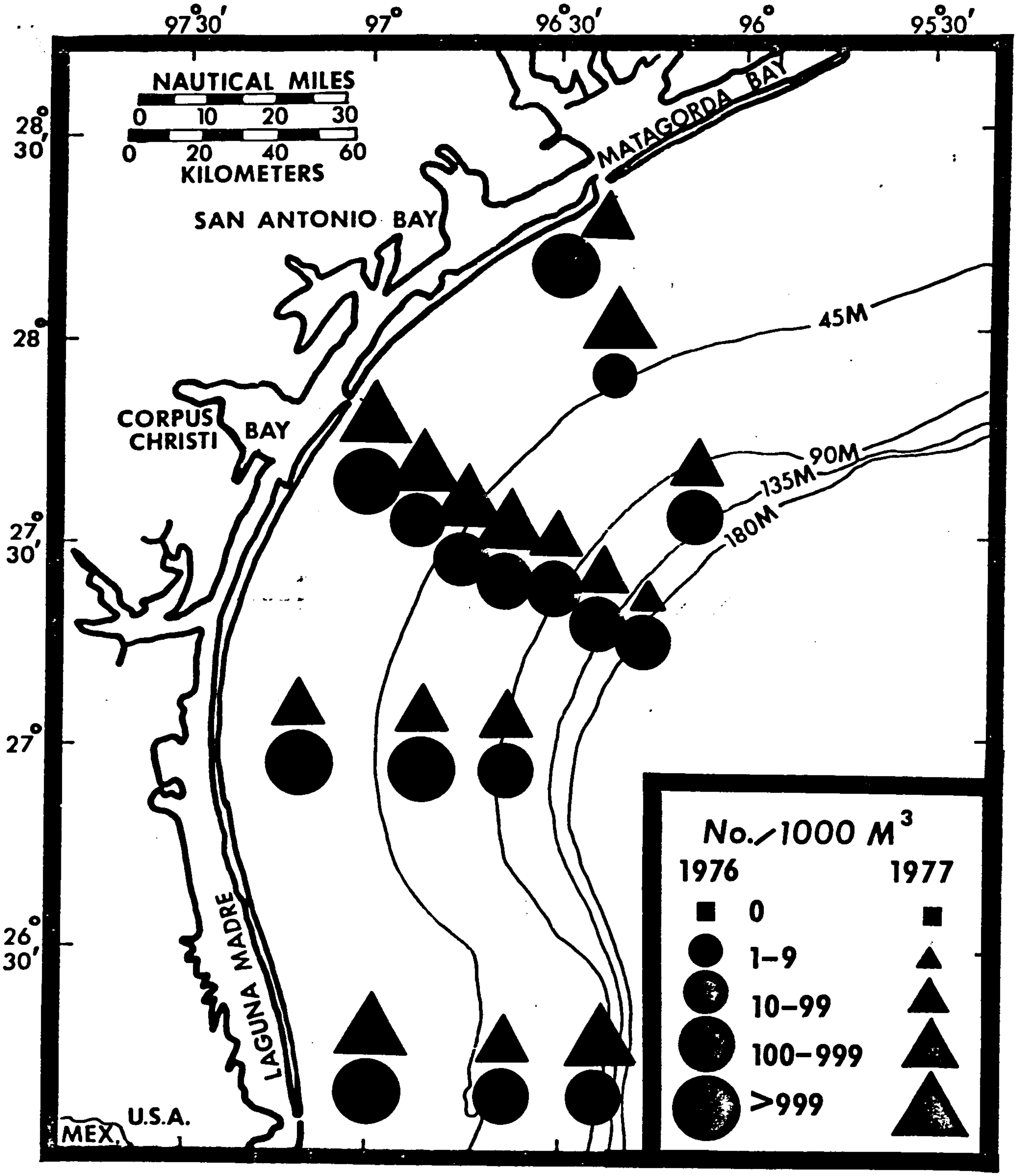


Figure 101. Distribution and abundance of fish eggs during Cruise 7 taken from 333µ samples.

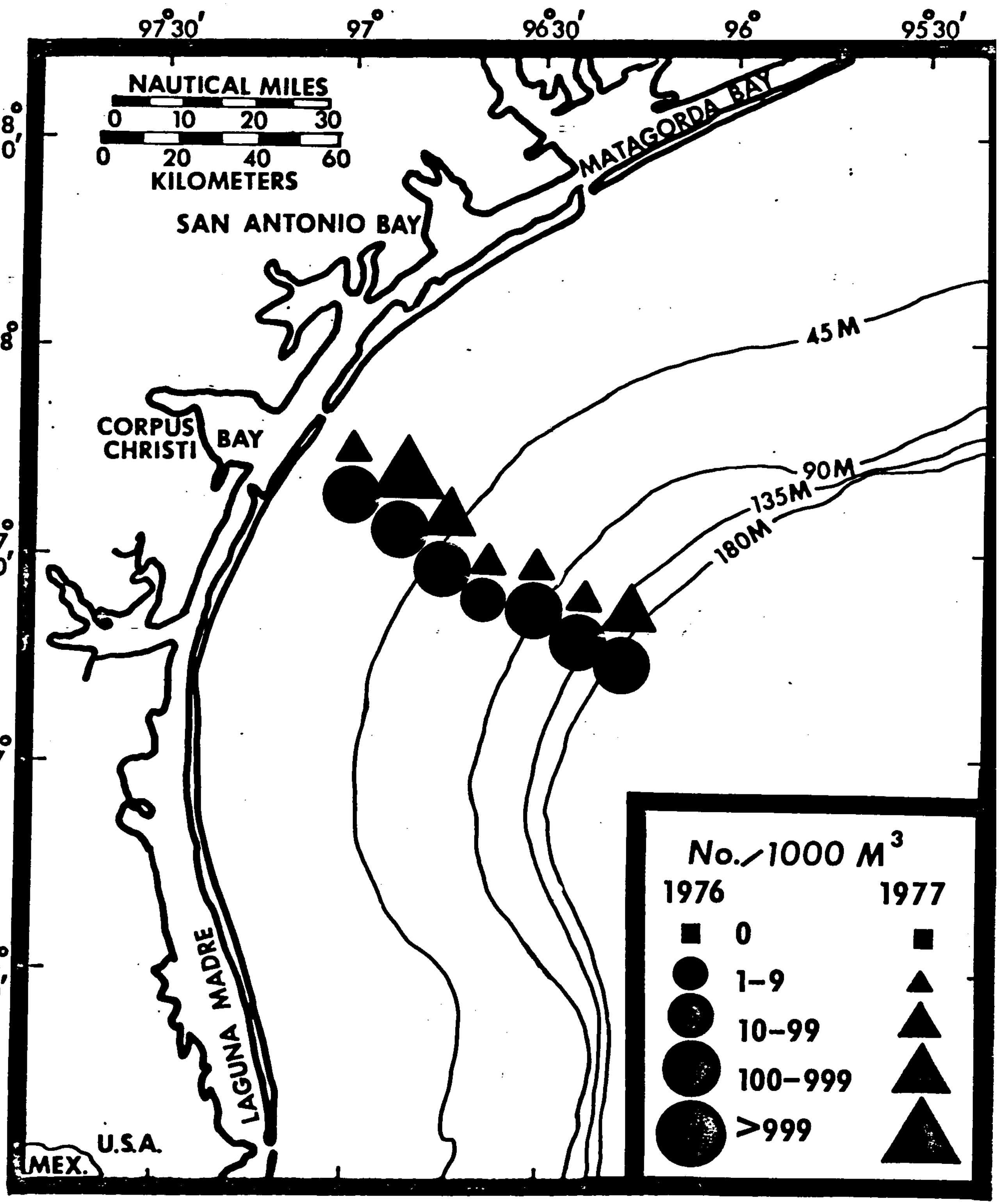


Figure 102. Distribution and abundance of fish eggs during Cruise 8 taken from 333μ samples.

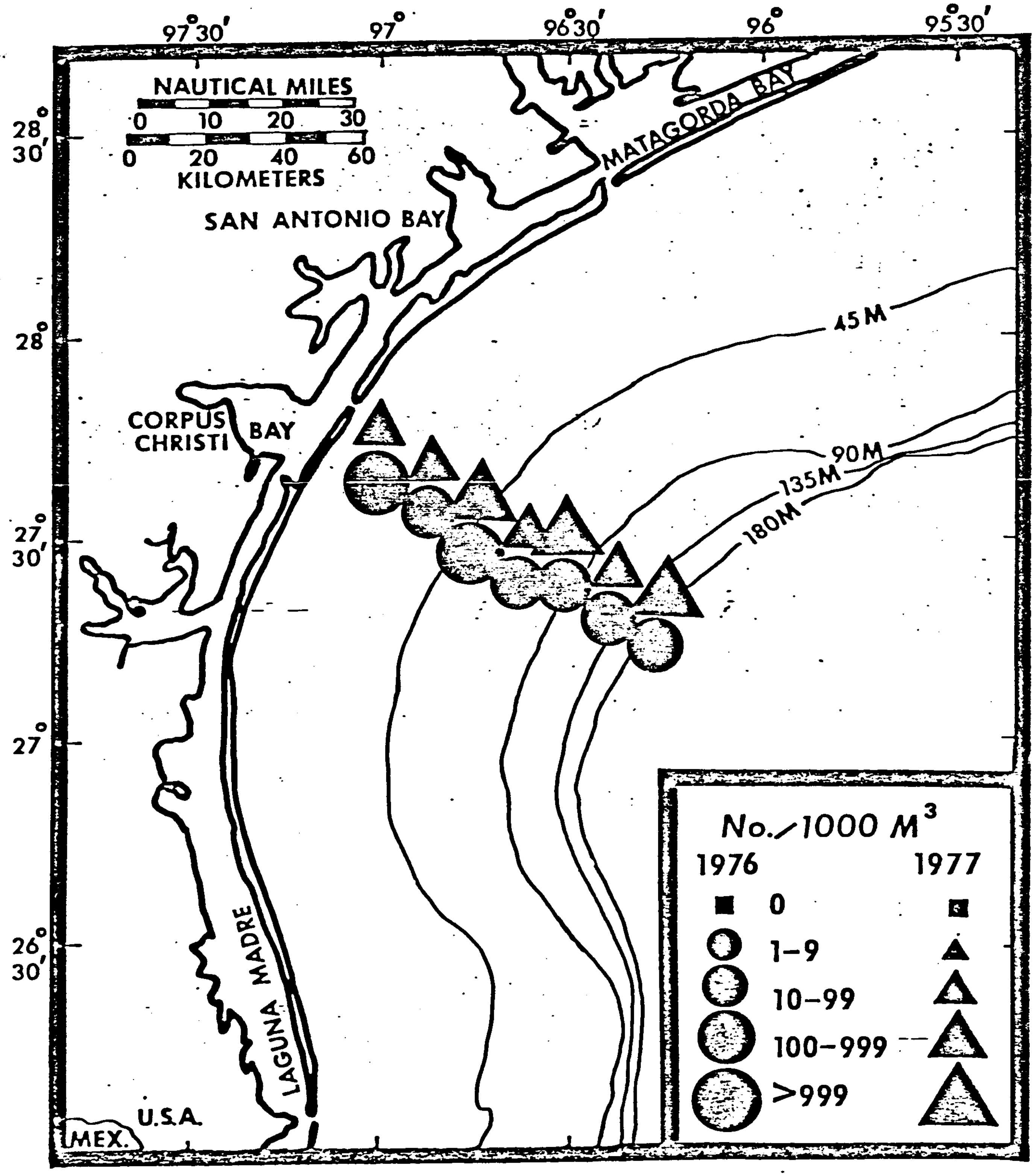


Figure 103. Distribution and abundance of fish eggs during Cruise 9 taken from 333μ samples.

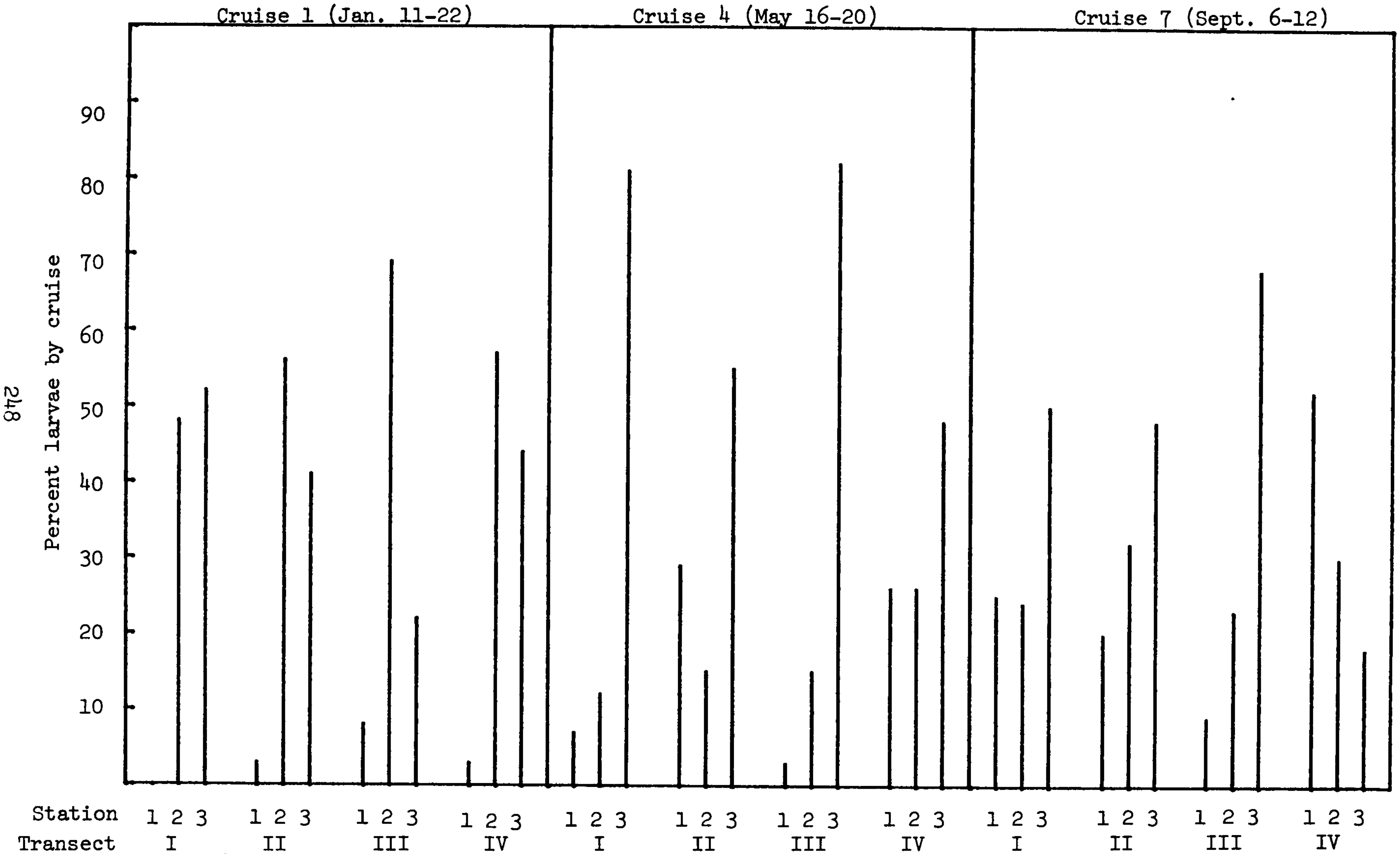


Figure 104 Percent of fish larvae taken from 505μ seasonal plankton samples by cruise, transect and station during 1977.

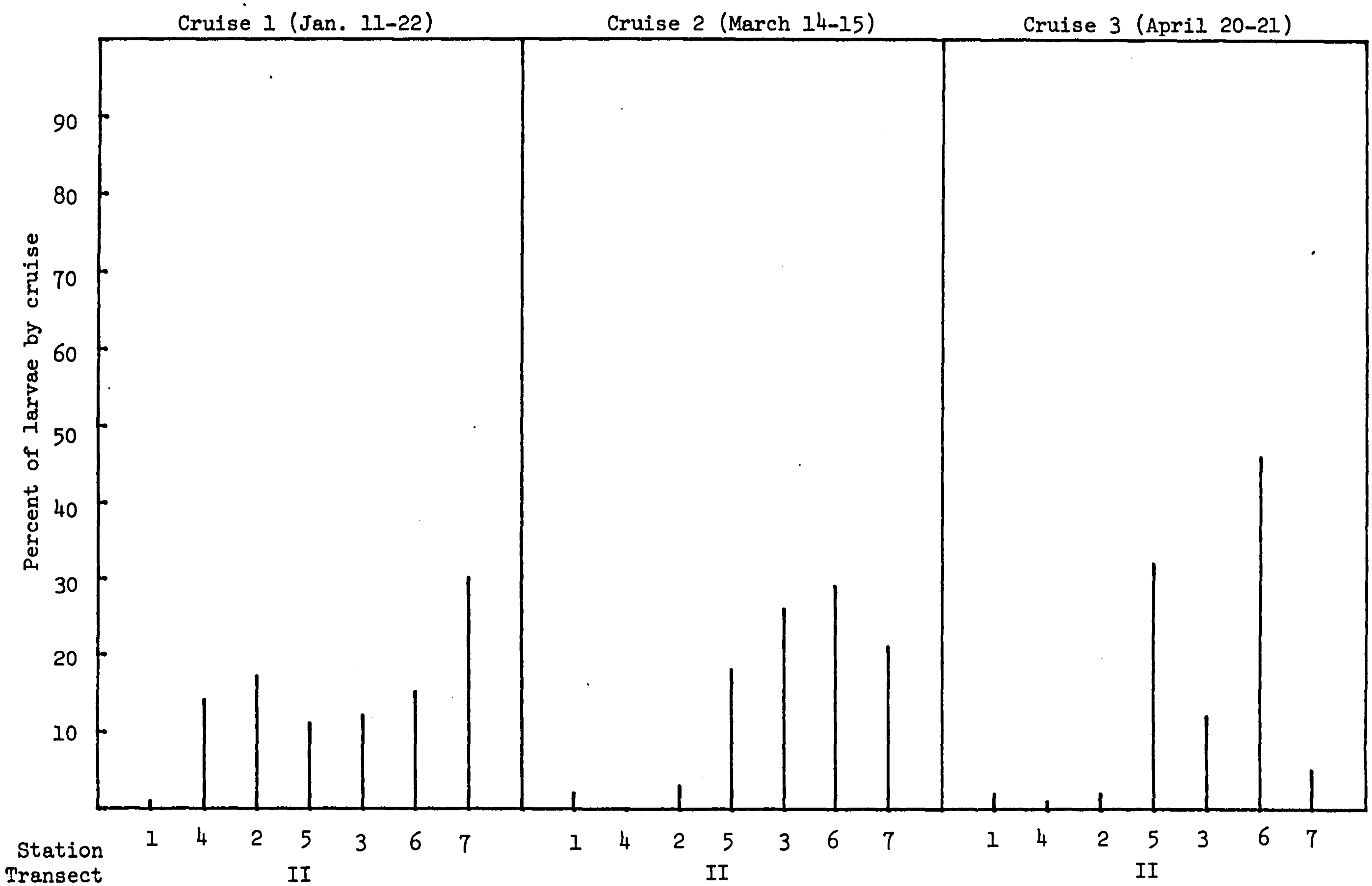


Figure 105. Percent of fish larvae taken from 505μ Transect II plankton samples during Cruises 1, 2, and 3 by station during 1977.

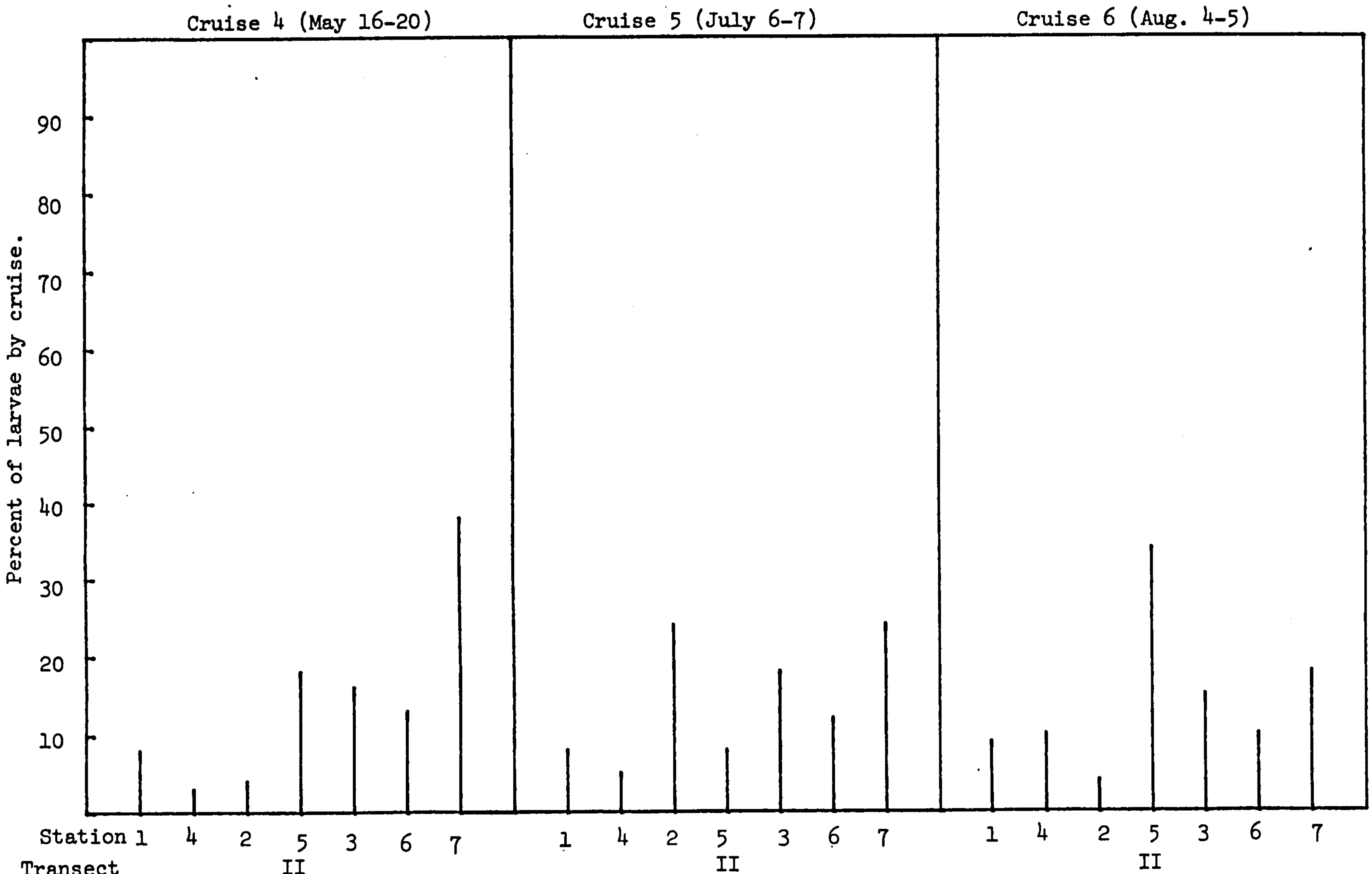


Figure 106. Percent of fish larvae taken from 505μ Transect II plankton samples during Cruises 4, 5, and 6 by station during 1977.

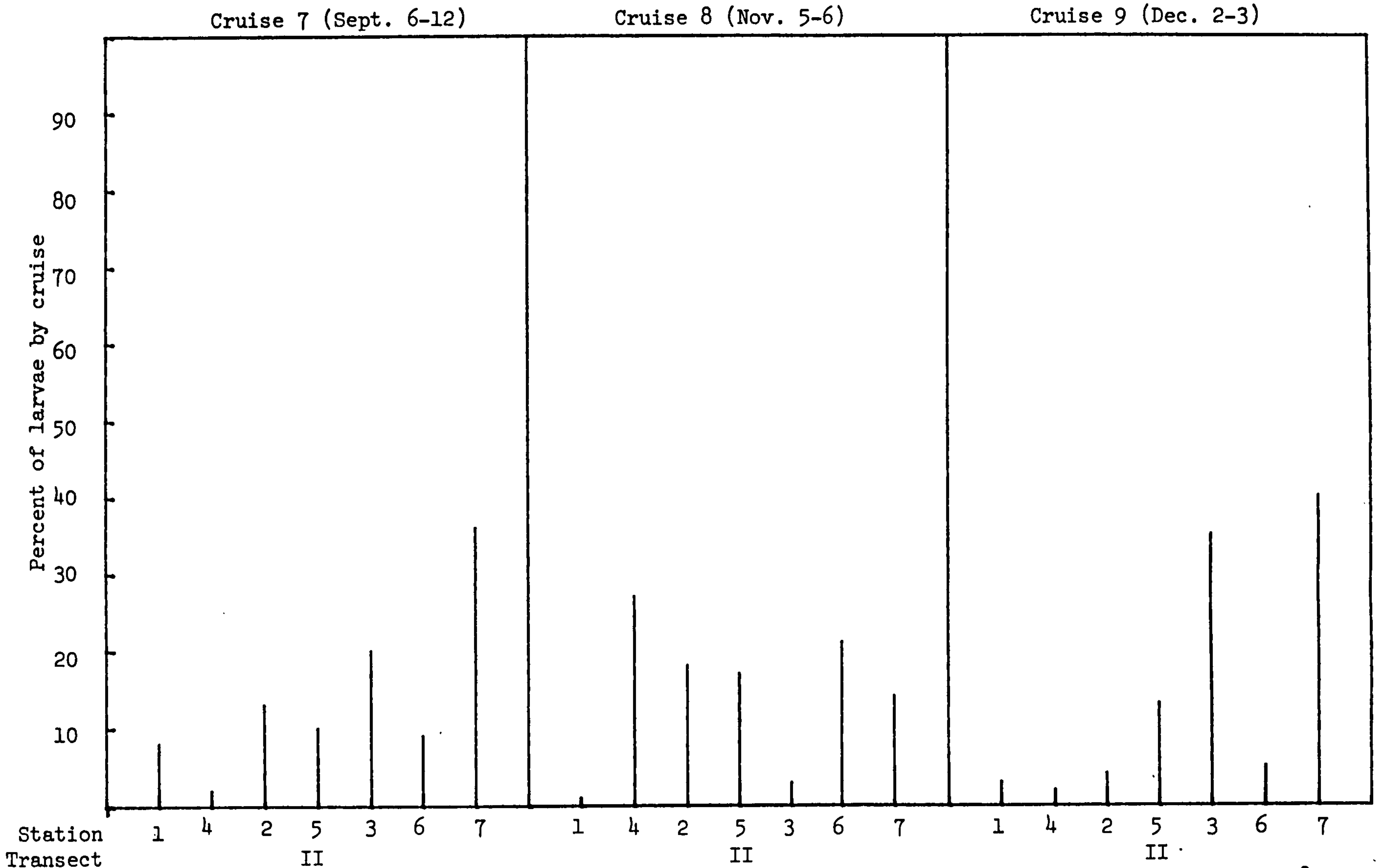


Figure 107 Percent of fish larvae taken from 505μ Transect II plankton samples during Cruises 7 , 8 , and 9 by station during 1977.

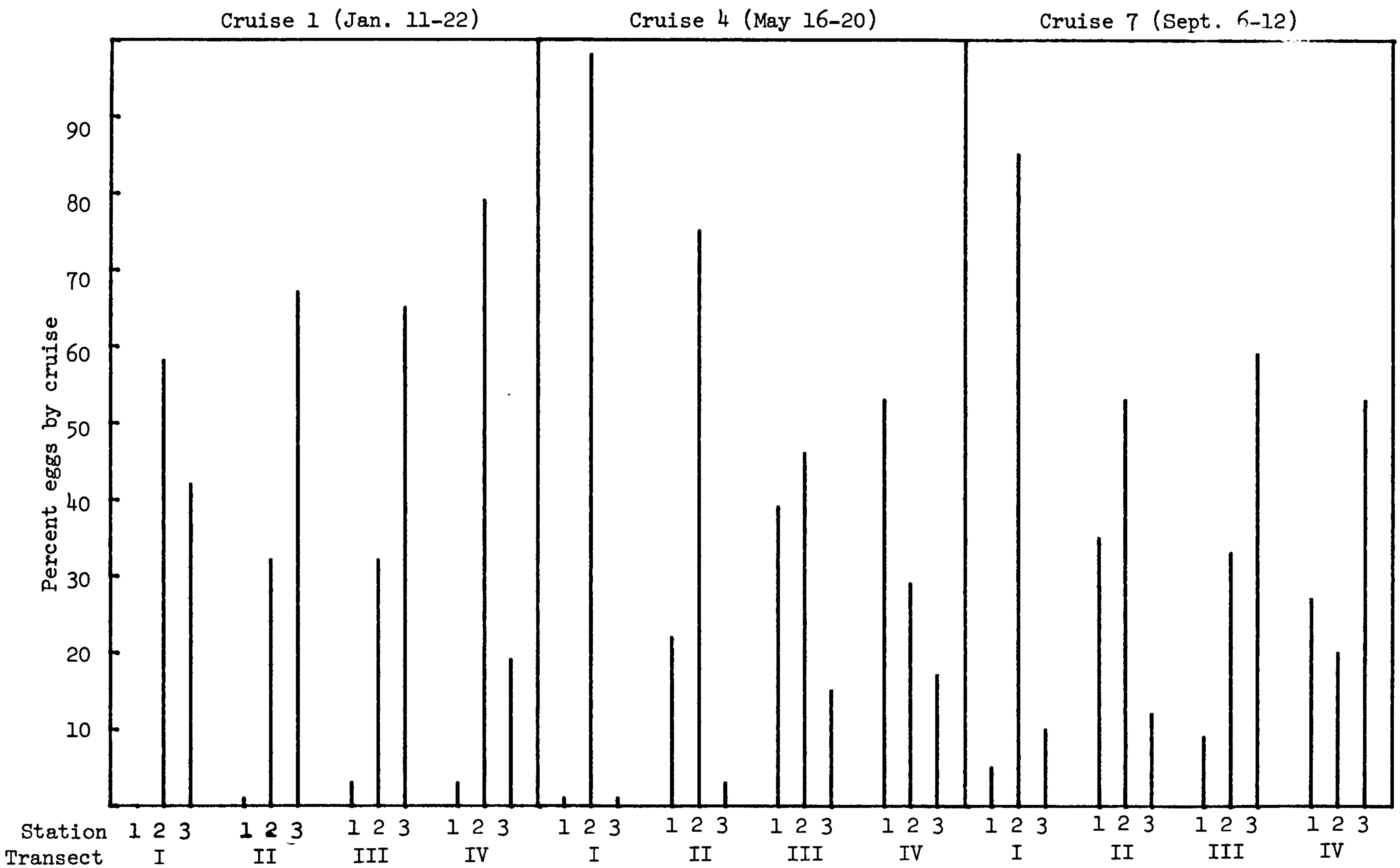


Figure 108. Percent of fish eggs taken from 333μ seasonal plankton samples by cruise, transect and station during 1977

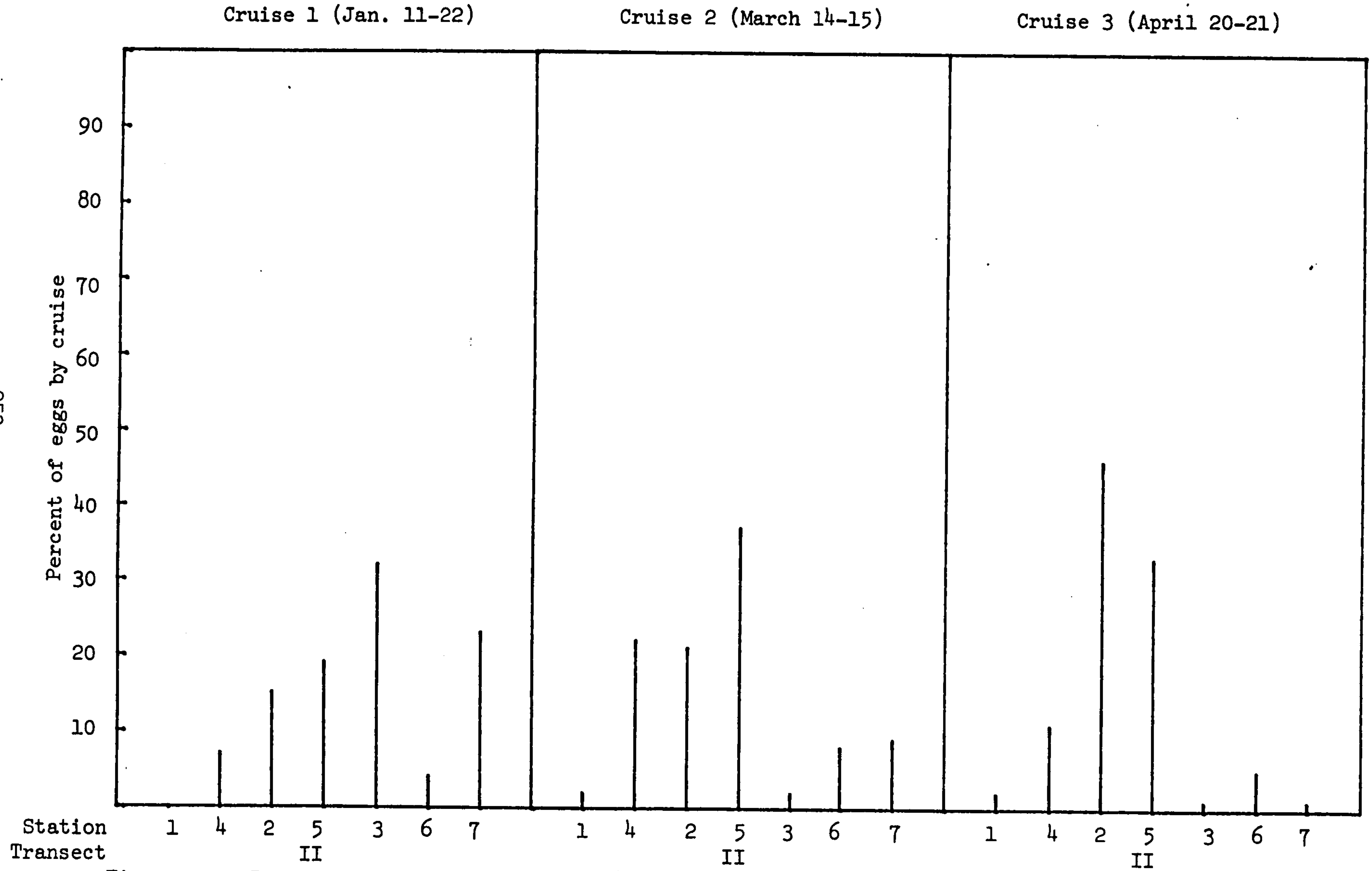


Figure 109. Percent of fish eggs taken from 333μ transect II plankton samples during Cruises 1, 2, and 3 by station during 1977.

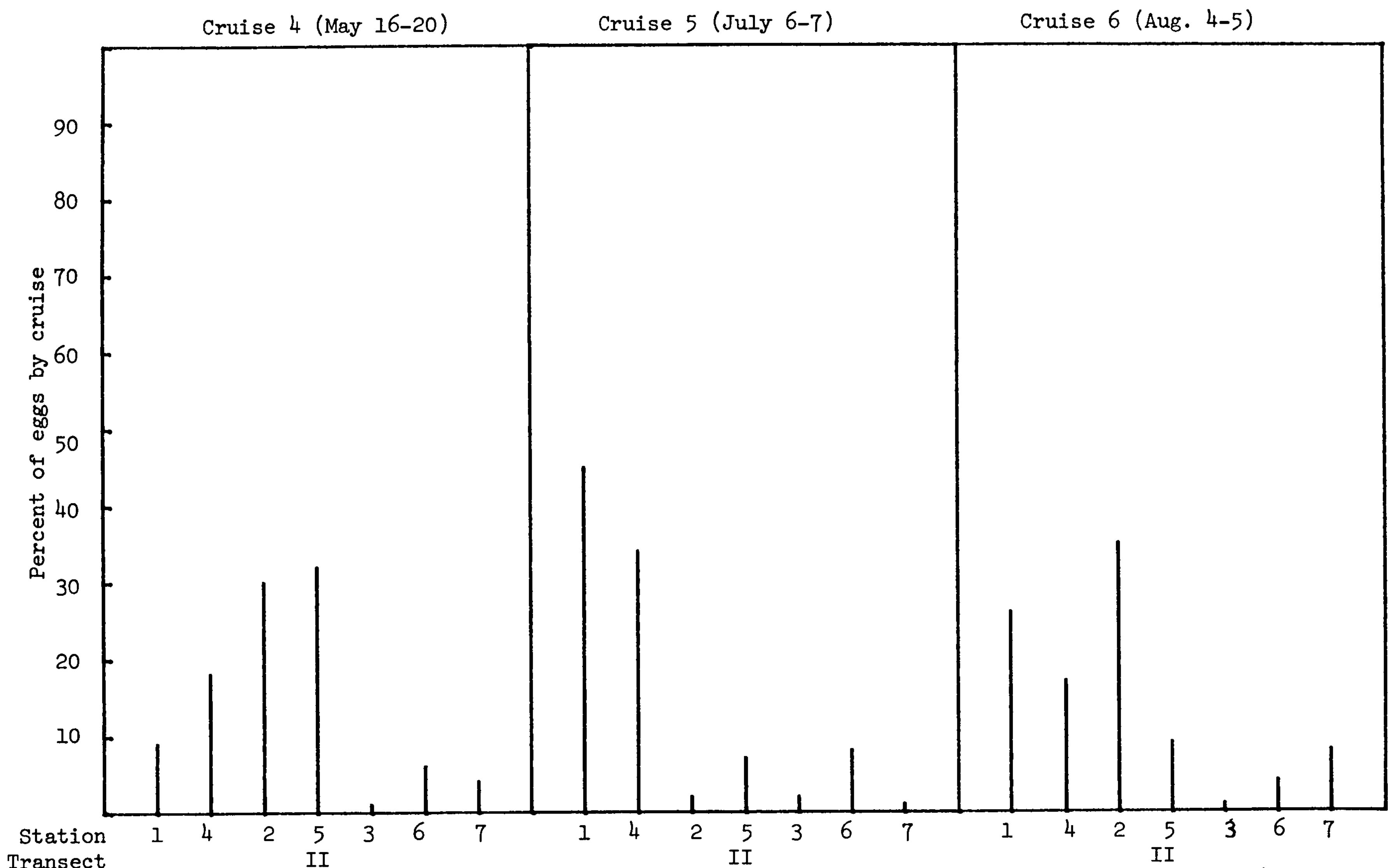


Figure 110 Percent of fish eggs taken from 333 transect II plankton samples during Cruises 4, 5, and 6 by station during 1977.

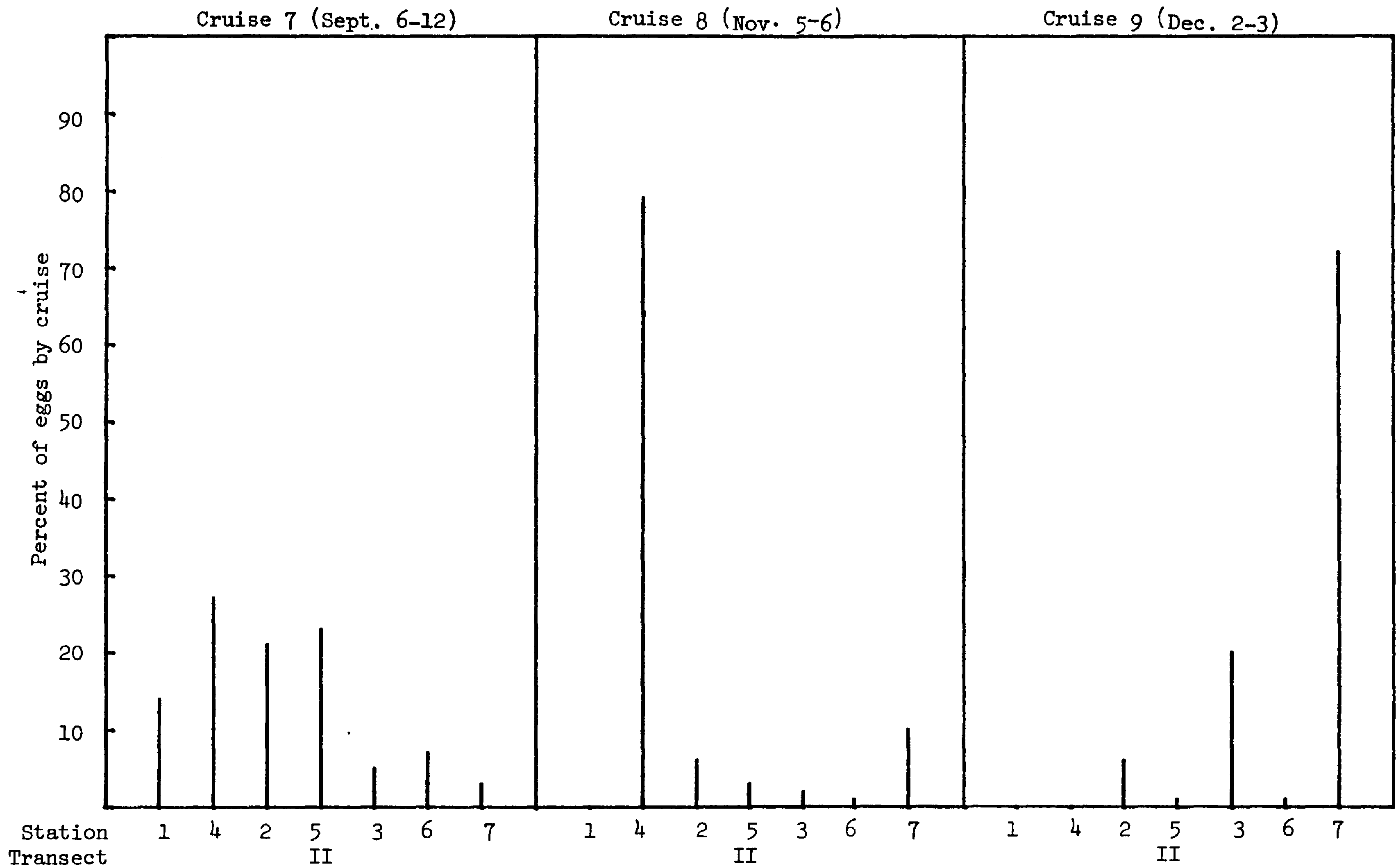


Figure 111. Percent of fish eggs taken from 333μ transect II plankton samples during Cruises 7, 8, and 9 by station during 1977.

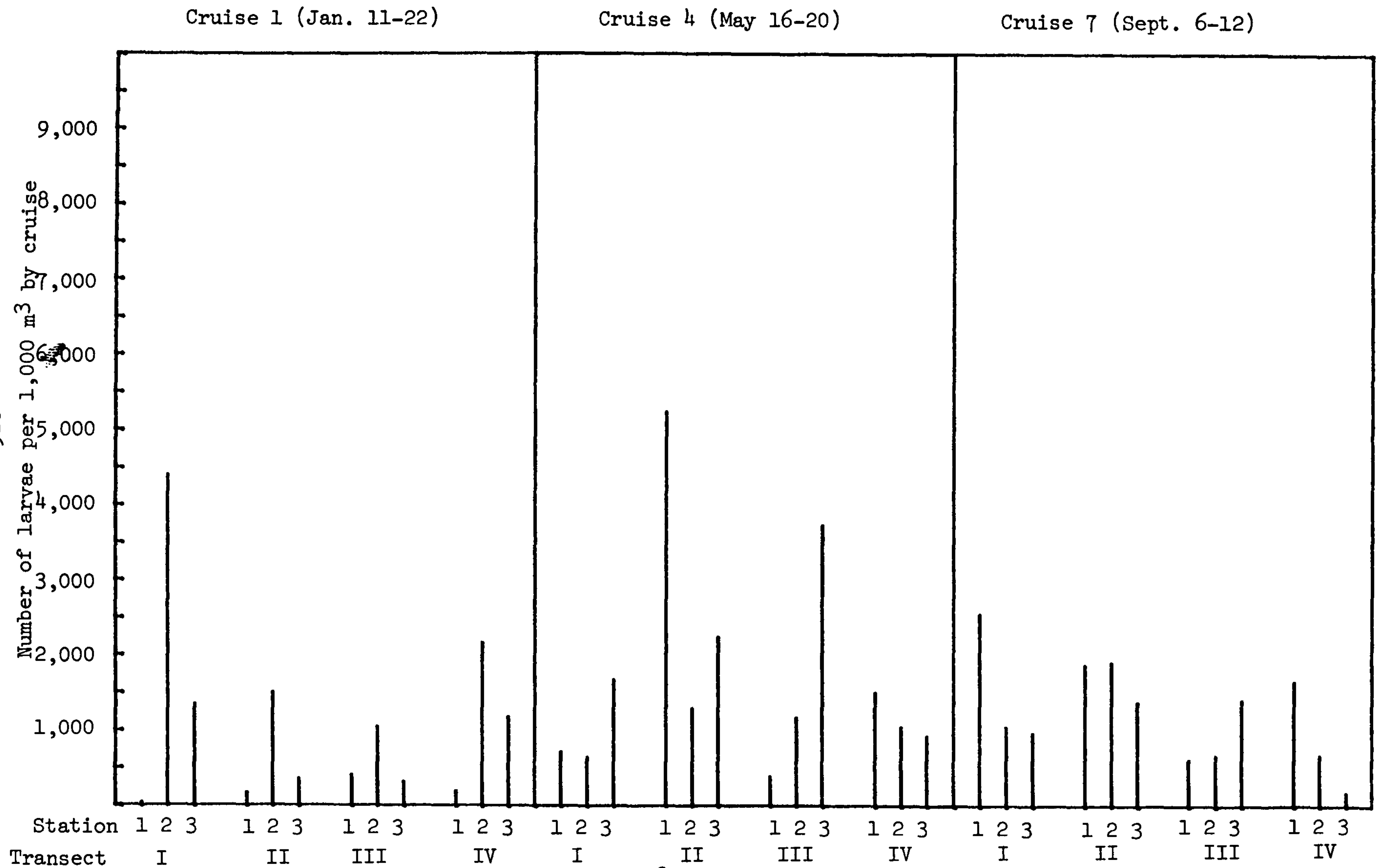


Figure 12. Number of fish larvae per 1,000 m^3 taken from seasonal 505μ plankton samples by cruise, transect and station during 1977.

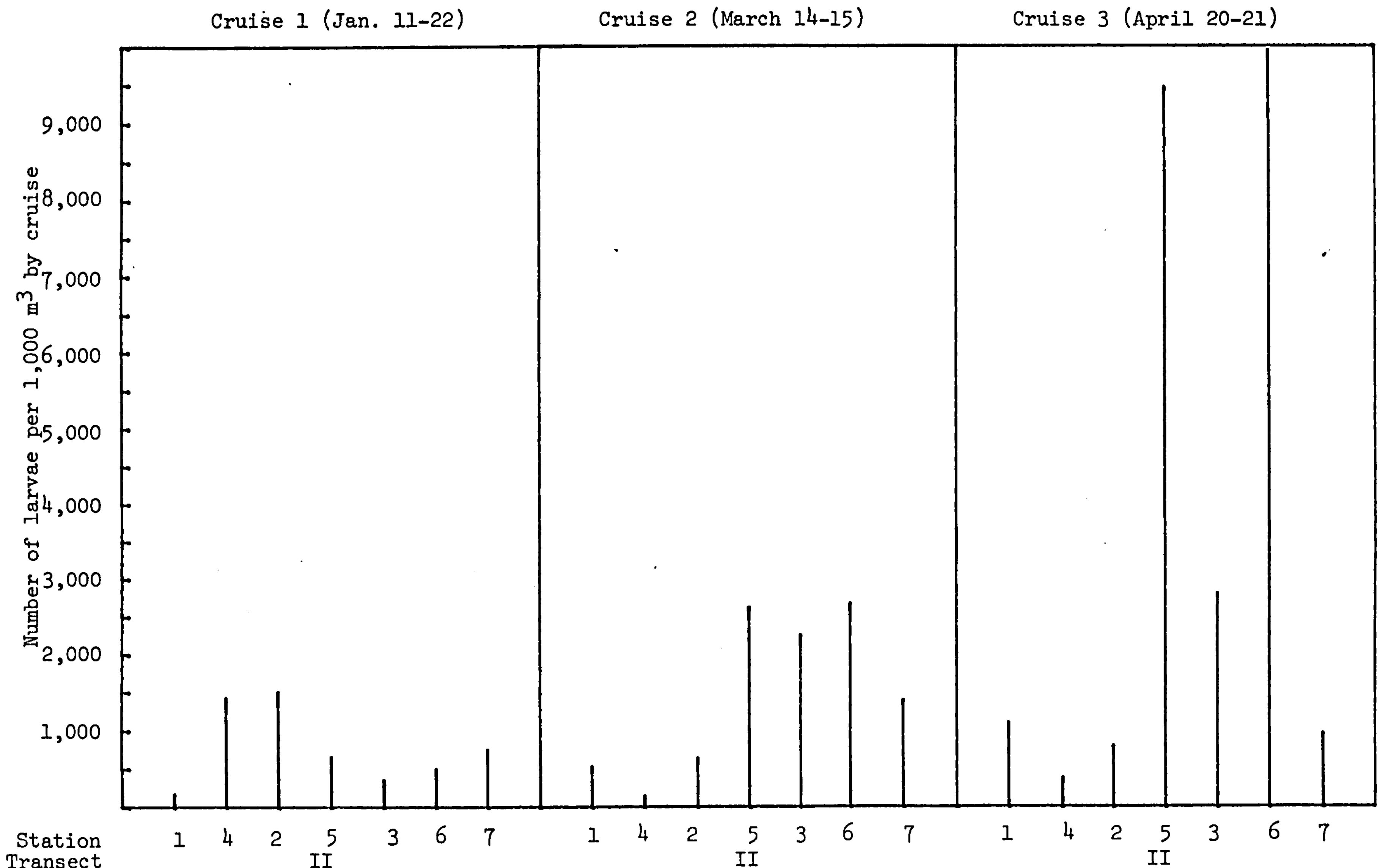


Figure 113 Number of fish larvae per 1,000 m^3 taken from 505µ transect II plankton samples during Cruises 1, 2, and 3 by station during 1977.

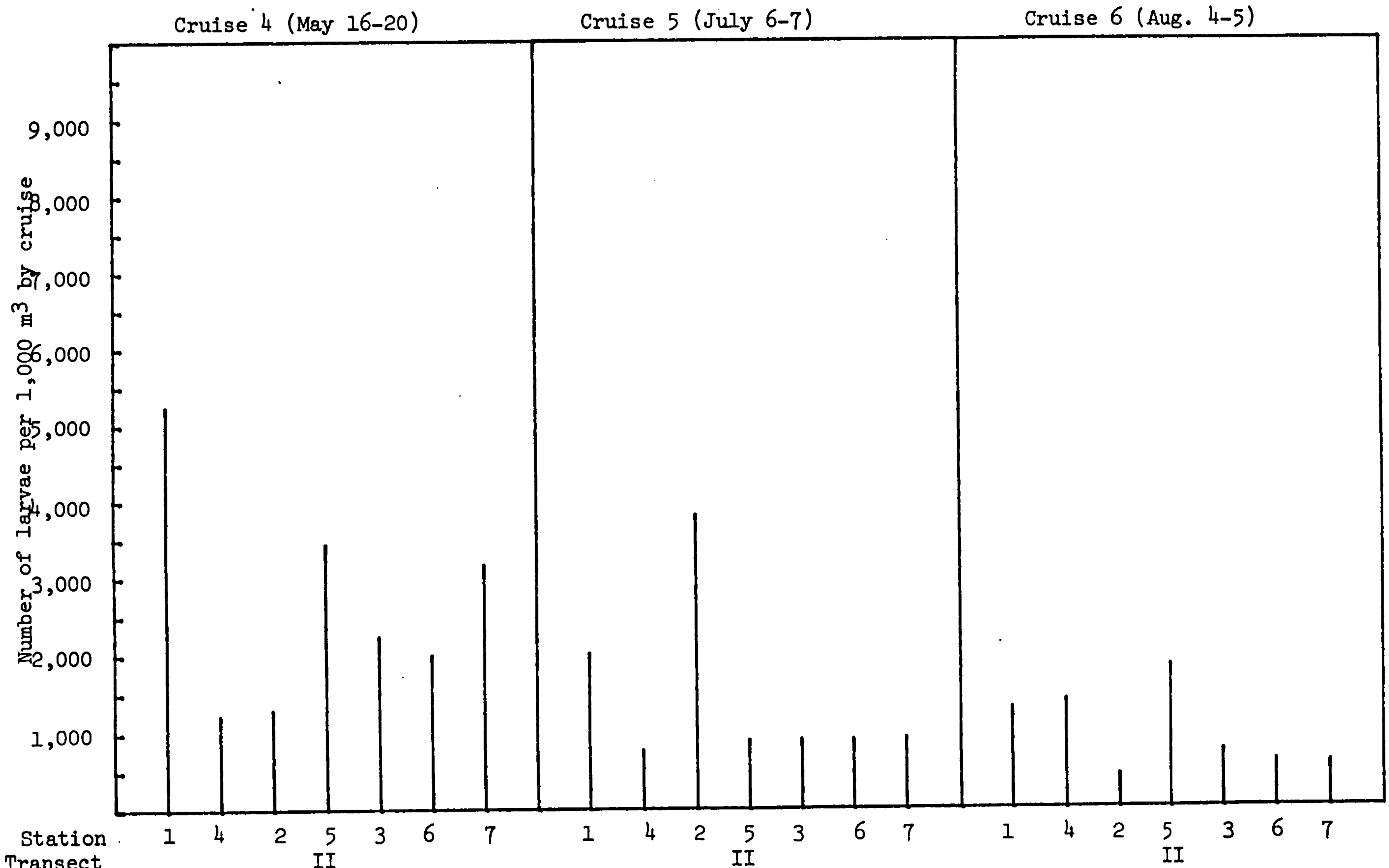


Figure 114. Number of fish larvae per 1,000 m^3 taken from 505µ transect II plankton samples during Cruises 4, 5, and 6 by station during 1977.

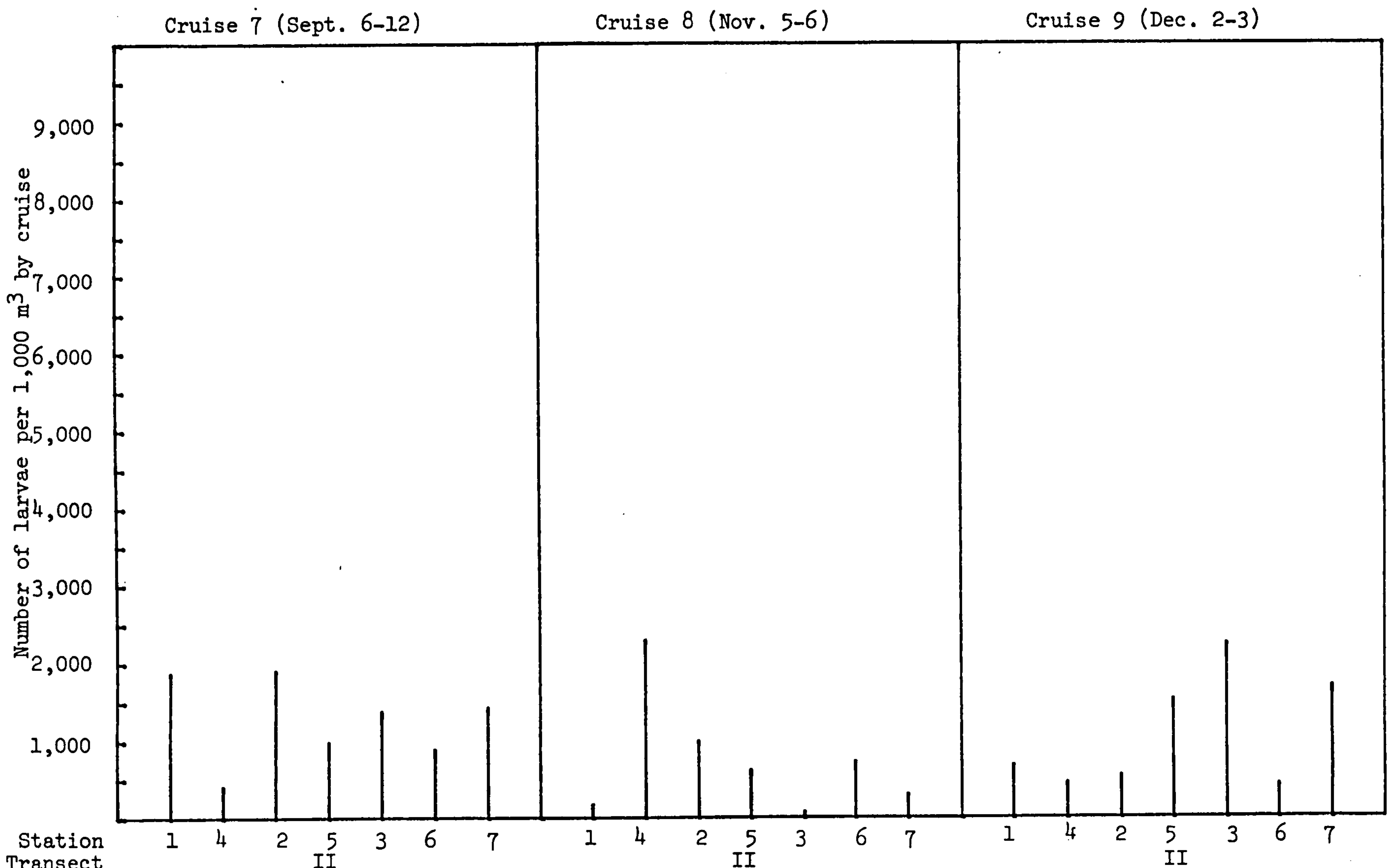


Figure115. Number of fish larvae per 1,000 m^3 taken from 505μ transect II plankton samples during Cruises 7, 8, and 9 by station during 1977.

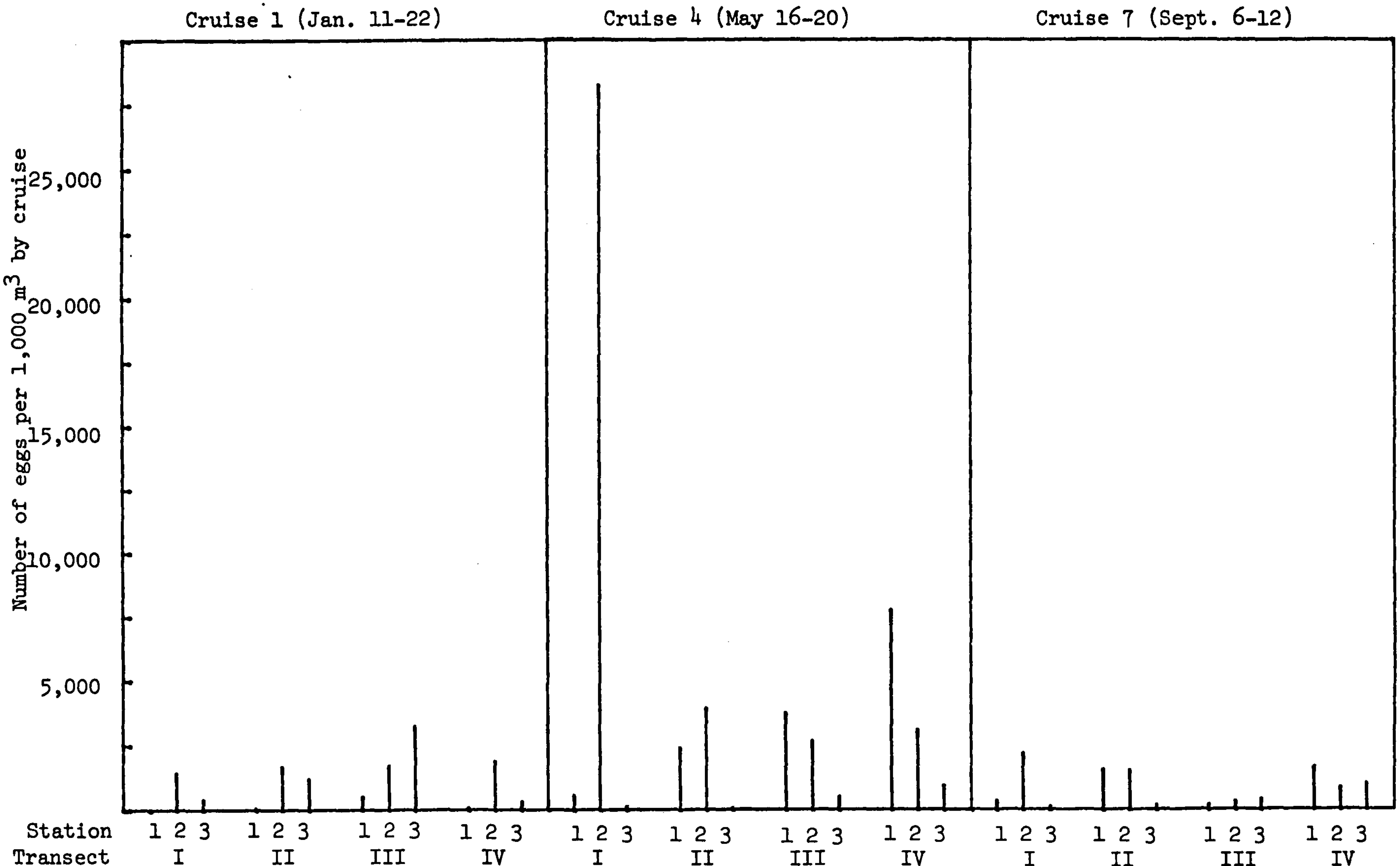


Figure 116. Number of fish eggs per 1,000 m^3 taken from 333 μ seasonal plankton samples by Cruise, transect, and station during 1977.

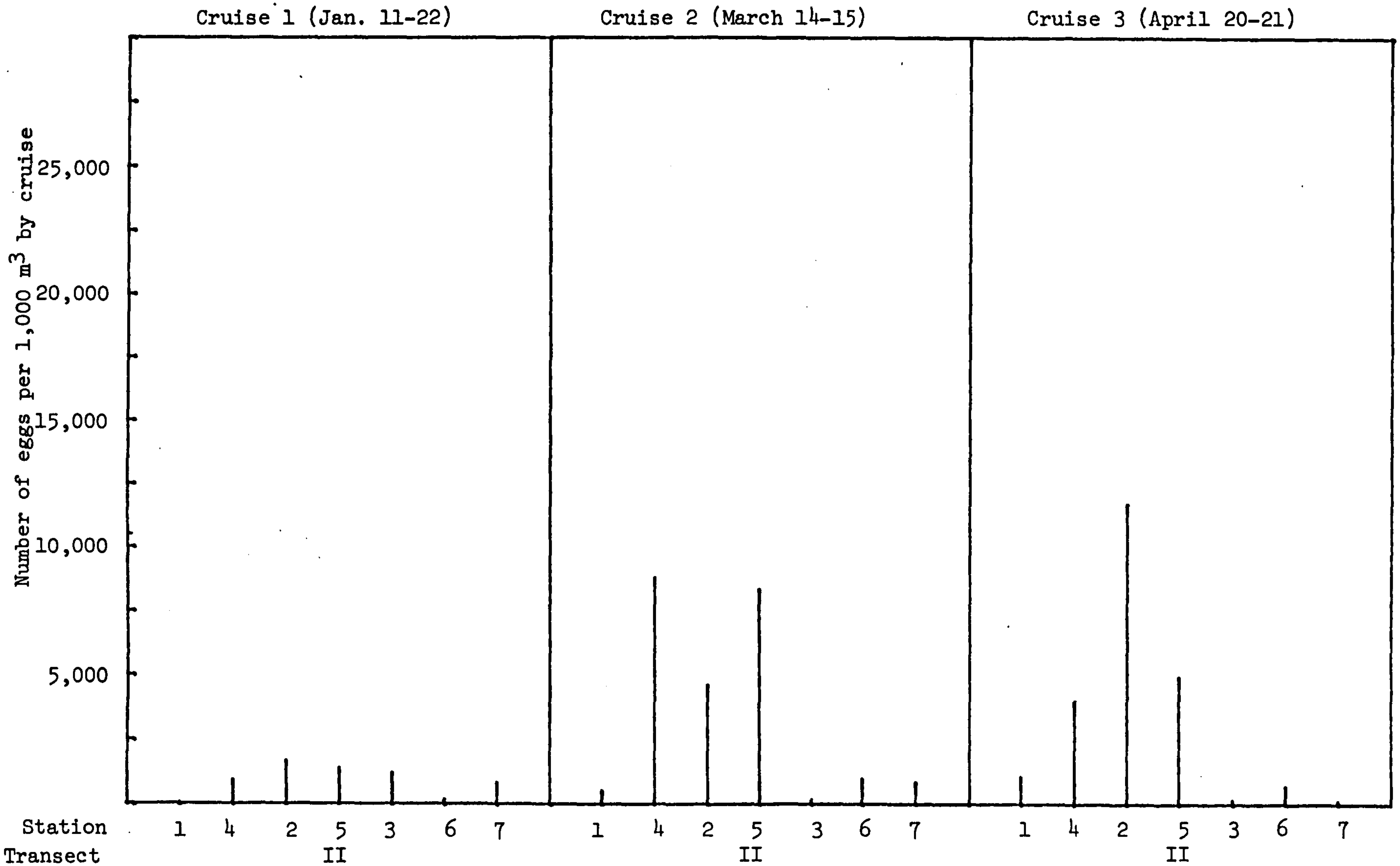


Figure 117. Number of fish eggs per 1,000 m^3 taken from 333μ transect II plankton samples during Cruises 1, 2, and 3 by station during 1977.

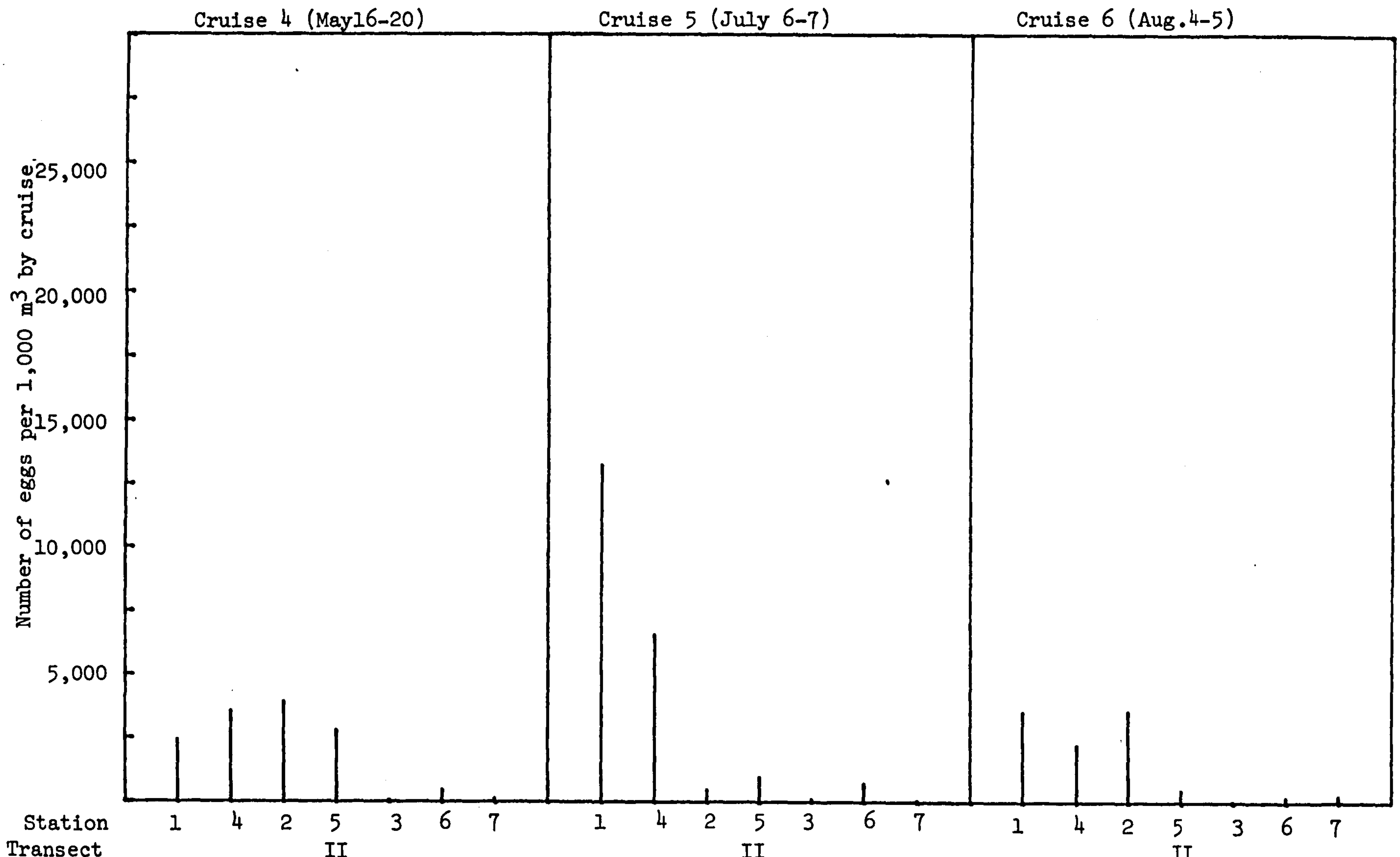


Figure 118 Number of fish eggs per 1,000 m^3 taken from 333μ transect II plankton samples during Cruises 4, 5, and 6 by station during 1977.

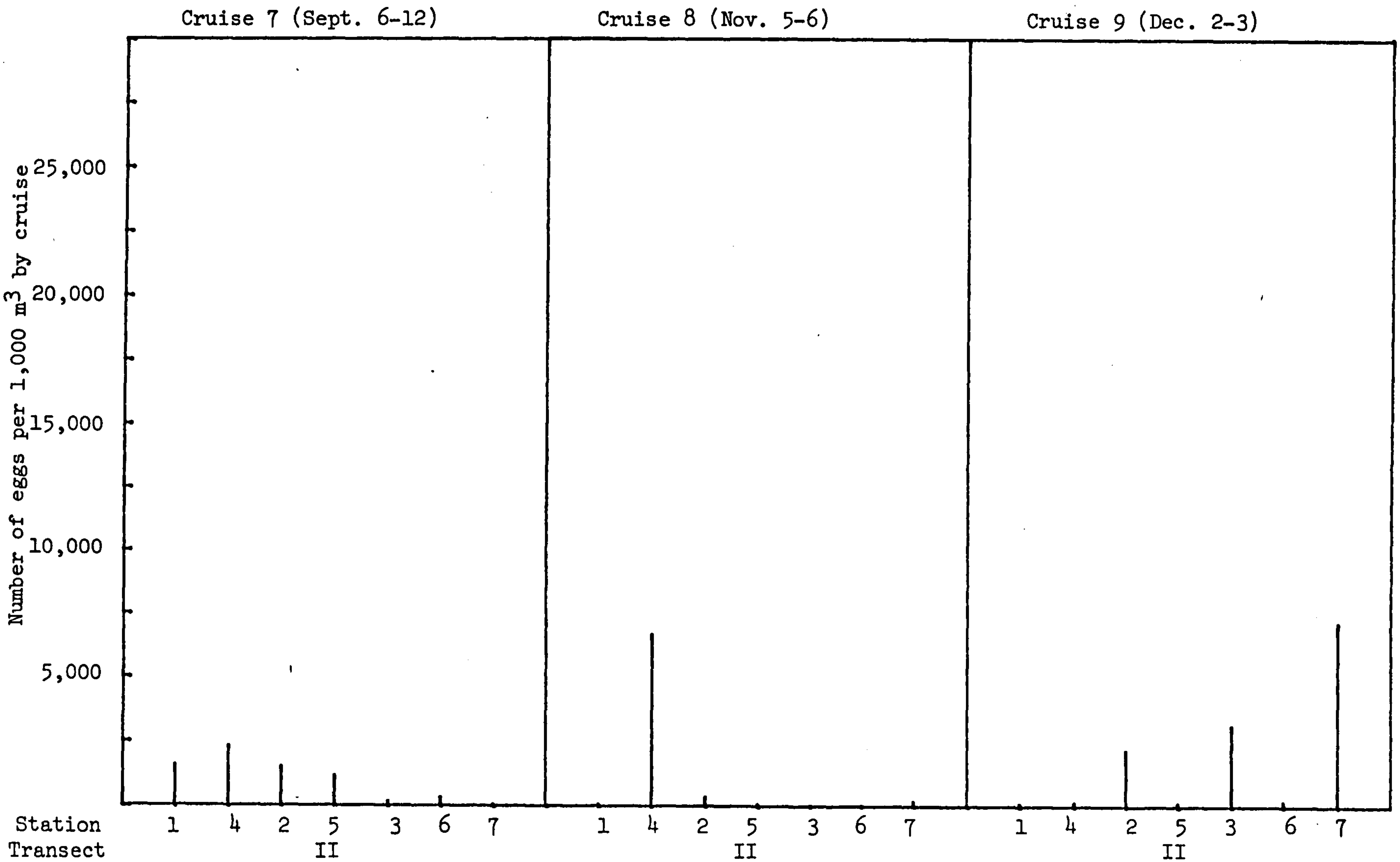


Figure 119. Number of fish eggs per 1,000 m^3 taken from 333μ transect II plankton samples during Cruises 7, 8, and 9 by station during 1977.

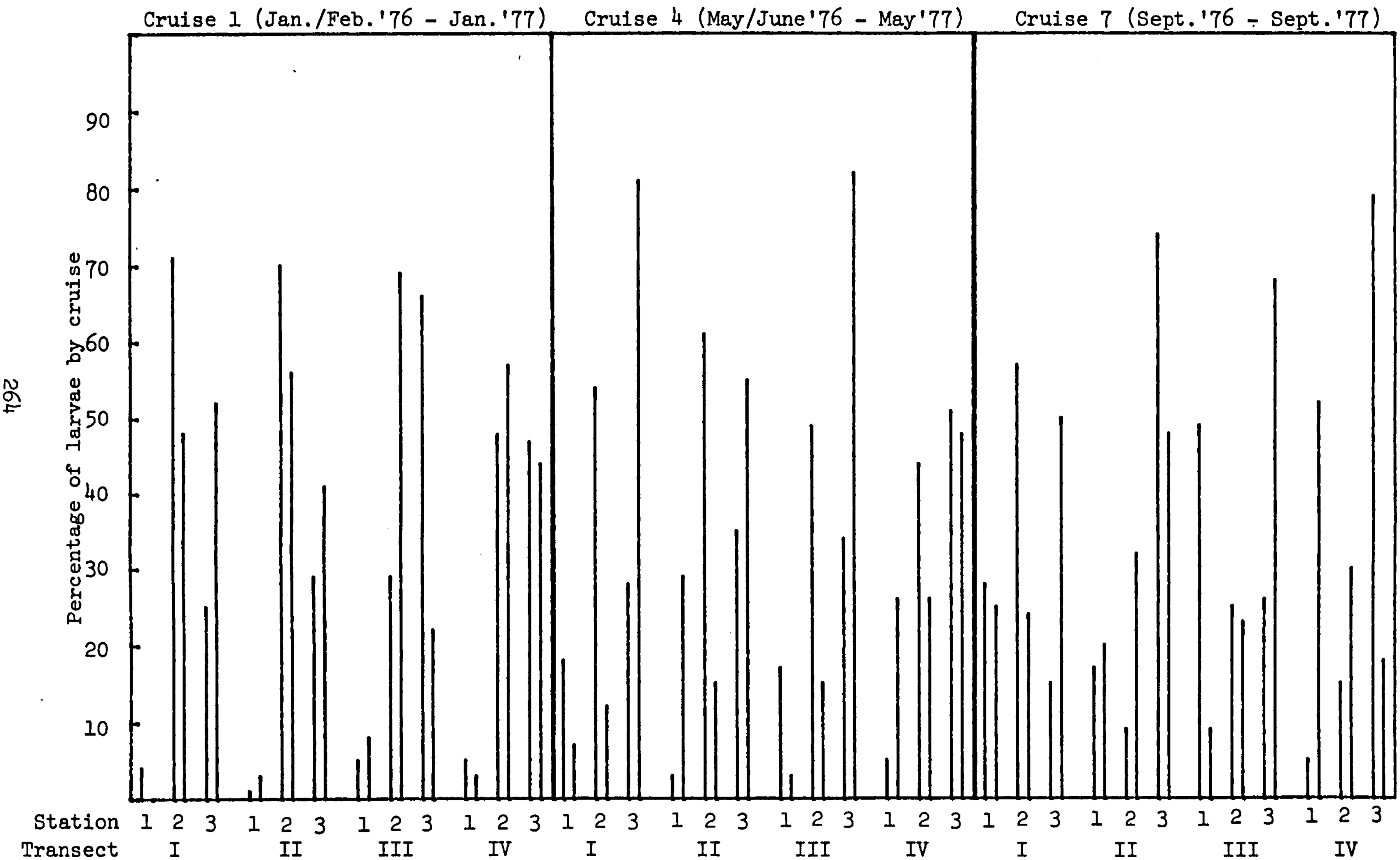


Figure 120. Comparison of fish larvae percentage taken from 505μ seasonal plankton samples by cruise, transect, and station during 1976 and 1977. First histogram line represents 1976, and the second, 1977.

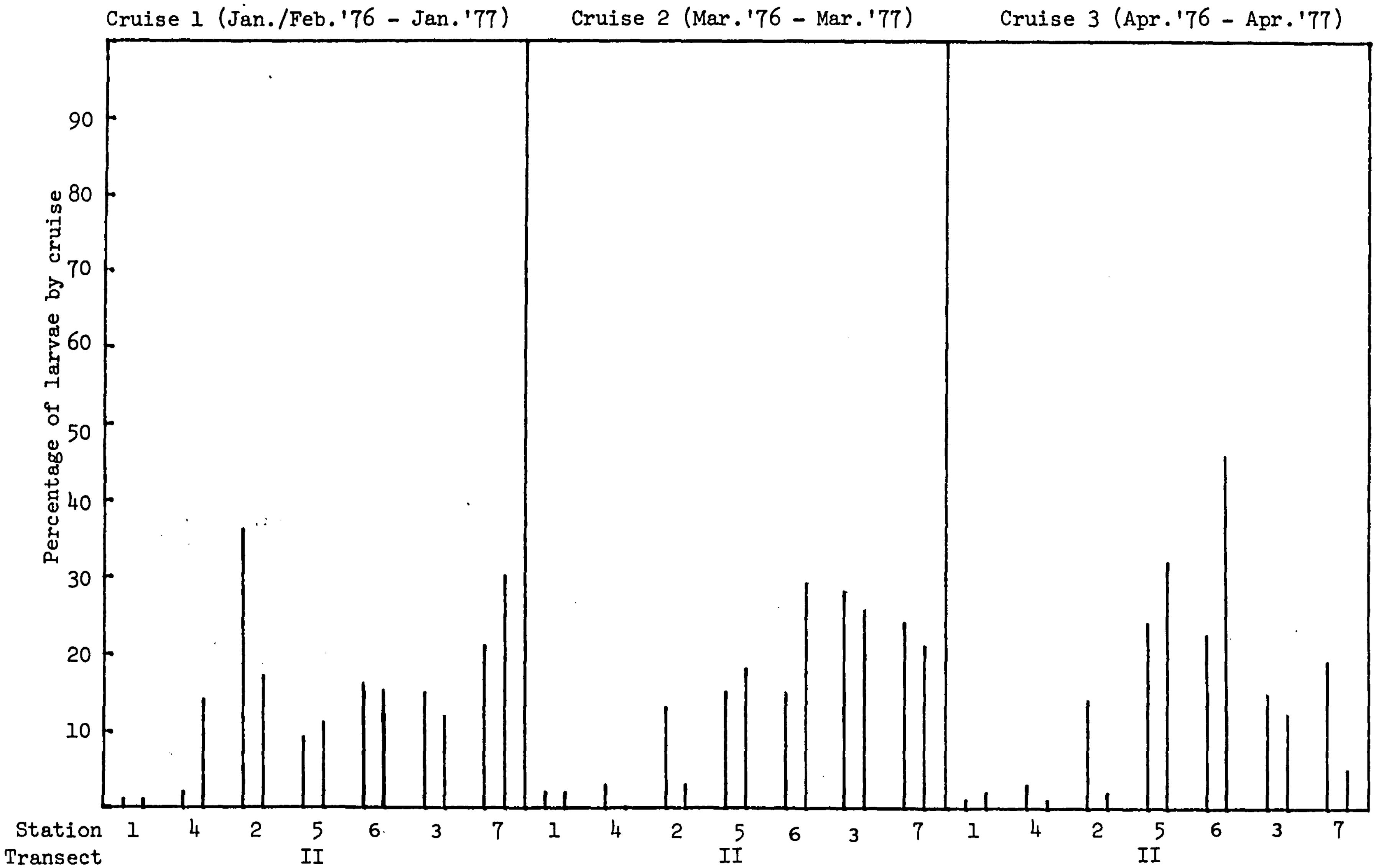


Figure 121. Comparison of fish larvae percentage taken from 505μ Transect II plankton samples during Cruises 1, 2, and 3 by station during 1976 and 1977. First histogram line represents 1976 and the second, 1977.

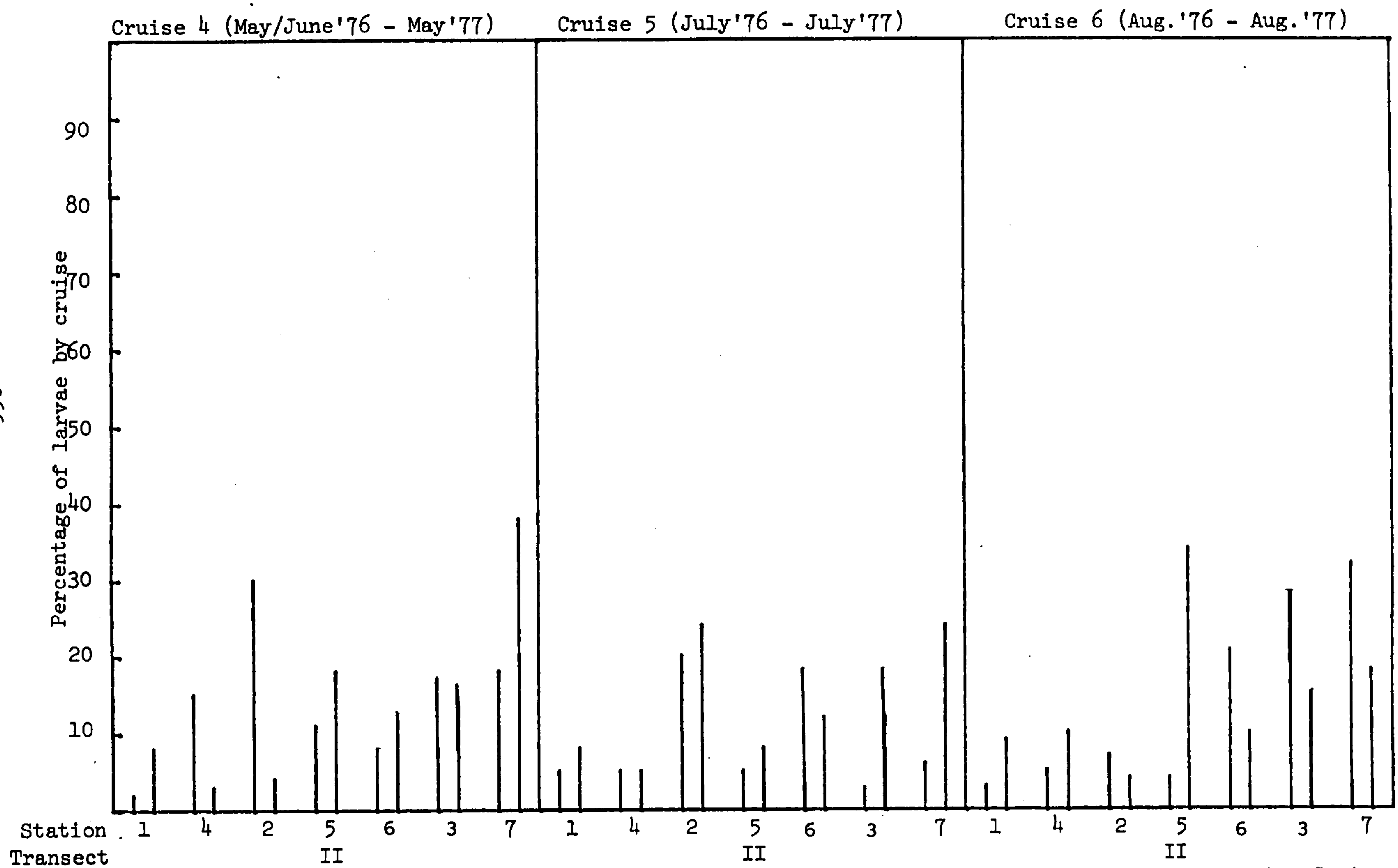


Figure 122. Comparison of fish larvae percentage taken from 505μ Transect II plankton samples during Cruises 4, 5, and 6 by station during 1976 and 1977. First histogram line represents 1976 and the second, 1977.

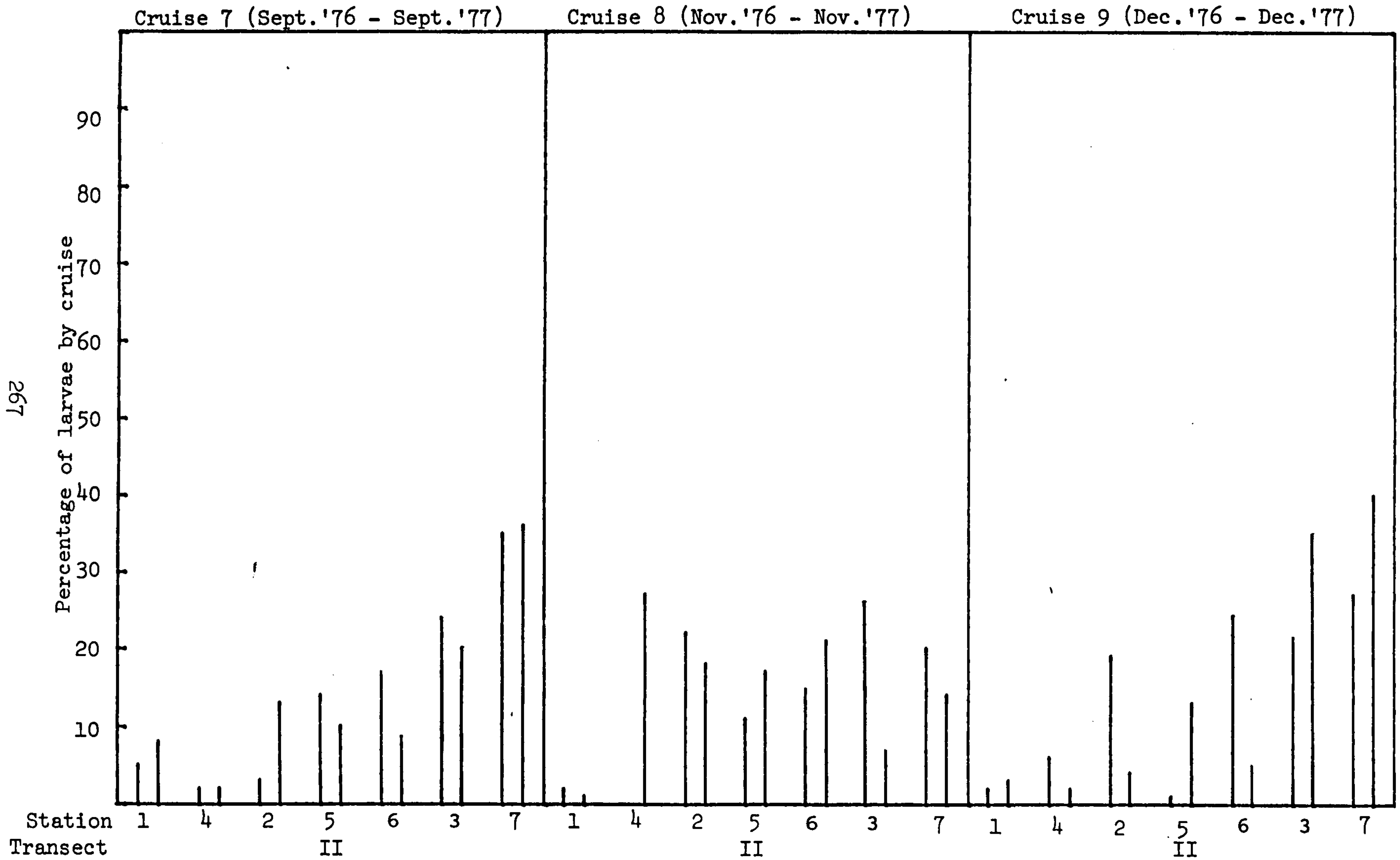


Figure123. Comparison of fish larvae percentage taken from 505μ Transect II plankton samples during Cruises 7, 8, and 9 by station during 1976 and 1977. First histogram line represents 1976 and the second, 1977.

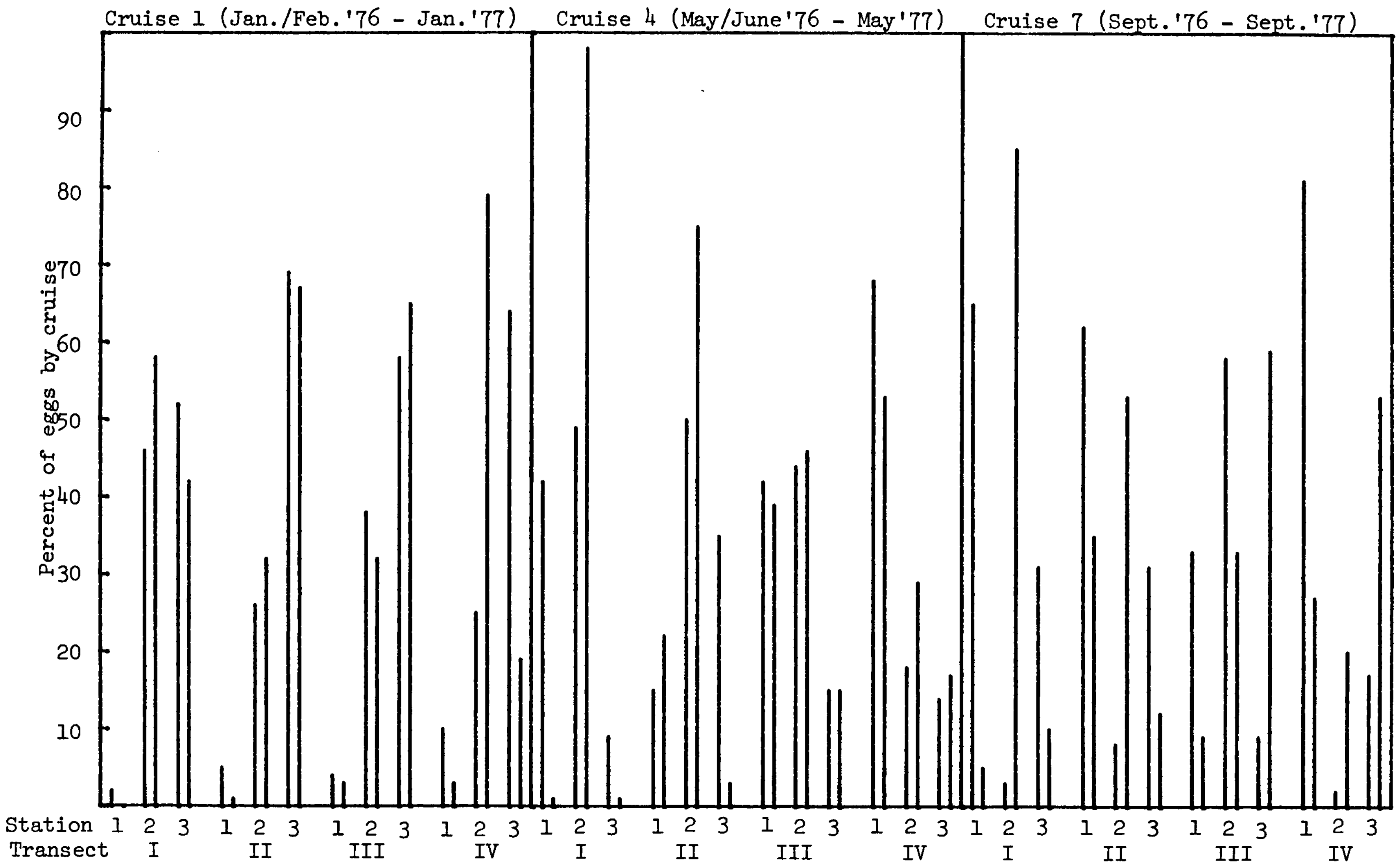


Figure 124. Comparison of fish egg percentage taken from 333µ seasonal plankton samples by cruise, transect, and station during 1976 and 1977. First histogram line represents 1976 and the second, 1977.

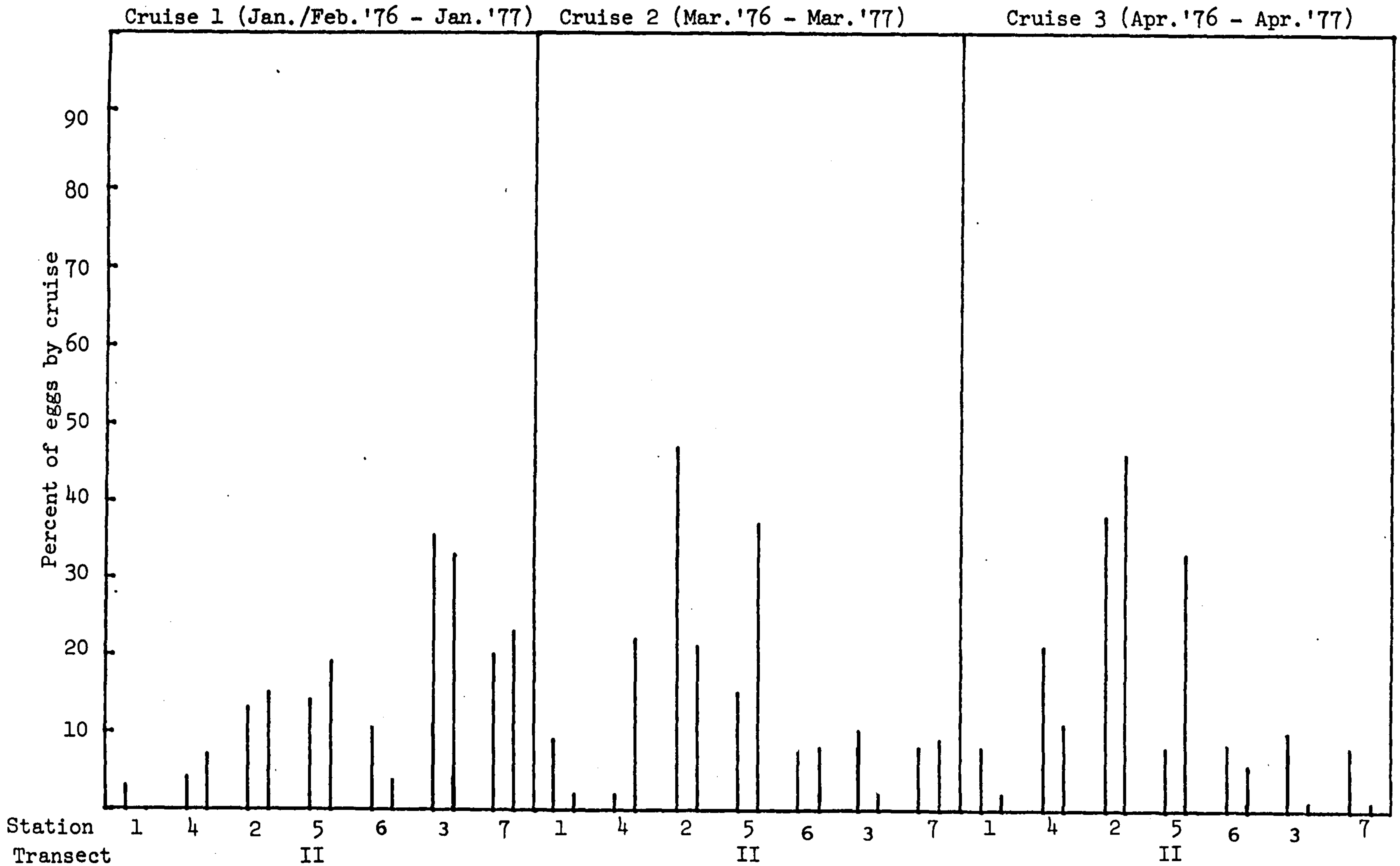


Figure125. Comparison of fish egg percentage taken from 333μ Transect II plankton samples during Cruises 1, 2, and 3 by station during 1976 and 1977. First histogram line represents 1976 and the second, 1977.

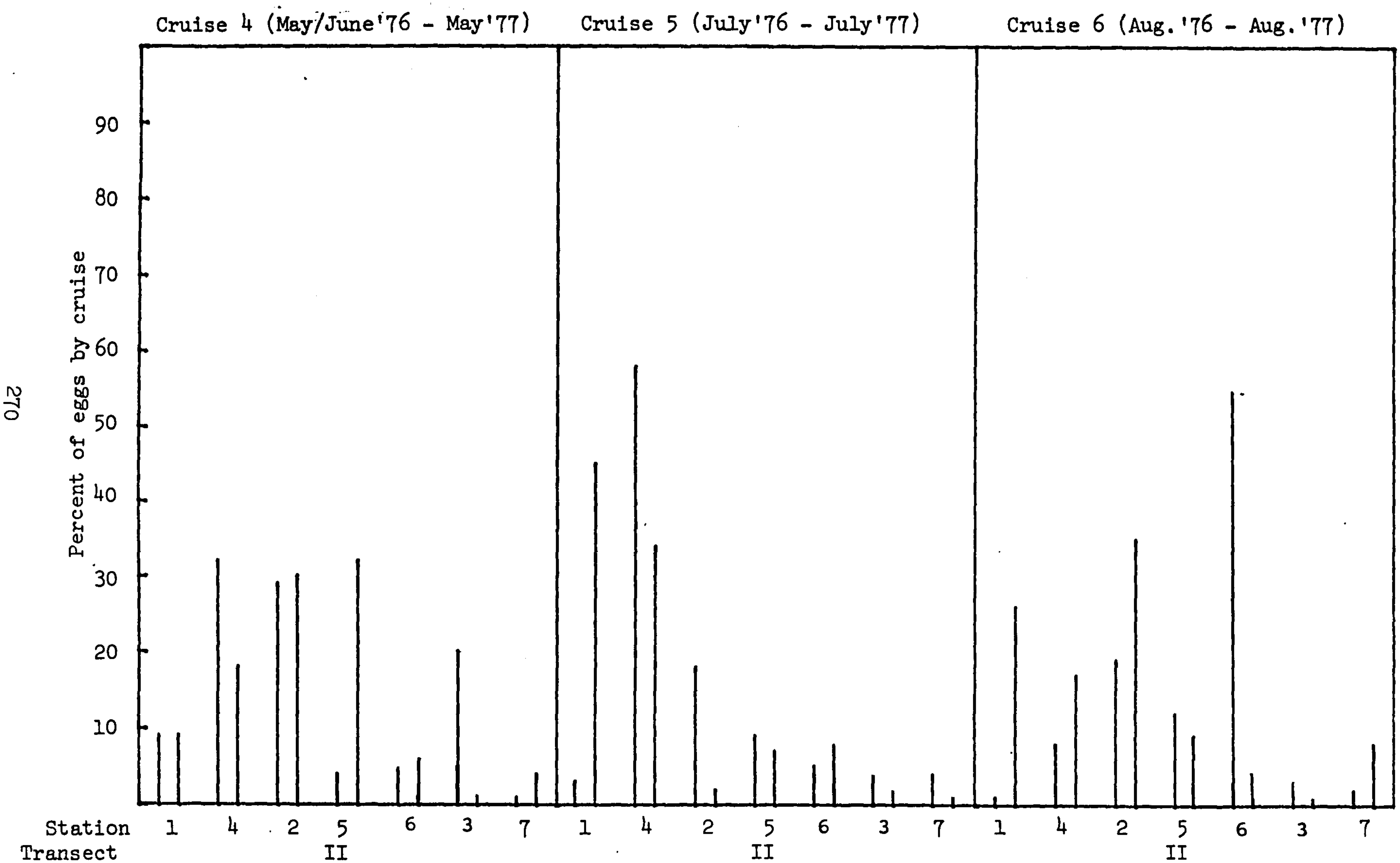


Figure126. Comparison of fish egg percentage taken from 333μ Transect II plankton samples during Cruises 4,5,6 by station during 1976 and 1977. First histogram line represents 1976 and the second, 1977.

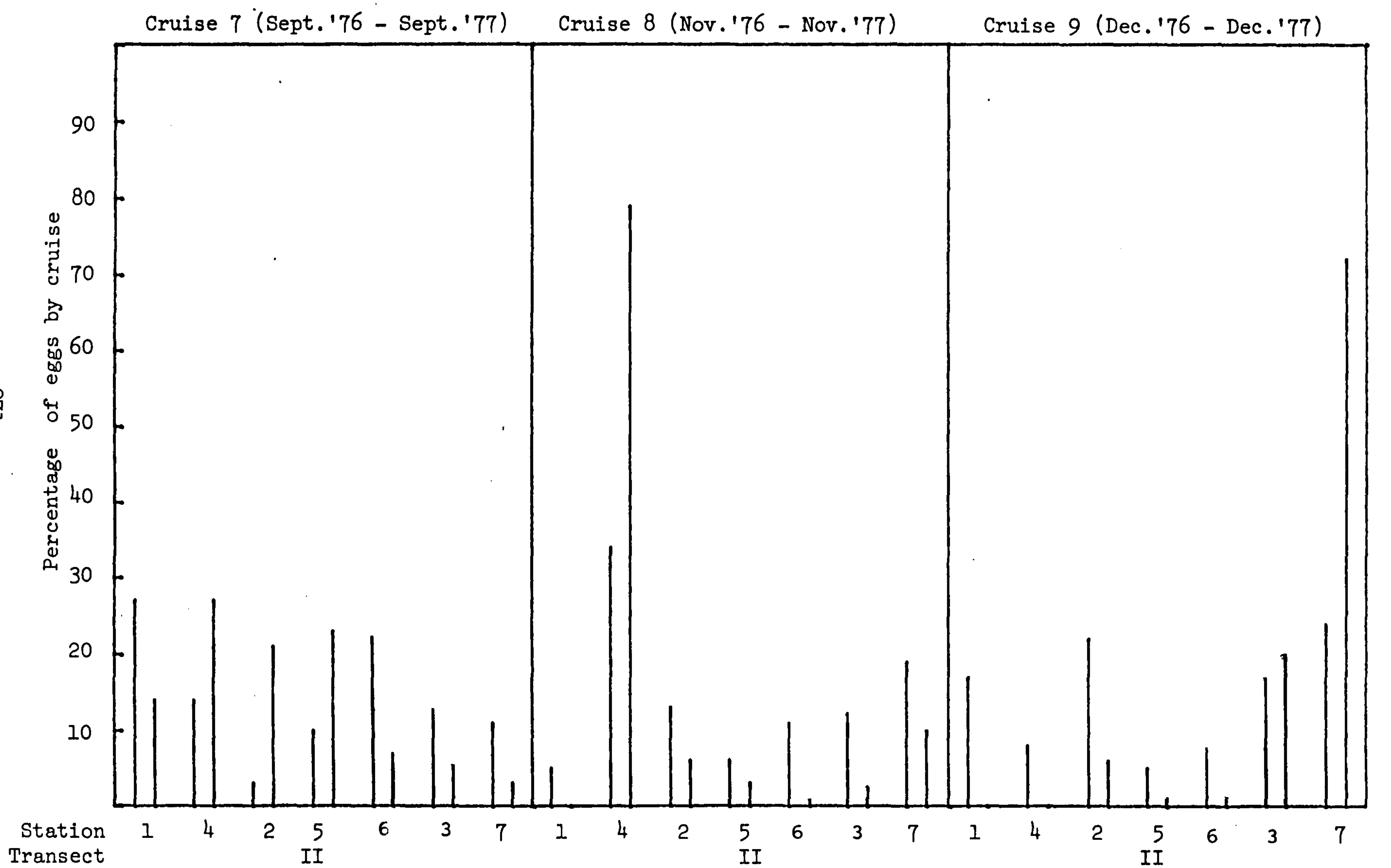


Figure127. Comparison of fish egg percentage taken from 333μ Transect II plankton samples during Cruises 7,8,9 by station during 1976 and 1977. First histogram line represents 1976 and the second, 1977.

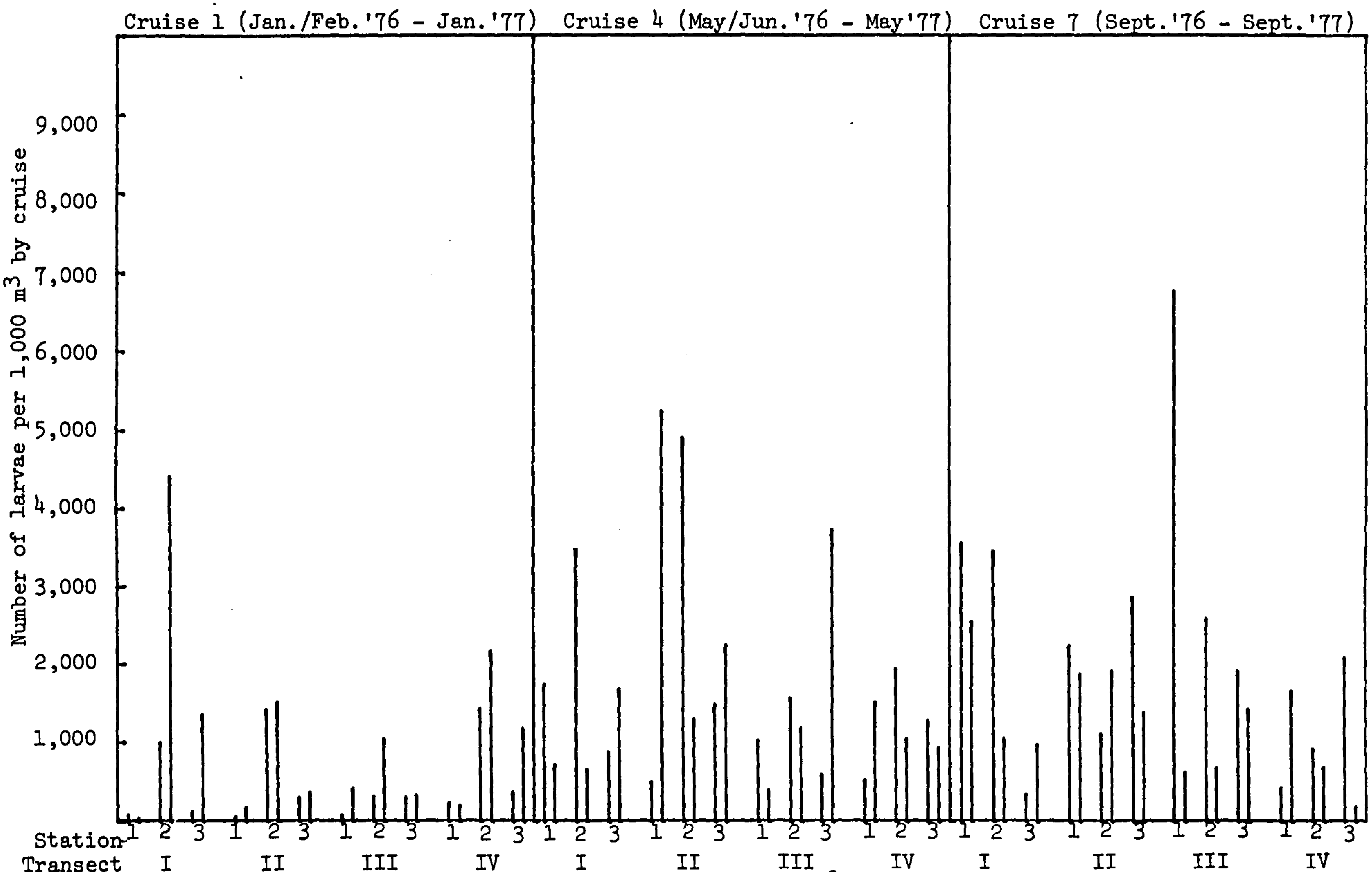


Figure 128. Comparison of numbers of fish larvae per 1,000 m^3 taken from seasonal 505μ plankton samples by cruise, transect and station during 1976 and 1977. First histogram line represents 1976 and the second, 1977.

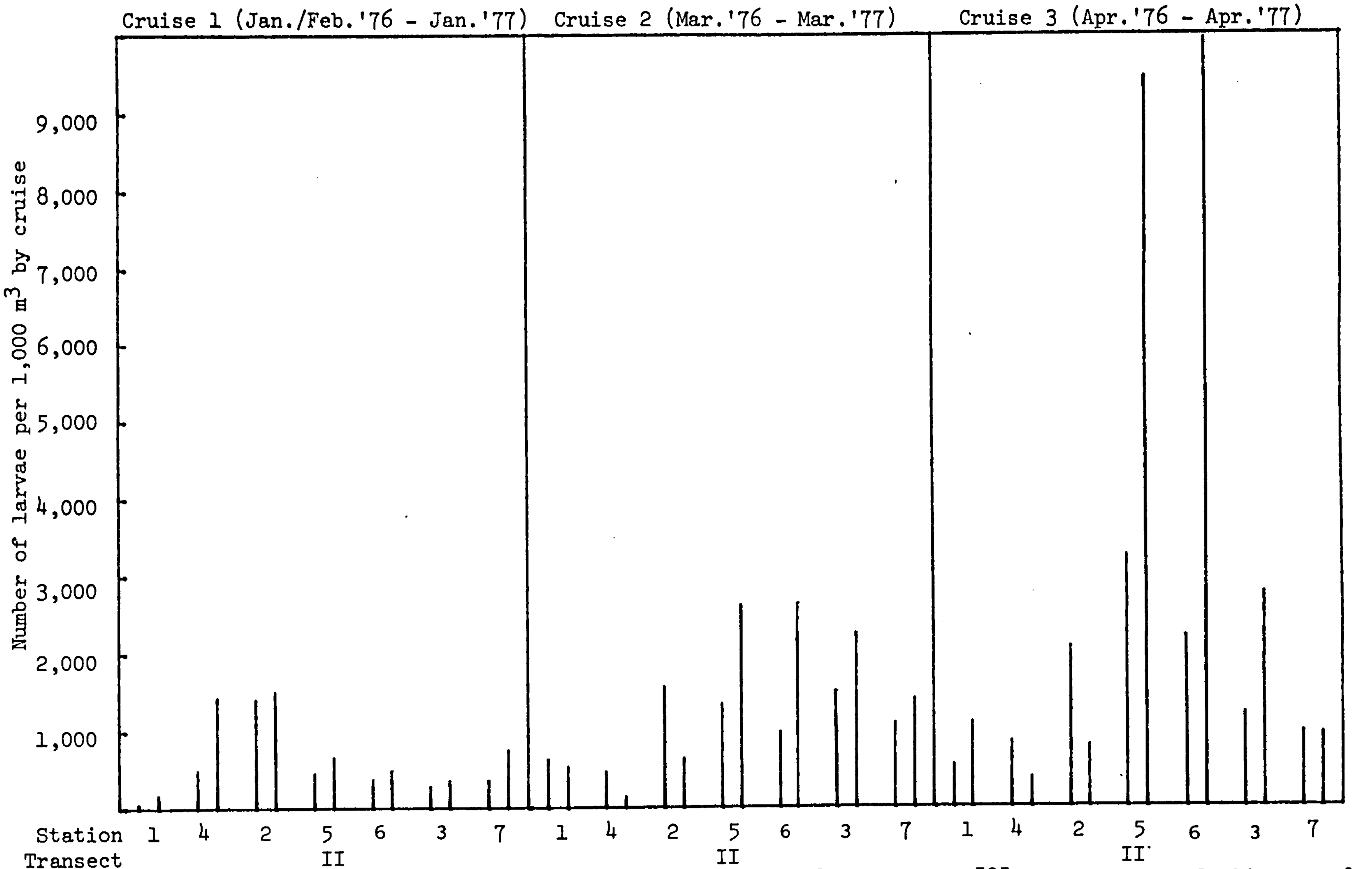


Figure129. Comparison of numbers of fish larvae per 1,000 m3 taken from 505μ Transect II plankton samples during Cruises 1,2,3 by station during 1976 and 1977. First histogram line represents 1976 and the second, 1977.

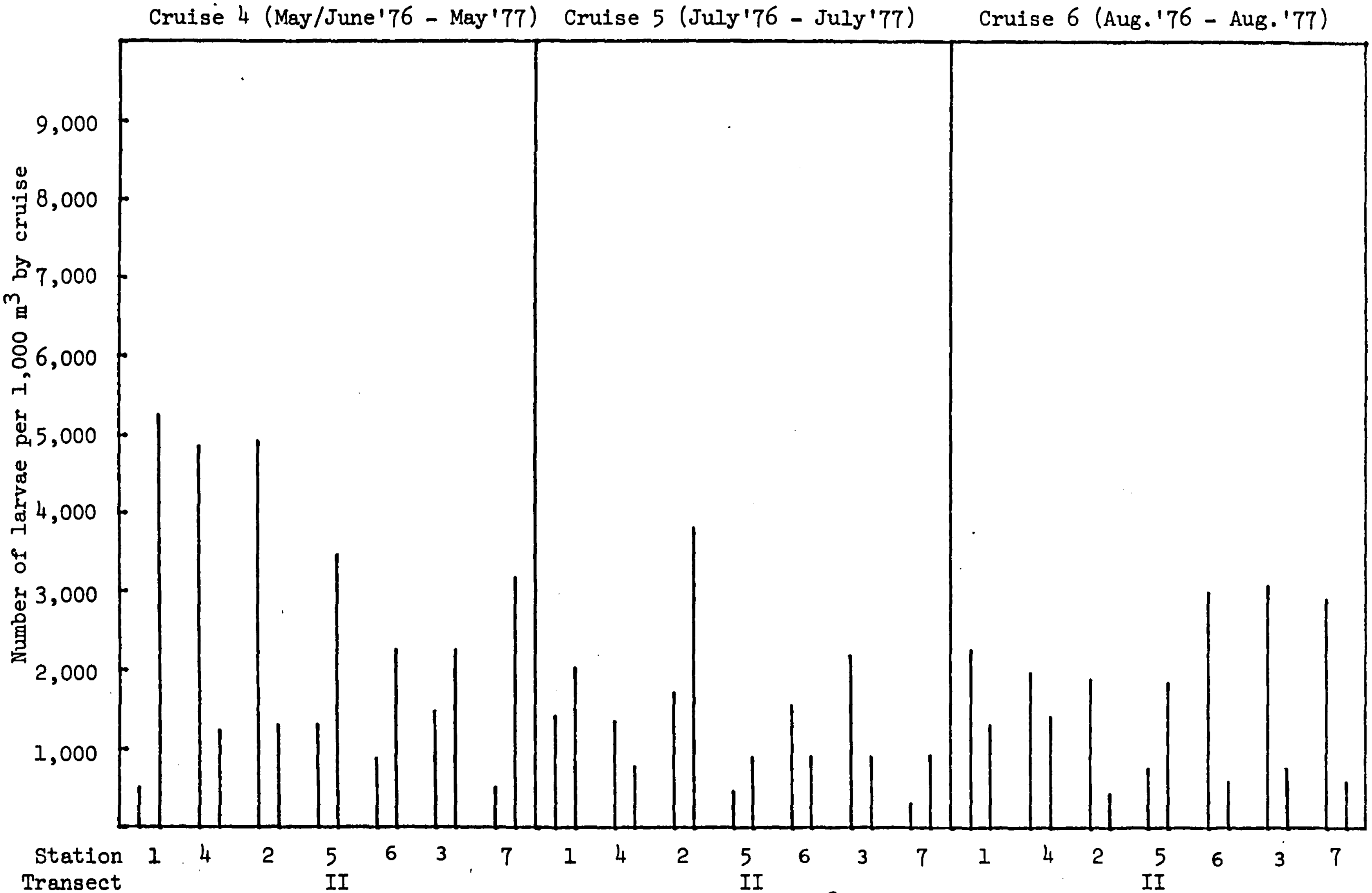


Figure130. Comparison of numbers of fish larvae per 1,000 m^3 taken from 505μ Transect II plankton samples during Cruises 4,5,6 by station during 1976 and 1977. First histogram line represents 1976 and the second, 1977.

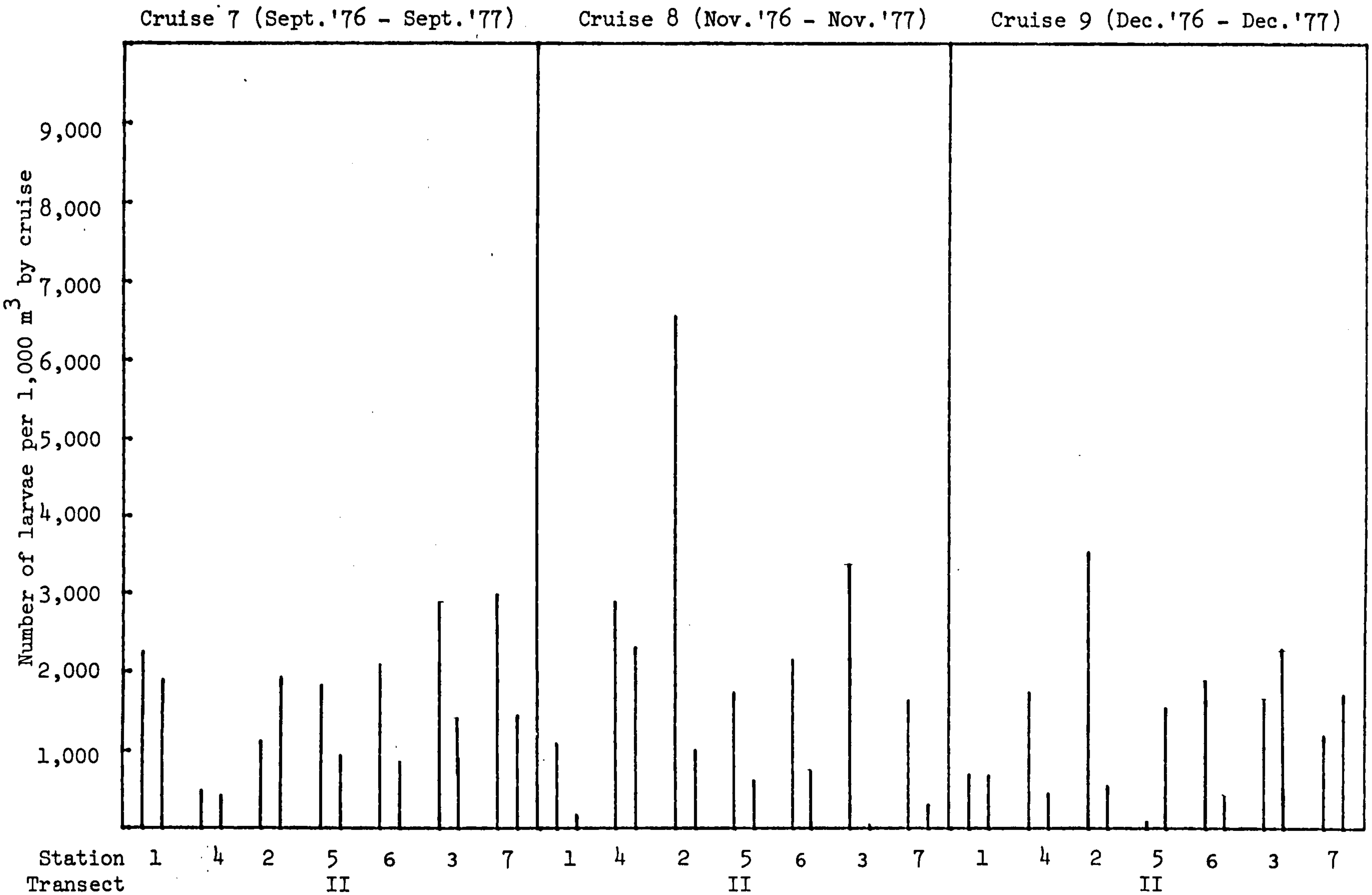


Figure131. Comparison of numbers of fish larvae per 1,000 m3 taken from 505 μ Transect II plankton samples during Cruises 7, 8, 9 by station during 1976 and 1977. First histogram line represents 1976 and the second, 1977.

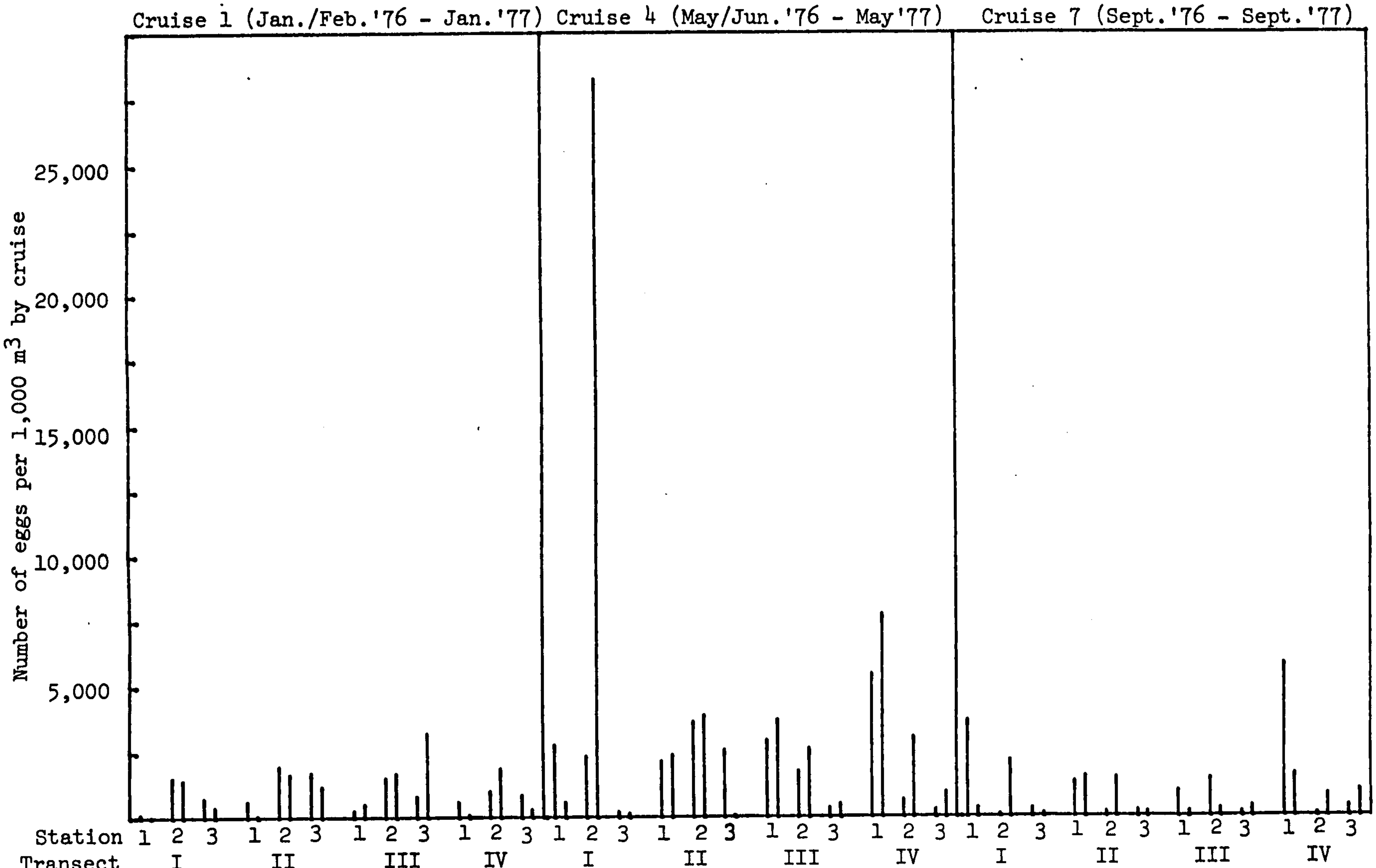


Figure132. Comparison of numbers of fish eggs per 1,000 m^3 taken from 333µ seasonal plankton samples by Cruise, transect, and station during 1976 and 1977. First histogram line represents 1976 and the second, 1977.

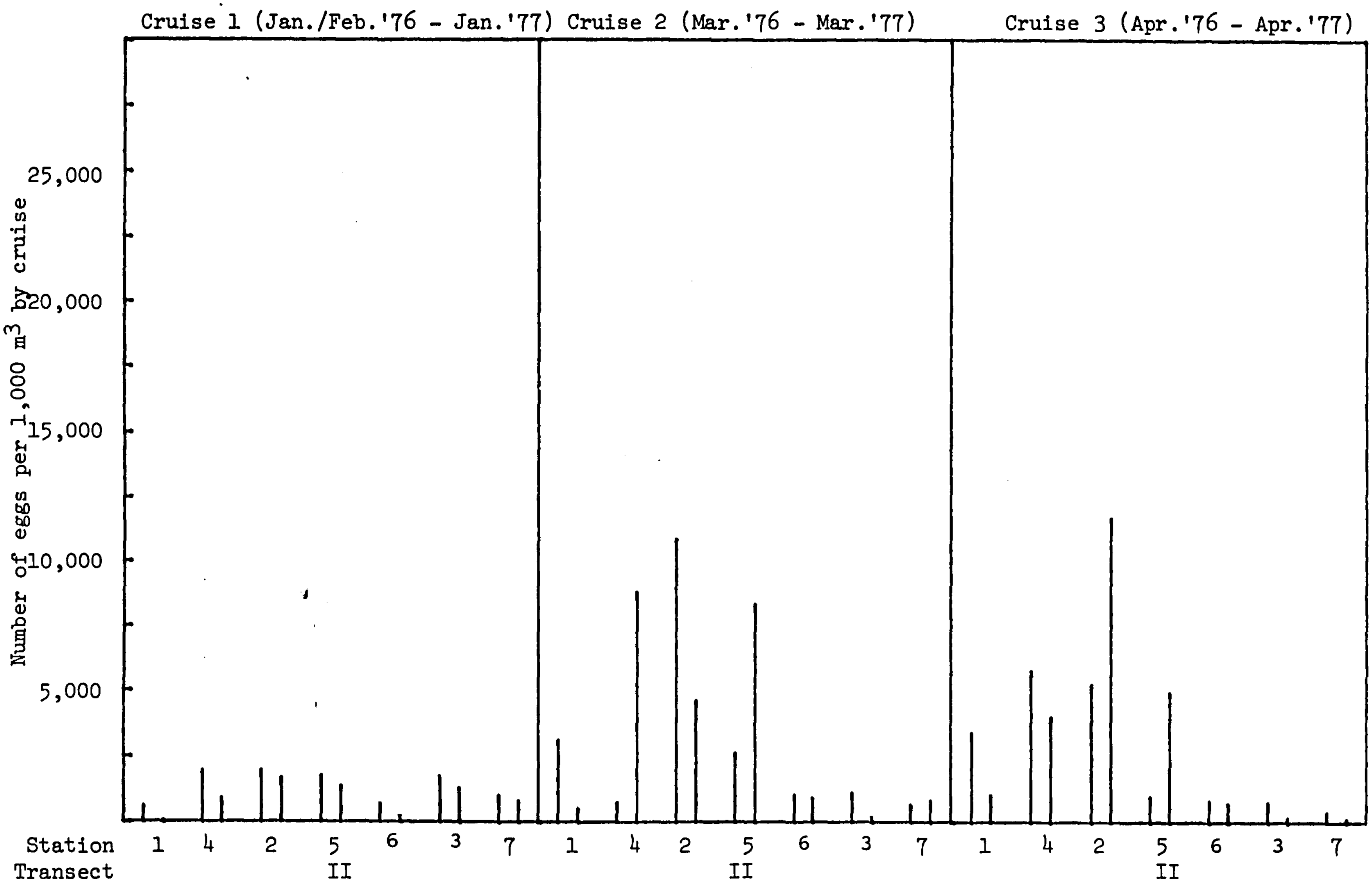


Figure 133. Comparison of numbers of fish eggs per 1,000 m^3 taken from 333µ transect II plankton samples during Cruises 1, 2, and 3 by station during 1976 and 1977. First histogram line represents 1976, and the second, 1977.

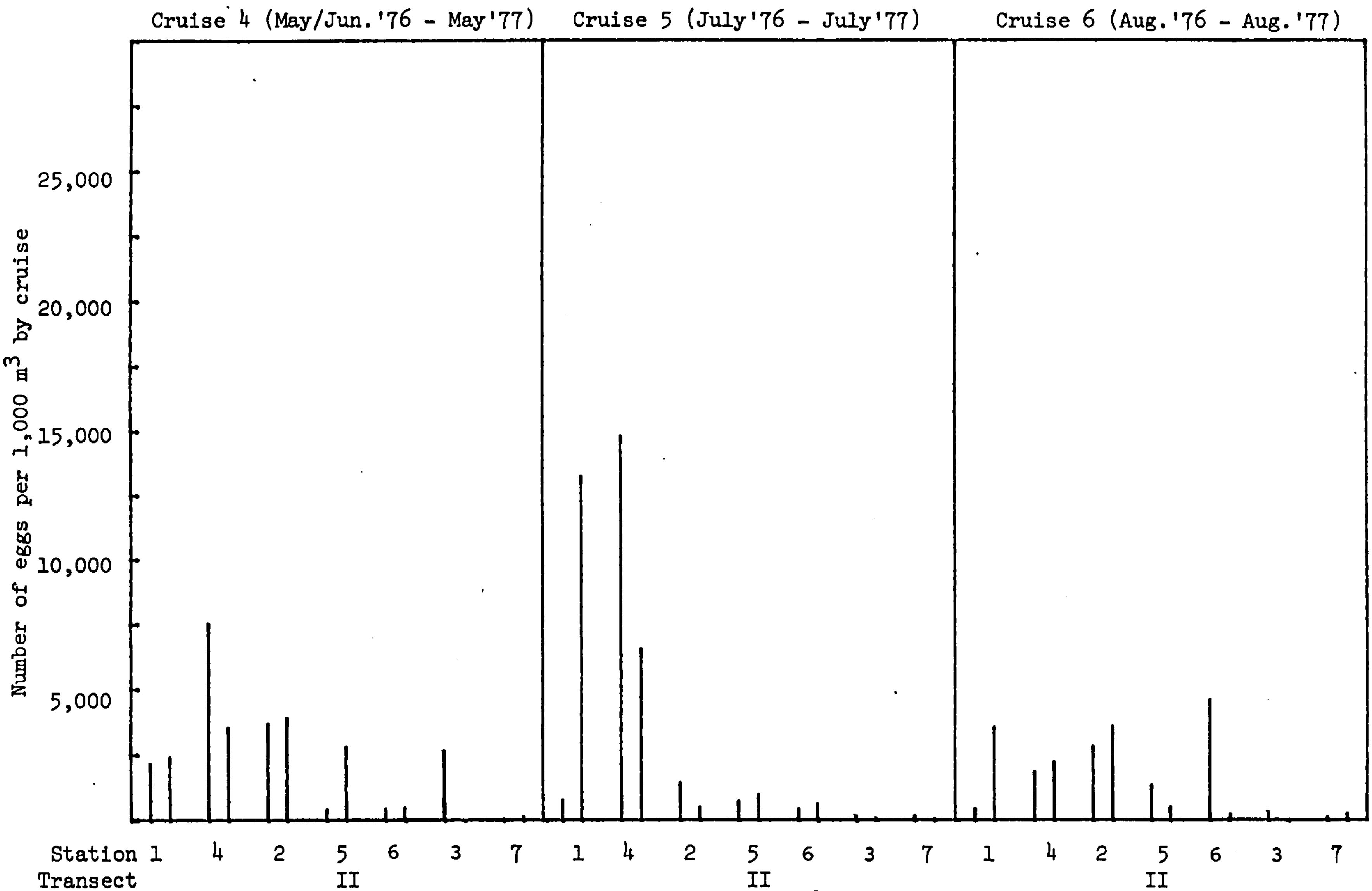


Figure134. Comparison of numbers of fish eggs per 1,000 m^3 taken from 333μ transect II plankton samples during Cruises 4, 5, and 6 by station during 1976 and 1977. First histogram line represents 1976 and the second, 1977.

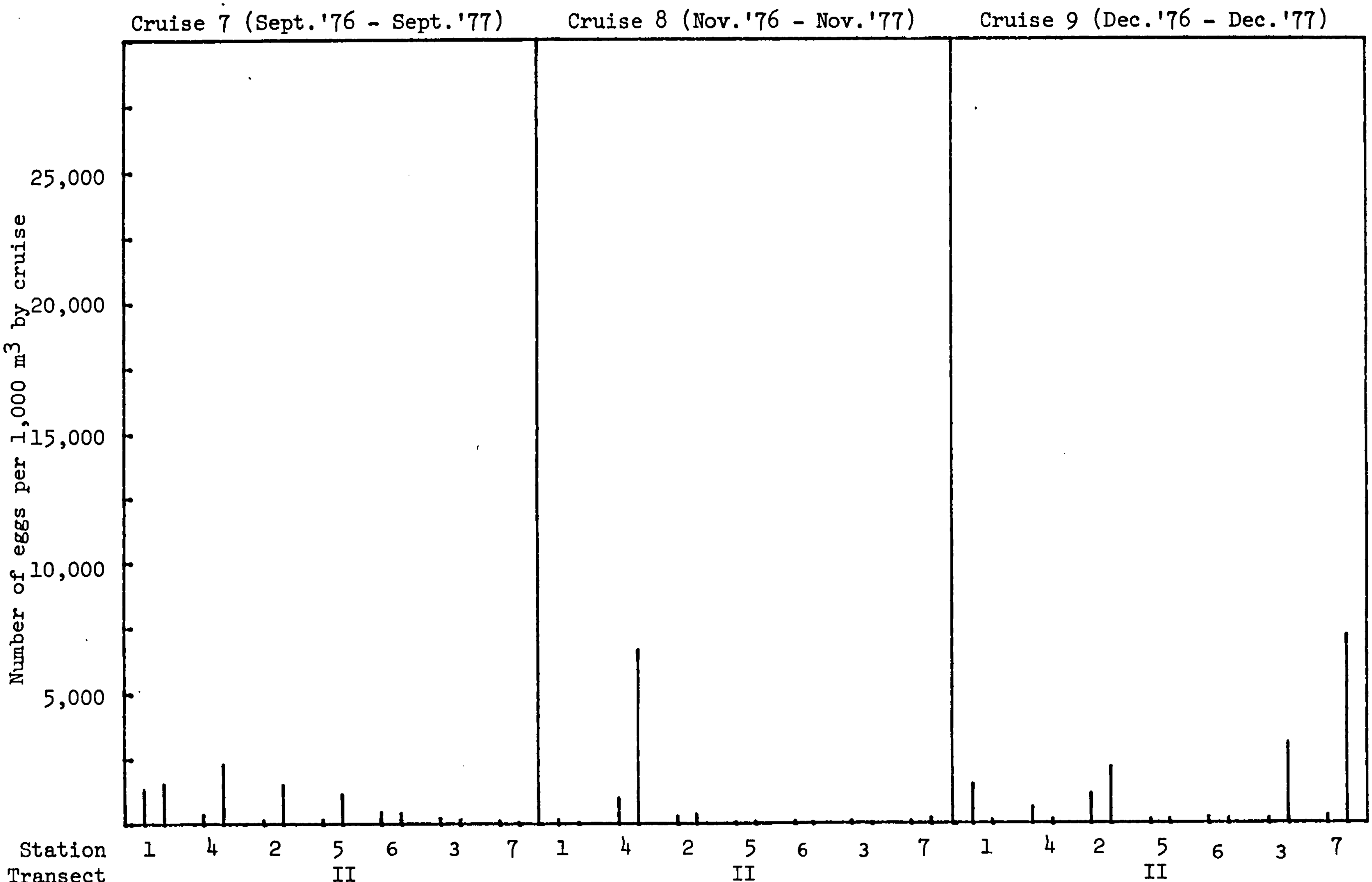


Figure 135. Comparison of numbers of fish eggs per 1,000 m^3 taken from 333μ transect II plankton samples during Cruises 7, 8, and 9 by station during 1976 and 1977. First histogram line represents 1976, and the second, 1977.

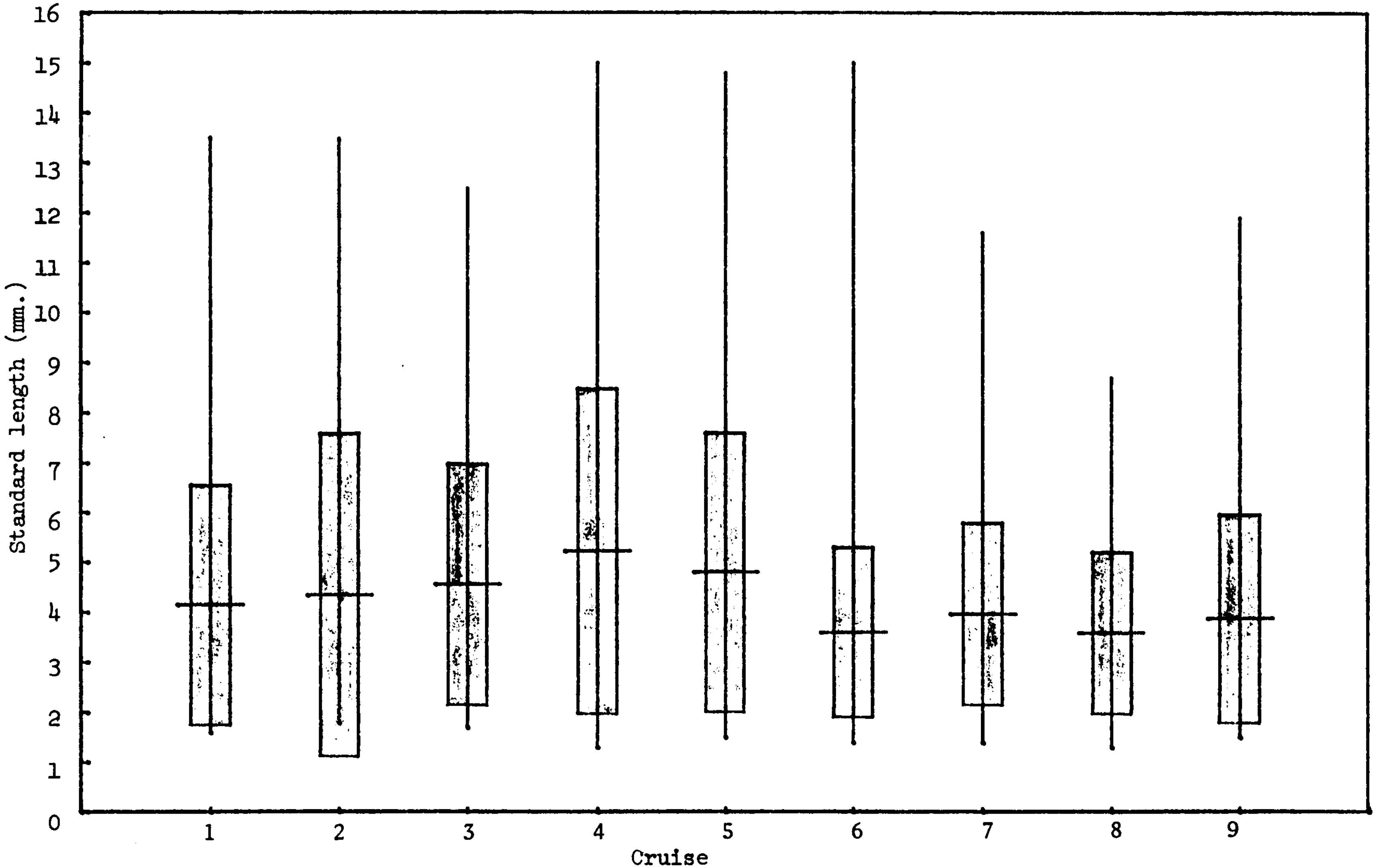


Figure 136. Length frequencies of Bregmaceros atlanticus larvae by cruises during 1977 for all mesh sizes. Horizontal line = mean, vertical line = range, shaded bar = 95% confidence interval.

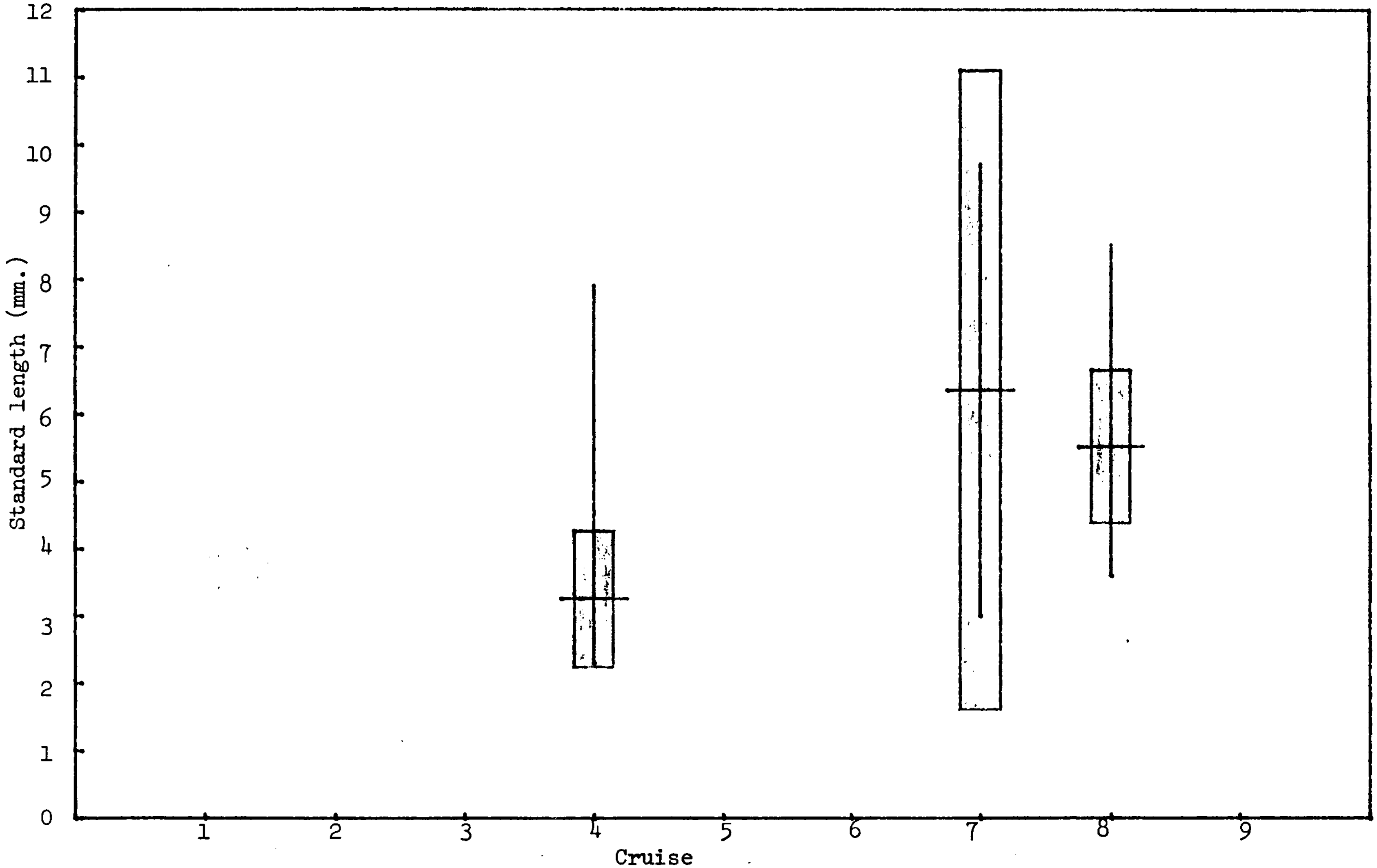


Figure137. Length frequencies of Cynoscion nothus larvae by cruises during 1977 for all mesh sizes. Horizontal line = mean, vertical line = range, shaded bar = 95% confidence interval.

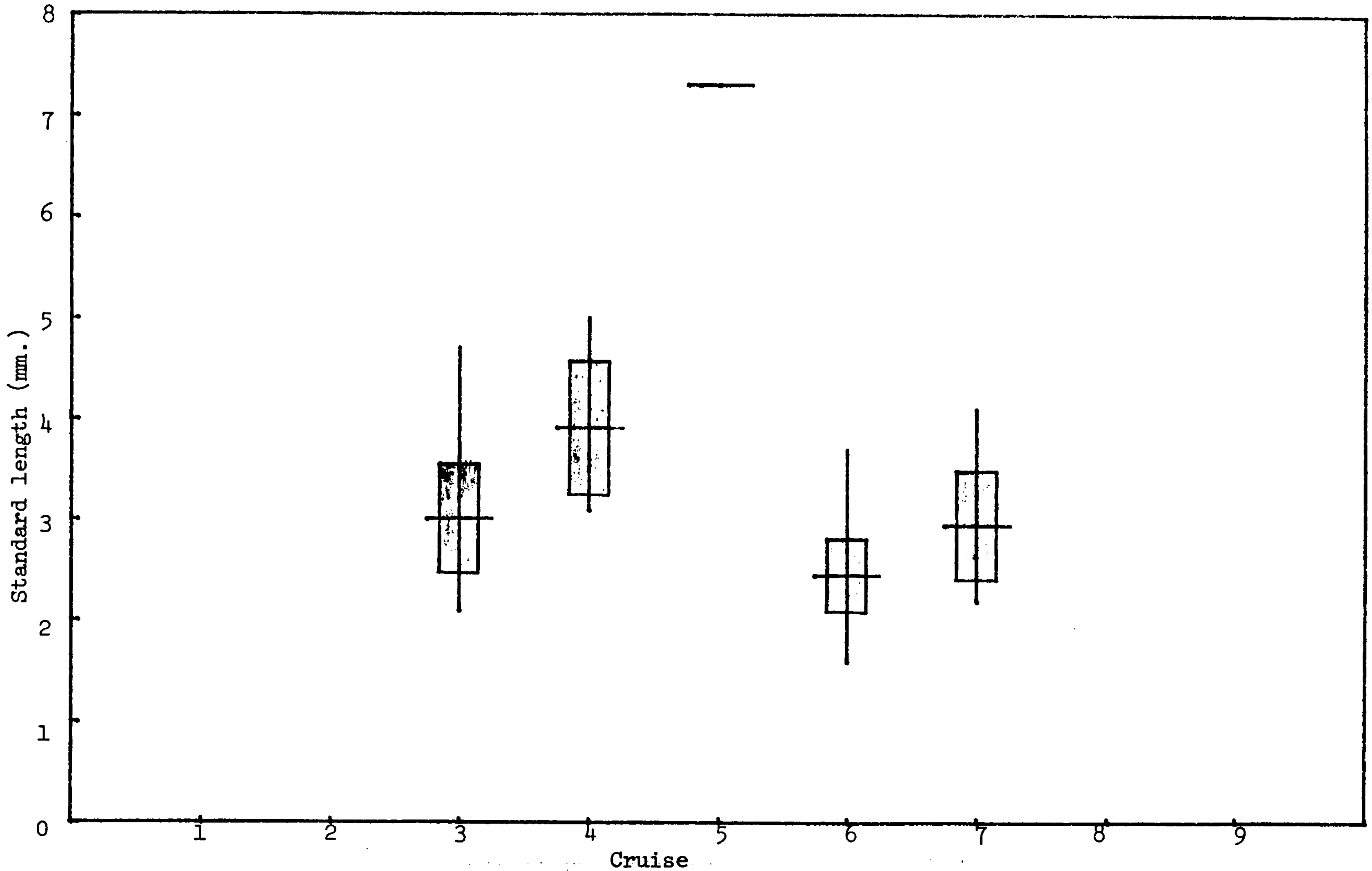


Figure 138. Length frequencies of Decapterus punctatus larvae by cruises during 1977 for all mesh sizes Horizontal line = mean, vertical line = range, shaded bar = 95% confidence interval.

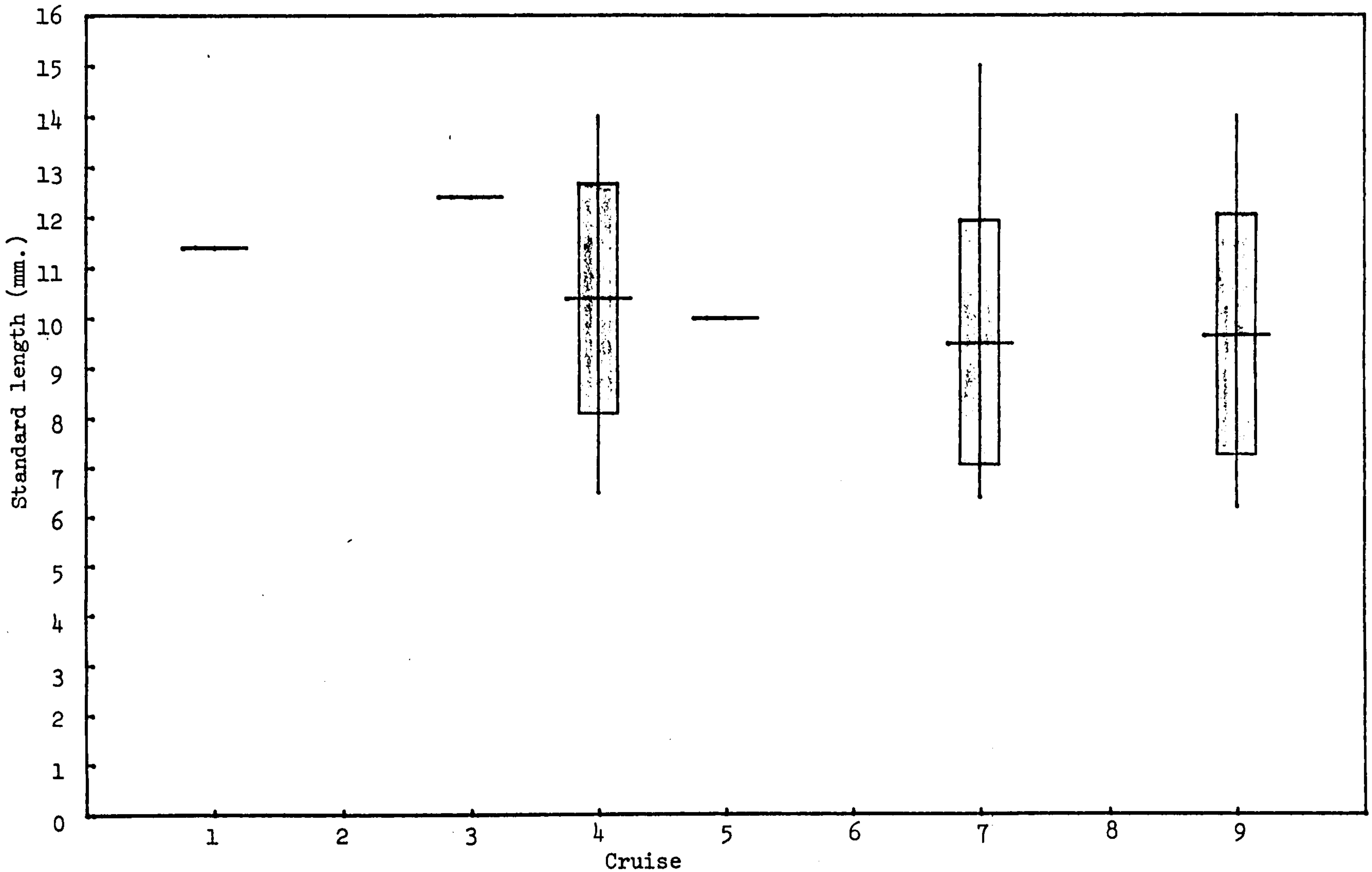


Figure 139. Length frequencies of *Engraulis eurystole* larvae by cruises during 1977 for all mesh sizes. Horizontal line = mean, vertical line = range, shaded bar = 95% confidence interval.

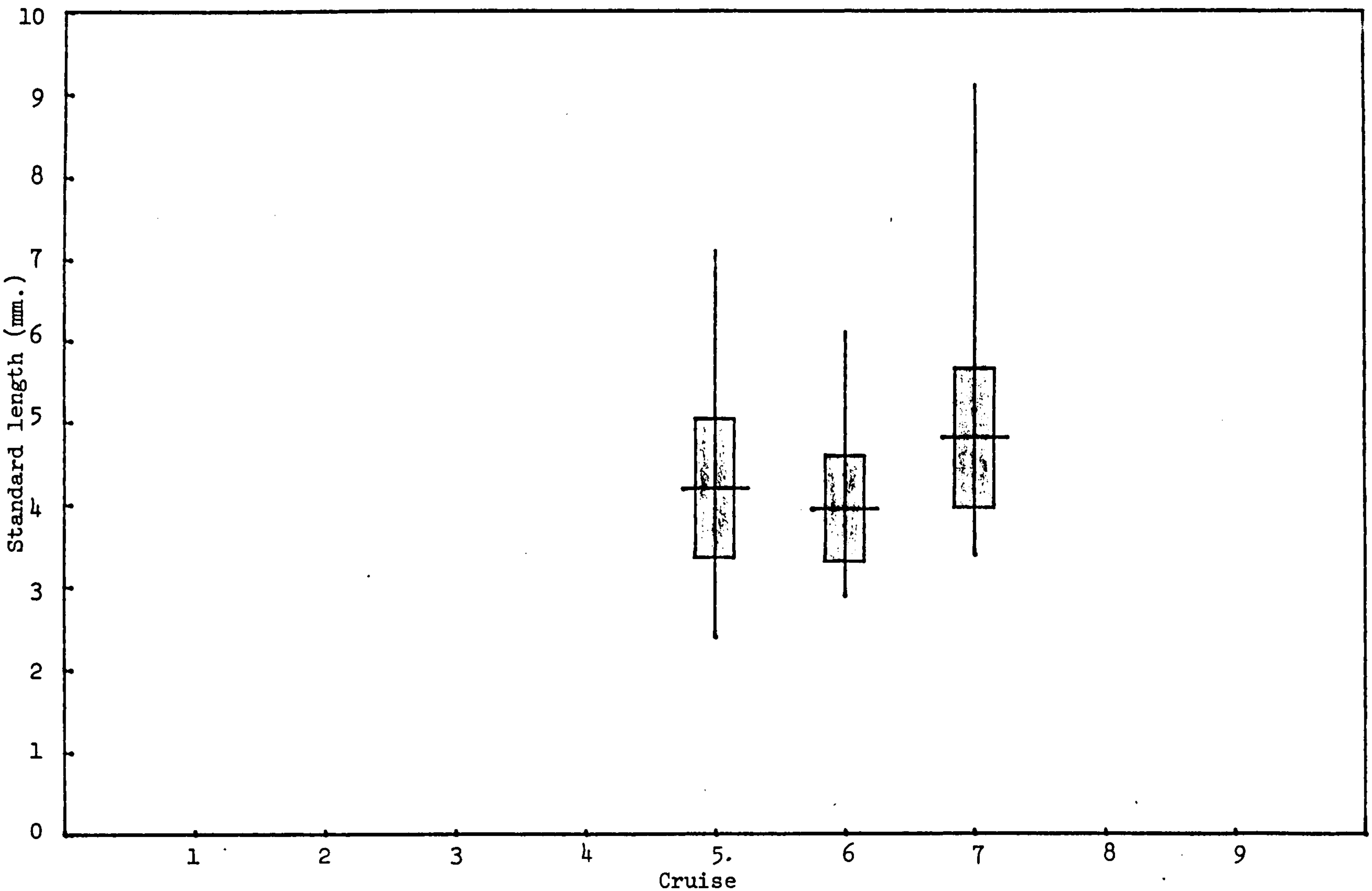


Figure 40. Length frequencies of Euthynnus alletteratus larvae by cruises during 1977 for all mesh sizes. Horizontal line = mean, vertical line = range, shaded bar = 95% confidence interval.

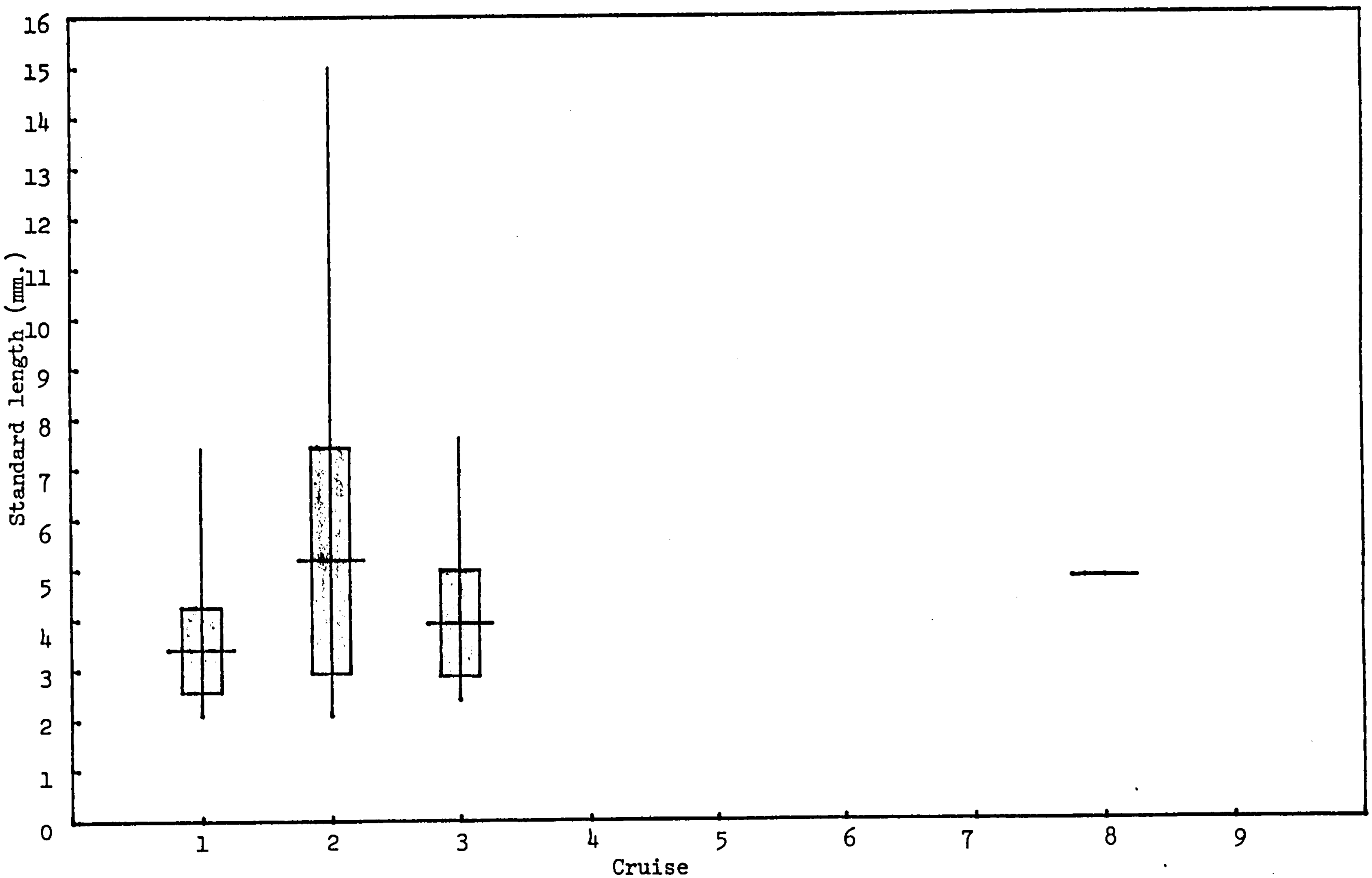
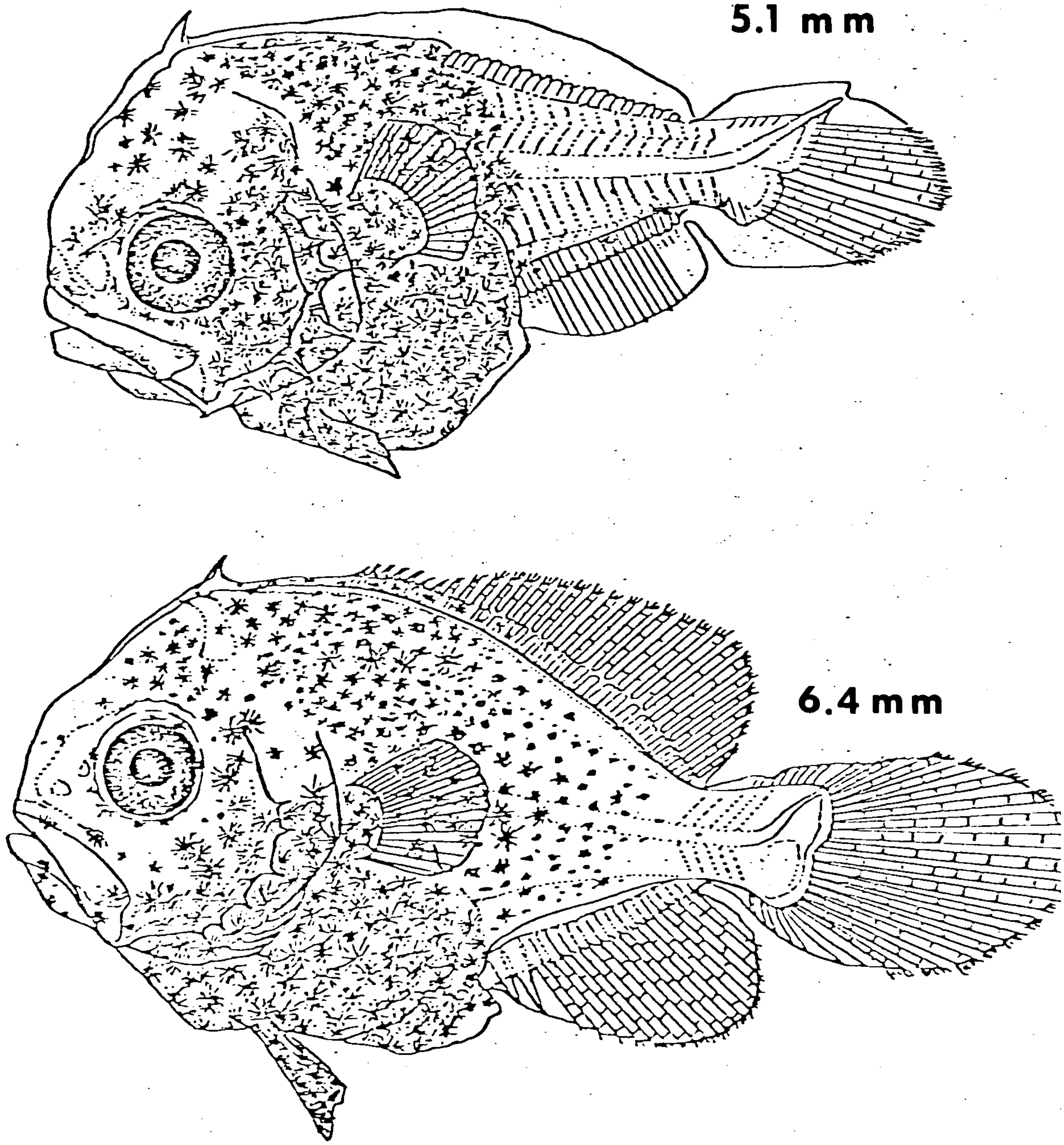


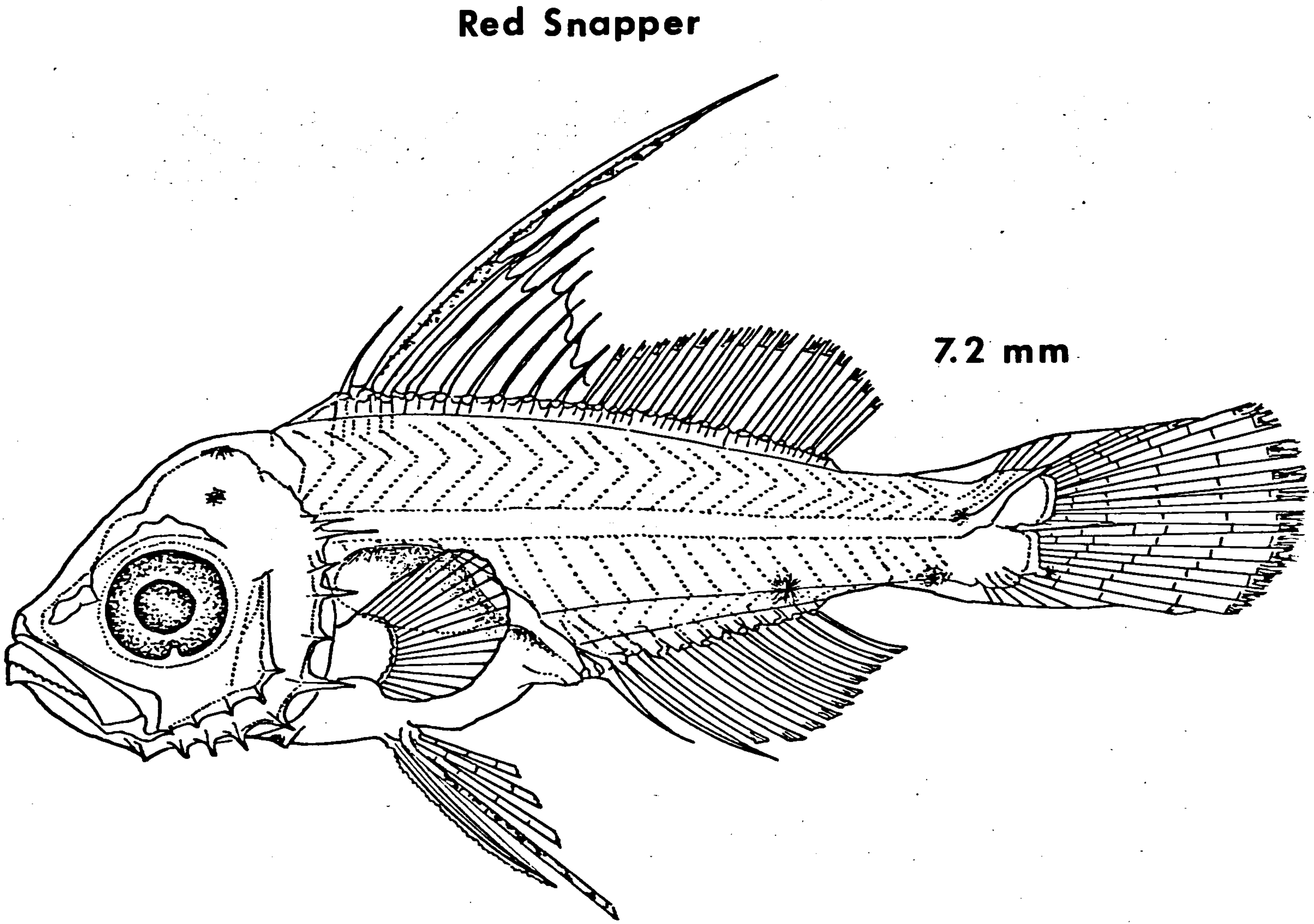
Figure141. Length frequencies of Trachurus lathami larvae by cruises during 1977 for all mesh sizes. Horizontal line = mean, vertical line = range, shaded bar = 95% confidence interval.

Spadefish



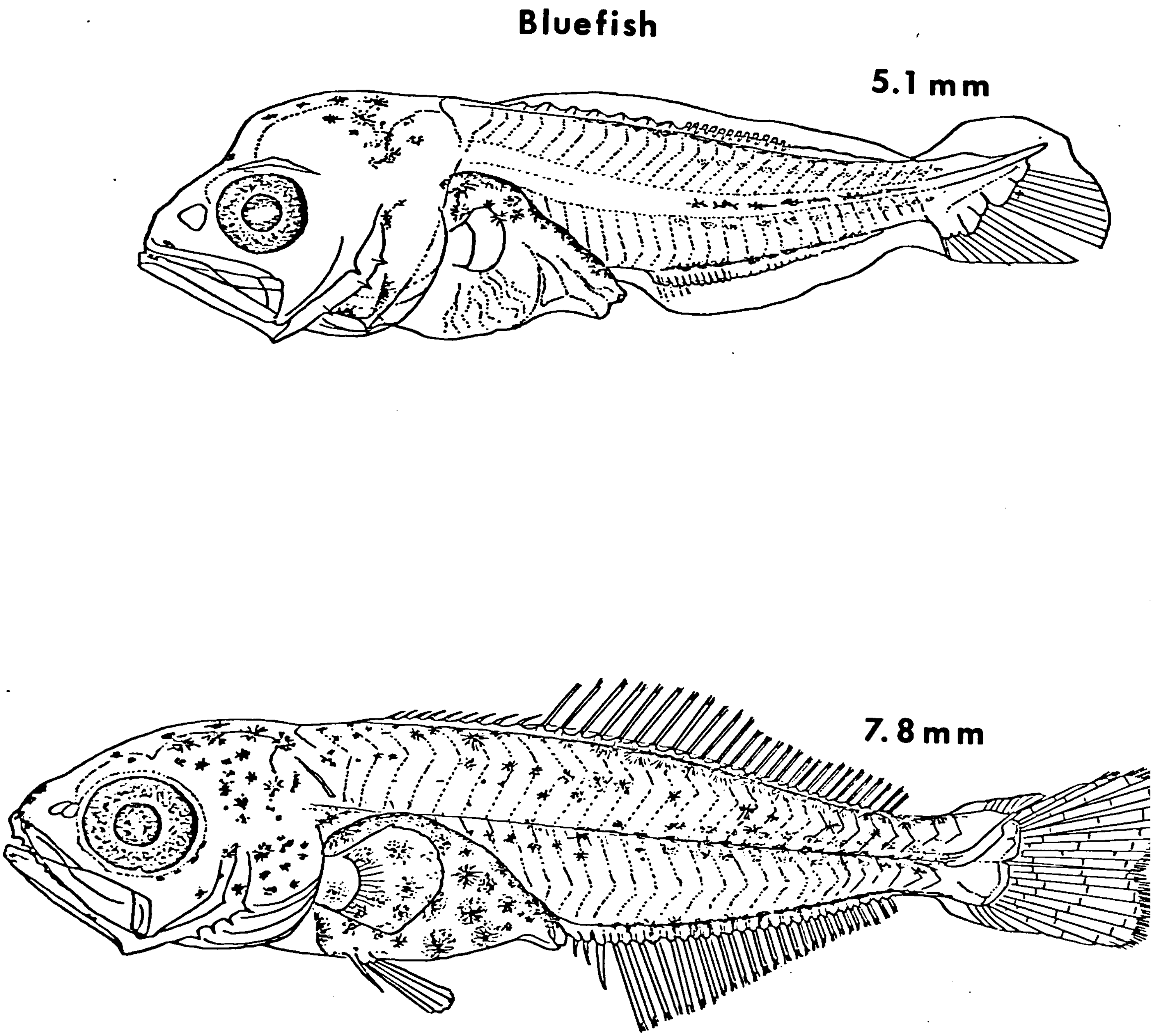
EPHIPPIDAE - *Chaetodipterus faber*

Figure142. Larval developmental stages of the spadefish collected off the Texas OCS.



LUTJANIDAE - ***Lutjanus campechanus***

Figure143. Larval stages of the red snapper collected off the Texas OCS.



POMATOMIDAE - *Pomatomus saltatrix*

Figure 144. Larval developmental stages of the bluefish collected off the Texas OCS.

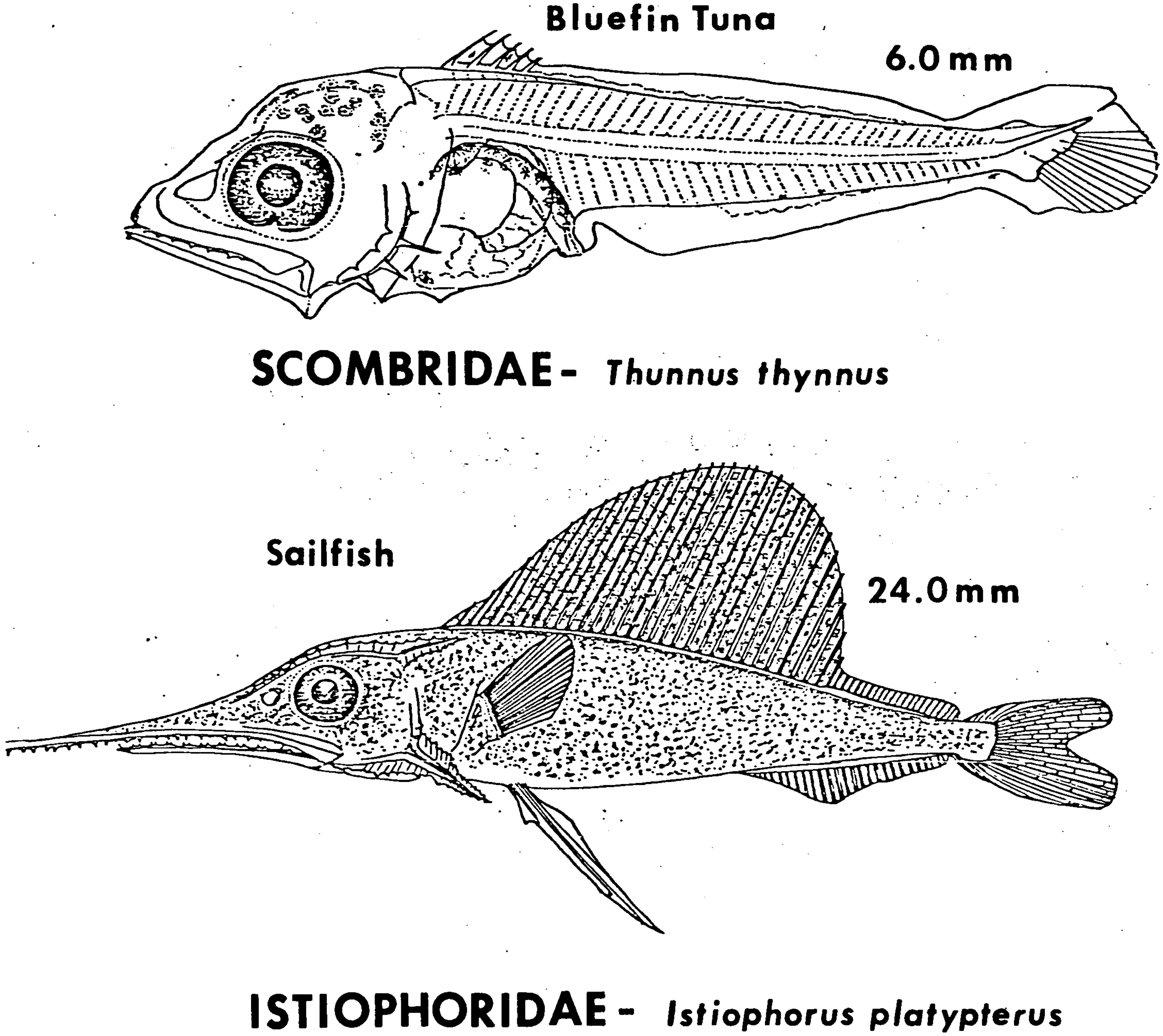
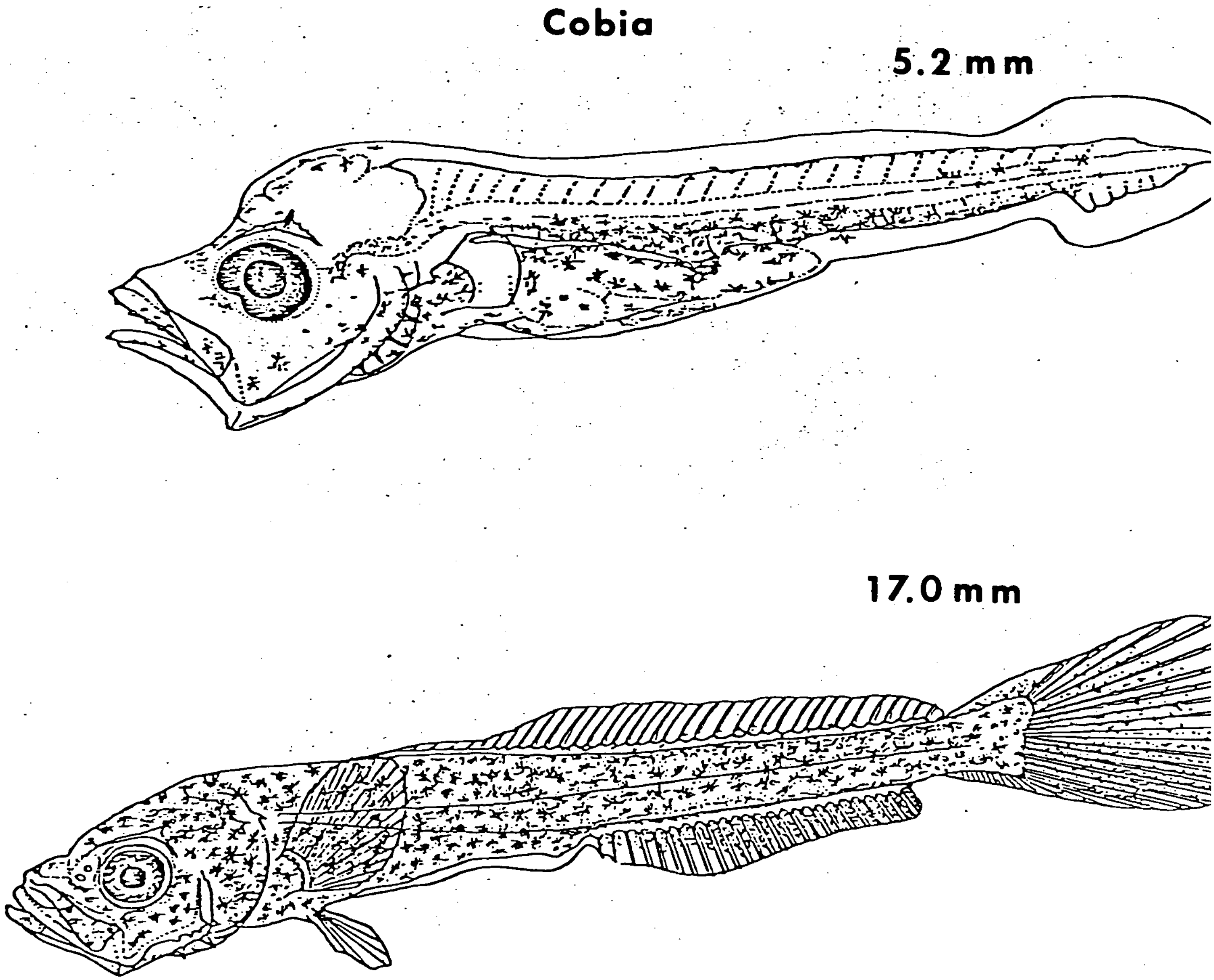


Figure 145. Larval developmental stages of the bluefin tuna and sailfish collected off the Texas OCS.



RACHYCENTRIDAE - *Rachycentron canadum*

Figure146. Larval developmental stages of the cobia collected off the Texas OCS.

APPENDIX B

(Mackerel Larvae)

Table 35. Summary of data collected on mackerel cruises of 1975 through 1977 off the Texas coast.

Cruise	Dates	Number of Stations	Mean Volume Filtered (m^3)	*S. cavalla* Number of Larvae	*S. cavalla* Mean length (mm SL)	*S. maculatus* Number of Larvae	*S. maculatus* Mean Length (mm SL)	Range of Mean Temperatures of Water Column	Range of Mean Salinities of Water Column
(6) SMS '75	21-22 May	16	497.5	8	3.5	0	0	24.0-27.0 (1)	
SMS '75	23-24 June	16	396.9	9	3.6	9	2.6	28.5-29.8 (1)	
SMS '75	28-29 July	16	496.1	32	3.0	8	2.2	27.0-30.2 (1)	
SMS '75	21-22 Aug.	16	408.6	59	3.3	7	2.1	28.0-29.7 (1)	
SMS '75	14-15 Sept.	16	682.1	91	3.1	8	5.0	28.4-28.7 (1)	
(7) BSST '75	4 Dec. to 25 Jan.	12	(2) 636.2 (3) 703.2	(2) 0 (3) 0		(2) 0 (3) 0		16.4-22.4	31.1-36.1
BSST '75	16 Apr. to 16 May	12	(2) 664.0 (3) 619.8	(2) 0 (3) 4	(3) 4.7	(2) 0 (3) 1	(3) 7.0	19.6-24.2	30.7-36.1
BSST '75	26 Aug. to 30 Sept.	12	(2) 440.2 (3) 542.2	(2) 75 (3) 90	(2) 4.3 (3) 3.3	(2) 60 (3) 38	(2) 4.4 (3) 3.9	24.2-29.8	29.6-36.3
BSST '76	14 Jan to 3 Feb.	16	(4) 201.0 (5) 228.6	(4) 0 (5) 0		(4) 0 (5) 0		15.0-20.9	32.6-36.3

Table 35. (Continued)

Cruise	Dates	Number of Stations	Mean Volume Filtered (m^3)		*S. cavalla* Number of Larvae		*S. cavalla* Mean Length (mm SL)		*S. maculatus* Number of Larvae		*S. maculatus* Mean Length (mm SL)		Range of Mean Temperatures of Water Column	Range of Mean Salinities of Water Column
			(4)	(5)	(4)	(5)	(4)	(5)	(4)	(5)	(4)	(5)		
BSST '76	18-19 Mar.	7	256.5	238.7	0	0			0	0			17.8-20.7	29.7-36.1
BSST '76	2-3 April	7	241.6	250.2	0	0			0	0			18.6-20.6	30.2-36.0
BSST '76	30 May to 7 June	16	218.7	224.6	37	30	3.2	3.4	6	2	2.7	3.3	22.4-27.4	30.4-35.9
BSST '76	10-11 July	7	251.5	265.0	28	25	3.6	3.9	5	3	2.8	2.8	23.4-27.8	34.2-36.0
BSST '76	27-28 Aug.	7	216.3	255.0	23	17	3.8	3.6	7	3	3.9	3.1	25.6-28.1	35.5-37.4
BSST '76	10-15 Sept.	16	212.2	231.4	115	84	3.5	3.6	15	4	3.7	4.2	23.2-29.2	33.5-36.7
BSST '76	9-10 Nov.	7	224.2	235.8	0	0			0	0			18.9-25.4	32.4-36.3
BSST '76	1-2 Dec.	7	242.1	255.7	0	0			0	0			14.9-21.1	33.5-36.3
BSST '77	11 Jan. to 21 Feb.	16	178.4	202.3	0	0			0	0			11.0-19.1	32.6-36.4
BSST '77	14-15 Mar.	7	217.5	240.2	0	0			0	0			15.2-17.9	33.1-36.4

Table 35. (Continued)

Cruise	Dates	Number of Stations	Mean Volume Filtered (m^3)		*S. cavalla* Number of Larvae		*S. cavalla* Mean Length (mm SL)		*S. maculatus* Number of Larvae		*S. maculatus* Mean Length (mm SL)		Range of Mean Temperatures of Water Column	Range of Mean Salinities of Water Column
			(4)	(5)	(4)	(5)	(4)	(5)	(4)	(5)	(4)	(5)		
BSST '77	20-21 Apr.	7	202.6	209.5	0	0			0	0			19.6-21.1	31.5-36.3
BSST '77	16-20 May	16	233.0	239.0	7	4	3.7	4.9	32	0	2.9		20.2-25.5	28.3-36.2
BSST '77	6-7 July	7	337.5	340.7	3	10	3.6	3.5	3	3	2.5	4.4	20.6-25.4	36.1-36.3
BSST '77	4 August	7	223.7	251.1	7	5	3.1	3.5	2	2	3.8	2.7	21.9-28.0	36.2-36.3
BSST '77	7-11 Sept.	16	224.3	229.1	144	92	3.5	4.4	17	13	2.7	4.1	23.7-29.8	34.2-36.3
BSST '77	5-6 Nov.	7	286.0	299.4	0	0			0	0			22.4-26.1	35.2-36.5
BSST '77	2-3 Dec.	7	261.1	271.0	0	0			0	0			21.3-23.8	33.4-36.4

(1) Surface temperature (2) Day tow (3) Night tow (4) 333μ Bongo net (5) 505μ Bongo net

(6) SMS '75 = Special mackerel cruise for 1975

(7) BSST '75,'76,'77 = Baseline survey of the south Texas outer continental shelf for 1975, 1976, 1977.

Table 36. Abundance of king mackerel and Spanish mackerel larvae at positive stations on each of the surveys of 1975. 1976, and 1977. Abundanced standardized to number of larvae under 10 m^2 , for all surveys; number in area represented by the station; and number in area represented by entire survey, for BSST '76 surveys only.

			King Mackerel		Spanish Mackerel	
Station	Depth	Area m^2	Under 10 m^2	Station Area	Under 10 m^2	Station Area
SMS '75 May						
2	28		0.9			
7	29		0.5			
10	27		1.5			
11	60		3.9			
13	104		3.2			
SMS '75 June						
1	7				0.5	
5	128		1.7			
6	60		1.3			

TABLE 36: Continued.

Station	Depth	Area m²	King Mackerel Under 10 m²	King Mackerel Station Area	Spanish Mackerel Under 10 m²	Spanish Mackerel Station Area
SMS '75 June Continued.						
8	9				0.7	
9	9				1.1	
10	27				1.2	
11	60		4.1			
12	130		1.7			
13	104		3.1		1.5	
14	59		1.4		1.4	
15	27				1.2	
16	7				0.6	
SMS '75 July						
2	28		4.7		0.9	
3	60		5.2			
6	60		1.6			
7	29		5.6			

TABLE 36: Continued

Station	Depth	Area m^2	King Mackerel Under 10 m^2	King Mackerel Station Area	Spanish Mackerel Under 10 m^2	Spanish Mackerel Station Area
SMS '75 July Continued.						
8	9				1.1	
9	9				0.4	
10	27		2.5		0.8	
11	60		2.2			
15	27		9.5		3.8	
16	7				0.4	
SMS '75 August						
3	60		4.0			
4	134		4.9			
5	128		1.6			
6	60		7.0		1.2	
7	29		11.5		1.0	
9	9				0.7	

TABLE 36: Continued.

Station	Depth	Area m^2	King Mackerel Under 10 m^2	King Mackerel Station Area	Spanish Mackerel Under 10 m^2	Spanish Mackerel Station Area
SMS '75 August Continued.						
10	27		7.6		1.3	
11	60		1.3			
12	130		14.2			
13	104		11.2			
14	59		13.3			
16	7		0.5		1.6	
SMS '75 September						
2	28		3.9		0.8	
3	60		20.9			
4	134		1.7			
5	128		0.8			
6	60		9.6			
7	29		2.9		0.7	
8	9				1.1	

TABLE36: Continued.

Station	Depth	Area m^2	King Mackerel Under 10 m^2	King Mackerel Station Area	Spanish Mackerel Under 10 m^2	Spanish Mackerel Station Area
SMS '75 September Continued.						
10	27		11.5		1.8	
11	60		1.0			
12	130		3.5			
13	104		2.4			
14	59		6.6			
15	27		3.3		0.8	
16	7				0.7	

BSST '75 April - May			King Mackerel Under 10 m^2 Day	King Mackerel Under 10 m^2 Night	King Mackerel Station Area Day	King Mackerel Station Area Night	Spanish Mackerel Under 10 m^2 Day	Spanish Mackerel Under 10 m^2 Night	Spanish Mackerel Station Area Day	Spanish Mackerel Station Area Night
I2	42			0.6						
II3	131			1.3						
III1	25							0.6		
III2	65			1.4						

TABLE 36: Continued

Station	Depth	Area m^2	King Mackerel Under $10\ m^2$ Day	King Mackerel Under $10\ m^2$ Night	King Mackerel Station Area Day	King Mackerel Station Area Night	Spanish Mackerel Under $10\ m^2$ Day	Spanish Mackerel Under $10\ m^2$ Night	Spanish Mackerel Station Area Day	Spanish Mackerel Station Area Night
BSST '75 August - September										
I1	18		0.6	0.6			12.2	7.4		
I2	42		10.1	2.5						
I3	134		5.6	9.1						
II1	22						3.9	1.5		
II2	49		11.9	9.7						
II3	131			2.8						
III1	25			0.5			4.5	2.5		
III2	65		10.3	10.5						
III3	106			23.6						
IV1	27		1.2				3.7	1.2		
IV2	47		10.6	14.0				2.0		
IV3	91		51.5	22.2						
			mesh size							
BSST '76 May - June			333	505	333	505	333	505	333	505
I1	18	2.29×10^{10}	3.2	1.7	7.33×10^{9}	3.89×10^{9}	1.6		3.66×10^{9}	

TABLE 36: Continued.

Station	Depth	Area m^2	King Mackerel Under 10 m^2 333	King Mackerel Under 10 m^2 505	King Mackerel Station Area 333	King Mackerel Station Area 505	Spanish Mackerel Under 10 m^2 333	Spanish Mackerel Under 10 m^2 505	Spanish Mackerel Station Area 333	Spanish Mackerel Station Area 505
					mesh size					
BSST '76 May - June Continued.										
I2	42	$2.33\text{X}10^{10}$	19.5	37.7	$4.54\text{X}10^{10}$	$8.78\text{X}10^{10}$				
I3	134	$1.35\text{X}10^{10}$	5.5	10.7	$7.43\text{X}10^{9}$	$1.45\text{X}10^{10}$				
II1	22	$1.92\text{X}10^{10}$	2.1	4.2	$4.03\text{X}10^{9}$	$8.06\text{X}10^{9}$	6.2	2.1	$1.19\text{X}10^{10}$	$4.03\text{X}10^{9}$
II2	49	$9.68\text{X}10^{9}$	19.9	16.6	$1.93\text{X}10^{10}$	$1.61\text{X}10^{10}$				
II3	131	$4.37\text{X}10^{9}$	33.9		$1.48\text{X}10^{10}$					
II4	34	$1.04\text{X}10^{10}$	6.9		$7.18\text{X}10^{9}$			3.7		$3.85\text{X}10^{9}$
II5	78	$7.08\text{X}10^{9}$	20.1	7.3	$1.42\text{X}10^{10}$	$5.17\text{X}10^{9}$				
II6	98	$6.99\text{X}10^{9}$	4.1		$2.87\text{X}10^{9}$		4.1		$2.87\text{X}10^{9}$	
II7	183	$5.69\text{X}10^{9}$	2.1		$1.20\text{X}10^{9}$		2.1		$1.20\text{X}10^{9}$	
III2	65	$2.14\text{X}10^{10}$		6.9		$1.48\text{X}10^{10}$				
III3	106	$1.69\text{X}10^{10}$	3.3	9.5	$5.58\text{X}10^{9}$	$1.61\text{X}10^{10}$				
IV2	47	$2.62\text{X}10^{10}$	2.2		$5.76\text{X}10^{9}$					
Number of larvae per cruise					$1.35\text{X}10^{11}$	$1.66\text{X}10^{11}$			$1.96\text{X}10^{10}$	$7.88\text{X}10^{9}$

TABLE36: Continued.

			King Mackerel				Spanish Mackerel			
			Under 10 m^2		Station Area		Under 10 m^2		Station Area	
Station	Depth	Area m^2	333	505	333	505	333	505	333	505
						mesh size				
BSST '76 July										
II1	22	1.92×10^{10}					6.4	4.2	1.23×10^{10}	8.06×10^{9}
II2	49	9.68×10^{9}	41.1	35.7	3.98×10^{10}	3.47×10^{10}	1.7	1.6	1.65×10^{9}	1.55×10^{9}
II3	131	4.37×10^{9}	3.2	3.0	1.40×10^{9}	1.31×10^{9}				
II4	34	1.04×10^{10}	7.3	3.4	7.59×10^{9}	3.54×10^{9}	3.6		3.74×10^{9}	
II5	78	7.08×10^{9}	2.9		2.05×10^{9}					
II6	98	6.99×10^{9}		3.5		2.45×10^{9}				
Number of larvae per cruise					5.08×10^{10}	4.20×10^{10}			1.77×10^{10}	9.61×10^{9}
BSST '76 August										
II1	22	1.92×10^{10}					5.5	5.1	1.06×10^{10}	9.79×10^{9}
II2	49	9.68×10^{9}	5.6	5.1	5.42×10^{9}	4.94×10^{9}		2.5		2.42×10^{9}
II3	131	4.37×10^{9}	30.4	33.5	1.33×10^{10}	1.46×10^{10}				
II4	34	1.04×10^{10}	5.6		5.82×10^{9}		8.5		8.84×10^{9}	
II5	78	7.08×10^{9}	6.9		4.89×10^{9}					
II6	98	6.99×10^{9}	20.5	6.1	1.43×10^{10}	4.26×10^{9}	6.8		4.75×10^{9}	

TABLE 36 Continued.

Station	Depth	Area m^2	King Mackerel Under 10 m^2 333	King Mackerel Under 10 m^2 505	King Mackerel Station Area 333	King Mackerel Station Area 505	Spanish Mackerel Under 10 m^2 333	Spanish Mackerel Under 10 m^2 505	Spanish Mackerel Station Area 333	Spanish Mackerel Station Area 505
					mesh size					
BSST '76 August Continued.										
II6	98	$6.99X10^9$	20.5	6.1	$1.43X10^{10}$	$4.26X10^9$	6.8		$4.75X10^9$	
II7	183	$5.69X10^9$	16.9	5.5	$9.62X10^9$	$3.13X10^9$				
Number of larvae per cruise					$5.34X10^{10}$	$2.69X10^{10}$			$2.42X10^{10}$	$1.22X10^{10}$
BSST '76 September										
I1	18	$2.29X10^{10}$					6.6		$1.51X10^{10}$	
I2	42	$2.33X10^{10}$	14.1	8.2	$3.29X10^{10}$	$1.91X10^{10}$	4.7		$1.10X10^{10}$	
I3	134	$1.35X10^{10}$	2.8		$3.78X10^9$					
II2	49	$9.68X10^9$	13.2	24.6	$1.27X10^{10}$	$2.38X10^{10}$				
II3	131	$4.37X10^9$	30.4		$1.33X10^{10}$					
II4	34	$1.04X10^{10}$	15.8	1.5	$1.64X10^{10}$	$1.56X10^9$				
II5	78	$7.08X10^9$	23.4	44.0	$1.66X10^{10}$	$3.12X10^{10}$	2.9		$2.05X10^9$	
II6	98	$6.99X10^9$	47.6	35.6	$3.33X10^{10}$	$2.49X10^{10}$				
II7	183	$5.69X10^9$	80.9	56.7	$4.60X10^{10}$	$3.23X10^{10}$				

TABLE 36: Continued.

			King Mackerel				Spanish Mackerel			
			Under 10 m^2		Station Area		Under 10 m^2		Station Area	
Station	Depth	Area m^2	333	505	333	505	333	505	333	505
			mesh size							
BSST '76 September Continued.										
III1	25	$2.99X10^{10}$	1.5		$4.49X10^{9}$		12.0	5.8	$3.59X10^{10}$	$1.73X10^{10}$
III2	65	$2.14X10^{10}$	106.7	43.5	$2.28X10^{11}$	$9.31X10^{10}$				
III3	106	$1.69X10^{10}$	35.1	31.6	$5.93X10^{10}$	$5.34X10^{10}$				
IV1	27	$3.02X10^{10}$	9.0	6.4	$2.72X10^{10}$	$1.93X10^{10}$	2.2		$6.64X10^{9}$	
IV2	47	$2.62X10^{10}$	3.2		$8.38X10^{9}$					
IV3	91	$2.36X10^{10}$	16.8	10.6	$3.96X10^{10}$	$2.50X10^{10}$				
Number of larvae per cruise					$5.42X10^{11}$	$3.24X10^{11}$			$7.07X10^{10}$	$1.73X10^{10}$
BSST '77 May										
I1	18	$2.29X10^{10}$					10.9		$2.50X10^{10}$	
II1	22	$1.92X10^{10}$					24.1		$4.63X10^{10}$	
II3	131	$4.37X10^{9}$	7.1	3.4	$3.08X10^{9}$	$1.47X10^{9}$				
II4	34	$1.04X10^{10}$	2.5		$2.57X10^{9}$		9.9		$1.03X10^{10}$	
II5	78	$7.08X10^{9}$		2.7		$1.90X10^{9}$				
II7	183	$5.69X10^{9}$	2.7		$1.48X10^{9}$					

TABLE 36: Continued.

Station	Depth	Area m^2	King Mackerel Under 10 m^2 333	King Mackerel Under 10 m^2 505	King Mackerel Station Area 333	King Mackerel Station Area 505	Spanish Mackerel Under 10 m^2 333	Spanish Mackerel Under 10 m^2 505	Spanish Mackerel Station Area 333	Spanish Mackerel Station Area 505
BSST '77 May Continued.										
III2	65	$2.14X10^{10}$					9.9		$2.12X10^{10}$	
III3	106	$1.69X10^{10}$					3.2		$5.34X10^{9}$	
IV1	27	$3.02X10^{10}$					2.0		$1.16X10^{10}$	
IV3	91	$2.36X10^{10}$	2.9	2.7	$6.90X10^{9}$	$6.40X10^{9}$				
Number of larvae per cruise					$1.88X10^{10}$	$1.21X10^{10}$			$1.29X10^{11}$	
BSST '77 July										
II1	22	$1.92X10^{10}$		4.5		$8.59X10^{9}$	2.9	4.5	$5.63X10^{9}$	$8.59X10^{9}$
II2	49	$9.68X10^{9}$	5.0		$4.81X10^{9}$					
II3	131	$4.37X10^{9}$					2.2		$9.67X10^{8}$	

TABLE 36: Continued.

			King Mackerel				Spanish Mackerel			
			Under 10 m^2		Station Area		Under 10 m^2		Station Area	
Station	Depth	Area m^2	333	505	333	505	333	505	333	505
						mesh size				
BSST '77 July Continued										
II4	34	$1.04X10^{10}$		1.6		$1.70X10^{9}$				
II5	78	$7.08X10^{9}$		15.3		$1.08X10^{10}$				
II7	183	$5.69X10^{9}$	2.4	2.5	$1.36X10^{9}$	$1.39X10^{9}$				
Number of larvae per cruise					$6.17X10^{10}$	$2.25X10^{10}$			$6.60X10^{9}$	$8.59X10^{9}$
BSST '77 August										
II1	22	$1.92X10^{10}$	3.5	1.6	$6.71X10^{9}$	$2.98X10^{9}$	3.5	3.1	$6.71X10^{9}$	$5.97X10^{9}$
II3	131	$4.37X10^{9}$	12.8	3.8	$3.72X10^{9}$	$1.67X10^{9}$				
II5	78	$7.08X10^{9}$	5.7	4.9	$4.02X10^{9}$	$3.50X10^{9}$				
II6	98	$6.99X10^{9}$	3.9		$2.72X10^{9}$					
II7	183	$5.69X10^{9}$		3.5		$1.99X10^{9}$				
Number of larvae per cruise			25.9	13.8	$1.72X10^{10}$	$1.01X10^{10}$	3.5	3.1	$6.71X10^{9}$	$5.97X10^{9}$
BSST '77 September										
I1	18	$2.29X10^{10}$						1.98		$4.54X10^{9}$
I2	42	$2.33X10^{10}$	7.2		$1.12X10^{10}$			4.77		$1.11X10^{10}$

TABLE 36: Continued.

Station	Depth	Area m^2	King Mackerel Under 10 m^2 333	King Mackerel Under 10 m^2 505	King Mackerel Station Area 333	King Mackerel Station Area 505	Spanish Mackerel Under 10 m^2 333	Spanish Mackerel Under 10 m^2 505	Spanish Mackerel Station Area 333	Spanish Mackerel Station Area 505
			mesh size							
BSST '77 September Continued										
I3	134	$1.35X10^{10}$	19.1	33.8	$2.58X10^{10}$	$4.56X10^{10}$				
II2	49	$9.68X10^{9}$	11.4	2.8	$1.10X10^{10}$	$2.71X10^{9}$	2.8	5.6	$2.75X10^{9}$	$5.42X10^{9}$
II3	131	$4.37X10^{9}$	100.0	69.9	$4.36X10^{10}$	$3.05X10^{10}$	12.0		$5.24X10^{9}$	
II5	78	$7.08X10^{9}$	60.1	28.2	$4.25X10^{10}$	$1.99X10^{10}$	3.3	3.1	$2.36X10^{9}$	$2.22X10^{9}$
II6	98	$6.99X10^{9}$	32.1	11.9	$2.24X10^{10}$	$8.32X10^{9}$				
II7	183	$5.69X10^{9}$	131.0	28.1	$7.45X10^{10}$	$3.38X10^{10}$				
III1	25	$2.99X10^{10}$					1.9		$5.75X10^{9}$	
III2	65	$2.14X10^{10}$	74.5	19.3	$7.85X10^{10}$	$4.13X10^{10}$	12.2	7.2	$2.61X10^{10}$	$1.55X10^{9}$
III3	106	$1.69X10^{10}$	36.7	70.3	$1.25X10^{11}$	$1.19X10^{11}$		11.7		$1.98X10^{10}$
IV2	47	$2.62X10^{10}$					15.1		$3.94X10^{10}$	
IV3	91	$2.36X10^{10}$	2.4	2.4	$5.67X10^{9}$	$5.41X10^{9}$				
Number of larvae per cruise					$4.40X10^{11}$	$3.06X10^{11}$			$4.22X10^{10}$	$4.45X10^{10}$

Table36: Continued.

			King Mackerel				Spanish Mackerel			
			Under 10 m		Station Area		Under 10 m		Station Area	
Station	Depth	Area m	333	505	333	505	333	505	333	505
						mesh size				
BSST '77 September Continued										
I3	134	$1.35X10^{10}$	19.1	33.8	$2.58X10^{10}$	$4.56X10^{10}$				
II2	49	$9.68X10^{9}$	11.4	2.8	$1.10X10^{10}$	$2.71X10^{9}$	2.8	5.6	$2.75X10^{9}$	$5.42X10^{9}$
II3	131	$4.37X10^{9}$	100.0	69.9	$4.36X10^{10}$	$3.05X10^{10}$	12.0		$5.24X10^{9}$	
II5	78	$7.08X10^{9}$	60.1	28.2	$4.25X10^{10}$	$1.99X10^{10}$	3.3	3.1	$2.36X10^{9}$	$2.22X10^{9}$
II6	98	$6.99X10^{9}$	32.1	11.9	$2.24X10^{10}$	$8.32X10^{9}$				
II7	183	$5.69X10^{9}$	131.0	28.1	$7.45X10^{10}$	$3.38X10^{10}$				
III1	25	$2.99X10^{10}$					1.9		$5.75X10^{9}$	
III2	65	$2.14X10^{10}$	74.5	19.3	$7.85X10^{10}$	$4.13X10^{10}$	12.2	7.2	$2.61X10^{10}$	$1.55X10^{9}$
III3	106	$1.69X10^{10}$	36.7	70.3	$1.25X10^{11}$	$1.19X10^{11}$		11.7		$1.98X10^{10}$
IV2	47	$2.62X10^{10}$					15.1		$3.94X10^{10}$	
IV3	91	$2.36X10^{10}$	2.4	2.4	$5.67X10^{9}$	$5.41X10^{9}$				
Number of larvae per cruise					$4.40X10^{11}$	$3.06X10^{11}$			$4.22X10^{10}$	$4.45X10^{10}$

(1) SMS '75 = Special mackerel cruise for 1975

(2) BSST '75, BSST '76, BSST '77 = Baseline survey of the south Texas outer continental shelf for 1975, 1976, 1977.

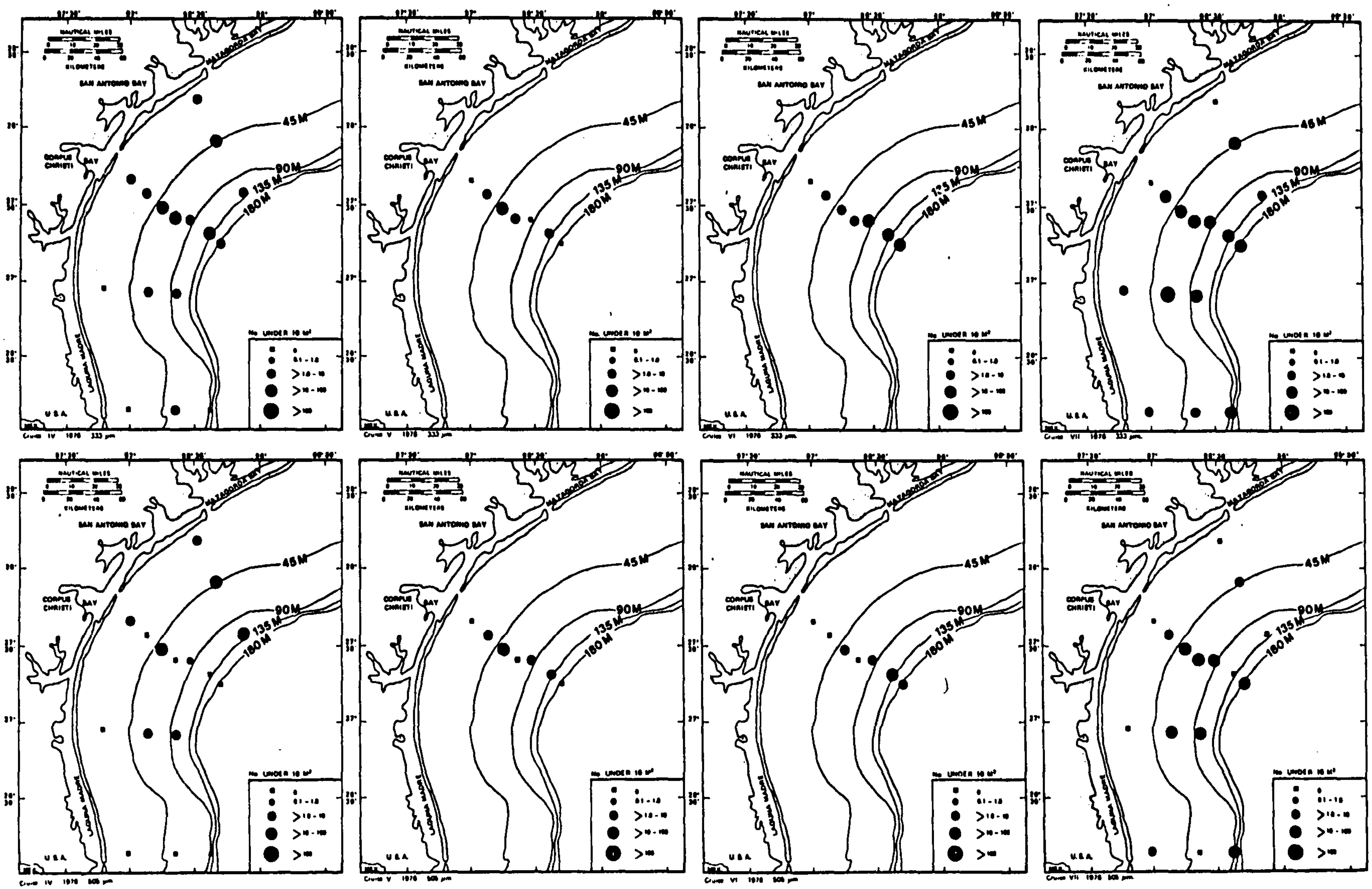


Figure 147. Estimated abundance of king mackerel larvae under 10 m^2 of sea surface at each station during the May-June (IV), July (V), August (VI), and September (VII) cruises of the 1976 baseline survey of the south Texas outer continental shelf. Estimates for 333μ mesh net above and estimates for 505μ mesh net below.

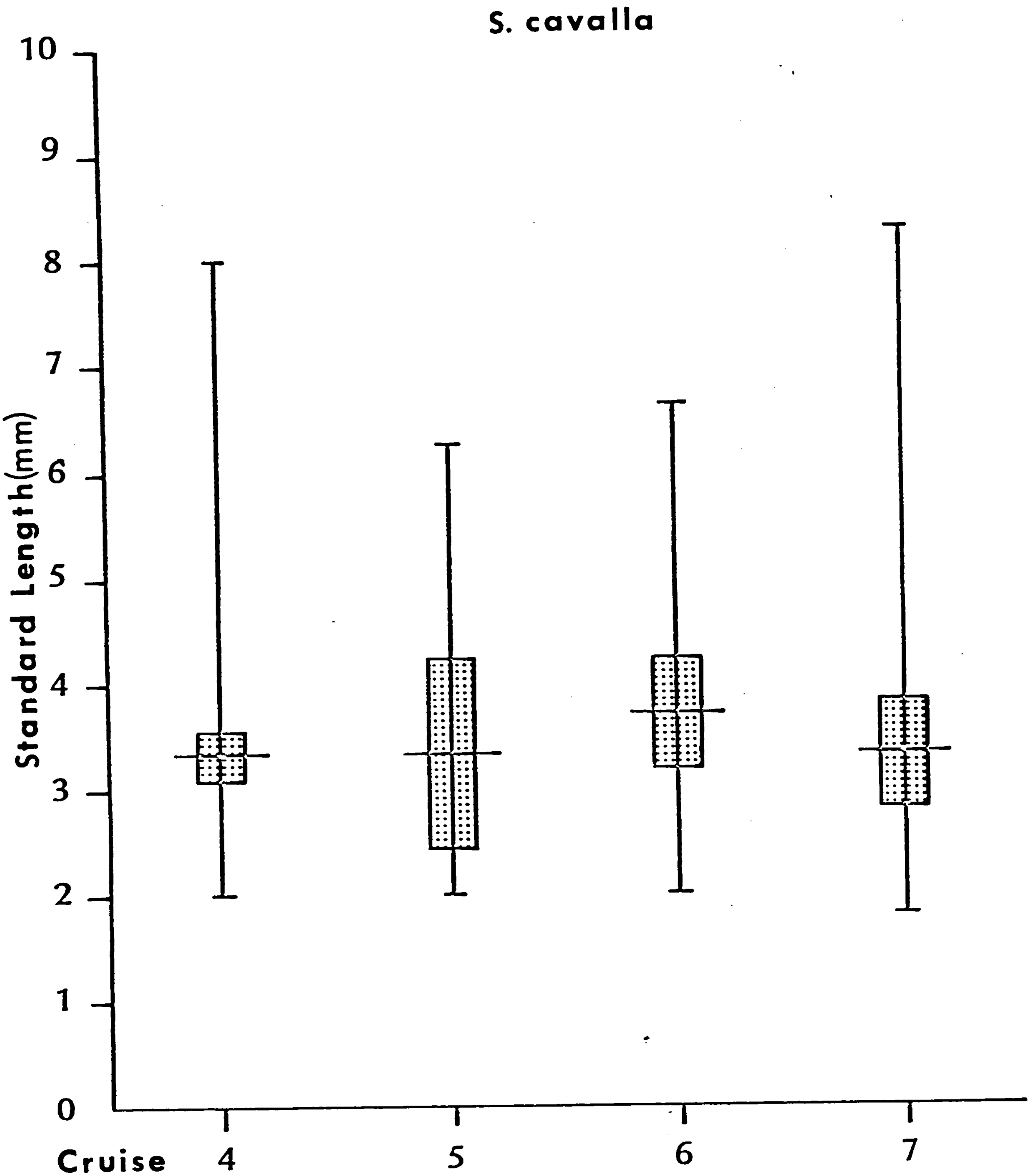


Figure 148. Standard length (mm) of king mackerel larvae captured on the May-June (4), July (5), August (6) and September (7) cruises of the 1976 baseline survey of the south Texas outer continental shelf. Mesh sizes (333 µ, 505 µ) within stations were combined. Horizontal line = mean, vertical line = range, stippled bar = 95% confidence interval.

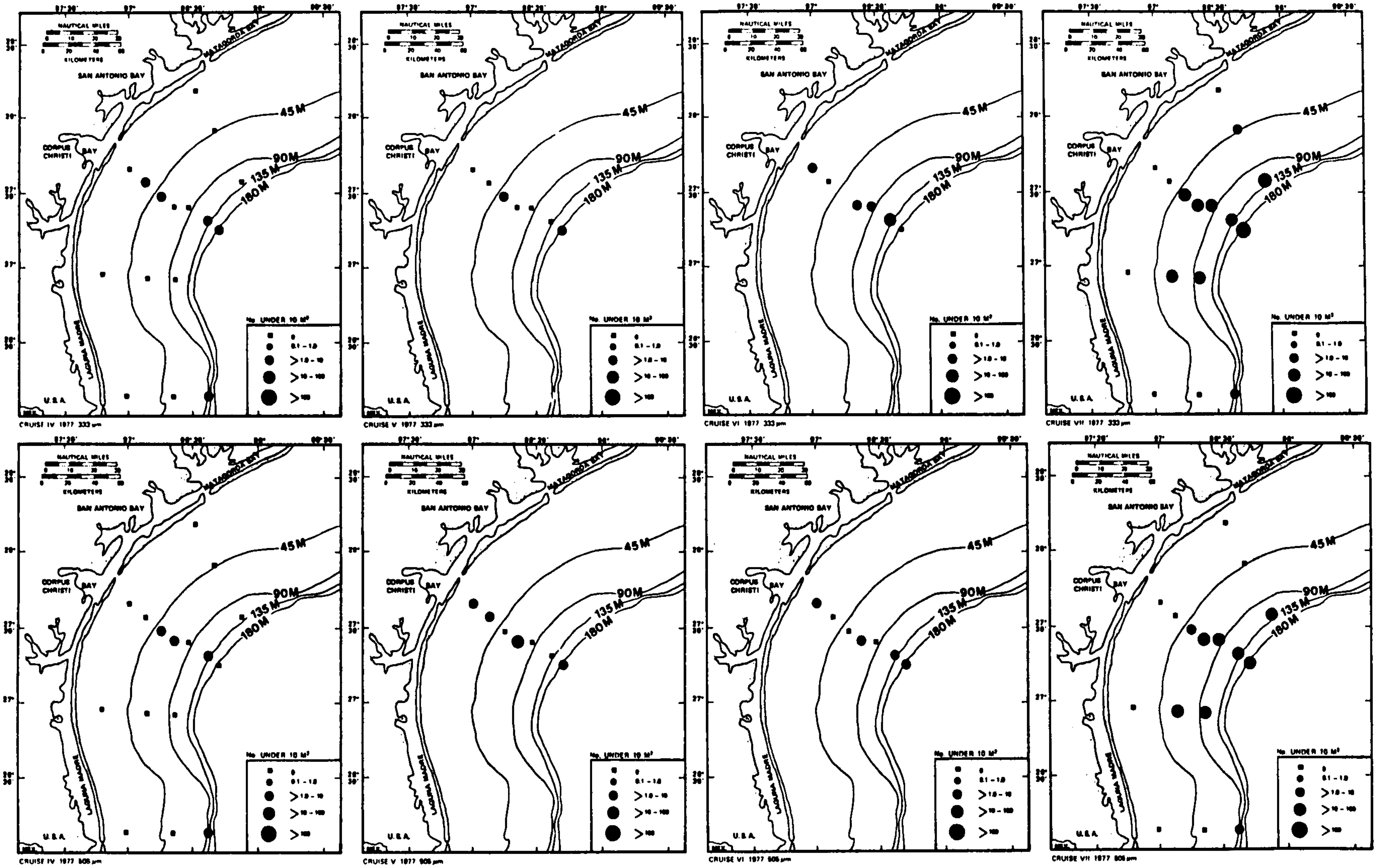


Figure 149. Estimated abundance of king mackerel larvae under 10 m^2 of sea surface at each station during the May (IV), July (V), August (VI) and September (VII) cruises of the 1977 baseline survey of the south Texas outer continental shelf. Estimates for 333μ mesh net above and estimates for 505μ mesh net below.

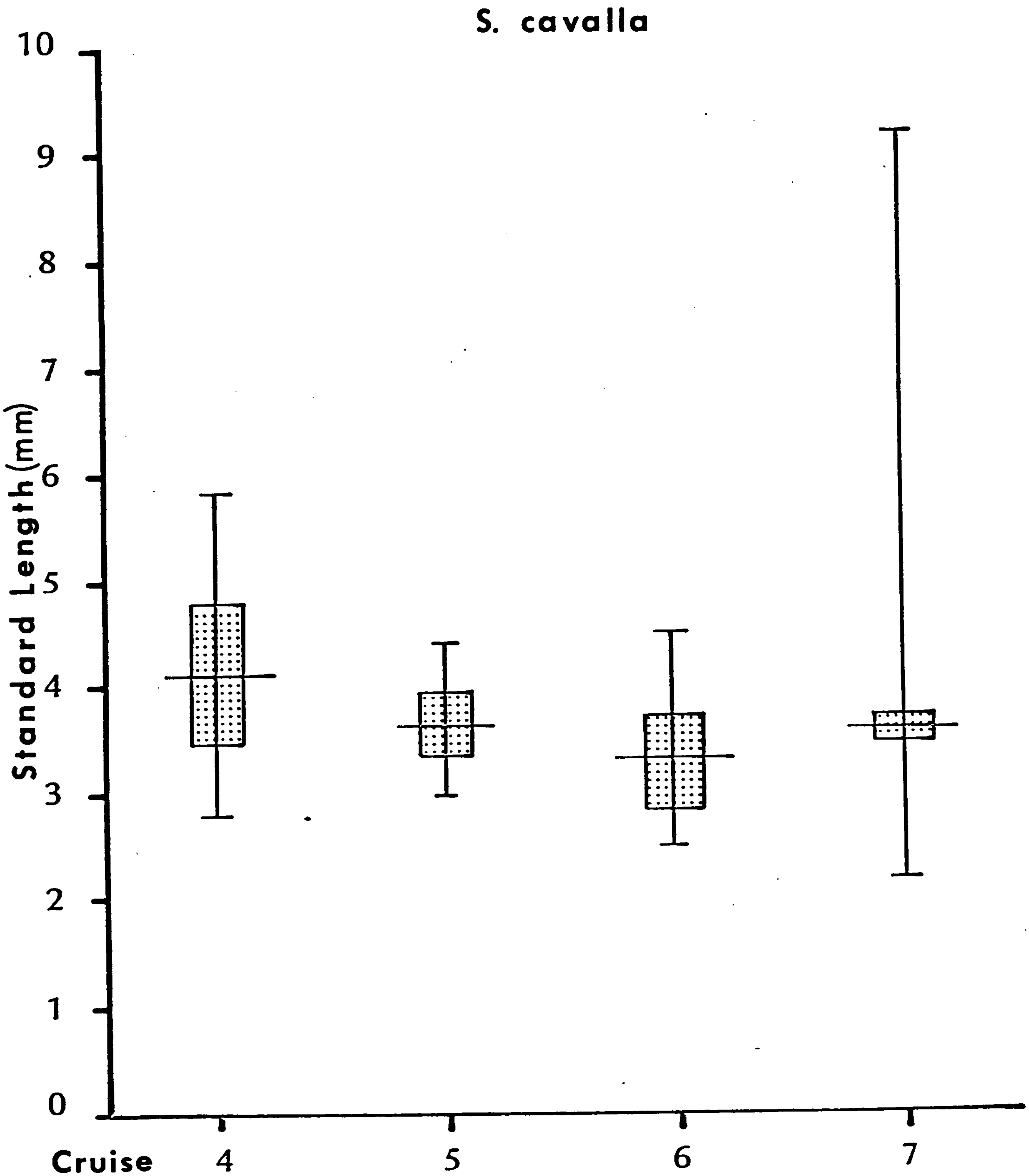


Figure 150. Standard length (mm) of king mackerel larvae captured on the May (4), July (5), August (6) and September (7) cruises of the 1977 baseline survey of the south Texas outer continental shelf. Mesh sizes (333 μ , 505 μ) within stations were combined. Horizontal line = mean, vertical line = range, stippled bar = 95% confidence interval.

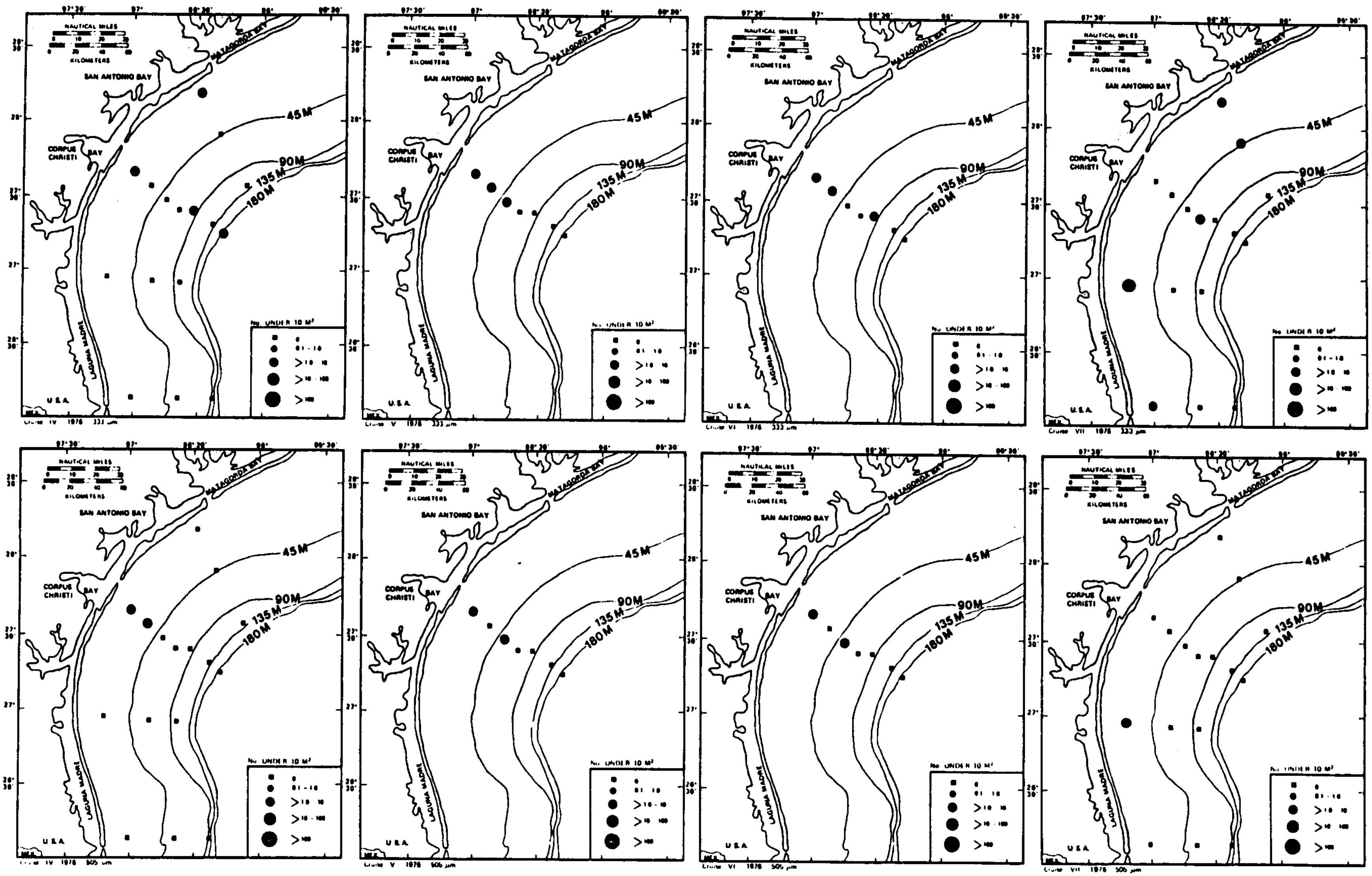


Figure 151. Estimated abundance of Spanish mackerel larvae under 10 m^2 of sea surface at each station during the May-June (IV), July (V), August (VI) and September (VII) cruises of the 1976 baseline survey of the south Texas outer continental shelf. Estimates for 333μ mesh net above and 505μ mesh net below.

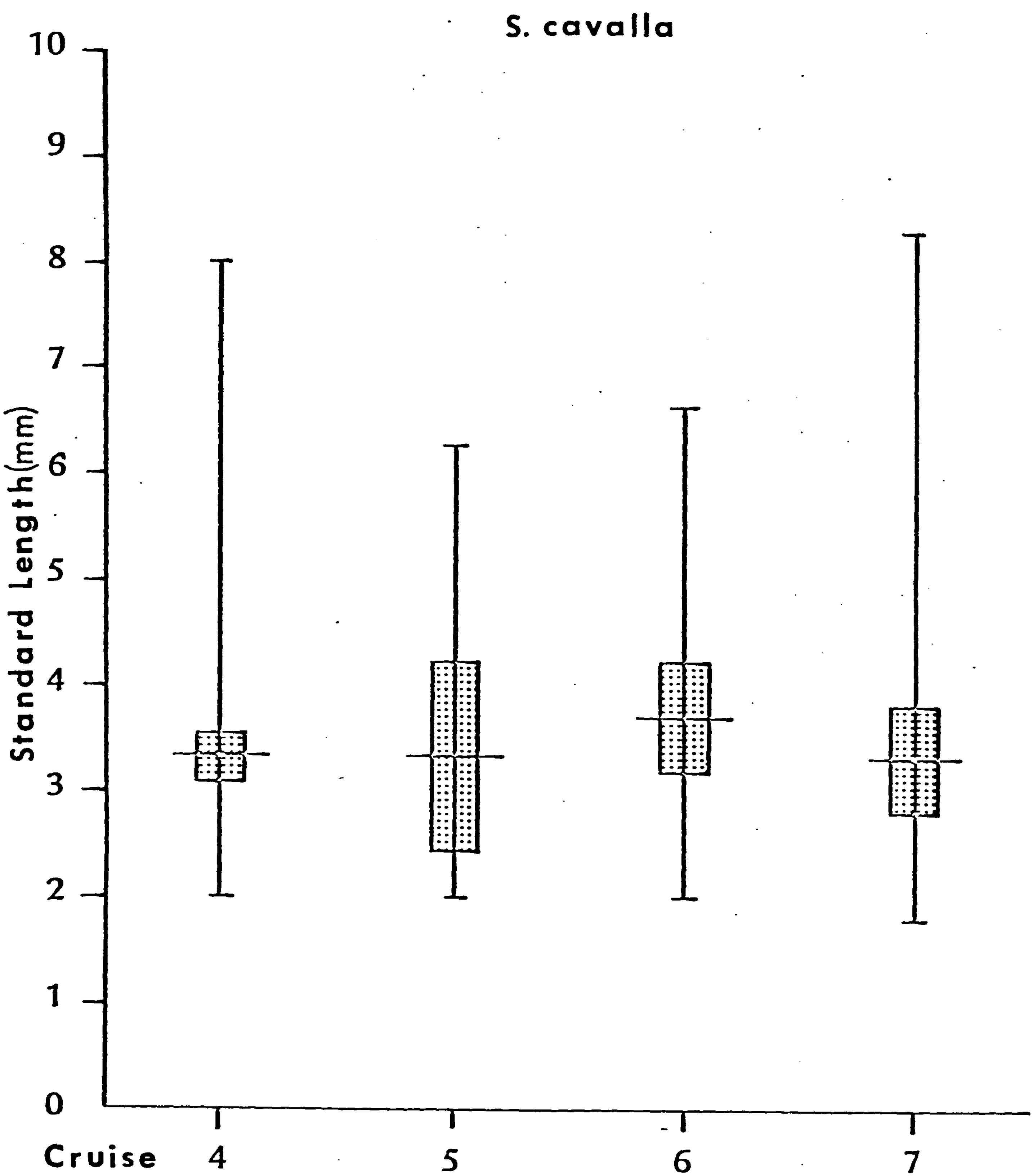


Figure 152. Standard length (mm) of Spanish mackerel larvae captured on the May-June (4), July (5), August (6) and September (7) cruises of the 1976 baseline survey of the south Texas outer continental shelf. Mesh sizes (333μ, 505μ) within stations were combined. Horizontal line = mean, vertical line = range, stippled bar = 95% confidence interval.

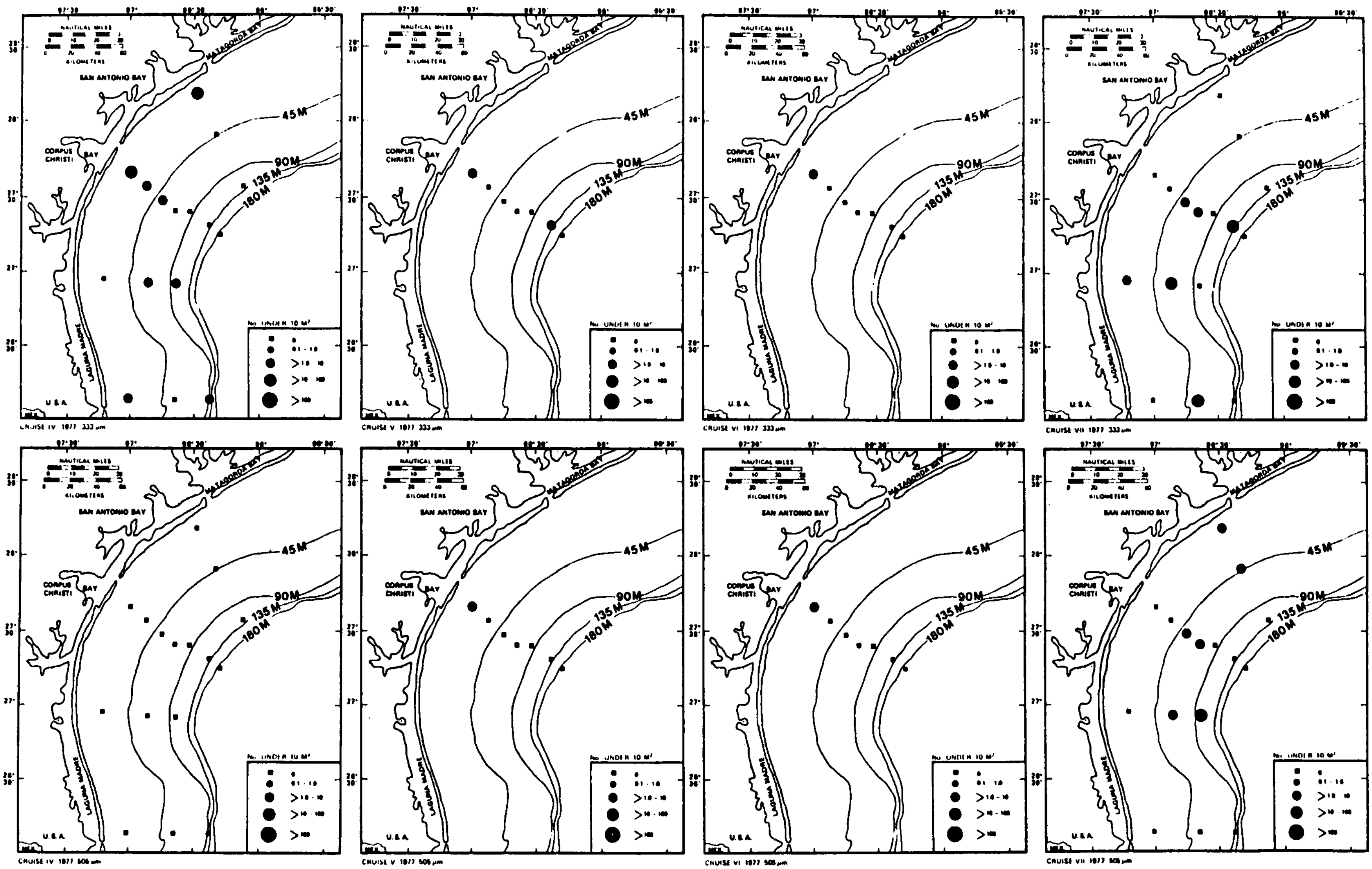


Figure 153. Estimated abundance of Spanish mackerel larvae under 10 m^2 of sea surface at each station during the May (IV), July (V), August (VI) and September (VII) cruises of the 1977 baseline survey of the south Texas outer continental shelf. Estimates for 333μ mesh net above and estimates for 505μ mesh net below.

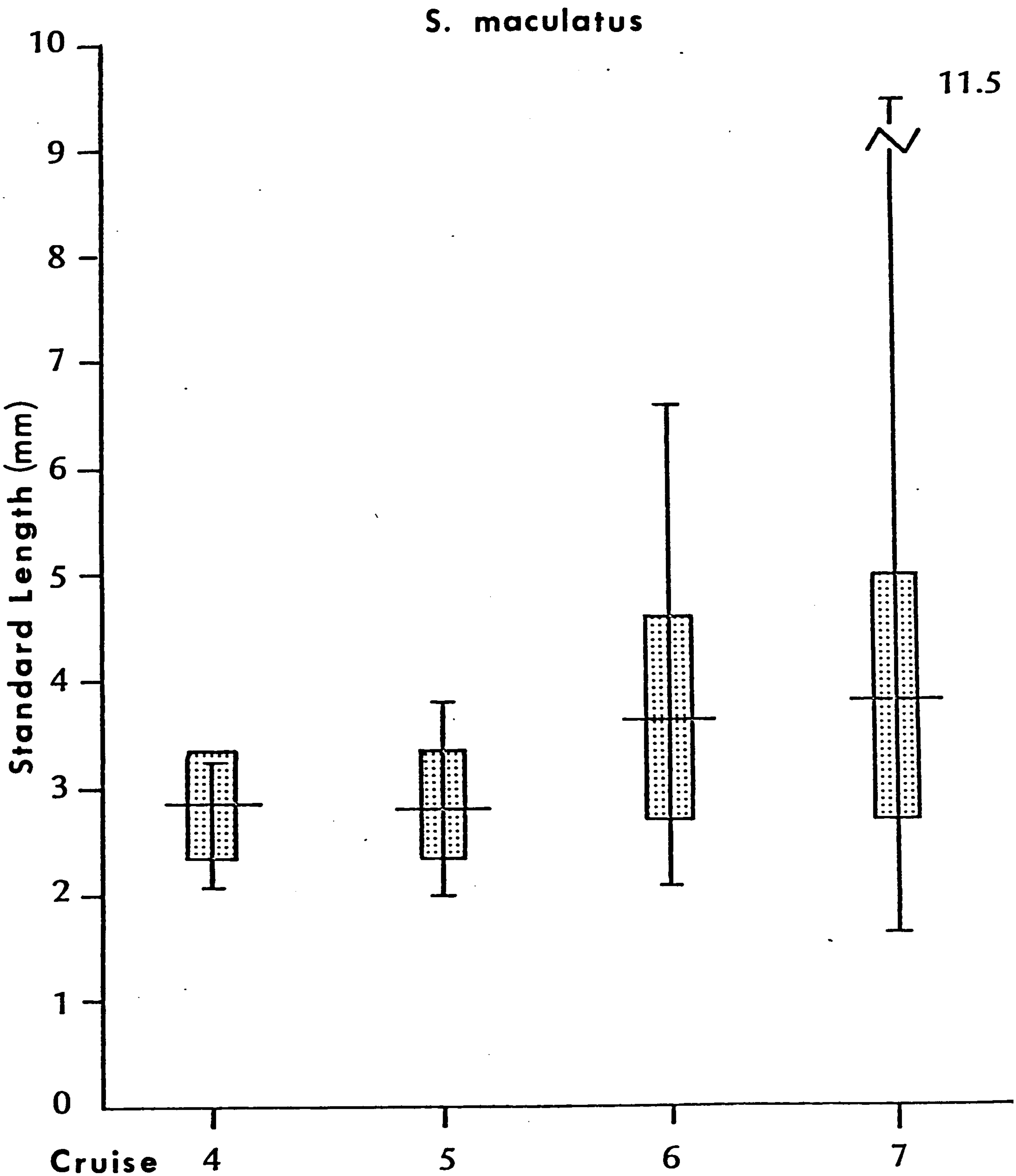


Figure 154. Standard length (mm) of Spanish mackerel larvae captured on the May (4), July (5), August (6) and September (7) cruises of the 1977 baseline survey of the south Texas outer continental shelf. Mesh sizes (333 μ, 505 μ) within stations were combined. Horizontal line = mean, vertical line = range, stippled bar = 95% confidence interval.

SPECIAL APPENDIX

(Table 1)

Appendix table 1. Identification, calculated numbers and size range of ichthyoplankton obtained from 1977 BLM plankton samples by date, transect, station and mesh size.

Date (1977)	Transect and station	Mesh size (μ)	Number eggs per 1,000 m^3	Larvae	Number larvae per 1,000 m^3	Min. size (mm)	Max. size (mm)
1/21	I-1	505	0	Bregmacerotidae - *Bregmaceros atlanticus*	42	28.6	33.0
1/21	I-1	333	22	Clupeidae	22	6.8	6.8
				Clupeidae - *Brevoortia* sp.	22	19.0	19.0
				Sciaenidae - *Leiostomus xanthurus*	43	6.1	7.2
				Unknown	22	3.8	3.8
1/21	I-2	505	1,333	Bothidae	30	3.4	4.6
				Bothidae - *Paralichthys* sp.	20	4.7	5.7
				Branchiostegidae - *Caulolatilus* sp.	40	2.3	2.7
				Bregmacerotidae - *Bregmaceros* sp.	10	3.2	3.2
				Bregmacerotidae - *Bregmaceros atlanticus*	59	2.7	6.6
				Carangidae - *Trachurus lathami*	158	2.6	4.6
				Clupeidae	1,757	3.5	8.2
				Clupeidae - *Brevoortia* sp.	20	10.1	13.9
				Clupeidae - *Etrumeus teres*	247	6.9	18.0
				Gobiidae	20	3.6	4.1
				Gonostomatidae - *Vinciguerria* sp.	10	7.2	7.2
				Myctophidae - *Diaphus* sp.	20	3.9	3.9
				Myctophidae - *Lampanyctus* sp.	10	4.0	4.0
				Sciaenidae - *Leiostomus xanthurus*	49	3.1	4.0
				Serranidae	247	2.8	5.3
				Serranidae - *Diplectrum* sp.	10	3.4	3.4
				Sparidae	1,412	2.3	6.0
				Stromateidae - *Peprilus burti*	138	2.4	5.2
				Triglidae - *Prionotus* sp.	49	2.3	4.5
				Unknown	89	2.4	4.7

Appendix table 1. (Continued)

Date (1977)	Transect and station	Mesh size (μ)	Number eggs per 1,000 m^3	Larvae	Number larvae per 1,000 m^3	Min. size (mm)	Max. size (mm)
1/21	I-2	333	1,409	Bothidae	31	2.6	8.8
				Bothidae - *Paralichthys* sp.	94	2.8	5.0
				Branchiostegidae - *Caulolatilus* sp.	42	2.2	2.4
				Bregmacerotidae - *Bregmaceros atlanticus*	73	2.6	4.8
				Carangidae - *Trachurus lathami*	198	2.5	3.9
				Clupeidae	2,025	3.2	9.4
				Clupeidae - *Etrumeus teres*	219	6.0	16.0
				Congridae - *Hildebrandia* sp.	10	21.5	21.5
				Ephippidae	10	2.8	2.8
				Gobiidae	10	2.7	2.7
				Gonostomatidae - *Vinciguerria* sp.	10	5.6	5.6
				Myctophidae - *Diaphus* sp.	42	3.5	4.5
				Myctophidae - *Hygophum* sp.	10	5.0	5.0
				Myctophidae - *Lampanyctus* sp.	10	3.5	3.5
				Myctophidae - *Myctophum* sp.	21	3.5	5.0
				Ophidiidae	10	3.7	3.7
				Sciaenidae	251	2.3	3.4
				Serranidae	459	2.3	4.6
				Serranidae - *Centropristis* sp.	21	5.3	5.8
				Sparidae	1,315	2.1	5.9
				Sparidae - *Lagodon rhomboides*	94	4.0	6.9
				Stromateidae - *Peprilus burti*	386	1.9	3.3
				Synodontidae	10	2.5	2.5
				Synodontidae - *Saurida* sp.	31	3.1	4.1
				Triglidae - *Prionotus* sp.	31	2.5	3.0
				Unknown	303	2.0	5.8
2/21	I-3	505	619	Bothidae - *Citharichthys* sp.	3	8.7	8.7
				Branchiostegidae - *Caulolatilus* sp.	3	2.7	2.7
				Bregmacerotidae - *Bregmaceros* sp.	3	5.0	5.0

Appendix table 1. (Continued)

Date (1977)	Transect and station	Mesh size (μ)	Number eggs per 1,000 m^3	Larvae	Number larvae per 1,000 m^3	Min. size (mm)	Max. size (mm)
2/21	I-3	505		Bregmacerotidae - *Bregmaceros atlanticus*	40	2.5	12.7
				Carangidae - *Trachurus lathami*	111	2.1	6.2
				Clupeidae	177	3.6	11.0
				Clupeidae - *Etrumeus teres*	43	7.1	19.0
				Gobiidae	128	5.7	8.2
				Gonostomatidae - *Cyclothone* sp.	17	6.0	10.0
				Gonostomatidae - *Gonostomus atlanticum*	9	4.3	6.0
				Gonostomatidae - *Maurolicus* sp.	83	2.5	7.5
				Gonostomatidae - *Vinciguerria* sp.	46	5.5	13.0
				Myctophidae	63	2.0	6.0
				Myctophidae - *Benthosema suborbitale*	97	3.2	9.3
				Myctophidae - *Ceratoscopelus* sp.	57	2.4	5.6
				Myctophidae - *Ceratoscopelus maderensis*	11	4.5	6.0
				Myctophidae - *Ceratoscopelus warmingi*	11	5.1	6.4
				Myctophidae - *Diaphus* sp.	26	3.1	5.5
				Myctophidae - *Diogenichthys atlanticus*	3	6.8	6.8
				Myctophidae - *Hygophum* sp.	91	3.1	7.0
				Myctophidae - *Lampanyctus* sp.	77	2.2	7.0
				Myctophidae - *Myctophum* sp.	49	3.1	12.0
				Myctophidae - *Myctophum nitidulum*	3	4.9	4.9
				Myctophidae - *Notolychnus valdiviae*	3	5.8	5.8
				Myctophidae - *Notoscopelus* sp.	6	3.8	5.3
				Scombridae - *Scomber japonicus*	29	2.5	4.6
				Scopelarchidae	3	16.5	16.5
				Serranidae	6	3.4	3.9
				Serranidae - *Centropristis* sp.	29	3.7	5.0
				Sparidae	17	2.7	4.8
				Stromateidae	3	3.3	3.3
				Stromateidae - *Peprilus burti*	6	2.6	4.3

Appendix table 1. (Continued)

Date (1977)	Transect and station	Mesh size (μ)	Number eggs per 1,000 m^3	Larvae	Number larvae per 1,000 m^3	Min. size (mm)	Max. size (mm)
2/21	I-3	505		Synodontidae - *Saurida* sp.	6	4.1	16.0
				Synodontidae - *Synodus* sp.	6	4.0	4.1
				Triglidae - *Prionotus* sp.	3	4.3	4.3
				Unknown	103	1.7	4.8
2/21	I-3	333	373	Bathylagidae - *Bathylagus* sp.	4	8.0	8.0
				Bothidae	4	7.3	7.3
				Branchiostegidae - *Caulolatilus* sp.	4	4.1	4.1
				Bregmacerotidae - *Bregmaceros atlanticus*	69	1.8	5.1
				Carangidae - *Trachurus lathami*	81	2.3	7.4
				Clupeidae	204	4.6	15.2
				Clupeidae - *Etrumeus teres*	38	9.6	21.4
				Gadidae - *Urophycis* sp.	12	2.2	3.3
				Gobiidae	115	2.7	9.0
				Gonostomatidae - *Cyclothone* sp.	15	6.4	8.6
				Gonostomatidae - *Maurolicus* sp.	65	3.0	8.5
				Gonostomatidae - *Vinciguerria* sp.	19	6.0	12.5
				Melamphaidae - *Melamphais* sp.	8	5.1	5.9
				Mugilidae - *Mugil* sp.	4	3.1	3.1
				Myctophidae	73	2.5	5.5
				Myctophidae - *Benthosema suborbitale*	65	4.2	13.0
				Myctophidae - *Ceratoscopelus* sp.	96	2.7	5.7
				Myctophidae - *Diaphus* sp.	8	3.7	5.0
				Myctophidae - *Diogenichthys atlanticus*	35	3.9	6.8
				Myctophidae - *Hygophum* sp.	42	4.5	7.5
				Myctophidae - *Hygophum reinhardti*	4	11.4	11.4
				Myctophidae - *Lampanyctus* sp.	31	3.4	10.2
				Myctophidae - *Myctophum* sp.	77	2.8	11.5
				Myctophidae - *Notolychnus valdiviae*	4	5.7	5.7
				Myctophidae - *Notoscopelus* sp.	12	4.2	5.0

Appendix table 1. (Continued)

Date (1977)	Transect and station	Mesh size (μ)	Number eggs per 1,000 m^3	Larvae	Number larvae per 1,000 m^3	Min. size (mm)	Max. size (mm)
2/21	I-3	333		Serranidae - *Centropristis* sp.	58	2.7	5.9
				Sparidae	38	2.6	3.7
				Stromateidae - *Peprilus burti*	23	2.7	5.2
				Synodontidae - *Saurida* sp.	4	3.8	3.8
				Synodontidae - *Synodus* sp.	4	3.4	3.4
				Triglidae - *Prionotus* sp.	8	3.4	6.3
				Unknown	234	1.8	4.2
1/11	II-1	505	19	Clupeidae	111	5.1	8.7
				Clupeidae - *Etrumeus teres*	19	16.5	16.5
				Sciaenidae - *Leiostomus xanthurus*	37	6.7	7.7
1/11	II-1	333	53	Clupeidae	18	15.0	15.0
				Clupeidae - *Etrumeus teres*	18	21.5	21.5
				Sciaenidae	35	6.3	6.5
1/11	II-2	505	1,089	Bothidae	86	3.5	7.7
				Bothidae - *Paralichthys* sp.	26	3.0	3.5
				Bregmacerotidae - *Bregmaceros* sp.	9	32.0	32.0
				Bregmacerotidae - *Bregmaceros atlanticus*	17	5.6	11.4
				Carangidae - *Trachurus lathami*	104	2.5	3.8
				Clupeidae	501	4.2	9.9
				Clupeidae - *Brevoortia* sp.	26	8.0	15.0
				Clupeidae - *Etrumeus teres*	147	5.6	16.5
				Gobiidae	9	7.6	7.6
				Myctophidae - *Hygophum* sp.	9	4.1	4.1
				Myctophidae - *Myctophum* sp.	9	6.2	6.2
				Sciaenidae	17	2.8	4.5
				Sciaenidae - *Leiostomus xanthurus*	61	4.2	5.5
				Serranidae	43	2.6	3.6

Appendix table 1. (Continued)

Date (1977)	Transect and station	Mesh size (μ)	Number eggs per 1,000 m^3	Larvae	Number larvae per 1,000 m^3	Min. size (mm)	Max. size (mm)
1/11	II-2	505		Sparidae	199	2.4	8.3
				Stromateidae - *Peprilus burti*	130	2.4	5.2
				Synodontidae - *Saurida* sp.	9	3.8	3.8
				Triglidae - *Prionotus stearnsi*	9	26.0	26.0
				Unknown	86	2.2	3.6
1/11	II-2	333	1,647	Bothidae	74	2.8	5.0
				Bothidae - *Paralichthys* sp.	19	3.3	5.2
				Bregmacerotidae - *Bregmaceros atlanticus*	46	5.8	19.8
				Carangidae - *Trachurus lathami*	287	2.6	3.8
				Clupeidae	712	4.2	10.0
				Clupeidae - *Etrumeus teres*	148	6.9	19.3
				Gobiidae	9	3.7	3.7
				Gonostomatidae - *Maurolicus* sp.	28	4.6	7.1
				Gonostomatidae - *Vinciguerria* sp.	9	8.1	8.1
				Myctophidae - *Benthosema suborbitale*	9	4.4	4.4
				Sciaenidae - *Leiostomus xanthurus*	93	3.2	7.0
				Serranidae	157	2.4	5.0
				Sparidae	315	2.4	7.7
				Stromateidae - *Peprilus burti*	333	2.2	4.5
				Synodontidae - *Saurida* sp.	9	2.9	2.9
				Triglidae - *Prionotus* sp.	9	18.0	18.0
				Unknown	176	2.1	4.6
1/21	II-3	505	947	Bothidae	3	7.3	7.3
				Bregmacerotidae - *Bregmaceros* sp.	6	2.9	9.1
				Bregmacerotidae - *Bregmaceros atlanticus*	20	2.8	3.4
				Carangidae - *Trachurus lathami*	34	3.4	4.9
				Chauliodontidae - *Chauliodus* sp.	14	7.4	14.3
				Clupeidae	65	5.3	7.0
				Clupeidae - *Etrumeus teres*	6	6.9	6.9

Appendix table 1. (Continued)

Date (1977)	Transect and station	Mesh size (μ)	Number eggs per 1,000 m^3	Larvae	Number larvae per 1,000 m^3	Min. size (mm)	Max. size (mm)
1/21	II-3	505		Engraulidae	3	4.9	4.9
				Gadidae - *Urophycis* sp.	11	2.6	3.3
				Gobiidae	63	6.7	8.4
				Gonostomatidae - *Cyclothone* sp.	3	4.5	4.5
				Gonostomatidae - *Ichthyococcus* sp.	3	7.0	7.0
				Gonostomatidae - *Maurolicus* sp.	20	3.2	18.4
				Gonostomatidae - *Vinciguerria* sp.	14	9.5	16.0
				Myctophidae	23	3.0	5.9
				Myctophidae - *Benthosema suborbitale*	11	4.1	6.3
				Myctophidae - *Diogenichthys atlanticus*	6	4.7	5.2
				Myctophidae - *Hygophum* sp.	6	5.6	6.5
				Myctophidae - *Hygophum reinhardti*	3	5.0	5.0
				Myctophidae - *Lampanyctus* sp.	3	3.8	3.8
				Myctophidae - *Myctophum* sp.	3	3.8	3.8
				Myctophidae - *Notolychnus valdiviae*	3	4.9	4.9
				Serranidae	3	4.6	4.6
				Stromateidae	3	3.8	3.8
				Triglidae - *Prionotus* sp.	3	4.7	4.7
				Unknown	28	2.3	46.5
1/21	II-3	333	1,162	Bothidae	3	8.1	8.1
				Bothidae - *Bothus ocellatus*	3	12.4	12.4
				Bregmacerotidae - *Bregmaceros* sp.	16	2.5	3.7
				Bregmacerotidae - *Bregmaceros atlanticus*	28	2.7	31.0
				Carangidae - *Trachurus lathami*	90	2.1	5.5
				Chauliodontidae - *Chauliodus* sp.	12	8.0	11.2
				Clupeidae	208	4.5	6.9
				Clupeidae - *Etrumeus teres*	6	7.9	8.8
				Congridae - *Hildebrandia* sp.	3	13.6	13.6
				Cynoglossidae - *Symphurus* sp.	3	4.0	4.0

Appendix table 1. (Continued)

Date (1977)	Transect and station	Mesh size (μ)	Number eggs per 1,000 m^3	Larvae	Number larvae per 1,000 m^3	Min. size (mm)	Max. size (mm)
1/21	II-3	333		Gadidae - *Urophycis* sp.	6	2.8	4.7
				Gadidae - *Urophycis floridanus*	3	16.4	16.4
				Gobiidae	81	3.9	10.1
				Gonostomatidae	12	4.2	5.9
				Gonostomatidae - *Cyclothone* sp.	3	5.5	5.5
				Gonostomatidae - *Maurolicus* sp.	84	2.9	3.9
				Gonostomatidae - *Vinciguerria* sp.	16	7.1	10.6
				Melamphaidae - *Melamphais* sp.	3	6.0	6.0
				Mugilidae - *Mugil* sp.	6	2.7	3.0
				Myctophidae	93	2.7	5.6
				Myctophidae - *Benthosema suborbitale*	9	3.3	6.1
				Myctophidae - *Ceratoscopelus* sp.	9	2.4	3.6
				Myctophidae - *Diaphus* sp.	3	4.1	4.1
				Myctophidae - *Diogenichthys atlanticus*	3	8.3	8.3
				Myctophidae - *Lampanyctus* sp.	9	3.3	4.0
				Myctophidae - *Myctophum* sp.	3	6.2	6.2
				Ophichthidae	3	60.0	60.0
				Serranidae	12	2.4	4.0
				Sparidae	3	3.8	3.8
				Stromateidae	6	3.9	4.3
				Stromateidae - *Peprilus burti*	19	2.0	2.3
				Synodontidae - *Saurida* sp.	6	2.9	3.7
				Triglidae - *Prionotus* sp.	3	5.0	5.0
				Unknown	263	2.0	6.3
1/11	II-4	505	752	Bothidae	30	4.1	4.8
				Bothidae - *Paralichthys* sp.	30	2.5	3.4
				Bregmacerotidae - *Bregmaceros atlanticus*	10	20.0	20.0
				Carangidae - *Trachurus lathami*	151	2.7	3.5
				Clupeidae	241	3.4	7.1
				Clupeidae - *Etrumeus teres*	271	5.7	20.0

Appendix table 1. (Continued)

Date (1977)	Transect and station	Mesh size (μ)	Number eggs per 1,000 m^3	Larvae	Number larvae per 1,000 m^3	Min. size (mm)	Max. size (mm)
1/11	II-4	505		Sciaenidae	80	2.3	3.2
				Sciaenidae - *Leiostomus xanthurus*	60	3.2	5.0
				Serranidae	60	2.8	3.9
				Sparidae	301	2.2	7.5
				Stromateidae - *Peprilus burti*	130	2.0	5.0
				Unknown	60	2.4	4.8
1/11	II-4	333	899	Bothidae	54	3.0	5.0
				Bothidae - *Paralichthys* sp.	65	3.2	4.1
				Bregmacerotidae - *Bregmaceros atlanticus*	33	2.2	7.7
				Carangidae - *Trachurus lathami*	368	2.6	3.6
				Clupeidae	401	4.0	8.7
				Clupeidae - *Brevoortia* sp.	11	10.3	10.3
				Clupeidae - *Etrumeus teres*	206	6.1	22.0
				Sciaenidae	119	2.4	3.6
				Sciaenidae - *Leiostomus xanthurus*	11	4.4	4.4
				Sciaenidae - *Micropogon undulatus*	43	3.0	10.0
				Serranidae	163	2.5	4.3
				Sparidae	358	2.3	5.5
				Sparidae - *Lagodon rhomboides*	65	5.0	10.7
				Stromateidae - *Peprilus burti*	163	2.8	5.6
				Triglidae - *Prionotus* sp.	11	3.4	3.4
				Unknown	249	1.8	6.9
1/12	II-5	505	1,510	Bothidae	17	5.3	5.6
				Branchiostegidae - *Caulolatilus* sp.	11	3.0	3.9
				Bregmacerotidae - *Bregmaceros atlanticus*	11	5.3	8.3
				Carangidae - *Trachurus lathami*	92	2.6	4.2
				Clupeidae	120	3.8	10.4
				Clupeidae - *Etrumeus teres*	40	7.9	11.6

Appendix table 1. (Continued)

Date (1977)	Transect and station	Mesh size (μ)	Number eggs per 1,000 m^3	Larvae	Number larvae per 1,000 m^3	Min. size (mm)	Max. size (mm)
1/12	II-5	505		Engraulidae	6	7.0	7.0
				Gadidae - *Urophycis* sp.	23	3.5	7.1
				Gobiidae	17	5.8	7.5
				Gonostomatidae - *Cyclothone* sp.	6	7.3	7.3
				Gonostomatidae - *Vinciguerria* sp.	11	4.4	14.8
				Myctophidae	46	3.5	5.5
				Myctophidae - *Diaphus* sp.	11	3.2	6.5
				Myctophidae - *Diogenichthys atlanticus*	6	4.2	4.2
				Myctophidae - *Lampanyctus* sp.	6	3.5	3.5
				Myctophidae - *Myctophum obtusirostre*	6	4.3	4.3
				Ophidiidae	6	5.3	5.3
				Scombridae	6	5.3	5.3
				Scombridae - *Scomber japonicus*	40	2.3	3.7
				Serranidae	11	3.1	3.2
				Triglidae - *Prionotus* sp.	40	3.4	6.7
				Unknown	114	2.5	13.3
1/12	II-5	333	1,368	Bothidae	12	4.8	5.6
				Branchiostegidae - *Caulolatilus* sp.	6	2.5	2.5
				Bregmacerotidae - *Bregmaceros* sp.	6	2.6	2.6
				Bregmacerotidae - *Bregmaceros atlanticus*	160	1.6	10.2
				Carangidae - *Trachurus lathami*	141	2.5	4.3
				Chauliodontidae - *Chauliodus* sp.	6	28.0	28.0
				Clupeidae	153	3.8	10.0
				Clupeidae - *Etrumeus teres*	37	5.5	17.7
				Gadidae - *Urophycis* sp.	6	4.8	4.8
				Gobiidae	37	3.0	6.9
				Gonostomatidae	25	3.0	5.5
				Gonostomatidae - *Cyclothone* sp.	12	5.0	6.3
				Gonostomatidae - *Vinciguerria* sp.	18	6.9	9.8

Appendix table 1. (Continued)

Date (1977)	Transect and station	Mesh size (μ)	Number eggs per 1,000 m³	Larvae	Number larvae per 1,000 m³	Min. size (mm)	Max. size (mm)
1/12	II-5	333		Mugilidae - *Mugil* sp.	6	4.0	4.0
				Mugilidae - *Mugil cephalus*	6	6.5	6.5
				Myctophidae	92	2.9	6.3
				Myctophidae - *Diaphus* sp.	6	3.1	3.1
				Myctophidae - *Diogenichthys atlanticus*	6	3.4	3.4
				Myctophidae - *Hygophum* sp.	37	3.3	4.5
				Myctophidae - *Hygophum reinhardti*	6	8.5	8.5
				Myctophidae - *Lampanyctus* sp.	12	3.2	3.8
				Myctophidae - *Myctophum* sp.	18	3.3	4.6
				Ophidiidae	12	2.5	7.3
				Sciaenidae - *Leiostomus xanthurus*	18	4.2	6.8
				Serranidae	74	2.3	4.8
				Sparidae	37	2.6	9.4
				Stromateidae - *Peprilus burti*	110	2.1	4.0
				Synodontidae	6	2.8	2.8
				Triglidae - *Prionotus* sp.	31	3.2	4.3
				Unknown	117	1.7	11.0
1/21	II-6	505	211	Bothidae	3	7.8	7.8
				Bregmacerotidae - *Bregmaceros* sp.	3	2.5	2.5
				Bregmacerotidae - *Bregmaceros atlanticus*	37	2.7	24.0
				Carangidae - *Trachurus lathami*	3	2.8	2.8
				Clupeidae	70	4.1	6.1
				Clupeidae - *Etrumeus teres*	3	6.3	6.3
				Gadidae - *Urophycis* sp.	10	2.8	3.5
				Gobiidae	121	5.9	14.0
				Gonostomatidae	3	4.4	4.4
				Gonostomatidae - *Maurolicus* sp.	70	3.0	10.0
				Gonostomatidae - *Vinciguerria* sp.	17	6.0	10.0
				Myctophidae	13	3.0	4.9

Appendix table 1. (Continued)

Date (1977)	Transect and station	Mesh size (μ)	Number eggs per 1,000 m^3	Larvae	Number larvae per 1,000 m^3	Min. size (mm)	Max. size (mm)
1/21	II-6	505		Myctophidae - *Benthosema suborbitale*	50	2.8	9.5
				Myctophidae - *Diaphus* sp.	3	4.3	4.3
				Myctophidae - *Diogenichthys atlanticus*	17	4.0	5.7
				Myctophidae - *Myctophum* sp.	17	4.5	5.8
				Myctophidae - *Myctophum obtusirostre*	3	3.6	3.6
				Myctophidae - *Notolychnus valdiviae*	7	5.0	5.2
				Serranidae	3	4.5	4.5
				Stromateidae - *Peprilus burti*	3	2.1	2.1
				Unknown	34	1.7	6.0
1/21	II-6	333	161	Bothidae - *Bothus ocellatus*	4	18.7	18.7
				Bothidae - *Cyclopsetta* sp.	4	3.8	3.8
				Bothidae - *Paralichthys* sp.	4	2.9	2.9
				Bregmacerotidae - *Bregmaceros atlanticus*	32	2.6	33.0
				Carangidae - *Trachurus lathami*	25	2.3	2.7
				Chauliodontidae - *Chauliodus* sp.	7	9.9	11.7
				Clupeidae	75	4.0	6.0
				Gadidae - *Urophycis* sp.	7	3.0	3.0
				Gobiidae	72	4.8	7.7
				Gonostomatidae	39	4.0	6.5
				Gonostomatidae - *Maurolicus* sp.	151	3.0	9.3
				Gonostomatidae - *Vinciguerria* sp.	22	5.9	11.5
				Mugilidae - *Mugil* sp.	7	2.9	4.8
				Myctophidae	75	2.7	5.2
				Myctophidae - *Benthosema suborbitale*	11	3.5	4.2
				Myctophidae - *Ceratoscopelus* sp.	11	2.5	3.1
				Myctophidae - *Myctophum* sp.	18	3.2	5.2
				Myctophidae - *Notolychnus valdiviae*	18	4.4	5.6
				Paralepididae - *Lestidiops* sp.	4	15.2	15.2
				Scopelarchidae	4	7.1	7.1

Appendix table 1. (Continued)

Date (1977)	Transect and station	Mesh size (μ)	Number eggs per 1,000 m^3	Larvae	Number larvae per 1,000 m^3	Min. size (mm)	Max. size (mm)
1/21	II-6	333		Sparidae	7	3.6	5.5
				Stromateidae - *Peprilus burti*	14	2.0	2.3
				Unknown	151	1.8	4.1
1/21	II-7	505	751	Bothidae	10	4.7	7.9
				Bregmacerotidae - *Bregmaceros* sp.	3	29.0	29.0
				Bregmacerotidae - *Bregmaceros atlanticus*	22	2.7	7.2
				Carangidae - *Trachurus lathami*	111	2.2	6.8
				Chauliodontidae - *Chauliodus* sp.	3	12.4	12.4
				Clupeidae	245	4.6	10.3
				Clupeidae - *Etrumeus teres*	47	5.0	10.2
				Engraulidae - *Engraulis eurystole*	3	11.4	11.4
				Gadidae - *Urophycis* sp.	7	4.5	7.7
				Gobiidae	91	6.2	8.5
				Gonostomatidae - *Cyclothone* sp.	7	3.5	10.0
				Gonostomatidae - *Vinciguerria* sp.	3	6.7	6.7
				Mugilidae - *Mugil* sp.	5	3.2	3.8
				Mugilidae - *Mugil cephalus*	3	7.2	7.2
				Myctophidae	25	3.1	6.8
				Myctophidae - *Diaphus* sp.	7	4.2	5.1
				Myctophidae - *Diogenichthys atlanticus*	3	5.4	5.4
				Myctophidae - *Hygophum* sp.	7	3.8	6.5
				Myctophidae - *Hygophum reinhardti*	3	8.8	8.8
				Myctophidae - *Lampanyctus* sp.	27	3.1	5.2
				Myctophidae - *Myctophum* sp.	3	4.3	4.3
				Ophidiidae	5	8.1	9.9
				Sciaenidae - *Leiostomus xanthurus*	3	5.0	5.0
				Serranidae	27	2.3	4.6
				Stromateidae	15	3.3	4.4
				Stromateidae - *Peprilus burti*	10	2.1	6.6

Appendix table 1. (Continued)

Date (1977)	Transect and station	Mesh size (μ)	Number eggs per 1,000 m^3	Larvae	Number larvae per 1,000 m^3	Min. size (mm)	Max. size (mm)
1/21	II-7	505		Triglidae - Prionotus sp.	7	6.0	7.2
				Unknown	42	1.9	7.5
1/21	II-7	333	799	Bothidae	23	6.6	9.4
				Bothidae - Cyclopsetta sp.	3	4.7	4.7
				Bregmacerotidae - Bregmaceros sp.	6	2.9	14.0
				Bregmacerotidae - Bregmaceros atlanticus	29	1.9	8.9
				Carangidae - Trachurus lathami	139	2.3	6.4
				Clupeidae	267	4.2	7.5
				Clupeidae - Etrumeus teres	12	6.4	9.9
				Congridae - Hildebrandia sp.	3	88.0	88.0
				Cynoglossidae - Symphurus sp.	3	4.7	4.7
				Gadidae - Urophycis sp.	23	1.7	4.6
				Gobiidae	58	4.1	7.6
				Gonostomatidae	6	3.2	3.3
				Gonostomatidae - Cyclothone sp.	6	6.6	7.2
				Gonostomatidae - Gonostomus atlanticum	3	4.5	4.5
				Gonostomatidae - Maurolicus sp.	3	10.0	10.0
				Gonostomatidae - Vinciguerria sp.	3	6.9	6.9
				Kyphosidae - Kyphosus sp.	3	3.9	3.9
				Mugilidae - Mugil sp.	3	6.1	6.1
				Myctophidae	38	2.4	4.5
				Myctophidae - Diaphus sp.	9	4.5	5.0
				Myctophidae - Lampanyctus sp.	32	3.2	5.4
				Myctophidae - Myctophum sp.	3	4.6	4.6
				Myctophidae - Notoscopelus resplendens	3	9.6	9.6
				Ophidiidae	6	9.9	17.2
				Paralepididae - Lestidiops sp.	6	15.9	18.0
				Serranidae	9	2.9	3.3
				Serranidae - Centropristis sp.	3	5.1	5.1

Appendix table 1. (Continued)

Date (1977)	Transect and station	Mesh size (μ)	Number eggs per 1,000 m^3	Larvae	Number larvae per 1,000 m^3	Min. size (mm)	Max. size (mm)
1/20	III-2	333		Gadidae - Urophycis sp.	66	2.1	4.0
				Gobiidae	70	4.3	7.3
				Gonostomatidae - Maurolicus sp.	23	3.2	5.7
				Myctophidae - Ceratoscopelus sp.	23	3.7	4.6
				Myctophidae - Hygophum sp.	5	5.2	5.2
				Myctophidae - Lampanyctus sp.	9	3.2	5.7
				Ophidiidae	5	4.7	4.7
				Sciaenidae	5	3.1	3.1
				Sciaenidae - Leiostomus xanthurus	28	3.0	4.9
				Serranidae - Centropristis sp.	159	2.5	7.0
				Sparidae	126	2.2	8.9
				Stromateidae	9	2.6	3.9
				Stromateidae - Peprilus burti	75	2.1	3.9
				Synodontidae - Saurida sp.	5	2.7	2.7
				Triglidae - Prionotus sp.	19	2.8	5.6
				Unknown	201	1.4	6.5
1/20	III-3	505	3,280	Bothidae	3	8.1	8.1
				Bregmacerotidae - Bregmaceros sp.	3	3.1	3.1
				Carangidae - Trachurus lathami	3	7.4	7.4
				Centriscidae - Macrorhamphosus sp.	3	6.4	6.4
				Clupeidae	82	4.1	5.2
				Gadidae - Urophycis sp.	6	2.8	4.5
				Gobiidae	76	6.2	7.4
				Gonostomatidae - Cyclothone sp.	3	4.2	4.2
				Gonostomatidae - Maurolicus sp.	6	4.3	4.3
				Gonostomatidae - Vinciguerria sp.	18	4.9	8.6
				Mugilidae - Mugil cephalus	6	5.8	6.1
				Myctophidae	15	2.8	3.9
				Myctophidae - Benthosema suborbitale	6	4.3	14.3

Appendix table 1. (Continued)

Date (1977)	Transect and station	Mesh size (μ)	Number eggs per 1,000 m^3	Larvae	Number larvae per 1,000 m^3	Min. size (mm)	Max. size (mm)
1/21	II-7	333		Sparidae	29	3.1	3.6
				Stromateidae - *Peprilus burti*	41	2.0	2.5
				Triglidae - *Prionotus* sp.	3	7.7	7.7
				Unknown	142	1.8	7.0
1/20	III-1	505	337	Bregmacerotidae - *Bregmaceros atlanticus*	10	4.6	4.6
				Carangidae - *Trachurus lathami*	10	3.9	3.9
				Clupeidae	143	4.8	10.0
				Clupeidae - *Brevoortia* sp.	31	8.0	17.8
				Gobiidae	20	3.6	7.3
				Serranidae	10	4.8	4.8
				Sparidae	10	3.2	3.2
				Stromateidae - *Peprilus burti*	51	2.6	5.0
				Unknown	102	2.6	5.3
1/20	III-1	333	501	Bothidae - *Paralichthys* sp.	32	2.9	4.1
				Bregmacerotidae - *Bregmaceros atlanticus*	11	7.9	7.9
				Carangidae - *Trachurus lathami*	21	3.5	3.7
				Clupeidae	192	4.1	11.0
				Clupeidae - *Brevoortia* sp.	21	10.3	17.5
				Gobiidae	32	6.9	8.5
				Sciaenidae	11	2.5	2.5
				Unknown	138	1.9	5.5
1/20	III-2	505	1,677	Bothidae	23	3.1	4.4
				Bothidae - *Paralichthys* sp.	6	3.4	3.8
				Branchiostegidae - *Caulolatilus* sp.	3	2.5	2.5
				Bregmacerotidae - *Bregmaceros* sp.	3	5.3	5.3
				Bregmacerotidae - *Bregmaceros atlanticus*	26	3.8	9.4
				Carangidae - *Trachurus lathami*	90	2.7	6.4

Appendix table 1. (Continued)

Date (1977)	Transect and station	Mesh size (μ)	Number eggs per 1,000 m^3	Larvae	Number larvae per 1,000 m^3	Min. size (mm)	Max. size (mm)
1/20	III-2	505		Clupeidae	387	4.5	10.0
				Clupeidae - *Brevoortia* sp.	3	15.5	15.5
				Clupeidae - *Etrumeus teres*	87	7.1	15.5
				Gadidae - *Urophycis* sp.	3	3.0	3.0
				Gobiidae	45	3.5	8.6
				Gonostomatidae - *Cyclothone* sp.	6	4.6	6.5
				Gonostomatidae - *Maurolicus* sp.	13	3.5	5.7
				Myctophidae	13	3.4	4.6
				Myctophidae - *Diaphus* sp.	6	4.5	4.9
				Myctophidae - *Hygophum* sp.	6	6.2	6.2
				Myctophidae - *Lampanyctus* sp.	13	3.7	5.3
				Myctophidae - *Myctophum* sp.	3	4.7	4.7
				Sciaenidae	3	4.2	4.2
				Sciaenidae - *Leiostomus xanthurus*	13	4.3	5.1
				Sciaenidae - *Micropogon undulatus*	6	2.8	3.1
				Serranidae	84	3.1	5.2
				Sparidae	71	2.5	6.4
				Stromateidae	6	3.7	4.4
				Stromateidae - *Peprilus burti*	52	2.6	4.6
				Synodontidae - *Saurida* sp.	6	5.1	10.9
				Triglidae - *Prionotus* sp.	6	4.4	4.9
				Uranoscopidae - *Gnathagnus egregius*	3	19.5	19.5
				Unknown	45	2.0	4.0
1/20	III-2	333	2,314	Bothidae	42	3.0	4.5
				Branchiostegidae - *Caulolatilus* sp.	9	2.2	3.1
				Bregmacerotidae - *Bregmaceros atlanticus*	33	2.4	7.6
				Carangidae - *Trachurus lathami*	131	2.1	5.1
				Clupeidae	486	3.4	9.2
				Clupeidae - *Etrumeus teres*	131	7.2	13.3

Appendix table 1. (Continued)

Date (1977)	Transect and station	Mesh size (μ)	Number eggs per 1,000 m^3	Larvae	Number larvae per 1,000 m^3	Min. size (mm)	Max. size (mm)
1/20	III-2	333		Gadidae - Urophycis sp.	66	2.1	4.0
				Gobiidae	70	4.3	7.3
				Gonostomatidae - Maurolicus sp.	23	3.2	5.7
				Myctophidae - Ceratoscopelus sp.	23	3.7	4.6
				Myctophidae - Hygophum sp.	5	5.2	5.2
				Myctophidae - Lampanyctus sp.	9	3.2	5.7
				Ophidiidae	5	4.7	4.7
				Sciaenidae	5	3.1	3.1
				Sciaenidae - Leiostomus xanthurus	28	3.0	4.9
				Serranidae - Centropristis sp.	159	2.5	7.0
				Sparidae	126	2.2	8.9
				Stromateidae	9	2.6	3.9
				Stromateidae - Peprilus burti	75	2.1	3.9
				Synodontidae - Saurida sp.	5	2.7	2.7
				Triglidae - Prionotus sp.	19	2.8	5.6
				Unknown	201	1.4	6.5
1/20	III-3	505	3,280	Bothidae	3	8.1	8.1
				Bregmacerotidae - Bregmaceros sp.	3	3.1	3.1
				Carangidae - Trachurus lathami	3	7.4	7.4
				Centriscidae - Macrorhamphosus sp.	3	6.4	6.4
				Clupeidae	82	4.1	5.2
				Gadidae - Urophycis sp.	6	2.8	4.5
				Gobiidae	76	6.2	7.4
				Gonostomatidae - Cyclothone sp.	3	4.2	4.2
				Gonostomatidae - Maurolicus sp.	6	4.3	4.3
				Gonostomatidae - Vinciguerria sp.	18	4.9	8.6
				Mugilidae - Mugil cephalus	6	5.8	6.1
				Myctophidae	15	2.8	3.9
				Myctophidae - Benthosema suborbitale	6	4.3	14.3

Appendix table 1. (Continued)

Date (1977)	Transect and station	Mesh size (μ)	Number eggs per 1,000 m^3	Larvae	Number larvae per 1,000 m^3	Min. size (mm)	Max. size (mm)
1/20	III-3	505		Myctophidae - Diaphus sp.	3	5.0	5.0
				Myctophidae - Diogenichthys atlanticus	6	3.7	5.4
				Myctophidae - Hygophum sp.	9	4.4	6.8
				Myctophidae - Lampanyctus sp.	12	3.0	4.0
				Myctophidae - Myctophum sp.	15	3.5	4.7
				Paralepididae - Lestidiops sp.	3	11.5	11.5
				Serranidae	9	2.7	3.3
				Sparidae	6	3.1	3.5
				Stromateidae	3	5.5	5.5
				Unknown	18	2.2	4.7
1/20	III-3	333	3,225	Bothidae	3	6.7	6.7
				Bregmacerotidae - Bregmaceros sp.	10	2.4	3.2
				Bregmacerotidae - Bregmaceros atlanticus	10	2.8	4.3
				Carangidae - Trachurus lathami	7	2.2	2.5
				Clupeidae	104	3.5	6.9
				Gadidae - Urophycis sp.	7	3.5	3.6
				Gobiidae	65	3.7	7.8
				Gonostomatidae	10	4.0	4.5
				Gonostomatidae - Cyclothone sp.	13	5.0	6.5
				Gonostomatidae - Gonostomus atlanticum	3	6.1	6.1
				Gonostomatidae - Maurolicus sp.	16	3.5	4.5
				Gonostomatidae - Vinciguerria sp.	3	8.2	8.2
				Melanostomiatidae - Bathophilus sp.	7	7.9	10.0
				Mugilidae - Mugil sp.	10	3.0	4.8
				Mugilidae - Mugil cephalus	3	5.6	5.6
				Myctophidae	52	2.8	4.3
				Myctophidae - Benthosema suborbitale	7	3.0	4.1
				Myctophidae - Lampanyctus sp.	3	3.3	3.3
				Myctophidae - Myctophum sp.	13	3.0	3.7

Appendix table 1. (Continued)

Date (1977)	Transect and station	Mesh size (μ)	Number eggs per 1,000 m^3	Larvae	Number larvae per 1,000 m^3	Min. size (mm)	Max. size (mm)
1/20	III-3	333		Ophidiidae	3	7.8	7.8
				Paralepididae - *Lestidiops* sp.	7	11.0	17.1
				Serranidae	10	2.5	3.0
				Sparidae	3	3.3	3.3
				Stromateidae	7	3.2	3.6
				Unknown	172	1.7	5.0
1/19	IV-1	505	91	Carangidae - *Trachurus lathami*	9	2.8	2.8
				Clupeidae	82	5.0	6.0
				Clupeidae - *Brevoortia* sp.	9	14.0	14.0
				Clupeidae - *Etrumeus teres*	9	7.0	7.0
				Sparidae	27	3.1	3.7
				Stromateidae - *Peprilus burti*	18	3.0	3.5
				Unknown	36	2.8	3.8
1/19	IV-1	333	87	Bothidae	19	2.6	3.3
				Bregmacerotidae - *Bregmaceros atlanticus*	10	2.7	2.7
				Carangidae - *Trachurus lathami*	10	2.8	2.8
				Clupeidae	48	4.3	9.5
				Sciaenidae	39	2.6	4.3
				Serranidae	19	3.0	3.1
				Sparidae	29	2.9	3.2
				Stromateidae - *Peprilus burti*	39	2.1	2.6
				Unknown	87	2.0	6.0
1/17	IV-2	505	1,955	Bothidae - *Paralichthys* sp.	138	3.1	6.1
				Branchiostegidae - *Caulolatilus* sp.	13	2.4	3.3
				Bregmacerotidae - *Bregmaceros* sp.	7	3.8	3.8
				Bregmacerotidae - *Bregmaceros atlanticus*	26	2.4	2.8
				Carangidae - *Trachurus lathami*	375	2.7	5.9

Appendix table 1. (Continued)

Date (1977)	Transect and station	Mesh size (μ)	Number eggs per 1,000 m3	Larvae	Number larvae per 1,000 m3	Min. size (mm)	Max. size (mm)
1/17	IV-2	505		Clupeidae	612	3.5	10.0
				Clupeidae - Brevoortia sp.	7	12.7	12.7
				Clupeidae - Etrumeus teres	132	5.7	22.0
				Gobiidae	26	2.4	3.2
				Myctophidae	7	5.0	5.0
				Sciaenidae	40	2.5	5.0
				Sciaenidae - Leistomus xanthurus	33	3.5	5.3
				Sciaenidae - Micropogon undulatus	13	3.0	3.1
				Serranidae	125	2.6	5.3
				Sparidae	145	2.8	7.2
				Stromateidae - Peprilus burti	402	2.3	4.7
				Triglidae - Prionotus sp.	13	3.8	4.3
				Unknown	46	2.2	3.2
1/17	IV-2	333	1,853	Bothidae - Paralichthys sp.	158	2.8	4.1
				Branchiostegidae - Caulolatilus sp.	14	2.4	3.4
				Bregmacerotidae - Bregmaceros atlanticus	83	2.0	6.1
				Carangidae - Trachurus lathami	413	2.5	5.2
				Clupeidae	833	3.9	10.0
				Clupeidae - Brevoortia sp.	14	12.0	12.1
				Clupeidae - Etrumeus teres	83	8.0	9.5
				Gadidae - Urophycis sp.	21	1.9	4.8
				Gobiidae	96	2.0	5.4
				Gonostomatidae - Cyclothone sp.	7	5.0	5.0
				Gonostomatidae - Maurolicus sp.	7	3.7	3.7
				Myctophidae - Benthosema suborbitale	7	3.8	3.8
				Sciaenidae	41	2.2	3.7
				Sciaenidae - Leiostomus xanthurus	14	4.7	4.9
				Sciaenidae - Micropogon undulatus	7	3.0	3.0
				Serranidae	372	2.1	5.7

Appendix table 1. (Continued)

Date (1977)	Transect and station	Mesh size (μ)	Number eggs per 1,000 m^3	Larvae	Number larvae per 1,000 m^3	Min. size (mm)	Max. size (mm)
1/17	IV-2	333		Sparidae	172	2.4	10.3
				Stromateidae	14	2.4	3.4
				Stromateidae - Peprilus burti	517	2.0	4.0
				Triglidae - Prionotus sp.	7	3.2	3.2
				Unknown	372	2.0	3.2
1/19	IV-3	505	235	Bothidae	4	6.5	6.5
				Bregmacerotidae - Bregmaceros sp.	8	2.8	3.0
				Bregmacerotidae - Bregmaceros atlanticus	29	2.7	7.2
				Carangidae - Trachurus lathami	34	4.0	6.3
				Carapidae - Carapus bermudensis	4	16.8	16.8
				Chauliodontidae - Chauliodus sp.	8	6.2	13.0
				Clupeidae	4	4.5	4.5
				Congridae - Hildebrandia sp.	4	18.0	18.0
				Engraulidae	4	5.6	5.6
				Gadidae - Urophycis sp.	21	2.5	2.9
				Gobiidae	756	4.9	8.8
				Gonostomatidae - Cyclothone sp.	8	4.9	6.2
				Gonostomatidae - Maurolicus sp.	13	4.9	8.4
				Gonostomatidae - Vinciguerria sp.	13	5.9	10.4
				Mugilidae - Mugil sp.	55	3.2	6.1
				Myctophidae	38	2.7	5.1
				Myctophidae - Benthosema suborbitale	21	2.9	5.7
				Myctophidae - Ceratoscopelus sp.	8	3.0	5.2
				Myctophidae - Diaphus sp.	4	4.5	4.5
				Myctophidae - Diogenichthys atlanticus	13	5.8	6.7
				Myctophidae - Hygophum sp.	17	4.2	6.3
				Myctophidae - Lampanyctus sp.	4	12.2	12.2
				Myctophidae - Myctophum sp.	34	3.4	4.5
				Myctophidae - Notolychnus valdiviae	8	5.1	6.7
				Myctophidae - Notoscopelus sp.	13	4.2	6.9

Appendix table 1 (Continued)

Date (1977)	Transect and station	Mesh size (μ)	Number eggs per 1,000 m^3	Larvae	Number larvae per 1,000 m^3	Min. size (mm)	Max. size (mm)
1/19	IV-3	505		Nettastomidae	4	83.0	83.0
				Paralepididae - *Lestidiops* sp.	4	22.5	22.5
				Scombridae - *Scomber japonicus*	4	2.5	2.5
				Serranidae	4	3.6	3.6
				Unknown	25	2.5	6.1
1/19	IV-3	333	289	Bothidae	18	5.6	6.8
				Bregmacerotidae - *Bregmaceros* sp.	5	3.3	3.3
				Bregmacerotidae - *Bregmaceros atlanticus*	9	3.3	3.6
				Carangidae - *Trachurus lathami*	5	4.5	4.5
				Carapidae - *Carapus bermudensis*	5	20.0	20.0
				Clupeidae	5	5.0	5.0
				Congridae - *Ariosoma balearicum*	5	41.0	41.0
				Gadidae - *Urophycis* sp.	27	2.0	3.9
				Gobiidae	483	5.8	9.7
				Gonostomatidae - *Cyclothone* sp.	5	8.9	8.9
				Gonostomatidae - *Gonostomus atlanticum*	14	4.7	5.0
				Gonostomatidae - *Gonostomus elongatum*	9	8.4	9.2
				Gonostomatidae - *Maurolicus muelleri*	18	5.5	6.5
				Gonostomatidae - *Vinciguerria* sp.	23	6.0	15.3
				Mugilidae - *Mugil* sp.	27	3.1	3.8
				Mugilidae - *Mugil cephalus*	23	4.8	6.5
				Myctophidae	23	2.6	4.1
				Myctophidae - *Benthosema suborbitale*	27	3.1	4.5
				Myctophidae - *Diaphus* sp.	5	5.5	5.5
				Myctophidae - *Hygophum* sp.	9	4.0	6.4
				Myctophidae - *Lampanyctus* sp.	5	8.6	8.6
				Myctophidae - *Myctophum* sp.	23	3.7	4.7
				Myctophidae - *Notolychnus valdiviae*	14	5.2	5.7
				Myctophidae - *Symbolophorus* sp.	5	9.8	9.8

Appendix table 1. (Continued)

Date (1977)	Transect and station	Mesh size (μ)	Number eggs per 1,000 m^3	Larvae	Number larvae per 1,000 m^3	Min. size (mm)	Max. size (mm)
1/19	IV-3	333		Serranidae	18	2.6	3.3
				Serranidae - *Diplectrum* sp.	5	10.8	10.8
				Stromateidae	5	4.5	4.5
				Synodontidae - *Saurida* sp.	5	11.3	11.3
				Unknown	86	2.1	8.1
3/15	II-1	505	296	Bothidae	59	10.3	14.2
				Bregmacerotidae - *Bregmaceros atlanticus*	37	17.6	38.2
				Carangidae - *Trachurus lathami*	7	3.2	3.2
				Clupeidae - *Brevoortia* sp.	7	15.0	15.0
				Clupeidae - *Etrumeus teres*	170	15.0	30.9
				Gobiidae	104	8.6	16.7
				Sciaenidae - *Leiostomus xanthurus*	15	8.4	8.9
				Serranidae - *Centropristis* sp.	22	7.3	11.5
				Stromateidae - *Peprilus burti*	44	5.2	12.7
				Synodontidae - *Synodus* sp.	15	6.3	6.8
				Synodontidae - *Synodus foetens*	15	8.9	13.1
				Triglidae - *Prionotus* sp.	22	9.2	9.6
				Unknown	7	3.3	3.3
3/15	II-1	333	495	Bothidae	73	7.4	12.7
				Bregmacerotidae - *Bregmaceros atlanticus*	8	35.0	35.0
				Carangidae - *Trachurus lathami*	16	3.6	3.7
				Clupeidae - *Etrumeus teres*	57	7.6	24.3
				Gobiidae	130	8.0	17.2
				Ophichthidae	8	81.0	81.0
				Sciaenidae - *Micropogon undulatus*	33	2.6	8.8
				Serranidae - *Centropristis* sp.	65	3.6	12.4
				Sparidae - *Lagodon rhomboides*	8	9.3	9.3
				Stromateidae - *Peprilus burti*	16	7.8	8.8

Appendix table 1. (Continued)

Date (1977)	Transect and station	Mesh size (μ)	Number eggs per 1,000 m^3	Larvae	Number larvae per 1,000 m^3	Min. size (mm)	Max. size (mm)
3/15	II-1	333		Synodontidae - *Synodus foetens*	8	7.2	7.2
				Triglidae - *Prionotus* sp.	33	7.5	10.6
				Unknown	8	4.0	4.0
3/14	II-2	505	4,736	Carangidae - *Trachurus lathami*	82	2.7	9.5
				Clupeidae	38	4.0	9.8
				Clupeidae - *Etrumeus teres*	50	9.6	22.5
				Gobiidae	6	10.0	10.0
				Myctophidae - *Diaphus* sp.	19	4.5	7.3
				Myctophidae - *Hygophum* sp.	6	5.9	5.9
				Scombridae - *Scomber japonicus*	6	6.6	6.6
				Serranidae - *Centropristis* sp.	126	3.6	12.0
				Sparidae	94	3.0	12.7
				Stromateidae - *Peprilus burti*	107	3.4	6.3
				Triglidae - *Prionotus* sp.	88	2.7	5.4
				Unknown	6	4.5	4.5
3/14	II-2	333	4,564	Bothidae	6	8.7	8.7
				Branchiostegidae - *Caulolatilus* sp.	6	2.5	2.5
				Carangidae - *Trachurus lathami*	61	2.5	5.7
				Clupeidae	61	4.0	8.3
				Gadidae - *Urophycis* sp.	12	5.5	7.6
				Myctophidae - *Ceratoscopelus warmingi*	6	6.7	6.7
				Myctophidae - *Diaphus* sp.	12	4.1	9.8
				Scombridae - *Scomber japonicus*	18	5.4	7.6
				Serranidae - *Centropristis* sp.	123	3.0	11.2
				Sparidae	43	3.1	8.9
				Stromateidae - *Peprilus burti*	68	3.3	4.4
				Synodontidae - *Synodus foetens*	6	11.1	11.1
				Triglidae - *Prionotus* sp.	43	2.5	4.7
				Unknown	6	1.9	1.9

Appendix table 1. (Continued)

Date (1977)	Transect and station	Mesh size (μ)	Number eggs per 1,000 m^3	Larvae	Number larvae per 1,000 m^3	Min. size (mm)	Max. size (mm)
3/14	II-3	505	186	Bothidae	12	4.1	9.7
				Bothidae - *Cyclopsetta* sp.	3	4.3	4.3
				Branchiostegidae - *Caulolatilus* sp.	9	2.9	3.2
				Bregmacerotidae - *Bregmaceros atlanticus*	68	2.1	9.8
				Carangidae - *Trachurus lathami*	239	2.7	18.8
				Clupeidae	106	4.4	7.8
				Clupeidae - *Brevoortia* sp.	3	14.5	14.5
				Clupeidae - *Etrumeus teres*	605	6.0	21.5
				Congridae - *Hildebrandia* sp.	3	120.0	120.0
				Engraulidae	3	7.8	7.8
				Gobiidae	153	2.1	9.3
				Gonostomatidae - *Cyclothone* sp.	24	5.6	11.0
				Gonostomatidae - *Gonostomus atlanticum*	3	6.7	6.7
				Gonostomatidae - *Maurolicus* sp.	50	5.9	8.0
				Gonostomatidae - *Vinciguerria* sp.	3	8.5	8.5
				Labridae	3	15.4	15.4
				Myctophidae	106	2.8	5.6
				Myctophidae - *Benthosema suborbitale*	6	4.3	7.3
				Myctophidae - *Ceratoscopelus* sp.	12	3.7	5.7
				Myctophidae - *Diaphus* sp.	89	3.5	9.3
				Myctophidae - *Diogenichthys atlanticus*	15	4.0	10.4
				Myctophidae - *Hygophum* sp.	224	3.6	12.2
				Myctophidae - *Hygophum reinhardti*	6	7.9	8.2
				Myctophidae - *Lampanyctus* sp.	6	5.0	5.6
				Myctophidae - *Myctophum* sp.	15	8.5	13.0
				Myctophidae - *Notolychnus valdiviae*	3	6.4	6.4
				Myctophidae - *Notoscopelus resplendens*	41	4.9	15.9
				Nettastomidae	3	122.0	122.0
				Ophidiidae	3	5.6	5.6
				Scombridae - *Scomber japonicus*	12	7.1	11.8

Appendix table 1. (Continued)

Date (1977)	Transect and station	Mesh size (μ)	Number eggs per 1,000 m^3	Larvae	Number larvae per 1,000 m^3	Min. size (mm)	Max. size (mm)
3/14	II-3	505		Serranidae - *Centropristis* sp.	150	2.6	11.1
				Serranidae - *Diplectrum* sp.	6	5.5	7.5
				Sparidae	86	2.8	13.5
				Stromateidae	6	2.9	5.2
				Stromateidae - *Peprilus burti*	68	2.7	19.0
				Synodontidae - *Saurida* sp.	12	3.0	5.4
				Synodontidae - *Saurida brasiliensis*	12	5.7	20.5
				Synodontidae - *Synodus* sp.	18	3.4	4.9
				Synodontidae - *Synodus foetens*	15	4.9	12.6
				Triglidae - *Prionotus* sp.	18	3.4	3.9
				Unknown	27	1.9	17.5
3/14	II-3	333	177	Bothidae	7	4.0	6.8
				Branchiostegidae - *Caulolatilus* sp.	7	2.7	3.1
				Bregmacerotidae - *Bregmaceros* sp.	3	13.5	13.5
				Bregmacerotidae - *Bregmaceros atlanticus*	121	1.8	10.4
				Carangidae - *Trachurus lathami*	148	3.5	16.2
				Clupeidae	112	4.2	8.6
				Clupeidae - *Etrumeus teres*	695	5.7	23.5
				Congridae - *Hildebrandia* sp.	3	98.0	98.0
				Cynoglossidae - *Symphurus* sp.	7	2.2	3.0
				Gobiidae	128	2.5	16.4
				Gonostomatidae - *Cyclothone* sp.	13	5.6	7.7
				Gonostomatidae - *Maurolicus muelleri*	23	3.4	7.5
				Gonostomatidae - *Vinciguerria* sp.	10	7.0	9.0
				Myctophidae	305	2.6	8.6
				Myctophidae - *Ceratoscopelus* sp.	46	3.1	4.5
				Myctophidae - *Diaphus* sp.	95	3.3	9.5
				Myctophidae - *Diogenichthys atlanticus*	7	4.2	7.9
				Myctophidae - *Hygophum* sp.	253	3.4	12.2

Appendix table 1. (Continued)

Date (1977)	Transect and station	Mesh size (μ)	Number eggs per 1,000 m^3	Larvae	Number larvae per 1,000 m^3	Min. size (mm)	Max. size (mm)
3/14	II-3	333		Myctophidae - *Lampanyctus* sp.	23	4.0	13.2
				Myctophidae - *Myctophum* sp.	16	6.2	9.5
				Myctophidae - *Notolychnus valdiviae*	7	4.0	4.6
				Myctophidae - *Notoscopelus resplendens*	36	5.1	14.0
				Ophidiidae	3	6.9	6.9
				Serranidae - *Centropristis* sp.	161	2.9	9.7
				Serranidae - *Diplectrum* sp.	3	3.2	3.2
				Sparidae	82	3.2	8.6
				Stromateidae	3	3.2	3.2
				Stromateidae - *Peprilus burti*	56	3.2	17.0
				Synodontidae - *Saurida* sp.	20	3.6	4.9
				Synodontidae - *Saurida brasiliensis*	36	7.2	24.0
				Synodontidae - *Synodus* sp.	62	3.6	5.4
				Synodontidae - *Synodus foetens*	3	6.6	6.6
				Triglidae - *Prionotus* sp.	33	3.1	8.7
				Unknown	72	2.2	19.7
3/15	II-4	505	6,869	Bothidae	10	12.7	12.7
				Clupeidae	31	7.8	13.0
				Clupeidae - *Etrumeus teres*	10	15.0	15.0
				Clupeidae - *Sardinella anchovia*	10	12.7	12.7
				Serranidae - *Centropristis* sp.	10	7.1	7.1
				Stromateidae - *Peprilus burti*	41	4.6	5.4
				Triglidae - *Prionotus* sp.	21	6.5	7.5
3/15	II-4	333	8,754	Clupeidae	11	6.0	6.0
				Clupeidae - *Sardinella anchovia*	11	10.4	10.4
				Myctophidae - *Hygophum* sp.	11	6.0	6.0
				Sciaenidae - *Pogonias cromis*	11	3.0	3.0
				Stromateidae - *Peprilus burti*	34	4.0	5.1
				Triglidae - *Prionotus* sp.	11	6.2	6.2

Appendix table 1 . (Continued)

Date (1977)	Transect and station	Mesh size (μ)	Number eggs per 1,000 m^3	Larvae	Number larvae per 1,000 m^3	Min. size (mm)	Max. size (mm)
3/15	II-5	505	8,104	Bothidae	10	4.3	6.5
				Bregmacerotidae - *Bregmaceros atlanticus*	142	2.5	12.4
				Carangidae - *Trachurus lathami*	278	2.4	5.1
				Clupeidae	283	4.0	7.5
				Clupeidae - *Etrumeus teres*	996	5.8	25.4
				Gobiidae	76	3.0	10.1
				Gonostomatidae - *Cyclothone* sp.	5	5.6	5.6
				Myctophidae	10	4.2	4.6
				Myctophidae - *Benthosema suborbitale*	10	3.8	5.0
				Myctophidae - *Ceratoscopelus* sp.	15	3.4	5.7
				Myctophidae - *Ceratoscopelus warmingi*	5	7.9	7.9
				Myctophidae - *Diaphus* sp.	20	3.8	5.0
				Myctophidae - *Hygophum* sp.	66	3.5	6.2
				Myctophidae - *Myctophum* sp.	10	3.7	3.9
				Ophichthidae	5	84.0	84.0
				Scombridae - *Scomber japonicus*	40	3.2	5.0
				Serranidae - *Centropristis* sp.	86	2.5	11.8
				Sparidae	197	2.0	12.0
				Stromateidae - *Peprilus burti*	66	2.1	5.5
				Synodontidae	10	3.8	4.2
				Synodontidae - *Saurida* sp.	40	2.8	3.7
				Synodontidae - *Synodus* sp.	81	3.2	6.2
				Synodontidae - *Synodus foetens*	25	9.0	14.2
				Triglidae - *Prionotus* sp.	71	2.7	6.0
				Unknown	56	1.9	4.6
3/15	II-5	333	8,298	Bothidae	19	6.4	10.2
				Bregmacerotidae - *Bregmaceros atlanticus*	133	2.4	13.5
				Carangidae - *Trachurus lathami*	462	2.2	6.1
				Clupeidae	354	3.7	7.6
				Clupeidae - *Brevoortia* sp.	6	9.6	9.6

Appendix table 1. (Continued)

Date (1977)	Transect and station	Mesh size (μ)	Number eggs per 1,000 m^3	Larvae	Number larvae per 1,000 m^3	Min. size (mm)	Max. size (mm)
3/15	II-5	333		Clupeidae - *Etrumeus teres*	943	5.5	25.1
				Clupeidae - *Sardinella anchovia*	6	7.4	7.4
				Gobiidae	82	2.8	9.6
				Gonostomatidae - *Vinciguerria* sp.	13	7.4	8.4
				Myctophidae	6	3.6	3.6
				Myctophidae - *Ceratoscopelus* sp.	13	3.5	3.8
				Myctophidae - *Diaphus* sp.	32	3.9	4.2
				Myctophidae - *Diogenichthys atlanticus*	6	4.6	4.6
				Myctophidae - *Hygophum* sp.	25	4.6	5.4
				Myctophidae - *Lampanyctus* sp.	6	3.5	3.5
				Scombridae - *Scomber japonicus*	19	3.8	4.2
				Serranidae - *Centropristis* sp.	57	2.3	10.1
				Sparidae	190	2.0	11.5
				Stromateidae - *Peprilus burti*	51	3.3	8.6
				Synodontidae - *Saurida* sp.	51	3.0	4.1
				Synodontidae - *Synodus* sp.	76	3.2	4.9
				Synodontidae - *Synodus foetens*	25	8.0	8.3
				Triglidae - *Prionotus* sp.	95	2.1	5.9
				Unknown	108	2.1	3.6
3/15	II-6	505	1,060	Apogonidae	3	9.5	9.5
				Bothidae	16	4.3	9.8
				Branchiostegidae - *Caulolatilus* sp.	3	4.1	4.1
				Bregmacerotidae - *Bregmaceros atlanticus*	98	2.4	12.9
				Carangidae - *Trachurus lathami*	89	2.5	8.5
				Clupeidae	212	4.9	8.0
				Clupeidae - *Brevoortia* sp.	6	8.6	8.7
				Clupeidae - *Etrumeus teres*	1,215	6.6	23.4
				Gobiidae	193	3.3	11.1
				Gonostomatidae - *Cyclothone* sp.	6	7.2	7.9

Appendix table 1. (Continued)

Date (1977)	Transect and station	Mesh size (μ)	Number eggs per 1,000 m^3	Larvae	Number larvae per 1,000 m^3	Min. size (mm)	Max. size (mm)
3/15	II-6	505		Gonostomatidae - *Gonostomus elongatum*	3	6.7	6.7
				Gonostomatidae - *Maurolicus* sp.	3	5.9	5.9
				Gonostomatidae - *Vinciguerria* sp.	3	16.5	16.5
				Myctophidae	25	3.7	5.2
				Myctophidae - *Benthosema suborbitale*	3	7.8	7.8
				Myctophidae - *Ceratoscopelus* sp.	6	3.7	3.8
				Myctophidae - *Ceratoscopelus warmingi*	44	6.0	11.0
				Myctophidae - *Diaphus* sp.	22	4.0	5.2
				Myctophidae - *Diogenichthys atlanticus*	16	5.0	8.3
				Myctophidae - *Hygophum* sp.	25	3.8	9.0
				Myctophidae - *Lampanyctus* sp.	3	11.5	11.5
				Myctophidae - *Notoscopelus resplendens*	3	7.0	7.0
				Ophidiidae - *Lepophidium* sp.	3	6.4	6.4
				Scombridae - *Scomber japonicus*	6	11.3	13.9
				Serranidae - *Centropristis* sp.	187	3.1	9.0
				Sparidae	212	3.5	13.9
				Stromateidae - *Peprilus burti*	104	3.0	19.4
				Synodontidae - *Saurida brasiliensis*	35	6.4	23.0
				Synodontidae - *Synodus* sp.	35	3.2	6.7
				Triglidae - *Prionotus* sp.	48	2.8	19.2
				Unknown	29	3.2	16.5
3/15	II-6	333	974	Bothidae	35	4.8	10.2
				Bregmacerotidae - *Bregmaceros atlanticus*	166	2.0	12.5
				Carangidae - *Trachurus lathami*	62	2.1	6.1
				Clupeidae	153	4.1	9.0
				Clupeidae - *Etrumeus teres*	1,123	5.6	23.0
				Gobiidae	177	2.9	11.1
				Gonostomatidae - *Cyclothone* sp.	10	7.7	10.7
				Gonostomatidae - *Maurolicus muelleri*	7	5.1	7.0
				Gonostomatidae - *Vinciguerria* sp.	7	7.4	7.9

Appendix table 1. (Continued)

Date (1977)	Transect and station	Mesh size (μ)	Number eggs per 1,000 m^3	Larvae	Number larvae per 1,000 m^3	Min. size (mm)	Max. size (mm)
3/15	II-6	333		Mugilidae - *Mugil* sp.	4	3.3	3.3
				Myctophidae	31	3.5	5.4
				Myctophidae - *Benthosema suborbitale*	7	4.2	11.2
				Myctophidae - *Ceratoscopelus* sp.	24	3.5	4.5
				Myctophidae - *Ceratoscopelus warmingi*	73	5.0	12.5
				Myctophidae - *Diaphus* sp.	10	4.8	6.6
				Myctophidae - *Lampanyctus* sp.	4	5.5	5.5
				Myctophidae - *Notoscopelus resplendens*	4	11.5	11.5
				Serranidae - *Centropristis* sp.	107	2.8	10.4
				Serranidae - *Diplectrum* sp.	7	3.5	3.8
				Sparidae	132	2.5	11.7
				Stromateidae - *Peprilus burti*	66	3.4	7.3
				Synodontidae - *Saurida* sp.	4	5.0	5.0
				Synodontidae - *Saurida brasiliensis*	55	7.0	17.5
				Synodontidae - *Synodus* sp.	38	3.9	6.1
				Synodontidae - *Synodus foetens*	14	6.3	8.5
				Triglidae - *Prionotus* sp.	21	4.2	14.2
				Uranoscopidae	4	11.0	11.0
				Unknown	73	2.1	14.6
3/14	II-7	505	910	Bothidae	7	3.7	9.8
				Branchiostegidae - *Caulolatilus* sp.	7	3.3	7.1
				Bregmacerotidae - *Bregmaceros* sp.	5	3.5	4.7
				Bregmacerotidae - *Bregmaceros atlanticus*	32	2.1	11.7
				Carangidae - *Trachurus lathami*	121	3.6	10.8
				Chiasmodontidae	2	10.0	10.0
				Clupeidae	57	4.4	7.6
				Clupeidae - *Etrumeus teres*	462	5.6	22.0
				Cynoglossidae - *Symphurus* sp.	7	3.0	4.0
				Gobiidae	18	2.8	8.5

Appendix table 1. (Continued)

Date (1977)	Transect and station	Mesh size (μ)	Number eggs per 1,000 m^3	Larvae	Number larvae per 1,000 m^3	Min. size (mm)	Max. size (mm)
3/14	II-7	505		Gonostomatidae - *Cyclothone* sp.	2	9.5	9.5
				Gonostomatidae - *Maurolicus muelleri*	251	2.7	44.0
				Gonostomatidae - *Vinciguerria* sp.	21	5.6	15.2
				Melamphaidae - *Melamphais* sp.	11	4.1	11.0
				Myctophidae	7	3.0	3.5
				Myctophidae - *Benthosema suborbitale*	23	3.4	6.5
				Myctophidae - *Ceratoscopelus* sp.	11	3.5	5.3
				Myctophidae - *Ceratoscopelus warmingi*	2	12.1	12.1
				Myctophidae - *Diaphus* sp.	27	3.4	13.0
				Myctophidae - *Diogenichthys atlanticus*	14	4.4	5.6
				Myctophidae - *Gonichthys coccoi*	2	5.7	5.7
				Myctophidae - *Hygophum* sp.	64	4.3	11.3
				Myctophidae - *Hygophum reinhardti*	5	7.3	7.4
				Myctophidae - *Lampanyctus* sp.	2	9.1	9.1
				Myctophidae - *Myctophum* sp.	14	3.5	7.8
				Myctophidae - *Notoscopelus resplendens*	5	14.1	15.3
				Scaridae	2	11.0	11.0
				Scombridae - *Scomber japonicus*	9	5.5	12.0
				Serranidae - *Centropristis* sp.	27	3.2	6.0
				Sparidae	16	3.0	5.0
				Stromateidae	2	3.4	3.4
				Stromateidae - *Peprilus burti*	39	3.0	13.4
				Synodontidae - *Saurida* sp.	32	3.1	6.7
				Synodontidae - *Synodus* sp.	14	3.6	5.5
				Synodontidae - *Synodus foetens*	7	6.9	7.8
				Triglidae - *Prionotus* sp.	18	2.5	7.7
				Unknown	41	2.2	4.2
3/14	II-7	333	815	Bothidae	3	3.0	3.0
				Branchiostegidae - *Caulolatilus* sp.	18	3.1	6.0

Appendix table 1. (Continued)

Date (1977)	Transect and station	Mesh size (µ)	Number eggs per 1,000 m^3	Larvae	Number larvae per 1,000 m^3	Min. size (mm)	Max. size (mm)
3/14	II-7	333		Bregmacerotidae - *Bregmaceros* sp.	10	2.7	3.8
				Bregmacerotidae - *Bregmaceros atlanticus*	134	1.8	3.5
				Carangidae - *Trachurus lathami*	149	2.9	9.9
				Chauliodontidae - *Chauliodus* sp.	10	5.6	13.6
				Clupeidae	45	4.4	5.3
				Clupeidae - *Etrumeus teres*	505	5.0	21.8
				Congridae - *Hildebrandia* sp.	5	104.0	117.0
				Gobiidae	35	2.9	8.4
				Gonostomatidae - *Cyclothone* sp.	3	6.0	6.0
				Gonostomatidae - *Gonostomus atlanticum*	3	11.4	11.4
				Gonostomatidae - *Maurolicus muelleri*	593	2.9	30.0
				Gonostomatidae - *Sternoptyx* sp.	3	7.3	7.3
				Gonostomatidae - *Vinciguerria* sp.	18	5.7	9.5
				Melamphaidae - *Melamphais* sp.	8	5.1	11.0
				Myctophidae	88	2.4	3.8
				Myctophidae - *Benthosema suborbitale*	18	3.9	5.4
				Myctophidae - *Ceratoscopelus* sp.	15	3.1	3.8
				Myctophidae - *Ceratoscopelus warmingi*	3	5.6	5.6
				Myctophidae - *Diaphus* sp.	53	3.2	8.5
				Myctophidae - *Diogenichthys atlanticus*	8	3.8	5.1
				Myctophidae - *Hygophum* sp.	101	3.8	9.0
				Myctophidae - *Hygophum reinhardti*	3	8.8	8.8
				Myctophidae - *Lampanyctus* sp.	5	4.8	5.1
				Myctophidae - *Myctophum* sp.	13	3.8	11.3
				Myctophidae - *Notolychnus valdiviae*	3	4.0	4.0
				Myctophidae - *Notoscopelus resplendens*	13	5.5	10.8
				Nettastomidae	3	15.7	15.7
				Ophidiidae	3	6.8	6.8
				Scombridae - *Scomber japonicus*	5	5.8	6.0
				Serranidae - *Centropristis* sp.	30	2.6	4.5

Appendix table 1. (Continued)

Date (1977)	Transect and station	Mesh size (μ)	Number eggs per 1,000 m^3	Larvae	Number larvae per 1,000 m^3	Min. size (mm)	Max. size (mm)
3/14	II-7	333		Sparidae	40	2.3	6.8
				Stromateidae - *Peprilus burti*	35	3.5	11.1
				Synodontidae - *Saurida* sp.	38	3.1	5.6
				Synodontidae - *Saurida brasiliensis*	3	5.7	5.7
				Synodontidae - *Synodus* sp.	35	3.2	4.7
				Triglidae - *Prionotus* sp.	18	3.1	24.0
				Unknown	76	1.7	7.9
4/21	II-1	505	1,066	Engraulidae	187	2.6	13.7
				Engraulidae - *Anchoa* sp.	22	9.8	12.1
				Sciaenidae	44	2.1	2.4
				Sciaenidae - *Menticirrhus* sp.	44	2.3	3.9
				Sciaenidae - *Micropogon undulatus*	44	2.4	3.9
				Sparidae	66	2.9	3.3
				Synodontidae	22	3.9	6.9
				Unknown	659	1.5	9.0
4/21	II-1	333	1,042	Bothidae	15	3.3	3.3
				Bregmacerotidae - *Bregmaceros atlanticus*	15	4.9	4.9
				Clupeidae	89	4.2	9.3
				Engraulidae	149	3.4	6.7
				Engraulidae - *Anchoa* sp.	15	14.6	14.6
				Gobiidae	30	2.0	3.4
				Ophidiidae	15	3.9	3.9
				Sciaenidae - *Menticirrhus* sp.	45	2.7	3.0
				Sciaenidae - *Micropogon undulatus*	104	2.1	3.5
				Sparidae	134	2.0	3.5
				Synodontidae	194	3.4	10.3
				Synodontidae - *Saurida* sp.	60	3.9	6.9
				Synodontidae - *Synodus* sp.	45	5.1	6.9

Appendix table 1. (Continued)

Date (1977)	Transect and station	Mesh size (μ)	Number eggs per 1,000 m^3	Larvae	Number larvae per 1,000 m^3	Min. size (mm)	Max. size (mm)
4/21	II-1	333		Tetraodontidae	15	2.5	2.5
				Unknown	625	1.8	6.6
4/20	II-2	505	5,099	Bothidae	14	2.1	3.5
				Bregmacerotidae - *Bregmaceros atlanticus*	14	1.7	2.5
				Carangidae	27	2.4	3.3
				Carangidae - *Trachurus lathami*	7	2.5	2.5
				Clupeidae	294	3.1	6.4
				Clupeidae - *Etrumeus teres*	14	6.7	7.6
				Cynoglossidae - *Symphurus* sp.	55	2.2	3.4
				Engraulidae	14	3.0	5.0
				Gobiidae	55	1.9	3.2
				Myctophidae	7	3.1	3.1
				Ophidiidae	7	5.6	5.6
				Serranidae - *Centropristis* sp.	7	3.2	3.2
				Serranidae - *Diplectrum* sp.	7	2.9	2.9
				Sparidae	34	2.9	3.1
				Stromateidae - *Peprilus burti*	7	2.2	2.2
				Synodontidae - *Saurida* sp.	27	2.7	4.2
				Synodontidae - *Synodus* sp.	68	2.5	3.6
				Tetraodontidae	7	3.0	3.0
				Triglidae - *Prionotus* sp.	41	2.0	3.5
				Unknown	82	1.6	2.8
4/20	II-2	333	11,670	Bothidae	72	2.3	3.0
				Bregmacerotidae - *Bregmaceros atlanticus*	15	1.9	1.9
				Carangidae	7	3.0	3.0
				Carangidae - *Decapterus punctatus*	29	2.7	3.3
				Clupeidae	188	3.3	5.2
				Clupeidae - *Etrumeus teres*	65	5.1	7.0

Appendix table 1. (Continued)

Date (1977)	Transect and station	Mesh size (μ)	Number eggs per 1,000 m^3	Larvae	Number larvae per 1,000 m^3	Min. size (mm)	Max. size (mm)
4/20	II-2	333		Cynoglossidae - Symphurus sp.	29	2.8	4.1
				Engraulidae	22	3.1	4.6
				Gobiidae	36	2.4	3.1
				Microdesmidae - Microdesmus sp.	7	2.7	2.7
				Ophidiidae	7	4.8	4.8
				Sparidae	29	3.5	5.0
				Synodontidae	94	2.5	3.5
				Synodontidae - Saurida sp.	22	2.9	5.4
				Synodontidae - Synodus sp.	22	2.6	3.2
				Tetraodontidae	7	3.1	3.1
				Unknown	644	1.5	4.0
4/20	II-3	505	147	Bothidae	4	2.9	2.9
				Bothidae - Bothus ocellatus	11	5.6	7.6
				Bregmacerotidae - Bregmaceros atlanticus	54	1.7	9.1
				Carangidae - Trachurus lathami	197	3.0	6.8
				Cynoglossidae - Symphurus sp.	7	3.0	4.5
				Engraulidae	18	4.4	7.2
				Engraulidae - Anchoa sp.	4	8.2	8.2
				Engraulidae - Engraulis eurystole	4	12.4	12.4
				Gobiidae	712	2.8	8.7
				Gonostomatidae - Gonostomus atlanticum	4	7.7	7.7
				Gonostomatidae - Ichthyococcus sp.	4	5.3	5.3
				Gonostomatidae - Maurolicus sp.	72	3.0	7.7
				Gonostomatidae - Vinciguerria sp.	57	6.1	16.0
				Lutjanidae - Lutjanus sp.	4	4.9	4.9
				Melamphaidae - Melamphais sp.	7	4.0	4.3
				Myctophidae	190	2.5	5.5
				Myctophidae - Benthosema suborbitale	50	3.2	6.6
				Myctophidae - Ceratoscopelus sp.	7	3.0	3.1

Appendix table 1. (Continued)

Date (1977)	Transect and station	Mesh size (μ)	Number eggs per 1,000 m^3	Larvae	Number larvae per 1,000 m^3	Min. size (mm)	Max. size (mm)
4/20	II-3	505		Myctophidae - *Ceratoscopelus warmingi*	4	16.2	16.2
				Myctophidae - *Diaphus* sp.	415	3.1	9.2
				Myctophidae - *Diogenichthys atlanticus*	14	4.0	8.9
				Myctophidae - *Hygophum* sp.	64	2.8	8.8
				Myctophidae - *Hygophum reinhardti*	11	9.4	11.0
				Myctophidae - *Lampanyctus* sp.	7	4.0	5.9
				Myctophidae - *Myctophum* sp.	22	3.5	9.5
				Myctophidae - *Myctophum asperum*	4	5.1	5.1
				Myctophidae - *Notoscopelus resplendens*	4	6.9	6.9
				Nettastomidae	4	7.5	7.5
				Ogcocephalidae	4	2.3	2.3
				Paralepididae - *Lestidiops* sp.	11	6.0	14.0
				Sciaenidae - *Menticirrhus* sp.	4	3.3	3.3
				Serranidae - *Diplectrum* sp.	111	2.5	7.2
				Synodontidae	7	4.5	6.3
				Synodontidae - *Saurida* sp.	286	3.4	6.5
				Synodontidae - *Saurida brasiliensis*	204	2.4	13.2
				Synodontidae - *Synodus* sp.	29	3.1	4.8
				Synodontidae - *Synodus foetens*	7	7.0	7.0
				Synodontidae - *Synodus poeyi*	7	5.4	6.3
				Trichiuridae - *Diplospinus multistriatus*	4	5.2	5.2
				Triglidae - *Prionotus* sp.	14	2.9	4.0
				Unknown	143	1.6	5.1
4/20	II-3	333	148	Bothidae	11	3.4	5.7
				Bothidae - *Bothus* sp.	4	3.9	3.9
				Bothidae - *Bothus ocellatus*	7	5.1	8.7
				Bregmacerotidae - *Bregmaceros* sp.	4	2.6	2.6
				Bregmacerotidae - *Bregmaceros atlanticus*	130	2.7	10.6
				Carangidae - *Trachurus lathami*	211	2.4	7.6

Appendix table 1. (Continued)

Date (1977)	Transect and station	Mesh size (μ)	Number eggs per 1,000 m^3	Larvae	Number larvae per 1,000 m^3	Min. size (mm)	Max. size (mm)
4/20	II-3	333		Clupeidae - *Sardinella anchovia*	7	3.5	7.1
				Cynoglossidae - *Symphurus* sp.	19	3.0	4.2
				Engraulidae	41	3.3	7.4
				Gobiidae	755	2.6	9.1
				Gonostomatidae - *Cyclothone* sp.	15	4.1	7.6
				Gonostomatidae - *Gonostomus atlanticum*	7	11.3	11.7
				Gonostomatidae - *Maurolicus muelleri*	148	2.3	8.4
				Gonostomatidae - *Vinciguerria* sp.	33	5.4	11.2
				Melamphaidae	7	4.0	4.6
				Mugilidae - *Mugil* sp.	4	2.9	2.9
				Myctophidae	285	2.2	4.7
				Myctophidae - *Benthosema suborbitale*	59	2.7	5.4
				Myctophidae - *Ceratoscopelus* sp.	4	2.8	2.8
				Myctophidae - *Diaphus* sp.	448	3.3	8.4
				Myctophidae - *Diogenichthys atlanticus*	56	2.7	8.0
				Myctophidae - *Hygophum* sp.	41	2.8	9.2
				Myctophidae - *Hygophum reinhardti*	11	4.3	15.1
				Myctophidae - *Lampanyctus* sp.	26	3.1	5.6
				Myctophidae - *Myctophum* sp.	15	3.2	5.5
				Paralepididae - *Lestidiops* sp.	44	2.7	9.4
				Sciaenidae - *Menticirrhus* sp.	4	2.9	2.9
				Scombridae - *Katsuwonus pelamis*	4	5.5	5.5
				Scopelarchidae	4	8.7	8.7
				Serranidae	4	3.0	3.0
				Serranidae - *Diplectrum* sp.	159	2.2	7.0
				Sparidae	4	2.2	2.2
				Synodontidae	89	2.8	6.8
				Synodontidae - *Saurida* sp.	411	3.4	6.8
				Synodontidae - *Saurida brasiliensis*	41	7.2	12.5
				Synodontidae - *Synodus* sp.	33	3.0	5.5

Appendix table 1. (Continued)

Date (1977)	Transect and station	Mesh size (μ)	Number eggs per 1,000 m^3	Larvae	Number larvae per 1,000 m^3	Min. size (mm)	Max. size (mm)
4/20	II-3	333		Triglidae - *Prionotus* sp.	33	2.1	3.7
				Unknown	526	1.8	12.4
4/21	II-4	505	3,202	Bothidae	10	1.8	1.8
				Bregmacerotidae - *Bregmaceros atlanticus*	10	3.5	3.5
				Clupeidae	10	9.2	9.2
				Clupeidae - *Etrumeus teres*	10	7.2	7.2
				Cynoglossidae - *Symphurus* sp.	19	4.7	5.1
				Engraulidae	115	2.6	7.6
				Gobiidae	19	2.2	2.4
				Gonostomatidae - *Maurolicus* sp.	10	3.1	3.1
				Mugilidae	10	4.2	4.2
				Myctophidae - *Diaphus* sp.	10	5.2	5.2
				Ophidiidae - *Rissola marginata*	10	4.5	4.5
				Sciaenidae	19	2.4	2.6
				Sparidae	29	3.8	5.2
				Synodontidae - *Synodus foetens*	10	5.9	5.9
				Synodontidae - *Synodus poeyi*	10	6.7	6.7
				Tetraodontidae	10	2.1	2.1
				Triglidae - *Prionotus* sp.	19	3.3	3.7
				Unknown	48	2.5	3.5
4/21	II-4	333	3,965	Bothidae	31	2.3	3.6
				Carangidae - *Decapterus punctatus*	10	3.2	3.2
				Clupeidae - *Etrumeus teres*	10	6.1	6.1
				Cynoglossidae - *Symphurus* sp.	10	5.9	5.9
				Engraulidae	102	3.2	4.4
				Sciaenidae	20	2.6	2.7
				Sciaenidae - *Micropogon undulatus*	31	2.5	2.5
				Synodontidae - *Synodus* sp.	41	4.5	5.7

Appendix table 1. (Continued)

Date (1977)	Transect and station	Mesh size (μ)	Number eggs per 1,000 m^3	Larvae	Number larvae per 1,000 m^3	Min. size (mm)	Max. size (mm)
4/21	II-4	333		Triglidae - *Prionotus* sp.	61	2.8	4.0
				Unknown	112	1.7	3.0
4/21	II-5	505	5,266	Bothidae	64	2.4	6.3
				Bregmacerotidae - *Bregmaceros atlanticus*	995	2.0	12.5
				Carangidae	119	2.1	3.3
				Clupeidae	477	3.9	6.3
				Clupeidae - *Etrumeus teres*	330	5.7	22.0
				Cynoglossidae - *Symphurus* sp.	60	2.0	3.7
				Engraulidae	284	3.3	9.0
				Engraulidae - *Engraulis eurystole*	5	19.5	19.5
				Gobiidae	3,410	2.2	9.7
				Labridae	9	6.0	6.0
				Microdesmidae - *Microdesmus* sp.	5	2.3	2.3
				Mullidae	5	7.7	7.7
				Myctophidae - *Ceratoscopelus* sp.	5	3.5	3.5
				Myctophidae - *Diaphus* sp.	28	3.9	5.2
				Ophidiidae	5	6.6	6.6
				Serranidae	55	1.8	3.0
				Serranidae - *Centropristis* sp.	128	2.6	8.5
				Sparidae	293	2.5	10.1
				Stromateidae - *Peprilus burti*	23	2.7	4.3
				Synodontidae	183	2.4	6.5
				Synodontidae - *Saurida* sp.	697	2.4	7.8
				Synodontidae - *Saurida brasiliensis*	655	6.0	14.5
				Synodontidae - *Synodus* sp.	573	2.8	6.5
				Synodontidae - *Synodus foetens*	64	5.1	10.0
				Synodontidae - *Synodus poeyi*	18	6.0	10.1
				Tetraodontidae	55	1.7	2.8
				Triglidae - *Prionotus* sp.	101	2.2	6.5
				Unknown	802	1.9	6.6

Appendix table 1. (Continued)

Date (1977)	Transect and station	Mesh size (μ)	Number eggs per 1,000 m^3	Larvae	Number larvae per 1,000 m^3	Min. size (mm)	Max. size (mm)
4/21	II-5	333	4,900	Bothidae	94	2.0	6.4
				Bothidae - *Paralichthys* sp.	4	3.0	3.0
				Bregmacerotidae - *Bregmaceros atlanticus*	753	2.4	12.1
				Carangidae	9	2.8	3.5
				Carangidae - *Decapterus punctatus*	51	2.5	3.5
				Carangidae - *Trachurus lathami*	60	2.4	3.7
				Clupeidae	362	3.8	9.1
				Clupeidae - *Etrumeus teres*	323	4.9	20.5
				Cynoglossidae - *Symphurus* sp.	72	2.1	5.3
				Engraulidae	213	3.0	6.5
				Engraulidae - *Engraulis eurystole*	4	16.0	16.0
				Ephippidae - *Chaetodipterus faber*	13	3.3	4.5
				Gobiidae	2,999	2.2	15.6
				Labridae	4	7.0	7.0
				Microdesmidae - *Microdesmus* sp.	4	2.5	2.5
				Mullidae	4	5.3	5.3
				Myctophidae - *Diaphus* sp.	17	3.8	4.3
				Ophidiidae	9	4.7	10.5
				Sciaenidae - *Menticirrhus* sp.	4	4.2	4.2
				Serranidae	60	2.3	4.3
				Serranidae - *Centropristis* sp.	98	3.0	8.5
				Soleidae - *Gymnachirus* sp.	9	3.8	5.3
				Sparidae	196	2.2	7.7
				Stromateidae - *Peprilus burti*	13	2.3	2.6
				Synodontidae	183	2.5	7.5
				Synodontidae - *Saurida* sp.	655	2.5	7.3
				Synodontidae - *Saurida brasiliensis*	447	6.7	15.9
				Synodontidae - *Synodus* sp.	715	2.5	6.9
				Synodontidae - *Synodus foetens*	55	7.1	12.8
				Synodontidae - *Synodus poeyi*	4	7.5	7.5

Appendix table 1. (Continued)

Date (1977)	Transect and station	Mesh size (μ)	Number eggs per 1,000 m^3	Larvae	Number larvae per 1,000 m^3	Min. size (mm)	Max. size (mm)
4/21	II-5	333		Tetraodontidae	43	1.9	2.5
				Triglidae - *Prionotus* sp.	115	2.3	4.7
				Unknown	1,804	1.6	8.3
4/21	II-6	505	611	Bothidae	85	1.9	4.5
				Bregmacerotidae - *Bregmaceros atlanticus*	1,407	1.7	11.9
				Carangidae	41	2.1	3.2
				Carangidae - *Decapterus punctatus*	38	2.7	3.3
				Carangidae - *Trachurus lathami*	232	2.4	5.1
				Chauliodontidae - *Chauliodus* sp.	3	12.2	12.2
				Clupeidae	324	3.7	7.0
				Clupeidae - *Etrumeus teres*	283	4.4	17.3
				Congridae - *Hildebrandia* sp.	3	102.0	102.0
				Cynoglossidae - *Symphurus* sp.	21	2.3	7.5
				Engraulidae	642	2.6	6.9
				Engraulidae - *Engraulis eurystole*	10	6.6	21.3
				Ephippidae - *Chaetodipterus faber*	3	4.3	4.3
				Gobiidae	3,353	1.9	9.6
				Gonostomatidae	3	3.9	3.9
				Gonostomatidae - *Vinciguerria* sp.	3	6.0	6.0
				Myctophidae	85	3.2	3.9
				Myctophidae - *Diaphus* sp.	44	3.3	6.0
				Myctophidae - *Hygophum* sp.	10	4.2	4.4
				Myctophidae - *Lampanyctus* sp.	3	3.5	3.5
				Myctophidae - *Myctophum* sp.	3	3.5	3.5
				Myctophidae - *Myctophum obtusirostre*	3	6.9	6.9
				Ophidiidae	7	3.9	4.4
				Paralepididae	331	3.0	11.4
				Sciaenidae - *Menticirrhus* sp.	10	3.3	4.8
				Serranidae	75	2.3	3.5

Appendix table 1. (Continued)

Date (1977)	Transect and station	Mesh size (μ)	Number eggs per 1,000 m^3	Larvae	Number larvae per 1,000 m^3	Min. size (mm)	Max. size (mm)
4/21	II-6	505		Serranidae - *Centropristis* sp.	96	3.3	8.6
				Serranidae - *Diplectrum* sp.	27	5.0	8.5
				Soleidae - *Gymnachirus* sp.	3	3.8	3.8
				Sparidae	260	2.5	9.6
				Stromateidae	14	3.0	3.1
				Stromateidae - *Peprilus burti*	7	2.3	2.7
				Synodontidae	283	2.1	10.4
				Synodontidae - *Saurida* sp.	577	2.4	7.6
				Synodontidae - *Saurida brasiliensis*	130	6.6	12.7
				Synodontidae - *Synodus* sp.	744	2.5	5.1
				Synodontidae - *Synodus foetens*	10	5.3	7.4
				Synodontidae - *Synodus poeyi*	14	5.5	6.6
				Tetraodontidae	58	1.8	3.1
				Triglidae - *Prionotus* sp.	123	1.9	8.9
				Unknown	563	1.7	10.5
4/21	II-6	333	667	Bothidae	169	1.5	4.0
				Bregmacerotidae - *Bregmaceros* sp.	7	2.5	3.0
				Bregmacerotidae - *Bregmaceros atlanticus*	1,605	1.6	28.8
				Carangidae	162	2.0	3.3
				Carangidae - *Decapterus punctatus*	28	2.1	3.4
				Carangidae - *Trachurus lathami*	246	2.5	4.0
				Clupeidae	488	3.1	5.6
				Clupeidae - *Etrumeus teres*	239	4.2	17.4
				Cynoglossidae - *Symphurus* sp.	39	2.3	5.9
				Engraulidae	1,128	2.5	7.3
				Engraulidae - *Engraulis eurystole*	21	6.8	15.0
				Gobiidae	3,442	1.8	13.5
				Gonostomatidae - *Vinciguerria* sp.	4	9.1	9.1
				Labridae	4	7.2	7.2

Appendix table 1. (Continued)

Date (1977)	Transect and station	Mesh size (μ)	Number eggs per 1,000 m^3	Larvae	Number larvae per 1,000 m^3	Min. size (mm)	Max. size (mm)
4/21	II-6	333		Microdesmidae - Microdesmus sp.	4	2.9	2.9
				Myctophidae	134	2.2	4.3
				Myctophidae - Diaphus sp.	46	3.1	4.3
				Myctophidae - Hygophum reinhardti	4	11.8	11.8
				Myctophidae - Lampanyctus sp.	14	3.2	3.8
				Ophidiidae	4	3.4	3.4
				Paralepididae	520	3.4	13.5
				Sciaenidae - Menticirrhus sp.	4	3.5	3.5
				Serranidae	190	1.7	3.6
				Serranidae - Centropristis sp.	77	2.2	5.9
				Serranidae - Diplectrum sp.	14	4.8	7.8
				Sparidae	214	2.2	6.9
				Sphyraenidae - Sphyraena sp.	4	3.7	3.7
				Stromateidae	21	2.5	3.6
				Stromateidae - Peprilus burti	7	2.6	3.0
				Synodontidae	692	2.0	8.0
				Synodontidae - Saurida sp.	713	2.1	8.2
				Synodontidae - Saurida brasiliensis	112	6.0	13.5
				Synodontidae - Synodus sp.	674	2.8	6.7
				Synodontidae - Synodus foetens	4	7.3	7.3
				Synodontidae - Synodus poeyi	7	6.5	10.6
				Tetraodontidae	42	1.7	2.4
				Triglidae - Prionotus sp.	183	1.9	4.2
				Unknown	1,212	1.7	9.5
4/20	II-7	505	221	Bathylagidae - Bathylagus sp.	3	11.3	11.3
				Bothidae - Bothus ocellatus	3	6.5	6.5
				Bregmacerotidae - Bregmaceros sp.	3	4.8	4.8
				Carangidae - Decapterus punctatus	3	3.9	3.9
				Carangidae - Trachurus lathami	93	3.2	6.5

Appendix table 1. (Continued)

Date (1977)	Transect and station	Mesh size (μ)	Number eggs per 1,000 m^3	Larvae	Number larvae per 1,000 m^3	Min. size (mm)	Max. size (mm)
4/20	II-7	505		Clupeidae	3	5.6	5.6
				Cynoglossidae - Symphurus sp.	3	3.8	3.8
				Engraulidae	3	4.4	4.4
				Gobiidae	15	2.5	7.1
				Gonostomatidae - Cyclothone sp.	18	5.6	9.5
				Gonostomatidae - Maurolicus muelleri	18	2.4	8.2
				Gonostomatidae - Vinciguerria sp.	24	7.0	12.7
				Melamphaidae - Melamphais sp.	9	3.0	5.0
				Mugilidae - Mugil sp.	24	2.6	5.0
				Myctophidae	108	2.9	5.1
				Myctophidae - Benthosema suborbitale	69	3.2	6.1
				Myctophidae - Ceratoscopelus sp.	6	3.2	5.2
				Myctophidae - Ceratoscopelus maderensis	3	14.4	14.4
				Myctophidae - Ceratoscopelus warmingi	9	6.1	7.6
				Myctophidae - Diaphus sp.	134	4.0	8.7
				Myctophidae - Diogenichthys atlanticus	33	3.2	5.3
				Myctophidae - Hygophum sp.	114	3.3	10.2
				Myctophidae - Hygophum reinhardti	24	5.2	11.8
				Myctophidae - Lampanyctus sp.	12	3.6	5.0
				Myctophidae - Myctophum sp.	15	3.4	4.5
				Myctophidae - Notolychnus valdiviae	6	4.6	4.6
				Myctophidae - Notoscopelus resplendens	3	3.8	3.8
				Paralepididae - Lestrolopis sp.	6	8.1	12.2
				Sciaenidae - Menticirrhus sp.	3	3.8	3.8
				Scombridae	9	3.7	7.1
				Scombridae - Auxis sp.	3	4.5	4.5
				Scombridae - Scomber japonicus	3	4.7	4.7
				Serranidae	6	3.2	3.8
				Serranidae - Diplectrum sp.	57	2.2	5.2
				Synodontidae - Saurida sp.	21	3.0	7.3

Appendix table 1. (Continued)

Date (1977)	Transect and station	Mesh size (μ)	Number eggs per 1,000 m^3	Larvae	Number larvae per 1,000 m^3	Min. size (mm)	Max. size (mm)
4/20	II-7	505		Synodontidae - *Synodus* sp.	6	3.5	3.8
				Trichiuridae - *Diplospinus multistriatus*	3	4.0	4.0
				Triglidae - *Prionotus* sp.	3	2.7	2.7
				Unknown	69	2.3	6.4
4/20	II-7	333	139	Bathylagidae - *Bathylagus* sp.	3	14.3	14.3
				Bothidae	3	5.5	5.5
				Bothidae - *Bothus ocellatus*	6	4.8	5.0
				Bregmacerotidae - *Bregmaceros* sp.	3	6.2	6.2
				Bregmacerotidae - *Bregmaceros atlanticus*	6	3.1	5.5
				Carangidae - *Decapterus punctatus*	9	3.8	4.7
				Carangidae - *Trachurus lathami*	80	4.1	6.0
				Clupeidae	3	5.3	5.3
				Cynoglossidae - *Symphurus* sp.	3	3.5	3.5
				Engraulidae	6	6.7	7.8
				Gobiidae	52	2.4	9.7
				Gonostomatidae	15	4.7	6.2
				Gonostomatidae - *Cyclothone* sp.	6	4.9	9.2
				Gonostomatidae - *Gonostomus atlanticum*	3	5.9	5.9
				Gonostomatidae - *Maurolicus* sp.	86	2.7	9.1
				Gonostomatidae - *Sternoptyx* sp.	6	6.3	8.1
				Gonostomatidae - *Vinciguerria* sp.	34	5.9	16.8
				Melamphaidae - *Melamphais* sp.	15	2.4	5.0
				Mugilidae - *Mugil* sp.	3	2.7	2.7
				Myctophidae	225	2.5	5.6
				Myctophidae - *Benthosema suborbitale*	83	2.8	6.0
				Myctophidae - *Ceratoscopelus* sp.	12	3.5	5.0
				Myctophidae - *Ceratoscopelus maderensis*	3	6.4	6.4
				Myctophidae - *Ceratoscopelus warmingi*	3	7.0	7.0
				Myctophidae - *Diaphus* sp.	145	2.9	8.8

Appendix table 1. (Continued)

Date (1977)	Transect and station	Mesh size (μ)	Number eggs per 1,000 m^3	Larvae	Number larvae per 1,000 m^3	Min. size (mm)	Max. size (mm)
4/20	II-7	333		Myctophidae - *Diogenichthys atlanticus*	74	3.0	8.0
				Myctophidae - *Hygophum* sp.	83	3.6	9.5
				Myctophidae - *Hygophum reinhardti*	3	11.3	11.3
				Myctophidae - *Lampanyctus* sp.	25	3.1	5.5
				Myctophidae - *Myctophum* sp.	25	3.0	4.1
				Myctophidae - *Notolychnus valdiviae*	19	4.0	7.5
				Ophidiidae	6	5.3	5.3
				Paralepididae - *Lestidiops* sp.	22	3.2	19.0
				Sciaenidae - *Menticirrhus* sp.	3	4.5	4.5
				Scombridae	3	5.1	5.1
				Serranidae	9	3.1	3.7
				Serranidae - *Centropristis* sp.	3	5.4	5.4
				Serranidae - *Diplectrum* sp.	71	2.2	5.3
				Soleidae - *Gymnachirus* sp.	3	3.0	3.0
				Sphyrnidae	6	3.7	4.5
				Stromateidae - *Cubiceps pauciradiatus*	3	4.2	4.2
				Synodontidae	9	3.2	5.2
				Synodontidae - *Saurida* sp.	15	3.5	6.8
				Synodontidae - *Synodus* sp.	3	4.5	4.5
				Tetraodontidae	6	3.0	3.0
				Trichiuridae - *Diplospinus multistriatus*	3	3.5	3.5
				Triglidae - *Prionotus* sp.	12	2.8	3.1
				Unknown	788	1.7	10.0
5/20	I-1	505	969	Carangidae	27	2.9	3.5
				Cynoglossidae - *Symphurus* sp.	27	7.5	8.2
				Engraulidae	218	4.5	13.7
				Engraulidae - *Anchoa* sp.	164	9.8	16.0
				Gobiidae	27	4.0	4.9
				Sciaenidae	55	2.4	2.8

Appendix table 1. (Continued)

Date (1977)	Transect and station	Mesh size (μ)	Number eggs per 1,000 m^3	Larvae	Number larvae per 1,000 m^3	Min. size (mm)	Max. size (mm)
5/20	I-1	505		Sciaenidae - Menticirrhus sp.	14	3.5	3.5
				Sciaenidae - Micropogon undulatus	177	2.5	3.0
5/20	I-1	333	547	Carangidae	28	2.5	3.6
				Clupeidae	14	8.1	8.1
				Clupeidae - Opisthonema oglinum	14	21.0	21.0
				Cynoglossidae - Symphurus sp.	14	3.7	3.7
				Engraulidae	281	4.1	13.0
				Engraulidae - Anchoa sp.	154	13.0	18.0
				Sciaenidae	84	2.0	2.9
				Sciaenidae - Menticirrhus sp.	14	2.9	2.9
				Sciaenidae - Micropogon undulatus	140	2.3	4.1
				Scombridae - Scomberomorus maculatus	84	2.3	2.8
				Unknown	42	2.3	8.3
5/20	I-2	505	25,178	Blenniidae	7	4.0	4.0
				Bothidae	14	3.5	3.8
				Bothidae - Bothus ocellatus	7	5.0	5.0
				Bothidae - Cyclopsetta sp.	7	4.0	4.0
				Bothidae - Syacium sp.	36	2.1	5.0
				Bregmacerotidae - Bregmaceros atlanticus	14	4.4	5.2
				Carangidae - Decapterus punctatus	7	3.1	3.1
				Cynoglossidae - Symphurus sp.	92	3.2	7.1
				Engraulidae	57	6.7	11.1
				Gobiidae	7	4.9	4.9
				Microdesmidae	64	2.3	6.8
				Mullidae	14	3.9	4.2
				Muraenidae - Gymnothorax sp.	7	8.5	8.5
				Ophidiidae	14	2.6	3.7
				Sciaenidae - Menticirrhus sp.	7	2.5	2.5

Appendix table 1. (Continued)

Date (1977)	Transect and station	Mesh size (μ)	Number eggs per 1,000 m^3	Larvae	Number larvae per 1,000 m^3	Min. size (mm)	Max. size (mm)
5/20	I-2	505		Scombridae	14	2.5	3.0
				Scorpaenidae - *Scorpaena* sp.	7	3.8	3.8
				Serranidae - *Diplectrum* sp.	121	2.1	9.8
				Synodontidae - *Saurida* sp.	57	2.4	8.5
				Synodontidae - *Synodus* sp.	50	3.9	7.0
				Tetraodontidae	7	2.0	2.0
				Triglidae - *Prionotus* sp.	7	5.4	5.4
				Unknown	21	1.2	4.7
5/20	I-2	333	28,213	Bothidae	198	1.2	4.5
				Bothidae - *Bothus ocellatus*	7	5.9	5.9
				Bothidae - *Syacium* sp.	44	1.9	3.9
				Bregmacerotidae - *Bregmaceros atlanticus*	15	1.6	1.8
				Clupeidae	7	3.9	3.9
				Cynoglossidae - *Symphurus* sp.	44	3.6	4.0
				Engraulidae	81	2.5	6.9
				Engraulidae - *Anchoa* sp.	29	7.4	11.2
				Engraulidae - *Engraulis eurystole*	44	6.5	7.9
				Gobiidae	147	2.0	6.6
				Microdesmidae - *Microdesmus* sp.	242	2.1	5.8
				Mullidae	15	3.2	3.2
				Ophidiidae	59	2.0	6.1
				Sciaenidae - *Menticirrhus* sp.	7	2.9	2.9
				Scombridae	22	2.4	2.4
				Serranidae - *Diplectrum* sp.	205	2.0	9.1
				Soleidae - *Gymnachirus* sp.	7	5.9	5.9
				Synodontidae	15	2.2	5.8
				Synodontidae - *Synodus* sp.	81	1.9	7.1
				Synodontidae - *Synodus foetens*	22	7.1	8.5
				Tetraodontidae	59	1.9	2.5

Appendix table 1. (Continued)

Date (1977)	Transect and station	Mesh size (μ)	Number eggs per 1,000 m^3	Larvae	Number larvae per 1,000 m^3	Min. size (mm)	Max. size (mm)
5/20	I-2	333		Tetraodontidae - *Sphoeroides* sp.	7	9.3	9.3
				Triglidae - *Prionotus* sp.	15	4.6	5.9
				Unknown	550	1.3	4.6
5/19	I-3	505	71	Bothidae	19	2.9	6.4
				Bothidae - *Bothus* sp.	5	2.9	3.2
				Bothidae - *Bothus ocellatus*	14	4.6	6.2
				Bothidae - *Cyclopsetta* sp.	5	4.0	4.9
				Bothidae - *Syacium* sp.	65	2.4	4.4
				Branchiostegidae - *Caulolatilus* sp.	5	2.8	3.5
				Bregmacerotidae - *Bregmaceros* sp.	8	3.1	4.0
				Bregmacerotidae - *Bregmaceros atlanticus*	38	3.0	10.0
				Clupeidae - *Etrumeus teres*	5	13.0	13.9
				Cynoglossidae - *Symphurus* sp.	46	2.6	5.4
				Engraulidae	57	4.8	11.2
				Gobiidae	412	3.5	8.5
				Gonostomatidae - *Gonostomus atlanticum*	3	6.2	6.2
				Gonostomatidae - *Maurolicus muelleri*	125	2.8	6.9
				Gonostomatidae - *Vinciguerria* sp.	14	5.0	8.0
				Melamphaidae - *Melamphais* sp.	3	4.0	4.0
				Microdesmidae - *Microdesmus* sp.	14	5.4	7.1
				Myctophidae	16	3.1	4.5
				Myctophidae - *Benthosema suborbitale*	27	3.6	6.0
				Myctophidae - *Diaphus* sp.	62	3.4	6.9
				Myctophidae - *Diogenichthys atlanticus*	30	3.6	5.8
				Myctophidae - *Hygophum* sp.	19	4.3	6.3
				Myctophidae - *Hygophum reinhardti*	5	8.2	9.6
				Myctophidae - *Myctophum* sp.	24	3.5	5.9
				Myctophidae - *Myctophum selenops*	5	3.6	5.0
				Myctophidae - *Notolychnus valdiviae*	11	3.4	4.5

Appendix table 1. (Continued)

Date (1977)	Transect and station	Mesh size (µ)	Number eggs per 1,000 m^3	Larvae	Number larvae per 1,000 m^3	Min. size (mm)	Max. size (mm)
5/19	I-3	505		Myctophidae - *Symbolophorus* sp.	3	6.0	6.0
				Nettastomidae	5	11.0	12.5
				Ophichthidae	19	9.6	21.4
				Ophidiidae	5	6.4	7.0
				Paralepididae	3	4.2	4.2
				Serranidae - *Diplectrum* sp.	30	3.0	4.8
				Synodontidae	22	4.2	6.5
				Synodontidae - *Saurida* sp.	407	3.8	8.1
				Synodontidae - *Saurida brasiliensis*	3	10.9	10.9
				Synodontidae - *Synodus* sp.	98	3.6	7.7
				Tetraodontidae	3	3.1	3.1
				Trichiuridae - *Diplospinus multistriatus*	3	6.6	6.6
				Triglidae - *Prionotus* sp.	5	4.6	5.0
				Unknown	22	1.8	6.0
5/19	I-3	333	125	Bothidae	17	2.8	5.8
				Bothidae - *Bothus* sp.	9	3.0	3.8
				Bothidae - *Bothus ocellatus*	15	4.4	6.2
				Bothidae - *Syacium* sp.	58	2.8	6.4
				Branchiostegidae - *Caulolatilus* sp.	17	2.6	3.5
				Bregmacerotidae - *Bregmaceros* sp.	12	3.2	3.7
				Bregmacerotidae - *Bregmaceros atlanticus*	70	2.8	10.1
				Carapidae - *Carapus bermudensis*	3	67.0	67.0
				Chauliodontidae - *Chauliodus* sp.	3	15.0	15.0
				Clupeidae - *Etrumeus teres*	3	9.3	9.3
				Cynoglossidae - *Symphurus* sp.	70	1.9	5.7
				Engraulidae	49	3.9	8.0
				Engraulidae - *Anchoa* sp.	17	7.3	8.4
				Engraulidae - *Engraulis eurystole*	46	6.7	12.8
				Gobiidae	603	2.6	8.6
				Gonostomatidae - *Cyclothone* sp.	15	3.7	6.0

Appendix table 1. (Continued)

Date (1977)	Transect and station	Mesh size (μ)	Number eggs per 1,000 m^3	Larvae	Number larvae per 1,000 m^3	Min. size (mm)	Max. size (mm)
5/19	I-3	333		Gonostomatidae - *Gonostomus atlanticum*	12	4.2	8.2
				Gonostomatidae - *Maurolicus muelleri*	511	2.5	6.0
				Gonostomatidae - *Vinciguerria* sp.	142	2.6	9.0
				Microdesmidae - *Microdesmus* sp.	9	4.0	6.5
				Myctophidae	342	2.1	5.8
				Myctophidae - *Benthosema suborbitale*	46	2.7	5.6
				Myctophidae - *Diaphus* sp.	177	2.5	6.8
				Myctophidae - *Diogenichthys atlanticus*	46	3.0	6.8
				Myctophidae - *Hygophum* sp.	20	3.1	7.0
				Myctophidae - *Hygophum reinhardti*	6	7.2	8.4
				Myctophidae - *Lampanyctus* sp.	15	2.9	3.8
				Myctophidae - *Myctophum* sp.	44	2.7	5.1
				Myctophidae - *Myctophum obtusirostre*	3	3.8	3.8
				Myctophidae - *Myctophum selenops*	3	4.4	4.4
				Myctophidae - *Notolychnus valdiviae*	49	2.9	4.5
				Ophichthidae	20	5.0	18.6
				Ophidiidae	9	5.8	10.3
				Paralepididae	6	4.6	10.0
				Priacanthidae	3	3.6	3.6
				Serranidae - *Diplectrum* sp.	49	2.4	5.4
				Synodontidae	44	2.6	6.1
				Synodontidae - *Saurida* sp.	589	2.7	7.2
				Synodontidae - *Saurida brasiliensis*	17	8.6	12.6
				Synodontidae - *Synodus* sp.	110	2.7	7.0
				Trichiuridae - *Diplospinus multistriatus*	3	7.6	7.6
				Triglidae - *Prionotus* sp.	15	3.9	6.0
				Unknown	310	1.4	7.5

Appendix table 1. (Continued)

Date (1977)	Transect and station	Mesh size (μ)	Number eggs per 1,000 m^3	Larvae	Number larvae per 1,000 m^3	Min. size (mm)	Max. size (mm)
5/19	II-1	505	1,231	Carangidae	106	2.2	4.2
				Clupeidae	47	4.9	6.3
				Clupeidae - *Harengula jaguana*	12	16.7	16.7
				Clupeidae - *Opisthonema oglinum*	35	9.4	14.0
				Cynoglossidae - *Symphurus* sp.	35	3.6	8.1
				Engraulidae	3,318	3.7	15.0
				Engraulidae - *Anchoa* sp.	997	9.3	25.0
				Engraulidae - *Engraulis eurystole*	23	15.3	18.4
				Gobiidae	12	2.8	2.8
				Sciaenidae - *Cynoscion* sp.	23	3.9	8.0
				Sciaenidae - *Menticirrhus* sp.	246	2.0	4.3
				Sciaenidae - *Micropogon undulatus*	363	2.2	3.9
				Serranidae - *Serraniculus pumilio*	12	2.7	2.7
				Unknown	12	3.0	3.0
5/19	II-1	333	2,391	Blenniidae	59	2.3	3.2
				Bothidae	24	1.3	1.8
				Carangidae	213	2.0	4.2
				Carangidae - *Chloroscombrus chrysurus*	1	5.6	5.6
				Clupeidae	154	2.7	10.6
				Clupeidae - *Harengula jaguana*	24	13.5	13.8
				Cynoglossidae - *Symphurus* sp.	118	1.4	8.4
				Engraulidae	2,095	3.0	8.9
				Engraulidae - *Anchoa* sp.	2,343	9.0	24.6
				Gobiidae	24	3.4	3.4
				Microdesmidae - *Microdesmus* sp.	12	1.7	1.7
				Sciaenidae	237	1.6	2.2
				Sciaenidae - *Cynoscion nothus*	604	2.3	7.9
				Sciaenidae - *Menticirrhus* sp.	414	1.8	6.0

Appendix table 1. (Continued)

Date (1977)	Transect and station	Mesh size (μ)	Number eggs per 1,000 m³	Larvae	Number larvae per 1,000 m³	Min. size (mm)	Max. size (mm)
5/19	II-1	333		Scombridae - *Scomberomorus maculatus*	142	1.8	8.3
				Serranidae - *Serraniculus pumilio*	71	1.8	2.5
				Unknown	166	1.2	2.9
5/19	II-2	505	2,988	Blenniidae	16	2.8	4.2
				Bothidae	44	3.2	5.3
				Bothidae - *Bothus ocellatus*	11	5.9	6.0
				Bothidae - *Syacium* sp.	22	1.6	3.2
				Bregmacerotidae - *Bregmaceros atlanticus*	49	8.6	14.0
				Carangidae	6	3.5	3.5
				Carangidae - *Decapterus punctatus*	6	4.2	4.2
				Clupeidae	22	3.8	7.7
				Clupeidae - *Etrumeus teres*	6	20.0	20.0
				Clupeidae - *Harengula jaguana*	6	13.9	13.9
				Cynoglossidae - *Symphurus* sp.	99	2.4	4.9
				Engraulidae	274	2.6	11.9
				Engraulidae - *Anchoa* sp.	22	10.5	12.0
				Gobiidae	285	2.1	10.9
				Labridae	6	6.3	6.3
				Microdesmidae - *Microdesmus* sp.	44	2.6	5.2
				Ophidiidae	33	2.7	4.8
				Sciaenidae - *Menticirrhus* sp.	6	3.0	3.0
				Sciaenidae - *Micropogon undulatus*	16	2.6	3.1
				Scombridae	16	3.2	3.9
				Scombridae - *Scomberomorus cavalla*	6	4.5	4.5
				Serranidae - *Diplectrum* sp.	115	2.2	5.1
				Serranidae - *Serraniculus pumilio*	6	3.8	3.8
				Synodontidae	22	5.3	6.9
				Synodontidae - *Saurida* sp.	33	2.2	4.8
				Synodontidae - *Saurida brasiliensis*	22	9.6	13.8
				Synodontidae - *Synodus* sp.	27	2.2	6.5

Appendix table 1. (Continued)

Date (1977)	Transect and station	Mesh size (μ)	Number eggs per 1,000 m^3	Larvae	Number larvae per 1,000 m^3	Min. size (mm)	Max. size (mm)
5/19	II-2	505		Synodontidae - *Synodus foetens*	11	8.2	9.3
				Tetraodontidae	6	2.1	2.1
				Triglidae - *Prionotus* sp.	6	7.0	7.0
				Unknown			
5/19	II-2	333	3,889	Bothidae	17	3.2	4.5
				Bothidae - *Syacium* sp.	107	1.6	3.3
				Bregmacerotidae - *Bregmaceros atlanticus*	56	7.0	16.4
				Carangidae	17	3.2	3.7
				Carangidae - *Decapterus punctatus*	6	4.4	4.4
				Clupeidae - *Etrumeus teres*	23	17.5	20.2
				Clupeidae - *Harengula jaguana*	28	7.7	13.8
				Cynoglossidae - *Symphurus* sp.	101	1.9	4.5
				Engraulidae	591	2.3	11.0
				Engraulidae - *Anchoa* sp.	28	10.4	12.3
				Gobiidae	1,154	2.0	10.0
				Microdesmidae - *Microdesmus* sp.	253	2.0	6.2
				Muraenidae - *Gymnothorax* sp.	6	7.8	7.8
				Ophidiidae	62	2.8	5.4
				Sciaenidae - *Menticirrhus* sp.	6	2.7	2.7
				Sciaenidae - *Micropogon undulatus*	6	3.0	3.0
				Scombridae	23	2.5	3.4
				Scombridae - *Scomberomorus cavalla*	11	2.7	4.2
				Scombridae - *Scomberomorus maculatus*	23	2.2	5.6
				Scorpaenidae - *Scorpaena* sp.	6	1.9	1.9
				Serranidae - *Diplectrum* sp.	236	1.8	4.9
				Soleidae - *Gymnachirus* sp.	6	4.4	4.4
				Synodontidae	28	2.5	4.9
				Synodontidae - *Saurida* sp.	62	2.1	6.3
				Synodontidae - *Saurida brasiliensis*	79	9.2	20.2

Appendix table 1. (Continued)

Date (1977)	Transect and station	Mesh size (μ)	Number eggs per 1,000 m^3	Larvae	Number larvae per 1,000 m^3	Min. size (mm)	Max. size (mm)
5/19	II-2	333		Synodontidae - *Synodus* sp.	146	2.4	6.8
				Synodontidae - *Synodus foetens*	11	8.5	8.6
				Tetraodontidae	6	1.8	1.8
				Triglidae - *Prionotus* sp.	28	2.6	5.2
				Unknown	1,002	1.5	9.0
5/18	II-3	505	86	Bathylagidae - *Bathylagus* sp.	3	5.7	5.7
				Bothidae	11	3.2	6.5
				Bothidae - *Bothus* sp.	16	3.0	4.0
				Bothidae - *Cyclopsetta* sp.	3	6.1	6.1
				Bothidae - *Syacium* sp.	24	2.4	4.3
				Bregmacerotidae - *Bregmaceros* sp.	22	2.5	5.1
				Bregmacerotidae - *Bregmaceros atlanticus*	46	2.2	10.0
				Carangidae	5	3.1	3.3
				Chauliodontidae - *Chauliodus* sp.	3	9.7	9.7
				Clupeidae - *Etrumeus teres*	13	4.8	9.5
				Clupeidae - *Harengula jaguana*	3	15.3	15.3
				Cynoglossidae - *Symphurus* sp.	32	3.0	10.2
				Engraulidae	215	4.0	11.7
				Gobiidae	319	2.4	8.5
				Gonostomatidae - *Cyclothone* sp.	5	5.4	7.5
				Gonostomatidae - *Gonostomus atlanticum*	3	12.2	12.2
				Gonostomatidae - *Maurolicus muelleri*	54	2.7	6.4
				Gonostomatidae - *Vinciguerria* sp.	16	6.4	13.0
				Melamphaidae - *Melamphais* sp.	3	5.7	5.7
				Microdesmidae - *Microdesmus* sp.	32	3.9	6.5
				Mugilidae - *Mugil* sp.	5	2.5	4.9
				Mullidae	11	3.6	6.1
				Myctophidae	43	2.8	5.2
				Myctophidae - *Benthosema suborbitale*	27	3.6	5.3

Appendix table 1. (Continued)

Date (1977)	Transect and station	Mesh size (μ)	Number eggs per 1,000 m^3	Larvae	Number larvae per 1,000 m^3	Min. size (mm)	Max. size (mm)
5/18	II-3	505		Myctophidae - *Ceratoscopelus maderensis*	3	6.2	6.2
				Myctophidae - *Diaphus* sp.	59	3.9	5.5
				Myctophidae - *Diogenichthys atlanticus*	24	3.7	5.7
				Myctophidae - *Hygophum* sp.	13	4.7	5.3
				Myctophidae - *Hygophum reinhardti*	5	7.4	11.6
				Myctophidae - *Lampanyctus* sp.	3	3.7	3.7
				Myctophidae - *Myctophum* sp.	3	6.8	6.8
				Nettastomidae	5	8.8	10.0
				Ophichthidae	3	9.7	9.7
				Ophidiidae	16	3.7	5.8
				Paralepididae - *Lestidiops* sp.	16	4.4	10.0
				Sciaenidae - *Menticirrhus* sp.	3	3.1	3.1
				Scombridae	3	3.8	3.8
				Scombridae - *Scomberomorus cavalla*	3	5.7	5.7
				Scopelarchidae	3	6.0	6.0
				Scorpaenidae - *Scorpaena* sp.	3	2.5	2.5
				Serranidae - *Diplectrum* sp.	177	2.6	6.1
				Sparidae	5	3.1	6.3
				Synodontidae	150	4.0	7.0
				Synodontidae - *Saurida* sp.	569	3.8	9.5
				Synodontidae - *Saurida brasiliensis*	51	8.1	12.9
				Synodontidae - *Synodus* sp.	91	3.0	7.0
				Triglidae - *Prionotus* sp.	27	3.0	6.5
				Unknown	94	2.0	7.5
5/18	II-3	333	65	Bothidae	36	2.6	8.8
				Bothidae - *Bothus* sp.	17	2.6	3.3
				Bothidae - *Cyclopsetta* sp.	3	3.9	3.9
				Bothidae - *Syacium* sp.	28	2.3	4.9
				Branchiostegidae - *Caulolatilus* sp.			

Appendix table 1. (Continued)

Date (1977)	Transect and station	Mesh size (μ)	Number eggs per 1,000 m^3	Larvae	Number larvae per 1,000 m^3	Min. size (mm)	Max. size (mm)
5/18	II-3	333		Bregmacerotidae - *Bregmaceros* sp.	11	2.6	5.0
				Bregmacerotidae - *Bregmaceros atlanticus*	93	1.5	10.4
				Clupeidae	3	7.1	7.1
				Clupeidae - *Etrumeus teres*	28	5.1	19.5
				Congridae	3	98.5	98.5
				Cynoglossidae - *Symphurus* sp.	112	2.1	6.4
				Engraulidae	76	2.8	10.0
				Engraulidae - *Anchoa* sp.	36	8.5	11.5
				Engraulidae - *Engraulis eurystole*	42	8.5	12.5
				Gobiidae	373	2.0	8.7
				Gonostomatidae	14	3.9	5.8
				Gonostomatidae - *Cyclothone* sp.	3	3.7	3.7
				Gonostomatidae - *Gonostomus atlanticum*	3	8.6	8.6
				Gonostomatidae - *Maurolicus muelleri*	193	2.4	6.3
				Gonostomatidae - *Vinciguerria* sp.	28	4.5	12.2
				Labridae	6	4.9	5.9
				Microdesmidae - *Microdesmus* sp.	65	1.9	5.8
				Myctophidae - *Benthosema suborbitale*	50	3.1	6.0
				Myctophidae - *Diaphus* sp.	151	1.8	8.9
				Myctophidae - *Diogenichthys atlanticus*	36	3.2	6.1
				Myctophidae - *Hygophum* sp.	17	4.0	6.3
				Myctophidae - *Hygophum reinhardti*	6	6.5	6.6
				Myctophidae - *Myctophum* sp.	3	3.6	3.6
				Myctophidae - *Symbolophorus* sp.	3	6.6	6.6
				Ophichthidae	28	3.9	16.9
				Ophidiidae	22	3.2	7.3
				Paralepididae	8	3.6	8.5
				Scombridae - *Scomberomorus cavalla*	6	2.3	4.2
				Scorpaenidae	3	3.2	3.2

Appendix table 1. (Continued)

Date (1977)	Transect and station	Mesh size (μ)	Number eggs per 1,000 m^3	Larvae	Number larvae per 1,000 m^3	Min. size (mm)	Max. size (mm)
5/19	II-4	333		Tetraodontidae	26	2.7	3.1
				Unknown	787	1.5	6.6
5/19	II-5	505	2,436	Bothidae	44	2.5	4.2
				Bothidae - *Bothus ocellatus*	4	5.2	5.2
				Bothidae - *Cyclopsetta* sp.	4	2.8	2.8
				Bothidae - *Syacium* sp.	22	2.0	4.5
				Bregmacerotidae - *Bregmaceros atlanticus*	162	2.2	11.0
				Carangidae	4	3.4	3.4
				Clupeidae - *Etrumeus teres*	26	5.5	18.0
				Cynoglossidae - *Symphurus* sp.	37	2.5	4.7
				Engraulidae	327	3.4	11.0
				Engraulidae - *Anchoa* sp.	4	13.0	13.0
				Engraulidae - *Engraulis eurystole*	4	10.8	10.8
				Gobiidae	706	2.2	7.8
				Gonostomatidae	4	5.4	5.4
				Labridae	4	6.1	6.1
				Microdesmidae - *Microdesmus* sp.	29	3.2	5.6
				Mullidae	7	3.5	3.5
				Myctophidae - *Myctophum* sp.	4	4.0	4.0
				Ophichthidae	4	20.6	20.6
				Ophidiidae	33	3.5	6.2
				Sciaenidae - *Menticirrhus* sp.	4	2.7	2.7
				Sciaenidae - *Micropogon undulatus*	4	2.6	2.6
				Scombridae - *Scomberomorus cavalla*	4	3.7	3.7
				Serranidae - *Diplectrum* sp.	96	2.5	8.5
				Stromateidae - *Peprilus burti*	4	3.9	3.9
				Synodontidae	324	2.2	8.8
				Synodontidae - *Saurida* sp.	960	2.2	9.7
				Synodontidae - *Saurida brasiliensis*	37	8.0	15.8

Appendix table 1. (Continued)

Date (1977)	Transect and station	Mesh size (μ)	Number eggs per 1,000 m^3	Larvae	Number larvae per 1,000 m^3	Min. size (mm)	Max. size (mm)
5/19	II-5	505		Synodontidae - *Synodus* sp.	383	2.7	8.1
				Tetraodontidae	7	2.0	3.4
				Trichiuridae - *Trichiurus lepturus*	7	6.1	7.0
				Triglidae - *Prionotus* sp.	11	2.9	5.5
				Unknown	177	1.9	5.5
5/19	II-5	333	2,777	Blenniidae	4	4.4	4.4
				Bothidae - *Bothus* sp.	8	2.3	2.4
				Bothidae - *Bothus ocellatus*	4	5.8	5.8
				Bothidae - *Citharichthys* sp.	61	2.0	4.2
				Bothidae - *Syacium* sp.	61	1.8	2.7
				Bregmacerotidae - *Bregmaceros atlanticus*	237	1.9	14.1
				Carangidae	4	3.1	3.1
				Clupeidae	4	6.5	6.5
				Clupeidae - *Etrumeus teres*	19	11.9	18.1
				Cynoglossidae - *Symphurus* sp.	111	1.8	7.3
				Engraulidae	397	2.6	11.4
				Engraulidae - *Anchoa* sp.	12	9.4	11.8
				Gerreidae	4	3.0	3.0
				Gobiidae	1,753	1.9	9.2
				Gonostomatidae - *Maurolicus muelleri*	4	3.7	3.7
				Labridae - *Halichoeres* sp.	12	4.4	5.3
				Microdesmidae - *Microdesmus* sp.	103	1.8	5.4
				Muraenidae - *Gymnothorax* sp.	4	7.5	7.5
				Myctophidae - *Hygophum* sp.	4	5.8	5.8
				Nettastomidae	4	10.8	10.8
				Ophidiidae - *Lepophidium* sp.	31	4.0	6.3
				Sciaenidae - *Bairdiella chrysura*	4	2.8	2.8
				Sciaenidae - *Micropogon undulatus*	12	2.5	2.9
				Scorpaenidae - *Scorpaena* sp.	4	2.4	2.4

Appendix table 1. (Continued)

Date (1977)	Transect and station	Mesh size (μ)	Number eggs per 1,000 m^3	Larvae	Number larvae per 1,000 m^3	Min. size (mm)	Max. size (mm)
5/19	II-5	333		Serranidae - Diplectrum sp.	294	2.0	5.4
				Sparidae	4	5.2	5.2
				Synodontidae	210	2.1	10.6
				Synodontidae - Saurida sp.	1,486	2.4	9.0
				Synodontidae - Saurida brasiliensis	46	8.3	13.9
				Synodontidae - Synodus sp.	852	2.3	7.4
				Synodontidae - Synodus foetens	4	10.5	10.5
				Synodontidae - Synodus poeyi	12	7.7	10.7
				Tetraodontidae	19	1.8	2.2
				Trichiuridae - Trichiurus lepturus	4	9.0	9.0
				Triglidae - Prionotus sp.	4	2.5	2.5
				Triglidae - Prionotus stearnsi	4	18.2	18.2
				Unknown	516	1.5	6.0
5/19	II-6	505	278	Bothidae	14	2.4	5.0
				Bothidae - Cyclopsetta sp.	3	3.2	3.2
				Bothidae - Syacium sp.	29	2.1	4.3
				Bregmacerotidae - Bregmaceros sp.	3	3.2	3.2
				Bregmacerotidae - Bregmaceros atlanticus	227	2.4	43.0
				Carangidae - Chloroscombrus sp.	3	2.9	2.9
				Clupeidae - Etrumeus teres	20	8.3	15.2
				Clupeidae - Harengula jaguana	3	12.4	12.4
				Cynoglossidae - Symphurus sp.	66	2.2	5.3
				Engraulidae	192	2.8	8.9
				Engraulidae - Anchoa sp.	6	9.9	14.4
				Engraulidae - Engraulis eurystole	3	12.4	12.4
				Gobiidae	499	2.2	8.4
				Gonostomatidae - Cyclothone sp.	9	4.0	5.7
				Gonostomatidae - Vinciguerria sp.	9	3.8	8.0
				Microdesmidae - Microdesmus sp.	100	3.0	6.7

Appendix table 1. (Continued)

Date (1977)	Transect and station	Mesh size (μ)	Number eggs per 1,000 m^3	Larvae	Number larvae per 1,000 m^3	Min. size (mm)	Max. size (mm)
5/19	II-6	505		Mugilidae - *Mugil* sp.	3	2.1	2.1
				Myctophidae	6	2.6	3.3
				Myctophidae - *Ceratoscopelus* sp.	3	3.1	3.1
				Myctophidae - *Diaphus* sp.	12	3.4	5.3
				Myctophidae - *Hygophum* sp.	3	3.7	3.7
				Myctophidae - *Hygophum reinhardti*	3	5.6	5.6
				Ogcocephalidae	3	2.3	2.3
				Ophichthidae	6	8.9	15.7
				Ophidiidae	14	3.3	6.0
				Serranidae - *Diplectrum* sp.	141	2.7	6.6
				Sparidae	6	4.0	5.2
				Synodontidae	75	2.9	7.3
				Synodontidae - *Saurida* sp.	250	2.5	7.7
				Synodontidae - *Synodus* sp.	138	2.8	6.8
				Synodontidae - *Synodus foetens*	9	6.8	7.5
				Tetraodontidae	12	2.0	2.6
				Triglidae - *Prionotus* sp.	26	3.3	4.8
				Unknown	106	2.7	7.0
5/19	II-6	333	434	Blenniidae - *Hypleurochilus geminatus*	3	5.6	5.6
				Bothidae	39	1.5	5.6
				Bothidae - *Bothus* sp.	30	1.9	3.2
				Bothidae - *Bothus ocellatus*	6	4.1	5.5
				Bothidae - *Syacium* sp.	51	1.6	3.6
				Branchiostegidae - *Caulolatilus* sp.	18	1.7	2.7
				Bregmacerotidae - *Bregmaceros* sp.	9	1.7	2.9
				Bregmacerotidae - *Bregmaceros atlanticus*	428	1.9	11.7
				Clupeidae - *Etrumeus teres*	3	13.9	13.9
				Clupeidae - *Harengula jaguana*	3	15.0	15.0
				Cynoglossidae - *Symphurus* sp.	186	2.3	4.7

Appendix table 1. (Continued)

Date (1977)	Transect and station	Mesh size (μ)	Number eggs per 1,000 m^3	Larvae	Number larvae per 1,000 m^3	Min. size (mm)	Max. size (mm)
5/19	II-6	333		Engraulidae	383	3.6	8.9
				Engraulidae - *Anchoa* sp.	36	7.5	13.0
				Engraulidae - *Engraulis eurystole*	15	7.7	11.3
				Gobiidae	1,090	2.6	8.8
				Gonostomatidae - *Cyclothone* sp.	12	3.9	6.2
				Gonostomatidae - *Vinciguerria* sp.	3	6.5	6.5
				Microdesmidae - *Microdesmus* sp.	246	2.3	6.8
				Mullidae	18	2.5	5.5
				Muraenidae	9	7.4	7.8
				Myctophidae	6	2.6	3.5
				Myctophidae - *Benthosema suborbitale*	3	4.8	4.8
				Myctophidae - *Ceratoscopelus* sp.	3	3.7	3.7
				Myctophidae - *Diaphus* sp.	24	3.3	5.5
				Ophichthidae	39	5.1	8.9
				Ophidiidae	48	2.5	6.2
				Scorpaenidae	3	2.0	2.0
				Serranidae - *Centropristis* sp.	3	4.8	4.8
				Serranidae - *Diplectrum* sp.	177	2.3	5.4
				Serranidae - *Serraniculus pumilio*	3	2.6	2.6
				Sparidae	9	2.9	4.0
				Synodontidae	273	2.4	5.6
				Synodontidae - *Saurida* sp.	734	2.5	6.4
				Synodontidae - *Saurida brasiliensis*	6	7.8	10.8
				Synodontidae - *Synodus* sp.	309	3.1	6.7
				Synodontidae - *Synodus poeyi*	3	9.9	9.9
				Tetraodontidae	15	1.5	1.8
				Triglidae - *Prionotus* sp.	33	2.2	4.3
				Unknown	192	1.3	9.1

Appendix table 1. (Continued)

Date (1977)	Transect and station	Mesh size (μ)	Number eggs per 1,000 m^3	Larvae	Number larvae per 1,000 m^3	Min. size (mm)	Max. size (mm)
5/19	II-6	333		Engraulidae	383	3.6	8.9
				Engraulidae - *Anchoa* sp.	36	7.5	13.0
				Engraulidae - *Engraulis eurystole*	15	7.7	11.3
				Gobiidae	1,090	2.6	8.8
				Gonostomatidae - *Cyclothone* sp.	12	3.9	6.2
				Gonostomatidae - *Vinciguerria* sp.	3	6.5	6.5
				Microdesmidae - *Microdesmus* sp.	246	2.3	6.8
				Mullidae	18	2.5	5.5
				Muraenidae	9	7.4	7.8
				Myctophidae	6	2.6	3.5
				Myctophidae - *Benthosema suborbitale*	3	4.8	4.8
				Myctophidae - *Ceratoscopelus* sp.	3	3.7	3.7
				Myctophidae - *Diaphus* sp.	24	3.3	5.5
				Ophichthidae	39	5.1	8.9
				Ophidiidae	48	2.5	6.2
				Scorpaenidae	3	2.0	2.0
				Serranidae - *Centropristis* sp.	3	4.8	4.8
				Serranidae - *Diplectrum* sp.	177	2.3	5.4
				Serranidae - *Serraniculus pumilio*	3	2.6	2.6
				Sparidae	9	2.9	4.0
				Synodontidae	273	2.4	5.6
				Synodontidae - *Saurida* sp.	734	2.5	6.4
				Synodontidae - *Saurida brasiliensis*	6	7.8	10.8
				Synodontidae - *Synodus* sp.	309	3.1	6.7
				Synodontidae - *Synodus poeyi*	3	9.9	9.9
				Tetraodontidae	15	1.5	1.8
				Triglidae - *Prionotus* sp.	33	2.2	4.3
				Unknown	192	1.3	9.1

Appendix table 1. (Continued)

Date (1977)	Transect and station	Mesh size (µ)	Number eggs per 1,000 m^3	Larvae	Number larvae per 1,000 m^3	Min. size (mm)	Max. size (mm)
5/18	II-7	505		Myctophidae - *Lampanyctus* sp.	6	3.1	4.6
				Myctophidae - *Myctophum* sp.	44	3.0	4.9
				Myctophidae - *Myctophum selenops*	2	4.0	4.0
				Myctophidae - *Notolychnus valdiviae*	30	3.5	5.9
				Ogcocephalidae	2	3.1	3.1
				Ophichthidae	2	20.0	20.0
				Ophidiidae	2	5.6	5.6
				Paralepididae - *Lestidiops* sp.	11	2.7	13.7
				Paralepididae - *Sudis hyalina*	2	7.4	7.4
				Sciaenidae	2	7.4	7.4
				Sciaenidae - *Micropogon undulatus*	2	3.3	3.3
				Scombridae	2	4.0	4.0
				Serranidae - *Diplectrum* sp.	124	2.4	7.1
				Sparidae	5	2.6	4.1
				Stromateidae	2	5.0	5.0
				Synodontidae	276	3.1	8.9
				Synodontidae - *Saurida* sp.	798	2.6	11.1
				Synodontidae - *Saurida brasiliensis*	22	10.0	14.5
				Synodontidae - *Synodus* sp.	50	3.4	8.2
				Trichiuridae - *Diplospinus multistriatus*	11	3.2	9.8
				Triglidae - *Prionotus* sp.	11	2.5	5.7
				Unknown	132	2.0	8.0
5/18	II-7	333	139	Bothidae	50	2.1	8.0
				Bothidae - *Bothus* sp.	31	2.8	4.0
				Bothidae - *Bothus ocellatus*	9	3.9	5.5
				Bothidae - *Cyclopsetta* sp.	4	2.7	4.3
				Bothidae - *Syacium* sp.	95	2.2	3.8
				Branchiostegidae - *Caulolatilus* sp.	18	2.2	4.4

Appendix table 1. (Continued)

Date (1977)	Transect and station	Mesh size (μ)	Number eggs per 1,000 m^3	Larvae	Number larvae per 1,000 m^3	Min. size (mm)	Max. size (mm)
5/18	II-7	333		Bregmacerotidae - *Bregmaceros* sp.	10	2.9	5.4
				Bregmacerotidae - *Bregmaceros atlanticus*	45	2.1	8.7
				Clupeidae - *Etrumeus teres*	22	6.2	15.4
				Clupeidae - *Harengula jaguana*	4	9.5	15.3
				Cynoglossidae - *Symphurus* sp.	104	1.9	6.5
				Engraulidae	110	3.0	11.0
				Engraulidae - *Engraulis eurystole*	2	12.0	12.0
				Exocoetidae - *Hirundichthys affinis*	2	61.0	61.0
				Gobiidae	530	2.6	9.1
				Gonostomatidae	15	3.4	5.4
				Gonostomatidae - *Cyclothone* sp.	22	3.9	7.7
				Gonostomatidae - *Gonostomus atlanticum*	3	4.2	8.1
				Gonostomatidae - *Maurolicus* sp.	16	2.9	5.5
				Gonostomatidae - *Vinciguerria* sp.	85	4.5	10.3
				Labridae	2	5.5	5.5
				Melamphaidae - *Melamphais* sp.	2	4.5	4.5
				Microdesmidae - *Microdesmus* sp.	59	2.6	5.3
				Mugilidae - *Mugil* sp.	3	2.6	3.1
				Myctophidae	334	2.5	5.3
				Myctophidae - *Benthosema suborbitale*	3	3.9	4.8
				Myctophidae - *Diaphus* sp.	167	3.6	8.0
				Myctophidae - *Diogenichthys atlanticus*	22	3.0	6.1
				Myctophidae - *Hygophum* sp.	45	3.1	8.4
				Myctophidae - *Hygophum reinhardti*	10	3.8	9.5
				Myctophidae - *Lampanyctus* sp.	4	3.3	3.9
				Myctophidae - *Lampanyctus cuprarius*	2	6.2	6.2
				Myctophidae - *Myctophum* sp.	60	3.0	6.0
				Myctophidae - *Notolychnus valdiviae*	21	3.8	5.4
				Myctophidae - *Notoscopelus resplendens*	3	5.5	6.0

Appendix table 1. (Continued)

Date (1977)	Transect and station	Mesh size (μ)	Number eggs per 1,000 m^3	Larvae	Number larvae per 1,000 m^3	Min. size (mm)	Max. size (mm)
5/18	II-7	333		Ogcocephalidae	2	3.7	3.7
				Ophidiidae	4	5.2	6.0
				Paralepididae - *Lestidiops* sp.	34	2.9	20.2
				Priacanthidae	2	3.1	3.1
				Scombridae - *Scomberomorus cavalla*	2	3.4	3.4
				Serranidae	2	3.4	3.4
				Serranidae - *Diplectrum* sp.	148	2.2	6.5
				Sparidae	2	3.8	3.8
				Synodontidae	164	2.3	9.8
				Synodontidae - *Saurida* sp.	846	2.5	9.5
				Synodontidae - *Saurida brasiliensis*	53	7.9	13.5
				Synodontidae - *Synodus* sp.	70	3.4	7.3
				Trichiuridae - *Diplospinus multistriatus*	4	3.8	7.4
				Triglidae - *Prionotus* sp.	28	2.4	5.2
				Unknown	732	1.8	13.3
5/17	III-1	505	824	Bothidae	45	3.7	8.5
				Carangidae	45	2.5	4.1
				Cynoglossidae - *Symphurus* sp.	9	4.8	4.8
				Engraulidae	117	3.4	6.9
				Engraulidae - *Anchoa* sp.	18	9.5	10.3
				Gobiidae	54	2.6	8.8
				Microdesmidae - *Microdesmus* sp.	9	3.7	3.7
				Sciaenidae	18	3.0	3.2
				Sciaenidae - *Menticirrhus* sp.	9	2.4	2.4
				Sciaenidae - *Micropogon undulatus*	45	2.2	3.5
				Serranidae - *Centropristis* sp.	9	4.8	4.8
				Sparidae	9	3.0	3.0

Appendix table 1 (Continued)

Date (1977)	Transect and station	Mesh size (μ)	Number eggs per 1,000 m^3	Larvae	Number larvae per 1,000 m^3	Min. size (mm)	Max. size (mm)
5/17	III-1	333	3,726	Bothidae	9	3.4	3.4
				Bothidae - *Syacium* sp.	9	2.9	2.9
				Carangidae	28	2.4	3.0
				Carangidae - *Chloroscombrus chrysurus*	37	4.6	5.4
				Carangidae - *Vomer setapinnis*	9	2.6	2.6
				Cynoglossidae - *Symphurus* sp.	55	1.4	8.8
				Engraulidae	405	2.2	7.3
				Engraulidae - *Anchoa* sp.	9	15.0	15.0
				Gobiidae	138	1.8	14.0
				Microdesmidae - *Microdesmus* sp.	37	3.0	3.7
				Sciaenidae - *Cynoscion* sp.	18	5.0	5.1
				Sciaenidae - *Menticirrhus* sp.	9	2.7	2.7
				Sciaenidae - *Micropogon undulatus*	37	2.8	3.7
				Scombridae - *Scomberomorus maculatus*	9	2.3	2.3
				Serranidae - *Diplectrum* sp.	46	3.3	6.8
				Stromateidae - *Peprilus alepidotus*	9	4.7	4.7
				Unknown	129	1.0	7.2
5/17	III-2	505	2,503	Blenniidae - *Hypleurochilus geminatus*	10	4.0	8.2
				Bothidae	10	4.6	5.1
				Bregmacerotidae - *Bregmaceros atlanticus*	98	2.4	11.5
				Carangidae	5	3.5	3.5
				Carangidae - *Chloroscombrus chrysurus*	16	4.8	5.1
				Clupeidae - *Etrumeus teres*	5	13.5	13.5
				Clupeidae - *Harengula jaguana*	5	8.3	8.3
				Cynoglossidae - *Symphurus* sp.	72	2.2	8.7
				Engraulidae	310	3.1	10.6
				Engraulidae - *Anchoa* sp.	62	7.8	14.3
				Engraulidae - *Engraulis eurystole*	5	12.0	12.0
				Gobiidae	114	1.9	6.4

Appendix table 1. (Continued)

Date (1977)	Transect and station	Mesh size (μ)	Number eggs per 1,000 m^3	Larvae	Number larvae per 1,000 m^3	Min. size (mm)	Max. size (mm)
5/17	III-2	505		Myctophidae - *Diaphus* sp.	5	4.6	4.6
				Ophidiidae	26	3.5	4.2
				Sciaenidae - *Cynoscion* sp.	5	4.9	4.9
				Sciaenidae - *Menticirrhus* sp.	21	2.3	4.4
				Sciaenidae - *Micropogon undulatus*	46	2.5	3.5
				Scombridae	5	2.4	2.4
				Serranidae - *Diplectrum* sp.	57	2.2	4.4
				Serranidae - *Serraniculus pumilio*	10	2.4	3.0
				Synodontidae - *Saurida* sp.	88	2.3	7.7
				Synodontidae - *Saurida brasiliensis*	5	16.0	16.0
				Synodontidae - *Synodus* sp.	57	2.8	7.0
				Synodontidae - *Synodus foetens*	5	10.0	10.0
				Tetraodontidae	5	2.9	2.9
				Unknown	119	1.6	5.8
5/17	III-2	333	2,627	Blenniidae	6	3.7	3.7
				Bothidae	50	1.1	3.8
				Bregmacerotidae - *Bregmaceros atlanticus*	210	1.9	13.0
				Carangidae	33	2.4	2.8
				Carangidae - *Decapterus punctatus*	6	4.2	4.2
				Clupeidae	22	4.1	5.4
				Clupeidae - *Etrumeus teres*	22	8.3	16.0
				Clupeidae - *Harengula jaguana*	6	11.0	11.0
				Clupeidae - *Opisthonema oglinum*	11	8.2	10.0
				Cynoglossidae - *Symphurus* sp.	353	1.6	7.2
				Engraulidae	331	2.4	8.1
				Engraulidae - *Anchoa* sp.	33	8.2	14.0
				Gobiidae	673	1.9	3.9
				Microdesmidae - *Microdesmus* sp.	55	2.0	4.2
				Mugilidae - *Mugil* sp.	11	2.0	2.3

Appendix table 1 (Continued)

Date (1977)	Transect and station	Mesh size (μ)	Number eggs per 1,000 m^3	Larvae	Number larvae per 1,000 m^3	Min. size (mm)	Max. size (mm)
5/17	III-2	333		Ophichthidae	11	4.8	7.0
				Ophidiidae	33	2.1	3.5
				Sciaenidae	28	1.4	1.8
				Sciaenidae - *Cynoscion nothus*	77	2.4	4.2
				Sciaenidae - *Menticirrhus* sp.	11	2.3	2.8
				Scombridae - *Scomberomorus maculatus*	17	2.3	3.4
				Serranidae	33	1.6	7.2
				Serranidae - *Diplectrum* sp.	66	2.2	4.2
				Serranidae - *Serraniculus pumilio*	11	2.6	4.3
				Soleidae - *Gymnachirus* sp.	6	3.5	3.5
				Sparidae	6	2.7	2.7
				Stromateidae - *Peprilus* sp.	6	3.1	3.1
				Synodontidae	121	1.9	2.5
				Synodontidae - *Saurida* sp.	171	2.1	6.5
				Synodontidae - *Saurida brasiliensis*	11	15.0	20.0
				Synodontidae - *Synodus* sp.	99	2.2	5.5
				Synodontidae - *Synodus foetens*	6	12.0	12.0
				Triglidae - *Prionotus* sp.	44	1.8	3.2
				Unknown	359	1.5	4.3
5/18	III-3	505	425	Bothidae	53	2.1	6.7
				Bothidae - *Bothus* sp.	18	2.6	3.5
				Bothidae - *Bothus ocellatus*	9	3.5	7.0
				Bothidae - *Syacium* sp.	62	2.1	3.4
				Bregmacerotidae - *Bregmaceros atlanticus*	703	2.2	9.1
				Carangidae	3	3.4	3.4
				Clupeidae - *Etrumeus teres*	9	10.9	14.5
				Cynoglossidae - *Symphurus* sp.	325	2.1	9.0
				Engraulidae	47	3.5	10.5
				Gobiidae	363	2.3	6.7

Appendix table 1. (Continued)

Date (1977)	Transect and station	Mesh size (μ)	Number eggs per 1,000 m³	Larvae	Number larvae per 1,000 m³	Min. size (mm)	Max. size (mm)
5/18	III-3	505		Gonostomatidae - Gonostomus atlanticum	3	6.1	6.1
				Gonostomatidae - Maurolicus muelleri	18	5.2	6.0
				Labridae	6	4.3	5.0
				Microdesmidae	9	3.3	4.4
				Mugilidae	3	2.3	2.3
				Myctophidae	56	2.8	4.0
				Myctophidae - Diaphus sp.	80	3.1	5.6
				Myctophidae - Diogenichthys atlanticus	3	5.1	5.1
				Myctophidae - Hygophum sp.	3	5.5	5.5
				Ophidiidae	15	3.7	8.3
				Sciaenidae	3	2.5	2.5
				Serranidae - Diplectrum sp.	62	2.3	4.8
				Serranidae - Serraniculus pumilio	3	6.9	6.9
				Sparidae	3	3.3	3.3
				Synodontidae	160	2.7	11.4
				Synodontidae - Saurida sp.	1,406	2.1	8.6
				Synodontidae - Saurida brasiliensis	18	7.0	9.0
				Synodontidae - Synodus sp.	177	2.6	7.7
				Synodontidae - Synodus poeyi	6	6.5	7.6
				Triglidae - Prionotus sp.	30	2.8	5.8
				Unknown	74	2.3	7.1
5/18	III-3	333	491	Bothidae	94	1.7	5.9
				Bothidae - Bothus sp.	28	2.5	3.1
				Bothidae - Bothus ocellatus	16	4.0	5.9
				Bothidae - Syacium sp.	81	1.9	2.9
				Bregmacerotidae - Bregmaceros atlanticus	870	1.3	9.0
				Carangidae	3	2.5	2.5
				Carangidae - Chloroscombrus chrysurus	6	2.9	3.3
				Clupeidae - Etrumeus teres	25	5.7	14.5

Appendix table 1. (Continued)

Date (1977)	Transect and station	Mesh size (µ)	Number eggs per 1,000 m^3	Larvae	Number larvae per 1,000 m^3	Min. size (mm)	Max. size (mm)
5/18	III-3	333		Cynoglossidae - *Symphurus* sp.	770	1.9	7.5
				Engraulidae	172	2.2	7.1
				Engraulidae - *Anchoa* sp.	3	11.8	11.8
				Engraulidae - *Engraulis eurystole*	3	8.8	8.8
				Gobiidae	917	1.6	8.6
				Gonostomatidae	3	4.6	4.6
				Gonostomatidae - *Cyclothone* sp.	3	4.3	4.3
				Gonostomatidae - *Maurolicus muelleri*	22	3.2	7.1
				Gonostomatidae - *Vinciguerria* sp.	6	6.1	7.5
				Labridae	6	5.3	6.0
				Microdesmidae - *Microdesmus* sp.	50	2.1	4.6
				Myctophidae	53	2.5	4.0
				Myctophidae - *Benthosema suborbitale*	3	4.6	4.6
				Myctophidae - *Diaphus* sp.	169	3.1	6.3
				Myctophidae - *Diogenichthys atlanticus*	3	4.5	4.5
				Myctophidae - *Hygophum* sp.	13	3.5	7.1
				Myctophidae - *Notoscopelus resplendens*	3	6.1	6.1
				Ophichthidae	53	4.2	9.0
				Ophidiidae	13	3.4	7.6
				Sciaenidae - *Menticirrhus* sp.	3	2.8	2.8
				Scombridae - *Scomberomorus maculatus*	3	2.3	2.3
				Serranidae - *Diplectrum* sp.	72	2.2	4.7
				Sparidae	9	2.6	3.9
				Synodontidae	641	1.7	6.5
				Synodontidae - *Saurida* sp.	2,125	2.7	6.4
				Synodontidae - *Saurida brasiliensis*	75	6.5	10.3
				Synodontidae - *Synodus* sp.	369	2.9	6.0
				Synodontidae - *Synodus foetens*	6	7.2	8.0
				Synodontidae - *Synodus poeyi*	6	6.7	8.6
				Tetraodontidae	6	2.5	3.3
				Triglidae - *Prionotus* sp.	19	2.5	4.3
				Unknown	307	1.2	7.9

Appendix table 1. (Continued)

Date (1977)	Transect and station	Mesh size (μ)	Number eggs per 1,000 m3	Larvae	Number larvae per 1,000 m3	Min. size (mm)	Max. size (mm)
5/16	IV-1	505	4,136	Blenniidae - *Hypleurochilus geminatus*	9	9.0	9.0
				Bothidae	121	3.0	4.4
				Bothidae - *Syacium* sp.	37	2.3	2.9
				Bregmacerotidae - *Bregmaceros atlanticus*	9	4.0	4.0
				Clupeidae - *Harengula jaguana*	28	11.5	15.3
				Clupeidae - *Opisthonema oglinum*	9	16.6	16.6
				Cynoglossidae - *Symphurus* sp.	56	3.5	6.5
				Engraulidae	400	5.3	12.5
				Engraulidae - *Anchoa* sp.	158	10.9	13.6
				Engraulidae - *Engraulis eurystole*	28	12.5	24.7
				Gobiidae	37	2.7	8.1
				Microdesmidae - *Microdesmus* sp.	19	3.1	6.1
				Ophidiidae	9	12.9	12.9
				Sciaenidae - *Menticirrhus* sp.	37	2.5	2.9
				Sciaenidae - *Micropogon undulatus*	47	2.9	3.4
				Serranidae - *Diplectrum* sp.	186	3.0	11.3
				Sparidae	9	7.5	7.5
				Synodontidae	19	4.7	6.0
				Synodontidae - *Saurida* sp.	9	7.0	7.0
				Synodontidae - *Synodus* sp.	158	3.7	7.1
				Synodontidae - *Synodus foetens*	56	6.0	9.4
				Synodontidae - *Synodus poeyi*	9	19.9	19.9
				Triglidae - *Prionotus* sp.	9	2.9	2.9
				Unknown	47	1.8	2.8
5/16	IV-1	333	7,737	Bothidae	138	1.2	5.0
				Bothidae - *Syacium* sp.	18	1.9	3.5
				Bregmacerotidae - *Bregmaceros atlanticus*	28	1.6	2.1
				Clupeidae - *Etrumeus teres*	18	17.5	27.1

Appendix table 1. (Continued)

Date (1977)	Transect and station	Mesh size (μ)	Number eggs per 1,000 m3	Larvae	Number larvae per 1,000 m3	Min. size (mm)	Max. size (mm)
5/16	IV-1	333		Cynoglossidae - *Symphurus* sp.	92	1.6	10.1
				Engraulidae	460	2.2	12.8
				Engraulidae - *Anchoa* sp.	304	6.6	17.1
				Engraulidae - *Engraulis eurystole*	138	7.0	21.1
				Gobiidae	524	1.7	9.1
				Microdesmidae - *Microdesmus* sp.	46	1.7	5.8
				Ophichthidae	18	4.8	5.2
				Sciaenidae	37	1.5	2.9
				Sciaenidae - *Cynoscion* sp.	28	1.9	2.5
				Sciaenidae - *Micropogon undulatus*	92	2.0	3.3
				Serranidae - *Diplectrum* sp.	212	2.2	5.3
				Synodontidae	28	2.3	4.6
				Synodontidae - *Saurida brasiliensis*	9	13.3	13.3
				Synodontidae - *Synodus* sp.	230	2.0	6.6
				Synodontidae - *Synodus foetens*	74	6.7	21.2
				Synodontidae - *Synodus poeyi*	9	14.0	14.0
				Unknown	396	1.1	2.3
5/16	IV-2	505	1,739	Bothidae	32	2.4	7.9
				Bothidae - *Bothus* sp.	13	2.4	3.1
				Bothidae - *Cyclopsetta* sp.	7	3.2	3.2
				Bothidae - *Syacium* sp.	156	2.0	3.9
				Bregmacerotidae - *Bregmaceros atlanticus*	240	1.6	3.8
				Cynoglossidae - *Symphurus* sp.	149	2.2	4.4
				Engraulidae	13	5.9	6.5
				Gobiidae	208	2.2	5.2
				Gonostomatidae - *Vinciguerria* sp.	7	6.8	6.8
				Microdesmidae - *Microdesmus* sp.	13	3.3	4.0
				Myctophidae - *Hygophum* sp.	7	5.2	5.2

Appendix table 1. (Continued)

Date (1977)	Transect and station	Mesh size (μ)	Number eggs per 1,000 m^3	Larvae	Number larvae per 1,000 m^3	Min. size (mm)	Max. size (mm)
5/16	IV-2	505		Ophidiidae	7	4.2	4.2
				Serranidae - *Diplectrum* sp.	65	2.5	4.8
				Synodontidae	7	5.0	5.0
				Synodontidae - *Saurida* sp.	45	2.4	3.1
				Synodontidae - *Synodus* sp.	26	2.8	4.4
				Triglidae - *Prionotus* sp.	45	1.9	5.4
				Unknown	7	7.9	7.9
5/16	IV-2	333	3,064	Bothidae - *Bothus* sp.	60	2.5	3.0
				Bothidae - *Citharichthys* sp.	13	2.6	2.7
				Bothidae - *Syacium* sp.	608	1.6	3.8
				Bregmacerotidae - *Bregmaceros* sp.	7	3.0	3.0
				Bregmacerotidae - *Bregmaceros atlanticus*	1,242	1.7	3.4
				Carangidae	7	2.5	2.5
				Clupeidae	27	6.9	9.2
				Cynoglossidae - *Symphurus* sp.	674	2.0	5.6
				Engraulidae	374	2.5	10.1
				Gerreidae	7	2.7	2.7
				Gobiidae	3,451	1.8	6.9
				Microdesmidae	180	2.0	5.1
				Mullidae	7	3.3	3.3
				Myctophidae - *Diaphus* sp.	7	4.6	4.6
				Myctophidae - *Hygophum* sp.	7	4.7	4.7
				Myctophidae - *Myctophum selenops*	7	5.4	5.4
				Ophidiidae - *Lepophidium* sp.	33	2.4	3.9
				Serranidae - *Diplectrum* sp.	260	2.0	3.7
				Soleidae - *Gymnachirus* sp.	13	3.6	4.0
				Sphyraenidae - *Sphyraena* sp.	7	5.3	5.3
				Synodontidae	87	2.2	2.8

Appendix table 1. (Continued)

Date (1977)	Transect and station	Mesh size (μ)	Number eggs per 1,000 m^3	Larvae	Number larvae per 1,000 m^3	Min. size (mm)	Max. size (mm)
5/16	IV-2	333		Synodontidae - *Saurida* sp.	648	2.2	3.1
				Synodontidae - *Synodus* sp.	254	2.4	4.2
				Tetraodontidae	20	1.4	1.6
				Tetraodontidae - *Sphoeroides* sp.	7	4.5	4.5
				Triglidae - *Prionotus* sp.	80	2.0	3.5
				Unknown	648	1.5	5.9
5/16	IV-3	505	618	Bothidae	126	2.6	5.2
				Bothidae - *Bothus* sp.	6	3.5	3.8
				Bothidae - *Bothus ocellatus*	6	4.1	4.2
				Bothidae - *Cyclopsetta* sp.	3	4.5	4.5
				Bothidae - *Syacium* sp.	85	2.0	3.0
				Bregmacerotidae - *Bregmaceros atlanticus*	10	5.1	7.8
				Carangidae - *Decapterus punctatus*	3	3.3	3.3
				Carangidae - *Trachurus lathami*	3	3.5	3.5
				Clupeidae - *Harengula jaguana*	10	9.5	10.5
				Cynoglossidae - *Symphurus* sp.	51	2.5	5.6
				Engraulidae	32	6.0	9.4
				Gobiidae	151	2.7	5.0
				Mugilidae - *Mugil* sp.	3	4.6	4.6
				Mullidae	16	3.2	5.5
				Myctophidae - *Diaphus* sp.	10	3.3	4.0
				Ophichthidae	10	7.2	17.5
				Ophidiidae	44	3.3	18.0
				Paralepididae	13	7.0	8.8
				Scombridae - *Euthynnus alletteratus*	3	6.0	6.0
				Scombridae - *Scomberomorus cavalla*	3	5.8	5.8
				Serranidae	6	5.3	6.2
				Serranidae - *Diplectrum* sp.	136	2.4	5.7
				Soleidae - *Gymnachirus* sp.	6	5.5	5.7

Appendix table 1. (Continued)

Date (1977)	Transect and station	Mesh size (μ)	Number eggs per 1,000 m^3	Larvae	Number larvae per 1,000 m^3	Min. size (mm)	Max. size (mm)
5/16	IV-3	505		Synodontidae - *Saurida* sp.	51	2.2	5.7
				Synodontidae - *Synodus* sp.	25	2.5	4.0
				Triglidae - *Prionotus* sp.	51	2.3	5.5
				Unknown	63	2.9	6.1
5/16	IV-3	333	935	Bothidae	306	2.0	4.8
				Bothidae - *Bothus* sp.	75	2.5	3.7
				Bothidae - *Bothus ocellatus*	20	3.5	4.9
				Bothidae - *Cyclopsetta* sp.	3	5.3	5.3
				Bothidae - *Syacium* sp.	143	1.9	3.8
				Branchiostegidae - *Caulolatilus* sp.	10	2.5	3.2
				Bregmacerotidae - *Bregmaceros atlanticus*	10	7.2	9.8
				Carangidae - *Decapterus punctatus*	3	5.0	5.0
				Clupeidae - *Etrumeus teres*	14	10.5	12.5
				Clupeidae - *Harengula jaguana*	10	10.0	10.6
				Cynoglossidae - *Symphurus* sp.	153	2.0	5.5
				Engraulidae	68	5.4	9.7
				Gerreidae - *Eucinostomus* sp.	10	4.5	5.1
				Gobiidae	476	1.6	5.3
				Gonostomatidae - *Cyclothone* sp.	3	6.1	6.1
				Labridae - *Halichoeres* sp.	7	5.1	7.9
				Lutjanidae - *Lutjanus* sp.	3	4.7	4.7
				Microdesmidae - *Microdesmus* sp.	3	9.7	9.7
				Mugilidae - *Mugil* sp.	3	3.4	3.4
				Mullidae	48	2.7	4.8
				Myctophidae	3	3.3	3.3
				Myctophidae - *Ceratoscopelus* sp.	7	4.3	4.3
				Myctophidae - *Diaphus* sp.	41	3.4	4.5
				Ophichthidae	7	10.8	12.0
				Ophidiidae	92	2.2	13.5

Appendix table 1. (Continued)

Date (1977)	Transect and station	Mesh size (μ)	Number eggs per 1,000 m^3	Larvae	Number larvae per 1,000 m^3	Min. size (mm)	Max. size (mm)
5/16	IV-3	333		Paralepididae	14	8.3	9.1
				Pomadasyidae - *Haemulon* sp.	3	5.6	5.6
				Scombridae	3	2.9	2.9
				Serranidae - *Diplectrum* sp.	265	1.9	6.0
				Serranidae - *Serraniculus pumilio*	7	3.4	3.8
				Sparidae	3	3.8	3.8
				Sphyraenidae - *Sphyraena* sp.	3	3.7	3.7
				Synodontidae	37	2.6	4.9
				Synodontidae - *Saurida* sp.	95	2.9	6.5
				Synodontidae - *Synodus* sp.	116	2.6	5.0
				Triglidae - *Prionotus* sp.	78	2.0	6.4
				Unknown	265	1.6	6.5

Appendix table 1. (Continued)

Date (1977)	Transect and station	Mesh size (μ)	Number eggs per 1,000 m^3	Larvae	Number larvae per 1,000 m^3	Min. size (mm)	Max. size (mm)
7/6	II-1	505	2,037	Bothidae - *Syacium* sp.	26	1.6	1.7
				Carangidae	26	3.2	3.4
				Clupeidae	1,089	3.2	8.5
				Clupeidae - *Harengula jaguana*	9	9.6	9.6
				Engraulidae	659	2.2	5.7
				Gerreidae	9	3.2	3.2
				Gobiidae	18	2.8	3.1
				Lutjanidae	9	4.0	4.0
				Microdesmidae - *Microdesmus* sp.	26	2.4	3.4
				Sciaenidae - *Larimus fasciatus*	9	2.1	2.1
				Scombridae	18	3.1	3.4
				Scombridae - *Euthynnus alletteratus*	26	3.4	5.7
				Scombridae - *Scomberomorus cavalla*	26	3.2	3.3
				Scombridae - *Scomberomorus maculatus*	26	1.9	3.6
				Serranidae - *Diplectrum* sp.	9	4.8	4.8
				Serranidae - *Serraniculus pumilio*	9	4.6	4.6
				Unknown	26	2.6	5.8
7/6	II-1	333	13,221	Blenniidae	9	3.5	3.5
				Bothidae - *Syacium* sp.	259	1.2	1.9
				Carangidae	9	1.9	1.9
				Clupeidae	5,380	2.5	6.1
				Clupeidae - *Harengula jaguana*	17	1.2	9.1
				Engraulidae	2,418	2.8	5.2
				Engraulidae - *Anchoa* sp.	17	6.4	5.8
				Gerreidae	17	2.4	3.2
				Gobiidae	121	1.8	3.2
				Microdesmidae - *Microdesmus* sp.	86	1.5	3.2

Appendix table 1. (Continued)

Date (1977)	Transect and station	Mesh size (μ)	Number eggs per 1,000 m^3	Larvae	Number larvae per 1,000 m^3	Min. size (mm)	Max. size (mm)
7/6	II-1	333		Ophidiidae	9	2.4	2.4
				Scombridae	86	1.8	3.2
				Scombridae - *Euthynnus alletteratus*	26	3.4	3.7
				Scombridae - *Scomberomorus maculatus*	17	2.3	2.7
				Serranidae	9	2.1	2.1
				Serranidae - *Diplectrum* sp.	9	3.6	3.6
				Unknown	941	2.1	4.1
7/7	II-2	505	396	Bothidae	351	1.5	5.3
				Bothidae - *Bothus* sp.	23	2.0	5.1
				Bothidae - *Bothus ocellatus*	34	3.9	7.8
				Bothidae - *Cyclopsetta* sp.	45	2.2	5.1
				Bothidae - *Syacium* sp.	1,205	1.8	5.6
				Bothidae - *Syacium gunteri*	17	6.1	7.8
				Bregmacerotidae - *Bregmaceros atlanticus*	141	1.7	19.6
				Carangidae	40	2.0	2.7
				Clupeidae	28	3.8	8.3
				Clupeidae - *Harengula jaguana*	23	8.8	10.0
				Cynoglossidae - *Symphurus* sp.	96	2.3	6.7
				Engraulidae	277	3.1	8.2
				Gerreidae	6	6.0	6.0
				Gobiidae	566	2.3	8.4
				Lutjanidae	23	2.7	3.7
				Microdesmidae - *Microdesmus* sp.	40	3.2	12.8
				Ophichthidae	6	5.8	5.8
				Ophidiidae	23	1.7	5.8
				Scombridae	260	2.0	3.7
				Scombridae - *Euthynnus alletteratus*	181	2.8	6.0
				Scombridae - *Katsuwonus pelamis*	11	4.9	5.8

Appendix table 1. (Continued)

Date (1977)	Transect and station	Mesh size (μ)	Number eggs per 1,000 m^3	Larvae	Number larvae per 1,000 m^3	Min. size (mm)	Max. size (mm)
7/7	II-2	505		Scorpaenidae - *Scorpaena* sp.	6	3.1	3.1
				Serranidae	11	1.9	2.0
				Serranidae - *Diplectrum* sp.	124	2.1	4.3
				Synodontidae - *Saurida* sp.	34	2.3	7.0
				Synodontidae - *Saurida brasiliensis*	11	8.3	8.9
				Synodontidae - *Synodus* sp.	102	2.2	7.5
				Trichiuridae - *Trichiurus lepturus*	6	5.5	5.5
				Unknown	119	2.1	9.8
7/7	II-2	333	469	Bothidae - *Bothus* sp.	11	2.3	2.5
				Bothidae - *Bothus ocellatus*	17	3.8	4.9
				Bothidae - *Cyclopsetta* sp.	17	3.4	4.9
				Bothidae - *Syacium* sp.	1,948	1.4	8.3
				Bregmacerotidae - *Bregmaceros atlanticus*	90	1.7	9.0
				Carangidae	17	2.1	4.3
				Carangidae - *Decapterus punctatus*	6	2.7	2.7
				Clupeidae	11	4.2	4.4
				Clupeidae - *Harengula jaguana*	45	7.7	9.8
				Cynoglossidae - *Symphurus* sp.	45	2.2	2.7
				Engraulidae	373	3.1	7.0
				Gerreidae - *Eucinostomus* sp.	6	7.0	7.0
				Gobiidae	1,011	1.8	7.7
				Gonostomatidae - *Cyclothone* sp.	23	2.5	5.0
				Lutjanidae	11	4.0	4.8
				Lutjanidae - *Lutjanus* sp.	6	7.0	7.0
				Microdesmidae - *Microdesmus* sp.	79	2.3	11.0
				Mullidae	6	5.8	5.8
				Ogcocephalidae	6	2.5	2.5
				Ophichthidae	26	6.5	66.0

Appendix table 1. (Continued)

Date (1977)	Transect and station	Mesh size (μ)	Number eggs per 1,000 m^3	Larvae	Number larvae per 1,000 m^3	Min. size (mm)	Max. size (mm)
7/7	II-2	333		Ophidiidae	23	2.5	5.9
				Priacanthidae	6	2.6	2.6
				Sciaenidae	6	2.3	2.3
				Sciaenidae - *Cynoscion* sp.	6	3.8	3.8
				Scombridae	339	2.3	4.5
				Scombridae - *Auxis* sp.	57	3.4	5.0
				Scombridae - *Euthynnus alletteratus*	119	3.3	6.0
				Scombridae - *Scomberomorus cavalla*	11	3.0	3.7
				Scombridae - *Thunnus* sp.	6	4.8	4.8
				Serranidae	45	1.9	2.8
				Serranidae - *Diplectrum* sp.	73	2.0	3.3
				Synodontidae	28	2.2	5.1
				Synodontidae - *Saurida* sp.	23	2.3	5.5
				Synodontidae - *Saurida brasiliensis*	28	6.2	10.0
				Synodontidae - *Synodus* sp.	107	2.0	6.0
				Unknown	520	1.6	4.5
7/6	II-3	505	189	Acanthuridae	2	4.0	4.0
				Bothidae	14	2.3	5.5
				Bothidae - *Bothus* sp.	4	2.3	3.7
				Bothidae - *Bothus ocellatus*	20	3.6	5.8
				Bothidae - *Syacium* sp.	160	2.3	8.4
				Bregmacerotidae - *Bregmaceros atlanticus*	41	3.2	9.7
				Carangidae	11	1.9	3.6
				Clupeidae	41	5.5	8.6
				Clupeidae - *Harengula jaguana*	14	8.7	13.4
				Congridae	4	10.9	16.8
				Cynoglossidae - *Symphurus* sp.	18	2.4	5.3
				Engraulidae	2	9.4	9.4

Appendix table 1. (Continued)

Date (1977)	Transect and station	Mesh size (μ)	Number eggs per 1,000 m^3	Larvae	Number larvae per 1,000 m^3	Min. size (mm)	Max. size (mm)
7/6	II-3	505		Engraulidae - Engraulis eurystole	2	10.0	10.0
				Exocoetidae	2	4.0	4.0
				Gempylidae	2	5.0	5.0
				Gerreidae - Eucinostomus sp.	20	2.7	8.4
				Gobiidae	116	2.3	7.5
				Gonostomatidae - Cyclothone sp.	43	3.2	7.1
				Gonostomatidae - Vinciguerria sp.	2	8.2	8.2
				Holocentridae	2	5.0	5.0
				Istiophoridae	2	3.5	3.5
				Labridae	4	5.1	8.0
				Lutjanidae	34	2.1	5.1
				Microdesmidae - Microdesmus sp.	57	3.4	14.1
				Mullidae	29	3.4	7.8
				Myctophidae	11	3.1	5.2
				Myctophidae - Ceratoscopelus maderensis	4	5.0	10.5
				Myctophidae - Ceratoscopelus warmingi	4	5.0	5.9
				Myctophidae - Diaphus sp.	62	3.1	6.2
				Ogcocephalidae	2	2.6	2.6
				Ophichthidae	21	4.9	21.1
				Ophidiidae	9	4.6	6.2
				Paralepididae	7	11.9	17.3
				Priacanthidae	5	2.3	2.8
				Scombridae	9	2.7	3.9
				Scombridae - Euthynnus alletteratus	9	3.1	4.5
				Serranidae - Hemanthias vivanus	2	4.8	4.8
				Synodontidae	16	3.6	4.6
				Synodontidae - Saurida sp.	21	3.5	7.0
				Synodontidae - Saurida brasiliensis	9	11.2	13.6
				Synodontidae - Synodus sp.	5	3.2	3.8

Appendix table 1. (Continued)

Date (1977)	Transect and station	Mesh size (μ)	Number eggs per 1,000 m^3	Larvae	Number larvae per 1,000 m^3	Min. size (mm)	Max. size (mm)
7/6	II-3	505		Synodontidae - *Synodus poeyi*	4	11.1	12.9
				Tetraodontidae	4	2.1	2.4
				Unknown	57	2.1	10.3
7/6	II-3	333	134	Bothidae	4	3.7	3.8
				Bothidae - *Bothus* sp.	14	1.7	4.2
				Bothidae - *Bothus ocellatus*	7	2.8	5.1
				Bothidae - *Syacium* sp.	204	1.5	5.7
				Bregmacerotidae - *Bregmaceros atlanticus*	55	2.3	9.2
				Carangidae	16	1.9	2.8
				Clupeidae	74	4.3	8.2
				Clupeidae - *Harengula jaguana*	35	6.8	13.0
				Cynoglossidae - *Symphurus* sp.	19	2.6	4.9
				Engraulidae	4	2.9	3.4
				Gerreidae - *Eucinostomus* sp.	23	2.8	7.3
				Gobiidae	156	2.1	7.2
				Gonostomatidae - *Cyclothone* sp.	76	2.7	8.5
				Lutjanidae	14	2.6	5.8
				Lutjanidae - *Etelis oculatus*	4	3.7	5.7
				Microdesmidae - *Microdesmus* sp.	47	3.2	7.3
				Mullidae	37	2.7	4.1
				Muraenidae	2	21.0	21.0
				Myctophidae - *Ceratoscopelus* sp.	53	2.0	4.2
				Myctophidae - *Diaphus* sp.	56	2.9	5.3
				Myctophidae - *Myctophum* sp.	2	3.6	3.6
				Ophichthidae	18	6.2	19.0
				Ophidiidae - *Lepophidium* sp.	2	5.2	5.2
				Paralepididae	12	7.8	13.0
				Rachycentridae - *Rachycentron canadum*	2	3.8	3.8

Appendix table 1. (Continued)

Date (1977)	Transect and station	Mesh size (μ)	Number eggs per 1,000 m^3	Larvae	Number larvae per 1,000 m^3	Min. size (mm)	Max. size (mm)
7/6	II-3	333		Scombridae	2	2.5	2.5
				Scombridae - *Scomberomorus maculatus*	2	2.0	2.0
				Scombridae - *Thunnus albacares*	2	5.7	5.7
				Sphyraenidae - *Sphyraena* sp.	4	3.2	3.8
				Synodontidae	16	3.1	10.6
				Synodontidae - *Saurida* sp.	19	3.1	6.1
				Synodontidae - *Saurida brasiliensis*	5	13.0	16.0
				Synodontidae - *Synodus* sp.	18	2.8	6.8
				Synodontidae - *Trachinocephalus myops*	2	5.1	5.1
				Unknown	668	1.3	33.0
7/6	II-4	505	1,923	Bothidae - *Bothus* sp.	6	3.4	3.4
				Bothidae - *Bothus ocellatus*	6	4.5	4.5
				Bothidae - *Cyclopsetta* sp.	6	3.6	3.6
				Bothidae - *Syacium* sp.	147	1.4	3.4
				Clupeidae	361	3.0	8.2
				Cynoglossidae - *Symphurus* sp.	62	1.7	3.9
				Engraulidae	23	2.5	4.2
				Gobiidae	34	1.7	2.6
				Lutjanidae	6	3.0	3.0
				Microdesmidae - *Microdesmus* sp.	40	2.6	3.5
				Ophidiidae	23	3.4	6.0
				Scombridae	6	3.5	3.5
				Scombridae - *Scomberomorus cavalla*	6	2.7	2.7
				Serranidae - *Diplectrum* sp.	6	3.0	3.0
				Synodontidae - *Synodus* sp.	17	3.2	5.1
				Unknown	23	1.3	3.1

Appendix table 1. (Continued)

Date (1977)	Transect and station	Mesh size (μ)	Number eggs per 1,000 m^3	Larvae	Number larvae per 1,000 m^3	Min. size (mm)	Max. size (mm)
7/7	II-4	333	6,534	Bothidae - *Bothus* sp.	17	1.8	2.2
				Bothidae - *Cyclopsetta* sp.	6	3.2	3.2
				Bothidae - *Syacium* sp.	188	1.1	3.0
				Bregmacerotidae - *Bregmaceros atlanticus*	17	1.7	2.3
				Clupeidae	1,833	2.6	6.7
				Cynoglossidae - *Symphurus* sp.	51	1.8	3.5
				Engraulidae	188	1.8	5.6
				Gobiidae	364	1.3	2.7
				Lutjanidae	11	2.9	3.0
				Microdesmidae - *Microdesmus* sp.	171	1.5	3.8
				Ophidiidae	85	1.8	5.2
				Scombridae	11	2.8	3.0
				Scombridae - *Euthynnus alletteratus*	6	5.9	5.9
				Serranidae - *Diplectrum* sp.	40	2.1	2.6
				Synodontidae - *Synodus* sp.	6	3.1	3.1
				Unknown	279	1.3	3.2
7/6	II-5	505	837	Bothidae	4	4.0	4.0
				Bothidae - *Bothus ocellatus*	4	11.0	11.0
				Bothidae - *Syacium* sp.	139	2.4	5.6
				Bothidae - *Syacium gunteri*	4	7.1	7.1
				Branchiostegidae - *Caulolatilus* sp.	4	3.4	3.4
				Bregmacerotidae - *Bregmaceros atlanticus*	42	3.0	8.2
				Cynoglossidae - *Symphurus* sp.	17	3.9	8.2
				Engraulidae	4	6.7	6.7
				Exocoetidae	4	4.0	4.0
				Gobiidae	101	2.7	6.5
				Gonostomatidae - *Cyclothone* sp.	13	3.7	6.2
				Holocentridae	4	2.4	2.4

Appendix table 1. (Continued)

Date (1977)	Transect and station	Mesh size (µ)	Number eggs per 1,000 m^3	Larvae	Number larvae per 1,000 m^3	Min. size (mm)	Max. size (mm)
7/6	II-5	505		Labridae	4	7.0	7.0
				Lutjanidae	25	2.2	3.0
				Microdesmidae - *Microdesmus* sp.	21	2.5	5.0
				Mullidae	13	3.5	4.0
				Myctophidae	46	2.7	4.0
				Myctophidae - *Ceratoscopelus* sp.	21	2.7	4.5
				Myctophidae - *Diaphus* sp.	277	3.1	4.5
				Myctophidae - *Hygophum* sp.	4	4.9	4.9
				Ogcocephalidae	25	2.6	23.0
				Ophichthidae - *Myrophis* sp.	4	9.6	9.6
				Scombridae	13	3.2	4.2
				Scombridae - *Euthynnus alletteratus*	8	3.7	4.1
				Scombridae - *Scomberomorus cavalla*	8	4.4	4.5
				Serranidae - *Hemanthias vivanus*	4	4.6	4.6
				Synodontidae - *Saurida* sp.	46	3.3	6.3
				Synodontidae - *Saurida brasiliensis*	4	8.6	8.6
				Synodontidae - *Synodus* sp.	17	2.8	3.9
				Unknown	8	1.7	2.6
7/6	II-5	333	973	Apogonidae	4	8.9	8.9
				Bothidae	21	2.7	3.6
				Bothidae - *Bothus* sp.	4	2.6	2.6
				Bothidae - *Syacium* sp.	167	1.5	5.3
				Bothidae - *Syacium gunteri*	4	6.4	6.4
				Bregmacerotidae - *Bregmaceros atlanticus*	33	2.3	5.3
				Clupeidae	13	2.7	7.7
				Cynoglossidae - *Symphurus* sp.	8	6.2	6.9
				Gerreidae	13	2.9	5.2

Appendix table 1. (Continued)

Date (1977)	Transect and station	Mesh size (μ)	Number eggs per 1,000 m^3	Larvae	Number larvae per 1,000 m^3	Min. size (mm)	Max. size (mm)
7/6	II-5	333		Gobiidae	100	2.0	7.9
				Gonostomatidae - Cyclothone sp.	33	2.3	5.1
				Lutjanidae	25	2.3	4.4
				Microdesmidae - Microdesmus sp.	13	3.9	4.9
				Myctophidae	138	2.1	4.2
				Myctophidae - Ceratoscopelus sp.	46	2.9	4.1
				Myctophidae - Diaphus sp.	159	2.5	4.7
				Ogcocephalidae	13	2.3	3.0
				Ophichthidae	21	6.4	18.0
				Paralepididae	4	16.0	16.0
				Scombridae	84	1.7	2.3
				Scombridae - Auxis sp.	13	3 2	3.7
				Scombridae - Euthynnus alletteratus	4	3.3	3.3
				Sphyraenidae - Sphyraena sp.	4	2.2	2.2
				Synodontidae - Saurida sp.	29	3.1	4.3
				Synodontidae - Synodus sp.	42	2.2	9.0
				Unknown	29	1.3	3.2
7/6	II-6	505	500	Bothidae	19	3.4	6.2
				Bothidae - Bothus sp.	11	3.9	4.2
				Bothidae - Bothus ocellatus	8	3.7	6.2
				Bothidae - Cyclopsetta sp.	5	4.1	7.1
				Bothidae - Syacium sp.	242	1.7	5.5
				Bothidae - Syacium gunteri	3	6.2	6.2
				Bregmacerotidae	41	2.3	5.8
				Clupeidae	16	5.0	7.4
				Cynoglossidae - Symphurus sp.	16	5.0	7.3
				Gobiidae	95	2.3	7.1

Appendix table 1. (Continued)

Date (1977)	Transect and station	Mesh size (μ)	Number eggs per 1,000 m^3	Larvae	Number larvae per 1,000 m^3	Min. size (mm)	Max. size (mm)
7/6	II-6	505		Gonostomatidae - *Cyclothone* sp.	11	3.8	7.0
				Labridae	3	7.6	7.6
				Lutjanidae	38	1.8	3.0
				Lutjanidae - *Lutjanus* sp.	5	3.7	4.3
				Microdesmidae - *Microdesmus* sp.	30	3.0	5.0
				Mullidae	3	3.6	3.6
				Myctophidae	8	2.8	4.0
				Myctophidae - *Ceratoscopelus* sp.	5	4.0	4.4
				Myctophidae - *Diaphus* sp.	188	2.8	6.5
				Myctophidae - *Lampadena* sp.	3	4.9	4.9
				Myctophidae - *Myctophum* sp.	3	4.4	4.4
				Ogcocephalidae	8	1.3	2.5
				Ophichthidae	5	8.6	20.8
				Ophidiidae	8	6.0	9.0
				Paralepididae	14	8.6	10.5
				Scombridae	3	4.8	4.8
				Scorpaenidae	3	3.1	3.1
				Synodontidae	22	3.0	4.9
				Synodontidae - *Saurida* sp.	35	3.5	5.4
				Synodontidae - *Synodus* sp.	11	3.0	3.8
				Synodontidae - *Synodus poeyi*	3	7.7	7.7
				Unknown	38	2.0	13.5
7/6	II-6	333	717	Balistidae - *Monacanthus* sp.	3	6.7	6.7
				Bothidae - *Bothus* sp.	22	2.2	3.8
				Bothidae - *Bothus ocellatus*	5	2.9	4.9
				Bothidae - *Citharichthys* sp.	16	3.2	4.5
				Bothidae - *Syacium* sp.	243	1.7	4.6

Appendix table 1. (Continued)

Date (1977)	Transect and station	Mesh size (μ)	Number eggs per 1,000 m^3	Larvae	Number larvae per 1,000 m^3	Min. size (mm)	Max. size (mm)
7/6	II-6	333		Bothidae - *Syacium gunteri*	3	6.5	6.5
				Bregmacerotidae - *Bregmaceros atlanticus*	33	1.5	5.6
				Carangidae	8	1.3	2.6
				Clupeidae	35	4.3	8.3
				Cynoglossidae - *Symphurus* sp.	8	1.8	3.7
				Gerreidae - *Eucinostomus* sp.	11	3.3	2.8
				Gobiidae	123	1.9	6.8
				Gonostomatidae - *Cyclothone* sp.	35	2.3	5.3
				Labridae	3	5.7	5.7
				Lutjanidae	22	1.9	3.1
				Lutjanidae - *Lutjanus* sp.	3	3.8	3.8
				Microdesmidae - *Microdesmus* sp.	25	3.1	5.8
				Mullidae	3	3.6	3.6
				Myctophidae - *Ceratoscopelus* sp.	147	2.3	4.1
				Myctophidae - *Diaphus* sp.	112	2.7	4.5
				Myctophidae - *Hygophum* sp.	5	2.7	3.6
				Myctophidae - *Myctophum* sp.	5	4.3	4.8
				Nettastomidae	3	7.3	7.3
				Ogcocephalidae	5	2.3	2.8
				Ophichthidae	27	4.2	10.0
				Ophidiidae	22	4.1	16.0
				Paralepididae - *Lestidiops* sp.	5	8.3	9.8
				Scombridae	46	2.0	3.1
				Scombridae - *Auxis* sp.	3	4.7	4.7
				Scombridae - *Euthynnus alletteratus*	3	2.4	2.4
				Scombridae - *Katsuwonus pelamis*	5	3.6	3.7
				Scombridae - *Thunnus albacares*	3	3.8	3.8
				Scorpaenidae - *Scorpaena* sp.	3	3.1	3.1

Appendix table 1. (Continued)

Date (1977)	Transect and station	Mesh size (μ)	Number eggs per 1,000 m^3	Larvae	Number larvae per 1,000 m^3	Min. size (mm)	Max. size (mm)
7/6	II-6	333		Serranidae	3	3.5	3.5
				Sphyraenidae - *Sphyraena* sp.	3	6.0	6.0
				Synodontidae - *Saurida* sp.	35	3.2	5.8
				Synodontidae - *Synodus* sp.	33	2.9	5.2
				Unknown	550	1.3	5.0
7/6	II-7	505	8	Bothidae	10	4.0	6.1
				Bothidae - *Bothus* sp.	3	2.9	3.3
				Bothidae - *Bothus ocellatus*	14	4.3	6.4
				Bothidae - *Syacium* sp.	65	1.9	5.2
				Bregmacerotidae - *Bregmaceros atlanticus*	8	2.3	9.4
				Carangidae - *Chloroscombrus chrysurus*	4	3.6	7.0
				Carangidae - *Decapterus punctatus*	1	7.3	7.3
				Carangidae - *Trachinotus* sp.	4	3.3	4.5
				Clupeidae	73	5.1	8.9
				Clupeidae - *Harengula jaguana*	63	10.4	12.9
				Cynoglossidae - *Symphurus* sp.	10	2.6	5.3
				Engraulidae	1	8.0	8.0
				Gerreidae	25	3.9	8.5
				Gobiidae	25	2.6	7.7
				Gonostomatidae - *Cyclothone* sp.	84	4.5	12.9
				Gonostomatidae - *Vinciguerria* sp.	1	6.2	6.2
				Holocentridae	3	3.4	5.1
				Lutjanidae	80	2.4	3.8
				Lutjanidae - *Etelis oculatus*	50	3.2	5.5
				Melanostomiatidae - *Eustomias* sp.	1	17.8	17.8
				Microdesmidae - *Microdesmus* sp.	11	3.5	5.4
				Mullidae	1	5.1	5.1

Appendix table 1. (Continued)

Date (1977)	Transect and station	Mesh size (μ)	Number eggs per 1,000 m^3	Larvae	Number larvae per 1,000 m^3	Min. size (mm)	Max. size (mm)
7/6	II-7	505		Muraenidae - Gymnothorax sp.	3	43.1	55.0
				Myctophidae	1	4.8	4.8
				Myctophidae - Ceratoscopelus sp.	3	4.5	4.7
				Myctophidae - Ceratoscopelus maderensis	1	5.8	5.8
				Myctophidae - Ceratoscopelus warmingi	3	5.2	7.9
				Myctophidae - Diaphus sp.	95	4.0	7.0
				Myctophidae - Lampadena sp.	8	4.2	6.9
				Myctophidae - Myctophum sp.	1	7.6	7.6
				Ogcocephalidae	4	2.8	4.6
				Ophichthidae	41	6.9	53.1
				Ophichthidae - Myrophis sp.	15	5.6	10.6
				Ophidiidae	1	3.6	3.6
				Paralepididae	17	8.2	18.2
				Pomacentridae - Abudefduf saxatilis	1	10.1	10.1
				Scombridae	12	3.7	5.9
				Scombridae - Scomberomorus cavalla	1	3.7	3.7
				Serranidae - Liopropoma sp.	1	13.3	13.3
				Sphyraenidae - Sphraena sp.	1	6.3	6.3
				Synodontidae	51	4.9	10.1
				Synodontidae - Saurida sp.	39	5.7	8.6
				Synodontidae - Saurida brasiliensis	21	8.8	15.6
				Synodontidae - Synodus sp.	3	3.2	3.6
				Tetraodontidae	3	2.2	2.6
				Unknown	59	2.6	8.6
7/6	II-7	333	53	Bothidae	18	2.1	5.3
				Bothidae - Bothus sp.	5	2.3	3.0
				Bothidae - Bothus ocellatus	20	2.8	5.4
				Bothidae - Syacium sp.	120	1.4	6.7

Appendix table 1. (Continued)

Date (1977)	Transect and station	Mesh size (μ)	Number eggs per 1,000 m^3	Larvae	Number larvae per 1,000 m^3	Min. size (mm)	Max. size (mm)
7/6	II-7	333		Bregmacerotidae - *Bregmaceros atlanticus*	27	2.0	4.2
				Carangidae	5	2.4	3.8
				Carangidae - *Caranx* sp.	7	4.7	8.3
				Carangidae - *Chloroscombrus chrysurus*	1	2.5	2.5
				Carangidae - *Trachinotus* sp.	1	5.5	5.5
				Chiasmodontidae	1	8.5	8.5
				Clupeidae	131	5.3	8.7
				Clupeidae - *Harengula jaguana*	127	6.3	9.2
				Congridae	1	9.1	9.1
				Congridae - *Ariosoma balearicum*	1	14.2	14.2
				Cynoglossidae - *Symphurus* sp.	18	1.8	11.2
				Gempylidae	1	4.8	4.8
				Gobiidae	80	2.2	7.3
				Gobiidae - *Ioglossus calliurus*	16	4.2	8.5
				Gonostomatidae - *Cyclothone* sp.	302	3.5	10.5
				Grammistidae - *Rypticus* sp.	1	4.6	4.6
				Holocentridae - *Holocentrus* sp.	3	3.5	5.8
				Lutjanidae	61	2.6	3.7
				Lutjanidae - *Etelis oculatus*	159	2.7	5.5
				Microdesmidae - *Microdesmus* sp.	24	2.7	14.0
				Mullidae	4	3.0	4.1
				Muraenidae	3	46.0	56.0
				Myctophidae	31	2.6	6.4
				Myctophidae - *Bolinichthys* sp.	4	6.3	9.2
				Myctophidae - *Ceratoscopelus* sp.	5	4.0	4.8
				Myctophidae - *Ceratoscopelus maderensis*	23	3.3	6.3
				Myctophidae - *Ceratoscopelus warmingi*	5	3.9	5.0
				Myctophidae - *Diaphus* sp.	155	4.1	6.8
				Myctophidae - *Hygophum* sp.	1	5.7	5.7

Appendix table 1. (Continued)

Date (1977)	Transect and station	Mesh size (μ)	Number eggs per 1,000 m^3	Larvae	Number larvae per 1,000 m^3	Min. size (mm)	Max. size (mm)
7/6	II-7	333		Myctophidae - *Lampadena* sp.	9	3.5	4.9
				Nettastomidae	1	14.1	14.1
				Ogcocephalidae	4	2.0	4.7
				Ophichthidae	74	4.7	11.7
				Ophichthidae - *Myrophis* sp.	3	18.0	28.0
				Ophidiidae	12	2.3	10.5
				Paralepididae	22	4.6	18.0
				Priacanthidae	1	3.2	3.2
				Scombridae	22	2.1	5.1
				Scombridae - *Auxis* sp.	8	3.6	5.2
				Scombridae - *Euthynnus alletteratus*	5	3.2	14.6
				Serranidae	9	2.1	5.1
				Soleidae - *Gymnachirus* sp.	1	3.2	3.2
				Synodontidae	82	3.6	8.5
				Synodontidae - *Saurida* sp.	49	2.6	7.7
				Synodontidae - *Saurida brasiliensis*	31	8.5	13.5
				Synodontidae - *Synodus* sp.	55	2.8	12.2
				Tetraodontidae	1	2.8	2.8
				Unknown	638	1.8	4.4
8/4	II-1	505	119	Bothidae - *Syacium* sp.	376	2.2	3.7
				Carangidae	55	2.8	4.0
				Carangidae - *Chloroscombrus chrysurus*	18	3.0	3.8
				Clupeidae	266	2.9	8.5
				Clupeidae - *Opisthonema oglinum*	46	8.5	11.0
				Cynoglossidae - *Symphurus* sp.	9	6.8	6.8
				Engraulidae	128	3.0	9.3
				Gobiidae	174	2.4	4.3
				Microdesmidae - *Microdesmus* sp.	37	3.0	8.3

Appendix table 1. (Continued)

Date (1977)	Transect and station	Mesh size (μ)	Number eggs per 1,000 m^3	Larvae	Number larvae per 1,000 m^3	Min. size (mm)	Max. size (mm)
8/4	II-1	505		Ophidiidae	9	3.0	3.0
				Scombridae - *Euthynnus alletteratus*	28	3.9	5.4
				Scombridae - *Scomberomorus cavalla*	9	4.2	4.2
				Scombridae - *Scomberomorus maculatus*	18	2.1	3.0
				Serranidae - *Diplectrum* sp.	46	2.4	3.9
				Serranidae - *Serraniculus pumilio*	9	5.2	5.2
				Sphyraenidae - *Sphyraena* sp.	64	2.8	4.8
				Unknown	9	3.5	3.5
8/4	II-1	333	3,525	Bothidae - *Syacium* sp.	761	1.5	3.8
				Carangidae	31	2.7	3.1
				Carangidae - *Chloroscombrus chrysurus*	21	2.9	3.5
				Carangidae - *Decapterus punctatus*	21	2.4	2.8
				Clupeidae	1,799	2.3	10.0
				Engraulidae	555	1.9	9.3
				Gobiidae	668	1.8	4.9
				Grammistidae - *Rypticus* sp.	10	3.4	3.4
				Lutjanidae	10	4.4	4.4
				Lutjanidae - *Lutjanus* sp.	10	4.9	4.9
				Microdesmidae - *Microdesmus* sp.	442	1.7	5.1
				Scombridae	31	1.8	2.5
				Scombridae - *Euthynnus alletteratus*	10	3.6	3.6
				Scombridae - *Scomberomorus cavalla*	21	4.0	4.5
				Scombridae - *Scomberomorus maculatus*	21	2.0	5.0
				Serranidae	113	1.7	3.2
				Serranidae - *Diplectrum* sp.	31	2.3	4.2
				Sphyraenidae - *Sphyraena* sp.	72	2.4	7.7
				Tetraodontidae	10	2.2	2.2
				Unknown	267	1.2	6.5

Appendix table 1. (Continued)

Date (1977)	Transect and station	Mesh size (µ)	Number eggs per 1,000 m^3	Larvae	Number larvae per 1,000 m^3	Min. size (mm)	Max. size (mm)
8/4	II-2	505	236	Bothidae - *Syacium* sp.	21	2.3	2.9
				Carangidae	143	1.7	3.0
				Carangidae - *Chloroscombrus chrysurus*	7	4.3	4.3
				Clupeidae	71	2.8	8.2
				Clupeidae - *Harengula jaguana*	14	12.0	14.0
				Gerreidae	36	2.2	3.1
				Gobiidae	7	4.8	4.8
				Gonostomatidae - *Cyclothone* sp.	7	3.6	3.6
				Lutjanidae	7	3.3	3.3
				Myctophidae - *Lampadena* sp.	7	4.3	4.3
				Ophidiidae	7	5.9	5.9
				Scombridae	50	2.1	4.1
				Scombridae - *Euthynnus alletteratus*	14	4.0	4.1
				Serranidae	14	2.0	2.4
				Unknown	14	2.7	3.2
8/4	II-2	333	3,558	Bothidae - *Syacium* sp.	78	1.5	2.3
				Bregmacerotidae - *Bregmaceros atlanticus*	16	4.3	4.8
				Carangidae	525	1.7	2.5
				Carangidae - *Decapterus punctatus*	8	2.1	2.1
				Clupeidae	133	2.3	3.5
				Engraulidae	16	1.9	2.3
				Gobiidae	47	1.6	8.7
				Gonostomatidae - *Cyclothone* sp.	16	3.5	3.7
				Muraenidae - *Gymnothorax* sp.	8	36.0	36.0
				Scombridae	267	2.0	4.1
				Serranidae - *Diplectrum* sp.	8	2.8	2.8
				Synodontidae	8	2.5	2.5
				Unknown	698	1.4	2.9

Appendix table 1. (Continued)

Date (1977)	Transect and station	Mesh size (μ)	Number eggs per 1,000 m^3	Larvae	Number larvae per 1,000 m^3	Min. size (mm)	Max. size (mm)
8/4	II-3	505	24	Bothidae	3	5.8	5.8
				Bothidae - Bothus sp.	24	4.6	5.6
				Bothidae - Syacium sp.	40	3.0	5.5
				Bregmacerotidae - Bregmaceros sp.	6	2.4	3.1
				Bregmacerotidae - Bregmaceros atlanticus	118	2.4	24.0
				Carangidae	33	2.2	3.3
				Cynoglossidae - Symphurus sp.	3	8.2	8.2
				Gobiidae	33	3.9	8.6
				Gonostomatidae - Cyclothone sp.	12	3.8	10.0
				Lutjanidae	67	2.5	3.4
				Lutjanidae - Etelis oculatus	9	4.0	4.8
				Myctophidae	9	3.1	3.6
				Myctophidae - Ceratoscopelus sp.	12	3.0	3.4
				Myctophidae - Diaphus sp.	261	2.2	4.5
				Myctophidae - Hygophum reinhardti	3	6.7	6.7
				Myctophidae - Myctophum sp.	3	5.0	5.0
				Nettastomidae	3	9.5	9.5
				Ophichthidae	6	14.0	27.0
				Paralepididae	6	4.8	6.3
				Scombridae	36	2.3	3.7
				Scombridae - Euthynnus alletteratus	15	2.9	4.1
				Scombridae - Scomberomorus cavalla	3	3.8	3.8
				Synodontidae - Saurida sp.	9	1.9	7.4
				Synodontidae - Synodus sp.	6	3.5	5.0
				Unknown	18	2.7	4.1
8/4	II-3	333	47	Alepisauridae - Alepisaurus sp.	3	3.9	3.9
				Bothidae - Bothus sp.	7	3.2	5.0
				Bothidae - Bothus ocellatus	3	5.8	5.8
				Bothidae - Cyclopsetta sp.	3	3.5	3.5

Appendix table 1. (Continued)

Date (1977)	Transect and station	Mesh size (μ)	Number eggs per 1,000 m^3	Larvae	Number larvae per 1,000 m^3	Min. size (mm)	Max. size (mm)
8/4	II-3	333		Bothidae - *Syacium* sp.	20	3.1	5.2
				Bregmacerotidae - *Bregmaceros* sp.	10	2.1	3.2
				Bregmacerotidae - *Bregmaceros atlanticus*	139	2.4	4.9
				Carangidae	122	1.7	2.8
				Carangidae - *Decapterus punctatus*	47	2.2	3.7
				Cynoglossidae - *Symphurus* sp.	3	3.6	3.6
				Engraulidae	3	9.2	9.2
				Gobiidae	71	1.9	8.7
				Gonostomatidae	7	3.2	3.8
				Gonostomatidae - *Cyclothone* sp.	41	3.0	6.3
				Gonostomatidae - *Gonostomus elongatum*	3	3.9	3.9
				Lutjanidae	359	1.9	4.7
				Myctophidae - *Benthosema suborbitale*	3	3.0	3.0
				Myctophidae - *Ceratoscopelus* sp.	37	2.2	3.5
				Myctophidae - *Diaphus* sp.	271	1.8	4.7
				Myctophidae - *Hygophum* sp.	3	3.8	3.8
				Myctophidae - *Lampanyctus* sp.	3	3.0	3.0
				Myctophidae - *Myctophum* sp.	3	4.1	4.1
				Myctophidae - *Myctophum obtusirostre*	3	3.7	3.7
				Ophichthidae	3	22.0	22.0
				Paralepididae	20	3.3	6.0
				Scombridae	102	2.1	3.9
				Scombridae - *Euthynnus alletteratus*	7	3.4	3.5
				Scombridae - *Scomberomorus maculatus*	10	2.5	2.7
				Scombridae - *Thunnus atlanticus*	3	3.9	3.9
				Synodontidae - *Saurida* sp.	10	3.5	9.6
				Synodontidae - *Synodus* sp.	3	3.6	3.6
				Unknown	481	1.5	4.0

Appendix table 1. (Continued)

Date (1977)	Transect and station	Mesh size (μ)	Number eggs per 1,000 m^3	Larvae	Number larvae per 1,000 m^3	Min. size (mm)	Max. size (mm)
8/4	II-4	505	540	Bothidae - *Syacium* sp.	174	1.5	3.7
				Carangidae	9	2.9	2.9
				Clupeidae	632	2.3	6.3
				Engraulidae	101	2.3	4.0
				Gobiidae	46	1.7	6.3
				Lutjanidae	28	2.6	2.9
				Microdesmidae - *Microdesmus* sp.	9	2.1	2.1
				Scombridae	92	2.4	3.4
				Scombridae - *Euthynnus alletteratus*	73	3.3	4.9
				Scombridae - *Katsuwonus pelamis*	9	3.2	3.2
				Serranidae	37	1.7	2.3
				Serranidae - *Serraniculus pumilio*	9	2.4	2.4
				Sphyraenidae - *Sphyraena* sp.	28	3.5	4.5
				Unknown	156	1.3	6.0
8/4	II-4	333	2,214	Bothidae - *Bothus* sp.	10	1.8	1.8
				Bothidae - *Syacium* sp.	480	1.2	3.1
				Carangidae	31	2.1	2.8
				Carangidae - *Decapterus punctatus*	41	2.0	2.8
				Clupeidae	2,612	2.1	6.0
				Clupeidae - *Harengula jaguana*	10	12.0	12.0
				Cynoglossidae - *Symphurus* sp.	10	5.8	5.8
				Engraulidae	551	2.0	5.7
				Gobiidae	20	2.4	3.2
				Lutjanidae	51	2.4	3.0
				Ophidiidae	41	2.1	4.3
				Scombridae	184	1.9	4.4
				Scombridae - *Euthynnus alletteratus*	133	3.3	4.4

Appendix table 1. (Continued)

Date (1977)	Transect and station	Mesh size (μ)	Number eggs per 1,000 m^3	Larvae	Number larvae per 1,000 m^3	Min. size (mm)	Max. size (mm)
8/4	II-4	333		Serranidae - *Diplectrum* sp.	61	2.0	3.3
				Sphyraenidae - *Sphyraena* sp.	10	3.4	3.4
				Synodontidae - *Synodus* sp.	10	3.7	3.7
				Unknown	1,174	1.7	4.3
8/5	II-5	505	358	Bothidae - *Bothus* sp.	7	3.1	5.7
				Bothidae - *Bothus ocellatus*	20	3.7	6.5
				Bothidae - *Syacium* sp.	112	3.0	5.6
				Bregmacerotidae - *Bregmaceros atlanticus*	213	1.8	7.0
				Carangidae - *Decapterus punctatus*	737	2.1	3.0
				Cynoglossidae - *Symphurus* sp.	3	4.0	4.0
				Gobiidae	108	2.7	8.3
				Gonostomatidae - *Cyclothone* sp.	85	3.2	6.5
				Istiophoridae - *Istiophorus platypterus*	3	4.6	4.6
				Myctophidae	3	4.3	4.3
				Myctophidae - *Ceratoscopelus* sp.	3	4.9	4.9
				Ophichthidae	14	6.3	8.2
				Ophidiidae	3	3.6	3.6
				Paralepididae	3	6.4	6.4
				Priacanthidae	3	2.1	2.1
				Scombridae	203	2.5	4.1
				Scombridae - *Auxis* sp.	24	2.4	4.5
				Scombridae - *Euthynnus alletteratus*	71	3.3	6.1
				Scombridae - *Katsuwonus pelamis*	3	3.8	3.8
				Synodontidae	14	3.1	7.3
				Synodontidae - *Saurida* sp.	17	3.6	6.2
				Synodontidae - *Saurida brasiliensis*	7	6.2	8.7
				Synodontidae - *Synodus* sp.	10	4.4	7.0
				Trichiuridae - *Trichiurus lepturus*	3	4.8	4.8
				Unknown	162	1.5	5.0

Appendix table 1. (Continued)

Date (1977)	Transect and station	Mesh size (μ)	Number eggs per 1,000 m^3	Larvae	Number larvae per 1,000 m^3	Min. size (mm)	Max. size (mm)
8/5	II-5	333	475	Bothidae - _Bothus ocellatus_	8	4.1	6.1
				Bothidae - _Syacium_ sp.	160	1.9	5.8
				Bregmacerotidae - _Bregmaceros atlanticus_	669	1.8	15.0
				Carangidae	8	3.5	4.2
				Carangidae - _Decapterus punctatus_	1,420	1.6	2.9
				Cynoglossidae - _Symphurus_ sp.	16	3.1	5.0
				Engraulidae	20	2.7	12.0
				Evermannellidae	4	4.6	4.6
				Gobiidae	230	2.0	9.1
				Gobiidae - _Ioglossus calliurus_	4	8.1	8.1
				Gonostomatidae - _Cyclothone_ sp.	261	3.0	8.1
				Lutjanidae	58	2.0	4.4
				Lutjanidae - _Lutjanus_ sp.	4	5.3	5.3
				Microdesmidae - _Microdesmus_ sp.	4	2.1	2.1
				Myctophidae	4	3.2	3.2
				Myctophidae - _Ceratoscopelus_ sp.	20	3.5	4.6
				Myctophidae - _Diaphus_ sp.	12	3.7	5.0
				Ophichthidae	23	5.4	38.0
				Ophidiidae	23	3.3	7.1
				Paralepididae	16	4.3	7.1
				Priacanthidae	4	3.0	3.0
				Scombridae	833	2.2	3.6
				Scombridae - _Euthynnus alletteratus_	39	3.3	5.0
				Scorpaenidae - _Scorpaena_ sp.	8	5.1	5.8
				Synodontidae	8	4.2	5.1
				Synodontidae - _Saurida_ sp.	39	3.0	8.0
				Synodontidae - _Synodus_ sp.	55	3.1	6.0
				Unknown	934	1.9	4.9

Appendix table 1. (Continued)

Date (1977)	Transect and station	Mesh size (μ)	Number eggs per 1,000 m^3	Larvae	Number larvae per 1,000 m^3	Min. size (mm)	Max. size (mm)
8/4	II-6	505	117	Bothidae	4	5.0	5.0
				Bothidae - *Bothus* sp.	23	3.1	5.2
				Bothidae - *Bothus ocellatus*	8	5.0	5.2
				Bothidae - *Syacium* sp.	19	4.0	4.7
				Bregmacerotidae - *Bregmaceros atlanticus*	151	1.8	7.1
				Carangidae - *Caranx* sp.	45	2.7	3.6
				Ephippidae	4	2.6	2.6
				Gobiidae	11	3.4	8.2
				Gonostomatidae - *Cyclothone* sp.	4	3.8	3.8
				Lutjanidae	83	2.3	3.5
				Myctophidae	19	2.8	3.7
				Myctophidae - *Diaphus* sp.	30	3.3	4.2
				Myctophidae - *Hygophum* sp.	4	4.1	4.1
				Myctophidae - *Lampanyctus* sp.	8	3.1	3.6
				Nettastomidae	4	8.3	8.3
				Ophichthidae	4	18.0	18.0
				Paralepididae	4	4.8	4.8
				Scombridae	90	2.5	4.7
				Scombridae - *Euthynnus alletteratus*	19	3.6	4.2
				Scombridae - *Scomberomorus cavalla*	8	2.6	3.0
				Synodontidae - *Saurida* sp.	15	2.3	4.0
				Unknown	45	1.8	4.6
8/4	II-6	333	202	Bothidae	4	3.3	3.3
				Bothidae - *Bothus* sp.	13	3.5	4.8
				Bothidae - *Syacium* sp.	38	2.5	3.9
				Bregmacerotidae - *Bregmaceros* sp.	4	2.3	2.3
				Bregmacerotidae - *Bregmaceros atlanticus*	558	1.4	6.8
				Carangidae - *Decapterus punctatus*	122	1.6	3.5

Appendix table 1. (Continued)

Date (1977)	Transect and station	Mesh size (μ)	Number eggs per 1,000 m^3	Larvae	Number larvae per 1,000 m^3	Min. size (mm)	Max. size (mm)
8/4	II-6	333		Gobiidae	42	2.5	8.0
				Gonostomatidae - *Cyclothone* sp.	34	2.8	9.3
				Lutjanidae	252	2.2	4.3
				Myctophidae	59	2.6	6.5
				Myctophidae - *Ceratoscopelus* sp.	34	2.5	14.0
				Myctophidae - *Diaphus* sp.	71	2.9	4.9
				Ophichthidae	17	12.0	30.0
				Paralepididae	4	10.0	10.0
				Scombridae	277	1.9	3.5
				Scombridae - *Euthynnus alletteratus*	25	3.1	4.4
				Scombridae - *Scomberomorus cavalla*	4	3.0	3.0
				Synodontidae - *Saurida* sp.	29	2.3	4.4
				Unknown	558	1.5	4.5
8/4	II-7	505	114	Bothidae	2	8.9	8.9
				Bothidae - *Bothus* sp.	6	4.3	6.4
				Bothidae - *Bothus ocellatus*	4	4.6	5.1
				Bothidae - *Syacium* sp.	26	2.2	4.8
				Bregmacerotidae - *Bregmaceros* sp.	2	3.7	3.7
				Bregmacerotidae - *Bregmaceros atlanticus*	59	1.9	6.6
				Carangidae	24	2.2	3.9
				Clupeidae	2	15.0	15.0
				Cynoglossidae - *Symphurus* sp.	4	3.4	3.7
				Engraulidae	2	9.6	9.6
				Gobiidae	149	3.4	8.7
				Gonostomatidae - *Cyclothone* sp.	22	3.2	11.0
				Gonostomatidae - *Vinciguerria nimbaria*	2	8.1	8.1
				Myctophidae	8	2.8	5.3
				Myctophidae - *Ceratoscopelus* sp.	2	3.6	3.6

Appendix table 1. (Continued)

Date (1977)	Transect and station	Mesh size (μ)	Number eggs per 1,000 m^3	Larvae	Number larvae per 1,000 m^3	Min. size (mm)	Max. size (mm)
8/4	II-7	505		Myctophidae - *Diaphus* sp.	183	2.5	4.8
				Myctophidae - *Hygophum* sp.	2	4.2	4.2
				Myctophidae - *Hygophum reinhardti*	2	8.1	8.1
				Myctophidae - *Lampadena* sp.	2	4.2	4.2
				Myctophidae - *Lampanyctus* sp.	2	6.2	6.2
				Myctophidae - *Myctophum* sp.	2	4.1	4.1
				Myctophidae - *Notolychnus valdiviae*	4	5.8	6.0
				Paralepididae	10	3.9	8.4
				Scombridae	2	3.1	3.1
				Scombridae - *Scomberomorus cavalla*	33	2.8	4.0
				Synodontidae	2	5.9	5.9
				Synodontidae - *Saurida* sp.	4	3.2	5.7
				Synodontidae - *Synodus* sp.	6	3.1	3.8
				Unknown	12	1.8	5.8
8/4	II-7	333	241	Bathylagidae	4	4.4	4.7
				Bothidae	2	4.8	4.8
				Bothidae - *Bothus* sp.	11	3.8	4.6
				Bothidae - *Bothus ocellatus*	7	3.5	7.7
				Bothidae - *Syacium* sp.	24	1.9	3.8
				Bregmacerotidae - *Bregmaceros* sp.	4	2.9	3.2
				Bregmacerotidae - *Bregmaceros atlanticus*	82	2.2	30.0
				Carangidae - *Decapterus punctatus*	88	1.6	3.0
				Clupeidae - *Harengula jaguana*	7	7.8	8.0
				Cynoglossidae - *Symphurus* sp.	4	3.2	3.9
				Gobiidae	259	3.8	8.6
				Gonostomatidae	11	3.5	5.7
				Gonostomatidae - *Cyclothone* sp.	60	2.4	7.3
				Gonostomatidae - *Vinciguerria* sp.	7	9.0	12.0

Appendix table 1. (Continued)

Date (1977)	Transect and station	Mesh size (μ)	Number eggs per 1,000 m^3	Larvae	Number larvae per 1,000 m^3	Min. size (mm)	Max. size (mm)
8/4	II-7	333		Lutjanidae	16	2.1	3.4
				Lutjanidae - *Etelis oculatus*	7	3.5	3.8
				Microdesmidae - *Microdesmus* sp.	2	1.7	1.7
				Myctophidae	27	1.8	4.7
				Myctophidae - *Ceratoscopelus* sp.	49	2.1	4.3
				Myctophidae - *Diaphus* sp.	212	2.9	5.0
				Myctophidae - *Hygophum reinhardti*	2	4.7	4.7
				Myctophidae - *Lampanyctus* sp.	2	3.1	3.1
				Myctophidae - *Myctophum* sp.	7	3.2	3.8
				Ophichthidae	7	21.0	84.0
				Paralepididae	40	3.1	13.0
				Priacanthidae	2	3.7	3.7
				Scombridae	42	2.0	3.9
				Synodontidae - *Saurida* sp.	9	3.0	9.2
				Synodontidae - *Synodus* sp.	20	3.0	6.5
				Tetraodontidae	4	2.0	3.8
				Triglidae - *Prionotus* sp.	2	2.6	2.6
				Unknown	307	1.9	11.0

Appendix table 1. (Continued)

Date (1977)	Transect and station	Mesh size (μ)	Number eggs per 1,000 m^3	Larvae	Number larvae per 1,000 m^3	Min. size (mm)	Max. size (mm)
9/11	I-1	505	137	Carangidae	336	1.8	3.9
				Clupeidae	718	4.0	19.4
				Engraulidae	748	3.8	12.4
				Engraulidae - *Anchoa* sp.	397	6.5	31.0
				Ephippidae - *Chaetodipterus faber*	15	2.7	2.7
				Gobiidae	15	3.8	3.8
				Sciaenidae	198	2.1	3.7
				Sciaenidae - *Menticirrhus* sp.	92	2.6	4.0
				Scombridae - *Scomberomorus maculatus*	15	3.6	3.6
				Unknown	15	---	---
9/11	I-1	333	322	Bothidae	15	7.4	7.4
				Carangidae	1,378	1.6	2.7
				Clupeidae	796	3.5	8.6
				Clupeidae - *Harengula* sp.	15	18.1	18.1
				Clupeidae - *Sardinella* sp.	230	10.1	15.0
				Clupeidae - *Sardinella anchovia*	15	16.3	16.3
				Engraulidae	1,470	2.2	9.2
				Engraulidae - *Anchoa* sp.	521	8.4	24.3
				Gobiidae	31	7.4	7.5
				Sciaenidae	490	1.7	4.1
				Sciaenidae - *Cynoscion nothus*	15	9.7	9.7
				Sciaenidae - *Menticirrhus* sp.	92	3.0	3.6
				Scombridae	15	2.3	2.3
				Unknown	567	1.8	4.4
9/11	I-2	505	458	Bothidae - *Syacium* sp.	52	1.9	4.7
				Carangidae	135	1.8	4.0
				Clupeidae	84	5.5	8.8
				Cynoglossidae - *Symphurus* sp.	58	1.9	2.4

Appendix table 1. (Continued)

Date (1977)	Transect and station	Mesh size (μ)	Number eggs per 1,000 m^3	Larvae	Number larvae per 1,000 m^3	Min. size (mm)	Max. size (mm)
9/11	I-2	505		Engraulidae	303	4.1	6.8
				Gobiidae	168	2.0	5.0
				Lutjanidae	13	2.4	2.8
				Microdesmidae - <u>Microdesmus</u> sp.	13	1.8	2.2
				Moringuidae - <u>Neoconger mucronatus</u>	110	4.0	7.3
				Ophcihthidae	32	6.0	9.8
				Sciaenidae - <u>Larimus fasciatus</u>	6	3.0	3.0
				Scombridae	6	3.5	3.5
				Scombridae - <u>Euthynnus alletteratus</u>	6	4.5	4.5
				Scombridae - <u>Scomberomorus maculatus</u>	13	3.8	5.7
				Scorpaenidae - <u>Scorpaena</u> sp.	6	4.8	4.8
				Sphyraenidae - <u>Sphyraena</u> sp.	6	3.2	3.2
				Unknown	32	2.2	4.7
9/11	I-2	333	2,156	Bothidae - <u>Syacium</u> sp.	241	1.6	2.3
				Carangidae	430	1.5	3.7
				Clupeidae	137	2.4	8.0
				Cynoglossidae - <u>Symphurus</u> sp.	762	1.6	3.6
				Engraulidae	671	3.3	6.2
				Gobiidae	495	1.6	5.7
				Microdesmidae - <u>Microdesmus</u> sp.	397	1.4	2.3
				Moringuidae - <u>Neoconger mucronatus</u>	189	3.3	5.4
				Myctophidae - <u>Diaphus</u> sp.	7	7.7	7.7
				Ophichthidae	26	4.3	13.9
				Ophidiidae	46	2.2	3.7
				Sciaenidae	7	2.2	2.2
				Sciaenidae - <u>Sciaenops ocellata</u>	7	4.1	4.1
				Scombridae - <u>Scomberomorus cavalla</u>	20	4.2	4.4
				Sphyraenidae - <u>Sphyraena</u> sp.	13	2.5	3.2
				Stromateidae - <u>Peprilus burti</u>	13	2.6	3.0

Appendix table 1. (Continued)

Date (1977)	Transect and station	Mesh size (μ)	Number eggs per 1,000 m^3	Larvae	Number larvae per 1,000 m^3	Min. size (mm)	Max. size (mm)
9/11	I-2	333		Synodontidae - Synodus sp.	7	7.2	7.2
				Tetraodontidae	7	4.0	4.0
				Trichiuridae - Diplospinus multistriatus	20	5.3	5.8
				Unknown	521	1.4	2.4
9/10	I-3	505	90	Apogonidae	3	4.7	4.7
				Bathylagidae	3	6.2	6.2
				Bothidae	3	6.2	6.2
				Bothidae - Bothus sp.	6	2.3	2.6
				Bothidae - Bothus ocellatus	12	3.8	6.3
				Bothidae - Syacium sp.	76	1.4	5.6
				Bothidae - Syacium gunteri	3	7.7	7.7
				Bregmacerotidae - Bregmaceros atlanticus	23	1.8	16.3
				Carangidae	20	1.7	2.4
				Cynoglossidae - Symphurus sp.	70	1.4	4.5
				Engraulidae	61	3.6	14.6
				Gobiidae	67	2.3	8.2
				Gonostomatidae - Gonostomus elongatum	6	4.0	4.2
				Gonostomatidae - Vinciguerria sp.	6	5.5	6.0
				Lutjanidae	6	3.3	4.0
				Moringuidae - Neoconger mucronatus	233	3.5	6.6
				Myctophidae	29	2.5	4.1
				Myctophidae - Diaphus sp.	3	3.9	3.9
				Myctophidae - Hygophum reinhardti	3	8.8	8.8
				Myctophidae - Notolychnus valdiviae	6	4.3	5.1
				Ogcocephalidae	3	2.7	2.7
				Ophichthidae	9	3.9	6.9
				Ophidiidae	23	2.0	6.6
				Scombridae	26	1.8	4.8
				Scombridae - Euthynnus alletteratus	9	4.3	6.7

Appendix table 1. (Continued)

Date (1977)	Transect and station	Mesh size (μ)	Number eggs per 1,000 m^3	Larvae	Number larvae per 1,000 m^3	Min. size (mm)	Max. size (mm)
9/10	I-3	505		Scombridae - *Scomberomorus cavalla*	26	2.6	3.9
				Synodontidae - *Saurida* sp.	9	2.7	3.4
				Synodontidae - *Saurida brasiliensis*	12	6.4	8.5
				Unknown	215	2.1	7.0
9/10	I-3	333	113	Bothidae	6	1.2	1.8
				Bothidae - *Bothus* sp.	24	1.8	2.5
				Bothidae - *Bothus ocellatus*	6	4.3	4.6
				Bothidae - *Syacium* sp.	320	1.3	6.4
				Bregmacerotidae - *Bregmaceros* sp.	3	4.1	4.1
				Bregmacerotidae - *Bregmaceros atlanticus*	30	2.1	23.0
				Carangidae	30	1.4	3.1
				Clupeidae	30	2.3	4.1
				Cynoglossidae - *Symphurus* sp.	255	1.1	12.0
				Engraulidae	30	3.2	4.7
				Engraulidae - *Engraulis eurystole*	6	9.4	15.0
				Gobiidae	42	1.8	7.9
				Gonostomatidae	6	5.2	5.7
				Lutjanidae	18	2.1	3.5
				Microdesmidae - *Microdesmus* sp.	6	2.0	2.1
				Moringuidae - *Neoconger mucronatus*	261	3.1	6.2
				Myctophidae - *Benthosema suborbitale*	21	2.7	4.3
				Myctophidae - *Diaphus* sp.	3	3.4	3.4
				Myctophidae - *Hygophum* sp.	3	3.4	3.4
				Myctophidae - *Myctophum* sp.	9	2.8	3.7
				Ophichthidae	392	1.7	8.6
				Ophidiidae	62	1.6	3.5
				Paralepididae	3	2.6	2.6
				Priacanthidae	3	2.1	2.1

Appendix table 1. (Continued)

Date (1977)	Transect and station	Mesh size (μ)	Number eggs per 1,000 m^3	Larvae	Number larvae per 1,000 m^3	Min. size (mm)	Max. size (mm)
9/10	I-3	333		Rachycentridae - *Rachycentron canadum*	3	5.1	5.1
				Scombridae	18	1.7	2.3
				Scombridae - *Euthynnus alletteratus*	12	4.2	5.1
				Scombridae - *Scomberomorus cavalla*	15	3.0	4.4
				Serranidae	71	1.3	2.8
				Synodontidae	9	1.9	2.1
				Synodontidae - *Saurida* sp.	6	2.3	6.3
				Synodontidae - *Synodus* sp.	18	2.2	3.3
				Unknown	543	1.4	3.2
9/10	II-1	505	33	Carangidae	10	2.4	2.4
				Clupeidae	71	7.7	11.0
				Clupeidae - *Opisthonema oglinum*	81	8.8	11.0
				Engraulidae	1,047	5.6	7.6
				Engraulidae - *Anchoa* sp.	50	8.3	14.0
				Gobiidae	292	5.8	8.7
				Ophichthidae	10	73.0	73.0
				Sciaenidae	40	2.4	3.3
				Sciaenidae - *Menticirrhus* sp.	161	2.5	3.5
				Sciaenidae - *Micropogon undulatus*	40	2.6	3.0
				Synodontidae	10	5.5	5.5
				Unknown	60	---	---
9/10	II-1	333	1,542	Bothidae - *Syacium* sp.	21	1.2	1.8
				Carangidae	21	1.8	2.0
				Clupeidae	31	8.6	8.8
				Clupeidae - *Opisthonema oglinum*	123	8.2	11.5
				Engraulidae	1,141	5.6	7.8
				Engraulidae - *Anchoa* sp.	103	7.7	15.6

Appendix table 1. (Continued)

Date (1977)	Transect and station	Mesh size (μ)	Number eggs per 1,000 m^3	Larvae	Number larvae per 1,000 m^3	Min. size (mm)	Max. size (mm)
9/10	II-1	333		Gobiidae	288	1.4	12.8
				Moringuidae - *Neoconger mucronatus*	10	4.9	4.9
				Sciaenidae	185	2.1	3.8
				Sciaenidae - *Menticirrhus* sp.	134	2.6	3.5
				Scombridae	10	2.6	2.6
				Unknown	216	1.4	6.7
9/10	II-2	505	656	Bothidae - *Bothus ocellatus*	45	3.2	9.9
				Bothidae - *Cyclopsetta* sp.	6	3.7	3.7
				Bothidae - *Syacium* sp.	331	1.8	6.0
				Bothidae - *Syacium gunteri*	25	6.3	7.0
				Carangidae	51	2.0	2.5
				Clupeidae - *Opisthonema oglinum*	6	8.0	8.0
				Cynoglossidae - *Symphurus* sp.	45	2.3	5.8
				Engraulidae	236	2.7	6.0
				Gobiidae	191	2.8	8.5
				Grammistidae - *Rypticus* sp.	6	6.1	6.1
				Lutjanidae	13	3.3	5.6
				Microdesmidae - *Microdesmus* sp.	13	5.0	7.0
				Moringuidae - *Neoconger mucronatus*	605	4.0	5.8
				Ogcocephalidae	6	3.3	3.3
				Ophichthidae	76	7.0	28.0
				Ophichthidae - *Myrophis* sp.	32	43.0	53.0
				Ophidiidae	32	2.2	14.0
				Sciaenidae	13	2.4	2.6
				Scombridae	6	2.5	2.5
				Scombridae - *Euthynnus alletteratus*	6	4.0	4.0
				Scombridae - *Scomberomorus cavalla*	6	9.2	9.2
				Scombridae - *Scomberomorus maculatus*	13	4.3	4.4
				Serranidae	6	5.0	5.0

Appendix table 1. (Continued)

Date (1977)	Transect and station	Mesh size (μ)	Number eggs per 1,000 m^3	Larvae	Number larvae per 1,000 m^3	Min. size (mm)	Max. size (mm)
9/10	II-2	505		Stromateidae - Peprilus alepidotus	19	2.3	2.4
				Synodontidae	6	2.4	2.4
				Tetraodontidae - Sphoeroides sp.	13	4.0	4.9
				Trichiuridae - Trichiurus lepturus	70	4.5	8.0
				Unknown	25	1.9	4.0
9/10	II-2	333	1,486	Bothidae	13	3.1	6.4
				Bothidae - Bothus ocellatus	78	2.6	7.9
				Bothidae - Cyclopsetta sp.	19	2.0	4.4
				Bothidae - Syacium sp.	911	1.4	9.2
				Carangidae	168	1.5	3.3
				Clupeidae	71	3.0	6.4
				Cynoglossidae - Symphurus sp.	1,124	1.5	5.3
				Engraulidae	607	2.4	8.0
				Gobiidae	413	2.1	6.9
				Grammistidae - Rypticus sp.	13	2.7	3.4
				Lutjanidae	13	3.0	7.0
				Microdesmidae - Microdesmus sp.	71	1.3	9.0
				Moringuidae - Neoconger mucronatus	820	4.4	5.6
				Muraenidae - Gymnothorax sp.	6	37.0	37.0
				Ogcocephalidae	6	2.9	2.9
				Ophichthidae	110	4.3	90.0
				Ophichthidae - Myrophis sp.	32	5.2	49.0
				Ophidiidae	123	1.8	16.0
				Sciaenidae	39	2.0	2.4
				Scombridae	129	1.9	2.6
				Scombridae - Scomberomorus cavalla	26	2.2	3.7
				Scombridae - Scomberomorus maculatus	6	3.1	3.1
				Serranidae	6	5.8	5.8
				Sphyraenidae - Sphyraena sp.	6	2.8	2.8

Appendix table 1. (Continued)

Date (1977)	Transect and station	Mesh size (μ)	Number eggs per 1,000 m^3	Larvae	Number larvae per 1,000 m^3	Min. size (mm)	Max. size (mm)
9/10	II-2	333		Stromateidae - *Peprilus alepidotus*	6	2.2	2.2
				Synodontidae	6	1.6	1.6
				Synodontidae - *Saurida* sp.	13	1.9	8.0
				Synodontidae - *Synodus* sp.	32	6.8	9.7
				Trichiuridae - *Trichiurus lepturus*	78	5.2	9.0
				Unknown	840	1.1	2.9
9/9	II-3	505	114	Bothidae - *Bothus* sp.	15	1.9	3.1
				Bothidae - *Bothus ocellatus*	18	3.3	5.0
				Bothidae - *Syacium* sp.	71	1.4	3.9
				Bregmacerotidae - *Bregmaceros* sp.	3	3.5	3.5
				Bregmacerotidae - *Bregmaceros atlanticus*	102	2.5	8.0
				Carangidae	28	1.7	3.1
				Carangidae - *Decapterus punctatus*	3	3.1	3.1
				Cynoglossidae - *Symphurus* sp.	31	1.4	4.0
				Engraulidae	274	3.2	5.8
				Gobiidae	99	1.8	4.3
				Lutjanidae	12	3.1	3.5
				Moringuidae - *Neoconger mucronatus*	182	3.9	6.0
				Myctophidae	3	2.6	2.6
				Myctophidae - *Diaphus* sp.	3	3.4	3.4
				Ophichthidae	80	3.5	6.0
				Ophidiidae	37	2.1	5.8
				Paralepididae	3	3.0	3.0
				Sciaenidae	9	2.3	3.0
				Scombridae	83	2.0	4.9
				Scombridae - *Euthynnus alletteratus*	3	5.0	5.0
				Scombridae - *Scomberomorus cavalla*	55	2.7	4.8
				Scorpaenidae - *Scorpaena* sp.	12	2.0	2.3
				Serranidae	3	2.3	2.3

Appendix table 1. (Continued)

Date (1977)	Transect and station	Mesh size (μ)	Number eggs per 1,000 m^3	Larvae	Number larvae per 1,000 m^3	Min. size (mm)	Max. size (mm)
9/9	II-3	505		Sphyraenidae - Sphyraena sp.	3	3.5	3.5
				Synodontidae	31	2.4	3.7
				Unknown	216	1.7	8.0
9/9	II-3	333	168	Bothidae - Bothus sp.	25	1.8	3.3
				Bothidae - Bothus ocellatus	16	2.7	3.6
				Bothidae - Syacium sp.	321	1.5	3.7
				Bregmacerotidae - Bregmaceros sp.	6	3.0	3.6
				Bregmacerotidae - Bregmaceros atlanticus	168	1.5	6.5
				Carangidae	165	1.6	3.2
				Cynoglossidae - Symphurus sp.	184	1.5	3.2
				Engraulidae	692	3.0	9.6
				Gobiidae	203	2.1	5.7
				Lutjanidae	22	2.8	3.1
				Microdesmidae - Microdesmus sp.	16	1.8	2.1
				Moringuidae - Neoconger mucronatus	190	4.0	5.8
				Myctophidae	6	2.7	3.1
				Ogcocephalidae	6	2.7	3.0
				Ophichthidae	60	4.2	7.0
				Ophidiidae	117	2.3	6.2
				Paralepididae	10	3.3	3.5
				Sciaenidae	3	2.5	2.5
				Scombridae	95	1.7	3.7
				Scombridae - Euthynnus alletteratus	13	5.0	5.9
				Scombridae - Scomberomorus cavalla	79	2.5	4.7
				Scombridae - Scomberomorus maculatus	10	2.7	2.9
				Scorpaenidae - Scorpaena sp.	32	1.4	2.7
				Serranidae	10	2.4	3.1
				Stromateidae - Peprilus alepidotus	3	2.3	2.3

Appendix table 1. (Continued)

Date (1977)	Transect and station	Mesh size (μ)	Number eggs per 1,000 m^3	Larvae	Number larvae per 1,000 m^3	Min. size (mm)	Max. size (mm)
9/9	II-3	333		Synodontidae	63	2.0	4.6
				Unknown	924	1.5	6.5
9/10	II-4	505	362	Carangidae	131	1.9	3.6
				Clupeidae - *Opisthonema oglinum*	31	5.7	13.0
				Engraulidae	93	3.2	6.1
				Engraulidae - *Anchoa* sp.	15	11.0	15.0
				Gobiidae	54	3.3	6.8
				Moringuidae - *Neoconger mucronatus*	8	4.1	4.1
				Ophichthidae	8	8.0	8.0
				Ophidiidae	8	2.2	2.2
				Sciaenidae	23	2.0	2.5
				Sciaenidae - *Sciaenops ocellata*	15	3.9	4.2
				Trichiuridae - *Trichiurus lepturus*	15	6.0	6.0
9/10	II-4	333	2,282	Bothidae - *Syacium* sp.	39	1.2	1.5
				Carangidae	293	1.4	3.8
				Clupeidae	39	3.0	9.9
				Engraulidae	131	1.8	6.2
				Engraulidae - *Anchoa* sp.	15	11.3	11.4
				Gobiidae	170	1.0	6.8
				Microdesmidae - *Microdesmus* sp.	15	1.5	2.0
				Moringuidae - *Neoconger mucronatus*	46	3.5	4.0
				Ophidiidae	23	2.0	2.2
				Sciaenidae	193	1.4	2.6
				Stromateidae - *Peprilus alepidotus*	15	1.5	2.1
				Trichiuridae - *Trichiurus lepturus*	8	6.0	6.0
				Unknown	239	1.0	2.4
9/10	II-5	505	604	Bothidae - *Bothus* sp.	13	2.4	2.5

Appendix table 1. (Continued)

Date (1977)	Transect and station	Mesh size (μ)	Number eggs per 1,000 m^3	Larvae	Number larvae per 1,000 m^3	Min. size (mm)	Max. size (mm)
9/10	II-5	505		Bothidae - *Cyclopsetta* sp.	17	2.4	5.2
				Bothidae - *Syacium* sp.	133	1.9	5.2
				Bothidae - *Syacium gunteri*	4	6.2	6.2
				Bregmacerotidae - *Bregmaceros atlanticus*	4	4.0	4.0
				Carangidae	4	2.6	2.6
				Clupeidae	43	4.7	8.0
				Cynoglossidae - *Symphurus* sp.	47	2.5	5.1
				Engraulidae	34	3.6	9.3
				Gobiidae	47	2.9	5.5
				Lutjanidae	17	3.9	5.0
				Moringuidae - *Neoconger mucronatus*	351	4.0	6.4
				Ophichthidae	86	3.3	14.0
				Ophidiidae	17	3.1	6.2
				Sciaenidae	4	3.1	3.1
				Scombridae	17	2.5	2.9
				Scombridae - *Euthynnus alletteratus*	4	9.1	9.1
				Scombridae - *Scomberomorus cavalla*	39	2.5	6.2
				Scombridae - *Scomberomorus maculatus*	4	4.6	4.6
				Sphyraenidae - *Sphyraena* sp.	4	2.8	2.8
				Synodontidae	9	3.6	5.2
				Trichiuridae - *Trichiurus lepturus*	30	3.9	5.8
				Unknown	51	2.4	5.8
9/10	II-5	333	1,130	Apogonidae	9	3.3	3.4
				Bothidae - *Bothus* sp.	9	3.0	3.3
				Bothidae - *Cyclopsetta fimbriata*	5	13.0	13.0
				Bothidae - *Syacium* sp.	270	1.8	5.9
				Bregmacerotidae - *Bregmaceros atlanticus*	5	4.2	4.2
				Carangidae	55	1.6	3.0
				Carangidae - *Decapterus punctatus*	5	2.8	2.8

Appendix table 1. (Continued)

Date (1977)	Transect and station	Mesh size (μ)	Number eggs per 1,000 m^3	Larvae	Number larvae per 1,000 m^3	Min. size (mm)	Max. size (mm)
9/10	II-5	333		Clupeidae	41	5.0	7.4
				Cynoglossidae - Symphurus sp.	238	1.5	9.1
				Engraulidae	188	3.2	9.7
				Engraulidae - Engraulis eurystole	18	8.3	14.0
				Gobiidae	146	1.9	7.7
				Lutjanidae	59	2.3	5.6
				Microdesmidae - Microdesmus sp.	5	6.1	6.1
				Moringuidae - Neoconger mucronatus	613	3.5	6.6
				Ophichthidae	146	4.0	50.0
				Ophidiidae	73	2.2	7.4
				Sciaenidae - Cynoscion sp.	5	3.6	3.6
				Sciaenidae - Menticirrhus sp.	5	2.6	2.6
				Scombridae	69	2.0	4.7
				Scombridae - Scomberomorus cavalla	82	2.4	5.8
				Scombridae - Scomberomorus maculatus	5	2.4	2.4
				Serranidae - Diplectrum sp.	5	4.0	4.0
				Sparidae	5	2.9	2.9
				Sphyraenidae - Sphyraena sp.	55	1.8	3.1
				Sphyraenidae - Sphyraena guachancho	5	6.3	6.3
				Synodontidae - Saurida sp.	59	3.3	6.8
				Synodontidae - Synodus sp.	14	4.0	5.1
				Trichiuridae - Trichiurus lepturus	96	4.8	9.3
				Unknown	393	1.1	7.0
9/10	II-6	505	137	Bothidae - Bothus sp.	17	2.3	3.1
				Bothidae - Bothus ocellatus	4	3.4	3.4
				Bothidae - Syacium sp.	107	1.4	4.5
				Bregmacerotidae - Bregmaceros atlanticus	81	1.8	6.0
				Carangidae	60	1.9	3.0
				Cynoglossidae - Symphurus sp.	47	1.8	4.9

Appendix table 1. (Continued)

Date (1977)	Transect and station	Mesh size (μ)	Number eggs per 1,000 m^3	Larvae	Number larvae per 1,000 m^3	Min. size (mm)	Max. size (mm)
9/10	II-6	505		Elopidae - *Elops saurus*	4	13.0	13.0
				Engraulidae	10	2.3	4.8
				Gobiidae	38	2.1	4.4
				Lutjanidae	13	3.0	3.6
				Lutjanidae - *Etelis oculatus*	9	3.0	3.3
				Moringuidae - *Neoconger mucronatus*	128	3.8	5.8
				Ophichthidae	38	3.3	35.0
				Ophidiidae	21	2.0	3.6
				Priacanthidae	4	2.2	2.2
				Sciaenidae	4	3.0	3.0
				Scombridae	21	2.5	4.9
				Scombridae - *Euthynnus alletteratus*	26	3.7	5.5
				Scombridae - *Scomberomorus cavalla*	13	3.3	4.9
				Scorpaenidae - *Scorpaena* sp.	4	2.1	2.1
				Serranidae	9	2.3	2.9
				Sphyraenidae - *Sphyraena* sp.	13	2.1	4.3
				Synodontidae	9	2.5	3.4
				Trichiuridae - *Trichiurus lepturus*	9	4.8	5.5
				Unknown	162	1.6	5.0
9/10	II-6	333	315	Bothidae	4	3.2	3.2
				Bothidae - *Bothus* sp.	78	1.9	3.5
				Bothidae - *Bothus ocellatus*	13	2.3	3.5
				Bothidae - *Syacium* sp.	793	1.4	3.8
				Bregmacerotidae - *Bregmaceros atlanticus*	99	1.4	8.1
				Carangidae	246	1.7	2.7
				Carangidae - *Decapterus punctatus*	26	2.3	3.6
				Cynoglossidae - *Symphurus* sp.	603	1.6	3.9
				Engraulidae	185	4.6	5.8
				Gobiidae	129	1.8	4.0

Appendix table 1. (Continued)

Date (1977)	Transect and station	Mesh size (μ)	Number eggs per 1,000 m^3	Larvae	Number larvae per 1,000 m^3	Min. size (mm)	Max. size (mm)
9/10	II-6	333		Lutjanidae	103	2.0	3.0
				Lutjanidae - *Etelis oculatus*	17	2.9	3.4
				Microdesmidae - *Microdesmus* sp.	22	1.8	2.3
				Moringuidae - *Neoconger mucronatus*	254	3.4	6.0
				Nettastomidae	9	4.2	4.8
				Ophcihthidae	17	5.0	10.0
				Ophidiidae	129	2.0	3.7
				Priacanthidae	4	2.9	2.9
				Sciaenidae - *Cynoscion* sp.	17	2.8	3.4
				Scombridae	60	2.0	4.0
				Scombridae - *Euthynnus alletteratus*	39	4.0	5.8
				Scombridae - *Scomberomorus cavalla*	34	2.7	5.0
				Scorpaenidae - *Scorpaena* sp.	4	3.6	3.6
				Serranidae	13	2.2	3.0
				Serranidae - *Diplectrum* sp.	9	2.5	2.5
				Sphyraenidae - *Sphyraena* sp.	86	1.6	4.2
				Synodontidae	151	1.9	3.5
				Synodontidae - *Synodus foetens*	4	5.5	5.5
				Trichiuridae - *Trichiurus lepturus*	30	4.2	6.0
				Unknown	2,245	1.4	6.4
9/9	II-7	505	23	Bothidae	2	3.2	3.2
				Bothidae - *Bothus* sp.	44	2.2	3.4
				Bothidae - *Bothus ocellatus*	28	3.1	6.8
				Bothidae - *Cyclopsetta* sp.	7	1.4	2.9
				Bothidae - *Syacium* sp.	125	1.5	4.0
				Bregmacerotidae - *Bregmaceros* sp.	4	2.4	3.0
				Bregmacerotidae - *Bregmaceros atlanticus*	126	1.8	8.6
				Carangidae	12	1.5	3.6
				Carangidae - *Decapterus punctatus*	5	2.2	2.7
				Clupeidae	4	4.1	4.3

Appendix table 1. (Continued)

Date (1977)	Transect and station	Mesh size (μ)	Number eggs per 1,000 m^3	Larvae	Number larvae per 1,000 m^3	Min. size (mm)	Max. size (mm)
9/9	II-7	505		Cynoglossidae - *Symphurus* sp.	56	1.5	5.1
				Engraulidae	40	2.8	7.4
				Engraulidae - *Engraulis eurystole*	7	9.3	13.7
				Gempylidae	4	3.6	3.7
				Gerreidae - *Eucinostomus* sp.	2	8.2	8.2
				Gobiidae	226	2.0	8.3
				Gonostomatidae	2	6.0	6.0
				Gonostomatidae - *Gonostomus atlanticum*	2	4.7	4.7
				Lutjanidae	16	2.9	5.8
				Lutjanidae - *Etelis oculatus*	9	2.8	3.9
				Moringuidae - *Neoconger mucronatus*	60	4.0	5.7
				Myctophidae	19	2.7	3.7
				Myctophidae - *Diaphus* sp.	56	2.6	4.7
				Myctophidae - *Hygophum* sp.	2	4.5	4.5
				Myctophidae - *Myctophum* sp.	5	3.5	4.4
				Myctophidae - *Notolychnus valdiviae*	2	4.6	4.6
				Ogcocephalidae	12	2.1	3.1
				Ophichthidae	98	2.8	10.0
				Ophidiidae	7	2.8	3.0
				Paralepididae	16	5.4	10.0
				Priacanthidae	7	1.7	3.3
				Scombridae	60	2.0	4.4
				Scombridae - *Euthynnus alletteratus*	74	3.4	6.5
				Scombridae - *Katsuwonus pelamis*	2	4.5	4.5
				Scombridae - *Scomberomorus cavalla*	33	2.8	4.0
				Scorpaenidae - *Scorpaena* sp.	5	2.3	3.4
				Serranidae	5	2.6	2.8
				Sphyraenidae - *Sphyraena* sp.	16	2.3	3.5
				Synodontidae	2	8.0	8.0
				Synodontidae - *Saurida* sp.	32	2.6	6.6

Appendix table 1. (Continued)

Date (1977)	Transect and station	Mesh size (μ)	Number eggs per 1,000 m^3	Larvae	Number larvae per 1,000 m^3	Min. size (mm)	Max. size (mm)
9/9	II-7	505		Synodontidae - *Saurida brasiliensis*	37	4.6	7.3
				Synodontidae - *Synodus* sp.	25	2.3	4.7
				Synodontidae - *Synodus foetens*	5	4.5	4.5
				Unknown	132	1.2	6.6
9/9	II-7	333	68	Bothidae	2	6.7	6.7
				Bothidae - *Bothus* sp.	90	1.7	3.3
				Bothidae - *Bothus ocellatus*	4	2.6	4.6
				Bothidae - *Cyclopsetta* sp.	4	2.3	3.5
				Bothidae - *Paralichthys* sp.	13	1.8	4.5
				Bothidae - *Syacium* sp.	208	1.6	2.7
				Bregmacerotidae - *Bregmaceros atlanticus*	185	1.8	9.8
				Carangidae	86	1.2	1.8
				Clupeidae	97	2.1	6.3
				Cynoglossidae - *Symphurus* sp.	144	1.3	5.9
				Engraulidae	99	2.7	8.1
				Engraulidae - *Anchoa* sp.	9	5.5	7.7
				Gobiidae	321	1.8	7.7
				Gonostomatidae	11	3.2	6.5
				Gonostomatidae - *Cyclothone* sp.	14	2.6	3.2
				Lutjanidae	41	1.7	3.2
				Lutjanidae - *Etelis oculatus*	4	3.0	3.1
				Microdesmidae - *Microdesmus* sp.	11	1.5	3.2
				Moringuidae - *Neoconger mucronatus*	59	2.1	3.8
				Myctophidae	11	2.2	3.2
				Myctophidae - *Benthosema suborbitale*	2	4.1	4.1
				Myctophidae - *Diaphus* sp.	196	2.0	3.7
				Myctophidae - *Hygophum* sp.	11	2.9	4.3
				Myctophidae - *Lampadena* sp.	2	3.5	3.5

Appendix table 1. (Continued)

Date (1977)	Transect and station	Mesh size (μ)	Number eggs per 1,000 m^3	Larvae	Number larvae per 1,000 m^3	Min. size (mm)	Max. size (mm)
9/9	II-7	333		Myctophidae - *Myctophum* sp.	5	3.3	4.1
				Ogcocephalidae	14	1.7	2.8
				Ophichthidae	181	2.7	7.3
				Ophidiidae	32	1.7	6.9
				Paralepididae	59	3.2	9.2
				Priacanthidae	4	2.3	3.5
				Scombridae	165	1.5	3.5
				Scombridae - *Auxis* sp.	2	4.2	4.2
				Scombridae - *Euthynnus alletteratus*	92	3.2	6.3
				Scombridae - *Scomberomorus cavalla*	74	2.3	5.7
				Scorpaenidae - *Scorpaena* sp.	22	1.2	5.2
				Serranidae	54	1.6	3.2
				Serranidae - *Diplectrum* sp.	4	2.2	3.2
				Sphyraenidae - *Sphyraena* sp.	65	1.2	3.3
				Synodontidae - *Saurida* sp.	48	2.2	8.4
				Synodontidae - *Synodus* sp.	75	1.7	5.6
				Unknown	858	1.2	3.6
9/8	III-1	505	28	Carangidae	373	1.6	3.8
				Engraulidae	9	5.6	5.6
				Engraulidae - *Anchoa* sp.	9	23.4	23.4
				Sciaenidae	121	1.7	3.4
				Sciaenidae - *Menticirrhus* sp.	65	2.3	3.3
				Unknown	37	2.2	8.0
9/8	III-1	333	183	Carangidae	1,174	1.3	3.4
				Clupeidae	10	5.5	5.5
				Clupeidae - *Harengula jaguana*	10	11.4	11.4
				Engraulidae	58	2.2	7.4

Appendix table 1. (Continued)

Date (1977)	Transect and station	Mesh size (μ)	Number eggs per 1,000 m^3	Larvae	Number larvae per 1,000 m^3	Min. size (mm)	Max. size (mm)
9/8	III-1	333		Sciaenidae	289	1.5	3.2
				Sciaenidae - *Menticirrhus* sp.	48	2.5	3.2
				Scombridae - *Scomberomorus maculatus*	10	2.5	2.5
				Unknown	106	2.2	2.4
9/8	III-2	505	101	Bothidae	12	2.2	2.7
				Bothidae - *Bothus* sp.	16	2.0	2.7
				Bothidae - *Bothus ocellatus*	48	2.6	4.2
				Bothidae - *Cyclopsetta* sp.	4	2.9	2.9
				Bothidae - *Syacium* sp.	173	1.6	4.4
				Bregmacerotidae - *Bregmaceros atlanticus*	28	2.3	6.3
				Carangidae	12	2.3	3.7
				Clupeidae	12	6.0	7.8
				Cynoglossidae - *Symphurus* sp.	48	2.0	7.0
				Engraulidae	60	3.1	9.6
				Gobiidae	40	2.7	5.0
				Microdesmidae - *Microdesmus* sp.	8	2.4	6.9
				Moringuidae - *Neoconger mucronatus*	12	3.7	4.1
				Ophichthidae	12	7.9	31.0
				Ophidiidae	20	2.1	2.8
				Scombridae	32	2.5	4.2
				Scombridae - *Scomberomorus cavalla*	32	3.3	4.3
				Scombridae - *Scomberomorus maculatus*	12	3.9	4.1
				Scorpaenidae - *Scorpaena* sp.	4	4.1	4.1
				Serranidae - *Diplectrum* sp.	28	2.6	4.3
				Synodontidae	8	2.0	2.1
				Trichiuridae - *Trichiurus lepturus*	4	6.0	6.0
				Unknown	44	1.3	6.2

Appendix table 1. (Continued)

Date (1977)	Transect and station	Mesh size (μ)	Number eggs per 1,000 m^3	Larvae	Number larvae per 1,000 m^3	Min. size (mm)	Max. size (mm)
9/8	III-2	333	286	Bothidae	12	2.5	6.5
				Bothidae - *Bothus* sp.	179	1.5	3.2
				Bothidae - *Syacium* sp.	689	1.4	5.0
				Carangidae - *Caranx* sp.	41	1.3	3.8
				Clupeidae	16	3.3	8.6
				Cynoglossidae - *Symphurus* sp.	188	1.3	5.3
				Engraulidae	294	2.7	4.7
				Engraulidae - *Engraulis eurystole*	53	6.5	11.2
				Gobiidae	82	2.1	4.2
				Lutjanidae	20	2.8	4.0
				Microdesmidae - *Microdesmus* sp.	16	2.1	5.8
				Moringuidae - *Neoconger mucronatus*	37	2.8	4.8
				Myctophidae - *Diaphus* sp.	8	4.2	5.0
				Ogcocephalidae	12	1.6	2.3
				Ophidiidae	224	1.8	16.0
				Priacanthidae	4	1.6	1.6
				Rachycentridae - *Rachycentron canadum*	4	6.8	6.8
				Sciaenidae - *Cynoscion* sp.	4	3.5	3.5
				Scombridae	294	2.0	4.6
				Scombridae - *Scomberomorus cavalla*	61	2.6	4.1
				Scombridae - *Scomberomorus maculatus*	20	2.2	4.0
				Serranidae	65	1.2	2.7
				Sphyraenidae - *Sphyraena* sp.	12	1.6	2.6
				Syndonntidae	90	1.7	3.2
				Trichiuridae - *Diplospinus multistriatus*	33	3.5	6.1
				Unknown	355	1.1	3.1
9/9	III-3	505	336	Bothidae	6	3.7	4.5
				Bothidae - *Bothus* sp.	14	2.7	2.9

Appendix table 1. (Continued)

Date (1977)	Transect and station	Mesh size (μ)	Number eggs per 1,000 m^3	Larvae	Number larvae per 1,000 m^3	Min. size (mm)	Max. size (mm)
9/9	III-3	505		Bothidae - *Bothus ocellatus*	12	3.0	4.8
				Bothidae - *Syacium* sp.	281	2.0	4.1
				Bregmacerotidae - *Bregmaceros atlanticus*	171	2.5	8.7
				Carangidae	75	1.7	3.6
				Cynoglossidae - *Symphurus* sp.	188	2.2	7.8
				Engraulidae	46	2.8	5.0
				Gobiidae	46	2.2	4.0
				Lutjanidae	17	2.6	4.0
				Moringuidae - *Neoconger mucronatus*	153	3.7	5.9
				Myctophidae	3	3.3	3.3
				Ogcocephalidae	3	2.3	2.3
				Ophichthidae	32	4.3	7.5
				Ophidiidae	38	2.3	12.0
				Priacanthidae	6	2.0	2.3
				Sciaenidae	3	2.6	2.6
				Sciaenidae - *Larimus fasciatus*	3	2.8	2.8
				Scombridae	9	2.3	3.5
				Scombridae - *Euthynnus alletteratus*	40	4.0	7.0
				Scombridae - *Scomberomorus cavalla*	69	2.8	6.8
				Scombridae - *Scomberomorus maculatus*	12	2.5	4.7
				Scorpaenidae - *Scorpaena* sp.	12	1.8	3.0
				Serranidae	3	2.0	2.0
				Serranidae - *Diplectrum* sp.	6	2.6	4.9
				Serranidae - *Serraniculus pumilio*	3	6.0	6.0
				Sparidae	3	3.0	3.0
				Sphyraenidae - *Sphyraena* sp.	17	2.1	3.0
				Stromateidae - *Peprilus alepidotus*	3	2.0	2.0
				Synodontidae	12	2.8	5.7
				Tetraodontidae	3	2.0	2.0

Appendix table 1. (Continued)

Date (1977)	Transect and station	Mesh size (μ)	Number eggs per 1,000 m^3	Larvae	Number larvae per 1,000 m^3	Min. size (mm)	Max. size (mm)
9/9	III-3	505		Trichiuridae - *Trichiurus lepturus*	6	5.7	6.2
				Unknown	119	1.4	5.1
9/9	III-3	333	372	Balistidae	3	2.7	2.7
				Bothidae - *Bothus* sp.	30	1.8	2.7
				Bothidae - *Bothus ocellatus*	3	4.7	4.7
				Bothidae - *Syacium* sp.	455	1.6	4.9
				Bregmacerotidae - *Bregmaceros atlanticus*	168	2.8	8.0
				Carangidae	564	1.4	2.8
				Carangidae - *Decapterus punctatus*	3	4.1	4.1
				Cynoglossidae - *Symphurus* sp.	304	1.5	5.9
				Engraulidae	121	3.1	4.7
				Gobiidae	92	1.8	4.2
				Lutjanidae	21	2.4	2.9
				Microdesmidae - *Microdesmus* sp.	3	6.4	6.4
				Moringuidae - *Neoconger mucronatus*	207	3.5	5.3
				Myctophidae	3	3.0	3.0
				Ogcocephalidae	12	2.0	2.6
				Ophichthidae	18	4.4	8.4
				Ophidiidae	136	2.0	6.0
				Priacanthidae	6	2.0	2.0
				Sciaenidae	6	2.3	2.6
				Scombridae	103	1.8	3.6
				Scombridae - *Auxis* sp.	3	5.1	5.1
				Scombridae - *Euthynnus alletteratus*	35	3.6	6.0
				Scombridae - *Scomberomorus cavalla*	74	3.1	5.7
				Scorpaenidae	9	2.0	2.4
				Serranidae	3	2.2	2.2
				Serranidae - *Diplectrum* sp.	15	2.2	3.7

Appendix table 1. (Continued)

Date (1977)	Transect and station	Mesh size (μ)	Number eggs per 1,000 m^3	Larvae	Number larvae per 1,000 m^3	Min. size (mm)	Max. size (mm)
9/9	III-3	333		Sphyraenidae - *Sphyraena* sp.	106	1.4	2.7
				Stromateidae - *Peprilus alepidotus*	6	2.2	2.3
				Synodontidae	15	2.2	3.2
				Synodontidae - *Saurida* sp.	15	1.5	3.0
				Synodontidae - *Synodus* sp.	15	2.4	3.7
				Trichiuridae - *Trichiurus lepturus*	6	6.3	8.4
				Unknown	387	1.4	5.9
9/7	IV-1	505	795	Bothidae - *Syacium* sp.	9	2.2	2.2
				Carangidae	203	2.1	3.3
				Carangidae - *Chloroscombrus chrysurus*	9	5.5	5.5
				Clupeidae	150	5.5	9.6
				Engraulidae	928	5.1	9.3
				Gobiidae	9	2.0	2.0
				Moringuidae - *Neoconger mucronatus*	44	3.8	6.3
				Sciaenidae	168	2.2	3.3
				Sciaenidae - *Cynoscion nothus*	9	3.0	3.0
				Sciaenidae - *Menticirrhus* sp.	18	2.5	2.6
				Stromateidae - *Peprilus alepidotus*	9	2.6	2.6
				Unknown	97	1.4	5.3
9/7	IV-1	333	1,610	Carangidae	1,113	1.5	3.6
				Clupeidae	180	4.2	8.7
				Engraulidae	1,712	4.9	8.5
				Engraulidae - *Anchoa* sp.	26	7.1	8.3
				Sciaenidae	248	1.9	3.3
				Sciaenidae - *Menticirrhus* sp.	9	2.8	2.8
				Synodontidae - *Synodus foetens*	9	30.6	30.6
				Unknown	985	1.1	6.2

Appendix table 1. (Continued)

Date (1977)	Transect and station	Mesh size (μ)	Number eggs per 1,000 m^3	Larvae	Number larvae per 1,000 m^3	Min. size (mm)	Max. size (mm)
9/7	IV-2	505	177	Bothidae	12	2.6	3.6
				Bothidae - *Bothus* sp.	12	2.5	2.7
				Bothidae - *Bothus ocellatus*	6	2.7	2.7
				Bothidae - *Cyclopsetta* sp.	6	2.4	2.4
				Bothidae - *Syacium* sp.	98	2.2	4.0
				Bregmacerotidae - *Bregmaceros atlanticus*	6	2.4	2.4
				Clupeidae	128	2.3	14.0
				Cynoglossidae - *Symphurus* sp.	6	2.8	2.8
				Engraulidae	91	2.8	16.0
				Engraulidae - *Engraulis eurystole*	6	19.0	19.0
				Gobiidae	250	2.3	4.7
				Sciaenidae	6	1.9	1.9
				Unknown	43	1.5	3.9
9/7	IV-2	333	824	Bothidae - *Bothus* sp.	24	2.0	2.7
				Bothidae - *Bothus ocellatus*	6	3.0	3.0
				Bothidae - *Syacium* sp.	364	1.1	5.4
				Carangidae	42	1.5	3.0
				Clupeidae	60	2.8	4.9
				Clupeidae - *Harengula jaguana*	6	12.9	12.9
				Engraulidae	603	2.0	10.4
				Engraulidae - *Anchoa* sp.	12	9.0	13.2
				Engraulidae - *Engraulis eurystole*	6	20.7	20.7
				Gobiidae	609	1.5	4.5
				Microdesmidae - *Microdesmus* sp.	24	1.6	3.2
				Ophichthidae	6	6.8	6.8
				Ophidiidae	143	1.5	2.4
				Sciaenidae	6	2.5	2.5
				Scombridae	42	2.1	2.9

Appendix table 1. (Continued)

Date (1977)	Transect and station	Mesh size (μ)	Number eggs per 1,000 m^3	Larvae	Number larvae per 1,000 m^3	Min. size (mm)	Max. size (mm)
9/7	IV-2	333		Scombridae - Scomberomorus maculatus	36	2.0	3.3
				Synodontidae	60	1.3	2.3
				Unknown	651	1.1	4.3
9/7	IV-3	505	453	Bothidae - Bothus sp.	3	3.0	3.0
				Bothidae - Bothus ocellatus	8	3.5	4.7
				Bothidae - Syacium sp.	59	2.0	3.7
				Bregmacerotidae - Bregmaceros atlanticus	5	3.5	6.9
				Carangidae	3	3.7	3.7
				Cynoglossidae - Symphurus sp.	13	2.6	7.8
				Engraulidae	5	5.5	5.7
				Gobiidae	19	3.0	3.8
				Gonostomatidae - Cyclothone sp.	3	5.1	5.1
				Lutjanidae	8	3.3	4.4
				Myctophidae - Diaphus sp.	5	3.4	3.9
				Ophichthidae	3	14.0	14.0
				Ophidiidae	8	3.5	4.0
				Scombridae - Scomberomorus cavalla	3	4.0	4.0
				Synodontidae	5	2.8	3.5
				Synodontidae - Saurida sp.	3	3.5	3.5
				Synodontidae - Synodus sp.	8	3.1	3.7
				Unknown	16	2.0	2.9
9/7	IV-3	333	1,049	Bothidae - Bothus sp.	42	2.0	3.0
				Bothidae - Bothus ocellatus	6	2.4	3.3
				Bothidae - Cyclopsetta sp.	3	3.2	3.2
				Bothidae - Syacium sp.	123	2.0	2.9
				Bregmacerotidae - Bregmaceros atlanticus	20	2.1	5.1
				Carangidae	3	3.2	3.2

Appendix table 1. (Continued)

Date (1977)	Transect and station	Mesh size (μ)	Number eggs per 1,000 m^3	Larvae	Number larvae per 1,000 m^3	Min. size (mm)	Max. size (mm)
9/7	IV-3	333		Clupeidae	22	2.1	5.8
				Cynoglossidae - *Symphurus* sp.	34	1.8	7.1
				Gobiidae	210	2.1	3.3
				Lutjanidae	39	2.1	2.9
				Lutjanidae - *Etelis oculatus*	6	3.2	3.2
				Microdesmidae - *Microdesmus* sp.	11	3.0	5.2
				Myctophidae	22	2.7	3.3
				Myctophidae - *Ceratoscopelus* sp.	14	2.3	3.8
				Ogcocephalidae	3	1.7	1.7
				Ophichthidae	3	12.2	12.2
				Ophidiidae	14	3.4	6.2
				Rachycentridae - *Rachycentron canadum*	3	4.0	4.0
				Scombridae	255	1.7	4.4
				Scombridae - *Auxis* sp.	3	3.5	3.5
				Scombridae - *Katsuwonus pelamis*	14	2.8	4.1
				Scombridae - *Scomberomorus cavalla*	3	2.5	2.5
				Serranidae	8	2.1	2.7
				Synodontidae	3	1.8	1.8
				Synodontidae - *Saurida* sp.	34	2.1	3.5
				Synodontidae - *Synodus* sp.	48	2.4	4.1
				Triglidae - *Prionotus* sp.	3	3.3	3.3
				Unknown	378	1.2	2.9

Appendix table 1. (Continued)

Date (1977)	Transect and station	Mesh size (μ)	Number eggs per 1,000 m^3	Larvae	Number larvae per 1,000 m^3	Min. size (mm)	Max. size (mm)
11/6	II-1	505	15	Bothidae - *Syacium* sp.	15	6.0	6.0
				Clupeidae - *Brevoortia* sp.	31	8.1	10.2
				Sciaenidae - *Cynoscion nothus*	15	8.5	8.5
				Sciaenidae - *Menticirrhus* sp.	31	2.5	3.0
				Sciaenidae - *Micropogon undulatus*	46	2.6	4.0
				Unknown	31	2.0	2.0
11/6	II-1	333	75	Bregmacerotidae - *Bregmaceros atlanticus*	105	1.4	2.1
				Clupeidae	15	8.8	8.8
				Clupeidae - *Brevoortia* sp.	15	10.0	10.0
				Sciaenidae - *Cynoscion nothus*	15	6.0	6.0
				Sciaenidae - *Menticirrhus* sp.	45	2.8	5.4
				Sciaenidae - *Micropogon undulatus*	15	4.9	4.9
				Unknown	165	1.4	4.5
11/5	II-2	505	311	Bothidae	172	2.0	6.3
				Bothidae - *Bothus* sp.	5	4.4	4.4
				Bothidae - *Syacium* sp.	10	2.5	3.6
				Bothidae - *Syacium gunteri*	5	8.5	8.5
				Bregmacerotidae - *Bregmaceros atlanticus*	29	3.0	6.6
				Carangidae	10	2.5	4.9
				Cynoglossidae - *Symphurus* sp.	10	3.5	3.8
				Gobiidae	463	2.5	3.5
				Lutjanidae	5	4.4	4.4
				Lutjanidae - *Etelis oculatus*	5	3.3	3.3
				Microdesmidae - *Microdesmus* sp.	19	3.6	7.0
				Mullidae	33	2.8	3.6
				Ophichthidae	14	4.0	4.2
				Ophidiidae	24	2.3	6.8

Appendix table 1. (Continued)

Date (1977)	Transect and station	Mesh size (μ)	Number eggs per 1,000 m^3	Larvae	Number larvae per 1,000 m^3	Min. size (mm)	Max. size (mm)
11/5	II-2	505		Sciaenidae	5	2.6	2.6
				Sciaenidae - *Menticirrhus* sp.	19	4.2	5.5
				Serranidae	53	2.2	4.2
				Serranidae - *Diplectrum* sp.	5	5.8	5.8
				Sparidae	24	3.4	5.7
				Sphyraenidae - *Sphyraena* sp.	14	2.0	3.1
				Stromateidae - *Peprilus alepidotus*	5	3.4	3.4
				Triglidae - *Prionotus* sp.	5	5.2	5.2
				Unknown	62	2.0	5.6
11/5	II-2	333	345	Bothidae	370	2.0	3.3
				Bothidae - *Bothus* sp.	25	2.3	3.9
				Bregmacerotidae - *Bregmaceros atlanticus*	35	3.2	8.6
				Carangidae	10	2.4	3.6
				Gobiidae	1,471	2.6	4.4
				Lutjanidae	35	2.5	3.8
				Microdesmidae - *Microdesmus* sp.	55	2.4	9.2
				Mullidae	30	3.3	4.9
				Myctophidae - *Diaphus* sp.	10	4.4	5.3
				Ophidiidae	15	6.3	7.0
				Opistognathidae	5	7.7	7.7
				Pomatomidae - *Pomatomus saltatrix*	15	3.7	7.7
				Sciaenidae - *Sciaenops ocellata*	10	4.5	4.5
				Serranidae	185	1.5	4.4
				Serranidae - *Diplectrum* sp.	5	6.1	6.1
				Sparidae	10	3.7	4.8
				Sphyraenidae - *Sphyraena* sp.	15	4.8	5.9
				Triglidae - *Prionotus* sp.	5	5.1	5.1
				Unknown	265	1.3	7.3

Appendix table 1. (Continued)

Date (1977)	Transect and station	Mesh size (μ)	Number eggs per 1,000 m^3	Larvae	Number larvae per 1,000 m^3	Min. size (mm)	Max. size (mm)
11/5	II-3	505	24	Bothidae	2	2.8	2.8
				Bothidae - *Syacium* sp.	2	3.6	3.6
				Cynoglossidae - *Symphurus* sp.	4	2.9	2.9
				Gobiidae	10	3.8	8.7
				Gonostomatidae - *Cyclothone* sp.	12	3.9	8.5
				Gonostomatidae - *Vinciguerria* sp.	2	6.5	6.5
				Myctophidae	10	3.0	5.0
				Myctophidae - *Diaphus* sp.	6	3.1	3.5
				Myctophidae - *Lampanyctus* sp.	4	3.3	3.3
				Ophichthidae	14	4.5	18.2
				Unknown	6	2.5	3.7
11/5	II-3	333	40	Bothidae	4	3.1	3.9
				Bothidae - *Syacium* sp.	2	4.9	4.9
				Bregmacerotidae - *Bregmaceros atlanticus*	2	3.3	3.3
				Carangidae	2	3.3	3.3
				Gobiidae	6	3.5	4.1
				Gonostomatidae - *Cyclothone* sp.	27	2.8	5.8
				Myctophidae	10	2.6	5.2
				Myctophidae - *Diaphus* sp.	15	3.1	3.8
				Ophichthidae	21	2.6	11.2
				Ophichthidae - *Myrophis* sp.	4	12.5	35.0
				Scombridae	6	2.9	4.1
				Serranidae - *Anthias* sp.	2	2.9	2.9
				Unknown	4	1.5	1.7
11/5	II-4	505	5,990	Bothidae	7	2.0	2.0
				Bothidae - *Syacium* sp.	7	4.5	4.5
				Bregmacerotidae - *Bregmaceros atlanticus*	304	1.6	4.0
				Cynoglossidae - *Symphurus* sp.	37	1.6	3.0

Appendix table 1. (Continued)

Date (1977)	Transect and station	Mesh size (μ)	Number eggs per 1,000 m^3	Larvae	Number larvae per 1,000 m^3	Min. size (mm)	Max. size (mm)
11/5	II-4	505		Gobiidae	1,386	1.5	3.5
				Ophidiidae	37	2.5	6.6
				Ophidiidae - *Rissola marginata*	7	7.0	7.0
				Sciaenidae	44	1.5	3.9
				Sciaenidae - *Cynoscion* sp.	22	2.6	3.2
				Sciaenidae - *Cynoscion nothus*	30	3.6	5.7
				Sciaenidae - *Menticirrhus* sp.	22	2.0	6.1
				Sciaenidae - *Micropogon undulatus*	59	3.9	4.8
				Sparidae	15	6.0	7.9
				Unknown	304	1.4	2.8
11/5	II-4	333	6,605	Bothidae - *Bothus* sp.	31	1.9	2.5
				Bothidae - *Citharichthys* sp.	77	1.0	2.2
				Bothidae - *Paralichthys* sp.	38	1.4	1.9
				Bregmacerotidae - *Bregmaceros atlanticus*	536	1.4	5.3
				Carangidae	8	1.4	1.4
				Cynoglossidae - *Symphurus* sp.	161	1.3	3.1
				Engraulidae - *Engraulis eurystole*	8	18.0	18.0
				Gobiidae	7,019	1.2	4.5
				Lutjanidae	8	3.2	3.2
				Myctophidae - *Ceratoscopelus* sp.	15	1.7	2.5
				Myctophidae - *Diaphus* sp.	15	3.1	3.8
				Ophidiidae	23	3.1	17.0
				Ophidiidae - *Rissola marginata*	8	6.2	6.2
				Sciaenidae	720	1.4	2.5
				Sciaenidae - *Cynoscion nothus*	92	4.2	7.2
				Sciaenidae - *Larimus fasciatus*	31	1.6	4.7
				Sciaenidae - *Menticirrhus americanus*	15	4.7	5.9
				Sciaenidae - *Micropogon undulatus*	92	2.1	5.0
				Serranidae	8	3.8	3.8
				Unknown	1,632	0.9	2.2

Appendix table 1. (Continued)

Date (1977)	Transect and station	Mesh size (μ)	Number eggs per 1,000 m^3	Larvae	Number larvae per 1,000 m^3	Min. size (mm)	Max. size (mm)
11/5	II-5	505	105	Bothidae	51	2.0	5.8
				Bothidae - *Syacium* sp.	16	2.0	4.2
				Bregmacerotidae - *Bregmaceros atlanticus*	32	3.2	8.0
				Carangidae	16	2.2	3.5
				Cynoglossidae - *Symphurus* sp.	32	2.2	4.5
				Gobiidae	213	2.5	4.8
				Lutjanidae	3	4.0	4.0
				Lutjanidae - *Etelis oculatus*	3	3.0	3.0
				Microdesmidae - *Microdesmus* sp.	3	5.0	5.0
				Mullidae	48	2.6	4.0
				Myctophidae - *Diaphus* sp.	3	4.7	4.7
				Ophidiidae	29	3.4	6.5
				Pomatomidae - *Pomatomus saltatrix*	10	3.6	4.4
				Sciaenidae	6	2.2	2.5
				Serranidae	29	2.5	3.6
				Serranidae - *Diplectrum* sp.	6	6.0	8.2
				Sparidae	19	2.5	4.6
				Stromateidae - *Peprilus burti*	3	3.9	3.9
				Triglidae - *Prionotus* sp.	16	3.7	7.2
				Unknown	70	1.9	11.0
11/5	II-5	333	93	Bothidae	90	2.0	4.1
				Bothidae - *Bothus* sp.	7	1.8	3.5
				Bothidae - *Cyclopsetta* sp.	3	3.2	3.2
				Bothidae - *Syacium* sp.	33	1.5	3.1
				Bregmacerotidae - *Bregmaceros atlanticus*	46	3.8	8.7
				Carangidae - *Seriola* sp.	20	2.6	3.7
				Carangidae - *Trachurus lathami*	3	4.8	4.8
				Carangidae - *Vomer setapinnis*	20	2.6	3.9
				Cynoglossidae - *Symphurus* sp.	93	1.8	4.6

Appendix table 1. (Continued)

Date (1977)	Transect and station	Mesh size (μ)	Number eggs per 1,000 m^3	Larvae	Number larvae per 1,000 m^3	Min. size (mm)	Max. size (mm)
11/5	II-5	333		Gobiidae	889	2.4	6.7
				Lutjanidae	53	2.1	3.2
				Lutjanidae - *Etelis oculatus*	3	3.8	3.8
				Microdesmidae - *Microdesmus* sp.	10	2.6	4.3
				Mugilidae	53	2.7	8.2
				Mugilidae - *Mugil* sp.	3	3.8	3.8
				Ophichthidae	3	3.6	3.6
				Ophidiidae	27	1.3	5.4
				Pomatomidae - *Pomatomus saltatrix*	7	4.5	4.9
				Sciaenidae - *Sciaenops ocellata*	10	3.3	4.1
				Scorpaenidae	3	1.4	1.4
				Serranidae	3	3.1	3.1
				Serranidae - *Diplectrum* sp.	53	2.2	4.5
				Sparidae	40	1.9	4.2
				Sphyraenidae	80	1.4	2.3
				Stromateidae - *Peprilus* sp.	3	3.2	3.2
				Synodontidae - *Saurida* sp.	3	2.8	2.8
				Unknown	159	1.1	3.9
11/5	II-6	505	18	Bothidae	54	2.0	5.5
				Bothidae - *Bothus* sp.	9	3.0	3.8
				Bothidae - *Bothus ocellatus*	24	3.2	6.0
				Bothidae - *Cyclopsetta* sp.	3	2.9	2.9
				Bothidae - *Syacium* sp.	69	2.0	3.0
				Bregmacerotidae - *Bregmaceros atlanticus*	90	2.7	5.1
				Carangidae	9	2.6	2.7
				Carangidae - *Seriola* sp.	6	4.0	4.5
				Cynoglossidae - *Symphurus* sp.	39	2.3	4.0
				Engraulidae	3	12.1	12.1
				Gobiidae	238	2.1	3.5

Appendix table i . (Continued)

Date (1977)	Transect and station	Mesh size (μ)	Number eggs per 1,000 m^3	Larvae	Number larvae per 1,000 m^3	Min. size (mm)	Max. size (mm)
11/5	II-6	505		Microdesmidae - Microdesmus sp.	3	2.9	2.9
				Mullidae	3	3.6	3.6
				Myctophidae	12	2.9	4.8
				Ophichthidae	24	3.5	4.0
				Ophidiidae	6	5.7	5.9
				Sciaenidae	18	2.5	4.5
				Sciaenidae - Cynoscion sp.	3	3.6	3.6
				Serranidae	33	2.4	3.8
				Serranidae - Diplectrum sp.	3	3.5	3.5
				Sparidae	3	3.5	3.5
				Synodontidae	6	3.5	4.5
				Unknown	57	1.7	4.1
11/5	II-6	333	22	Bothidae	83	1.5	4.5
				Bothidae - Bothus sp.	54	1.8	3.9
				Bothidae - Syacium sp.	57	1.7	3.5
				Bregmacerotidae - Bregmaceros atlanticus	131	2.0	5.2
				Carangidae - Seriola sp.	3	3.8	3.8
				Cynoglossidae - Symphurus sp.	131	1.4	4.2
				Gobiidae	463	1.7	3.4
				Lutjanidae	13	2.1	3.2
				Microdesmidae - Microdesmus sp.	10	3.1	3.9
				Mullidae	3	3.2	3.2
				Myctophidae	19	2.8	3.5
				Myctophidae - Myctophum sp.	3	3.3	3.3
				Ophichthidae	16	3.0	5.4
				Ophidiidae	10	2.2	6.1
				Sciaenidae	6	1.7	1.8
				Sciaenidae - Micropogon undulatus	6	2.3	3.5

Appendix table 1. (Continued)

Date (1977)	Transect and station	Mesh size (μ)	Number eggs per 1,000 m^3	Larvae	Number larvae per 1,000 m^3	Min. size (mm)	Max. size (mm)
11/5	II-6	333		Serranidae	125	1.9	4.7
				Serranidae - *Centropristis* sp.	16	1.9	3.6
				Sparidae	6	2.1	2.6
				Tetraodontidae	3	1.9	1.9
				Triglidae - *Prionotus* sp.	6	3.7	3.8
				Unknown	109	1.4	3.4
11/5	II-7	505	191	Bothidae	9	3.6	4.6
				Bothidae - *Bothus ocellatus*	2	5.5	5.5
				Bregmacerotidae - *Bregmaceros* sp.	9	2.5	3.7
				Cynoglossidae - *Symphurus* sp.	4	2.4	2.7
				Gempylidae	7	3.4	7.5
				Gobiidae	57	3.5	9.0
				Gonostomatidae	2	3.7	3.7
				Gonostomatidae - *Cyclothone* sp.	54	2.2	6.0
				Gonostomatidae - *Maurolicus muelleri*	2	4.5	4.5
				Gonostomatidae - *Polymetme corytheole*	2	9.0	9.0
				Myctophidae	17	2.8	5.7
				Myctophidae - *Ceratoscopelus* sp.	17	2.5	6.0
				Myctophidae - *Diaphus* sp.	4	4.5	4.5
				Myctophidae - *Hygophum* sp.	4	3.2	4.2
				Myctophidae - *Hygophum reinhardti*	2	7.0	7.0
				Myctophidae - *Lampanyctus* sp.	9	3.0	4.1
				Myctophidae - *Myctophum* sp.	4	3.5	4.5
				Ophichthidae	11	8.0	20.5
				Paralepididae	11	4.0	13.0
				Priacanthidae	9	3.0	4.0
				Scaridae	2	6.0	6.0
				Unknown	61	2.1	4.1

Appendix table 1. (Continued)

Date (1977)	Transect and station	Mesh size (μ)	Number eggs per 1,000 m^3	Larvae	Number larvae per 1,000 m^3	Min. size (mm)	Max. size (mm)
11/5	II-7	333	206	Bothidae	16	2.8	4.0
				Bothidae - *Bothus* sp.	10	4.9	7.3
				Bothidae - *Bothus ocellatus*	2	7.2	7.2
				Bregmacerotidae - *Bregmaceros atlanticus*	4	27.0	27.0
				Chauliodontidae - *Chauliodus* sp.	2	6.8	6.8
				Congridae - *Ariosoma balearicum*	2	24.0	24.0
				Cynoglossidae - *Symphurus* sp.	2	2.7	2.7
				Gobiidae	67	3.3	7.6
				Gonostomatidae - *Cyclothone* sp.	80	2.4	5.3
				Gonostomatidae - *Maurolicus* sp.	16	3.8	4.7
				Gonostomatidae - *Vinciguerria* sp.	4	5.3	6.7
				Myctophidae	51	2.0	4.5
				Myctophidae - *Benthosema suborbitale*	2	3.2	3.2
				Myctophidae - *Diaphus* sp.	37	2.7	4.2
				Myctophidae - *Hygophum* sp.	6	3.2	3.8
				Myctophidae - *Lampanyctus* sp.	2	3.6	3.6
				Ophichthidae	16	13.9	20.1
				Paralepididae	18	2.8	7.1
				Priacanthidae	6	3.5	3.9
				Scaridae	2	6.2	6.2
				Sciaenidae - *Larimus fasciatus*	6	2.5	3.2
				Scorpaenidae - *Scorpaena* sp.	2	2.5	2.5
				Serranidae	8	1.8	2.3
				Serranidae - *Serranus* sp.	2	3.2	3.2
				Stromateidae - *Peprilus* sp.	4	3.3	3.5
				Unknown	84	1.5	3.2

Appendix table 1. (Continued)

Date (1977)	Transect and station	Mesh size (μ)	Number eggs per 1,000 m^3	Larvae	Number larvae per 1,000 m^3	Min. size (mm)	Max. size (mm)
12/3	II-1	505	129	Bothidae	30	5.2	6.7
				Clupeidae	89	6.5	14.0
				Mugilidae - *Mugil* sp.	10	3.4	3.4
				Sciaenidae	89	1.4	6.5
				Sciaenidae - *Leiostomus xanthurus*	8	4.1	7.2
				Sparidae	10	8.5	8.5
				Stromateidae - *Peprilus burti*	89	3.9	6.7
				Unknown	40	4.0	4.5
12/3	II-1	333	113	Bothidae	10	5.2	5.2
				Bregmacerotidae - *Bregmaceros atlanticus*	51	1.8	2.9
				Clupeidae	226	8.5	12.0
				Cynoglossidae - *Symphurus* sp.	21	2.6	4.3
				Engraulidae	10	6.2	6.2
				Gadidae - *Urophycis* sp.	10	2.4	2.4
				Gobiidae	246	1.5	3.2
				Mullidae	10	3.1	3.1
				Sciaenidae - *Leiostomus xanthurus*	51	4.3	5.0
				Serranidae	62	2.7	3.8
				Sparidae	31	4.3	9.3
				Stromateidae - *Peprilus burti*	21	3.0	4.3
				Unknown	318	1.5	8.9
12/2	II-2	505	1,602	Bothidae	23	2.0	3.2
				Bregmacerotidae - *Bregmaceros atlanticus*	52	2.0	3.7
				Cynoglossidae - *Symphurus* sp.	17	2.1	4.1
				Gobiidae	179	1.8	4.1
				Ophichthidae - *Myrophis* sp.	6	31.1	31.1
				Sciaenidae	145	1.9	3.5

Appendix table 1. (Continued)

Date (1977)	Transect and station	Mesh size (μ)	Number eggs per 1,000 m^3	Larvae	Number larvae per 1,000 m^3	Min. size (mm)	Max. size (mm)
12/2	II-2	505		Sciaenidae - *Leiostomus xanthurus*	35	2.6	4.0
				Sciaenidae - *Micropogon undulatus*	35	3.8	57.0
				Triglidae	12	2.8	3.2
				Unknown	29	1.9	4.2
12/3	II-2	333	2,146	Bothidae	72	2.1	3.5
				Bregmacerotidae - *Bregmaceros atlanticus*	150	1.7	3.3
				Carangidae - *Caranx* sp.	18	3.3	4.2
				Clupeidae	48	3.7	11.0
				Cynoglossidae - *Symphurus* sp.	12	1.8	1.9
				Engraulidae	6	3.8	3.8
				Gobiidae	126	2.1	6.2
				Lutjanidae	48	2.2	3.2
				Ophichthidae	6	8.7	8.7
				Sciaenidae	144	2.3	6.1
				Sciaenidae - *Leiostomus xanthurus*	42	2.9	7.4
				Sciaenidae - *Micropogon undulatus*	18	2.3	3.8
				Serranidae	114	1.7	3.6
				Serranidae - *Centropristis* sp.	6	4.1	4.1
				Sparidae	24	2.9	4.3
				Stromatidae - *Peprilus burti*	6	2.7	2.7
				Synodontidae	6	2.8	2.8
				Triglidae - *Prionotus* sp.	18	2.7	3.8
				Unknown	612	1.7	8.2
12/2	II-3	505	3,177	Bathylagidae - *Bathylagus* sp.	3	4.3	4.3
				Bothidae	45	1.7	5.1
				Bothidae - *Bothus* sp.	10	2.5	4.3
				Bothidae - *Bothus ocellatus*	3	9.5	9.5

Appendix table 1. (Continued)

Date (1977)	Transect and station	Mesh size (μ)	Number eggs per 1,000 m^3	Larvae	Number larvae per 1,000 m^3	Min. size (mm)	Max. size (mm)
12/2	II-3	505		Bothidae - *Paralichthys* sp.	3	2.8	2.8
				Branchiostegidae - *Caulolatilus* sp.	35	1.6	2.8
				Bregmacerotidae - *Bregmaceros atlanticus*	864	2.5	28.0
				Cynoglossidae - *Symphurus* sp.	417	1.6	9.9
				Engraulidae - *Engraulis eurystole*	8	6.2	8.8
				Gempylidae	3	6.7	6.7
				Gobiidae	278	1.8	6.2
				Gonostomatidae - *Maurolicus* sp.	8	2.8	3.3
				Labridae - *Halichoeres* sp.	3	4.7	4.7
				Mugilidae - *Mugil* sp.	13	2.5	3.8
				Myctophidae - *Ceratoscopelus* sp.	3	5.3	5.3
				Myctophidae - *Hygophum* sp.	8	3.8	4.4
				Ogcocephalidae	3	2.1	2.1
				Ophichthidae	15	2.3	5.8
				Sciaenidae - *Leiostomus xanthurus*	53	1.9	3.5
				Sciaenidae - *Micropogon undulatus*	51	2.0	3.3
				Serranidae	5	2.4	3.2
				Serranidae - *Anthias* sp.	3	4.5	4.5
				Serranidae - *Serranus* sp.	8	2.6	3.2
				Sparidae	10	2.5	4.7
				Stromateidae - *Peprilus burti*	18	2.3	3.3
				Synodontidae - *Saurida* sp.	93	2.3	5.3
				Synodontidae - *Synodus* sp.	30	1.8	3.3
				Trichiuridae - *Trichiurus lepturus*	13	4.7	8.7
				Triglidae - *Prionotus* sp.	3	4.1	4.1
				Unknown	235	1.4	4.8
12/2	II-3	333	3,119	Bothidae	48	2.0	5.4
				Bothidae - *Bothus* sp.	27	1.7	3.9

Appendix table 1. (Continued)

Date (1977)	Transect and station	Mesh size (μ)	Number eggs per 1,000 m^3	Larvae	Number larvae per 1,000 m^3	Min. size (mm)	Max. size (mm)
12/2	II-3	333		Branchiostegidae - *Caulolatilus* sp.	56	1.7	3.2
				Bregmacerotidae - *Bregmaceros atlanticus*	1,515	1.8	11.2
				Cynoglossidae - *Symphurus* sp.	774	1.8	11.8
				Engraulidae - *Engraulis eurystole*	13	6.2	11.2
				Gobiidae	387	1.8	8.8
				Gonostomatidae	19	2.6	4.8
				Moringuidae - *Neoconger mucronatus*	3	41.0	41.0
				Mugilidae - *Mugil* sp.	13	1.8	4.3
				Myctophidae - *Benthosema suborbitale*	8	3.8	5.3
				Myctophidae - *Diaphus* sp.	3	8.5	8.5
				Ophichthidae	11	4.5	8.3
				Ophichthidae - *Myrophis* sp.	5	58.0	60.0
				Ophidiidae	8	4.3	9.2
				Paralepididae	3	14.2	14.2
				Sciaenidae	19	1.2	1.8
				Sciaenidae - *Cynoscion arenarius*	40	1.5	3.3
				Sciaenidae - *Leiostomus xanthurus*	78	1.7	4.4
				Sciaenidae - *Micropogon undulatus*	24	2.2	3.8
				Serranidae	56	2.0	3.4
				Serranidae - *Hemanthias vivanus*	3	6.2	6.2
				Stromateidae - *Peprilus alepidotus*	3	3.9	3.9
				Stromateidae - *Peprilus burti*	5	2.5	3.6
				Synodontidae - *Saurida* sp.	73	2.3	8.5
				Synodontidae - *Synodus* sp.	51	1.7	3.6
				Trichiuridae - *Trichiurus lepturus*	11	5.1	14.2
				Triglidae - *Prionotus* sp.	8	2.5	8.8
				Unknown	355	1.1	3.2
12/3	II-4	505	218	Bregmacerotidae - *Bregmaceros atlanticus*	23	4.3	7.4
				Clupeidae	117	3.8	12.0

Appendix table 1. (Continued)

Date (1977)	Transect and station	Mesh size (μ)	Number eggs per 1,000 m^3	Larvae	Number larvae per 1,000 m^3	Min. size (mm)	Max. size (mm)
12/3	II-4	505		Gobiidae	31	1.8	3.4
				Ophidiidae - Rissola marginata	8	2.8	2.8
				Sciaenidae	93	2.9	4.2
				Sciaenidae - Leiostomus xanthurus	39	4.0	5.0
				Stromateidae - Peprilus burti	23	3.3	4.5
				Synodontidae - Saurida sp.	8	2.7	2.7
				Triglidae - Prionotus sp.	31	2.9	4.2
				Unknown	70	1.7	4.5
12/3	II-4	333	181	Bothidae	8	2.1	2.1
				Bregmacerotidae - Bregmaceros atlanticus	32	3.1	5.7
				Clupeidae	16	3.9	4.1
				Clupeidae - Brevoortia sp.	249	6.6	14.0
				Cynoglossidae - Symphurus sp.	32	3.5	6.8
				Engraulidae	16	5.5	5.8
				Engraulidae - Engraulis sp.	8	14.0	14.0
				Gerreidae	8	9.0	9.0
				Gobiidae	64	2.3	3.5
				Sciaenidae	72	1.9	5.6
				Sciaenidae - Leiostomus xanthurus	40	2.5	6.0
				Sciaenidae - Micropogon undulatus	32	2.4	3.5
				Serranidae	40	2.1	3.1
				Serranidae - Diplectrum sp.	16	3.7	4.1
				Stromateidae - Peprilus burti	32	2.9	4.1
				Synodontidae - Saurida sp.	8	6.2	6.2
				Triglidae - Prionotus sp.	24	2.1	5.4
				Unknown	96	1.5	3.8
12/2	II-5	505	108	Bothidae	52	2.8	4.3
				Bothidae - Bothus sp.	19	3.3	7.8

Appendix table 1. (Continued)

Date (1977)	Transect and station	Mesh size (μ)	Number eggs per 1,000 m^3	Larvae	Number larvae per 1,000 m^3	Min. size (mm)	Max. size (mm)
12/2	II-5	505		Bothidae - *Bothus ocellatus*	19	3.5	4.4
				Branchiostegidae - *Caulolatilus* sp.	19	2.6	4.8
				Bregmacerotidae - *Bregmaceros atlanticus*	258	2.4	9.0
				Clupeidae	5	7.5	7.5
				Cynoglossidae - *Symphurus* sp.	47	2.6	4.4
				Gobiidae	169	2.2	4.9
				Gonostomatidae	5	4.0	4.0
				Mugilidae - *Mugil* sp.	108	2.5	4.0
				Mullidae	5	4.7	4.7
				Myctophidae	9	4.5	4.8
				Myctophidae - *Hygophum* sp.	19	3.8	5.2
				Ophichthidae	19	6.1	10.9
				Ophichthidae - *Myrophis* sp.	5	29.9	29.9
				Ophidiidae	5	4.6	4.6
				Sciaenidae - *Leiostomus xanthurus*	56	2.1	3.7
				Sciaenidae - *Micropogon undulatus*	14	2.8	3.5
				Serranidae	150	2.6	4.5
				Sparidae	221	2.5	5.1
				Stromateidae - *Peprilus* sp.	5	3.5	3.5
				Synodontidae	5	6.2	6.2
				Synodontidae - *Saurida* sp.	5	6.9	6.9
				Unknown	310	1.9	6.1
12/2	II-5	333	153	Bothidae	89	2.1	3.3
				Bothidae - *Bothus* sp.	25	3.3	3.9
				Branchiostegidae - *Caulolatilus* sp.	35	2.2	4.1
				Bregmacerotidae	242	1.5	4.4
				Carangidae	10	2.9	3.0
				Carangidae - *Chloroscombrus chrysurus*	5	3.3	3.3

Appendix table 1. (Continued)

Date (1977)	Transect and station	Mesh size (μ)	Number eggs per 1,000 m^3	Larvae	Number larvae per 1,000 m^3	Min. size (mm)	Max. size (mm)
12/2	II-5	333		Cynoglossidae - *Symphurus* sp.	69	2.5	4.8
				Engraulidae	20	3.6	6.1
				Gadidae - *Urophycis* sp.	64	1.5	2.5
				Gobiidae	296	2.1	5.9
				Gonostomatidae - *Cyclothone* sp.	10	4.2	6.3
				Mugilidae - *Mugil* sp.	198	2.4	4.4
				Myctophidae	20	2.2	3.8
				Myctophidae - *Diaphus* sp.	5	8.2	8.2
				Myctophidae - *Hygophum* sp.	20	3.0	4.2
				Myctophidae - *Lampanyctus* sp.	5	3.0	3.0
				Ophidiidae - *Rissola marginata*	5	3.2	3.2
				Scaridae	10	5.8	5.8
				Sciaenidae	741	1.7	4.4
				Sciaenidae - *Leiostomus xanthurus*	158	1.7	5.3
				Sciaenidae - *Micropogon undulatus*	40	1.8	4.0
				Scorpaenidae	5	2.8	2.8
				Serranidae	158	2.0	4.3
				Serranidae - *Diplectrum* sp.	5	4.4	4.4
				Sparidae	301	3.2	4.8
				Stromateidae - *Peprilus burti*	15	3.1	4.9
				Synodontidae - *Saurida* sp.	35	3.3	6.3
				Triglidae - *Prionotus* sp.	10	3.2	7.6
				Uranoscopidae	10	2.2	2.9
				Unknown	538	1.7	6.7
12/2	II-6	505	593	Bothidae	11	2.5	3.8
				Bothidae - *Bothus* sp.	14	2.5	3.1
				Bregmacerotidae - *Bregmaceros atlanticus*	60	3.0	11.9
				Carangidae	4	2.9	2.9

Appendix table 1. (Continued)

Date (1977)	Transect and station	Mesh size (μ)	Number eggs per 1,000 m^3	Larvae	Number larvae per 1,000 m^3	Min. size (mm)	Max. size (mm)
12/2	II-6	505		Cynoglossidae - *Symphurus* sp.	28	2.7	4.8
				Engraulidae	18	6.7	7.5
				Gobiidae	28	3.0	6.8
				Microdesmidae - *Microdesmus* sp.	4	6.4	6.4
				Mullidae	4	4.8	4.8
				Ophichthidae - *Myrophis* sp.	11	15.8	50.2
				Sciaenidae - *Cynoscion arenarius*	7	3.7	4.1
				Sciaenidae - *Leiostomus xanthurus*	21	2.0	3.6
				Sciaenidae - *Micropogon undulatus*	11	2.8	3.5
				Serranidae	11	2.2	3.5
				Serranidae - *Serranus* sp.	11	2.3	3.5
				Sparidae	25	2.4	6.5
				Synodontidae - *Saurida* sp.	4	4.0	4.0
				Triglidae - *Prionotus* sp.	46	2.9	7.6
				Unknown	102	1.7	4.5
12/2	II-6	333	213	Bothidae	64	2.2	5.0
				Branchiostegidae - *Caulolatilus* sp.	4	2.7	2.7
				Bregmacerotidae - *Bregmaceros atlanticus*	52	1.7	4.9
				Carangidae - *Chloroscombrus chrysurus*	4	4.6	4.6
				Clupeidae	11	5.7	6.8
				Clupeidae - *Brevoortia* sp.	30	7.3	11.0
				Cynoglossidae - *Symphurus* sp.	19	2.1	4.1
				Gobiidae	109	1.8	12.0
				Mullidae	7	3.4	3.4
				Myctophidae	7	5.4	5.4
				Myctophidae - *Diaphus* sp.	4	5.8	5.8
				Sciaenidae	71	2.0	3.8
				Sciaenidae - *Leiostomus xanthurus*	34	2.0	3.6

Appendix table i. (Continued)

Date (1977)	Transect and station	Mesh size (μ)	Number eggs per 1,000 m^3	Larvae	Number larvae per 1,000 m^3	Min. size (mm)	Max. size (mm)
12/2	II-6	333		Sciaenidae - *Micropogon undulatus*	15	2.3	2.6
				Serranidae	49	1.8	3.5
				Sparidae	22	2.8	9.5
				Stromateidae - *Peprilus burti*	45	2.6	6.1
				Synodontidae - *Saurida* sp.	7	2.0	4.1
				Triglidae - *Prionotus* sp.	11	3.2	4.3
				Unknown	232	1.5	3.8
12/2	II-7	505	1,689	Bothidae	71	2.3	7.8
				Bothidae - *Bothus* sp.	13	2.0	6.6
				Bothidae - *Bothus ocellatus*	2	6.2	6.2
				Bothidae - *Paralichthys* sp.	7	2.1	3.5
				Bothidae - *Syacium* sp.	2	3.6	3.6
				Branchiostegidae - *Caulolatilus* sp.	17	1.6	2.9
				Bregmacerotidae - *Bregmaceros atlanticus*	686	2.0	9.9
				Cynoglossidae - *Symphurus* sp.	203	1.9	11.9
				Engraulidae	3	7.6	7.9
				Engraulidae - *Engraulis eurystole*	2	11.6	11.6
				Gobiidae	211	1.7	6.4
				Gonostomatidae	3	3.7	5.4
				Gonostomatidae - *Cyclothone* sp.	5	4.3	9.8
				Moringuidae - *Neoconger mucronatus*	3	38.3	40.0
				Mugilidae - *Mugil* sp.	37	3.0	4.4
				Myctophidae - *Diaphus* sp.	2	3.9	3.9
				Myctophidae - *Hygophum* sp.	10	5.1	6.9
				Myctophidae - *Lampanyctus* sp.	2	4.0	4.0
				Ophichthidae	5	9.0	56.0
				Paralepididae - *Lestidiops* sp.	3	7.3	24.4

Appendix table 1. (Continued)

Date (1977)	Transect and station	Mesh size (μ)	Number eggs per 1,000 m^3	Larvae	Number larvae per 1,000 m^3	Min. size (mm)	Max. size (mm)
12/2	II-7	505		Priacanthidae	2	3.2	3.2
				Sciaenidae	2	3.6	3.6
				Sciaenidae - *Cynoscion arenarius*	8	2.2	4.3
				Sciaenidae - *Leiostomus xanthurus*	22	2.3	3.8
				Sciaenidae - *Micropogon undulatus*	25	2.3	3.6
				Scopelosauridae - *Scopelosaurus* sp.	12	3.5	6.5
				Scorpaenidae - *Scorpaena* sp.	8	1.0	2.8
				Serranidae	2	4.0	4.0
				Serranidae - *Diplectrum* sp.	15	2.6	4.4
				Serranidae - *Hemanthias vivanus*	2	4.3	4.3
				Serranidae - *Serranus* sp.	13	2.3	3.5
				Sparidae	3	3.1	3.2
				Stromateidae - *Peprilus burti*	2	4.1	4.1
				Synodontidae - *Saurida* sp.	18	1.8	5.9
				Synodontidae - *Synodus* sp.	17	3.2	4.2
				Trichiuridae - *Trichiurus lepturus*	7	4.0	6.6
				Triglidae - *Prionotus* sp.	5	2.1	4.5
				Unknown	242	1.5	3.3
12/2	II-7	333	7,152	Bothidae	81	1.4	6.0
				Bothidae - *Bothus* sp.	17	2.1	4.5
				Bothidae - *Bothus ocellatus*	5	5.0	5.6
				Bothidae - *Paralichthys* sp.	2	4.2	4.2
				Branchiostegidae - *Caulolatilus* sp.	19	1.4	2.9
				Bregmacerotidae - *Bregmaceros* sp.	5	1.9	3.1
				Bregmacerotidae - *Bregmaceros atlanticus*	968	1.8	9.6
				Carangidae	2	3.0	3.0
				Clupeidae	5	6.3	8.2
				Cynoglossidae - *Symphurus* sp.	383	1.6	8.6

Appendix table 1. (Continued)

Date (1977)	Transect and station	Mesh size (μ)	Number eggs per 1,000 m^3	Larvae	Number larvae per 1,000 m^3	Min. size (mm)	Max. size (mm)
12/2	II-7	333		Engraulidae - *Engraulis eurystole*	2	10.5	10.5
				Gempylidae	2	4.7	4.7
				Gobiidae	304	2.9	8.1
				Gonostomatidae	7	4.2	8.8
				Gonostomatidae - *Cyclothone* sp.	19	3.2	8.2
				Labridae	2	6.0	6.0
				Microdesmidae - *Microdesmus* sp.	2	5.2	5.2
				Moringuidae - *Neoconger mucronatus*	2	37.0	37.0
				Mugilidae - *Mugil* sp.	40	2.4	3.7
				Myctophidae - *Benthosema suborbitale*	7	4.2	6.9
				Myctophidae - *Diaphus* sp.	3	3.6	6.6
				Ophichthidae	14	3.1	63.0
				Ophidiidae	2	8.2	8.2
				Paralepididae	5	4.7	5.6
				Sciaenidae	7	1.4	2.4
				Sciaenidae - *Cynoscion* sp.	2	3.9	3.9
				Sciaenidae - *Leiostomus xanthurus*	9	2.0	3.2
				Sciaenidae - *Micropogon undulatus*	45	1.8	3.6
				Scopelarchidae	10	3.8	5.2
				Serranidae	14	2.1	2.8
				Serranidae - *Hemanthias vivanus*	3	4.2	4.8
				Serranidae - *Serranus* sp.	12	2.7	8.6
				Sparidae	2	5.0	5.0
				Stromateidae - *Peprilus burti*	9	2.8	4.9
				Synodontidae - *Saurida* sp.	73	1.9	5.5
				Synodontidae - *Synodus* sp.	28	1.3	4.2
				Triglidae - *Prionotus* sp.	2	5.2	5.2
				Unknown	404	1.6	3.0

SPECIAL APPENDIX

(Table 2)

Appendix table 2. (Continued)

Cruise	Transect station	Taxon Family - genera & species	Abundance No. per 1,000 m^3	Salinity °/oo (mean)	Temperature °C (mean)
4	I-2	Bothidae	64	35.0	23.4
4	I-3	"	108	36.1	21.2
4	II-1	"	0	31.9	24.7
4	II-2	"	77	34.3	23.2
4	II-3	"	54	35.9	21.0
4	II-4	"	0	32.6	24.3
4	II-5	"	74	35.1	22.1
4	II-6	"	46	35.5	21.6
4	II-7	"	143	36.2	20.2
4	III-1	"	45	32.5	23.8
4	III-2	"	10	34.9	21.9
4	III-3	"	142	35.6	20.7
4	IV-1	"	158	33.5	23.8
4	IV-2	"	210	35.3	22.2
4	IV-3	"	226	35.8	20.8
5	II-1	"	26	36.3	25.4
5	II-2	"	1,665	36.3	24.6
5	II-3	"	198	36.2	21.9
5	II-4	"	165	36.3	24.9
5	II-5	"	151	36.1	23.4
5	II-6	"	288	36.2	22.6
5	II-7	"	92	36.3	20.6
6	II-1	"	376	36.3	28.0
6	II-2	"	21	36.2	26.9
6	II-3	"	67	36.3	23.9
6	II-4	"	174	36.3	27.3
6	II-5	"	139	36.3	26.2
6	II-6	"	54	36.3	25.0
6	II-7	"	38	36.3	21.9
7	I-1	"	0	34.2	29.8
7	I-2	"	52	35.2	28.3
7	I-3	"	100	36.2	24.2

Appendix table 2. (Continued)

Cruise	Transect station	Taxon Family - genera & species	Abundance No. per 1,000 m^3	Salinity °/oo (mean)	Temperature °C (mean)
7	II-1	Bothidae	0	34.4	29.2
7	II-2	"	407	35.8	29.2
7	II-3	"	34	36.2	24.1
7	II-4	"	0	34.8	29.3
7	II-5	"	167	36.2	27.2
7	II-6	"	128	36.1	25.6
7	II-7	"	206	36.2	23.7
7	III-1	"	0	34.9	29.3
7	III-2	"	253	36.2	28.2
7	III-3	"	313	36.2	24.4
7	IV-1	"	9	36.0	29.2
7	IV-2	"	134	36.3	29.1
7	IV-3	"	70	36.3	26.4
8	II-1	"	15	36.5	26.1
8	II-2	"	192	36.5	26.1
8	II-3	"	4	36.3	23.8
8	II-4	"	14	35.4	24.9
8	II-5	"	67	36.4	25.9
8	II-6	"	99	36.4	23.8
8	II-7	"	11	36.5	22.4
9	II-1	"	30	33.4	21.6
9	II-2	"	23	35.9	23.8
9	II-3	"	61	36.4	22.2
9	II-4	"	0	34.6	22.7
9	II-5	"	90	36.4	23.3
9	II-6	"	25	36.4	22.8
9	II-7	"	95	36.4	21.3
1	I-1	Bothidae - *Bothus ocellatus*	0	32.6	11.0
1	I-2	"	0	36.4	17.4
1	I-3	"	0	36.4	17.9
1	II-1	"	0	34.2	13.1

Appendix table 2. (Continued)

Cruise	Transect station	Taxon Family - genera & species	Abundance No. per 1,000 m^3	Salinity °/oo (mean)	Temperature °C (mean)
1	II-2	Bothidae - Bothus ocellatus	0	36.0	16.5
1	II-3	"	0	36.4	17.8
1	II-4	"	0	36.3	17.4
1	II-5	"	0	36.3	18.6
1	II-6	"	0	36.4	18.2
1	II-7	"	0	36.4	18.3
1	III-1	"	0	34.1	13.0
1	III-2	"	0	36.4	17.4
1	III-3	"	0	36.3	18.1
1	IV-1	"	0	36.6	17.7
1	IV-2	"	0	36.4	19.1
1	IV-3	"	0	36.4	19.1
2	II-1	"	0	33.1	15.0
2	II-2	"	0	35.8	16.6
2	II-3	"	0	36.3	17.7
2	II-4	"	0	35.7	17.0
2	II-5	"	0	36.4	17.8
2	II-6	"	0	36.3	17.9
2	II-7	"	0	36.3	17.5
3	II-1	"	0	31.5	21.1
3	II-2	"	0	36.0	20.2
3	II-3	"	11	36.2	20.6
3	II-4	"	0	35.6	21.1
3	II-5	"	0	36.1	19.9
3	II-6	"	0	36.1	20.2
3	II-7	"	3	36.3	19.6
4	I-1	"	0	28.3	25.5
4	I-2	"	7	35.0	23.4
4	I-3	"	14	36.1	21.2
4	II-1	"	0	31.9	24.7
4	II-2	"	11	34.3	23.2
4	II-3	"	0	35.9	21.0

Appendix table 2. (Continued)

Cruise	Transect station	Taxon Family - genera & species	Abundance No. per 1,000 m^3	Salinity °/oo (mean)	Temperature °C (mean)
4	II-4	Bothidae - *Bothus ocellatus*	0	32.6	24.3
4	II-5	"	4	35.1	22.1
4	II-6	"	0	36.0	21.6
4	II-7	"	5	36.2	20.2
4	III-1	"	0	32.5	23.8
4	III-2	"	0	34.9	21.9
4	III-3	"	9	35.6	20.7
4	IV-1	"	0	33.5	23.8
4	IV-2	"	0	36.3	22.2
4	IV-3	"	6	35.8	20.8
5	II-1	"	0	36.3	25.4
5	II-2	"	34	36.3	24.9
5	II-3	"	20	36.2	21.9
5	II-4	"	6	36.3	24.9
5	II-5	"	4	36.1	23.4
5	II-6	"	8	36.2	22.6
5	II-7	"	14	36.3	20.6
6	II-1	"	0	34.2	29.8
6	II-2	"	0	36.2	26.9
6	II-3	"	0	36.3	23.9
6	II-4	"	0	36.3	27.3
6	II-5	"	20	36.3	26.2
6	II-6	"	8	36.3	25.0
6	II-7	"	4	36.3	21.9
7	I-1	"	0	34.2	29.8
7	I-2	"	0	35.2	28.3
7	I-3	"	12	36 2	24.2
7	II-1	"	0	34.4	29.2
7	II-2	"	45	35.8	29.2
7	II-3	"	18	36.2	24.1
7	II-4	"	0	34.8	29.3

Appendix table 2. (Continued)

Cruise	Transect station	Taxon Family - genera & species	Abundance No. per 1,000 m^3	Salinity $^o/oo$ (mean)	Temperature ^oC (mean)
7	II-5	Bothidae - Bothus ocellatus	0	36.2	27.2
7	II-6	"	4	36.1	25.6
7	II-7	"	28	36.2	23.7
7	III-1	"	0	34.9	29.3
7	III-2	"	48	36.2	28.2
7	III-3	"	12	36.2	24.4
7	IV-1	"	0	36.0	29.2
7	IV-2	"	6	36.3	29.1
7	IV-3	"	8	36.3	26.4
8	II-1	"	0	35.2	24.3
8	II-2	"	0	36.5	26.1
8	II-3	"	0	36.3	23.8
8	II-4	"	0	35.4	24.9
8	II-5	"	0	36.4	25.9
8	II-6	"	24	36.4	23.8
8	II-7	"	2	36.5	22.4
9	II-1	"	0	33.4	21.6
9	II-2	"	0	35.9	23.8
9	II-3	"	3	36.4	22.2
9	II-4	"	0	34.6	22.7
9	II-5	"	19	36.4	23.3
9	II-6	"	0	36.4	22.8
9	II-7	"	2	36.4	21.3
1	I-1	Carangidae	0	----	----
1	I-2	"	158	36.4	17.4
1	I-3	"	111	36.4	17.9
1	II-1	"	0	----	----
1	II-2	"	104	36.3	16.5
1	II-3	"	34	36.4	17.8
1	II-4	"	151	36.3	17.4
1	II-5	"	92	36.3	18.6
1	II-6	"	3	36.4	18.2

Appendix table 2 (Continued)

Cruise	Transect station	Taxon Family - genera & species	Abundance No. per 1,000 m^3	Salinity °/oo (mean)	Temperature °C (mean)
1	II-7	Carangidae	111	36.4	18.3
1	III-1	"	10	34.1	13.0
1	III-2	"	90	36.4	17.4
1	III-3	"	3	36.3	18.1
1	IV-1	"	9	33.9	12.7
1	IV-2	"	375	36.3	17.7
1	IV-3	"	34	36.4	19.1
2	II-1	"	7	33.1	15.2
2	II-2	"	82	35.8	16.6
2	II-3	"	239	36.3	17.7
2	II-4	"	0	35.7	17.0
2	II-5	"	278	36.4	17.8
2	II-6	"	89	36.3	17.9
2	II-7	"	121	36.4	17.5
3	II-1	"	0	31.5	21.1
3	II-2	"	34	36.0	20.2
3	II-3	"	197	36.2	20.6
3	II-4	"	0	35.6	21.1
3	II-5	"	119	36.1	19.9
3	II-6	"	111	36.1	20.2
3	II-7	"	96	36.3	19.6
4	I-1	"	27	28.3	25.5
4	I-2	"	7	35.0	23.4
4	I-3	"	0	36.1	21.2
4	II-1	"	106	31.9	24.7
4	II-2	"	12	34.3	23.2
4	II-3	"	5	35.9	21.0
4	II-4	"	17	32.6	24.3
4	II-5	"	4	35.1	22.1
4	II-6	"	3	35.5	21.6
4	II-7	"	0	36.2	20.2
4	III-1	"	45	32.5	23.8

Appendix table 2. (Continued)

Cruise	Transect station	Taxon Family - genera & species	Abundance No. per 1,000 m^3	Salinity $^o/oo$ (mean)	Temperature °C (mean)
4	III-2	Carangidae	21	34.9	21.9
4	III-3	"	3	35.6	20.7
4	IV-1	"	0	33.5	23.8
4	IV-2	"	0	35.3	22.2
4	IV-3	"	6	35.8	20.8
5	II-1	"	26	36.3	25.4
5	II-2	"	40	36.3	24.6
5	II-3	"	11	36.2	21.9
5	II-4	"	0	36.3	24.9
5	II-5	"	0	36.1	23.4
5	II-6	"	0	36.2	22.6
5	II-7	"	9	36.3	20.6
6	II-1	"	73	36.3	28.0
6	II-2	"	150	36.2	26.9
6	II-3	"	33	36.3	23.9
6	II-4	"	9	36.3	27.3
6	II-5	"	737	36.3	26.2
6	II-6	"	45	36.3	25.0
6	II-7	"	24	36.3	21.9
7	I-1	"	336	34.2	29.8
7	I-2	"	135	35.2	28.3
7	I-3	"	20	36.2	24.2
7	II-1	"	10	34.4	29.2
7	II-2	"	51	35.8	29.2
7	II-3	"	28	36.2	24.1
7	II-4	"	131	34.8	29.3
7	II-5	"	4	36.2	27.2
7	II-6	"	60	36.1	25.6
7	II-7	"	12	36.2	23.7
7	III-1	"	373	34.9	29.3
7	III-2	"	12	36.2	28.2
7	III-3	"	75	36.2	24.4

Appendix table 2. (Continued)

Cruise	Transect station	Taxon Family - genera & species	Abundance No. per 1,000 m^3	Salinity $^{o}/oo$ (mean)	Temperature °C (mean)
7	IV-1	Carangidae	203	36.0	29.2
7	IV-2	"	0	36.3	29.1
7	IV-3	"	3	36.3	26.4
8	II-1	"	0	35.2	24.3
8	II-2	"	10	36.5	26.1
8	II-3	"	0	36.3	23.8
8	II-4	"	0	35.4	24.9
8	II-5	"	16	36.4	25.9
8	II-6	"	15	36.4	23.8
8	II-7	"	0	36.5	22.4
9	II-1	"	0	33.4	21.6
9	II-2	"	0	35.9	23.8
9	II-3	"	0	36.4	22.2
9	II-4	"	0	34.6	22.7
9	II-5	"	0	36.4	23.3
9	II-6	"	4	36.4	22.8
9	II-7	"	0	36.4	21.3
1	I-1	Carangidae - <u>Trachurus</u> <u>lathami</u>	0	32.6	11.0
1	I-2	"	158	36.4	17.4
1	I-3	"	111	36.4	17.9
1	II-1	"	0	34.2	13.1
1	II-2	"	104	36.0	16.5
1	II-3	"	34	36.4	17.8
1	II-4	"	151	36.3	17.4
1	II-5	"	92	36.3	18.6
1	II-6	"	3	36.4	18.2
1	II-7	"	111	36.4	18.3
1	III-1	"	10	34.1	13.0
1	III-2	"	90	36.4	17.4
1	III-3	"	3	36.3	18.1
1	IV-1	"	9	36.6	17.7
1	IV-2	"	375	36.4	19.1
		"			

Appendix table 2. (Continued)

Cruise	Transect station	Taxon Family - genera & species	Abundance No. per 1,000 m^3	Salinity °/oo (mean)	Temperature °C (mean)
1	IV-3	Carangidae - Trachurus lathami	34	36.4	19.1
2	II-1	"	7	33.1	15.0
2	II-2	"	82	35.8	16.6
2	II-3	"	239	36.3	17.7
2	II-4	"	0	35.7	17.0
2	II-5	"	278	36.4	17.8
2	II-6	"	89	36.3	17.9
2	II-7	"	121	36.3	17.5
3	II-1	"	0	31.5	21.1
3	II-2	"	7	36.0	20.2
3	II-3	"	197	36.2	20.6
3	II-4	"	0	35.6	21.1
3	II-5	"	0	36.1	19.9
3	II-6	"	232	36.1	20.2
3	II-7	"	93	36.3	19.6
4	I-1	"	0	28.3	25.5
4	I-2	"	0	35.0	23.4
4	I-3	"	0	36.1	21.2
4	II-1	"	0	31.9	24.7
4	II-2	"	0	34.3	23.2
4	II-3	"	0	35.9	21.0
4	II-4	"	0	32.6	24.3
4	II-5	"	0	35.1	22.1
4	II-6	"	0	36.1	21.6
4	II-7	"	0	36.2	20.2
4	III-1	"	0	32.5	23.8
4	III-2	"	0	34.9	21.9
4	III-3	"	0	35.6	20.7
4	IV-1	"	0	33.5	23.8
4	IV-2	"	0	36.3	22.2
4	IV-3	"	3	35.8	20.8
5	II-1	"	0	36.3	25.4

Appendix table 2. (Continued)

Cruise	Transect station	Taxon Family - genera & species	Abundance No. per 1,000 m^3	Salinity °/oo (mean)	Temperature °C (mean)
5	II-2	Carangidae - *Trachurus lathami*	0	36.3	24.9
5	II-3	"	0	36.2	21.9
5	II-4	"	0	36.3	24.9
5	II-5	"	0	36.1	23.4
5	II-6	"	0	36.2	22.6
5	II-7	"	0	36.3	20.6
6	II-1	"	0	34.2	29.8
6	II-2	"	0	36.2	26.9
6	II-3	"	0	36.3	23.9
6	II-4	"	0	36.3	27.3
6	II-5	"	0	36.3	26.2
6	II-6	"	0	36.3	25.0
6	II-7	"	0	36.3	21.9
7	I-1	"	0	34.2	29.8
7	I-2	"	0	35.2	28.3
7	I-3	"	0	36.2	24.2
7	II-1	"	0	34.4	29.2
7	II-2	"	0	35.8	29.2
7	II-3	"	0	36.2	24.1
7	II-4	"	0	34.8	29.3
7	II-5	"	0	36.2	27.2
7	II-6	"	0	36.1	25.6
7	II-7	"	0	36.2	23.7
7	III-1	"	0	34.9	29.3
7	III-2	"	0	36.2	28.2
7	III-3	"	0	36.2	24.4
7	IV-1	"	0	36.0	29.2
7	IV-2	"	0	36.3	29.1
7	IV-3	"	0	36.3	26.4
8	II-1	"	0	35.2	24.3
8	II-2	"	0	36.5	26.1
8	II-3	"	0	36.3	23.8

Appendix table 2. (Continued)

Cruise	Transect station	Taxon Family - genera & species	Abundance No. per 1,000 m^3	Salinity °/oo (mean)	Temperature °C (mean)
8	II-4	Carangidae - <u>Trachurus lathami</u>	0	35.4	24.9
8	II-5	"	0	36.4	25.9
8	II-6	"	0	36.4	23.8
8	II-7	"	0	36.5	22.4
9	II-1	"	0	33.4	21.6
9	II-2	"	0	35.9	23.8
9	II-3	"	0	36.4	22.2
9	II-4	"	0	34.6	22.7
9	II-5	"	0	36.4	23.3
9	II-6	"	0	36.4	22.8
9	II-7	"	0	36.4	21.3
1	I-1	Clupeidae	0	32.6	11.0
1	I-2	"	2024	36.4	17.4
1	I-3	"	220	36.4	17.9
1	II-1	"	130	43.2	13.1
1	II-2	"	674	36.0	16.5
1	II-3	"	71	36.4	17.8
1	II-4	"	512	36.3	17.4
1	II-5	"	160	36.3	18.6
1	II-6	"	73	36.4	18.2
1	II-7	"	292	36.4	18.3
1	III-1	"	174	34.1	13.0
1	III-2	"	477	36.4	17.4
1	III-3	"	82	36.3	18.1
1	IV-1	"	100	33.9	12.7
1	IV-2	"	751	36.3	17.7
1	IV-3	"	4	36.4	19.1
2	II-1	"	177	33.1	15.2
2	II-2	"	88	35.8	16.6
2	II-3	"	714	36.3	17.7
2	II-4	"	51	35.7	17.0
2	II-5	"	1279	36.4	17.8

Appendix table 2. (Continued)

Cruise	Transect station	Taxon Family - genera & species	Abundance No. per 1,000 m^3	Salinity $^o/oo$ (mean)	Temperature °C (mean)
2	II-6	Clupeidae	1433	36.3	17.9
2	II-7	"	519	36.4	17.5
3	II-1	"	0	31.5	21.1
3	II-2	"	308	36.0	20.2
3	II-3	"	0	36.2	20.6
3	II-4	"	20	35.6	21.1
3	II-5	"	807	36.1	19.9
3	II-6	"	607	36.1	20.2
3	II-7	"	3	36.3	19.6
4	I-1	"	0	28.3	25.5
4	I-2	"	0	35.0	23.4
4	I-3	"	5	36.1	21.2
4	II-1	"	94	31.9	24.7
4	II-2	"	34	34.3	23.2
4	II-3	"	16	35.9	21.0
4	II-4	"	16	32.6	24.3
4	II-5	"	26	35.1	22.1
4	II-6	"	23	35.5	21.6
4	II-7	"	27	36.2	20.2
4	III-1	"	0	32.5	23.8
4	III-2	"	10	34.9	21.9
4	III-3	"	9	35.6	20.7
4	IV-1	"	37	33.5	23.8
4	IV-2	"	0	35.3	22.2
4	IV-3	"	10	35.8	20.8
5	II-1	"	1098	36.3	25.4
5	II-2	"	51	36.3	24.6
5	II-3	"	55	36.2	21.9
5	II-4	"	361	36.3	24.9
5	II-5	"	0	36.1	23.4
5	II-6	"	16	36.2	22.6
5	II-7	"	136	36.3	20.6

Appendix table 2. (Continued)

Cruise	Transect station	Taxon Family - genera & species	Abundance No. per 1,000 m^3	Salinity $^o/oo$ (mean)	Temperature °C (mean)
6	II-1	Clupeidae	312	36.3	28.0
6	II-2	"	85	36.2	26.9
6	II-3	"	0	36.3	23.9
6	II-4	"	632	36.3	27.3
6	II-5	"	0	36.3	26.2
6	II-6	"	0	36.3	25.0
6	II-7	"	2	36.3	21.9
7	I-1	"	718	34.2	29.8
7	I-2	"	84	35.2	28.3
7	I-3	"	0	36.2	24.2
7	II-1	"	70	34.4	29.2
7	II-2	"	6	35.8	29.2
7	II-3	"	0	36.2	24.1
7	II-4	"	31	34.8	29.3
7	II-5	"	43	36.2	27.2
7	II-6	"	0	36.2	25.6
7	II-7	"	4	36.2	23.7
7	III-1	"	0	34.9	29.3
7	III-2	"	12	36.2	28.2
7	III-3	"	0	36.2	24.4
7	IV-1	"	150	36.0	29.2
7	IV-2	"	128	36.3	29.1
7	IV-3	"	0	36.3	26.4
8	II-1	"	31	35.2	24.3
8	II-2	"	0	36.5	26.1
8	II-3	"	0	36.3	23.8
8	II-4	"	0	35.4	24.9
8	II-5	"	0	36.4	25.9
8	II-6	"	0	36.4	23.8
8	II-7	"	0	36.5	22.4
9	II-1	"	317	33.4	21.6
9	II-2	"	0	35.9	23.8

Appendix table 2. (Continued)

Cruise	Transect station	Taxon Family - genera & species	Abundance No. per 1,000 m^3	Salinity $^o/oo$ (mean)	Temperature ^oC (mean)
9	II-3	Clupeidae	0	36.4	22.2
9	II-4	"	117	34.6	22.7
9	II-5	"	5	36.4	23.3
9	II-6	"	0	36.4	22.8
9	II-7	"	0	36.4	21.3
1	I-1	Clupeidae - _Etrumeus_ _teres_	0	32.6	11.0
1	I-2	"	247	36.4	17.4
1	I-3	"	43	36.4	17.9
1	II-1	"	19	34.1	13.1
1	II-2	"	147	36.0	16.5
1	II-3	"	6	36.4	17.8
1	II-4	"	271	36.3	17.4
1	II-5	"	40	36.3	18.6
1	II-6	"	3	36.4	18.2
1	II-7	"	47	36.4	18.3
1	III-1	"	0	34.1	13.0
1	III-2	"	87	36.4	17.4
1	III-3	"	0	36.3	18.1
1	IV-1	"	9	36.6	17.7
1	IV-2	"	132	36.4	19.1
1	IV-3	"	0	36.4	19.1
2	II-1	"	170	33.1	15.0
2	II-2	"	50	35.8	16.6
2	II-3	"	605	36.3	17.7
2	II-4	"	10	35.7	17.0
2	II-5	"	996	36.4	17.8
2	II-6	"	1215	36.3	17.9
2	II-7	"	462	36.3	17.5
3	II-1	"	0	31.5	21.1
3	II-2	"	14	36.0	20.2
3	II-3	"	0	36.2	20.6
3	II-4	"	10	35.6	21.1

Appendix table 2. (Continued)

Cruise	Transect station	Taxon Family - genera & species	Abundance No. per 1,000 m^3	Salinity °/oo (mean)	Temperature °C (mean)
3	II-5	Clupeidae - Etrumeus teres	330	36.1	19.9
3	II-6	"	283	36.1	20.2
3	II-7	"	0	36.3	19.6
4	I-1	"	0	28.3	25.5
4	I-2	"	0	35.0	23.4
4	I-3	"	5	36.1	21.2
4	II-1	"	0	31.9	24.7
4	II-2	"	6	34.3	23.2
4	II-3	"	13	35.9	21.0
4	II-4	"	8	32.6	24.3
4	II-5	"	26	35.1	22.1
4	II-6	"	20	36.1	21.6
4	II-7	"	27	36.2	20.2
4	III-1	"	0	32.5	23.8
4	III-2	"	5	34.9	21.9
4	III-3	"	9	35.6	20.7
4	IV-1	"	0	33.5	23.8
4	IV-2	"	0	36.3	22.2
4	IV-3	"	0	35.8	20.8
5	II-1	"	0	36.3	25.4
5	II-2	"	0	36.3	24.9
5	II-3	"	0	36.2	21.9
5	II-4	"	0	36.3	24.9
5	II-5	"	0	36.1	23.4
5	II-6	"	0	36.2	22.6
5	II-7	"	0	36.3	20.6
6	II-1	"	0	34.2	29.8
6	II-2	"	0	36.2	26.9
6	II-3	"	0	36.3	23.9
6	II-4	"	0	36.3	27.3
6	II-5	"	0	36.3	26.2
6	II-6	"	0	36.3	25.0

Appendix table 2. (Continued)

Cruise	Transect station	Taxon Family - genera & species	Abundance No. per 1,000 m^3	Salinity $^\circ$/oo (mean)	Temperature $^\circ$C (mean)
6	II-7	Clupeidae - *Etrumeus teres*	0	36.3	21.9
7	I-1	"	0	34.2	29.8
7	I-2	"	0	35.2	28.3
7	I-3	"	0	36.2	24.2
7	II-1	"	0	34.4	29.2
7	II-2	"	0	35.8	29.2
7	II-3	"	0	36.2	24.1
7	II-4	"	0	34.8	29.3
7	II-5	"	0	36.2	27.2
7	II-6	"	0	36.1	25.6
7	II-7	"	0	36.2	23.7
7	III-1	"	0	34.9	29.3
7	III-2	"	0	36.2	28.2
7	III-3	"	0	36.2	24.4
7	IV-1	"	0	36.0	29.2
7	IV-2	"	0	36.3	29.1
7	IV-3	"	0	36.3	26.4
8	II-1	"	0	35.2	24.3
8	II-2	"	0	36.5	26.1
8	II-3	"	0	36.3	23.8
8	II-4	"	0	35.4	24.9
8	II-5	"	0	36.4	25.9
8	II-6	"	0	36.4	23.8
8	II-7	"	0	36.5	22.4
9	II-1	"	0	33.4	21.6
9	II-2	"	0	35.9	23.8
9	II-3	"	0	36.4	22.2
9	II-4	"	0	34.6	22.7
9	II-5	"	0	36.4	23.3
9	II-6	"	0	36.4	22.8
9	II-7	"	0	36.4	21.3
1	I-1	Sciaenidae	0	32.6	11.0

Appendix table 2. (Continued)

Cruise	Transect station	Taxon Family - genera & species	Abundance No. per 1,000 m^3	Salinity ^{o}/oo (mean)	Temperature ^oC (mean)
1	I-2	Sciaenidae	49	36.4	17.4
1	I-3	"	0	36.4	17.9
1	II-1	"	37	34.2	13.1
1	II-2	"	78	36.0	16.5
1	II-3	"	0	36.4	17.8
1	II-4	"	140	36.3	17.4
1	II-5	"	0	36.3	18.6
1	II-6	"	0	36.4	18.2
1	II-7	"	3	36.4	18.3
1	III-1	"	0	34.1	13.0
1	III-2	"	22	36.4	17.4
1	III-3	"	0	36.3	18.1
1	IV-1	"	0	33.9	12.7
1	IV-2	"	86	36.3	17.7
1	IV-3	"	0	36.4	19.1
2	II-1	"	15	33.1	15.2
2	II-2	"	0	35.8	16.6
2	II-3	"	0	36.3	17.7
2	II-4	"	0	35.7	17.0
2	II-5	"	0	36.4	17.8
2	II-6	"	0	36.3	17.9
2	II-7	"	0	36.4	17.5
3	II-1	"	132	31.5	21.1
3	II-2	"	0	36.0	20.2
3	II-3	"	4	36.2	20.6
3	II-4	"	19	35.6	21.1
3	II-5	"	0	36.1	19.9
3	II-6	"	10	36.1	20.2
3	II-7	"	3	36.3	19.6
4	I-1	"	246	28.3	25.5
4	I-2	"	7	35.0	23.4
4	I-3	"	0	36.1	21.2

Appendix table 2. (Continued)

Cruise	Transect station	Taxon Family - genera & species	Abundance No. per 1,000 m^3	Salinity $^o/oo$ (mean)	Temperature ^oC (mean)
4	II-1	Sciaenidae	632	31.9	24.7
4	II-2	"	22	34.3	23.2
4	II-3	"	3	35.9	21.0
4	II-4	"	0	32.6	24.3
4	II-5	"	8	35.1	22.1
4	II-6	"	0	35.5	21.6
4	II-7	"	4	36.2	20.2
4	III-1	"	72	32.5	23.8
4	III-2	"	72	34.9	21.9
4	III-3	"	3	35.6	20.7
4	IV-1	"	84	33.5	23.8
4	IV-2	"	0	35.3	22.2
4	IV-3	"	0	35.8	20.8
5	II-1	"	9	36.3	25.4
5	II-2	"	0	36.3	24.6
5	II-3	"	0	36.2	21.9
5	II-4	"	0	36.3	24.9
5	II-5	"	0	36.1	23.4
5	II-6	"	0	36.2	22.6
5	II-7	"	0	36.3	20.6
6	II-1	"	0	36.3	28.0
6	II-2	"	0	36.2	26.9
6	II-3	"	0	36.3	23.9
6	II-4	"	0	36.3	27.3
6	II-5	"	0	36.3	26.2
6	II-6	"	0	36.3	25.0
6	II-7	"	0	36.3	21.9
7	I-1	"	290	34.2	29.8
7	I-2	"	6	35.2	28.3
7	I-3	"	0	36.2	24.2
7	II-1	"	241	34.4	29.2
7	II-2	"	13	35.8	29.2

Appendix table 2. (Continued)

Cruise	Transect station	Taxon Family - genera & species	Abundance No. per 1,000 m^3	Salinity °/oo (mean)	Temperature °C (mean)
7	II-3	Sciaenidae	9	36.2	24.1
7	II-4	"	38	34.8	29.3
7	II-5	"	4	36.2	27.2
7	II-6	"	4	36.1	25.6
7	II-7	"	0	36.2	23.7
7	III-1	"	186	34.9	29.3
7	III-2	"	0	36.2	28.2
7	III-3	"	6	36.2	24.4
7	IV-1	"	195	36.0	29.2
7	IV-2	"	6	36.3	29.1
7	IV-3	"	0	36.3	26.4
8	II-1	"	92	35.2	24.3
8	II-2	"	24	36.5	26.1
8	II-3	"	0	36.3	23.8
8	II-4	"	177	35.4	24.9
8	II-5	"	6	36.4	25.9
8	II-6	"	21	36.4	23.8
8	II-7	"	0	36.5	22.4
9	II-1	"	168	33.4	21.6
9	II-2	"	215	35.9	23.8
9	II-3	"	104	36.4	22.2
9	II-4	"	132	34.6	22.7
9	II-5	"	70	36.4	23.3
9	II-6	"	39	36.4	22.8
9	II-7	"	57	36.4	21.3
1	I-1	Sciaenidae - *Micropogon undulatus*	0	32.6	11.0
1	I-2	"	0	36.4	17.4
1	I-3	"	0	36.4	17.9
1	II-1	"	0	34.2	13.1
1	II-2	"	0	36.0	16.5
1	II-3	"	0	36.4	17.8
1	II-4	"	0	36.3	17.4

Appendix table 2. (Continued)

Cruise	Transect station	Taxon Family - genera & species	Abundance No. per 1,000 m^3	Salinity $^{o}/oo$ (mean)	Temperature ^{o}C (mean)
1	II-5	Sciaenidae - *Micropogon undulatus*	0	36.3	18.6
1	II-6	"	0	36.4	18.2
1	II-7	"	0	36.4	18.3
1	III-1	"	0	34.1	13.0
1	III-2	"	6	36.4	17.4
1	III-3	"	0	36.3	18.1
1	IV-1	"	0	36.6	17.7
1	IV-2	"	13	36.4	19.1
1	IV-3	"	0	36.4	19.1
2	II-1	"	0	33.1	15.0
2	II-2	"	0	35.8	16.6
2	II-3	"	0	36.3	17.7
2	II-4	"	0	35.7	17.0
2	II-5	"	0	36.4	17.8
2	II-6	"	0	36.3	17.9
2	II-7	"	0	36.3	17.5
3	II-1	"	44	31.5	21.1
3	II-2	"	0	36.0	20.2
3	II-3	"	0	36.2	20.6
3	II-4	"	0	35.6	21.1
3	II-5	"	0	36.1	19.9
3	II-6	"	0	36.0	20.2
3	II-7	"	0	36.3	19.6
4	I-1	"	177	28.3	25.5
4	I-2	"	0	35.0	23.4
4	I-3	"	0	36.1	21.2
4	II-1	"	363	31.9	24.7
4	II-2	"	16	34.3	23.2
4	II-3	"	0	35.9	21.0
4	II-4	"	0	32.6	24.3
4	II-5	"	4	35.1	22.1
4	II-6	"	0	36.1	21.6

Appendix table 2. (Continued)

Cruise	Transect station	Taxon Family - genera & species	Abundance No. per 1,000 m^3	Salinity $^o/oo$ (mean)	Temperature °C (mean)
4	II-7	Sciaenidae - Micropogon undulatus	2	36.2	20.2
4	III-1	"	45	32.5	23.8
4	III-2	"	46	34.9	21.9
4	III-3	"	0	35.6	20.7
4	IV-1	"	47	33.5	23.8
4	IV-2	"	0	36.3	22.2
4	IV-3	"	0	35.8	20.8
5	II-1	"	0	36.3	25.4
5	II-2	"	0	36.3	24.9
5	II-3	"	0	36.2	21.9
5	II-4	"	0	36.3	24.9
5	II-5	"	0	36.1	23.4
5	II-6	"	0	36.2	22.6
5	II-7	"	0	36.3	20.6
6	II-1	"	0	34.2	29.8
6	II-2	"	0	36.2	26.9
6	II-3	"	0	36.3	23.9
6	II-4	"	0	36.3	27.3
6	II-5	"	0	36.3	26.2
6	II-6	"	0	36.3	25.0
6	II-7	"	0	36.3	21.9
7	I-1	"	0	34.2	29.8
7	I-2	"	0	35.2	28.3
7	I-3	"	0	36.2	24.2
7	II-1	"	40	34.4	29.2
7	II-2	"	0	35.8	29.2
7	II-3	"	0	36.2	24.1
7	II-4	"	0	34.8	29.3
7	II-5	"	0	36.2	27.2
7	II-6	"	0	36.1	25.6
7	II-7	"	0	36.2	23.7
7	III-1	"	0	34.9	29.3

Appendix table 2. (Continued)

Cruise	Transect station	Taxon Family - genera & species	Abundance No. per 1,000 m^3	Salinity °/oo (mean)	Temperature °C (mean)
7	III-2	Sciaenidae - <u>Micropogon</u> <u>undulatus</u>	0	36.2	28.2
7	III-3	"	0	36.2	24.4
7	IV-1	"	0	36.0	29.2
7	IV-2	"	0	36.3	29.1
7	IV-3	"	0	36.3	26.4
8	II-1	"	46	35.2	24.3
8	II-2	"	0	36.5	26.1
8	II-3	"	0	36.3	23.8
8	II-4	"	59	35.4	24.9
8	II-5	"	0	36.4	25.9
8	II-6	"	0	36.4	23.8
8	II-7	"	0	36.5	22.4
9	II-1	"	0	33.4	21.6
9	II-2	"	35	35.9	23.8
9	II-3	"	51	36.4	22.2
9	II-4	"	0	34.6	22.7
9	II-5	"	14	36.4	23.3
9	II-6	"	11	36.4	22.8
9	II-7	"	25	36.4	21.3
1	I-1	Scombridae	0	32.6	11.0
1	I-2	"	0	36.4	17.4
1	I-3	"	29	36.4	17.9
1	II-1	"	0	34.2	13.1
1	II-2	"	0	36.0	16.5
1	II-3	"	0	36.4	17.8
1	II-4	"	46	36.3	17.4
1	II-5	"	0	36.3	18.6
1	II-6	"	0	36.4	18.2
1	II-7	"	0	36.4	18.3
1	III-1	"	0	34.1	13.0
1	III-2	"	0	36.4	17.4
1	III-3	"	0	36.3	18.1
1	IV-1	"	0	33.9	12.7

Appendix table 2. (Continued)

Cruise	Transect station	Taxon Family - genera & species	Abundance No. per 1,000 m^3	Salinity $^{o}/oo$ (mean)	Temperature ^{o}C (mean)
1	IV-2	Scombridae	0	36.3	17.7
1	IV-3	"	4	36.4	19.1
2	II-1	"	0	33.1	15.2
2	II-2	"	6	35.8	16.6
2	II-3	"	12	36.3	17.7
2	II-4	"	0	35.7	17.0
2	II-5	"	40	36.4	17.8
2	II-6	"	6	36.3	17.9
2	II-7	"	9	36.4	17.5
3	II-1	"	0	31.5	21.1
3	II-2	"	0	36.0	20.2
3	II-3	"	0	36.2	20.6
3	II-4	"	0	35.6	21.1
3	II-5	"	0	36.1	19.9
3	II-6	"	0	36.1	20.2
3	II-7	"	15	36.3	19.6
4	I-1	"	0	28.3	25.5
4	I-2	"	14	35.0	23.4
4	I-3	"	0	36.1	21.2
4	II-1	"	0	31.9	24.7
4	II-2	"	32	34.3	23.2
4	II-3	"	6	35.9	21.0
4	II-4	"	8	32.6	24.3
4	II-5	"	4	35.1	22.1
4	II-6	"	0	35.5	21.6
4	II-7	"	2	36.2	20.2
4	III-1	"	0	32.5	23.8
4	III-2	"	5	34.9	21.9
4	III-3	"	0	35.6	20.7
4	IV-1	"	0	33.5	23.8
4	IV-2	"	0	35.3	22.2
4	IV-3	"	6	35.8	20.8

Appendix table 2. (Continued)

Cruise	Transect station	Taxon Family - genera & species	Abundance No. per 1,000 m^3	Salinity °/oo (mean)	Temperature °C (mean)
5	II-1	Scombridae	96	36.3	25.4
5	II-2	"	452	36.3	24.6
5	II-3	"	18	36.2	21.9
5	II-4	"	12	36.3	24.9
5	II-5	"	29	36.1	23.4
5	II-6	"	3	36.2	22.6
5	II-7	"	13	36.3	20.6
6	II-1	"	55	36.3	28.0
6	II-2	"	64	36.2	26.9
6	II-3	"	54	36.3	23.9
6	II-4	"	174	36.3	27.3
6	II-5	"	298	36.3	26.2
6	II-6	"	117	36.3	25.0
6	II-7	"	35	36.3	21.9
7	I-1	"	15	34.2	29.8
7	I-2	"	25	35.2	28.3
7	I-3	"	61	36.2	24.2
7	II-1	"	0	34.4	29.2
7	II-2	"	31	35.8	29.2
7	II-3	"	141	36.2	24.1
7	II-4	"	0	34.8	29.3
7	II-5	"	64	36.2	27.2
7	II-6	"	60	36.1	25.6
7	II-7	"	169	36.2	23.7
7	III-1	"	0	34.9	29.3
7	III-2	"	76	36.2	28.2
7	III-3	"	130	36.2	24.4
7	IV-1	"	0	36.0	29.2
7	IV-2	"	0	36.3	29.1
7	IV-3	"	3	36.3	26.4
8	II-1	"	0	35.2	24.3

Appendix table 2. (Continued)

Cruise	Transect station	Taxon Family - genera & species	Abundance No. per 1,000 m^3	Salinity °/oo (mean)	Temperature °C (mean)
8	II-2	Scombridae	0	36.5	26.1
8	II-3	"	0	36.3	23.8
8	II-4	"	0	35.4	24.9
8	II-5	"	0	34.4	25.9
8	II-6	"	0	36.4	23.8
8	II-7	"	0	36.5	22.4
9	II-1	"	0	33.4	21.6
9	II-2	"	0	35.9	23.8
9	II-3	"	0	36.4	22.2
9	II-4	"	0	34.6	22.7
9	II-5	"	0	36.4	23.3
9	II-6	"	0	36.4	22.8
9	II-7	"	0	36.4	21.3
1	I-1	Scombridae - <u>Euthynnus</u> <u>alletteratus</u>	0	32.6	11.0
1	I-2	"	0	36.4	17.4
1	I-3	"	0	36.4	17.9
1	II-1	"	0	34.1	13.1
1	II-2	"	0	36.0	16.5
1	II-3	"	0	36.4	17.8
1	II-4	"	0	36.3	17.4
1	II-5	"	0	36.3	18.6
1	II-6	"	0	36.4	18.2
1	II-7	"	0	36.4	18.3
1	III-1	"	0	34.1	13.0
1	III-2	"	0	36.4	17.4
1	III-3	"	0	36.3	18.1
1	IV-1	"	0	36.6	17.7
1	IV-2	"	0	36.4	19.1
1	IV-3	"	0	36.4	19.1
2	II-1	"	0	33.1	15.0
2	II-2	"	0	35.8	16.6
2	II-3	"	0	36.3	17.7

Appendix table 2. (Continued)

Cruise	Transect station	Taxon Family - genera & species	Abundance No. per 1,000 m^3	Salinity °/oo (mean)	Temperature °C (mean)
2	II-4	Scombridae - Euthynnus alletteratus	0	35.7	17.0
2	II-5	"	0	36.4	17.8
2	II-6	"	0	36.3	17.9
2	II-7	"	0	36.3	17.5
3	II-1	"	0	31.5	21.1
3	II-2	"	0	36.0	20.2
3	II-3	"	0	36.2	20.6
3	II-4	"	0	35.6	21.1
3	II-5	"	0	36.1	19.9
3	II-6	"	0	36.1	20.2
3	II-7	"	0	36.3	19.6
4	I-1	"	0	28.3	25.5
4	I-2	"	0	35.0	23.4
4	I-3	"	0	36.1	21.2
4	II-1	"	0	31.9	24.7
4	II-2	"	0	34.3	23.2
4	II-3	"	0	35.9	21.0
4	II-4	"	0	32.6	24.3
4	II-5	"	0	35.1	22.1
4	II-6	"	0	36.1	21.6
4	II-7	"	0	36.2	20.2
4	III-1	"	0	32.5	23.8
4	III-2	"	0	34.9	21.9
4	III-3	"	0	35.6	20.7
4	IV-1	"	0	33.5	23.8
4	IV-2	"	0	36.3	22.2
4	IV-3	"	3	35.8	20.8
5	II-1	"	26	36.3	25.4
5	II-2	"	181	36.3	24.9
5	II-3	"	9	36.2	21.9
5	II-4	"	0	36.3	24.9
5	II-5	"	8	36.1	23.4

Appendix table 2 . (Continued)

Cruise	Transect station	Taxon Family - genera & species	Abundance No. per 1,000 m^3	Salinity °/oo (mean)	Temperature °C (mean)
5	II-6	Scombridae - Euthynnus alletteratus	0	36.2	22.6
5	II-7	"	0	36.3	20.6
6	II-1	"	28	34.2	29.8
6	II-2	"	14	36.2	26.9
6	II-3	"	15	36.3	23.9
6	II-4	"	73	36.3	27.3
6	II-5	"	71	36.3	26.2
6	II-6	"	19	36.3	25.0
6	II-7	"	0	36.3	21.9
7	I-1	"	0	34.2	29.8
7	I-2	"	6	35.2	28.3
7	I-3	"	9	36.2	24.2
7	II-1	"	0	34.4	29.2
7	II-2	"	6	35.8	29.2
7	II-3	"	3	36.2	24.1
7	II-4	"	0	34.8	29.3
7	II-5	"	4	36.2	27.2
7	II-6	"	26	36.1	25.6
7	II-7	"	74	36.2	23.7
7	III-1	"	0	34.9	29.3
7	III-2	"	0	36.2	28.2
7	III-3	"	40	36.2	24.4
7	IV-1	"	0	36.0	29.2
7	IV-2	"	0	36.3	29.1
7	IV-3	"	0	36.3	26.4
8	II-1	"	0	35.2	24.3
8	II-2	"	0	36.5	26.1
8	II-3	"	0	36.3	23.8
8	II-4	"	0	35.4	24.9
8	II-5	"	0	36.4	25.9
8	II-6	"	0	36.4	23.8
8	II-7	"	0	36.5	22.4

Appendix table 2. (Continued)

Cruise	Transect station	Taxon Family - genera & species	Abundance No. per 1,000 m^3	Salinity °/oo (mean)	Temperature °C (mean)
9	II-1	Scombridae - Euthynnus alletteratus	0	33.4	21.6
9	II-2	"	0	35.9	23.8
9	II-3	"	0	36.4	22.2
9	II-4	"	0	34.6	22.7
9	II-5	"	0	36.4	23.3
9	II-6	"	0	36.4	22.8
9	II-7	"	0	36.4	21.3
1	I-1	Serranidae	0	32.6	11.0
1	I-2	"	257	36.4	17.4
1	I-3	"	35	36.4	17.9
1	II-1	"	0	34.2	13.1
1	II-2	"	43	36.0	16.5
1	II-3	"	3	36.4	17.8
1	II-4	"	60	36.3	17.4
1	II-5	"	11	36.3	18.6
1	II-6	"	3	36.4	18.2
1	II-7	"	27	36.4	18.3
1	III-1	"	10	34.1	13.0
1	III-2	"	84	36.4	17.4
1	III-3	"	9	36.3	18.1
1	IV-1	"	0	33.9	12.7
1	IV-2	"	125	36.3	17.7
1	IV-3	"	4	36.4	19.1
2	II-1	"	22	33.1	15.2
2	II-2	"	126	35.8	16.6
2	II-3	"	156	36.3	17.7
2	II-4	"	10	35.7	17.0
2	II-5	"	86	36.4	17.8
2	II-6	"	187	36.3	17.9
2	II-7	"	27	36.4	17.5
3	II-1	"	0	31.5	21.1
3	II-2	"	14	36.0	20.2
3	II-3	"	111	36.2	20.6

Appendix table 2. (Continued)

Cruise	Transect station	Taxon Family - genera & species	Abundance No. per 1,000 m^3	Salinity °/oo (mean)	Temperature °C (mean)
3	II-4	Serranidae	0	35.6	21.1
3	II-5	"	183	36.1	19.9
3	II-6	"	198	36.1	20.2
3	II-7	"	63	36.3	19.6
4	I-1	"	0	28.3	25.5
4	I-2	"	121	35.0	23.4
4	I-3	"	30	36.1	21.2
4	II-1	"	12	31.9	24.7
4	II-2	"	121	34.3	23.2
4	II-3	"	177	35.9	21.0
4	II-4	"	41	32.6	24.3
4	II-5	"	96	35.1	22.1
4	II-6	"	141	35.5	21.6
4	II-7	"	124	36.2	20.2
4	III-1	"	9	32.5	23.8
4	III-2	"	67	34.9	21.9
4	III-3	"	65	35.6	20.7
4	IV-1	"	186	33.5	23.8
4	IV-2	"	65	35.3	22.2
4	IV-3	"	142	35.8	20.8
5	II-1	"	18	36.4	25.4
5	II-2	"	135	36.3	24.6
5	II-3	"	2	36.2	21.9
5	II-4	"	6	32.3	24.9
5	II-5	"	4	36.1	23.4
5	II-6	"	0	36.2	22.6
5	II-7	"	1	36.3	20.6
6	II-1	"	55	36.3	28.0
6	II-2	"	14	36.2	26.9
6	II-3	"	0	36.3	23.9
6	II-4	"	46	36.3	27.3
6	II-5	"	0	36.3	26.2

Appendix table 2. (Continued)

Cruise	Transect station	Taxon Family - genera & species	Abundance No. per 1,000 m^3	Salinity °/oo (mean)	Temperature °C (mean)
6	II-6	Serranidae	0	36.3	25.0
6	II-7	"	0	36.3	21.9
7	I-1	"	0	34.2	29.8
7	I-2	"	0	35.2	28.3
7	I-3	"	0	36.2	24.2
7	II-1	"	0	34.4	29.2
7	II-2	"	6	35.8	29.2
7	II-3	"	3	36.2	24.1
7	II-4	"	0	34.8	29.3
7	II-5	"	0	36.2	27.2
7	II-6	"	0	36.1	25.6
7	II-7	"	5	36.2	23.7
7	III-1	"	0	34.9	29.3
7	III-2	"	28	36.2	28.2
7	III-3	"	12	36.2	24.4
7	IV-1	"	0	36.0	29.2
7	IV-2	"	0	36.3	29.1
7	IV-3	"	0	36.3	26.4
8	II-1	"	0	35.2	24.3
8	II-2	"	58	36.5	26.1
8	II-3	"	0	36.3	23.8
8	II-4	"	0	35.4	24.9
8	II-5	"	35	36.4	25.9
8	II-6	"	36	36.4	23.8
8	II-7	"	0	36.5	22.4
9	II-1	"	0	33.4	21.6
9	II-2	"	0	35.9	23.8
9	II-3	"	16	36.4	22.2
9	II-4	"	0	34.6	22.7
9	II-5	"	150	36.4	23.3
9	II-6	"	22	36.4	22.8
9	II-7	"	32	36.4	21.3

Appendix table 2. (Continued)

Cruise	Transect station	Taxon Family - genera & species	Abundance No. per 1,000 m^3	Salinity °/oo (mean)	Temperature °C (mean)
1	I-1	Serranidae - *Diplectrum* sp.	0	32.6	11.0
1	I-2	"	10	36.4	17.4
1	I-3	"	0	36.4	17.9
1	II-1	"	0	34.2	13.1
1	II-2	"	0	36.0	16.5
1	II-3	"	0	36.4	17.8
1	II-4	"	0	36.3	17.4
1	II-5	"	0	36.3	18.6
1	II-6	"	0	36.4	18.2
1	II-7	"	0	36.4	18.3
1	III-1	"	0	34.1	13.0
1	III-2	"	0	36.4	17.4
1	III-3	"	0	36.3	18.1
1	IV-1	"	0	36.6	17.7
1	IV-2	"	0	36.4	19.1
1	IV-3	"	0	36.4	19.1
2	II-1	"	0	33.1	15.0
2	II-2	"	0	35.8	16.6
2	II-3	"	6	36.3	17.7
2	II-4	"	0	35.7	17.0
2	II-5	"	0	36.4	17.8
2	II-6	"	0	36.3	17.9
2	II-7	"	0	36.3	17.5
3	II-1	"	0	31.5	21.1
3	II-2	"	7	36.0	20.2
3	II-3	"	111	36.2	20.6
3	II-4	"	0	35.6	21.1
3	II-5	"	0	36.1	19.9
3	II-6	"	27	36.1	20.2
3	II-7	"	0	36.3	19.6
4	I-1	"	0	28.3	25.5
4	I-2	"	121	35.0	23.4
4	I-3	"	30	36.1	21.2

Appendix table 2. (Continued)

Cruise	Transect station	Taxon Family - genera & species	Abundance No. per 1,000 m^3	Salinity $^o/oo$ (mean)	Temperature ^oC (mean)
4	II-1	Serranidae - <u>Diplectrum</u> sp.	0	31.9	24.7
4	II-2	"	115	34.3	23.2
4	II-3	"	177	35.9	21.0
4	II-4	"	33	32.6	24.3
4	II-5	"	96	35.1	22.1
4	II-6	"	141	36.1	21.6
4	II-7	"	124	36.2	20.2
4	III-1	"	0	32.5	23.8
4	III-2	"	57	34.9	21.9
4	III-3	"	62	35.6	20.7
4	IV-1	"	186	33.5	23.8
4	IV-2	"	65	36.3	22.2
4	IV-3	"	136	35.8	20.8
5	II-1	"	9	36.3	25.4
5	II-2	"	124	36.3	24.9
5	II-3	"	0	36.2	21.9
5	II-4	"	6	36.3	24.9
5	II-5	"	0	36.1	23.4
5	II-6	"	0	36.2	22.6
5	II-7	"	0	36.3	20.6
6	II-1	"	46	34.1	29.8
6	II-2	"	0	36.2	26.9
6	II-3	"	0	36.3	23.9
6	II-4	"	0	36.3	27.3
6	II-5	"	0	36.3	26.2
6	II-6	"	0	36.3	25.0
6	II-7	"	0	36.3	21.9
7	I-1	"	0	34.2	29.8
7	I-2	"	0	35.2	28.3
7	I-3	"	0	36.2	24.2
7	II-1	"	0	34.4	29.2
7	II-2	"	0	35.8	29.2

Appendix table 2. (Continued)

Cruise	Transect station	Taxon Family - genera & species	Abundance No. per 1,000 m^3	Salinity $^{o}/oo$ (mean)	Temperature ^{o}C (mean)
7	II-3	Serranidae - _Diplectrum_ sp.	0	36.2	24.1
7	II-4	"	0	34.8	29.3
7	II-5	"	0	36.2	27.2
7	II-6	"	0	36.1	25.6
7	II-7	"	0	36.2	23.7
7	III-1	"	0	34.9	29.3
7	III-2	"	28	36.2	28.2
7	III-3	"	6	36.2	24.4
7	IV-1	"	0	36.0	29.2
7	IV-2	"	0	36.3	29.1
7	IV-3	"	0	36.3	26.4
8	II-1	"	0	35.2	24.3
8	II-2	"	5	36.5	26.1
8	II-3	"	0	36.3	23.8
8	II-4	"	0	35.4	24.9
8	II-5	"	6	36.4	25.9
8	II-6	"	3	36.4	23.8
8	II-7	"	0	36.5	22.4
9	II-1	"	0	33.4	21.6
9	II-2	"	0	35.9	23.8
9	II-3	"	0	36.4	22.2
9	II-4	"	0	34.6	22.7
9	II-5	"	0	36.4	23.3
9	II-6	"	0	36.4	22.8
9	II-7	"	15	36.4	21.3

The Department of the Interior Mission

As the Nation's principal conservation agency, the Department of the Interior has responsibility for most of our nationally owned public lands and natural resources. This includes fostering sound use of our land and water resources; protecting our fish, wildlife, and biological diversity; preserving the environmental and cultural values of our national parks and historical places; and providing for the enjoyment of life through outdoor recreation. The Department assesses our energy and mineral resources and works to ensure that their development is in the best interests of all our people by encouraging stewardship and citizen participation in their care. The Department also has a major responsibility for American Indian reservation communities and for people who live in island territories under U.S. administration.

The Minerals Management Service Mission

As a bureau of the Department of the Interior, the Minerals Management Service's (MMS) primary responsibilities are to manage the mineral resources located on the Nation's Outer Continental Shelf (OCS), collect revenue from the Federal OCS and onshore Federal and Indian lands, and distribute those revenues.

Moreover, in working to meet its responsibilities, the **Offshore Minerals Management Program** administers the OCS competitive leasing program and oversees the safe and environmentally sound exploration and production of our Nation's offshore natural gas, oil and other mineral resources. The MMS **Minerals Revenue Management** meets its responsibilities by ensuring the efficient, timely and accurate collection and disbursement of revenue from mineral leasing and production due to Indian tribes and allottees, States and the U.S. Treasury.

The MMS strives to fulfill its responsibilities through the general guiding principles of: (1) being responsive to the public's concerns and interests by maintaining a dialogue with all potentially affected parties and (2) carrying out its programs with an emphasis on working to enhance the quality of life for all Americans by lending MMS assistance and expertise to economic development and environmental protection.