NOAA Technical Memorandum NMFS

DECEMBER 1992

DISTRIBUTION OF ICHTHYOPLANKTON AROUND SOUTHEAST HANCOCK SEAMOUNT, CENTRAL NORTH PACIFIC, IN SUMMER 1984 AND WINTER 1985: DATA REPORT

George W. Boehlert
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NOAA-TM-NMFS-SWFSC-176

U.S. DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
National Marine Fisheries Service
Southwest Fisheries Science Center

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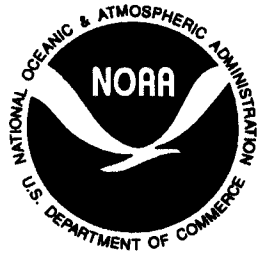

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INTRODUCTION

Seamounts in the open ocean have been a subject of biological investigations in recent years because of their hypothesized importance for fisheries (Uchida et al. 1986), biogeography (Wilson and Kaufman 1987), and alteration of oceanic productivity (Boehlert and Genin 1987). Seamounts may contain isolated demersal populations for which recruitment may either be from local or distant sources (Leal and Bouchet 1991). The interaction of ocean currents with isolated seamounts may result in hydrographic variations in physical structure (Royer 1978) that in turn can affect the distribution and abundance of oceanic species (Genin et al. 1988). Additionally, predatory oceanic species may concentrate at or upstream of seamounts (Uda and Ishino 1958, Fonteneau 1991), creating further complexity in the waters overlying seamounts. Such areas are thus biologically and physically dynamic, which may be reflected in the distribution and abundance of varied marine organisms.

Most research on fish larvae around seamounts has consisted of single, descriptive studies, typically conducted near isolated seamounts (Boehlert and Mundy In press). In this report, we present data on ichthyoplankton distribution over and near Southeast (SE) Hancock Seamount in the central North Pacific during summer 1984 and winter 1985. Sampling was conducted to characterize the vertical distribution of fish larvae at the seamount, investigate diel changes in that distribution, and contrast abundance of fish larvae above the seamount summit with the abundance of larvae away from the seamount. We describe the sampling program and sample handling and provide only data summaries of the distributional patterns; analyses of this data base will be presented in detail elsewhere.

MATERIALS AND METHODS

Ichthyoplankton sampling was conducted aboard the NOAA vessel Townsend Cromwell in summer 1984 (cruise 84-05) and winter 1985 (cruise 85-01). The study site was Southeast Hancock Seamount (lat. 29°48'N, long. 179°04'E) at the northern end of the Hawaiian chain within the U.S. Exclusive Economic Zone. The seamount's summit is within 265 m of the ocean's surface from a background depth of some 5 km; the physical environment is detailed in Brainard (1986). Two locations were sampled intensively during these cruises to allow comparisons of ichthyoplankton species composition, distribution, and abundance. One location was over the seamount summit ("seamount" location); the other location was 20 km west, over a water depth of approximately 1,800-4,750 m ("reference" location).

Ichthyoplankton was sampled with an opening-closing Tucker trawl (Clarke 1969) equipped with three nets and a double-release mechanism operated by messengers, as in Boehlert et al. (1985, 1992). The nets were 0.333 mm mesh (Nitex) with a 1.4 m^2 mouth area. Ship speed was adjusted over tow speeds of about 0.9-1.1 m/second to maintain a wire angle at 45°. At this angle, the effective mouth area of the Tucker trawl is 1.0 m^2; tow depths

were estimated as a function of wire angle and meters of wire out.

Four discrete depth strata (0-25, 25-50, 50-100, and 100-200 m) were sampled. Replicate tows at each depth comprised a sampling series. To sample at discrete depths without contamination by animals from shallower depths, the trawl was lowered with the first net open, and the second net was opened for the desired sampling time and then closed, and the trawl was retrieved with the third net open. To sample the two shallower strata, the trawl was lowered to 50 m, the second net was opened at that depth, and then the third net was opened at 25 m to sample the shallow stratum. For the two deeper strata, the second net was closed at the upper end of each stratum, and the trawl was retrieved with the third net open. Thus, a full set of duplicate samples for each depth stratum required six deployments of the trawl. The summer cruise had two series of night sampling (9-10 and 28-29 July) and one of day sampling (14-15 July); the winter cruise had one series of day and night sampling (4-10 February 1985).

Each net was fished for 18 minutes and tows were conducted in a stepped oblique fashion, in an attempt to sample depths equally within each stratum. The volume of water filtered was estimated with calibrated General Oceanics flowmeters mounted in the center of each net. The volume filtered was 698-1052 m^3 per sample. Plankton samples were preserved at sea in a 4% buffered formaldehyde seawater mixture.

In the laboratory, plankton volume was determined from a known total volume minus the remaining water volume after the plankton were strained (Omori and Ikeda 1984); gelatinous plankton and fishes larger than approximately 50 mm were removed before the volume was determined. Whole samples were sorted for fish eggs, larvae, and squid paralarvae under a dissecting microscope.

Larval Fish Identification

All fish larvae were identified to the lowest taxonomic level possible; fish eggs and cephalopod paralarvae were not identified. Primary sources for the identifications were Miller et al. (1979), Fahay (1983), Leis and Rennis (1983), and especially Moser et al. (1984). Additional references used for the identification of species within particular taxonomic groups were Bertelsen (1951), Gibbs and Collette (1959), Ebeling (1962), Ebeling and Weed (1963), Moser and Ahlstrom (1970), Mead (1972), Johnson (1974), Pertseva-Ostroumova (1974), Ahlstrom et al. (1976), Shiganova (1977), and Smith (1979). Several useful references on the identification of central North Pacific fish larvae were not available in 1985, when the samples were

processed: Ozawa (1986), Okiyama (1988), Matarese et al. (1989) and Leis and Trnski (1989). Many larvae thus were not identified with the precision that would now be possible (e.g., Cyclothone spp., Paralepididae, Lampanyctus spp., and small Gempylidae).

Identification to species was possible for most of the widespread oceanic taxa. Larvae identified only to a higher taxonomic level were usually preflexion specimens that lacked characters diagnostic of species; most were probably small specimens of the common species collected in this study. A few taxa were consistently recognizable even though they could not be associated with adults; they were designated as larval types (e.g., "Astronesthidae type 1").

A few larvae were identified to species with the qualification "cf." That is, they matched descriptions of species discussed as problematic in taxonomic reviews; the qualification is intended to alert the reader that these records do not validate the nominal taxon's occurrence at the Southeast Hancock Seamount.

If no specimens within a taxon were identified to species or larval type (e.g., Cyclothone spp.), there was uncertainty as to the number or identities of species presently in the region and a lack of information on the diagnostic characters for larvae within the taxon. In addition, our incomplete knowledge of the Hawaiian Ridge shorefish fauna at the time the samples were examined limited our identification of shorefish larvae (as defined by Leis and Trnski 1989) only to family despite their being postflexion specimens. Additional taxonomic information and identification criteria for several species are contained in the appendix.

Data Analysis

Larval densities within each stratum were calculated as the number per 1,000 m^3 of water filtered, and mean values for replicates within a sampling stratum were calculated for the seamount or reference location during the same diel period (day or night) and season. Seasonal comparisons of larval abundance were calculated as the number of larvae per 100 m^2 of sea surface for the upper 200 m: The density of larvae in a stratum was multiplied by the vertical extent of that stratum; then, all estimates within a given replicate series were summed.

RESULTS

During the course of this study, 76 discrete depth plankton tows were made, 44 during the summer cruise and 32 during the winter cruise (Table 1). The total volume of water filtered was

69,475 m^3. Of the 28,016 fish larvae and 8,005 fish eggs taken in the study, 22,705 larvae and 4,783 eggs were from the summer cruise (Table 2). In summer, 465 cephalopod paralarvae were taken compared to 320 in winter.

Abundance of fish larvae was much greater in summer than in winter, although fish eggs were equally abundant in both seasons (Table 2). Of the 139 total taxa present, 112 occurred in summer and 73 in winter; 46 taxa were present in both summer and winter. Larval numbers were clearly dominated by Stomiiformes and Myctophiformes in both summer (69.3% and 23.3%, respectively) and winter (35.2% and 56.5%).

Larval abundance was relatively variable. A certain amount of this variation is likely caused by differences in abundance between the day and night series within each cruise; the day samples typically had lower larval abundance than did the night samples, particularly in summer (Figs. 1-2). While some of this day-night difference may have arisen from net avoidance, it may also have been due in part to vertical migration. It should also be noted that some species may have vertical distribution deeper than the 200 m maximum depth sampled in this study; abundance values in such cases would not be accurate.

Data on of vertical distribution of fish larvae, fish eggs, zooplankton displacement volumes, and squid paralarvae are presented in Tables 3-5 and Figure 1 for summer and in Tables 6-7 and Figure 2 for winter; in both cases, the data from the seamount and reference location have been combined. In summer, larvae were far more abundant at night and showed decreasing densities with depth; this trend was much less pronounced in the day samples. Data on the vertical distribution of individual taxa are listed in the tables and will not be described here. In summer, fish eggs also showed decreasing densities with depth in daytime and during the first night survey but not the second (Fig. 1). Plankton displacement volumes, although decreasing uniformly with depth at night, were maximal at 50-100 m during the day. There was a clear difference in larval fish densities, fish egg densities, and zooplankton displacement volumes between the first (10-11 July) and the second (28-29 July) night surveys, with densities in the second survey typically being far lower than in the first. Paralarval squid densities, however, decreased with depth and did not differ dramatically between the two night surveys.

In winter, general patterns of larval fish, fish eggs, and zooplankton displacement volumes were quite different from those in summer (Tables 6-7; Fig. 2). Larval fish densities in day samples were not as low relative to night samples (as in summer), and declined only slightly with depth. Densities at night were lowest in the shallowest stratum and were greatest at 50-100 m. Fish egg densities declined with depth as in summer, but plankton

displacement volumes during the day declined with depth, unlike the pattern noted during the day in summer (Figs. 1-2). Paralarval squid distributions were similar to those observed in summer.

Comparisons of larval densities by depth stratum at the seamount and reference location are in Tables 8-12, and abundances in the upper 200 m are in Figure 3. In summer, the total larval fish densities differed little between the daytime samples (Table 8; Fig. 3), but in both night surveys, larval densities tended to be higher at the reference locations (Tables 9-10). Fish eggs also differed litle in abundance between the sites, except on the first night survey when they were more abundant at the seamount location. Zooplankton displacement volumes showed no remarkable trend between the seamount and reference locations, although night volumes were greater at the seamount station on the first survey and less on the second. Squid paralarvae in summer tended to be more abundant at the reference location. In winter the situation changed. In all comparisons except the deepest stratum at night, larval fish densities were greater at the seamount location than at the reference location. The opposite trend was evident for fish eggs. Zooplankton displacement volumes again did not differ during the day, but the values were greater at the reference location at night. Squid paralarvae showed no clear difference.

No single constant pattern of enrichment or depletion of organisms was seen above the seamount summit relative to the reference location. General patterns within this data set will be examined elsewhere. Likewise, we will not discuss the physical mechanisms that might explain the variability in fish larvae and zooplankton densities in the region of SE Hancock Seamount.

Our report makes this data set available to researchers interested in the ichthyofauna of the central North Pacific, thereby providing records of fish larvae that might otherwise go unrecorded in the literature. Taxonomic comments on unusual and problematic groups collected in this survey are therefore included in an appendix. There is little information on the biogeography of this region of the Pacific, so it is our hope that data from the National Marine Fisheries Service surveys of the SE Hancock Seamount can add to our knowledge of the distribution of central North Pacific fishes.

ACKNOWLEDGMENTS

We wish to thank scientists from other institutions who helped with larval fish identifications: K. Kawaguchi, M. Okiyama (ORI, Tokyo), H. G. Moser, E. Sandknop, W. Watson (NMFS, SWFSC, La Jolla), T. Clarke (Univ. Hawaii, Honolulu), R.

Lavenberg (LACM, Los Angeles), J. Moore (YPM, New Haven), J. Paxton (AMS, Sydney), G. D. Johnson (USNM, Washington), and E. Bertelsen (ZMUC, Copenhagen). We thank A. W. Kendall, H. G. Moser, and M. P. Seki for comments in our earlier draft of this report.

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Table 1.--Location, date, station number, and depth zone of samples taken at Southeast Hancock Seamount during cruises 84-05 in July 1984 and 85-01 in February 1985. Day indicates the date.

Cruise 84-05, July 1984

1. Samples taken over the seamount summit, day.

Day	Station	Latitude(°N)		Longitude(°E)		Depth stratum (m)
14	72	29	47.9	179	2.7	0-25
14	72	29	47.9	179	2.7	25-50
14	73	29	48.1	179	2.9	0-25
14	73	29	48.1	179	2.9	25-50
14	74	29	47.4	179	2.7	50-100
14	75	29	46.9	179	2.7	50-100
14	76	29	46.8	179	2.9	100-200
14	77	29	47.2	179	3.2	100-200

2. Samples taken over the seamount summit, night.

Day	Station	Latitude(°N)		Longitude(°E)		Depth stratum (m)
10	56	29	48.0	179	4.5	0-25
10	56	29	48.0	179	4.5	25-50
10	57	29	48.0	179	4.6	0-25
10	57	29	48.0	179	4.6	25-50
10	58	29	47.4	179	5.1	50-100
11	59	29	47.1	179	5.3	50-100
11	60	29	47.7	179	3.5	100-200
11	61	29	47.8	179	4.0	100-200
28	143	29	47.9	179	3.6	0-25
28	143	29	47.9	179	3.6	25-50
28	144	29	47.8	179	3.9	0-25
28	144	29	47.8	179	3.9	25-50
28	145	29	47.7	179	4.1	50-100
29	146	29	47.0	179	4.4	100-200

3. Samples taken 20 km west of the summit, day.

Day	Station	Latitude(°N)		Longitude(°E)		Depth stratum (m)
15	79	29	47.1	178	47.2	0-25
15	79	29	47.1	178	47.2	25-50
15	80	29	46.6	178	47.3	0-25
15	80	29	46.6	178	47.3	25-50
15	81	29	45.8	178	47.8	50-100
15	82	29	45.0	178	47.4	50-100
15	83	29	46.5	178	46.5	100-200
15	84	29	45.6	178	47.0	100-200

Table 1.--Continued.

4. Samples taken 20 km west of the summit, night.

Day	Station	Latitude(°N)		Longitude(°E)		Depth stratum (m)
9	47	29	48.1	178	50.9	0-25
9	47	29	48.1	178	50.9	25-50
10	49	29	48.9	178	54.3	50-100
10	50	29	48.6	178	56.5	50-100
10	51	29	50.1	178	54.5	100-200
10	52	29	50.2	178	54.8	0-25
10	53	29	50.2	178	55.1	100-200
27	135	29	49.0	178	48.5	0-25
27	135	29	49.0	178	48.5	25-50
27	136	29	48.1	178	48.6	0-25
27	136	29	48.1	178	48.6	25-50
27	137	29	47.8	178	47.7	50-100
28	138	29	47.8	178	48.9	50-100
28	139	29	48.2	178	48.1	100-200

Cruise 85-01, February 1985

1. Samples taken over the seamount summit, day.

Day	Station	Latitude(°N)		Longitude(°E)		Depth stratum (m)
9	56	29	47.6	179	2.6	0-25
9	56	29	47.6	179	2.6	25-50
9	57	29	48.0	179	3.6	50-100
9	58	29	48.2	179	3.4	0-25
9	58	29	48.2	179	3.4	25-50
9	59	29	48.9	179	3.9	100-200
9	60	29	48.2	179	3.6	50-100
9	61	29	47.8	179	3.3	100-200

2. Samples taken over the seamount summit, night.

Day	Station	Latitude(°N)		Longitude(°E)		Depth stratum (m)
9	62	29	48.8	179	4.7	0-25
9	62	29	48.8	179	4.7	25-50
9	63	29	48.1	179	4.0	50-100
9	64	29	46.9	179	4.3	0-25
9	64	29	46.9	179	4.3	25-50
9	65	29	47.4	179	4.0	100-200
10	66	29	47.6	179	4.3	50-100
10	67	29	48.2	179	2.4	100-200

Table 1.--Continued.

3. Samples taken 20 km west of the summit, day.

Day	Station	Latitude(°N)		Longitude(°E)		Depth stratum (m)
4	42	29	48.6	178	47.2	0-25
4	42	29	48.6	178	47.2	25-50
4	43	29	48.1	178	46.9	50-100
4	44	29	48.1	178	47.2	0-25
4	44	29	48.1	178	47.2	25-50
4	45	29	48.3	178	48.1	100-200
4	46	29	46.2	178	53.9	50-100
4	47	29	44.9	178	54.5	100-200

4. Samples taken 20 km west of the summit, night.

Day	Station	Latitude(°N)		Longitude(°E)		Depth stratum (m)
8	49	29	48.0	178	49.9	0-25
8	49	29	48.0	178	49.9	25-50
8	50	29	48.0	178	49.6	50-100
8	51	29	48.1	178	50.2	0-25
8	51	29	48.1	178	50.2	25-50
8	52	29	48.1	178	50.1	100-200
9	53	29	49.7	178	52.6	50-100
9	54	29	50.4	178	58.9	100-200

Table 2.--Total number of larvae collected and mean larval abundance (larvae per 100 m^2 sea surface) during sampling at Southeast Hancock Seamount in summer 1984 (84-05) and winter 1985 (85-01). The total number of larvae from all samples was from a total sampled volume of 38,892 m^3 in summer (six sampling series) and 28,583 m^3 in winter (four sampling series). Larval abundance is based upon abundance throughout the upper 200 m. (*N* refers to the number of vertical series from which abundance estimates were calculated.)

Taxon	Total larvae (No.)		Larval abundance (per 100 m^2)			
			84-05 (*N*=6)		85-01 (*N*=4)	
	84-05	85-01	Mean	(SD)	Mean	(SD)
Anguilliformes						
Muraenidae						
Unidentified Muraenidae	1	--	0.426	(1.043)	--	--
Nettastomatidae						
Saurenchelys stylura	1	--	0.250	(0.611)	--	--
Congridae						
Ariosoma sp.	1	--	0.237	(0.579)	--	--
Ophichthidae						
Unidentified Ophichthidae	1	--	0.250	(0.611)	--	--
Derichthyidae						
Derichthys serpentinus	4	--	0.910	(2.229)	--	--
Saccopharyngiformes						
Cyematidae						
"Leptocephalus holti" type	--	2	--	--	1.359	(2.718)
Salmoniformes						
Microstomatidae						
Nansenia sp.	--	16	--	--	17.436	(5.019)
Bathylagidae						
Bathylagus longirostris	15	39	8.940	(11.345)	41.345	(32.041)
B. bericoides	--	1	--	--	1.460	(2.921)
Stomiiformes						
Unidentified Stomiiformes	145	30	40.460	(22.322)	26.779	(30.119)
Phosichthyidae						
Vinciguerria spp.	779	480	320.133	(181.454)	321.466	(157.904)
V. poweriae	50	81	21.469	(19.730)	78.682	(55.559)
V. nimbaria	2,456	128	843.782	(907.214)	67.834	(57.212)
V. attenuata	41	34	19.601	(22.337)	22.349	(14.465)
Woodsia nonsuchae	4	--	1.688	(2.079)	--	--
Ichthyococcus sp.	1	34	0.418	(1.023)	18.466	(10.827)
Gonostomatidae						
Gonostoma atlanticum	15	2	6.245	(9.875)	1.364	(2.728)
Cyclothone spp.	11,731	303	2,996.960	(2,376.382)	128.640	(109.969)

Table 2.--Continued.

Taxon	Total larvae (No.)		Larval abundance (per 100 m^2)			
			84-05 (*N*=6)		85-01 (*N*=4)	
	84-05	85-01	Mean	(SD)	Mean	(SD)
Diplophos spp.	21	--	5.020	(3.366)	--	--
Margrethia obtusirostra	3	1	2.669	(2.929)	1.312	(2.625)
Sternoptychidae						
Unidentified Sternoptychidae	7	125	8.004	(3.006)	164.002	(181.936)
Sternoptyx spp.	49	35	44.796	(56.617)	43.945	(26.635)
Argyropelecus spp.	19	61	16.762	(23.623)	79.517	(15.292)
Maurolicus muelleri	--	79	--	--	98.830	(86.561)
Valenciennellus tripunctulatus	42	14	39.032	(58.146)	19.998	(10.586)
Stomiidae						
Chauliodus sloani	1	181	0.418	(1.023)	147.349	(40.223)
Stomias (Macrostomias) sp.	3	--	0.953	(2.335)	--	--
Unidentified "Astronesthidae"	42	--	10.360	(25.378)	--	--
"Astronesthidae" Type 1	315	--	87.754	(54.347)	--	--
"Astronesthidae" Type 2	1	--	0.480	(1.176)	--	--
"Astronesthidae" Type 3	--	3	--	--	1.086	(0.726)
Neonesthes sp.	--	4	--	--	5.468	(5.294)
Unidentified "Melanostomiidae"	3	227	0.913	(1.070)	117.256	(40.287)
Eustomias spp.	9	--	2.430	(1.749)	--	--
Bathophilus spp.	--	1	--	--	0.407	(0.815)
Photonectes spp.	1	--	0.459	(1.124)	--	--
Opostomias mitsuii	--	41	--	--	18.300	(9.322)
Unidentified "Malacosteidae"	2	--	0.505	(0.782)	--	--
Idiacanthus sp.	--	4	--	--	1.705	(3.410)
Myctophiformes						
Scopelarchidae						
Unidentified Scopelarchidae	1	6	0.877	(2.149)	4.061	(8.121)
Scopelarchus analis	4	10	4.865	(5.798)	11.021	(11.869)
S.stephensi	--	139	--	--	122.892	(109.027)
Benthalbella sp.	--	2	--	--	2.921	(5.841)
B.infans	--	4	--	--	5.245	(4.134)
Paralepididae						
Unidentified Paralepididae	355	59	103.362	(48.655)	31.574	(11.081)
Sudis atrox	2	--	0.976	(1.514)	--	--
Stemonosudis macrura	29	--	7.476	(7.909)	--	--
Alepisauridae						
Alepisaurus ferox	9	--	3.000	(3.401)	--	--
Myctophidae						
Lampanyctinae						

Table 2.--Continued.

Taxon	Total larvae (No.)		Larval abundance (per 100 m^2)			
			84-05 (*N*=6)		85-01 (*N*=4)	
	84-05	85-01	Mean	(SD)	Mean	(SD)
Bolinichthys longipes	24	--	5.942	(6.613)	--	--
B. sp.	1	--	0.224	(0.549)	--	--
Ceratoscopelus townsendi	604	363	155.533	(111.948)	163.666	(111.606)
Diaphus spp.	997	225	256.752	(273.875)	118.446	(137.830)
Lampadena luminosa	6	1	1.465	(2.353)	0.407	(0.815)
L. urophaos	138	19	34.504	(20.625)	8.377	(6.160)
Lampanyctus spp.	475	508	185.343	(205.305)	225.050	(117.534)
Lobianchia gemellarii	44	13	18.646	(29.655)	11.626	(10.701)
Notolychnus valdiviae	86	2	40.005	(47.744)	2.173	(2.861)
Notoscopelus spp.	--	294	--	--	142.505	(14.245)
N. resplendens	--	35	--	--	28.046	(27.818)
Triphoturus nigrescens	138	--	37.158	(44.702)	--	--
Myctophinae						
Benthosema fibulatum	15	2	5.382	(8.974)	2.100	(4.200)
B. suborbitale	275	206	143.170	(90.877)	181.641	(37.655)
Centrobranchus sp.	7	1	2.637	(2.903)	0.644	(1.289)
Diogenichthys atlanticus	983	469	490.879	(318.564)	395.239	(199.283)
Electrona risso	--	19	--	--	23.879	(21.470)
Hygophum reinhardtii	308	47	129.380	(94.260)	25.707	(18.061)
Loweina rara	--	322	--	--	222.039	(73.176)
Myctophum spp.	12	9	4.196	(5.517)	5.492	(1.875)
M. nitidulum	35	39	18.912	(9.665)	22.730	(5.884)
M. selenops	3	1	1.312	(2.468)	0.644	(1.289)
Symbolophorus cf. californiensis	--	6	--	--	3.640	(4.670)
S. evermanni	56	13	24.438	(48.969)	7.841	(6.476)
Unidentified Myctophidae	658	186	182.570	(65.393)	86.268	(48.471)
Neoscopelidae						
Neoscopelus macrolepidotus	1	--	0.246	(0.602)	--	--
Evermannellidae						
Unidentified Evermannellidae	15	--	4.555	(7.850)	--	--
Lophiiformes						
Ceratioidei						
Unidentified Ceratioidei	159	--	38.298	(37.086)	--	--
Ceratiidae						
Unidentified Ceratiidae	1	--	0.253	(0.620)	--	--
Ceratias spp.	7	--	1.669	(2.358)	--	--
Cryptopsaras couesi	27	--	6.388	(7.312)	--	--
Caulophrynidae						

Table 2.--Continued.

Taxon	Total larvae (No.)		Larval abundance (per 100 m^2)			
			84-05 (*N*=6)		85-01 (*N*=4)	
	84-05	85-01	Mean	(SD)	Mean	(SD)
Unidentified Caulophrynidae	1	--	0.218	(0.533)	--	--
Oneirodidae						
Unidentified Oneirodidae	41	--	10.454	(7.772)	--	--
Gigantactinidae						
Unidentified Gigantactinidae	9	--	2.798	(4.870)	--	--
Linophrynidae						
Unidentified Linophrynidae	3	1	1.264	(2.461)	1.413	(2.826)
Linophryne macrorhinus group	1	--	0.418	(1.023)	--	--
"Edriolychnus" group	3	29	1.740	(4.263)	27.663	(30.024)
Neoceratiidae						
Neoceratias spinifer	1	--	0.947	(2.319)	--	--
Himantolophidae						
Unidentified Himantolophidae	13	--	3.207	(5.765)	--	--
Gadiformes						
Bregmacerotidae						
Bregmaceros spp.	4	--	2.242	(4.286)	--	--
B. cf. japonicus	11	--	4.822	(7.463)	--	--
B. cf. atlanticus	1	--	0.418	(1.023)	--	--
Macrouridae						
Unidentified Macrouridae	--	4	--	--	5.888	(8.439)
Ophidiiformes						
Unidentified Ophidiiformes	--	2	--	--	1.969	(2.954)
Beloniformes						
Hemiramphidae						
Oxyporhamphus micropterus	3	--	0.685	(1.117)	--	--
Belonidae						
Unidentified Belonidae	1	--	0.253	(0.620)	--	--
Beryciformes						
Melamphaidae						
Melamphaes sp.	2	21	0.730	(1.788)	13.092	(10.097)
M. cf. simus	9	38	3.843	(5.340)	17.797	(11.070)
M. cf. lugubris	--	14	--	--	12.606	(15.027)
M. type 3	--	1	--	--	0.837	(1.674)
Scopeloberyx spp.	--	1	--	--	1.460	(2.921)
S. opisthopterus	2	--	1.025	(2.511)	--	--
S. robustus	49	48	23.869	(18.822)	36.554	(20.202)
Stephanoberycidae?						
Unidentified Stephanoberycidae?	1	--	0.235	(0.576)	--	--

Table 2.--Continued.

Taxon	Total larvae (No.)		Larval abundance (per 100 m^2)			
			84-05 (*N*=6)		85-01 (*N*=4)	
	84-05	85-01	Mean	(SD)	Mean	(SD)
Anoplogastridae						
Anoplogaster cornuta	--	3	--	--	1.393	(2.786)
Berycidae						
Beryx spp.	112	--	26.777	(46.136)	--	--
Mirapinnidae						
Eutaeniophorus festivus	--	11	--	--	7.037	(3.340)
Lampriformes						
Trachipteridae						
Unidentified Trachipteridae	8	--	2.568	(3.623)	--	--
Trachipterus sp.	--	1	--	--	0.666	(1.332)
Zu cristatus	2	--	0.491	(0.761)	--	--
Scorpaeniformes						
Scorpaenidae	5	2	1.172	(1.386)	1.084	(1.327)
Perciformes						
Percoidei						
Incertae sedis						
Howella sp.	14	--	4.511	(8.479)	--	--
Serranidae						
Anthiinae	2	--	0.449	(1.099)	--	--
Callanthiidae						
Grammatonotus laysanus	1	--	0.231	(0.566)	--	--
Bramidae						
Pteraclis aesticola	5	--	1.215	(2.363)	--	--
Brama japonica	--	20	--	--	8.279	(2.197)
Caristiidae						
Caristius sp.	3	1	0.787	(1.353)	0.314	(0.628)
Emmelichthyidae						
Unidentified Emmelichthyidae	11	--	2.634	(6.453)	--	--
Carangoidei						
Carangidae						
Unidentified Carangidae	1	--	0.239	(0.584)	--	--
Coryphaenidae						
Unidentified Coryphaenidae	2	--	0.491	(1.204)	--	--
Coryphaena equiselis	22	--	5.255	(2.834)	--	--
Labroidei						
Labridae						
Unidentified Labridae	4	1	0.936	(1.453)	0.407	(0.815)
Scaridae						

Table 2.--Continued.

Taxon	Total larvae (No.)		Larval abundance (per 100 m^2)			
			84-05 (*N*=6)		85-01 (*N*=4)	
	84-05	85-01	Mean	(SD)	Mean	(SD)
Unidentified Scaridae	2	--	0.466	(0.723)	--	--
Trachinoidei						
Chiasmodontidae						
Unidentified Chiasmodontidae	107	--	28.680	(18.164)	--	--
Callionymoidei						
Callionymidae						
Unidentified Callionymidae	1	--	0.513	(1.255)	--	--
Gobioidei						
Gobiidae						
Unidentified Gobiidae	1	--	0.231	(0.565)	--	--
Acanthuroidei						
Acanthuridae						
Unidentified Acanthuridae	1	--	0.218	(0.533)	--	--
Scombroidei						
Gempylidae						
Unidentified Gempylidae	95	--	33.992	(21.318)	--	--
Gempylus serpens	13	--	3.253	(7.346)	--	--
Diplospinus multistriatus	32	5	12.228	(18.182)	2.364	(3.157)
Scombridae						
Unidentified Scombridae	1	--	0.218	(0.533)	--	--
Acanthocybium solandri	14	--	3.257	(3.716)	--	--
Katsuwonus pelamis	2	--	0.489	(1.199)	--	--
Thunnus spp.	17	--	4.171	(5.933)	--	--
Stromateoidei						
Nomeidae						
Cubiceps baxteri	3	4	0.720	(1.764)	1.490	(2.043)
Tetragonuridae						
Tetragonurus cuvieri	--	5	--	--	2.950	(3.409)
T. atlanticus	26	--	7.921	(6.298)	--	--
Pleuronectiformes						
Bothidae						
Unidentified Bothidae	4	--	0.904	(2.215)	--	--
Bothus sp.	2	--	0.435	(1.066)	--	--
Engyprosopon xenandrus	1	--	0.287	(0.703)	--	--
Tetraodontiformes						
Monacanthidae						
Unidentified Monacanthidae	1	--	0.253	(0.620)	--	--
Other unidentified larvae	796	170	276.085	(153.271)	106.363	(27.882)

Table 2.--Continued.

Taxon	Total larvae (No.)		Larval abundance (per 100 m^2)			
			84-05 (*N*=6)		85-01 (*N*=4)	
	84-05	85-01	Mean	(SD)	Mean	(SD)
Total fish larvae	22,705	5,311	6,874.185	(4,645.720)	3,537.798	(1,098.658)
Fish eggs	4,783	3,222	1,798.438	(440.795)	1,700.346	(556.178)
Zooplankton displacement (ml)	--	--	745.487	(257.202)	936.797	(323.555)
Squid paralarvae	465	320	128.578	(60.340)	197.984	(40.701)

Table 3.--Mean densities (larvae/1,000 m^3) of fish larvae in daytime samples from Southeast Hancock Seamount cruise 84-05 in 14-15 July, 1984. Each depth zone is represented by a total of four samples, including two from above the seamount and two 20 km west of the seamount.

	0-25 m		25-50 m		50-100 m		100-200 m	
Taxon	Mean	(SD)	Mean	(SD)	Mean	(SD)	Mean	(SD)
Anguilliformes								
Muraenidae								
Unidentified Muraenidae	--	--	--	--	--	--	--	--
Nettastomatidae								
Saurenchelys stylura	--	--	--	--	--	--	--	--
Congridae								
Ariosoma sp.	--	--	--	--	--	--	--	--
Ophichthidae								
Unidentified Ophichthidae	--	--	--	--	--	--	--	--
Derichthyidae								
Derichthys serpentinus	--	--	--	--	--	--	--	--
Saccopharyngiformes								
Cyematidae								
"Leptocephalus holti" type	--	--	--	--	--	--	--	--
Salmoniformes								
Microstomatidae								
Nansenia sp.	--	--	--	--	--	--	--	--
Bathylagidae								
Bathylagus longirostris	--	--	--	--	1.330	(1.041)	--	--
B. bericoides	--	--	--	--	--	--	--	--
Stomiiformes								
Unidentified Stomiiformes	5.086	(3.792)	6.241	(2.855)	4.036	(7.391)	0.796	(1.591)
Phosichthyidae								
Vinciguerria spp.	0.590	(1.179)	12.178	(8.514)	56.976	(50.710)	1.615	(2.040)
V. poweriae	--	--	--	--	--	--	--	--
V. nimbaria	13.579	(1.704)	44.186	(19.001)	61.223	(22.718)	2.452	(1.039)
V. attenuata	--	--	0.353	(0.706)	0.275	(0.551)	0.268	(0.537)
Woodsia nonsuchae	--	--	--	--	0.252	(0.503)	--	--
Ichthyococcus sp.	--	--	--	--	--	--	--	--
Gonostomatidae								
Gonostoma atlanticum	--	--	--	--	--	--	--	--
Cyclothone spp.	292.306	(77.262)	144.674	(61.974)	3.829	(3.354)	1.364	(1.041)
Diplophos spp.	1.151	(1.615)	--	--	--	--	--	--
Margrethia obtusirostra	--	--	--	--	--	--	0.268	(0.537)
Sternoptychidae								
Unidentified Sternoptychidae	--	--	--	--	--	--	0.545	(0.630)
Sternoptyx spp.	--	--	--	--	--	--	4.642	(1.441)
Argyropelecus spp.	--	--	--	--	--	--	1.344	(1.019)
Maurolicus muelleri	--	--	--	--	--	--	--	--

Table 3.--Continued.

Taxon	0-25 m		25-50 m		50-100 m		100-200 m	
	Mean	(SD)	Mean	(SD)	Mean	(SD)	Mean	(SD)
Valenciennellus tripunctulatus	--	--	--	--	--	--	1.088	(1.257)
Stomiidae								
Chauliodus sloani	--	--	--	--	--	--	--	--
Stomias (Macrostomias) sp.	--	--	--	--	--	--	--	--
Unidentified "Astronesthidae"	11.372	(13.501)	--	--	--	--	0.265	(0.530)
"Astronesthidae" Type 1	2.617	(3.115)	22.067	(6.726)	8.810	(2.514)	0.534	(0.616)
"Astronesthidae" Type 2	--	--	--	--	--	--	--	--
"Astronesthidae" Type 3	--	--	--	--	--	--	--	--
Neonesthes sp.	--	--	--	--	--	--	--	--
Unidentified "Melanostomiidae"	--	--	--	--	0.252	(0.503)	--	--
Eustomias spp.	0.277	(0.554)	0.303	(0.605)	--	--	--	--
Bathophilus spp.	--	--	--	--	--	--	--	--
Photonectes spp.	--	--	--	--	0.275	(0.551)	--	--
Opostomias mitsuii	--	--	--	--	--	--	--	--
Unidentified "Malacosteidae"	--	--	--	--	--	--	--	--
Idiacanthus sp.	--	--	--	--	--	--	--	--
Myctophiformes								
Scopelarchidae								
Unidentified Scopelarchidae	--	--	--	--	--	--	--	--
Scopelarchus analis	--	--	--	--	--	--	--	--
S. stephensi	--	--	--	--	--	--	--	--
Benthalbella sp.	--	--	--	--	--	--	--	--
B. infans	--	--	--	--	--	--	--	--
Paralepididae								
Unidentified Paralepididae	0.572	(0.661)	13.711	(11.525)	8.864	(3.708)	0.555	(0.641)
Sudis atrox	--	--	--	--	0.278	(0.556)	--	--
Stemonosudis macrura	0.277	(0.554)	1.042	(1.322)	0.278	(0.556)	--	--
Alepisauridae								
Alepisaurus ferox	--	--	0.958	(1.181)	--	--	--	--
Myctophidae								
Lampanyctinae								
Bolinichthys longipes	3.711	(7.423)	--	--	--	--	--	--
B. sp.	--	--	--	--	--	--	--	--
Ceratoscopelus townsendi	13.491	(9.360)	4.108	(5.828)	--	--	--	--
Diaphus spp.	9.327	(4.170)	7.841	(6.221)	5.245	(5.261)	--	--
Lampadena luminosa	--	--	--	--	--	--	--	--
L. urophaos	8.272	(6.103)	1.638	(2.016)	--	--	--	--
Lampanyctus spp.	5.523	(6.730)	18.496	(10.587)	5.200	(5.423)	--	--
Lobianchia gemellarii	--	--	1.059	(2.119)	0.252	(0.503)	--	--
Notolychnus valdiviae	--	--	--	--	0.513	(0.593)	--	--
Notoscopelus spp.	--	--	--	--	--	--	--	--

Table 3.--Continued.

Taxon	0-25 m		25-50 m		50-100 m		100-200 m	
	Mean	(SD)	Mean	(SD)	Mean	(SD)	Mean	(SD)
N. resplendens	--	--	--	--	--	--	--	--
Triphoturus nigrescens	3.725	(2.034)	0.605	(1.210)	--	--	--	--
Myctophinae								
Benthosema fibulatum	--	--	--	--	--	--	--	--
B. suborbitale	--	--	--	--	12.597	(13.145)	1.645	(0.667)
Centrobranchus sp.	--	--	0.313	(0.627)	0.278	(0.556)	--	--
Diogenichthys atlanticus	0.278	(0.556)	0.313	(0.627)	30.767	(10.616)	6.796	(1.826)
Electrona risso	--	--	--	--	--	--	--	--
Hygophum reinhardtii	0.295	(0.590)	5.418	(5.265)	13.793	(9.108)	1.087	(0.905)
Loweina rara	--	--	--	--	--	--	--	--
Myctophum spp.	--	--	1.566	(3.133)	0.275	(0.551)	--	--
M. nitidulum	--	--	1.033	(2.066)	2.318	(2.228)	--	--
M. selenops	--	--	0.344	(0.689)	--	--	--	--
Symbolophorus cf. *californiensis*	--	--	--	--	--	--	--	--
S. evermanni	--	--	0.313	(0.627)	0.261	(0.523)	--	--
Unidentified Myctophidae	21.953	(13.469)	25.291	(14.698)	10.243	(4.804)	1.074	(1.501)
Neoscopelidae								
Neoscopelus macrolepidotus	0.295	(0.590)	--	--	--	--	--	--
Evermannellidae								
Unidentified Evermannellidae	0.875	(1.126)	--	--	--	--	--	--
Lophiiformes								
Ceratioidei								
Unidentified Ceratioidei	5.755	(4.005)	0.697	(0.805)	--	--	--	--
Ceratiidae								
Unidentified Ceratiidae	--	--	--	--	--	--	--	--
Ceratias spp.	--	--	--	--	--	--	--	--
Cryptopsaras couesi	0.285	(0.571)	--	--	--	--	--	--
Caulophrynidae								
Unidentified Caulophrynidae	--	--	--	--	--	--	--	--
Oneirodidae								
Unidentified Oneirodidae	0.278	(0.556)	0.666	(0.772)	--	--	0.265	(0.530)
Gigantactinidae								
Unidentified Gigantactinidae	0.278	(0.556)	--	--	--	--	--	--
Linophrynidae								
Unidentified Linophrynidae	--	--	--	--	--	--	--	--
Linophryne macrorhinus group	--	--	--	--	--	--	--	--
"*Edriolychnus*" group	--	--	--	--	--	--	--	--
Neoceratiidae								
Neoceratias spinifer	--	--	--	--	--	--	--	--
Himantolophidae								
Unidentified Himantolophidae	0.285	(0.571)	--	--	--	--	--	--

Table 3.--Continued.

Taxon	0-25 m		25-50 m		50-100 m		100-200 m	
	Mean	(SD)	Mean	(SD)	Mean	(SD)	Mean	(SD)
Gadiformes								
Bregmacerotidae								
Bregmaceros spp.	--	--	--	--	0.275	(0.551)	--	--
B. cf. *japonicus*	--	--	--	--	0.755	(1.510)	--	--
B. cf. *atlanticus*	--	--	--	--	--	--	--	--
Macrouridae								
Unidentified Macrouridae	--	--	--	--	--	--	--	--
Ophidiiformes								
Unidentified Ophidiiformes	--	--	--	--	--	--	--	--
Beloniformes								
Hemiramphidae								
Oxyporhamphus micropterus	--	--	--	--	--	--	--	--
Belonidae								
Unidentified Belonidae	--	--	--	--	--	--	--	--
Beryciformes								
Melamphaidae								
Melamphaes sp.	--	--	0.353	(0.706)	0.261	(0.523)	--	--
M. cf. *simus*	--	--	0.353	(0.706)	0.252	(0.503)	--	--
M. cf. *lugubris*	--	--	--	--	--	--	--	--
M. type 3	--	--	--	--	--	--	--	--
Scopeloberyx spp.	--	--	--	--	--	--	--	--
S. opisthopterus	--	--	--	--	--	--	--	--
S. robustus	--	--	--	--	2.622	(1.253)	--	--
Stephanoberycidae?								
Unidentified Stephanoberycidae?	--	--	--	--	--	--	--	--
Anoplogastridae								
Anoplogaster cornuta	--	--	--	--	--	--	--	--
Berycidae								
Beryx spp.	0.575	(0.661)	0.689	(1.377)	--	--	--	--
Mirapinnidae								
Eutaeniophorus festivus	--	--	--	--	--	--	--	--
Lampriformes								
Trachipteridae								
Unidentified Trachipteridae	--	--	--	--	--	--	--	--
Trachipterus sp.	--	--	--	--	--	--	--	--
Zu cristatus	0.285	(0.571)	--	--	--	--	--	--
Scorpaeniformes								
Scorpaenidae	0.278	(0.556)	--	--	--	--	--	--
Perciformes								
Percoidei								
Incertae sedis								

Table 3.--Continued.

Taxon	0-25 m Mean	0-25 m (SD)	25-50 m Mean	25-50 m (SD)	50-100 m Mean	50-100 m (SD)	100-200 m Mean	100-200 m (SD)
Howella sp.	--	--	--	--	--	--	--	--
Serranidae								
Anthiinae	--	--	--	--	--	--	--	--
Callanthiidae								
Grammatonotus laysanus	--	--	--	--	--	--	--	--
Bramidae								
Pteraclis aesticola	0.277	(0.554)	--	--	--	--	--	--
Brama japonica	--	--	--	--	--	--	--	--
Caristiidae								
Caristius sp.	--	--	0.658	(0.761)	--	--	--	--
Emmelichthyidae								
Unidentified Emmelichthyidae	--	--	--	--	--	--	--	--
Carangoidei								
Carangidae								
Unidentified Carangidae	--	--	--	--	--	--	--	--
Coryphaenidae								
Unidentified Coryphaenidae	0.590	(1.179)	--	--	--	--	--	--
Coryphaena equiselis	1.125	(1.299)	0.605	(1.210)	--	--	--	--
Labroidei								
Labridae								
Unidentified Labridae	--	--	--	--	--	--	--	--
Scaridae								
Unidentified Scaridae	--	--	--	--	--	--	--	--
Trachinoidei								
Chiasmodontidae								
Unidentified Chiasmodontidae	3.091	(2.514)	2.273	(0.591)	0.275	(0.551)	--	--
Callionymoidei								
Callionymidae								
Unidentified Callionymidae	--	--	--	--	--	--	--	--
Gobioidei								
Gobiidae								
Unidentified Gobiidae	--	--	--	--	--	--	--	--
Acanthuroidei								
Acanthuridae								
Unidentified Acanthuridae	--	--	--	--	--	--	--	--
Scombroidei								
Gempylidae								
Unidentified Gempylidae	--	--	5.432	(4.124)	4.426	(4.426)	--	--
Gempylus serpens	--	--	--	--	--	--	--	--
Diplospinus multistriatus	--	--	2.706	(3.403)	--	--	--	--
Scombridae								

Table 3.--Continued.

Taxon	0-25 m		25-50 m		50-100 m		100-200 m	
	Mean	(SD)	Mean	(SD)	Mean	(SD)	Mean	(SD)
Unidentified Scombridae	--	--	--	--	--	--	--	--
Acanthocybium solandri	--	--	0.303	(0.605)	--	--	--	--
Katsuwonus pelamis	--	--	--	--	--	--	--	--
Thunnus spp.	--	--	--	--	--	--	--	--
Stromateoidei								
Nomeidae								
Cubiceps baxteri	--	--	--	--	--	--	--	--
Tetragonuridae								
Tetragonurus cuvieri	--	--	--	--	--	--	--	--
Tetragonurus atlanticus	2.635	(3.898)	1.051	(1.350)	--	--	--	--
Pleuronectiformes								
Bothidae								
Unidentified Bothidae	--	--	--	--	--	--	--	--
Bothus sp.	--	--	--	--	--	--	--	--
Engyprosopon xenandrus	--	--	0.344	(0.689)	--	--	--	--
Tetraodontiformes								
Monacanthidae								
Unidentified Monacanthidae	--	--	--	--	--	--	--	--
Other unidentified larvae	18.509	(18.115)	27.233	(14.481)	18.317	(15.273)	3.006	(1.896)
Total fish larvae	429.814	(64.715)	357.414	(57.907)	255.603	(114.162)	29.610	(7.319)
Fish eggs	368.799	(386.293)	131.036	(45.608)	84.740	(40.689)	43.882	(41.781)
Zooplankton displacement (ml)	38.043	(2.233)	42.562	(6.777)	85.228	(27.999)	16.403	(5.672)
Squid paralarvae	18.065	(23.642)	12.845	(5.202)	8.538	(7.367)	0.547	(0.632)

Table 4.--Mean densities (larvae/1,000 m^3) of fish larvae in night samples from the first sampling series (9-11 July 1984) at Southeast Hancock Seamount during cruise 84-05. Each depth zone is represented by a total of four samples, including two from above the seamount and two 20 km west of the seamount (except only one sample was taken from the 25-50 m depth at the site west of the summit).

	0-25 m		25-50 m		50-100 m		100-200 m	
Taxon	Mean	(SD)	Mean	(SD)	Mean	(SD)	Mean	(SD)
Anguilliformes								
Muraenidae								
Unidentified Muraenidae	--	--	--	--	0.255	(0.511)	--	--
Nettastomatidae								
Saurenchelys stylura	0.299	(0.599)	--	--	--	--	--	--
Congridae								
Ariosoma sp.	0.284	(0.568)	--	--	--	--	--	--
Ophichthidae								
Unidentified Ophichthidae	0.299	(0.599)	--	--	--	--	--	--
Derichthyidae								
Derichthys serpentinus	--	--	--	--	--	--	--	--
Saccopharyngiformes								
Cyematidae								
"Leptocephalus holti" type	--	--	--	--	--	--	--	--
Salmoniformes								
Microstomatidae								
Nansenia sp.	--	--	--	--	--	--	--	--
Bathylagidae								
Bathylagus longirostris	--	--	--	--	1.002	(2.004)	1.337	(1.035)
B. bericoides	--	--	--	--	--	--	--	--
Stomiiformes								
Unidentified Stomiiformes	10.050	(5.220)	1.945	(2.366)	0.563	(0.656)	--	--
Phosichthyidae								
Vinciguerria spp.	2.362	(1.741)	64.831	(49.635)	51.709	(26.666)	1.863	(1.334)
V. poweriae	--	--	--	--	6.366	(1.020)	1.032	(1.192)
V. nimbaria	149.691	(138.212)	222.744	(233.438)	90.428	(65.795)	5.992	(7.691)
V. attenuata	--	--	--	--	4.579	(3.782)	0.253	(0.506)
Woodsia nonsuchae	--	--	--	--	0.761	(0.508)	--	--
Ichthyococcus sp.	--	--	--	--	0.251	(0.501)	--	--
Gonostomatidae								
Gonostoma atlanticum	--	--	0.382	(0.661)	3.604	(1.641)	--	--
Cyclothone spp.	1609.896	(432.247)	630.827	(59.547)	24.598	(37.777)	5.202	(6.791)
Diplophos spp.	2.093	(1.821)	0.418	(0.725)	--	--	--	--
Margrethia obtusirostra	--	--	--	--	--	--	0.532	(0.616)
Sternoptychidae								
Unidentified Sternoptychidae	--	--	--	--	--	--	0.769	(0.972)
Sternoptyx spp.	--	--	--	--	--	--	8.185	(8.802)
Argyropelecus spp.	--	--	--	--	--	--	3.684	(3.474)

Table 4.--Continued.

Taxon	0-25 m		25-50 m		50-100 m		100-200 m	
	Mean	(SD)	Mean	(SD)	Mean	(SD)	Mean	(SD)
Maurolicus muelleri	--	--	--	--	--	--	--	--
Valenciennellus tripunctulatus	--	--	--	--	--	--	9.398	(10.052)
Stomiidae								
Chauliodus sloani	--	--	--	--	0.251	(0.501)	--	--
Stomias (Macrostomias) sp.	0.568	(1.135)	0.384	(0.665)	--	--	--	--
Unidentified "Astronesthidae"	--	--	--	--	--	--	--	--
"Astronesthidae" Type 1	17.221	(11.788)	8.935	(7.138)	0.308	(0.615)	0.253	(0.506)
"Astronesthidae" Type 2	--	--	0.384	(0.665)	--	--	--	--
"Astronesthidae" Type 3	--	--	--	--	--	--	--	--
Neonesthes sp.	--	--	--	--	--	--	--	--
Unidentified "Melanostomiidae"	0.304	(0.607)	--	--	--	--	--	--
Eustomias spp.	0.881	(1.141)	--	--	0.308	(0.615)	--	--
Bathophilus spp.	--	--	--	--	--	--	--	--
Photonectes spp.	--	--	--	--	--	--	--	--
Opostomias mitsuii	--	--	--	--	--	--	--	--
Unidentified "Malacosteidae"	0.304	(0.607)	--	--	--	--	--	--
Idiacanthus sp.	--	--	--	--	--	--	--	--
Myctophiformes								
Scopelarchidae								
Unidentified Scopelarchidae	--	--	--	--	--	--	0.263	(0.526)
Scopelarchus analis	--	--	--	--	--	--	0.848	(1.086)
S. stephensi	--	--	--	--	--	--	--	--
Benthalbella sp.	--	--	--	--	--	--	--	--
B. infans	--	--	--	--	--	--	--	--
Paralepididae								
Unidentified Paralepididae	11.787	(7.817)	10.492	(7.044)	2.962	(2.462)	--	--
Sudis atrox	--	--	--	--	0.308	(0.615)	--	--
Stemonosudis macrura	0.850	(1.086)	1.984	(0.729)	--	--	--	--
Alepisauridae								
Alepisaurus ferox	--	--	0.837	(1.450)	1.007	(1.417)	--	--
Myctophidae								
Lampanyctinae								
Bolinichthys longipes	--	--	1.945	(2.366)	0.308	(0.615)	--	--
B. sp.	--	--	--	--	--	--	--	--
Ceratoscopelus townsendi	60.247	(51.320)	25.178	(2.000)	10.173	(3.000)	--	--
Diaphus spp.	100.679	(83.083)	29.591	(8.724)	7.889	(3.390)	--	--
Lampadena luminosa	1.496	(2.302)	--	--	--	--	--	--
L. urophaos	18.031	(16.231)	2.750	(0.602)	0.308	(0.615)	0.253	(0.506)
Lampanyctus spp.	5.539	(3.897)	24.724	(14.995)	65.272	(22.987)	1.389	(2.157)
Lobianchia gemellarii	--	--	--	--	9.963	(8.369)	--	--
Notolychnus valdiviae	--	--	--	--	18.873	(9.147)	0.568	(1.136)

Table 4.--Continued.

Taxon	0-25 m Mean	0-25 m (SD)	25-50 m Mean	25-50 m (SD)	50-100 m Mean	50-100 m (SD)	100-200 m Mean	100-200 m (SD)
Notoscopelus spp.	--	--	--	--	--	--	--	--
N. resplendens	--	--	--	--	--	--	--	--
Triphoturus nigrescens	22.631	(16.255)	13.488	(3.808)	--	--	0.253	(0.506)
Myctophinae								
Benthosema fibulatum	0.906	(1.161)	0.800	(0.695)	2.346	(3.247)	--	--
B. suborbitale	--	--	--	--	31.769	(14.414)	3.265	(1.006)
Centrobranchus sp.	--	--	--	--	1.007	(1.417)	--	--
Diogenichthys atlanticus	0.607	(1.214)	--	--	135.260	(77.664)	13.262	(6.936)
Electrona risso	--	--	--	--	--	--	--	--
Hygophum reinhardtii	0.889	(1.156)	13.306	(3.068)	30.907	(18.754)	--	--
Loweina rara	--	--	--	--	--	--	--	--
Myctophum spp.	--	--	0.763	(1.322)	1.173	(1.743)	--	--
M. nitidulum	--	--	--	--	2.952	(1.362)	--	--
M. selenops	--	--	--	--	0.615	(1.230)	--	--
Symbolophorus cf. californiensis	--	--	--	--	--	--	--	--
S. evermanni	--	--	0.418	(0.725)	13.098	(13.262)	0.284	(0.568)
Unidentified Myctophidae	49.965	(21.261)	22.101	(11.157)	4.653	(3.590)	1.011	(2.022)
Neoscopelidae								
Neoscopelus macrolepidotus	--	--	--	--	--	--	--	--
Evermannellidae								
Unidentified Evermannellidae	1.723	(2.697)	1.537	(2.662)	--	--	--	--
Lophiiformes								
Ceratioidei								
Unidentified Ceratioidei	8.613	(5.390)	--	--	--	--	--	--
Ceratiidae								
Unidentified Ceratiidae	0.304	(0.607)	--	--	--	--	--	--
Ceratias spp.	1.748	(1.540)	--	--	--	--	--	--
Cryptopsaras couesi	0.566	(0.654)	0.763	(1.322)	--	--	--	--
Caulophrynidae								
Unidentified Caulophrynidae	--	--	--	--	--	--	--	--
Oneirodidae								
Unidentified Oneirodidae	4.338	(1.858)	0.382	(0.661)	--	--	--	--
Gigantactinidae								
Unidentified Gigantactinidae	1.800	(2.896)	--	--	--	--	0.253	(0.506)
Linophrynidae								
Unidentified Linophrynidae	--	--	0.382	(0.661)	0.615	(1.230)	--	--
Linophryne macrorhinus group	--	--	--	--	0.251	(0.501)	--	--
"Edriolychnus" group	--	--	0.384	(0.665)	0.251	(0.501)	0.253	(0.506)
Neoceratiidae								
Neoceratias spinifer	--	--	--	--	--	--	0.284	(0.568)
Himantolophidae								

Table 4.--Continued.

Taxon	0-25 m		25-50 m		50-100 m		100-200 m	
	Mean	(SD)	Mean	(SD)	Mean	(SD)	Mean	(SD)
Unidentified Himantolophidae	3.261	(5.040)	--	--	--	--	--	--
Gadiformes								
Bregmacerotidae								
Bregmaceros spp.	--	--	--	--	0.511	(1.021)	0.280	(0.559)
B. cf. japonicus	0.304	(0.607)	--	--	1.987	(2.120)	--	--
B. cf. atlanticus	--	--	--	--	0.251	(0.501)	--	--
Macrouridae								
Unidentified Macrouridae	--	--	--	--	--	--	--	--
Ophidiiformes								
Unidentified Ophidiiformes	--	--	--	--	--	--	--	--
Beloniformes								
Hemiramphidae								
Oxyporhamphus micropterus	0.299	(0.599)	--	--	--	--	--	--
Belonidae								
Unidentified Belonidae	0.304	(0.607)	--	--	--	--	--	--
Beryciformes								
Melamphaidae								
Melamphaes sp.	--	--	--	--	--	--	--	--
M. cf. simus	--	--	--	--	1.877	(1.312)	--	--
M. cf. lugubris	--	--	--	--	--	--	--	--
M. type 3	--	--	--	--	--	--	--	--
Scopeloberyx spp.	--	--	--	--	--	--	--	--
S. opisthopterus	--	--	--	--	0.615	(1.230)	--	--
S. robustus	--	--	--	--	7.771	(3.061)	0.779	(1.004)
Stephanoberycidae?								
Unidentified Stephanoberycidae?	0.282	(0.565)	--	--	--	--	--	--
Anoplogastridae								
Anoplogaster cornuta	--	--	--	--	--	--	--	--
Berycidae								
Beryx spp.	5.565	(4.310)	0.766	(0.663)	0.308	(0.615)	--	--
Mirapinnidae								
Eutaeniophorus festivus	--	--	--	--	--	--	--	--
Lampriformes								
Trachipteridae								
Unidentified Trachipteridae	0.870	(0.581)	--	--	--	--	0.284	(0.568)
Trachipterus sp.	--	--	--	--	--	--	--	--
Zu cristatus	0.304	(0.607)	--	--	--	--	--	--
Scorpaeniformes								
Scorpaenidae	0.565	(1.130)	--	--	--	--	--	--

Table 4.--Continued.

Taxon	0-25 m Mean	0-25 m (SD)	25-50 m Mean	25-50 m (SD)	50-100 m Mean	50-100 m (SD)	100-200 m Mean	100-200 m (SD)
Perciformes								
Percoidei								
Incertae sedis								
Howella sp.	1.701	(2.703)	1.921	(3.327)	--	--	--	--
Serranidae								
Anthiinae	--	--	--	--	--	--	--	--
Callanthiidae								
Grammatonotus laysanus	--	--	--	--	--	--	--	--
Bramidae								
Pteraclis aesticola	1.181	(1.694)	--	--	--	--	--	--
Brama japonica	--	--	--	--	--	--	--	--
Caristiidae								
Caristius sp.	--	--	0.382	(0.661)	--	--	--	--
Emmelichthyidae								
Unidentified Emmelichthyidae	2.875	(3.758)	0.382	(0.661)	--	--	--	--
Carangoidei								
Carangidae								
Unidentified Carangidae	--	--	0.382	(0.661)	--	--	--	--
Coryphaenidae								
Unidentified Coryphaenidae	--	--	--	--	--	--	--	--
Coryphaena equiselis	2.317	(0.890)	0.837	(1.450)	--	--	--	--
Labroidei								
Labridae								
Unidentified Labridae	0.299	(0.599)	0.382	(0.661)	--	--	--	--
Scaridae								
Unidentified Scaridae	0.282	(0.565)	--	--	--	--	--	--
Trachinoidei								
Chiasmodontidae								
Unidentified Chiasmodontidae	11.088	(4.683)	1.950	(0.602)	--	--	0.280	(0.559)
Callionymoidei								
Callionymidae								
Unidentified Callionymidae	--	--	--	--	0.308	(0.615)	--	--
Gobioidei								
Gobiidae								
Unidentified Gobiidae	--	--	--	--	--	--	--	--
Acanthuroidei								
Acanthuridae								
Unidentified Acanthuridae	--	--	--	--	--	--	--	--
Scombroidei								
Gempylidae								
Unidentified Gempylidae	2.428	(4.856)	6.827	(4.036)	5.421	(3.616)	0.253	(0.506)

Table 4.--Continued.

Taxon	0-25 m		25-50 m		50-100 m		100-200 m	
	Mean	(SD)	Mean	(SD)	Mean	(SD)	Mean	(SD)
Gempylus serpens	3.642	(7.284)	--	--	--	--	--	--
Diplospinus multistriatus	--	--	1.152	(1.996)	4.554	(4.452)	--	--
Scombridae								
Unidentified Scombridae	--	--	--	--	--	--	--	--
Acanthocybium solandri	1.714	(1.451)	--	--	--	--	--	--
Katsuwonus pelamis	0.587	(0.679)	--	--	--	--	--	--
Thunnus spp.	3.879	(3.337)	0.763	(1.322)	--	--	--	--
Stromateoidei								
Nomeidae								
Cubiceps baxteri	0.864	(1.088)	--	--	--	--	--	--
Tetragonuridae								
Tetragonurus cuvieri	--	--	--	--	--	--	--	--
T. atlanticus	0.607	(1.214)	--	--	0.256	(0.511)	0.253	(0.506)
Pleuronectiformes								
Bothidae								
Unidentified Bothidae	--	--	--	--	--	--	--	--
Bothus sp.	--	--	--	--	--	--	--	--
Engyprosopon xenandrus	--	--	--	--	--	--	--	--
Tetraodontiformes								
Monacanthidae								
Unidentified Monacanthidae	0.304	(0.607)	--	--	--	--	--	--
Other unidentified larvae	53.341	(45.187)	31.200	(5.068)	28.618	(15.868)	6.775	(1.831)
Total fish larvae	2186.117	(755.453)	1130.005	(154.706)	579.412	(79.784)	69.587	(48.851)
Fish eggs	344.218	(416.730)	100.482	(50.105)	28.861	(20.008)	70.532	(76.710)
Zooplankton displacement (ml)	98.476	(8.775)	87.866	(15.286)	58.548	(14.546)	22.006	(7.542)
Squid paralarvae	30.556	(17.053)	6.198	(3.193)	5.452	(5.831)	1.343	(0.511)

Table 5.--Mean densities (larvae/1,000 m^3) of fish larvae in night samples from the second sampling series (27-29 July, 1984) at the Southeast Hancock Seamount during cruise 84-05. Each depth zone is represented by a total of four samples, including two from above the seamount and two 20 km west of the seamount (except only one sample was taken above summit for the 50-100 m, and 100-200 m depths, and one west of the summit at the 100-200 m depth).

	0-25 m		25-50 m		50-100 m		100-200 m	
Taxon	Mean	(SD)	Mean	(SD)	Mean	(SD)	Mean	(SD)
Anguilliformes								
Muraenidae								
Unidentified Muraenidae	--	--	--	--	--	--	--	--
Nettastomatidae								
Saurenchelys stylura	--	--	--	--	--	--	--	--
Congridae								
Ariosoma sp.	--	--	--	--	--	--	--	--
Ophichthidae								
Unidentified Ophichthidae	--	--	--	--	--	--	--	--
Derichthyidae								
Derichthys serpentinus	0.538	(0.622)	0.554	(1.108)	--	--	--	--
Saccopharyngiformes								
Cyematidae								
"Leptocephalus holti" type	--	--	--	--	--	--	--	--
Salmoniformes								
Microstomatidae								
Nansenia sp.	--	--	--	--	--	--	--	--
Bathylagidae								
Bathylagus longirostris	--	--	--	--	0.478	(0.827)	--	--
B. bericoides	--	--	--	--	--	--	--	--
Stomiiformes								
Unidentified Stomiiformes	8.340	(8.220)	4.996	(5.823)	--	--	--	--
Phosichthyidae								
Vinciguerria spp.	0.791	(1.003)	10.345	(10.642)	41.948	(34.423)	1.087	(0.193)
V. poweriae	--	--	3.924	(5.321)	3.319	(4.565)	--	--
V. nimbaria	72.320	(28.484)	79.152	(54.006)	15.309	(12.884)	0.612	(0.865)
V. attenuata	0.522	(1.044)	1.385	(2.770)	4.680	(4.883)	0.612	(0.865)
Woodsia nonsuchae	--	--	--	--	--	--	--	--
Ichthyococcus sp.	--	--	--	--	--	--	--	--
Gonostomatidae								
Gonostoma atlanticum	--	--	--	--	--	--	--	--
Cyclothone spp.	536.148	(365.755)	284.810	(240.100)	9.095	(7.989)	3.399	(2.117)
Diplophos spp.	1.862	(1.378)	0.604	(1.209)	--	--	--	--
Margrethia obtusirostra	--	--	--	--	--	--	--	--
Sternoptychidae								
Unidentified Sternoptychidae	--	--	--	--	--	--	1.087	(0.193)
Sternoptyx spp.	--	--	--	--	--	--	0.612	(0.865)
Argyropelecus spp.	--	--	--	--	--	--	--	--

Table 5.--Continued.

Taxon	0-25 m		25-50 m		50-100 m		100-200 m	
	Mean	(SD)	Mean	(SD)	Mean	(SD)	Mean	(SD)
Maurolicus muelleri	--	--	--	--	--	--	--	--
Valenciennellus tripunctulatus	--	--	--	--	--	--	1.224	(1.731)
Stomiidae								
Chauliodus sloani	--	--	--	--	--	--	--	--
Stomias (Macrostomias) sp.	--	--	--	--	--	--	--	--
Unidentified "Astronesthidae"	--	--	--	--	--	--	--	--
"Astronesthidae" Type 1	18.612	(19.463)	14.947	(24.860)	0.406	(0.703)	--	--
"Astronesthidae" Type 2	--	--	--	--	--	--	--	--
"Astronesthidae" Type 3	--	--	--	--	--	--	--	--
Neonesthes sp.	--	--	--	--	--	--	--	--
Unidentified "Melanostomiidae"	--	--	0.289	(0.578)	--	--	--	--
Eustomias spp.	0.261	(0.522)	0.579	(0.670)	--	--	--	--
Bathophilus spp.	--	--	--	--	--	--	--	--
Photonectes spp.	--	--	--	--	--	--	--	--
Opostomias mitsuii	--	--	--	--	--	--	--	--
Unidentified "Malacosteidae"	--	--	0.302	(0.604)	--	--	--	--
Idiacanthus sp.	--	--	--	--	--	--	--	--
Myctophiformes								
Scopelarchidae								
Unidentified Scopelarchidae	--	--	--	--	--	--	--	--
Scopelarchus analis	--	--	--	--	--	--	0.612	(0.865)
S. stephensi	--	--	--	--	--	--	--	--
Benthalbella sp.	--	--	--	--	--	--	--	--
Benthalbella infans	--	--	--	--	--	--	--	--
Paralepididae								
Unidentified Paralepididae	7.418	(6.663)	45.341	(37.263)	4.148	(4.846)	--	--
Sudis atrox	--	--	--	--	--	--	--	--
Stemonosudis macrura	1.876	(2.194)	2.594	(3.009)	--	--	--	--
Alepisauridae								
Alepisaurus ferox	--	--	--	--	--	--	--	--
Myctophidae								
Lampanyctinae								
Bolinichthys longipes	1.345	(1.354)	--	--	--	--	--	--
Bolinichthys sp.	0.269	(0.538)	--	--	--	--	--	--
Ceratoscopelus townsendi	45.340	(20.079)	18.173	(7.685)	--	--	--	--
Diaphus spp.	81.724	(89.559)	48.114	(54.042)	--	--	0.612	(0.865)
Lampadena luminosa	0.261	(0.522)	--	--	--	--	--	--
L. urophaos	7.424	(5.814)	1.775	(2.109)	--	--	--	--
Lampanyctus spp.	6.327	(5.832)	5.309	(7.557)	3.868	(3.673)	--	--
Lobianchia gemellarii	--	--	0.277	(0.554)	0.406	(0.703)	--	--
Notolychnus valdiviae	--	--	--	--	4.219	(3.813)	--	--

Table 5.--Continued.

Taxon	0-25 m		25-50 m		50-100 m		100-200 m	
	Mean	(SD)	Mean	(SD)	Mean	(SD)	Mean	(SD)
Notoscopelus spp.	--	--	--	--	--	--	--	--
N. resplendens	--	--	--	--	--	--	--	--
Triphoturus nigrescens	1.599	(2.012)	1.158	(1.340)	--	--	--	--
Myctophinae								
Benthosema fibulatum	0.261	(0.522)	--	--	--	--	--	--
B. suborbitale	--	--	0.563	(1.127)	32.311	(36.224)	3.126	(0.959)
Centrobranchus sp.	--	--	0.282	(0.563)	--	--	--	--
Diogenichthys atlanticus	0.530	(0.612)	15.141	(15.823)	81.360	(58.294)	6.929	(6.337)
Electrona risso	--	--	--	--	--	--	--	--
Hygophum reinhardtii	1.647	(2.644)	8.067	(13.856)	20.362	(20.860)	--	--
Loweina rara	--	--	--	--	--	--	--	--
Myctophum spp.	--	--	--	--	--	--	--	--
M. nitidulum	--	--	0.282	(0.563)	4.269	(1.220)	0.475	(0.672)
M. selenops	--	--	--	--	--	--	--	--
Symbolophorus cf. californiensis	--	--	--	--	--	--	--	--
Symbolophorus evermanni	0.277	(0.554)	0.566	(0.654)	--	--	--	--
Unidentified Myctophidae	39.046	(21.588)	16.488	(16.417)	2.875	(3.059)	--	--
Neoscopelidae								
Neoscopelus macrolepidotus	--	--	--	--	--	--	--	--
Evermannellidae								
Unidentified Evermannellidae	0.261	(0.522)	0.302	(0.604)	--	--	--	--
Lophiiformes								
Ceratioidei								
Unidentified Ceratioidei	18.672	(14.694)	10.953	(11.918)	0.423	(0.732)	--	--
Ceratiidae								
Unidentified Ceratiidae	--	--	--	--	--	--	--	--
Ceratias spp.	0.254	(0.508)	--	--	--	--	--	--
Cryptopsaras couesi	2.161	(2.330)	4.081	(2.841)	--	--	--	--
Caulophrynidae								
Unidentified Caulophrynidae	0.261	(0.522)	--	--	--	--	--	--
Oneirodidae								
Unidentified Oneirodidae	3.209	(2.720)	2.707	(4.675)	--	--	--	--
Gigantactinidae								
Unidentified Gigantactinidae	0.269	(0.538)	--	--	--	--	--	--
Linophrynidae								
Unidentified Linophrynidae	--	--	--	--	--	--	--	--
Linophryne macrorhinus group	--	--	--	--	--	--	--	--
"Edriolychnus" group	--	--	--	--	--	--	--	--
Neoceratiidae								
Neoceratias spinifer	--	--	--	--	--	--	--	--
Himantolophidae								

Table 5.--Continued.

Taxon	0-25 m		25-50 m		50-100 m		100-200 m	
	Mean	(SD)	Mean	(SD)	Mean	(SD)	Mean	(SD)
Unidentified Himantolophidae	--	--	0.302	(0.604)	--	--	--	--
Gadiformes								
Bregmacerotidae								
Bregmaceros spp.	--	--	--	--	--	--	--	--
B. cf. japonicus	--	--	--	--	--	--	--	--
B. cf. atlanticus	--	--	--	--	--	--	--	--
Macrouridae								
Unidentified Macrouridae	--	--	--	--	--	--	--	--
Ophidiiformes								
Unidentified Ophidiiformes	--	--	--	--	--	--	--	--
Beloniformes								
Hemiramphidae								
Oxyporhamphus micropterus	0.522	(1.044)	--	--	--	--	--	--
Belonidae								
Unidentified Belonidae	--	--	--	--	--	--	--	--
Beryciformes								
Melamphaidae								
Melamphaes sp.	--	--	--	--	--	--	--	--
M. cf. simus	--	--	--	--	--	--	--	--
M. cf. lugubris	--	--	--	--	--	--	--	--
M. type 3	--	--	--	--	--	--	--	--
Scopeloberyx spp.	--	--	--	--	--	--	--	--
S. opisthopterus	--	--	--	--	--	--	--	--
S. robustus	--	--	--	--	2.739	(2.591)	--	--
Stephanoberycidae?								
Unidentified Stephanoberycidae?	--	--	--	--	--	--	--	--
Anoplogastridae								
Anoplogaster cornuta	--	--	--	--	--	--	--	--
Berycidae								
Beryx spp.	16.425	(19.007)	7.404	(10.839)	--	--	--	--
Mirapinnidae								
Eutaeniophorus festivus	--	--	--	--	--	--	--	--
Lampriformes								
Trachipteridae								
Unidentified Trachipteridae	1.076	(2.152)	--	--	--	--	--	--
Trachipterus sp.	--	--	--	--	--	--	--	--
Zu cristatus	--	--	--	--	--	--	--	--
Scorpaeniformes								
Scorpaenidae	0.261	(0.522)	0.302	(0.604)	--	--	--	--
Perciformes								
Percoidei								

Table 5.--Continued.

Taxon	0-25 m		25-50 m		50-100 m		100-200 m	
	Mean	(SD)	Mean	(SD)	Mean	(SD)	Mean	(SD)
Incertae sedis								
Howella sp.	0.277	(0.554)	0.554	(1.108)	--	--	--	--
Serranidae								
Anthiinae	0.538	(0.622)	--	--	--	--	--	--
Callanthiidae								
Grammatonotus laysanus	0.277	(0.554)	--	--	--	--	--	--
Bramidae								
Pteraclis aesticola	--	--	--	--	--	--	--	--
Brama japonica	--	--	--	--	--	--	--	--
Caristiidae								
Caristius sp.	--	--	--	--	--	--	--	--
Emmelichthyidae								
Unidentified Emmelichthyidae	--	--	--	--	--	--	--	--
Carangoidei								
Carangidae								
Unidentified Carangidae	--	--	--	--	--	--	--	--
Coryphaenidae								
Unidentified Coryphaenidae	--	--	--	--	--	--	--	--
Coryphaena equiselis	1.631	(1.432)	--	--	--	--	--	--
Labroidei								
Labridae								
Unidentified Labridae	0.261	(0.522)	0.277	(0.554)	--	--	--	--
Scaridae								
Unidentified Scaridae	0.277	(0.554)	--	--	--	--	--	--
Trachinoidei								
Chiasmodontidae								
Unidentified Chiasmodontidae	7.426	(5.022)	4.383	(3.675)	--	--	0.612	(0.865)
Callionymoidei								
Callionymidae								
Unidentified Callionymidae	--	--	--	--	--	--	--	--
Gobioidei								
Gobiidae								
Unidentified Gobiidae	--	--	0.277	(0.554)	--	--	--	--
Acanthuroidei								
Acanthuridae								
Unidentified Acanthuridae	0.261	(0.522)	--	--	--	--	--	--

Table 5.--Continued.

Taxon	0-25 m		25-50 m		50-100 m		100-200 m	
	Mean	(SD)	Mean	(SD)	Mean	(SD)	Mean	(SD)
Scombroidei								
Gempylidae								
Unidentified Gempylidae	0.823	(1.059)	1.943	(3.181)	2.316	(3.019)	--	--
Gempylus serpens	0.261	(0.522)	--	--	--	--	--	--
Diplospinus multistriatus	--	--	1.132	(1.308)	--	--	--	--
Scombridae								
Unidentified Scombridae	0.261	(0.522)	--	--	--	--	--	--
Acanthocybium solandri	1.615	(1.866)	0.277	(0.554)	--	--	--	--
Katsuwonus pelamis	--	--	--	--	--	--	--	--
Thunnus spp.	0.554	(1.109)	--	--	--	--	--	--
Stromateoidei								
Nomeidae								
Cubiceps baxteri	--	--	--	--	--	--	--	--
Tetragonuridae								
Tetragonurus cuvieri	--	--	--	--	--	--	--	--
T. atlanticus	1.839	(0.954)	0.584	(0.67)	0.423	(0.732)	--	--
Pleuronectiformes								
Bothidae								
Unidentified Bothidae	0.783	(1.566)	0.302	(0.604)	--	--	--	--
Bothus sp.	0.522	(1.044)	--	--	--	--	--	--
Engyprosopon xenandrus	--	--	--	--	--	--	--	--
Tetraodontiformes								
Monacanthidae								
Unidentified Monacanthidae	--	--	--	--	--	--	--	--
Other Unidentified Larvae	21.175	(16.311)	19.491	(16.041)	10.151	(8.257)	2.923	(2.789)
Total fish larvae	916.893	(591.784)	621.290	(350.613)	244.698	(186.479)	23.922	(4.247)
Fish eggs	64.051	(43.921)	77.072	(84.945)	88.233	(51.927)	63.786	(59.054)
Zooplankton displacement (ml)	55.801	(16.432)	38.948	(20.158)	28.652	(17.694)	12.097	(3.661)
Squid paralarvae	39.898	(17.417)	8.191	(7.015)	0.845	(1.464)	0.000	(0.000)

Table 6.--Mean densities (larvae/1,000 m^3) of fish larvae in daytime samples during cruise 85-01 in February 1985 at Southeast Hancock Seamount. Each depth zone is represented by a total of four samples, including two from above the seamount and two 20 km west of the seamount.

Taxon	0-25 m		25-50 m		50-100 m		100-200 m	
	Mean	(SD)	Mean	(SD)	Mean	(SD)	Mean	(SD)
Anguilliformes								
Muraenidae								
Unidentified Muraenidae	--	--	--	--	--	--	--	--
Nettastomatidae								
Saurenchelys stylura	--	--	--	--	--	--	--	--
Congridae								
Ariosoma sp.	--	--	--	--	--	--	--	--
Ophichthidae								
Unidentified Ophichthidae	--	--	--	--	--	--	--	--
Derichthyidae								
Derichthys serpentinus	--	--	--	--	--	--	--	--
Saccopharyngiformes								
Cyematidae								
"Leptocephalus holti" type	--	--	--	--	0.544	(0.628)	--	--
Salmoniformes								
Microstomatidae								
Nansenia sp.	--	--	--	--	0.531	(0.613)	1.471	(1.150)
Bathylagidae								
Bathylagus longirostris	--	--	--	--	2.991	(3.484)	1.250	(2.499)
B. bericoides	--	--	--	--	--	--	--	--
Stomiiformes								
Unidentified Stomiiformes	--	--	0.780	(0.973)	0.819	(1.637)	3.392	(6.783)
Phosichthyidae								
Vinciguerria spp.	5.679	(5.293)	20.151	(10.770)	27.539	(6.257)	3.456	(2.601)
V. poweriae	--	--	0.284	(0.569)	3.055	(4.232)	1.500	(1.837)
V. nimbaria	3.931	(2.058)	1.374	(1.645)	1.637	(2.134)	--	--
V. attenuata	0.581	(1.163)	0.853	(1.706)	1.909	(1.845)	--	--
Woodsia nonsuchae	--	--	--	--	--	--	--	--
Ichthyococcus sp.	1.476	(0.572)	0.503	(1.005)	0.816	(1.044)	0.262	(0.525)
Gonostomatidae								
Gonostoma atlanticum	--	--	--	--	0.546	(1.091)	--	--
Cyclothone spp.	14.773	(5.811)	3.810	(2.662)	1.618	(1.081)	0.262	(0.525)
Diplophos spp.	--	--	--	--	--	--	--	--
Margrethia obtusirostra	--	--	--	--	--	--	0.262	(0.525)
Sternoptychidae								
Unidentified Sternoptychidae	--	--	--	--	0.541	(1.083)	23.371	(22.098)
Sternoptyx spp.	--	--	--	--	0.541	(1.083)	2.719	(3.315)
Argyropelecus spp.	--	--	--	--	1.083	(2.166)	8.675	(5.660)
Maurolicus muelleri	--	--	--	--	0.541	(1.083)	10.954	(12.476)

Table 6.--Continued.

Taxon	0-25 m		25-50 m		50-100 m		100-200 m	
	Mean	(SD)	Mean	(SD)	Mean	(SD)	Mean	(SD)
Valenciennellus tripunctulatus	--	--	--	--	--	--	1.403	(1.035)
Stomiidae								
Chauliodus sloani	0.841	(1.059)	4.769	(4.578)	18.955	(10.813)	6.787	(5.283)
Stomias (Macrostomias) sp.	--	--	--	--	--	--	--	--
Unidentified "Astronesthidae"	--	--	--	--	--	--	--	--
"Astronesthidae" Type 1	--	--	--	--	--	--	--	--
"Astronesthidae" Type 2	--	--	--	--	--	--	--	--
"Astronesthidae" Type 3	0.569	(0.658)	--	--	--	--	--	--
Neonesthes sp.	--	--	--	--	--	--	0.625	(1.250)
Unidentified "Melanostomiidae"	18.744	(8.564)	4.998	(4.294)	6.464	(1.613)	5.359	(2.377)
Eustomias spp.	--	--	--	--	--	--	--	--
Bathophilus spp.	0.326	(0.652)	--	--	--	--	--	--
Photonectes spp.	--	--	--	--	--	--	--	--
Opostomias mitsuii	1.166	(1.644)	1.126	(1.609)	0.546	(1.091)	0.283	(0.565)
Unidentified "Malacosteidae"	--	--	--	--	--	--	--	--
Idiacanthus sp.	--	--	--	--	--	--	--	--
Myctophiformes								
Scopelarchidae								
Unidentified Scopelarchidae	--	--	--	--	1.624	(3.249)	--	--
Scopelarchus analis	--	--	--	--	0.541	(1.083)	0.262	(0.525)
S. stephensi	--	--	6.046	(9.948)	8.411	(10.543)	3.880	(5.080)
Benthalbella sp.	--	--	--	--	--	--	--	--
B. infans	--	--	--	--	--	--	0.544	(0.629)
Paralepididae								
Unidentified Paralepididae	3.998	(3.548)	1.367	(1.079)	1.337	(1.008)	0.625	(1.250)
Sudis atrox	--	--	--	--	--	--	--	--
Stemonosudis macrura	--	--	--	--	--	--	--	--
Alepisauridae								
Alepisaurus ferox	--	--	--	--	--	--	--	--
Myctophidae								
Lampanyctinae								
Bolinichthys longipes	--	--	--	--	--	--	--	--
B. sp.	--	--	--	--	--	--	--	--
Ceratoscopelus townsendi	32.863	(21.632)	7.358	(6.284)	3.838	(4.225)	0.262	(0.525)
Diaphus spp.	18.376	(21.126)	7.343	(4.203)	0.786	(0.992)	--	--
Lampadena luminosa	0.326	(0.652)	--	--	--	--	--	--
L. urophaos	1.713	(2.216)	0.277	(0.555)	--	--	--	--
Lampanyctus spp.	43.978	(30.794)	9.827	(2.574)	2.686	(1.379)	1.333	(1.984)
Lobianchia gemellarii	--	--	--	--	0.528	(0.611)	--	--
Notolychnus valdiviae	--	--	--	--	--	--	--	--
Notoscopelus spp.	31.610	(23.958)	15.120	(6.936)	4.070	(2.891)	1.119	(0.862)

Table 6.--Continued.

Taxon	0-25 m		25-50 m		50-100 m		100-200 m	
	Mean	(SD)	Mean	(SD)	Mean	(SD)	Mean	(SD)
N. resplendens	0.872	(1.744)	--	--	0.258	(0.515)	0.283	(0.565)
Triphoturus nigrescens	--	--	--	--	--	--	--	--
Myctophinae								
Benthosema fibulatum	--	--	--	--	--	--	--	--
B. suborbitale	--	--	--	--	15.435	(16.924)	9.368	(7.333)
Centrobranchus sp.	--	--	--	--	0.258	(0.515)	--	--
Diogenichthys atlanticus	0.907	(1.128)	3.904	(4.509)	31.061	(23.423)	6.943	(3.521)
Electrona risso	--	--	--	--	0.812	(1.624)	1.562	(3.124)
Hygophum reinhardtii	2.064	(1.114)	2.146	(0.785)	0.553	(0.639)	--	--
Loweina rara	12.026	(4.176)	11.178	(11.948)	13.473	(5.272)	5.785	(8.039)
Myctophum spp.	--	--	0.809	(0.542)	0.788	(0.993)	--	--
M. nitidulum	1.774	(1.173)	1.917	(3.139)	1.943	(2.648)	--	--
M. selenops	--	--	--	--	0.258	(0.515)	--	--
Symbolophorus cf. *californiensis*	--	--	--	--	--	--	--	--
S. evermanni	--	--	0.547	(1.093)	0.544	(0.628)	--	--
Unidentified Myctophidae	7.917	(7.954)	6.914	(5.366)	5.857	(5.495)	0.564	(0.651)
Neoscopelidae								
Neoscopelus macrolepidotus	--	--	--	--	--	--	--	--
Evermannellidae								
Unidentified Evermannellidae	--	--	--	--	--	--	--	--
Lophiiformes								
Ceratioidei								
Unidentified Ceratioidei	--	--	--	--	--	--	--	--
Ceratiidae								
Unidentified Ceratiidae	--	--	--	--	--	--	--	--
Ceratias spp.	--	--	--	--	--	--	--	--
Cryptosaras couesi	--	--	--	--	--	--	--	--
Caulophrynidae								
Unidentified Caulophrynidae	--	--	--	--	--	--	--	--
Oneirodidae								
Unidentified Oneirodidae	--	--	--	--	--	--	--	--
Gigantactinidae								
Unidentified Gigantactinidae	--	--	--	--	--	--	--	--
Linophrynidae								
Unidentified Linophrynidae	--	--	--	--	--	--	0.283	(0.565)
Linophryne macrorhinus group	--	--	--	--	--	--	--	--
"*Edriolychnus*" group	--	--	0.569	(1.137)	2.732	(3.389)	2.187	(4.373)
Neoceratiidae								
Neoceratias spinifer	--	--	--	--	--	--	--	--
Himantolophidae								
Unidentified Himantolophidae	--	--	--	--	--	--	--	--

Table 6.--Continued.

Taxon	0-25 m		25-50 m		50-100 m		100-200 m	
	Mean	(SD)	Mean	(SD)	Mean	(SD)	Mean	(SD)
Gadiformes								
Bregmacerotidae								
Bregmaceros spp.	--	--	--	--	--	--	--	--
B. cf. japonicus	--	--	--	--	--	--	--	--
B. cf. atlanticus	--	--	--	--	--	--	--	--
Macrouridae								
Unidentified Macrouridae	--	--	--	--	--	--	0.283	(0.565)
Ophidiiformes								
Unidentified Ophidiiformes	0.326	(0.652)	--	--	--	--	0.312	(0.625)
Beloniformes								
Hemiramphidae								
Oxyporhamphus micropterus	--	--	--	--	--	--	--	--
Belonidae								
Unidentified Belonidae	--	--	--	--	--	--	--	--
Beryciformes								
Melamphaidae								
Melamphaes sp.	0.856	(1.108)	0.798	(1.040)	1.614	(1.391)	0.262	(0.525)
M. cf. simus	--	--	3.912	(3.511)	1.915	(2.418)	0.281	(0.563)
M. cf. lugubris	--	--	--	--	0.814	(1.037)	0.625	(1.250)
M. type 3	--	--	--	--	--	--	--	--
Scopeloberyx spp.	--	--	--	--	--	--	--	--
S. opisthopterus	--	--	--	--	--	--	--	--
S. robustus	0.291	(0.581)	1.950	(1.675)	3.768	(4.812)	0.283	(0.565)
Stephanoberycidae?								
Unidentified Stephanoberycidae?	--	--	--	--	--	--	--	--
Anoplogastridae								
Anoplogaster cornuta	--	--	0.569	(1.137)	0.273	(0.546)	--	--
Berycidae								
Beryx spp.	--	--	--	--	--	--	--	--
Mirapinnidae								
Eutaeniophorus festivus	0.907	(1.128)	0.558	(0.64)	--	--	0.544	(0.629)
Lampriformes								
Trachipteridae								
Unidentified Trachipteridae	--	--	--	--	--	--	--	--
Trachipterus sp.	--	--	--	--	--	--	--	--
Zu cristatus	--	--	--	--	--	--	--	--
Scorpaeniformes								
Scorpaenidae	0.326	(0.652)	--	--	0.271	(0.541)	--	--
Perciformes								
Percoidei								
Incertae sedis								

Table 6.--Continued.

Taxon	0-25 m		25-50 m		50-100 m		100-200 m	
	Mean	(SD)	Mean	(SD)	Mean	(SD)	Mean	(SD)
Howella sp.	--	--	--	--	--	--	--	--
Serranidae								
Anthiinae	--	--	--	--	--	--	--	--
Callanthiidae								
Grammatonotus laysanus	--	--	--	--	--	--	--	--
Bramidae								
Pteraclis aesticola	--	--	--	--	--	--	--	--
Brama japonica	1.770	(0.662)	1.115	(1.288)	0.515	(1.031)	--	--
Caristiidae								
Caristius sp.	--	--	0.251	(0.503)	--	--	--	--
Emmelichthyidae								
Unidentified Emmelichthyidae	--	--	--	--	--	--	--	--
Carangoidei								
Carangidae								
Unidentified Carangidae	--	--	--	--	--	--	--	--
Coryphaenidae								
Unidentified Coryphaenidae	--	--	--	--	--	--	--	--
Coryphaena equiselis	--	--	--	--	--	--	--	--
Labroidei								
Labridae								
Unidentified Labridae	0.326	(0.652)	--	--	--	--	--	--
Scaridae								
Unidentified Scaridae	--	--	--	--	--	--	--	--
Trachinoidei								
Chiasmodontidae								
Unidentified Chiasmodontidae	--	--	--	--	--	--	--	--
Callionymoidei								
Callionymidae								
Unidentified Callionymidae	--	--	--	--	--	--	--	--
Gobioidei								
Gobiidae								
Unidentified Gobiidae	--	--	--	--	--	--	--	--
Acanthuroidei								
Acanthuridae								
Unidentified Acanthuridae	--	--	--	--	--	--	--	--
Scombroidei								
Gempylidae								
Unidentified Gempylidae	--	--	--	--	--	--	--	--
Gempylus serpens	--	--	--	--	--	--	--	--
Diplospinus multistriatus	--	--	0.558	(0.644)	--	--	--	--
Scombridae								

Table 6.--Continued.

Taxon	0-25 m		25-50 m		50-100 m		100-200 m	
	Mean	(SD)	Mean	(SD)	Mean	(SD)	Mean	(SD)
Unidentified Scombridae	--	--	--	--	--	--	--	--
Acanthocybium solandri	--	--	--	--	--	--	--	--
Katsuwonus pelamis	--	--	--	--	--	--	--	--
Thunnus spp.	--	--	--	--	--	--	--	--
Stromateoidei								
Nomeidae								
Cubiceps baxteri	0.907	(1.128)	0.284	(0.569)	--	--	--	--
Tetragonuridae								
Tetragonurus cuvieri	0.652	(1.304)	0.503	(1.005)	--	--	--	--
T. atlanticus	--	--	--	--	--	--	--	--
Pleuronectiformes								
Bothidae								
Unidentified Bothidae	--	--	--	--	--	--	--	--
Bothus sp.	--	--	--	--	--	--	--	--
Engyprosopon xenandrus	--	--	--	--	--	--	--	--
Tetraodontiformes								
Monacanthidae								
Unidentified Monacanthidae	--	--	--	--	--	--	--	--
Other unidentified larvae	14.319	(11.200)	3.579	(2.564)	7.129	(5.881)	3.983	(1.966)
Total fish larvae	227.193	(86.408)	128.046	(53.744)	184.769	(56.102)	114.391	(50.778)
Fish eggs	211.436	(181.156)	154.468	(36.549)	120.906	(38.295)	46.113	(16.572)
Zooplankton displacement (ml)	100.909	(52.554)	45.906	(14.345)	37.888	(19.103)	17.033	(6.037)
Squid paralarvae	28.014	(16.802)	9.413	(5.052)	7.472	(4.056)	7.426	(7.610)

Table 7.--Mean densities (larvae/1,000 m^3) of fish larvae in night samples from the Southeast Hancock Seamount during cruise 85-01 in February 1984. Each depth zone is represented by a total of four samples, including two from above the seamount and two 20 km west of the seamount.

	0-25 m		25-50 m		50-100 m		100-200 m	
Taxon	Mean	(SD)	Mean	(SD)	Mean	(SD)	Mean	(SD)
Anguilliformes								
Muraenidae								
Unidentified Muraenidae	--	--	--	--	--	--	--	--
Nettastomatidae								
Saurenchelys stylura	--	--	--	--	--	--	--	--
Congridae								
Ariosoma sp.	--	--	--	--	--	--	--	--
Ophichthidae								
Unidentified Ophichthidae	--	--	--	--	--	--	--	--
Derichthyidae								
Derichthys serpentinus	--	--	--	--	--	--	--	--
Saccopharyngiformes								
Cyematidae								
"Leptocephalus holti" type	--	--	--	--	--	--	--	--
Salmoniformes								
Microstomatidae								
Nansenia sp.	--	--	--	--	1.741	(1.140)	0.880	(0.587)
Bathylagidae								
Bathylagus longirostris	--	--	--	--	3.279	(5.870)	3.885	(2.047)
B. bericoides	--	--	--	--	--	--	0.292	(0.584)
Stomiiformes								
Unidentified Stomiiformes	1.130	(2.261)	1.440	(2.879)	0.266	(0.533)	0.584	(1.168)
Phosichthyidae								
Vinciguerria spp.	0.300	(0.600)	22.728	(11.170)	41.389	(35.689)	14.159	(15.698)
V. poweriae	--	--	0.556	(0.643)	11.783	(10.254)	6.607	(2.363)
V. nimbaria	1.148	(1.599)	15.526	(6.806)	10.639	(6.592)	1.934	(1.329)
V. attenuata	--	--	1.604	(0.570)	3.702	(2.952)	0.904	(1.809)
Woodsia nonsuchae	--	--	--	--	--	--	--	--
Ichthyococcus sp.	0.569	(0.659)	2.986	(1.838)	2.694	(2.025)	0.292	(0.584)
Gonostomatidae								
Gonostoma atlanticum	--	--	--	--	--	--	--	--
Cyclothone spp.	32.047	(33.929)	26.741	(26.064)	3.131	(1.645)	3.748	(4.030)
Diplophos spp.	--	--	--	--	--	--	--	--
Margrethia obtusirostra	--	--	--	--	--	--	--	--
Sternoptychidae								
Unidentified Sternoptychidae	--	--	--	--	4.584	(4.632)	6.867	(8.299)
Sternoptyx spp.	--	--	--	--	2.343	(4.687)	4.627	(3.037)
Argyropelecus spp.	--	--	--	--	1.674	(3.348)	5.850	(3.669)
Maurolicus muelleri	--	--	--	--	7.296	(13.891)	4.893	(3.217)

Table 7.--Continued.

Taxon	0-25 m		25-50 m		50-100 m		100-200 m	
	Mean	(SD)	Mean	(SD)	Mean	(SD)	Mean	(SD)
Valenciennellus tripunctulatus	--	--	--	--	--	--	2.597	(1.522)
Stomiidae								
Chauliodus sloani	--	--	1.879	(1.777)	11.789	(7.387)	5.439	(3.129)
Stomias (Macrostomias) sp.	--	--	--	--	--	--	--	--
Unidentified "Astronesthidae"	--	--	--	--	--	--	--	--
"Astronesthidae" Type 1	--	--	--	--	--	--	--	--
"Astronesthidae" Type 2	--	--	--	--	--	--	--	--
"Astronesthidae" Type 3	0.300	(0.600)	--	--	--	--	--	--
Neonesthes sp.	--	--	--	--	0.335	(0.670)	0.301	(0.603)
Unidentified "Melanostomiidae"	9.918	(3.390)	15.418	(9.737)	1.974	(1.793)	1.604	(1.719)
Eustomias spp.	--	--	--	--	--	--	--	--
Bathophilus spp.	--	--	--	--	--	--	--	--
Photonectes spp.	--	--	--	--	--	--	--	--
Opostomias mitsuii	2.606	(3.420)	4.664	(2.632)	0.825	(1.065)	0.301	(0.603)
Unidentified "Malacosteidae"	--	--	--	--	--	--	--	--
Idiacanthus sp.	0.806	(1.612)	--	--	0.279	(0.558)	--	--
Myctophiformes								
Scopelarchidae								
Unidentified Scopelarchidae	--	--	--	--	--	--	--	--
Scopelarchus analis	--	--	--	--	0.601	(0.703)	1.370	(1.032)
S. stephensi	0.283	(0.565)	3.105	(4.165)	7.850	(13.542)	10.209	(6.428)
Benthalbella sp.	--	--	--	--	--	--	0.584	(1.168)
B. infans	--	--	--	--	--	--	0.505	(1.010)
Paralepididae								
Unidentified Paralepididae	1.412	(1.105)	4.615	(1.180)	2.258	(1.176)	1.044	(1.431)
Sudis atrox	--	--	--	--	--	--	--	--
Stemonosudis macrura	--	--	--	--	--	--	--	--
Alepisauridae								
Alepisaurus ferox	--	--	--	--	--	--	--	--
Myctophidae								
Lampanyctinae								
Bolinichthys longipes	--	--	--	--	--	--	--	--
B. sp.	--	--	--	--	--	--	--	--
Ceratoscopelus townsendi	16.023	(27.789)	28.649	(34.906)	10.104	(7.942)	4.277	(2.649)
Diaphus spp.	1.501	(3.001)	17.826	(21.158)	13.165	(16.283)	5.452	(4.275)
Lampadena luminosa	--	--	--	--	--	--	--	--
L. urophaos	2.261	(4.521)	0.576	(1.152)	0.335	(0.670)	0.301	(0.603)
Lampanyctus spp.	18.384	(13.351)	47.794	(43.540)	16.637	(15.119)	4.020	(3.109)
Lobianchia gemellarii	--	--	0.268	(0.536)	2.179	(2.316)	0.904	(1.809)
Notolychnus valdiviae	--	--	--	--	0.266	(0.533)	0.301	(0.603)
Notoscopelus spp.	0.869	(1.140)	14.582	(4.698)	14.928	(2.604)	2.339	(2.461)

Table 7.--Continued.

Taxon	0-25 m		25-50 m		50-100 m		100-200 m	
	Mean	(SD)	Mean	(SD)	Mean	(SD)	Mean	(SD)
N. resplendens	--	--	1.608	(3.216)	4.587	(3.520)	2.284	(1.978)
Triphoturus nigrescens	--	--	--	--	--	--	--	--
Myctophinae								
Benthosema fibulatum	--	--	--	--	0.335	(0.670)	0.253	(0.505)
B. suborbitale	--	--	4.827	(6.152)	22.216	(18.317)	6.927	(6.729)
Centrobranchus sp.	--	--	--	--	--	--	--	--
Diogenichthys atlanticus	1.430	(2.137)	10.794	(9.362)	51.698	(29.362)	26.466	(15.142)
Electrona risso	--	--	0.268	(0.536)	--	--	2.741	(2.063)
Hygophum reinhardtii	--	--	3.712	(2.452)	3.668	(3.306)	1.050	(1.431)
Loweina rara	--	--	14.264	(8.365)	24.789	(13.725)	10.125	(2.196)
Myctophum spp.	--	--	0.288	(0.576)	0.287	(0.574)	0.287	(0.573)
M. nitidulum	--	--	2.124	(4.248)	1.878	(3.057)	1.182	(0.985)
M. selenops	--	--	--	--	--	--	--	--
Symbolophorus cf. *californiensis*	0.269	(0.537)	0.806	(1.003)	0.335	(0.670)	0.292	(0.584)
Symbolophorus evermanni	--	--	1.357	(1.345)	0.533	(1.066)	0.554	(0.645)
Unidentified Myctophidae	19.707	(29.355)	4.347	(1.383)	5.894	(3.580)	1.093	(0.831)
Neoscopelidae								
Neoscopelus macrolepidotus	--	--	--	--	--	--	--	--
Evermannellidae								
Unidentified Evermannellidae	--	--	--	--	--	--	--	--
Lophiiformes								
Ceratioidei								
Unidentified Ceratioidei	--	--	--	--	--	--	--	--
Ceratiidae								
Unidentified Ceratiidae	--	--	--	--	--	--	--	--
Ceratias spp.	--	--	--	--	--	--	--	--
Cryptopsaras couesi	--	--	--	--	--	--	--	--
Caulophrynidae								
Unidentified Caulophrynidae	--	--	--	--	--	--	--	--
Oneirodidae								
Unidentified Oneirodidae	--	--	--	--	--	--	--	--
Gigantactinidae								
Unidentified Gigantactinidae	--	--	--	--	--	--	--	--
Linophrynidae								
Unidentified Linophrynidae	--	--	--	--	--	--	--	--
Linophryne macrorhinus group	--	--	--	--	--	--	--	--
"*Edriolychnus*" group	--	--	--	--	1.995	(1.628)	0.841	(0.566)
Neoceratiidae								
Neoceratias spinifer	--	--	--	--	--	--	--	--
Himantolophidae								
Unidentified Himantolophidae	--	--	--	--	--	--	--	--

Table 7.--Continued.

Taxon	0-25 m Mean	0-25 m (SD)	25-50 m Mean	25-50 m (SD)	50-100 m Mean	50-100 m (SD)	100-200 m Mean	100-200 m (SD)
Gadiformes								
Bregmacerotidae								
Bregmaceros spp.	--	--	--	--	--	--	--	--
B. cf. *japonicus*	--	--	--	--	--	--	--	--
B. cf. *atlanticus*	--	--	--	--	--	--	--	--
Macrouridae								
Unidentified Macrouridae	--	--	--	--	--	--	0.895	(1.151)
Ophidiiformes								
Unidentified Ophidiiformes	--	--	--	--	--	--	--	--
Beloniformes								
Hemiramphidae								
Oxyporhamphus micropterus	--	--	--	--	--	--	--	--
Belonidae								
Unidentified Belonidae	--	--	--	--	--	--	--	--
Beryciformes								
Melamphaidae								
Melamphaes sp.	--	--	1.035	(2.070)	0.566	(0.654)	0.594	(0.686)
M. cf. *simus*	0.283	(0.565)	3.271	(3.160)	0.908	(1.119)	--	--
M. cf. *lugubris*	--	--	--	--	2.473	(3.193)	0.253	(0.505)
M. type 3	--	--	--	--	0.335	(0.670)	--	--
Scopeloberyx spp.	--	--	--	--	--	--	0.292	(0.584)
S. opisthopterus	--	--	--	--	--	--	--	--
S. robustus	--	--	0.815	(0.545)	4.570	(4.705)	2.095	(3.469)
Stephanoberycidae?								
Unidentified Stephanoberycidae?	--	--	--	--	--	--	--	--
Anoplogastridae								
Anoplogaster cornuta	--	--	--	--	--	--	--	--
Berycidae								
Beryx spp.	--	--	--	--	--	--	--	--
Mirapinnidae								
Eutaeniophorus festivus	--	--	0.821	(0.549)	--	--	0.292	(0.584)
Lampriformes								
Trachipteridae								
Unidentified Trachipteridae	--	--	--	--	--	--	--	--
Trachipterus sp.	--	--	--	--	0.266	(0.533)	--	--
Zu cristatus	--	--	--	--	--	--	--	--
Scorpaeniformes								
Scorpaenidae	--	--	--	--	--	--	--	--
Perciformes								
Percoidei								
Incertae sedis								

Table 7.--Continued.

Taxon	0-25 m		25-50 m		50-100 m		100-200 m	
	Mean	(SD)	Mean	(SD)	Mean	(SD)	Mean	(SD)
Howella sp.	--	--	--	--	--	--	--	--
Serranidae								
Anthiinae	--	--	--	--	--	--	--	--
Callanthiidae								
Grammatonotus laysanus	--	--	--	--	--	--	--	--
Bramidae								
Pteraclis aesticola	--	--	--	--	--	--	--	--
Brama japonica	--	--	1.600	(1.332)	0.553	(0.640)	--	--
Caristiidae								
Caristius sp.	--	--	--	--	--	--	--	--
Emmelichthyidae								
Unidentified Emmelichthyidae	--	--	--	--	--	--	--	--
Carangoidei								
Carangidae								
Unidentified Carangidae	--	--	--	--	--	--	--	--
Coryphaenidae								
Unidentified Coryphaenidae	--	--	--	--	--	--	--	--
Coryphaena equiselis	--	--	--	--	--	--	--	--
Labroidei								
Labridae								
Unidentified Labridae	--	--	--	--	--	--	--	--
Scaridae								
Unidentified Scaridae	--	--	--	--	--	--	--	--
Trachinoidei								
Chiasmodontidae								
Unidentified Chiasmodontidae	--	--	--	--	--	--	--	--
Callionymoidei								
Callionymidae								
Unidentified Callionymidae	--	--	--	--	--	--	--	--
Gobioidei								
Gobiidae								
Unidentified Gobiidae	--	--	--	--	--	--	--	--
Acanthuroidei								
Acanthuridae								
Unidentified Acanthuridae	--	--	--	--	--	--	--	--
Scombroidei								
Gempylidae								
Unidentified Gempylidae	--	--	--	--	--	--	--	--
Gempylus serpens	--	--	--	--	--	--	--	--
Diplospinus multistriatus	--	--	0.268	(0.536)	0.533	(1.066)	--	--
Scombridae								

Table 7.--Continued.

Taxon	0-25 m		25-50 m		50-100 m		100-200 m	
	Mean	(SD)	Mean	(SD)	Mean	(SD)	Mean	(SD)
Unidentified Scombridae	--	--	--	--	--	--	--	--
Acanthocybium solandri	--	--	--	--	--	--	--	--
Katsuwonus pelamis	--	--	--	--	--	--	--	--
Thunnus spp.	--	--	--	--	--	--	--	--
Stromateoidei								
Nomeidae								
Cubiceps baxteri	--	--	--	--	--	--	--	--
Tetragonuridae								
Tetragonurus cuvieri	--	--	--	--	--	--	0.301	(0.603)
T. atlanticus	--	--	--	--	--	--	--	--
Pleuronectiformes								
Bothidae								
Unidentified Bothidae	--	--	--	--	--	--	--	--
Bothus sp.	--	--	--	--	--	--	--	--
Engyprosopon xenandrus	--	--	--	--	--	--	--	--
Tetraodontiformes								
Monacanthidae								
Unidentified Monacanthidae	--	--	--	--	--	--	--	--
Other unidentified larvae	3.068	(0.450)	7.078	(3.541)	4.915	(2.113)	4.256	(4.810)
Total fish larvae	114.312	(88.037)	270.238	(143.977)	311.383	(165.830)	160.146	(56.277)
Fish eggs	155.828	(10.148)	111.677	(26.492)	68.956	(33.652)	40.673	(16.076)
Zooplankton displacement (ml)	141.039	(32.247)	84.164	(29.939)	51.238	(21.178)	32.759	(6.332)
Squid paralarvae	7.523	(5.555)	10.857	(5.259)	13.467	(10.252)	7.750	(3.008)

Table 8.--Mean densities (larvae/1,000 m^3) of fish larvae in daytime samples from catches taken above and 20 km west of the Southeast Hancock Seamount during cruise 84-05 July 1984. Each depth zone is represented by two samples; "on" indicates the sampling station above the seamount, and "off" indicates the station 20 km west.

Taxon	0-25 m		25-50 m		50-100 m		100-200 m	
	On	Off	On	Off	On	Off	On	Off
Anguilliformes								
Muraenidae								
Unidentified Muraenidae	--	--	--	--	--	--	--	--
Nettastomatidae								
Saurenchelys stylura	--	--	--	--	--	--	--	--
Congridae								
Ariosoma sp.	--	--	--	--	--	--	--	--
Ophichthidae								
Unidentified Ophichthidae	--	--	--	--	--	--	--	--
Derichthyidae								
Derichthys serpentinus	--	--	--	--	--	--	--	--
Saccopharyngiformes								
Cyematidae								
"Leptocephalus holti" type	--	--	--	--	--	--	--	--
Salmoniformes								
Microstomatidae								
Nansenia sp.	--	--	--	--	--	--	--	--
Bathylagidae								
Bathylagus longirostris	--	--	--	--	1.112	1.549	--	--
B. bericoides	--	--	--	--	--	--	--	--
Stomiiformes								
Unidentified Stomiiformes	6.653	3.519	4.008	8.474	--	8.072	1.591	--
Phosichthyidae								
Vinciguerria spp.	--	1.179	14.467	9.888	25.949	88.003	3.229	--
V. poweriae	--	--	--	--	--	--	--	--
V. nimbaria	14.981	12.17	60.126	28.246	44.233	78.214	3.253	1.651
V. attenuata	--	--	--	0.706	0.551	--	--	0.537
Woodsia nonsuchae	--	--	--	--	--	0.503	--	--
Ichthyococcus sp.	--	--	--	--	--	--	--	--
Gonostomatidae								
Gonostoma atlanticum	--	--	--	--	--	--	--	--
Cyclothone spp.	358.426	226.185	143.298	146.050	6.633	1.026	1.615	1.114
Diplophos spp.	--	2.303	--	--	--	--	--	--
Margrethia obtusirostra	--	--	--	--	--	--	--	0.537
Sternoptychidae								
Unidentified Sternoptychidae	--	--	--	--	--	--	0.554	0.537
Sternoptyx spp.	--	--	--	--	--	--	5.444	3.839
Argyropelecus spp.	--	--	--	--	--	--	1.615	1.074
Maurolicus muelleri	--	--	--	--	--	--	--	--

Table 8.--Continued.

Taxon	0-25 m		25-50 m		50-100 m		100-200 m	
	On	Off	On	Off	On	Off	On	Off
Valenciennellus tripunctulatus	--	--	--	--	--	--	1.061	1.114
Stomiidae								
Chauliodus sloani	--	--	--	--	--	--	--	--
Stomias (Macrostomias) sp.	--	--	--	--	--	--	--	--
Unidentified "Astronesthidae"	22.743	--	--	--	--	--	0.530	--
"Astronesthidae" Type 1	0.554	4.680	26.682	17.451	9.391	8.229	0.530	0.537
"Astronesthidae" Type 2	--	--	--	--	--	--	--	--
"Astronesthidae" Type 3	--	--	--	--	--	--	--	--
Neonesthes sp.	--	--	--	--	--	--	--	--
Unidentified "Melanostomiidae"	--	--	--	--	--	0.503	--	--
Eustomias spp.	0.554	--	--	0.605	--	--	--	--
Bathophilus spp.	--	--	--	--	--	--	--	--
Photonectes spp.	--	--	--	--	0.551	--	--	--
Opostomias mitsuii	--	--	--	--	--	--	--	--
Unidentified "Malacosteidae"	--	--	--	--	--	--	--	--
Idiacanthus sp.	--	--	--	--	--	--	--	--
Myctophiformes								
Scopelarchidae								
Unidentified Scopelarchidae	--	--	--	--	--	--	--	--
Scopelarchus analis	--	--	--	--	--	--	--	--
S. stephensi	--	--	--	--	--	--	--	--
Benthalbella sp.	--	--	--	--	--	--	--	--
B. infans	--	--	--	--	--	--	--	--
Paralepididae								
Unidentified Paralepididae	0.554	0.590	23.487	3.934	11.048	6.680	0.554	0.557
Sudis atrox	--	--	--	--	0.556	--	--	--
Stemonosudis macrura	0.554	--	1.377	0.706	0.556	--	--	--
Alepisauridae								
Alepisaurus ferox	--	--	--	1.917	--	--	--	--
Myctophidae								
Lampanyctinae								
Bolinichthys longipes	--	7.423	--	--	--	--	--	--
B. sp.	--	--	--	--	--	--	--	--
Ceratoscopelus townsendi	8.890	18.092	1.253	6.962	--	--	--	--
Diaphus spp.	9.426	9.229	2.568	13.114	2.202	8.287	--	--
Lampadena luminosa	--	--	--	--	--	--	--	--
L. urophaos	4.441	12.102	2.066	1.210	--	--	--	--
Lampanyctus spp.	1.668	9.378	9.957	27.036	1.106	9.294	--	--
Lobianchia gemellarii	--	--	--	2.119	--	0.503	--	--
Notolychnus valdiviae	--	--	--	--	--	1.026	--	--
N. spp.	--	--	--	--	--	--	--	--

Table 8.--Continued.

Taxon	0-25 m		25-50 m		50-100 m		100-200 m	
	On	Off	On	Off	On	Off	On	Off
N. resplendens	--	--	--	--	--	--	--	--
Triphoturus nigrescens	2.218	5.232	--	1.210	--	--	--	--
Myctophinae								
Benthosema fibulatum	--	--	--	--	--	--	--	--
B. suborbitale	--	--	--	--	3.319	21.876	1.638	1.651
Centrobranchus sp.	--	--	0.627	--	0.556	--	--	--
Diogenichthys atlanticus	0.556	--	0.627	--	22.116	39.418	5.398	8.195
Electrona risso	--	--	--	--	--	--	--	--
Hygophum reinhardtii	--	0.590	9.020	1.815	6.077	21.509	1.638	0.537
Loweina rara	--	--	--	--	--	--	--	--
Myctophum spp.	--	--	3.133	--	0.551	--	--	--
M. nitidulum	--	--	2.066	--	0.551	4.085	--	--
M. selenops	--	--	0.689	--	--	--	--	--
Symbolophorus cf. californiensis	--	--	--	--	--	--	--	--
S. evermanni	--	--	0.627	--	--	0.523	--	--
Unidentified Myctophidae	32.189	11.718	30.305	20.276	7.729	12.758	1.591	0.557
Neoscopelidae								
Neoscopelus macrolepidotus	--	0.590	--	--	--	--	--	--
Evermannellidae								
Unidentified Evermannellidae	--	1.750	--	--	--	--	--	--
Lophiiformes								
Ceratioidei								
Unidentified Ceratioidei	2.777	8.732	0.689	0.706	--	--	--	--
Ceratiidae								
Unidentified Ceratiidae	--	--	--	--	--	--	--	--
Ceratias spp.	--	--	--	--	--	--	--	--
Cryptopsaras couesi	--	0.571	--	--	--	--	--	--
Caulophrynidae								
Unidentified Caulophrynidae	--	--	--	--	--	--	--	--
Oneirodidae								
Unidentified Oneirodidae	0.556	--	0.627	0.706	--	--	0.530	--
Gigantactinidae								
Unidentified Gigantactinidae	0.556	--	--	--	--	--	--	--
Linophrynidae								
Unidentified Linophrynidae	--	--	--	--	--	--	--	--
Linophryne macrorhinus group	--	--	--	--	--	--	--	--
"Edriolychnus" group	--	--	--	--	--	--	--	--
Neoceratiidae								
Neoceratias spinifer	--	--	--	--	--	--	--	--
Himantolophidae								
Unidentified Himantolophidae	--	0.571	--	--	--	--	--	--

Table 8.--Continued.

Taxon	0-25 m		25-50 m		50-100 m		100-200 m	
	On	Off	On	Off	On	Off	On	Off
Gadiformes								
Bregmacerotidae								
Bregmaceros spp.	--	--	--	--	0.551	--	--	--
B. cf. japonicus	--	--	--	--	--	1.510	--	--
B. cf. atlanticus	--	--	--	--	--	--	--	--
Macrouridae								
Unidentified Macrouridae	--	--	--	--	--	--	--	--
Ophidiiformes								
Unidentified Ophidiiformes	--	--	--	--	--	--	--	--
Beloniformes								
Hemiramphidae								
Oxyporhamphus micropterus	--	--	--	--	--	--	--	--
Belonidae								
Unidentified Belonidae	--	--	--	--	--	--	--	--
Beryciformes								
Melamphaidae								
Melamphaes sp.	--	--	--	0.706	--	0.523	--	--
M. cf. simus	--	--	--	0.706	--	0.503	--	--
M. cf. lugubris	--	--	--	--	--	--	--	--
M. type 3	--	--	--	--	--	--	--	--
Scopeloberyx spp.	--	--	--	--	--	--	--	--
S. opisthopterus	--	--	--	--	--	--	--	--
S. robustus	--	--	--	--	1.662	3.582	--	--
Stephanoberycidae?								
Unidentified Stephanoberycidae?	--	--	--	--	--	--	--	--
Anoplogastridae								
Anoplogaster cornuta	--	--	--	--	--	--	--	--
Berycidae								
Beryx spp.	0.554	0.590	1.377	--	--	--	--	--
Mirapinnidae								
Eutaeniophorus festivus	--	--	--	--	--	--	--	--
Lampriformes								
Trachipteridae								
Unidentified Trachipteridae	--	--	--	--	--	--	--	--
Trachipterus sp.	--	--	--	--	--	--	--	--
Zu cristatus	--	0.571	--	--	--	--	--	--
Scorpaeniformes								
Scorpaenidae	0.556	--	--	--	--	--	--	--
Perciformes								
Percoidei								
Incertae sedis								

Table 8.--Continued.

Taxon	0-25 m		25-50 m		50-100 m		100-200 m	
	On	Off	On	Off	On	Off	On	Off
Howella sp.	--	--	--	--	--	--	--	--
Serranidae								
Anthiinae	--	--	--	--	--	--	--	--
Callanthiidae								
Grammatonotus laysanus	--	--	--	--	--	--	--	--
Bramidae								
Pteraclis aesticola	0.554	--	--	--	--	--	--	--
Brama japonica	--	--	--	--	--	--	--	--
Caristiidae								
Caristius sp.	--	--	1.315	--	--	--	--	--
Emmelichthyidae								
Unidentified Emmelichthyidae	--	--	--	--	--	--	--	--
Carangoidei								
Carangidae								
Unidentified Carangidae	--	--	--	--	--	--	--	--
Coryphaenidae								
Unidentified Coryphaenidae	--	1.179	--	--	--	--	--	--
Coryphaena equiselis	1.108	1.142	--	1.210	--	--	--	--
Labroidei								
Labridae								
Unidentified Labridae	--	--	--	--	--	--	--	--
Scaridae								
Unidentified Scaridae	--	--	--	--	--	--	--	--
Trachinoidei								
Chiasmodontidae								
Unidentified Chiasmodontidae	3.327	2.855	2.630	1.917	0.551	--	--	--
Callionymoidei								
Callionymidae								
Unidentified Callionymidae	--	--	--	--	--	--	--	--
Gobioidei								
Gobiidae								
Unidentified Gobiidae	--	--	--	--	--	--	--	--
Acanthuroidei								
Acanthuridae								
Unidentified Acanthuridae	--	--	--	--	--	--	--	--
Scombroidei								
Gempylidae								
Unidentified Gempylidae	--	--	5.013	5.851	1.106	7.745	--	--
Gempylus serpens	--	--	--	--	--	--	--	--
Diplospinus multistriatus	--	--	1.880	3.532	--	--	--	--
Scombridae								

Table 8.--Continued.

Taxon	0-25 m		25-50 m		50-100 m		100-200 m	
	On	Off	On	Off	On	Off	On	Off
Unidentified Scombridae	--	--	--	--	--	--	--	--
Acanthocybium solandri	--	--	--	0.605	--	--	--	--
Katsuwonus pelamis	--	--	--	--	--	--	--	--
Thunnus spp.	--	--	--	--	--	--	--	--
Stromateoidei								
Nomeidae								
Cubiceps baxteri	--	--	--	--	--	--	--	--
Tetragonuridae								
Tetragonurus cuvieri	--	--	--	--	--	--	--	--
Tetragonurus atlanticus	--	5.269	0.689	1.413	--	--	--	--
Pleuronectiformes								
Bothidae								
Unidentified Bothidae	--	--	--	--	--	--	--	--
Bothus sp.	--	--	--	--	--	--	--	--
Engyprosopon xenandrus	--	--	0.689	--	--	--	--	--
Tetraodontiformes								
Monacanthidae								
Unidentified Monacanthidae	--	--	--	--	--	--	--	--
Other unidentified larvae	8.332	28.686	30.057	24.409	14.870	21.764	4.360	1.651
Total fish larvae	482.725	376.902	381.345	333.482	163.523	347.684	35.132	24.088
Fish eggs	220.830	516.768	132.634	129.437	118.310	51.169	65.782	21.982
Zooplankton displacement (ml)	37.178	38.908	45.281	39.844	81.706	88.750	17.925	14.881
Squid paralarvae	3.887	32.243	10.459	15.231	2.207	14.869	0.000	1.094

Table 9.--Mean densities (larvae/1,000 m^3) of fish larvae in night samples from the first sampling series (9-11 July 1984) above and 20 km west of the Southeast Hancock Seamount during cruise 84-05. Each depth zone is usually represented by two samples, except only one sample was taken at the 25-50 m depth west of the seamount.

Taxon	0-25 m		25-50 m		50-100 m		100-200 m	
	On	Off	On	Off	On	Off	On	Off
Anguilliformes								
Muraenidae								
Unidentified Muraenidae	--	--	--	--	0.511	--	--	--
Nettastomatidae								
Saurenchelys stylura	0.599	--	--	--	--	--	--	--
Congridae								
Ariosoma sp.	--	0.568	--	--	--	--	--	--
Ophichthidae								
Unidentified Ophichthidae	0.599	--	--	--	--	--	--	--
Derichthyidae								
Derichthys serpentinus	--	--	--	--	--	--	--	--
Saccopharyngiformes								
Cyematidae								
"Leptocephalus holti" type	--	--	--	--	--	--	--	--
Salmoniformes								
Microstomatidae								
Nansenia sp.	--	--	--	--	--	--	--	--
Bathylagidae								
Bathylagus longirostris	--	--	--	--	--	2.004	0.526	2.147
B. bericoides	--	--	--	--	--	--	--	--
Stomiiformes								
Unidentified Stomiiformes	10.507	9.594	2.918	--	0.511	0.615	--	--
Phosichthyidae								
Vinciguerria spp.	1.728	2.996	89.756	14.982	69.482	33.936	1.579	2.147
V. poweriae	--	--	--	--	7.152	5.580	1.053	1.011
V. nimbaria	48.330	251.053	89.792	488.648	33.718	147.137	1.118	10.866
V. attenuata	--	--	--	--	7.153	2.004	--	0.506
Woodsia nonsuchae	--	--	--	--	1.022	0.501	--	--
Ichthyococcus sp.	--	--	--	--	--	0.501	--	--
Gonostomatidae								
Gonostoma atlanticum	--	--	0.572	--	4.087	3.120	--	--
Cyclothone spp.	1240.142	1979.650	665.037	562.406	4.597	44.599	1.118	9.287
Diplophos spp.	1.796	2.389	0.628	--	--	--	--	--
Margrethia obtusirostra	--	--	--	--	--	--	0.559	0.506
Sternoptychidae								
Unidentified Sternoptychidae	--	--	--	--	--	--	0.526	1.011
Sternoptyx spp.	--	--	--	--	--	--	1.085	15.285
Argyropelecus spp.	--	--	--	--	--	--	1.053	6.316
Maurolicus muelleri	--	--	--	--	--	--	--	--

Table 9.--Continued.

Taxon	0-25 m		25-50 m		50-100 m		100-200 m	
	On	Off	On	Off	On	Off	On	Off
Valenciennellus tripunctulatus	--	--	--	--	--	--	3.256	15.540
Stomiidae								
Chauliodus sloani	--	--	--	--	--	0.501	--	--
Stomias (Macrostomias) sp.	--	1.135	--	1.152	--	--	--	--
Unidentified "Astronesthidae"	--	--	--	--	--	--	--	--
"Astronesthidae" Type 1	11.241	23.201	11.098	4.610	--	0.615	--	0.506
"Astronesthidae" Type 2	--	--	--	1.152	--	--	--	--
"Astronesthidae" Type 3	--	--	--	--	--	--	--	--
Neonesthes sp.	--	--	--	--	--	--	--	--
Unidentified "Melanostomiidae"	--	0.607	--	--	--	--	--	--
Eustomias spp.	1.762	--	--	--	--	0.615	--	--
Bathophilus spp.	--	--	--	--	--	--	--	--
Photonectes spp.	--	--	--	--	--	--	--	--
Opostomias mitsuii	--	--	--	--	--	--	--	--
Unidentified "Malacosteidae"	--	0.607	--	--	--	--	--	--
Idiacanthus sp.	--	--	--	--	--	--	--	--
Myctophiformes								
Scopelarchidae								
Unidentified Scopelarchidae	--	--	--	--	--	--	0.526	--
Scopelarchus analis	--	--	--	--	--	--	0.559	1.136
S. stephensi	--	--	--	--	--	--	--	--
Benthalbella sp.	--	--	--	--	--	--	--	--
B. infans	--	--	--	--	--	--	--	--
Paralepididae								
Unidentified Paralepididae	5.954	17.619	6.518	18.440	3.577	2.346	--	--
Sudis atrox	--	--	--	--	--	0.615	--	--
Stemonosudis macrura	0.565	1.135	2.400	1.152	--	--	--	--
Alepisauridae								
Alepisaurus ferox	--	--	1.255	--	0.511	1.503	--	--
Myctophidae								
Lampanyctinae								
Bolinichthys longipes	--	--	2.918	--	--	0.615	--	--
B. sp.	--	--	--	--	--	--	--	--
Ceratoscopelus townsendi	25.477	95.018	25.667	24.202	12.261	8.086	--	--
Diaphus spp.	35.610	165.747	25.370	38.032	5.620	10.158	--	--
Lampadena luminosa	0.565	2.428	--	--	--	--	--	--
L. urophaos	13.760	22.302	2.973	2.305	--	0.615	--	0.506
Lampanyctus spp.	2.327	8.751	16.341	41.489	52.625	77.920	--	2.777
Lobianchia gemellarii	--	--	--	--	4.598	15.328	--	--
Notolychnus valdiviae	--	--	--	--	21.460	16.285	--	1.136
Notoscopelus spp.	--	--	--	--	--	--	--	--

Table 9.--Continued.

Taxon	0-25 m		25-50 m		50-100 m		100-200 m	
	On	Off	On	Off	On	Off	On	Off
N. resplendens	--	--	--	--	--	--	--	--
Triphoturus nigrescens	20.619	24.643	12.741	14.982	--	--	--	0.506
Myctophinae								
Benthosema fibulatum	0.599	1.214	1.200	--	3.575	1.116	--	--
B. suborbitale	--	--	--	--	39.851	23.687	3.815	2.715
Centrobranchus sp.	--	--	--	--	0.511	1.503	--	--
Diogenichthys atlanticus	--	1.214	--	--	185.954	84.566	8.650	17.875
Electrona risso	--	--	--	--	--	--	--	--
Hygophum reinhardtii	0.565	1.214	11.892	16.135	15.327	46.487	--	--
Loweina rara	--	--	--	--	--	--	--	--
Myctophum spp.	--	--	1.145	--	--	2.346	--	--
M. nitidulum	--	--	--	--	2.555	3.348	--	--
M. selenops	--	--	--	--	--	1.230	--	--
Symbolophorus cf. californiensis	--	--	--	--	--	--	--	--
S. evermanni	--	--	0.628	--	2.555	23.642	--	0.568
Unidentified Myctophidae	39.394	60.536	21.051	24.202	3.065	6.241	--	2.022
Neoscopelidae								
Neoscopelus macrolepidotus	--	--	--	--	--	--	--	--
Evermannellidae								
Unidentified Evermannellidae	--	3.445	--	4.610	--	--	--	--
Lophiiformes								
Ceratioidei								
Unidentified Ceratioidei	8.846	8.380	--	--	--	--	--	--
Ceratiidae								
Unidentified Ceratiidae	--	0.607	--	--	--	--	--	--
Ceratias spp.	2.361	1.135	--	--	--	--	--	--
Cryptopsaras couesi	0.565	0.568	1.145	--	--	--	--	--
Caulophrynidae								
Unidentified Caulophrynidae	--	--	--	--	--	--	--	--
Oneirodidae								
Unidentified Oneirodidae	4.056	4.620	0.572	--	--	--	--	--
Gigantactinidae								
Unidentified Gigantactinidae	0.565	3.035	--	--	--	--	--	0.506
Linophrynidae								
Unidentified Linophrynidae	--	--	0.572	--	--	1.230	--	--
Linophryne macrorhinus group	--	--	--	--	--	0.501	--	--
"Edriolychnus" group	--	--	--	1.152	--	0.501	--	0.506
Neoceratiidae								
Neoceratias spinifer	--	--	--	--	--	--	--	0.568
Himantolophidae								
Unidentified Himantolophidae	5.954	0.568	--	--	--	--	--	--

Table 9.--Continued.

Taxon	0-25 m		25-50 m		50-100 m		100-200 m	
	On	Off	On	Off	On	Off	On	Off
Gadiformes								
Bregmacerotidae								
Bregmaceros spp.	--	--	--	--	1.021	--	0.559	--
B. cf. *japonicus*	--	0.607	--	--	0.511	3.462	--	--
B. cf. *atlanticus*	--	--	--	--	--	0.501	--	--
Macrouridae								
Unidentified Macrouridae	--	--	--	--	--	--	--	--
Ophidiiformes								
Unidentified Ophidiiformes	--	--	--	--	--	--	--	--
Beloniformes								
Hemiramphidae								
Oxyporhamphus micropterus	0.599	--	--	--	--	--	--	--
Belonidae								
Unidentified Belonidae	--	0.607	--	--	--	--	--	--
Beryciformes								
Melamphaidae								
Melamphaes sp.	--	--	--	--	--	--	--	--
M. cf. *simus*	--	--	--	--	1.021	2.733	--	--
M. cf. *lugubris*	--	--	--	--	--	--	--	--
M. type 3	--	--	--	--	--	--	--	--
Scopeloberyx spp.	--	--	--	--	--	--	--	--
S. opisthopterus	--	--	--	--	--	1.230	--	--
S. robustus	--	--	--	--	8.685	6.856	1.053	0.506
Stephanoberycidae?								
Unidentified Stephanoberycidae?	0.565	--	--	--	--	--	--	--
Anoplogastridae								
Anoplogaster cornuta	--	--	--	--	--	--	--	--
Berycidae								
Beryx spp.	3.593	7.536	0.572	1.152	--	0.615	--	--
Mirapinnidae								
Eutaeniophorus festivus	--	--	--	--	--	--	--	--
Lampriformes								
Trachipteridae								
Unidentified Trachipteridae	0.565	1.175	--	--	--	--	--	0.568
Trachipterus sp.	--	--	--	--	--	--	--	--
Zu cristatus	--	0.607	--	--	--	--	--	--
Scorpaeniformes								
Scorpaenidae	1.130	--	--	--	--	--	--	--
Perciformes								
Percoidei								
Incertae sedis								

Table 9.--Continued.

Taxon	0-25 m		25-50 m		50-100 m		100-200 m	
	On	Off	On	Off	On	Off	On	Off
Howella sp.	0.565	2.838	--	5.762	--	--	--	--
Serranidae								
Anthiinae	--	--	--	--	--	--	--	--
Callanthiidae								
Grammatonotus laysanus	--	--	--	--	--	--	--	--
Bramidae								
Pteraclis aesticola	2.361	--	--	--	--	--	--	--
Brama japonica	--	--	--	--	--	--	--	--
Caristiidae								
Caristius sp.	--	--	0.572	--	--	--	--	--
Emmelichthyidae								
Unidentified Emmelichthyidae	5.750	--	0.572	--	--	--	--	--
Carangoidei								
Carangidae								
Unidentified Carangidae	--	--	0.572	--	--	--	--	--
Coryphaenidae								
Unidentified Coryphaenidae	--	--	--	--	--	--	--	--
Coryphaena equiselis	2.892	1.742	1.255	--	--	--	--	--
Labroidei								
Labridae								
Unidentified Labridae	0.599	--	0.572	--	--	--	--	--
Scaridae								
Unidentified Scaridae	0.565	--	--	--	--	--	--	--
Trachinoidei								
Chiasmodontidae								
Unidentified Chiasmodontidae	15.127	7.048	1.773	2.305	--	--	0.559	--
Callionymoidei								
Callionymidae								
Unidentified Callionymidae	--	--	--	--	--	0.615	--	--
Gobioidei								
Gobiidae								
Unidentified Gobiidae	--	--	--	--	--	--	--	--
Acanthuroidei								
Acanthuridae								
Unidentified Acanthuridae	--	--	--	--	--	--	--	--
Scombroidei								
Gempylidae								
Unidentified Gempylidae	--	4.856	8.512	3.457	7.152	3.690	--	0.506
Gempylus serpens	--	7.284	--	--	--	--	--	--
Diplospinus multistriatus	--	--	--	3.457	1.022	8.086	--	--
Scombridae								

Table 9.--Continued.

Taxon	0-25 m		25-50 m		50-100 m		100-200 m	
	On	Off	On	Off	On	Off	On	Off
Unidentified Scombridae	--	--	--	--	--	--	--	--
Acanthocybium solandri	2.293	1.135	--	--	--	--	--	--
Katsuwonus pelamis	--	1.175	--	--	--	--	--	--
Thunnus spp.	4.723	3.035	1.145	--	--	--	--	--
Stromateoidei								
Nomeidae								
Cubiceps baxteri	1.728	--	--	--	--	--	--	--
Tetragonuridae								
Tetragonurus cuvieri	--	--	--	--	--	--	--	--
T. atlanticus	--	1.214	--	--	0.511	--	--	0.506
Pleuronectiformes								
Bothidae								
Unidentified Bothidae	--	--	--	--	--	--	--	--
Bothus sp.	--	--	--	--	--	--	--	--
Engyprosopon xenandrus	--	--	--	--	--	--	--	--
Tetraodontiformes								
Monacanthidae								
Unidentified Monacanthidae	--	0.607	--	--	--	--	--	--
Other unidentified larvae	25.838	80.844	34.123	25.354	15.327	41.909	6.479	7.071
Total fish larvae	1553.379	2818.856	1043.861	1302.293	517.531	641.294	34.074	105.101
Fish eggs	663.280	25.156	129.403	42.641	44.443	13.279	13.913	127.150
Zooplankton displacement (ml)	101.067	95.885	96.073	71.453	68.969	48.126	23.747	20.266
Squid paralarvae	16.359	44.754	5.263	8.067	2.044	8.860	1.612	1.073

Table 10.--Mean densities (larvae/1,000 m^3) of fish larvae in night samples from the second sampling series (27-29 July 1984) above and 20 km west of the Southeast Hancock Seamount during cruise 84-05. Each depth zone is usually represented by two samples, except only one samples was taken at the 50-100 m and 100-200 m depths on the seamount and at the 100-200 m depth off the seamount.

Taxon	0-25 m		25-50 m		50-100 m		100-200 m	
	On	Off	On	Off	On	Off	On	Off
Anguilliformes								
Muraenidae								
Unidentified Muraenidae	--	--	--	--	--	--	--	--
Nettastomatidae								
Saurenchelys stylura	--	--	--	--	--	--	--	--
Congridae								
Ariosoma sp.	--	--	--	--	--	--	--	--
Ophichthidae								
Unidentified Ophichthidae	--	--	--	--	--	--	--	--
Derichthyidae								
Derichthys serpentinus	--	1.077	--	1.108	--	--	--	--
Saccopharyngiformes								
Cyematidae								
"Leptocephalus holti" type	--	--	--	--	--	--	--	--
Salmoniformes								
Microstomatidae								
Nansenia sp.	--	--	--	--	--	--	--	--
Bathylagidae								
Bathylagus longirostris	--	--	--	--	--	0.716	--	--
B. bericoides	--	--	--	--	--	--	--	--
Stomiiformes								
Unidentified Stomiiformes	2.034	14.646	1.127	8.865	--	--	--	--
Phosichthyidae								
Vinciguerria spp.	0.538	1.044	9.057	11.633	13.945	55.949	0.951	1.224
V. poweriae	--	--	5.633	2.216	--	4.979	--	--
V. nimbaria	76.717	67.923	79.790	78.515	3.803	21.062	--	1.224
V. attenuata	--	1.044	--	2.770	--	7.021	--	1.224
Woodsia nonsuchae	--	--	--	--	--	--	--	--
Ichthyococcus sp.	--	--	--	--	--	--	--	--
Gonostomatidae								
Gonostoma atlanticum	--	--	--	--	--	--	--	--
Cyclothone spp.	221.980	850.315	121.250	448.371	8.874	9.205	1.902	4.895
Diplophos spp.	1.017	2.708	--	1.209	--	--	--	--
Margrethia obtusirostra	--	--	--	--	--	--	--	--
Sternoptychidae								
Unidentified Sternoptychidae	--	--	--	--	--	--	0.951	1.224
Sternoptyx spp.	--	--	--	--	--	--	--	1.224
Argyropelecus spp.	--	--	--	--	--	--	--	--

Table 10.--Continued.

Taxon	0-25 m		25-50 m		50-100 m		100-200 m	
	On	Off	On	Off	On	Off	On	Off
Maurolicus muelleri	--	--	--	--	--	--	--	--
Valenciennellus tripunctulatus	--	--	--	--	--	--	--	2.448
Stomiidae								
Chauliodus sloani	--	--	--	--	--	--	--	--
Stomias (Macrostomias) sp.	--	--	--	--	--	--	--	--
Unidentified "Astronesthidae"	--	--	--	--	--	--	--	--
"Astronesthidae" Type 1	2.123	35.101	0.578	29.315	--	0.609	--	--
"Astronesthidae" Type 2	--	--	--	--	--	--	--	--
"Astronesthidae" Type 3	--	--	--	--	--	--	--	--
Neonesthes sp.	--	--	--	--	--	--	--	--
Unidentified "Melanostomiidae"	--	--	0.578	--	--	--	--	--
Eustomias spp.	--	0.522	--	1.158	--	--	--	--
Bathophilus spp.	--	--	--	--	--	--	--	--
Photonectes spp.	--	--	--	--	--	--	--	--
Opostomias mitsuii	--	--	--	--	--	--	--	--
Unidentified "Malacosteidae"	--	--	--	0.604	--	--	--	--
Idiacanthus sp.	--	--	--	--	--	--	--	--
Myctophiformes								
Scopelarchidae								
Unidentified Scopelarchidae	--	--	--	--	--	--	--	--
Scopelarchus analis	--	--	--	--	--	--	--	1.224
S. stephensi	--	--	--	--	--	--	--	--
Benthalbella sp.	--	--	--	--	--	--	--	--
B. infans	--	--	--	--	--	--	--	--
Paralepididae								
Unidentified Paralepididae	2.601	12.234	65.753	24.929	1.268	5.588	--	--
Sudis atrox	--	--	--	--	--	--	--	--
Stemonosudis macrura	--	3.752	--	5.188	--	--	--	--
Alepisauridae								
Alepisaurus ferox	--	--	--	--	--	--	--	--
Myctophidae								
Lampanyctinae								
Bolinichthys longipes	1.614	1.077	--	--	--	--	--	--
Bolinichthys sp.	0.538	--	--	--	--	--	--	--
Ceratoscopelus townsendi	35.283	55.397	14.185	22.161	--	--	--	--
Diaphus spp.	4.186	159.262	3.454	92.775	--	--	--	1.224
Lampadena luminosa	--	0.522	--	--	--	--	--	--
L. urophaos	4.245	10.603	0.578	2.972	--	--	--	--
Lampanyctus spp.	2.572	10.081	1.705	8.914	--	5.803	--	--
Lobianchia gemellarii	--	--	--	0.554	--	0.609	--	--
Notolychnus valdiviae	--	--	--	--	1.268	5.695	--	--

Table 10.--Continued.

Taxon	0-25 m		25-50 m		50-100 m		100-200 m	
	On	Off	On	Off	On	Off	On	Off
Notoscopelus spp.	--	--	--	--	--	--	--	--
N. resplendens	--	--	--	--	--	--	--	--
Triphoturus nigrescens	--	3.197	--	2.317	--	--	--	--
Myctophinae								
Benthosema fibulatum	--	0.522	--	--	--	--	--	--
B. suborbitale	--	--	1.127	--	3.803	46.565	3.803	2.448
Centrobranchus sp.	--	--	0.563	--	--	--	--	--
Diogenichthys atlanticus	0.538	0.522	17.491	12.791	20.284	111.897	11.410	2.448
Electrona risso	--	--	--	--	--	--	--	--
Hygophum reinhardtii	--	3.294	1.127	15.007	1.268	29.909	--	--
Loweina rara	--	--	--	--	--	--	--	--
Myctophum spp.	--	--	--	--	--	--	--	--
M. nitidulum	--	--	0.563	--	5.071	3.868	0.951	--
M. selenops	--	--	--	--	--	--	--	--
Symbolophorus cf. californiensis	--	--	--	--	--	--	--	--
S. evermanni	--	0.554	0.578	0.554	--	--	--	--
Unidentified Myctophidae	21.946	56.146	4.521	28.455	2.535	3.045	--	--
Neoscopelidae								
Neoscopelus macrolepidotus	--	--	--	--	--	--	--	--
Evermannellidae								
Unidentified Evermannellidae	--	0.522	--	0.604	--	--	--	--
Lophiiformes								
Ceratioidei								
Unidentified Ceratioidei	7.626	29.718	7.500	14.406	1.268	--	--	--
Ceratiidae								
Unidentified Ceratiidae	--	--	--	--	--	--	--	--
Ceratias spp.	0.508	--	--	--	--	--	--	--
Cryptopsaras couesi	2.690	1.631	4.032	4.130	--	--	--	--
Caulophrynidae								
Unidentified Caulophrynidae	--	0.522	--	--	--	--	--	--
Oneirodidae								
Unidentified Oneirodidae	1.525	4.893	0.578	4.836	--	--	--	--
Gigantactinidae								
Unidentified Gigantactinidae	0.538	--	--	--	--	--	--	--
Linophrynidae								
Unidentified Linophrynidae	--	--	--	--	--	--	--	--
Linophryne macrorhinus group	--	--	--	--	--	--	--	--
"Edriolychnus" group	--	--	--	--	--	--	--	--
Neoceratiidae								
Neoceratias spinifer	--	--	--	--	--	--	--	--
Himantolophidae								

Table 10.--Continued.

Taxon	0-25 m		25-50 m		50-100 m		100-200 m	
	On	Off	On	Off	On	Off	On	Off
Unidentified Himantolophidae	--	--	--	0.604	--	--	--	--
Gadiformes								
Bregmacerotidae								
Bregmaceros spp.	--	--	--	--	--	--	--	--
B. cf. japonicus	--	--	--	--	--	--	--	--
B. cf. atlanticus	--	--	--	--	--	--	--	--
Macrouridae								
Unidentified Macrouridae	--	--	--	--	--	--	--	--
Ophidiiformes								
Unidentified Ophidiiformes	--	--	--	--	--	--	--	--
Beloniformes								
Hemiramphidae								
Oxyporhamphus micropterus	--	1.044	--	--	--	--	--	--
Belonidae								
Unidentified Belonidae	--	--	--	--	--	--	--	--
Beryciformes								
Melamphaidae								
Melamphaes sp.	--	--	--	--	--	--	--	--
M. cf. simus	--	--	--	--	--	--	--	--
M. cf. lugubris	--	--	--	--	--	--	--	--
M. type 3	--	--	--	--	--	--	--	--
Scopeloberyx spp.	--	--	--	--	--	--	--	--
S. opisthopterus	--	--	--	--	--	--	--	--
S. robustus	--	--	--	--	1.268	3.474	--	--
Stephanoberycidae?								
Unidentified Stephanoberycidae?	--	--	--	--	--	--	--	--
Anoplogastridae								
Anoplogaster cornuta	--	--	--	--	--	--	--	--
Berycidae								
Beryx spp.	--	32.850	--	14.808	--	--	--	--
Mirapinnidae								
Eutaeniophorus festivus	--	--	--	--	--	--	--	--
Lampriformes								
Trachipteridae								
Unidentified Trachipteridae	2.152	--	--	--	--	--	--	--
Trachipterus sp.	--	--	--	--	--	--	--	--
Zu cristatus	--	--	--	--	--	--	--	--
Scorpaeniformes								
Scorpaenidae	--	0.522	--	0.604	--	--	--	--
Perciformes								
Percoidei								

Table 10.--Continued.

Taxon	0-25 m		25-50 m		50-100 m		100-200 m	
	On	Off	On	Off	On	Off	On	Off
Incertae sedis								
Howella sp.	--	0.554	--	1.108	--	--	--	--
Serranidae								
Anthiinae	--	1.077	--	--	--	--	--	--
Callanthiidae								
Grammatonotus laysanus	--	0.554	--	--	--	--	--	--
Bramidae								
Pteraclis aesticola	--	--	--	--	--	--	--	--
Brama japonica	--	--	--	--	--	--	--	--
Caristiidae								
Caristius sp.	--	--	--	--	--	--	--	--
Emmelichthyidae								
Unidentified Emmelichthyidae	--	--	--	--	--	--	--	--
Carangoidei								
Carangidae								
Unidentified Carangidae	--	--	--	--	--	--	--	--
Coryphaenidae								
Unidentified Coryphaenidae	--	--	--	--	--	--	--	--
Coryphaena equiselis	1.076	2.185	--	--	--	--	--	--
Labroidei								
Labridae								
Unidentified Labridae	--	0.522	--	0.554	--	--	--	--
Scaridae								
Unidentified Scaridae	--	0.554	--	--	--	--	--	--
Trachinoidei								
Chiasmodontidae								
Unidentified Chiasmodontidae	4.216	10.636	2.268	6.497	--	--	--	1.224
Callionymoidei								
Callionymidae								
Unidentified Callionymidae	--	--	--	--	--	--	--	--
Gobioidei								
Gobiidae								
Unidentified Gobiidae	--	--	--	0.554	--	--	--	--
Acanthuroidei								
Acanthuridae								
Unidentified Acanthuridae	--	0.522	--	--	--	--	--	--
Scombroidei								
Gempylidae								
Unidentified Gempylidae	0.538	1.109	0.563	3.324	--	3.474	--	--
Gempylus serpens	--	0.522	--	--	--	--	--	--
Diplospinus multistriatus	--	--	1.156	1.108	--	--	--	--

Table 10.--Continued.

Taxon	0-25 m		25-50 m		50-100 m		100-200 m	
	On	Off	On	Off	On	Off	On	Off
Scombridae								
Unidentified Scombridae	--	0.522	--	--	--	--	--	--
Acanthocybium solandri	--	3.230	--	0.554	--	--	--	--
Katsuwonus pelamis	--	--	--	--	--	--	--	--
Thunnus spp.	--	1.109	--	--	--	--	--	--
Stromateoidei								
Nomeidae								
Cubiceps baxteri	--	--	--	--	--	--	--	--
Tetragonuridae								
Tetragonurus cuvieri	--	--	--	--	--	--	--	--
T. atlanticus	2.601	1.077	0.563	0.604	1.268	--	--	--
Pleuronectiformes								
Bothidae								
Unidentified Bothidae	--	1.566	--	0.604	--	--	--	--
Bothus sp.	--	1.044	--	--	--	--	--	--
Engyprosopon xenandrus	--	--	--	--	--	--	--	--
Tetraodontiformes								
Monacanthidae								
Unidentified Monacanthidae	--	--	--	--	--	--	--	--
Other unidentified larvae	7.444	34.906	11.280	27.702	3.803	13.325	0.951	4.895
Total fish larvae	408.849	1424.936	357.597	884.983	69.726	332.184	20.919	26.924
Fish eggs	48.647	79.456	33.159	120.986	29.158	117.771	105.543	22.029
Zooplankton displacement (ml)	42.995	68.607	22.797	55.098	8.874	38.540	9.508	14.686
Squid paralarvae	37.677	42.118	5.099	11.283	2.535	0.000	0.000	0.000

Table 11.--Mean densities (larvae/1,000 m^3) of fish larvae in daytime samples taken above and 20 km west of the Southeast Hancock Seamount during cruise 85-01 in February 1985. Each depth zone is represented by two samples.

Taxon	0-25 m		25-50 m		50-100 m		100-200 m	
	On	Off	On	Off	On	Off	On	Off
Anguilliformes								
Muraenidae								
Unidentified Muraenidae	--	--	--	--	--	--	--	--
Nettastomatidae								
Saurenchelys stylura	--	--	--	--	--	--	--	--
Congridae								
Ariosoma sp.	--	--	--	--	--	--	--	--
Ophichthidae								
Unidentified Ophichthidae	--	--	--	--	--	--	--	--
Derichthyidae								
Derichthys serpentinus	--	--	--	--	--	--	--	--
Saccopharyngiformes								
Cyematidae								
"Leptocephalus holti" type	--	--	--	--	1.087	--	--	--
Salmoniformes								
Microstomatidae								
Nansenia sp.	--	--	--	--	0.546	0.515	1.250	1.693
Bathylagidae								
Bathylagus longirostris	--	--	--	--	5.981	--	2.499	--
B. bericoides	--	--	--	--	--	--	--	--
Stomiiformes								
Unidentified Stomiiformes	--	--	--	1.560	1.637	--	--	6.783
Phosichthyidae								
Vinciguerria spp.	6.408	4.950	28.518	11.784	23.353	31.725	5.224	1.688
V. poweriae	--	--	0.569	--	1.624	4.486	1.874	1.125
V. nimbaria	3.502	4.360	1.640	1.109	--	3.274	--	--
V. attenuata	1.163	--	1.706	--	3.257	0.561	--	--
Woodsia nonsuchae	--	--	--	--	--	--	--	--
Ichthyococcus sp.	1.751	1.202	--	1.005	1.633	--	0.525	--
Gonostomatidae								
Gonostoma atlanticum	--	--	--	--	1.091	--	--	--
Cyclothone spp.	19.279	10.268	2.231	5.389	1.083	2.152	0.525	--
Diplophos spp.	--	--	--	--	--	--	--	--
Margrethia obtusirostra	--	--	--	--	--	--	0.525	--
Sternoptychidae								
Unidentified Sternoptychidae	--	--	--	--	1.083	--	42.242	4.500
Sternoptyx spp.	--	--	--	--	1.083	--	3.749	1.690
Argyropelecus spp.	--	--	--	--	2.166	--	7.749	9.602
Maurolicus muelleri	--	--	--	--	1.083	--	19.095	2.813
Valenciennellus tripunctulatus	--	--	--	--	--	--	1.675	1.131

Table 11.--Continued.

Taxon	0-25 m		25-50 m		50-100 m		100-200 m	
	On	Off	On	Off	On	Off	On	Off
Stomiidae								
Chauliodus sloani	0.581	1.100	6.212	3.327	28.269	9.640	3.974	9.599
Stomias (Macrostomias) sp.	--	--	--	--	--	--	--	--
Unidentified "Astronesthidae"	--	--	--	--	--	--	--	--
"Astronesthidae" Type 1	--	--	--	--	--	--	--	--
"Astronesthidae" Type 2	--	--	--	--	--	--	--	--
"Astronesthidae" Type 3	0.588	0.550	--	--	--	--	--	--
Neonesthes sp.	--	--	--	--	--	--	1.250	--
Unidentified "Melanostomiidae"	15.791	21.698	7.327	2.669	5.440	7.488	5.649	5.068
Eustomias spp.	--	--	--	--	--	--	--	--
Bathophilus spp.	--	0.652	--	--	--	--	--	--
Photonectes spp.	--	--	--	--	--	--	--	--
Opostomias mitsuii	2.332	--	2.253	--	1.091	--	--	0.565
Unidentified "Malacosteidae"	--	--	--	--	--	--	--	--
Idiacanthus sp.	--	--	--	--	--	--	--	--
Myctophiformes								
Scopelarchidae								
Unidentified Scopelarchidae	--	--	--	--	3.249	--	--	--
Scopelarchus analis	--	--	--	--	1.083	--	0.525	--
S. stephensi	--	--	12.092	--	15.185	1.637	7.198	0.563
Benthalbella sp.	--	--	--	--	--	--	--	--
B. infans	--	--	--	--	--	--	0.525	0.563
Paralepididae								
Unidentified Paralepididae	2.332	5.664	2.231	0.503	1.083	1.592	1.250	--
Sudis atrox	--	--	--	--	--	--	--	--
Stemonosudis macrura	--	--	--	--	--	--	--	--
Alepisauridae								
Alepisaurus ferox	--	--	--	--	--	--	--	--
Myctophidae								
Lampanyctinae								
Bolinichthys longipes	--	--	--	--	--	--	--	--
B. sp.	--	--	--	--	--	--	--	--
Ceratoscopelus townsendi	31.561	34.165	4.942	9.773	5.994	1.682	0.525	--
Diaphus spp.	30.885	5.868	10.562	4.124	0.541	1.031	--	--
Lampadena luminosa	--	0.652	--	--	--	--	--	--
L. urophaos	2.325	1.100	--	0.555	--	--	--	--
Lampanyctus spp.	67.725	20.231	11.197	8.457	3.266	2.107	2.100	0.565
Lobianchia gemellarii	--	--	--	--	0.541	0.515	--	--
Notolychnus valdiviae	--	--	--	--	--	--	--	--
Notoscopelus spp.	32.129	31.091	19.618	10.623	3.274	4.866	1.675	0.563
N. resplendens	1.744	--	--	--	--	0.515	--	0.565

Table 11.--Continued.

Taxon	0-25 m		25-50 m		50-100 m		100-200 m	
	On	Off	On	Off	On	Off	On	Off
Triphoturus nigrescens	--	--	--	--	--	--	--	--
Myctophinae								
Benthosema fibulatum	--	--	--	--	--	--	--	--
B. suborbitale	--	--	--	--	17.457	13.414	5.749	12.988
Centrobranchus sp.	--	--	--	--	--	0.515	--	--
Diogenichthys atlanticus	1.163	0.652	7.807	--	34.309	27.813	5.423	8.463
Electrona risso	--	--	--	--	1.624	--	3.124	--
Hygophum reinhardtii	2.927	1.202	2.231	2.062	0.546	0.561	--	--
Loweina rara	15.189	8.862	15.857	6.498	16.835	10.110	8.747	2.824
Myctophum spp.	--	--	1.115	0.503	0.546	1.031	--	--
M. nitidulum	2.346	1.202	3.280	0.555	1.083	2.804	--	--
M. selenops	--	--	--	--	--	0.515	--	--
Symbolophorus cf. californiensis	--	--	--	--	--	--	--	--
S. evermanni	--	--	1.093	--	1.087	--	--	--
Unidentified Myctophidae	9.315	6.520	3.412	10.415	5.998	5.715	--	1.128
Neoscopelidae								
Neoscopelus macrolepidotus	--	--	--	--	--	--	--	--
Evermannellidae								
Unidentified Evermannellidae	--	--	--	--	--	--	--	--
Lophiiformes								
Ceratioidei								
Unidentified Ceratioidei	--	--	--	--	--	--	--	--
Ceratiidae								
Unidentified Ceratiidae	--	--	--	--	--	--	--	--
Ceratias spp.	--	--	--	--	--	--	--	--
Cryptopsaras couesi	--	--	--	--	--	--	--	--
Caulophrynidae								
Unidentified Caulophrynidae	--	--	--	--	--	--	--	--
Oneirodidae								
Unidentified Oneirodidae	--	--	--	--	--	--	--	--
Gigantactinidae								
Unidentified Gigantactinidae	--	--	--	--	--	--	--	--
Linophrynidae								
Unidentified Linophrynidae	--	--	--	--	--	--	--	0.565
Linophryne macrorhinus group	--	--	--	--	--	--	--	--
"Edriolychnus" group	--	--	1.137	--	4.903	0.561	4.373	--
Neoceratiidae								
Neoceratias spinifer	--	--	--	--	--	--	--	--
Himantolophidae								
Unidentified Himantolophidae	--	--	--	--	--	--	--	--
Gadiformes								

Table 11.--Continued.

Taxon	0-25 m		25-50 m		50-100 m		100-200 m	
	On	Off	On	Off	On	Off	On	Off
Bregmacerotidae								
Bregmaceros spp.	--	--	--	--	--	--	--	--
B. cf. japonicus	--	--	--	--	--	--	--	--
B. cf. atlanticus	--	--	--	--	--	--	--	--
Macrouridae								
Unidentified Macrouridae	--	--	--	--	--	--	--	0.565
Ophidiiformes								
Unidentified Ophidiiformes	--	0.652	--	--	--	--	0.625	--
Beloniformes								
Hemiramphidae								
Oxyporhamphus micropterus	--	--	--	--	--	--	--	--
Belonidae								
Unidentified Belonidae	--	--	--	--	--	--	--	--
Beryciformes								
Melamphaidae								
Melamphaes sp.	1.163	0.550	1.093	0.503	1.637	1.592	0.525	--
M. cf. simus	--	--	6.714	1.109	3.270	0.561	--	0.563
M. cf. lugubris	--	--	--	--	1.629	--	1.250	--
M. type 3	--	--	--	--	--	--	--	--
Scopeloberyx spp.	--	--	--	--	--	--	--	--
S. opisthopterus	--	--	--	--	--	--	--	--
S. robustus	0.581	--	3.346	0.555	6.506	1.031	--	0.565
Stephanoberycidae?								
Unidentified Stephanoberycidae?	--	--	--	--	--	--	--	--
Anoplogastridae								
Anoplogaster cornuta	--	--	1.137	--	0.546	--	--	--
Berycidae								
Beryx spp.	--	--	--	--	--	--	--	--
Mirapinnidae								
Eutaeniophorus festivus	1.163	0.652	1.115	--	--	--	0.525	0.563
Lampriformes								
Trachipteridae								
Unidentified Trachipteridae	--	--	--	--	--	--	--	--
Trachipterus sp.	--	--	--	--	--	--	--	--
Zu cristatus	--	--	--	--	--	--	--	--
Scorpaeniformes								
Scorpaenidae	--	0.652	--	--	0.541	--	--	--
Perciformes								
Percoidei								
Incertae sedis								
Howella sp.	--	--	--	--	--	--	--	--

Table 11.--Continued.

Taxon	0-25 m		25-50 m		50-100 m		100-200 m	
	On	Off	On	Off	On	Off	On	Off
Serranidae								
Anthiinae	--	--	--	--	--	--	--	--
Callanthiidae								
Grammatonotus laysanus	--	--	--	--	--	--	--	--
Bramidae								
Pteraclis aesticola	--	--	--	--	--	--	--	--
Brama japonica	2.339	1.202	2.231	--	--	1.031	--	--
Caristiidae								
Caristius sp.	--	--	--	0.503	--	--	--	--
Emmelichthyidae								
Unidentified Emmelichthyidae	--	--	--	--	--	--	--	--
Carangoidei								
Carangidae								
Unidentified Carangidae	--	--	--	--	--	--	--	--
Coryphaenidae								
Unidentified Coryphaenidae	--	--	--	--	--	--	--	--
Coryphaena equiselis	--	--	--	--	--	--	--	--
Labroidei								
Labridae								
Unidentified Labridae	--	0.652	--	--	--	--	--	--
Scaridae								
Unidentified Scaridae	--	--	--	--	--	--	--	--
Trachinoidei								
Chiasmodontidae								
Unidentified Chiasmodontidae	--	--	--	--	--	--	--	--
Callionymoidei								
Callionymidae								
Unidentified Callionymidae	--	--	--	--	--	--	--	--
Gobioidei								
Gobiidae								
Unidentified Gobiidae	--	--	--	--	--	--	--	--
Acanthuroidei								
Acanthuridae								
Unidentified Acanthuridae	--	--	--	--	--	--	--	--
Scombroidei								
Gempylidae								
Unidentified Gempylidae	--	--	--	--	--	--	--	--
Gempylus serpens	--	--	--	--	--	--	--	--
Diplospinus multistriatus	--	--	1.115	--	--	--	--	--
Scombridae								
Unidentified Scombridae	--	--	--	--	--	--	--	--

Table 11.--Continued.

Taxon	0-25 m		25-50 m		50-100 m		100-200 m	
	On	Off	On	Off	On	Off	On	Off
Acanthocybium solandri	--	--	--	--	--	--	--	--
Katsuwonus pelamis	--	--	--	--	--	--	--	--
Thunnus spp.	--	--	--	--	--	--	--	--
Stromateoidei								
Nomeidae								
Cubiceps baxteri	1.163	0.652	0.569	--	--	--	--	--
Tetragonuridae								
Tetragonurus cuvieri	--	1.304	--	1.005	--	--	--	--
T. atlanticus	--	--	--	--	--	--	--	--
Pleuronectiformes								
Bothidae								
Unidentified Bothidae	--	--	--	--	--	--	--	--
Bothus sp.	--	--	--	--	--	--	--	--
Engyprosopon xenandrus	--	--	--	--	--	--	--	--
Tetraodontiformes								
Monacanthidae								
Unidentified Monacanthidae	--	--	--	--	--	--	--	--
Other unidentified larvae	11.647	16.992	5.599	1.560	6.544	7.715	3.449	4.517
Total fish larvae	269.089	185.297	169.949	86.142	220.782	148.755	146.964	81.817
Fish eggs	129.773	293.098	139.769	169.168	89.704	152.107	31.894	60.333
Zooplankton displacement (ml)	114.495	87.323	49.251	42.561	29.940	45.836	18.847	15.219
Squid paralarvae	29.256	26.771	11.634	7.192	5.440	9.504	11.471	3.381

Table 12.--Mean densities (larvae/1,000 m^3) of fish larvae in night samples taken above and 20 km west of the Southeast Hancock Seamount during cruise 85-01 in February 1985. Each depth zone is represented by two samples.

Taxon	0-25 m		25-50 m		50-100 m		100-200 m	
	On	Off	On	Off	On	Off	On	Off
Anguilliformes								
Muraenidae								
Unidentified Muraenidae	--	--	--	--	--	--	--	--
Nettastomatidae								
Saurenchelys stylura	--	--	--	--	--	--	--	--
Congridae								
Ariosoma sp.	--	--	--	--	--	--	--	--
Ophichthidae								
Unidentified Ophichthidae	--	--	--	--	--	--	--	--
Derichthyidae								
Derichthys serpentinus	--	--	--	--	--	--	--	--
Saccopharyngiformes								
Cyematidae								
"Leptocephalus holti" type	--	--	--	--	--	--	--	--
Salmoniformes								
Microstomatidae								
Nansenia sp.	--	--	--	--	1.202	2.279	0.573	1.187
Bathylagidae								
Bathylagus longirostris	--	--	--	--	6.559	--	4.246	3.523
B. bericoides	--	--	--	--	--	--	--	0.584
Stomiiformes								
Unidentified Stomiiformes	2.261	--	2.879	--	0.533	--	--	1.168
Phosichthyidae								
Vinciguerria spp.	0.600	--	15.685	29.770	33.040	49.738	4.955	23.363
V. poweriae	--	--	1.112	--	13.240	10.326	4.887	8.328
V. nimbaria	2.296	--	21.124	9.928	10.426	10.853	2.662	1.206
V. attenuata	--	--	1.112	2.097	4.537	2.868	--	1.809
Woodsia nonsuchae	--	--	--	--	--	--	--	--
Ichthyococcus sp.	0.600	0.537	2.799	3.172	2.009	3.380	--	0.584
Gonostomatidae								
Gonostoma atlanticum	--	--	--	--	--	--	--	--
Cyclothone spp.	57.604	6.490	46.102	7.380	1.735	4.527	2.089	5.407
Diplophos spp.	--	--	--	--	--	--	--	--
Margrethia obtusirostra	--	--	--	--	--	--	--	--
Sternoptychidae								
Unidentified Sternoptychidae	--	--	--	--	8.021	1.147	10.172	3.561
Sternoptyx spp.	--	--	--	--	4.687	--	5.693	3.561
Argyropelecus spp.	--	--	--	--	3.348	--	4.615	7.085
Maurolicus muelleri	--	--	--	--	14.593	--	7.413	2.374
Valenciennellus tripunctulatus	--	--	--	--	--	--	1.652	3.542

Table 12.--Continued.

Taxon	0-25 m		25-50 m		50-100 m		100-200 m	
	On	Off	On	Off	On	Off	On	Off
Stomiidae								
Chauliodus sloani	--	--	1.688	2.070	16.151	7.427	4.887	5.992
Stomias (Macrostomias) sp.	--	--	--	--	--	--	--	--
Unidentified "Astronesthidae"	--	--	--	--	--	--	--	--
"Astronesthidae" Type 1	--	--	--	--	--	--	--	--
"Astronesthidae" Type 2	--	--	--	--	--	--	--	--
"Astronesthidae" Type 3	0.600	--	--	--	--	--	--	--
Neonesthes sp.	--	--	--	--	0.670	--	--	0.603
Unidentified "Melanostomiidae"	12.819	7.016	20.867	9.968	2.801	1.147	2.021	1.187
Eustomias spp.	--	--	--	--	--	--	--	--
Bathophilus spp.	--	--	--	--	--	--	--	--
Photonectes spp.	--	--	--	--	--	--	--	--
Opostomias mitsuii	3.601	1.612	5.639	3.690	0.533	1.116	--	0.603
Unidentified "Malacosteidae"	--	--	--	--	--	--	--	--
Idiacanthus sp.	--	1.612	--	--	--	0.558	--	--
Myctophiformes								
Scopelarchidae								
Unidentified Scopelarchidae	--	--	--	--	--	--	--	--
Scopelarchus analis	--	--	--	--	1.202	--	2.157	0.584
S. stephensi	0.5	--	5.679	0.531	15.126	0.574	15.671	4.748
Benthalbella sp.	--	--	--	--	--	--	--	1.168
B. infans	--	--	--	--	--	--	1.010	--
Paralepididae								
Unidentified Paralepididae	1.200	1.623	5.023	4.208	2.268	2.248	2.089	--
Sudis atrox	--	--	--	--	--	--	--	--
Stemonosudis macrura	--	--	--	--	--	--	--	--
Alepisauridae								
Alepisaurus ferox	--	--	--	--	--	--	--	--
Myctophidae								
Lampanyctinae								
Bolinichthys longipes	--	--	--	--	--	--	--	--
Bolinichthys sp.	--	--	--	--	--	--	--	--
Ceratoscopelus townsendi	28.812	3.234	51.524	5.774	15.619	4.589	4.955	3.599
Diaphus spp.	3.001	--	34.603	1.049	26.331	--	9.132	1.771
Lampadena luminosa	--	--	--	--	--	--	--	--
L. urophaos	4.521	--	1.152	--	0.670	--	--	0.603
Lampanyctus spp.	29.735	7.033	80.351	15.237	13.227	20.047	3.235	4.805
Lobianchia gemellarii	--	--	0.536	--	3.211	1.147	--	1.809
Notolychnus valdiviae	--	--	--	--	0.533	--	--	0.603
Notoscopelus spp.	1.200	0.537	17.629	11.534	14.553	15.303	1.078	3.599
N. resplendens	--	--	3.216	--	6.942	2.233	2.157	2.412

Table 12.--Continued.

Taxon	0-25 m		25-50 m		50-100 m		100-200 m	
	On	Off	On	Off	On	Off	On	Off
Triphoturus nigrescens	--	--	--	--	--	--	--	--
Myctophinae								
Benthosema fibulatum	--	--	--	--	0.670	--	0.505	--
B. suborbitale	--	--	7.543	2.110	19.253	25.179	4.246	9.609
Centrobranchus sp.	--	--	--	--	--	--	--	--
Diogenichthys atlanticus	2.861	--	16.398	5.189	71.984	31.412	24.162	28.771
Electrona risso	--	--	0.536	--	--	--	4.314	1.168
Hygophum reinhardtii	--	--	3.256	4.167	5.616	1.721	1.516	0.584
Loweina rara	--	--	14.790	13.738	28.476	21.101	10.716	9.534
Myctophum spp.	--	--	0.576	--	--	0.574	0.573	--
M. nitidulum	--	--	--	4.248	3.198	0.558	0.573	1.790
M. selenops	--	--	--	--	--	--	--	--
Symbolophorus cf. californiensis	--	0.537	0.576	1.035	0.670	--	--	0.584
S. evermanni	--	--	2.184	0.531	1.066	--	0.505	0.603
Unidentified Myctophidae	33.450	5.964	4.487	4.208	8.950	2.837	1.584	0.603
Neoscopelidae								
Neoscopelus macrolepidotus	--	--	--	--	--	--	--	--
Evermannellidae								
Unidentified Evermannellidae	--	--	--	--	--	--	--	--
Lophiiformes								
Ceratioidei								
Unidentified Ceratioidei	--	--	--	--	--	--	--	--
Ceratiidae								
Unidentified Ceratiidae	--	--	--	--	--	--	--	--
Ceratias spp.	--	--	--	--	--	--	--	--
Cryptopsaras couesi	--	--	--	--	--	--	--	--
Caulophrynidae								
Unidentified Caulophrynidae	--	--	--	--	--	--	--	--
Oneirodidae								
Unidentified Oneirodidae	--	--	--	--	--	--	--	--
Gigantactinidae								
Unidentified Gigantactinidae	--	--	--	--	--	--	--	--
Linophrynidae								
Unidentified Linophrynidae	--	--	--	--	--	--	--	--
Linophryne macrorhinus group	--	--	--	--	--	--	--	--
"Edriolychnus" group	--	--	--	--	2.268	1.721	1.078	0.603
Neoceratiidae								
Neoceratias spinifer	--	--	--	--	--	--	--	--
Himantolophidae								
Unidentified Himantolophidae	--	--	--	--	--	--	--	--
Gadiformes								

Table 12.--Continued.

Taxon	0-25 m		25-50 m		50-100 m		100-200 m	
	On	Off	On	Off	On	Off	On	Off
Bregmacerotidae								
Bregmaceros spp.	--	--	--	--	--	--	--	--
B. cf. *japonicus*	--	--	--	--	--	--	--	--
B. cf. *atlanticus*	--	--	--	--	--	--	--	--
Macrouridae								
Unidentified Macrouridae	--	--	--	--	--	--	--	1.790
Ophidiiformes								
Unidentified Ophidiiformes	--	--	--	--	--	--	--	--
Beloniformes								
Hemiramphidae								
Oxyporhamphus micropterus	--	--	--	--	--	--	--	--
Belonidae								
Unidentified Belonidae	--	--	--	--	--	--	--	--
Beryciformes								
Melamphaidae								
Melamphaes sp.	--	--	--	2.070	--	1.132	--	1.187
M. cf. *simus*	0.565	--	5.479	1.062	0.670	1.147	--	--
M. cf. *lugubris*	--	--	--	--	4.946	--	0.505	--
M. type 3	--	--	--	--	0.670	--	--	--
Scopeloberyx spp.	--	--	--	--	--	--	--	0.584
S. opisthopterus	--	--	--	--	--	--	--	--
S. robustus	--	--	1.112	0.518	4.550	4.589	0.573	3.618
Stephanoberycidae?								
Unidentified Stephanoberycidae?	--	--	--	--	--	--	--	--
Anoplogastridae								
Anoplogaster cornuta	--	--	--	--	--	--	--	--
Berycidae								
Beryx spp.	--	--	--	--	--	--	--	--
Mirapinnidae								
Eutaeniophorus festivus	--	--	1.112	0.531	--	--	--	0.584
Lampriformes								
Trachipteridae								
Unidentified Trachipteridae	--	--	--	--	--	--	--	--
Trachipterus sp.	--	--	--	--	0.533	--	--	--
Zu cristatus	--	--	--	--	--	--	--	--
Scorpaeniformes								
Scorpaenidae	--	--	--	--	--	--	--	--
Perciformes								
Percoidei								
Incertae sedis								
Howella sp.	--	--	--	--	--	--	--	--

Table 12.--Continued.

Taxon	0-25 m		25-50 m		50-100 m		100-200 m	
	On	Off	On	Off	On	Off	On	Off
Serranidae								
Anthiinae	--	--	--	--	--	--	--	--
Callanthiidae								
Grammatonotus laysanus	--	--	--	--	--	--	--	--
Bramidae								
Pteraclis aesticola	--	--	--	--	--	--	--	--
Brama japonica	--	--	1.648	1.553	0.533	0.574	--	--
Caristiidae								
Caristius sp.	--	--	--	--	--	--	--	--
Emmelichthyidae								
Unidentified Emmelichthyidae	--	--	--	--	--	--	--	--
Carangoidei								
Carangidae								
Unidentified Carangidae	--	--	--	--	--	--	--	--
Coryphaenidae								
Unidentified Coryphaenidae	--	--	--	--	--	--	--	--
Coryphaena equiselis	--	--	--	--	--	--	--	--
Labroidei								
Labridae								
Unidentified Labridae	--	--	--	--	--	--	--	--
Scaridae								
Unidentified Scaridae	--	--	--	--	--	--	--	--
Trachinoidei								
Chiasmodontidae								
Unidentified Chiasmodontidae	--	--	--	--	--	--	--	--
Callionymoidei								
Callionymidae								
Unidentified Callionymidae	--	--	--	--	--	--	--	--
Gobioidei								
Gobiidae								
Unidentified Gobiidae	--	--	--	--	--	--	--	--
Acanthuroidei								
Acanthuridae								
Unidentified Acanthuridae	--	--	--	--	--	--	--	--
Scombroidei								
Gempylidae								
Unidentified Gempylidae	--	--	--	--	--	--	--	--
Gempylus serpens	--	--	--	--	--	--	--	--
Diplospinus multistriatus	--	--	0.536	--	1.066	--	--	--
Scombridae								
Unidentified Scombridae	--	--	--	--	--	--	--	--

Table 12.--Continued.

Taxon	0-25 m		25-50 m		50-100 m		100-200 m	
	On	Off	On	Off	On	Off	On	Off
Acanthocybium solandri	--	--	--	--	--	--	--	--
Katsuwonus pelamis	--	--	--	--	--	--	--	--
Thunnus spp.	--	--	--	--	--	--	--	--
Stromateoidei								
Nomeidae								
Cubiceps baxteri	--	--	--	--	--	--	--	--
Tetragonuridae								
Tetragonurus cuvieri	--	--	--	--	--	--	--	0.603
T. atlanticus	--	--	--	--	--	--	--	--
Pleuronectiformes								
Bothidae								
Unidentified Bothidae	--	--	--	--	--	--	--	--
Bothus sp.	--	--	--	--	--	--	--	--
Engyprosopon xenandrus	--	--	--	--	--	--	--	--
Tetraodontiformes								
Monacanthidae								
Unidentified Monacanthidae	--	--	--	--	--	--	--	--
Other unidentified larvae	2.896	3.240	9.470	4.685	4.140	5.690	6.704	1.809
Total fish larvae	189.189	39.435	388.422	152.054	383.022	239.743	154.902	165.391
Fish eggs	163.192	148.465	112.128	111.227	48.808	89.103	35.956	45.389
Zooplankton displacement (ml)	114.634	167.443	58.270	110.058	35.527	66.948	27.533	37.985
Squid paralarvae	5.897	9.149	11.813	9.901	11.492	15.442	5.965	9.534

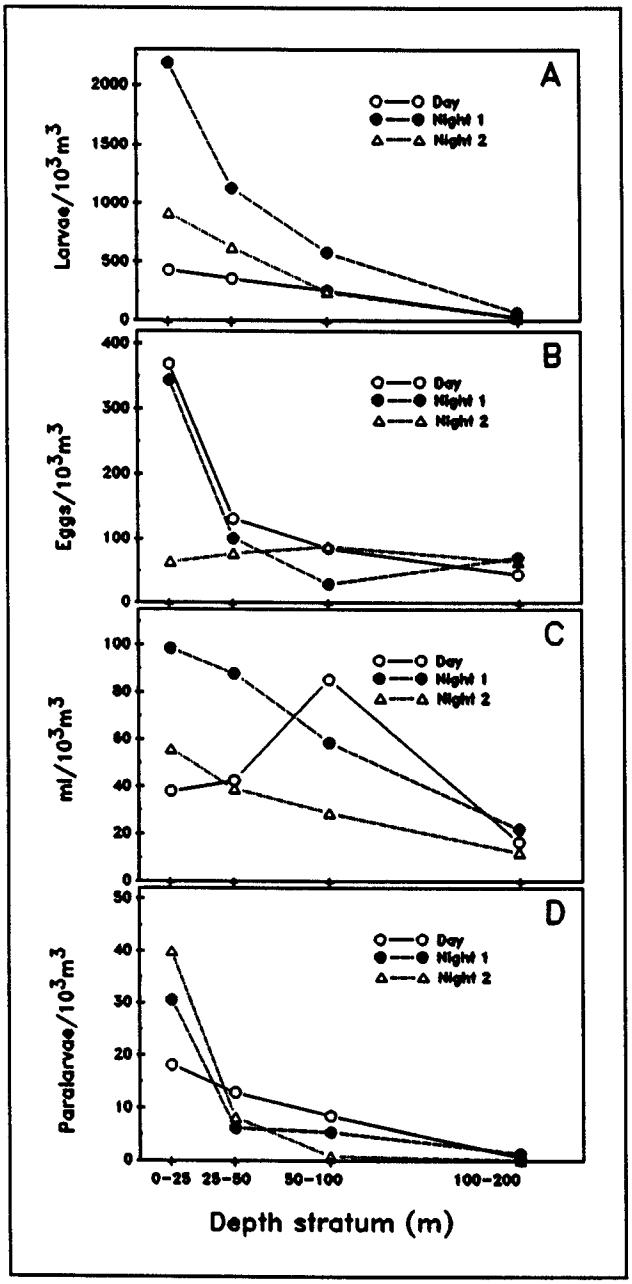

Figure 1.--Density data from plankton samples collected at Southeast Hancock Seamount during cruise 84-05 in July 1984. All values are means typically of four samples, from data contained in Tables 2-4 and are from combined samples taken above and 20 km west of the seamount. Error bars have been excluded for clarity, but standard deviations are available in the appropriate table. The three lines in each graph represent the three different surveys: the day survey, 14-15 July; the first night survey, 9-11 July; and the second night survey, 27-29 July. (A) Total fish larvae, (B) fish eggs, (C) zooplankton displacement volume, and (D) squid paralarvae.

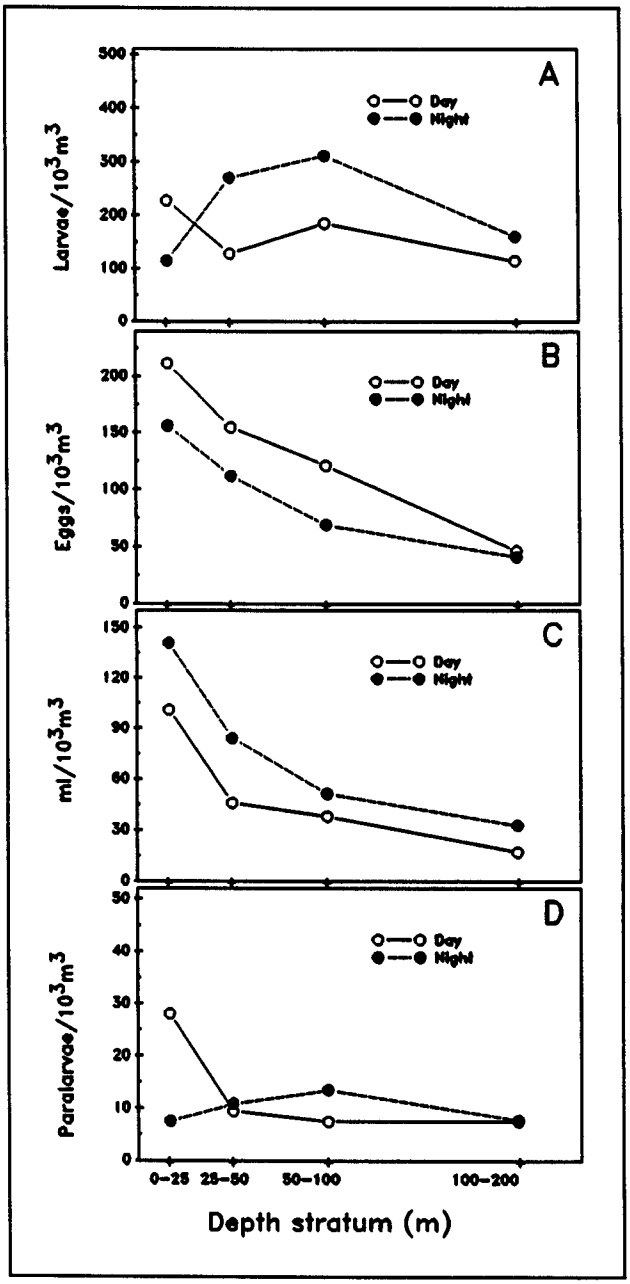

Figure 2.--Density data from plankton samples collected at Southeast Hancock Seamount during cruise 85-01 in February 1985. All values are means, typically of four samples, from data contained in Tables 5-6 and are combined samples taken above and 20 km west of the seamount. Error bars have been excluded for clarity, but standard deviations are available in the appropriate table. The two lines in each graph represent day and night surveys: the day surveys, 4 and 9 February; the night survey, 8-10 February. (A) Total fish larvae, (B) fish eggs, (C) zooplankton displacement volume, and (D) squid paralarvae.

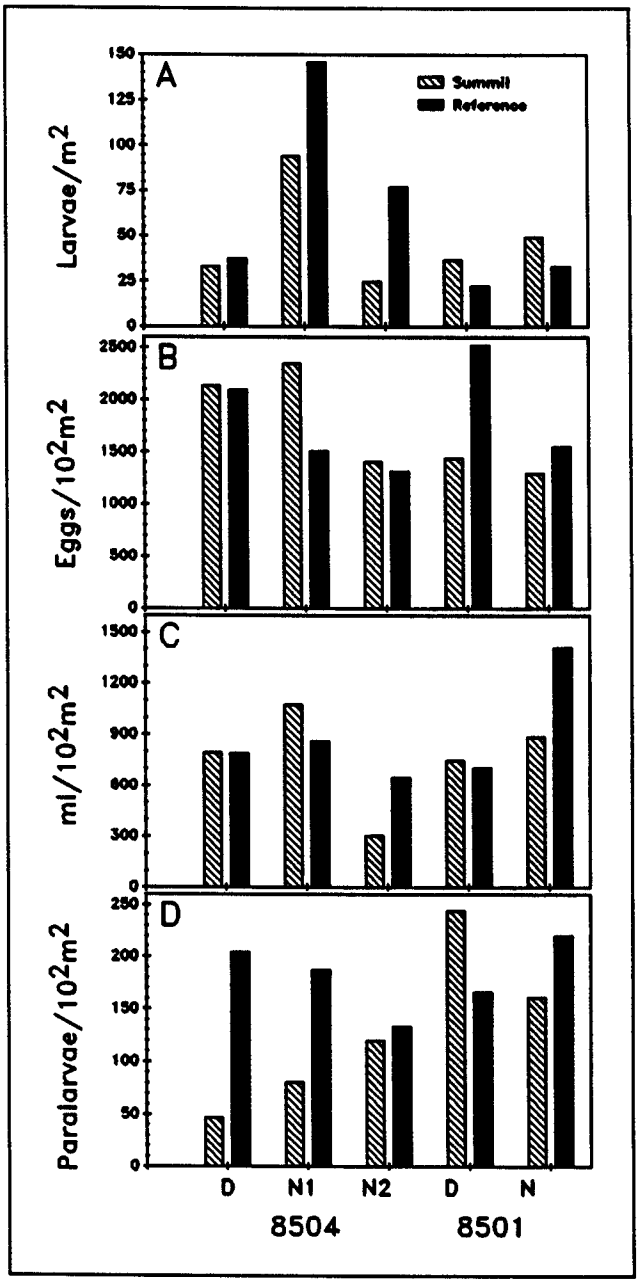

Figure 3.--Abundance data from plankton samples collected at Southeast Hancock Seamount during cruise 84-05 and 85-01 February 1985. Each bar represents one sampling series, with the abundance from the upper 200 m of the water column. The five bar pairs each represent two series, one above and one 20 km west of the seamount; *D* represents day and *N* night (two night surveys were undertaken in July 1984). (A) Total fish larvae (note that these abundances are number per m^2, contrasted with all others), (B) fish eggs, (C) zooplankton displacement volume, and (D) squid paralarvae.

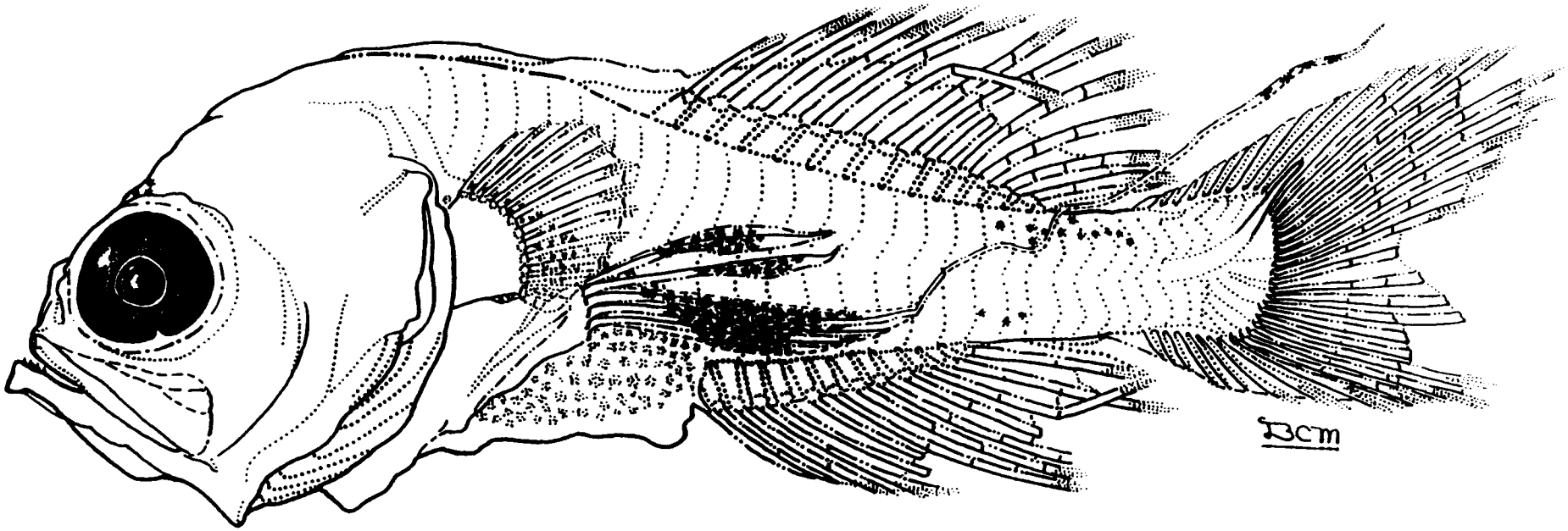

Figure 4.--Larval beryciform tentatively identified as family Stephanoberycidae, perhaps Malacosarcus macrostoma or an undescribed species. 11.3 mm standard length. NOAA vessel Townsend Cromwell cruise TC-84-05, Sta. 57, net 3. Southeast Hancock Seamount.

APPENDIX

APPENDIX

Comments on the identification of fish larvae from the Southeast Hancock Seamount in July 1984 and February 1985.

The classification of fishes in Tables 2-12 follows Eschmeyer (1990, Part II) with the following exceptions. The Microstomatidae was inadvertently omitted from Eschmeyer's (1990) list; we include Nansenia spp. in the Microstomatidae following his text, Part I. The traditional families Astronesthidae, Chauliodontidae, Stomiidae, Melanostomiidae, Idiacanthidae, and Malacosteidae are included in an expanded Stomiidae following Fink (1985). We use the older names in a vernacular sense, to enable the reader to more precisely identify the types of larvae mentioned. The families in the Aulopiformes and Myctophiformes of Eschmeyer (1990) are here placed in an inclusive Myctophiformes (Rosen 1985). Johnson (1992) has since given evidence that the Aulopiformes is a monophyletic group, however. The Mirapinnidae is included in the Beryciformes as suggested by Paxton et al. (1989). Placement of the Carangidae and Coryphaenidae in the perciform suborder Carangoidei follows Johnson (1984).

Comments on the identification of several taxa are given to clarify the ichthyofaunal composition at the Southeast (SE) Hancock Seamount for those interested in the biogeography of the region, which may be an area of change between faunal zones. Numerous demersal fish species seem to be at the southeastern limits of their ranges at the SE Hancock Seamount (Borets 1986), while many deepwater fishes found in the Hawaiian Islands have the northwestern limits of their distributions in the same area (Humphreys et al. 1984). Less is documented about the mesopelagic fauna of the region, but certain pelagic species make seasonal movements into this area (Seki and Mundy 1991, Sinclair 1991).

The biogeographic zones of the north Pacific Ocean are known only in the broadest terms. Most emphasis has been placed on either the boreal area bounded by the subarctic front (Willis et al. 1988, Pearcy 1991) or a broadly interpreted central ocean fauna (McGowen 1974, Johnson 1982). Changes in the pelagic fauna at the subtropical front, which is adjacent to or seasonally moves over the SE Hancock Seamount, are less clearly identifiable than those at the subarctic front (Willis 1984; Pearcy 1991). Even so, the distributions of species such as Scopelosaurus stephensi and Diplophos orientalis (Johnson 1982, Ozawa et al. 1990) indicate that there is a region of faunal change in the latitude of the SE Hancock Seamount. One purpose of publishing this appendix on identification problems is to provide information useful to future investigations of the biogeography of this region.

Congridae: One morph of Ariosoma occurred in our samples. Although only one Ariosoma species (A. marginatum), has been reported from Hawaii, Ariosoma anagoides has been recorded from the Milwaukee Seamount to the north (Novikov et al. 1980, as Alloconger anagoides). It is not possible to identify leptocephali in this genus to species without metamorphic specimens (Mochioka et al. 1991). Therefore, the adult habitat of this larva cannot be determined.

Ophichthidae: The single ophichthid leptocephalus collected was an ophichthin with a myomere count most closely matching the vertebral counts of Ophichthus erabo, a shallow water species, and Muraenichthys puhioilo, a species known only from off Oahu at 275 m, of the species recorded from the Hawaiian Ridge (McCosker 1979). No ophichthids have been reported from seamounts north of Midway, but this may be due to lack of appropriate sampling. Thus, we cannot determine if this leptocephalus was of a deepwater species that could have originated from the Seamount or a waif from a shallow bank or island to the south.

Cyematidae: These are the form described as "Cyematidae species 1" by Okiyama (1988), included in the "Leptocephalus holti group" of Castle (1984). Adults are unknown.

Derichthyidae: Our collections of Derichthys serpentinus apparently are the northernmost record of this species in the central North Pacific Ocean (Karmovskaya 1985).

Microstomatidae: The identities of the Nansenia species at the SE Hancock Seamount are unknown. N. ardesiaca has been reported from the Emperor Seamounts (Humphreys et al. 1984), but this is a western Pacific and Indian Ocean species (Kawaguchi and Butler 1984). N. longicauda is the species which has been recorded nearest SE Hancock Seamount, although N. pelagica also occurs in Hawaiian waters (Kawaguchi and Butler 1984).

"Unidentified Stomiiformes": Most unidentified stomiiforms were recently hatched larvae that had not developed the identifying characters of stomiiform families. The intestine length and pigment of these larvae suggested that most were "melanostomiids", although this could not be confirmed. Four larvae in this group, collected at night on 9 February 1985 in 0-25 m above the seamount summit, may have been small Etrumeus teres, a clupeid.

Phosichthyidae, Ichthyococcus species: Only two species of Ichthyococcus probably occur in Hawaiian waters. The Hawaiian specimens reported as I. ovatus (Clarke 1974) were I. intermedius, described subsequently by Mukhacheva (1980) (T. Clarke, Univ. Hawaii, pers. commun., December 1990). Gon (1987) used one of Clarke's (1974) specimens to confirm

the presence of I. intermedius in Hawaiian waters and corroborated the presence of I. elongatus in the SE Hancock Seamount region, previously noted by Mukhacheva (1980). Mukhacheva's (1980) record of I. ovatus from Hawaii (her figure 1) probably refers to that of Clarke (1974), as she did not include specimens from Hawaii in her list of material examined. I. elongatus has a north Pacific Transition Zone distribution and I. intermedius has a peculiar known distribution from New Guinea, the Caroline Islands, and Hawaii (Mukhacheva 1980). This genus may be informative about biogeographic zones in the Pacific Ocean. Unfortunately, larvae cannot be identified by characters that distinguish the adults and we did not collect metamorphic specimens. Therefore, we could not identify Ichthyococcus larvae from the SE Hancock Seamount to species.

Phosichthyidae, Vinciguerria species: These were small, preflexion specimens lacking caudal melanophores and gas bladder pigment diagnostic of larger larvae (Fahay 1983). Most probably were V. nimbaria, inferred from the relative abundance of postflexion larvae of the three species of Vinciguerria collected at the SE Hancock Seamount (Boehlert and Seki, unpublished data).

Gonostomatidae, Diplophos species: Recent examination of voucher specimens of Diplophos larvae from the SE Hancock Seamount revealed that some were not the widespread D. taenia (W. Watson, National Marine Fisheries Service (NMFS), Southwest Fisheries Science Center (SWFSC), La Jolla, CA, pers. commun. March 1992). The SE Hancock Seamount may be in a region of overlap between the western Pacific transition zone D. orientalis and the nearly cosmopolitan, warm water D. taenia (Ozawa et al. 1990). We have not re-examined Diplophos larvae from our study and so cannot designate species.

Gonostomatidae, Cyclothone species: No attempt was made to identify larvae of Cyclothone to species except for one C. obscura which was immediately identifiable because of its extensive dark pigment (Ozawa 1986). The C. obscura was collected on 10 July 1984 at 0-50 m 20 km west of the seamount summit. This record is of biogeographic interest because the location is intermediate to collections from the main Hawaiian Islands (Maynard 1982) and Japan (Miya and Nemoto 1987). Four other Cyclothone species occur in the region of the SE Hancock Seamount; C. alba, C. atraria, C. pallida, and C. pseudopallida (Kobayashi 1973).

Unidentified Sternoptychidae: These were small specimens for which reliable myomere counts could not be obtained.

Sternoptychidae, Argyropelecus species: No attempt was made to identify Argyropelecus larvae to species; almost all were preflexion specimens. Four species occur in the region: Argyropelecus aculeatus, A. affinis, A. hemigymnus, and A. sladeni (Baird 1971, Haruta 1975, Borodulina 1978).

Sternoptychidae, Maurolicus muelleri and Valenciennellus tripunctulatus: Until recently, there was no information to distinguish preflexion larvae of these two species, except a brief comparison in Japanese (Okiyama 1988). Previous descriptions of each in English were from areas where they are allopatric, so comparisons were not provided (Okiyama 1971, Ahlstrom 1974, Robertson 1976, Badcock 1977, Ahlstrom et al. 1984, Olivar and Fortuno 1991). William Watson (NMFS, SWFSC, La Jolla, CA.), examined our specimens and determined characters that distinguish larvae of these species.

"The best character for separating Maurolicus and Valenciennellus is swimbladder location. The swimbladder is visible in Maurolicus as small as ca. 3.2 mm (sometimes; almost always visible in those ≥4 mm), but not until ca. 7 mm in Valenciennellus. When present, the swimbladder is at about myomere 8-9 in Maurolicus, and at about myomere 10-12 (usually 11) in Valenciennellus. In postflexion [larvae], about 3-6 myomeres (rarely as few as 3) separate the posterior edge of the swimbladder and the anus in Maurolicus; the space is 0-3 myomeres wide in Valenciennellus (rarely as many as 3).

"Other characters that may help are eye width (narrower in Valenciennellus: width usually 41-55% - mean 50% of length for fish ≤7.5 mm, vs. usually 50-74% - mean 60% for Maurolicus ca. 4-7 mm), gut shape (usually thinner and straighter in Valenciennellus; also the esophagus may be a little bit longer and the liver a little smaller in Valenciennellus, through flexion stage), and size at which photophores begin to develop (later in Valenciennellus: ca. 9.5-10 mm vs. ca. 7-7.5 mm in Maurolicus). Larval Maurolicus are more robust (shorter and deeper-bodied) than Valenciennellus: this isn't particularly apparent until notochord flexion, but is an obvious difference in flexion and postflexion." (W. Watson, NMFS, SWFSC, La Jolla, CA., pers. commun., June 1992).

Sternoptychidae, Sternoptyx species: No attempt was made to identify Sternoptyx larvae to species; most were preflexion specimens. Sternoptyx diaphana and S. pseudobscura occur in the region (Baird 1971, Haruta and Kawaguchi 1976) and S. obscura has been recorded from the main Hawaiian Islands (Ridge-Cooney 1987).

Stomiidae, "Chauliodontidae": We assumed that the Chauliodus larvae collected at SE Hancock Seamount were C. sloani, but there are no characters known that distinguish Chauliodus larvae to species. Chauliodus sloani is the only species recorded from the region. Chauliodus macouni, the species nearest in range, seems to be a subarctic and eastern transition zone form with the southern limit of its range in the central Pacific at the subarctic front (Parin and Novikova 1974).

Stomiidae, Stomias (Macrostomias) species: Although Stomias pacificus is the only Stomias with a high vertebral count ("Macrostomias") recorded from the SE Hancock Seamount region (Scherbachev and Novikova 1976), specimens from the main Hawaiian Islands identified as S. longibarbatus had characteristics intermediate between the two species (Clarke 1974). This problem was not addressed in the most recent revision of the genus (Fink and Fink 1986) and we were unwilling to identify these larvae to species.

Stomiidae, "Astronesthidae": The form that we call "Astronesthidae type 1" is that described and illustrated in Belyanina (1982, her figure 10) and Okiyama (1988, as "Astronesthidae sp. 5"). Thus, this larval type occurs off the Philippines, Japan, and at the SE Hancock Seamount. Transforming individuals from the SE Hancock Seamount indicated that this larval type belongs to an undescribed species (K. Kawaguchi, Ocean Research Institute, Univ. Tokyo, Japan, pers. commun., May 1985).

The other astronesthids collected were not identifiable either as named species nor larval types described in the literature. The "unidentified Astronesthidae" were small, preflexion specimens; most were probably "Astronesthidae type 1" that had not formed the diagnostic pigment pattern on the finfolds. At least 12 species of "astronesthids" occur in the region of the SE Hancock Seamount.

Stomiidae, "Melanostomiidae" and "Malacosteidae": Approximately 30 species of Eustomias occur in Hawaiian waters (Clarke 1982). Because of the unsettled taxonomic state of the genus, we did not attempt to identify larvae to species. Larvae of Bathophilus, Photonectes, and the "Malacosteidae" were not identified to species because of uncertainty about the species present in the region. Identifications to genus and family were based on descriptions in Kawaguchi and Moser (1984). Most of the "unidentified Melanostomiidae" collected in the winter cruise were probably Opostomias mitsuii that had not yet developed the diagnostic band of melanophores across the caudal peduncle.

Stomiidae, Idiacanthus species: There are no known characters that allow identification of Idiacanthus larvae in areas of sympatry. Idiacanthus fasciola is the central gyre species found off the main Hawaiian Islands, but I. antrostomus is a boundary current species found in surrounding waters (Novikova 1967). We were unwilling to assume that our specimens were either species without independent evidence.

Scopelarchidae: The unidentified Scopelarchidae and Benthalbella species were either specimens with myomere and fin ray counts in the ranges of overlap between species, or small specimens lacking diagnostic pigment for which reliable counts could not be obtained.

Paralepididae: No attempt was made to identify larval Paralepididae, except for the distinctive larvae of Stemonosudis macrura and Sudis atrox. Our "unidentified Paralepididae" probably includes several genera and species.

Myctophidae, Bolinichthys species: We collected two types of Bolinichthys larvae, equivalent to Bolinichthys species I (without mid-lateral melanophores) and species II (with mid-lateral melanophores) of Ozawa (1986). Clarke (1973) recorded Bolinichthys longipes and B. supralateralis from Hawaii; B. photothorax also occurs in the region (Wisner 1976), although it may not occur as far north as 30°N (Bekker 1983). Pacific Bolinichthys populations of B. supralateralis were subsequently described as B. distofax by Johnson (1975). Moser and Ahlstrom (1974) presented an illustration of the larval type with mid-lateral pigment as B. supralateralis; the same illustration was later identified as B. distofax (Moser et al. 1984). Nafpaktitis et al. (1977) mentioned specimens of both B. distofax and B. supralateralis from off Hawaii, however, and juveniles identified as B. supralateralis using the key in Johnson (1975) have also been identified in collections from Hawaii (B. Mundy, pers. observ.). We therefore refer to the larvae with mid-lateral pigment only as Bolinichthys species and identify the larvae lacking mid-lateral melanophores as B. longipes.

Myctophidae, Ceratoscopelus townsendi: Our Ceratoscopelus larvae were originally identified as C. warmingii, following the then accepted nomenclature of the central North Pacific populations (Wisner 1976). We now identify our specimens as C. townsendi following Badcock and Araújo (1988).

Myctophidae, Diaphus and Lampanyctus species: No attempt was made to identify Diaphus and Lampanyctus larvae to species.

Myctophidae, Notoscopelus species: Larvae of Notoscopelus resplendens were identified by myomere and dorsal fin ray counts (Ozawa 1986). Specimens which had not yet formed fin

rays were identified only as Notoscopelus species. Most probably were N. resplendens because the large larvae that were identified were only that species. However, N. japonicus and N. caudispinosus may also occur in the region (Novikov et al. 1980, Bekker 1983).

Myctophidae, Benthosema suborbitale and Electrona risso: No comparisons have been published discussing characters that reliably distinguish very small, preflexion larvae of Benthosema suborbitale and Electrona risso. Our small specimens were identified by eye and intestine shape. Small B. suborbitale have been illustrated as having the extreme anterior of the gut only slightly more constricted than the mid-gut and the posterior section turned downward from the body musculature at an angle of appx. 45°. In overall appearance, the gut is bulbous anteriorly with a downturned posterior end. The ventral edge of the eye has been illustrated as having a lunate or only slightly conical mass of choroid tissue (Pertseva-Ostroumova 1974, Fahay 1983). In contrast, preflexion E. risso have been illustrated as having the extreme anterior of the gut about half the diameter of the mid-gut and the posterior section turned downward from the body musculature at <45°. In overall appearance, the gut is sigmoid with a thick middle. The ventral edge of the eye has been illustrated as having a markedly conical mass of choroid tissue (Moser and Ahlstrom 1970). The diagnostic validity of these characters is contradicted, however, by a more recent illustration of a preflexion B. suborbitale in which the intestine is sigmoid, without a bulbous anterior section, and in which a conical mass of choroid tissue is shown on the ventral eye (Ozawa 1986). A 45° downward turning of the posterior intestine remains the only feature mentioned above that has been consistently illustrated for small specimens of B. suborbitale. Characters for the reliable separation of preflexion B. suborbitale and E. risso need further investigation. Flexion and postflexion larvae are easily distinguished (Moser et al. 1984).

Myctophidae, Centrobranchus species: At the time when these larvae were identified no characters were known to distinguish larvae of Centrobranchus brevirostris, C. choerocephalus, and C. nigroocellatus, all of which had been reported from the region (Wisner 1976, Novikov et al. 1980). These have recently been shown to be synonyms (Gago and Lavenberg 1992). Our specimens were not the other valid species (C. andreae), and so are here identified as C. nigroocellatus.

Myctophidae, Hygophum reinhardti: A few Hygophum specimens in our collection had pigment on the symphysis of the lower jaw, but also had caudal pigment diagnostic of H. reinhardti larvae (Moser and Ahlstrom 1970). Symphyseal pigment is

apparently absent in larvae of H. reinhardti, but present in similar larvae of H. atratum (Moser and Ahlstrom 1970). Hygophum reinhardti has been recorded from the region of SE Hancock Seamount (Novikov et al. 1980); H. atratum is an eastern tropical Pacific endemic species not recorded from our area. We identified all of our Hygophum larvae as H. reinhardti based on caudal pigment.

Myctophidae, Myctophum species: These were all small, preflexion specimens which had not yet formed identifying characters.

Myctophidae, Symbolophorus cf. californiensis: These were larvae that closely matched descriptions of Symbolophorus californiensis (Moser and Ahlstrom 1970). Wisner (1976) gave the range of S. californiensis as "...from about 27°N to British Columbia and perhaps westward in the Subarctic Current to at least 155°W" and suggested that related populations in the western Pacific might be an undescribed species. We therefore qualified the identification of our specimens. Bekker (1983) gave the distribution of S. californiensis as trans-Pacific in the northern Transition area, although not as far south as 30°N in the mid-Pacific. Collections of S. californiensis-type larvae at the SE Hancock Seamount in winter confirm that S. californiensis (or a similar species) occurs in the region.

Myctophidae, unidentified Myctophidae: These were mostly small larvae that had not yet formed diagnostic characters. Most were slender lampanyctines of the Diaphus-Ceratoscopelus-Bolinichthys type. Since these lacked melanophores at the isthmus, at the intestine, and in the otic capsule, there was probably a bias toward identifying small Ceratoscopelus merely as unidentified Myctophidae.

Evermannellidae: No attempt was made to identify larval Evermannellidae to species. None of these, however, was Odontostomops normalops.

Ceratioidei: The unidentified Ceratioidei were small, preflexion larvae that had not yet formed diagnostic characters. No attempt was made to identify larvae of the Caulophrynidae, Oneirodidae, Gigantactinidae, or Himantolophidae beyond family level.

Ceratiidae, Ceratias spp.: These larvae are identified only as Ceratias species, because both C. holboelli and C. uranoscopus are known from Hawaiian waters (Pietsch 1986). There is presently no way to distinguish larvae of these two species.

Linophrynidae, Linophryne macrorhinus and Edriolychnus larval types: Linophrynid larvae were identified to two species groups assigned by Bertelsen (1951). The Edriolychnus group

includes the "hyaloceratias"-type larvae of Edriolychnus schmidti and the Linophryne arborifera species group (= subgenus Rhizophryne; Bertelsen 1982). The L. macrorhinus group includes larvae in the subgenus Linophryne (Bertelsen 1951, 1982). The distribution of linophrynids is poorly known. Although only one species (Linophryne pennibarbata, subgenus Rhizophryne) is recorded from the region of the SE Hancock Seamount (Bertelsen 1981), our collections indicate that at least two occur there. Four other species (L. coronata, L. escaramosa - subgenus Linophryne; L. indica - subgenus Stephanophryne; and L. densiramus - subgenus Rhizophryne) are recorded from off the main Hawaiian Islands (Bertelsen 1980, 1981, 1982).

Neoceratiidae: There are no published records of this monotypic family from the central North Pacific Ocean. Larvae of Neoceratias spinifer are distinctive (Bertelsen 1951). Our specimen was examined by E. Bertelsen (Zoological Museum, Univ. Copenhagen, pers. commun., June 1991), who informed us that another specimen was collected north of Hawaii in 1971, according to information received from E. H. Ahlstrom (NMFS, SWFSC, La Jolla Laboratory).

Bregmacerotidae: Bregmaceros japonicus and B. cf. macclellandi have been recorded from off the main Hawaiian Islands (Clarke and Wagner 1976). Our Bregmaceros cf. atlanticus larvae match the descriptions and illustrations of that species and lack the anterior, precocious dorsal fin ray characteristic of larvae described as B. macclellandi (Houde 1984). Our B. cf. japonicus match the description in footnote 1 of Houde (1984). There is clearly a need for more taxonomic work in the central Pacific Ocean on this most confusing family.

Macrouridae and Ophidiiformes: No attempt was made to identify macrourid or ophidiiform larvae beyond these levels.

Melamphaidae, Melamphaes species: Larvae identified as Melamphaes species were preflexion specimens lacking distinctive pigment patterns. Larvae identified as M. cf. simus and M. cf. lugubris had pigment patterns similar to those described for those species. M. danae, M. indicus, M. janae?, M. longivelis?, M. lugubris, M. polylepis, M. simus, and M. suborbitalis occur in the central North Pacific Ocean (Ebeling 1962, Clarke and Wagner 1976). Our identifications are tentative, because diagnostic pigment patterns are not described for all of these species. M. danae and M. indicus were eliminated as possibilities based on pigment, however (Ebeling 1962). Our Melamphaes type 3 was a darkly pigmented larva different from any that have been described.

Stephanoberycidae?: A unique beryciform larva (Fig. 4, 11.3 mm SL) was tentatively identified as belonging to the poorly

known Stephanoberycidae. Meristics of this specimen were: 13 dorsal fin elements, 12 anal fin elements, x, 10+9, viii caudal rays, 5 pelvic rays, 12 or 13 pectoral rays, 7 branchiostegals, and approximately 10+18 myomeres. Another specimen, 13.0 mm SL was collected by the NMFS Honolulu Laboratory off the Kona coast, Hawaii Island. Scales were not formed on either specimen.

The exclusion of the maxilla from the gape, the position of the pelvic fins, and the principal caudal fin ray count indicate that these are beryciforms. Beryciform families with meristics similar to these larvae include the Hispidoberycidae, Gibberichthyidae, Stephanoberycidae, and Rondeletiidae (Keene and Tighe 1984). Descriptions of larvae make it unlikely that our specimens are gibberichthyids (Keene and Tighe 1984) or rondeletiids (J. Paxton, Aust. Mus., Sydney, pers. commun., November 1989). Hispidoberycids have 8 pelvic fin elements and are known only from Indonesia and the South China Sea (Kotlyar 1991).

We suggest that these larvae are most likely stephanoberycids, based on meristics and the known distribution of adults. Counts of the larvae agree most closely with those of Malacosarcus macrostoma (Ebeling and Weed 1973). Malacosarcus is known only from six specimens, from 0°33'S, 151°34'W; 13°28'S, 149°30'W; 16°32.5'S, 119°59'W (central South Pacific-4 specimens; Ebeling and Weed 1973), and 20-21°N, 20-24°W (eastern North Atlantic-2 specimens; Merrett 1992). The unusual position of the pelvic fins in our specimens does not agree with their ventral position in Malacosarcus, but ontogenetic changes in pelvic fin position occur in other beryciform larvae (Keene and Tighe In Moser et al. 1984). The dissimilarity of our specimens with those of Acanthochaenus lutkenii (Kotlyar and Evseyenko 1989) also argues against this identification. Even so, we suggest that the morphology of these larvae is in greatest agreement with the Stephanoberycidae, of all possibilities.

John Paxton (Australian Museum) and Jon Moore (Yale University) examined the SE Hancock Seamount specimen and agreed that it might be a stephanoberycid. Paxton suggested that it might be Stephanoberyx or an undescribed form. Stephanoberyx has only been recorded from the western North Atlantic Ocean (Ebeling and Weed 1973). At minimum, our collection of these larvae at the SE Hancock Seamount and the island of Hawaii gives evidence for the existence of a previously unrecorded fish family from the Hawaiian Ridge.

Mirapinnidae: We tentatively identified our specimens as Eutaeniophorus festivus, based on myomere counts (Bertelsen and Marshall 1984). These counts were difficult to obtain in darkly pigmented larvae, however, and our identifications

are thus tentative. We also note that Parataeniophorus larvae have recently been recorded from Johnston Atoll (Boehlert et al. 1992), in the same biogeographic province as the Hawaiian Islands. In any case, records of miripinnid larvae from the SE Hancock Seamount and Johnston Atoll add significantly to knowledge of the distribution of this little-known family.

Scorpaenidae: Most of these larvae were not identifiable. One, collected during the day on 9 February 1985 at 50-100 m over the seamount summit, had large nuchal spines characteristic of Scorpaenodes (Washington et al. 1984) among the genera known from the region (Eschmeyer and Randall 1975, Kanayama 1981). Scorpaenodes species are not recorded from the seamounts north of the emergent Hawaiian Islands, so this may have been a waif from a shallow bank or island to the south.

Percoidei, Howella species: Our Howella larvae differ significantly from those of H. brodiei and H. pammelas from the California Current region (E. Sandknop, NMFS, SWFSC, La Jolla, pers. commun., August 1991). Two species of "oceanic cheilodipterid" fishes have been recorded from the region of the SE Hancock Seamount: Brephostoma carpenteri and Howella parini (Fedoryako 1976). Howella brodiei is the most abundant species in this group near the main Hawaiian Islands (Clarke 1987 as H. sherbourni), although Howella zina, Pseudohowella intermedia, and B. carpenteri have also been taken there (T. Clarke, Univ. Hawaii, Honolulu, HI, December 1990). Our larvae appeared to be a Howella species, based on fin ray counts, but we could not identify them to species.

Serranidae, Anthiinae: These were small, preflexion specimens lacking diagnostic characters. Plectranthias kellogi is found at the SE Hancock Seamount (Humphreys et al. 1984), so it is possible that these larvae originated there.

Emmelichthyidae: Adult Emmelichthys struhsakeri and Erythrocles scintillans have been collected at the SE Hancock Seamount (Humphreys et al. 1984). We could not identify our larvae to species.

Carangidae: One carangid specimen with fin rays formed was a Decapterus species. This specimen was collected at night on 10 July 1984 at 25-50 m over the seamount summit. Adult D. tabl have been collected at the SE Hancock Seamount and other species occur in the region (Humphreys et al. 1984).

Labridae: Fin ray counts indicated that we collected larval Julidini and Cheilinini (Leis and Rennis 1983). The cheilinines of the Hawaiian Ridge are generally shallow

water, reef associated species, so it is likely that these larvae were waifs from the south.

Scaridae: One scarid larva, collected at night on 10 July 1984 at 0-25 m over the Seamount summit, was a Calotomus species. All adult scarids are shallow water, usually reef associated species; this larva probably was a waif from the south.

Chiasmodontidae: Chiasmodontid larvae were not identified to genus or species during our study. Subsequent examination of voucher specimens from July 1984 revealed that Pseudoscopelus and Chiasmodon species were present (R. Lavenberg, Los Angeles Co. Museum of Natural History, pers. commun., January 1990). We have not re-examined our larvae to identify them to genus; species could not be identified in the absence of transforming specimens. There is little information available about the distribution of chiasmodontids in the North Pacific Ocean.

Gobiidae: This larva could not be identified to species, but it was not the only deepwater gobiid species known from the Hawaiian Islands, an undescribed Oxyurichthys species with >12 dorsal and anal fin rays (Struhsaker 1973, B. Mundy, pers. observ.). There is a high probability that this larva was a waif from a bank or island to the south.

Acanthuridae: A specimen collected at night on 27 July 1984 at 0-25 m 20 km to the west of the Seamount had fin ray counts diagnostic for Acanthurus species (Leis and Rennis 1983). This larva probably was a waif from the south.

Gempylidae, unidentified Gempylidae: These were small, preflexion larvae. More recent information on the identification of gempylid larvae (Ozawa 1986) suggested that most were Diplospinus multistriatus, but we have not re-examined the larvae to confirm this.

Scombridae, unidentified Scombridae and Thunnus species: Larval scombrids were identified by the criteria of Nishikawa and Rimmer (1987). The Thunnus species were either T. alalunga or T. albacares; they lacked pigment on the symphysis of the lower jaw, but may have been too small to have formed this character.

Bothidae: One specimen with four elongate dorsal fin rays, collected at night on 27 July at 0-25 m 20 km west of the Seamount, was a Parabothus larva (Tsukamoto et al. 1991). Parabothus chlorospilus and P. coarctatus occur in the southern Emperor Seamounts (Novikov et al. 1980, Humphreys et al. 1984). The remaining unidentified bothid larvae were not Parabothus or Chascanopsetta species, but were too small to identify as other genera occurring in the region.

Monacanthidae: A specimen collected at night on 10 July 1984 at 0-25 m 20 km to the west of the Seamount resembled the "morph C monacanthid" of Leis and Rennis (1983). However, the specimen had preopercular spinules characteristic of other monacanthid morphs, triacanthodids, and balistids (Leis and Rennis 1983). The identification of this larva is therefore tentative, with the possibility that it could be a balistid or Hollardia goslinei, a triacanthodid collected at the SE Hancock Seamount (Humphreys et al. 1984).

Other unidentified larvae: Most of our "other unidentified larvae" were small, damaged specimens lacking diagnostic characters. Five distinctive larval types could be consistently recognized but not assigned to family. All were preflexion larvae.

Two types were elongate with early-developing pelvic fins, short coiled intestines, and >30 myomeres; these may have been morids, other gadiforms, or the chiasmodontid genus Kali. One darkly pigmented type with 12+13 myomeres resembles preflexion Howella larvae from the eastern Pacific Ocean (from information by E. Sandknop, NMFS, SWFSC, La Jolla, pers. commun., August 1991). A fourth type had approximately 35-39 myomeres, a sinusoidal intestine with muscle rings, early forming larval teeth, and three melanophore stripes on the caudal peduncle; larger larvae of this type collected in another NMFS study off Oahu indicated that they may be undescribed larvae of a myctophiform.

The most abundant unidentified larval type had a band of melanophores around the tail, pigment over the posterior intestine, behind the esophagus, on the oil globule, and over the anterior edge of the head. Most larvae of this type had yolksacs. Larger larvae similar to these lacked the tail band, having a single melanophore on the ventral edge of the tail. These had >50 myomeres and an indication of an early forming dorsal fin element. This larval type may have been the early stage of a gempylid, but this could not be verified.

Lancelets, Amphioxi: Although not directly relevent to this study, it is also noteworthy that larval lancelets of the Amphioxides type (Bigelow and Perez-Farfante 1948) were common in our samples.

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