

**SIPHONOPHORES OF THE  
PACIFIC  
WITH A REVIEW OF THE  
WORLD  
DISTRIBUTION**

BY  
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## INTRODUCTION

Most of the published work on Siphonophorae deals with taxonomic descriptions, taxonomic problems and systematic accounts, histology and anatomy and also gives records concerning the distribution of the individual species. Totton's "Synopsis" (1965) encompassed the anatomy, ontogeny and taxonomy of most of the species of siphonophores.

Some data on the distribution of the species, particularly for the Mediterranean and its adjacent seas, appeared in Bigelow and Sears (1937). Garstang (1946) has given a comprehensive account of the morphology, nomenclature and relationships of the Siphonophorae.

Data on the development of various species appeared in Haeckel (1869), Metschnikoff (1874), Chun (1882) and Lochmann (1914). Development of Muggiaea atlantica from the egg to the adult form was described by Russel (1938); Agalma elegans, by Totton (1956); Abylopsis tetragona, by C. Carré (1967); and Sphaeronectes, by D. Carré (1969).

Regeneration in siphonophores was reported by Moser (1925). Mackie and Boag (1963) observed that in Nanomia the palpons regenerated.

Recently, particular attention has been given to the siphonophores. Mackie (1964) reported on the studies of locomotion in the colonies and Mackie and Boag (1963) on the capture of prey, feeding and digestion and culture of siphonophores. Barham (1966) had considered some siphonophores as sound scatterers because pneumatophores were found with bubbles of carbon monoxide in the physonectes (Pickwell, 1966, 1967). The structure of the pneumatophores had been studied earlier by several workers (Chun, 1897; Bigelow, 1911a; Moser, 1925; Leloup, 1941b).

Phosphorescence was observed in several species of siphonophores (reviewed by Boden and Kampa, 1964), but no biochemical studies of this process have been made for this group. No luminiscent organs have been observed in these Coelenterates, so it is probable that any luminiscence was due to contamination by luminescent microorganisms.

Parasites in siphonophores were reported by Rose and Cachon (1951) and Totton (1954).

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Many of the free-swimming Siphonophorae appear to follow the vertical migration of the zooplanktonic organisms on which they feed. The response to light in the Physophorae is shown by the siphosoma region, while the pneumatophore and nectosoma do not present photoreceptive capacity (Mackie, 1964; Mackie and Boag, 1963). Chromatophores occur in the nectophores and pneumatophores (region with no apparent photosensitivity). The nature of the siphosome photoreception is unknown; it could depend on the neurons (Mackie and Boag, 1963).

Although the Siphonophorae are not so distinctly restricted to water masses as are most of the Chaetognatha species (reviewed by Alvarino, 1965), it has been observed that some species of siphonophores can be used as indicators of the flow of certain types of waters into a particular region. Russel (1934) observed Muggiaea atlantica at the entrance of the English Channel where it “occurred for an unbroken series of years from 1913 to 1924 (excepting 1915, when none were seen in the collections), but that in 1924 M. kochi first made its appearance and that since that time M. atlantica has disappeared from the area.” Later I studied the plankton of this region and became familiar with the fluctuations in the occurrence of one or other of these species; the presence of M. kochi is an indication of the inflow of water from the south. Moore (1953) has considered that fluctuations in abundance are in part due to “inherent seasonal changes within a given water mass, but in part also to seasonal changes in the water mass present.” He has implied that in the Bermuda region the summer water of northern origin brings into the region species typical of colder regions, while the winter water comes from warmer locations in the south. He also states that in the Florida Current off Miami there is “a fluctuating amount of water of the Gulf of Mexico origin intruding into the main water mass.” He ends his discussion stating: “Although the abundance of several [species] has shown to be different in the Yucatan and Gulf of Mexico waters, none are completely restricted to one mass, and so readily useable as indicator species.” In the California region it has been observed from the monthly 1954 and 1958 California Cooperative Oceanic Fisheries Investigations cruises that Chelophyes appendiculata (a species typical of the temperate regions) is displaced by Ch. contorta (a warm-water species) with an inflow of warm water. A particular pattern of distribution was observed (Alvarino, 1969) for Chelophyes appendiculata, Ch. contorta, Muggiaea atlantica and M. kochi off the Panama Canal in the Caribbean and Pacific regions.

The material to be considered here consists of the extensive collections of Scripps Institution of Oceanography in the Pacific and the CalCOFI cruises in the region of the California Current and the Sea of Cortés. The material collected in the Pacific extends over a period of fourteen years (table 1). The present work provides the first extensive survey of the distribution of the siphonophores in the Pacific as well as a preliminary account of their bathymetric distribution. Bigelow (1911a) has presented extensive data from the Eastern Tropical Pacific and also from the Northwest Pacific (Bigelow, 1913).

Table 2 includes other collections analyzed by the author. The published

data on the distribution of the species observed in the Pacific and adjacent seas are compiled in table 3.

Table 4 is a compilation of all published data on the bathymetric distribution of the species of Siphonophorae plus the author's unpublished data.

The records of the capture of certain rare species are of special importance. The following are notable: Muggiaea delsmanni Totton, 1954; Lensia achilles Totton, 1941; L. ajax Totton, 1941; L. hostile Totton, 1941; Abyla brownia Sears, 1953; Ceratocymba intermedia Sears, 1953; Clausophyes galeata Lens and Riemsdijk, 1908; Sulculeolaria bigelowi (Sears), 1950; Marrus orthocannoides Totton, 1954; Dromalia alexandri Bigelow, 1911. Three newly described species are also included: Vogtia kuruae Alvariño, 1967; Sulculeolaria brintoni Alvariño, 1968; Enneagonum searsae Alvariño, 1968.

The isotherms at a depth of 200 m are used for comparison with the distributional ranges of the species because the position of certain 200 m isotherms tends to agree with the limits of the ranges. Temperatures are relatively conservative at and below 200 m, as compared with those in and above the thermocline. It is to be expected, therefore, that general aspects of the ocean climate which existed during the 15-year sampling period are reflected by the distribution of temperature at levels below the thermocline. It is not expected that a particular temperature, perhaps at a particular depth, is associated with a complex of environmental factors that affects or controls the distributional limits of the species.

TABLE 1 Collections Studied

Expedition/cruise	Region surveyed	Depths sampled (m)	Date
NORTHERN HOLIDAY	NE Pacific and Gulf of Alaska	Various depths; from 118-0 to 227-0	August-September 1951
SHELLBACK	Tropico-equatorial eastern Pacific	Various depths; from 155-0 to 474-0	May-August 1952
CAPRICORN	Tropico-equatorial South Pacific, with some stations north of the equator	140-0; 400-0; 1000-0	November 1952 -February 1953
TRANSPAC	North Pacific	Various depths; from 140-0 to 1280-0 and stratified sampling at various depths, from 318-75 and 265-115 to 850-680 and 1175-525	July-November 1953
EASTROPIC	Galápagos Islands	Various depths; from 1328-0 to 1583-0	October-December 1955
NORPAC CalCOFI 5508	NE Pacific (48°N - 20°N and east of 154°W)	140-0; 280-140; 700-0	July-September 1955
NORPAC POFI	NE Pacific (157°W-165°W and north of 34°N)	Various depths; from 100-0 to 141-0	July-August 1955
TROLL	Tropico-equatorial western Pacific	140-0	March-April 1955
CHINOOK	Central North Pacific (Hawaii to Adak)	Various depths; from 85-0 to 130-0	July-August 1956
EQUAPAC HORIZON	Equatorial western Pacific	Various depths; from 140-0; 280-140; 700-0	August-September 1956
EQUAPAC STRANGER	Equatorial central-western Pacific (175°W to Hawaii)	Various depths; from 140-0; 280-140; 700-0	August-September 1956
DOWNWIND	Eastern South Pacific	Various depths; from 71-0 to 1830-0 and stratified 129-64; 258-100; 283-141; 514-267; 565-283	October 1957 -February 1958
VERMILLION SEA	Sea of Cortés	640-0; 732-0 1097-0;1262-0 1464-0;1701-0	March-April 1959

Expedition/cruise	Region surveyed	Depths sampled (m)	Date
TETHYS	Tropico-equatorial eastern Pacific (San Diego to Hawaii to 5°S-135°W to San Diego)	150-0; 868-0 and midwater trawls at various depths from 1100-0 to 4179-0	June-August 1960
MONSOON	Tropico-equatorial western Pacific-Indonesian Seas; western South Pacific; Antarctic to Subantarctic Pacific	Various depths; from 200-0 to 362-0 and Isaacs-Kidd MWT, from 1878-0 to 2727-0	September 1960 - April 1961
LEAPFROG	Alaska	140-0; 200-0	August-September 1961
CalCOFI Cruises 5401, 5402, 5403, 5404, 5405, 5406, 5407, 5408, 5410 5412	Region of California	140-0	January-December 1954
CalCOFI Cruises 5602, 5604	Sea of Cortes and region of California Current	140-0	February-April 1956
CalCOFI Cruises 5801, 5802, 5803, 5804, 5805, 5806, 5807, 5810	Region of California Current	140-0; 418-0 420-0; 423-0; 618-0	January-October 1958
CalCOFI Cruise 5901	Region of California Current	140-0	January 1959
CalCOFI Cruise 6101	Region of California Current	140-0	January 1961
CalCOFI Special Cruise 6508-2	Off California (30° 30'N - 120°00'W)	Stratified samples BONGO(BMOC) net Day: 100-0; 100-20; 300-235; 460-410; 500-420; 620-530; 775-685; 840-690; 1030-860;1040-890; 1242-1090; 1710-1450; 2020-1800; 2170-1950; 2320-2100; 2460-2100 Night: 110-0; 350-250; 525-401; 1720-1340; 2300-1880; 2630-2210; 3040-2620	August 1965



TABLE 2 Other Collections Analyzed (data listed in table 3)

Expedition/cruise	Region	Date
Alaska cruises	Gulf of Mexico	1951, 1952
Sarsia cruises	Bay of Biscay	1954
Albatross II	Gulf of Maine; Georges Bank; off Long Island and Atlantic City	1956
Venezuela	Venezuela and off Orinoco River, Gulf of Cariaco	1959, 1960
NAGA Expedition	South China Sea and Gulf of Thailand	1959-1961
Bonacca cruise	Gulf of Mexico; off Central America	1963
LUSIAD Expedition	SE Atlantic and eastern Tropico-equatorial Atlantic	1963
Atlantis II cruise	Tropical western Atlantic and off Amazon estuary	1964
Chain cruise	Tropical western Atlantic and off Amazon estuary	1965
Thomas Washington cruise	Tropical western Atlantic; off the Guianas, Venezuela and Panama	1965

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## METHODS

The collections analyzed here were obtained by the following methods: one-meter oblique net tows from various depths (Ahlstrom, 1948; Brinton, 1962; Alvariño, 1965a), Leavitt opening-closing net tows, mid-water trawl and Isaacs-Kidd mid-water trawl hauls. Accurate data on the depth distribution could not be considered reliable until recently when appropriate equipment became available to establish the depth at which the animals were caught. Therefore, the most accurate data on the bathymetric distribution of the species (Alvariño, 1967b) were obtained with the BONGO (BMOC) nets (McGowan and Brown, 1966) during the CalCOFI Cruise 6508-2.

Data on the number of superior and inferior nectophores, gonophores, bracts, and pneum atopores were determined for each of the species observed. The number of colonies present could be determined by the greatest count of either the superior or inferior nectophores, and in the eudoxid generation by the greatest counts of either bracts or male or female gonophores, according to the structure of the colony. In this way quantitative data could be arranged for most of the Calycophorae. However, accurate quantitative data could not be obtained from the fragmented Physonect colonies; therefore, because of the particular structure of these organisms, it was decided to attempt only a qualitative analysis and interpretation of the distribution of the species.

## LIST OF SPECIES

The species appear under the most accepted synonym, author and date. The taxonomic references to an adequate description of the species and/or synonyms are given in brackets to make certain the reader knows the identity of the species under consideration.

### Order CALYCOPHORAE

#### Family Diphyidae

#### Subfamily Diphyinae:

Chelophyes appendiculata (Eschscholtz) 1829M

[Bigelow 1911a; Totton and Bargmann 1965]

Ch. contorta (Lens and Riemsdijk) 1908

[Bigelow 1911a; Totton and Bargmann 1965]

Dimophyes arctica (Chun) 1897

[Moser 1925; Totton and Bargmann 1965]

Diphyes antarctica Moser 1925

[Moser 1925; Totton and Bargmann 1965]

D. bojani (Eschscholtz) 1829

[Moser 1925; Totton and Bargmann 1965]

D. chamissonis Huxley 1859

[Totton and Bargmann 1965]

D. dispar Chamisso and Eysenhardt 1821

[Moser 1925; Totton and Bargmann 1965]

Diphyopsis mitra Huxley 1859

[Bigelow 1911a; Totton and Bargmann 1965]

Muggiaea atlantica Cunningham 1892

[Russell 1934; Totton and Bargmann 1965]

M. delsmanni Totton 1954

[Totton 1954; Totton and Bargmann 1965]

M. kochi (Will) 1844

[Russell 1934; Totton and Bargmann 1965]

Eudoxia macra Totton 1954

[Totton 1954; Totton and Bargmann 1965]

Eudoxoides spiralis (Bigelow) 1911

[Bigelow 1911a; Totton and Bargmann 1965]

Lensia achilles Totton 1941

[Totton 1941; Totton and Bargmann 1965]

L. ajax Totton 1941

[Totton 1941; Totton and Bargmann 1965]

L. campanella (Moser) 1925

[Moser 1925; Totton and Bargmann 1965]

L. challengerii Totton 1954

[Totton 1954; Totton and Bargmann 1965]

L. conoidea Keferstein and Ehlers 1860

[Bigelow and Sears 1939; Totton and Bargmann 1965]

L. grimaldii Leloup 1933

[Totton 1941; Totton and Bargmann 1965]

L. havock Totton 1941

[Totton 1941; Totton and Bargmann 1965]

L. hostile Totton 1941

[Totton 1941; Totton and Bargmann 1965]

L. hotspur Totton 1941

[Totton 1954; Totton and Bargmann 1965]

L. lelouveteau Totton 1941

[Totton 1941; Totton and Bargmann 1965]

L. meteori (Leloup) 1934

[Totton 1954; Totton and Bargmann 1965]

L. multicristata (Moser) 1925

[Bigelow and Sears 1939; Totton and Bargmann 1965]

L. reticulata Totton 1954

[Totton 1954; Totton and Bargmann 1965]

L. subtilis (Chun) 1886

[Totton 1954; Totton and Bargmann 1965]

L. subtiloides (Lens and Riemsdijk) 1908

[Bigelow and Sears 1939; Totton and Bargmann 1965]

L. tottoni Daniel, A., and R. Daniel 1963

[Daniel, A., and R. Daniel 1963; Totton and Bargmann 1965]

#### Subfamily Chuniphyinae:

Chuniphyes moserae Totton 1954

[Totton 1954; Totton and Bargmann 1965]

Ch. multidentata Lens and Riemsdijk 1908

[Bigelow and Sears 1939; Totton 1954; Totton and Bargmann 1965]

Clausophyes galeata Lens and Riemsdijk 1908

[Totton 1954; Totton and Bargmann 1965]

C. ovata (Keferstein and Ehlers) 1860

[Totton 1954; Totton and Bargmann 1965]

Crystallophyes amigdalina Moser 1925

[Totton 1954; Totton and Bargmann 1965]

Heteropyramis maculata Moser 1925

[Moser 1925; Totton 1954; Totton and Bargmann 1965]

#### Subfamily Abylinae:

Abyla bicarinata Moser 1925 [Sears 1953]

A. brownia Sears 1953

[Sears 1953]

A. carina Haeckel 1888

[Sears 1953]

A. haeckeli Lens and Riemsdijk 1908

[Sears 1953]

A. ingeborgae Sears 1953

[Sears 1953]

A. peruana Sears 1953

[Sears 1953]

A. schmidtii Sears 1953

[Sears 1953]

A. tottoni Sears 1953

[Sears 1953; Totton and Bargmann 1965]

Abylopsis eschscholtzi Huxley 1859

[Sears 1953]

A. tetragona Otto 1823

[Sears 1953]

Bassia bassensis (Quoy and Gaimard) 1834

[Sears 1953]

Ceratocymba dentata (Bigelow) 1918

[Sears 1953]

C. intermedia Sears 1953

[Sears 1953]

C. leuckarti Huxley 1859

[Sears 1953]

C. sagittata Quoy and Gaimard 1827

[Sears 1953]

Enneagonum hyalinum Quoy and Gaimard 1827

[Sears 1953]

E. searsae Alvariño 1968

[Alvariño 1968]

Subfamily Sulculeolariinae:

Sulculeolaria angusta Totton 1954

[Totton 1954; Totton and Bargmann 1965; Alvariño 1968]

S. bigelowi (Sears) 1950

[Sears 1950; Totton and Bargmann 1965; Alvariño 1968]

S. biloba (Sars) 1846

[Totton and Bargmann 1965; Alvariño 1968]

S. brintoni Alvariño 1968

[Alvariño 1968]

S. chuni (Lens and Riemsdijk) 1908

[Totton and Bargmann 1965; Alvariño 1968]

S. monoica (Chun) 1888

[Totton and Bargmann 1965; Alvariño 1968]

S. quadrivalvis Blainville 1830

[Bigelow 1911a; Totton and Bargmann 1965; Alvariño 1968]

S. turgida (Gegenbaur) 1853

[Totton 1954; Totton and Bargmann 1965; Alvariño 1968]

Family Hippopodiidae:

Hippopodius hippopus (Forskal) 1776

[Bigelow and Sears 1939; Totton and Bargmann 1965]

Vogtia glabra Bigelow 1918

[Bigelow 1918; Bigelow and Sears 1939; Totton and Bargmann 1965; Alvariño 1967]

V. kuruae Alvariño 1967

[Alvariño 1967]



V. pentacantha K  lliker 1853

[Bigelow and Sears 1939; Totton and Bargmann 1965; Alvar  o 1967]

V. serrata Moser 1913

[Moser 1925; Bigelow and Sears 1939; Totton and Bargmann 1965; Alvar  o 1967]

V. spinosa Keferstein and Ehlers 1861

[Bigelow and Sears 1939; Totton and Bargmann 1965; Alvar  o 1967]

Family Prayidae:

Subfamily Prayiinae:

Nectopyramis dubia (Quoy and Gaimard) 1834

[Bigelow 1911a; Totton and Bargmann 1965]

N. reticulata Bigelow 1911

[Bigelow 1911a; Totton and Bargmann 1965]

Rosacea plicata Quoy and Gaimard 1827

[Bigelow 1911a; Bigelow and Sears 1939; Totton 1954; Totton and Bargmann 1965]

Subfamily Nectopyramidinae:

Nectopyramis diomedae Bigelow 1911

[Bigelow 1911a; Totton 1954; Totton and Bargmann 1965]

N. natans (Bigelow) 1911

[Bigelow 1911a; Totton 1954; Totton and Bargmann 1965]

N. spinosa Sears 1952

[Sears 1952; Totton 1954; Totton and Bargmann 1965]

N. thetis Bigelow 1911

[Bigelow 1911a; Totton 1954; Totton and Bargmann 1965]

Subfamily Amphicaryoninae:

Amphicaryon acaule Chun 1888

[Bigelow 1911a; Totton and Bargmann 1965]

A. ernesti Totton 1954

[Totton 1954; Totton and Bargmann 1965]

Order PHYSOPHORAE

Family Agalmidae:

Agalma okeni Eschscholtz 1825

[Totton 1954; Totton and Bargmann 1965]

Bargmannia elongata Totton 1954

[Totton 1954; Totton and Bargmann 1965]

Erenna richardi Bedot 1904

[Totton and Bargmann 1965]

Marrus orthocannoides Totton 1954

[Totton 1954; Totton and Bargmann 1965]

Stephanomia bijuga (Delle Chiaje) 1841

[Totton 1954; Totton and Bargmann 1965]

S. rubra (Vogt) 1852

[Totton 1954; Totton and Bargmann 1965]

Family Physophoridae:

Physophora hydrostatica Forskäl 1775

[Totton and Bargmann 1965]

Family Anthophysidae:

Melophysa melo (Quoy and Gaimard) 1827

[Totton 1954; Totton and Bargmann 1965]

Family Rhodaliidae:

Dromalia alexandri Bigelow 1911

[Bigelow 1911a; Totton and Bargmann 1965]

Order CHRONDOPHORAE

Porpita pacifica Lesson 1826

[Bigelow 1911a]

Velella sps.

[Agassiz 1883]

## DISTRIBUTION IN THE PACIFIC

Although the bathymetric distribution of organisms is regulated by biological, physical and chemical factors, the limits of the various bathymetric zones change latitudinally and correspond in certain geographical zones to particular oceanographic regions. The bathymetric zones considered are the epipelagic (upper 200 m), mesopelagic (200-1000 m) and bathypelagic (below 1000 m).

Of note is the morphological stability of the group: species separated in time and space maintain exactly the same morphological characteristics. Thus, *Muggiaea kochi*, a neritic species in the tropico-equatorial Atlantic isolated from the populations inhabiting the tropico-equatorial Eastern Pacific since the close of the Bolivar Gorge, cannot be separated morphologically; the same is true for all the other species of siphonophores. The Siphonophorae present a great variety in the morphology of the different parts belonging to the same species (siphons, gastrozooids, gonozooids, bracts, nectophores, tentacles, tentillas), but they are morphologically constant for the species itself; the species present a great polymorphism of parts, but the species itself is not polymorphic. The medusae show, in general, great polymorphism in size, number of tentacles, shape of the gonads and coloration.

A large number of species of siphonophores are truly cosmopolitan, inhabiting the Arctic, Antarctic, Indian, Pacific and Atlantic Oceans; whereas, other species inhabit only the Atlantic, Pacific and Indian Oceans. Species can be grouped under the various categories: neritic, temperate (extending also along the tropico-equatorial regions, although mainly at deeper levels), and tropico-equatorial. The species inhabiting the upper strata in the Arctic are also present in the Antarctic, extending at different levels along the other oceans. It appears, however, that the Antarctic has some species restricted to that region. The tropico-equatorial species are also restricted to that belt; and one must draw attention to the southeast Asia and western Pacific tropico-equatorial regions, in which the highest number of tropico-equatorial species occurs. This is also true for other zooplankton groups (Alvarino, 1968b) and also for fishes (Hubbs personal communication). In this region not only the tropico-equatorial Indo-Pacific species occur, but also various species restricted to this region. The unity of the Chaetognatha fauna of the Indian and Pacific Oceans (Alvarino, 1964a, 1965a) is now well established; a comparable situation exists for the Siphonophorae in these two oceans and in the Atlantic as well.

The distributional patterns of the siphonophores do not correspond, as do those of the chaetognaths, with the water masses. It is possible that the distributional boundaries of the species might have shifted simultaneously with the temperature transgressions through the geological periods, the animals occupying different geographical environments either in latitude or in depth. The tropico-equatorial Indo-Pacific species of chaetognaths are not present in the tropico-equatorial Atlantic, whereas the tropico-equatorial siphonophores inhabit this belt continuously, interrupted only by the continents. The distributional boundaries of the species in the Pacific have been related to hydrographic parameters obtained from the same expeditions studied here. Figure 1 is a map of the isotherms at 200 m prepared by Joseph L. Reid, Jr.; correlations were obtained in most cases with the distribution of those isotherms. If, as has just been suggested, the distributional boundaries of the species change with temperature transgressions through the geological periods, then the distributional pattern of the siphonophores may, in general, be more related to the distribution of certain isotherms.

In many cases a genus is represented by two species Which present an allopatric distribution, one species being connected with cold waters and the other with warm waters. Because of this, they may be used as indicators of warm or cold water inflow in several oceanic regions. This is the case for Muggiaea atlantica and M. kochi in the eastern Pacific, M. atlantica and M. delsmanni in the western Pacific and Chelophyes appendiculata and Ch. contorta in the Atlantic, Pacific and Indian Oceans.

## PARTICULAR CONSIDERATIONS

Chelophyes appendiculata is one of the commonest species in the epipelagic layers along the temperate and tropico-equatorial oceanic regions. It extends in the Pacific from about 45°N to about 42°S (fig. 2). Its distributional pattern is similar to that presented by the Chaetognatha Sagitta hexaptera or S. enflata. In the Kuroshio regions south of Japan, and in several locations of the tropico-equatorial Pacific, it is only present at mesoplanktonic or bathy-pelagic levels. Its distribution in the Pacific appears limited roughly by the 6°C isotherm at 200 m. Off San Diego, California, it was observed (Alvariño, 1967b) in the upper 350 m at daylight and the upper 460 m at night. The eudoxid form (Eudoxia russelli Totton 1932) appeared mainly in the upper 100 m. Ch. appendiculata was present all the year round in the California Current region, its distribution appearing limited by the maximal isotherm of 10°C to 12°C at 200 m (Alvariño, 197b). The species apparently breeds all the year round in this region. It was not observed in the Sea of Cortés (Alvariño, 1965a). It appears all the year round in the South China Sea but was collected in the Gulf of Thailand during the April-May cruise (Alvariño, 1963, 197 a).

Chelophyes contorta is present in the epipelagic levels of the tropico-equatorial Pacific, extending northward of this region in both the northeastern and northwestern Pacific up to 36°N, with the extension of the Davidson and the Kuroshio Currents, respectively (fig. 3). The distribution of the species

appears to be outlined by the 18°C isotherm at 200 m, except for outflows in the North Pacific and in the region of the Peru Current. There are few specimens in the equatorial region at depths below 1000 m.

It was present all the year round in the South China Sea and the Gulf of Thailand (Alvariño, 1963, 197 a). In the California Current region it was also present all the year round (1954, 1958) but was absent during the summer months. The species distribution appeared limited in this region by the minimal isotherm of 11°C at 200 m (Alvariño, 197 b). It was also present in the collections from the Sea of Cortés (Alvariño, 1965a).

Chelophyes appendiculata and Ch. contorta are allopatric species. The latter is, among the siphonophores, the equivalent of Sagitta pacifica for the chaetognaths, and is a valuable indicator of the warm-water inflow into the California region.

Dimophyes arctica is a truly cosmopolitan species, populating the Arctic, Antarctic, Pacific, Atlantic and Indian Oceans. The species inhabits the upper layers in the high latitudes, sinking to deeper levels in the temperate and tropico-equatorial regions. It is more abundant, and the specimens are of larger size, in the Arctic-Subarctic and Antarctic-Subantarctic regions than in the other parts of the oceans. The species was also present in the deep strata in the southeast Asian waters. It was observed in the South China Sea, May-June cruise, in hauls taken from a depth of more than 100 m (Alvariño, 197 a). In the California Current region it appeared in May 1954, and in April, July and October of 1958, in locations with temperatures of 8°C to 11°C at 200 m (Alvariño, 197 b). This species was not present in the Sea of Cortés (Alvariño, 1965a).

Dimophyes arctica was largely observed in the Subarctic and Subantarctic regions, but it was also found in the tropico-equatorial Pacific and the California region. Other records in the southeastern Pacific indicated an extension of the cold Antarctic flow. In the central northeastern Pacific some specimens were obtained, but there is an absence of records from the central temperate and tropico-equatorial Pacific, probably due to the fact that samples were not collected deep enough. The species, as already indicated, extends from the Arctic to the Antarctic, inhabiting the epipelagic layers along the high latitudes, and reaching to deeper levels toward medium and low latitudes (fig. 4). It was observed off San Diego, California, from 2630 to 3040 m (the greatest depths of the hauls) during daylight and from 460-410 m at night (Alvariño, 1967b).

Diphyes antarctica was observed only in the Antarctic region (fig. 5).

Diphyes bojani has a distribution similar to that of D. dispar, although it does not extend as far north or south. It is present in the Pacific from 40°N in the west to 38°N in the east and about 35°S. A few deep-water observations were made in the equatorial region and in the northernmost station off Japan. Its distribution appears limited in the north by the 8°C isotherm and in the south by the 12°C isotherm at 200 m (fig. 6). This species is presented all the year round in the California Current region and in the Sea of Cortés (Alvariño, 197 b, 1965a). In the California region, the distribution

appeared to be restricted by the minimal isotherm of 10°C at 200 m. This species was also present all year round in the South China Sea and in the Gulf of Thailand only in January (Alvariño, 1963, 197 a).

Diphyes chamissonis was abundant in the Gulf of Thailand and the South China Sea (Alvariño, 1963, 197 b).

Diphyes dispar is often recorded in the warm oceanic regions. It is present in the epiplankton of the Pacific from about 42°N to 41°S, appearing in deeper levels, below 100 m in the tropico-equatorial regions and in the northernmost collections off California (42°N). It appears that the 8°C isotherm at 200 m delineates its distribution both in the North and South Pacific (fig. 7). It is present all the year round in the California Current region. Apparently its distribution is restricted by the minimal isotherm of 8°C and the maximal isotherm of 11°C at 200 m (Alvariño, 197 b). It was not present in the Sea of Cortés (Alvariño, 1965a). The species was observed in the South China Sea and in the Gulf of Thailand only during October 1959 (Alvariño, 1963, 197 a).

Diphyopsis mitra (= Eudoxoides mitra) occurs in the epiplanktonic levels from about 38°N to 41°S. The 10°C isotherm at 200 m appears to define its distribution in the high latitudes of both hemispheres (fig. 8). In the California region it was observed in January and May of 1954, limited in distribution apparently by the minimal isotherm of 9°C at 200 m. It was present every month during the 1958 CalCOFI cruises, except in July. The distribution of the species during 1958 in this region appeared restricted by the minimal isotherm of 11°C at 200 m (Alvariño, 197 b). D. mitra was not observed in the Sea of Cortés (Alvariño, 1965a); however, it was present all the year round in the South China Sea, but no records were obtained from the Gulf of Thailand (Alvariño, 197 a).

It is interesting to note the distribution of the neritic species (fig. 9). Muggiaea atlantica extends along the neritic waters of the temperate eastern and western Atlantic and the eastern and northwestern Pacific, but it is substituted by M. kochi in the tropico-equatorial zones of those regions (fig. 10). With the progression of warm waters into the temperate zones, however, M. kochi may in some cases reach the region normally populated by M. atlantica (Russell, 1934), a feature with no equivalent in the Pacific. The populations of M. atlantica on both sides of the north Pacific connect along the Transition Region (the band extending across the Pacific between the Subarctic and the Central Pacific Waters). The species was abundant off the Peruvian coast (Bigelow, 1911a). Off San Diego it inhabits the upper 100 m (Alvariño, 1967b), in the California Current regions it was present all the year round, and the distribution appeared limited by the maximal isotherm of 10°C or 11°C at 200 m (Alvariño, 1965a), Dr. Mary Sears (personal communication) considers M. atlantica probably not a truly neritic species, but it seems bound to the land masses. She also suggests the possibility of a center of production around the Japanese islands which might replenish the supply off the California coast.

The tropico-equatorial western Pacific is populated by Muggiaea delsmanni

which is extremely abundant in the Gulf of Thailand (Alvariño, 197 a).

Eudoxia macra was observed in the California Current region in May 1954 and April 1958, where the 9°C and 11°C isotherms occur at 200 m (Alvariño, 197 a). It was not observed in the Sea of Cortés (Alvariño, 1965a).

Eudoxoides spiralis is a widely distributed and abundant species in the epiplanktonic layers from about 39°N to 43°S. The 8°C isotherm at 200 m in the north Pacific and the 6°C isotherm at 200 m in the south appear to limit the distribution toward higher latitudes (fig. 11). It is present in the upper 100 m both during day and night in the region off San Diego, California, (Alvariño, 1967b). It was present all the year round in the California region. Its distribution is limited by the maximal isotherms of either 9°C, 10°C or 11°C at 200 m. Breeding appears to be continuous throughout the year (Alvariño, 197 b). This species was not present in the Sea of Cortés (Alvariño, 1965a). E. spiralis was widely distributed in the South China Sea, and only present in October in the Gulf of Thailand (Alvariño, 1963, 197 a).

Lensia achilles, L. ajax, L. grimaldii, L. havock, L. hostile and L. lelouveteau were observed only off San Diego (Alvariño, 1967b), as it will be explained later.

Lensia campanella appears well represented off Baja California and progresses farther offshore along southern California. Other specimens were taken southeast of Hawaii and northeast of the Philippines (fig. 12). These observations and the published information presented in table 3 suggest the species appears to be characteristic of warm waters. In the California Current region it was found in May 1954 and in every month in 1958 except October. The distribution in this region appeared limited by the minimal isotherm of 10°C or 11°C at 200 m (Alvariño, 197 b). in the Sea of Cortés it was observed in February 1956 (Alvariño, 1965a). This species was also present in the South China Sea from January to March (Alvariño, 1963, 197 a).

Lensia challengerii is abundant in the region of the California and the Peru Currents and in the Gulf of Panama. It extends from 46°N in the eastern Pacific and 36°N in the western Pacific to about 45°S. It populated mainly the epiplanktonic layers southeast of Hawaii (fig. 13). The species was observed in the upper layers off San Diego but only during daylight (Alvariño, 1967b). It appears all the year round in the California region and probably also in the Sea of Cortés (Alvariño, 197 b, 1965a). In the California waters the distribution appeared limited by the minimal and maximal isotherms of 8°C and 12°C respectively at 200 m. This species was also observed all the year round in the South China Sea (Alvariño, 1963, 197 a).

Lensia conoidea extends in the Subarctic, Transition and California Current regions. Scattered specimens were obtained in the Equatorial region (mainly in the bathy- and mesoplanktonic layers); and it is also found in the region of the Subtropical Convergence. It is obvious that the population extends in the Pacific at various depths, showing its highest abundance in the regions where the temperatures are below 12°C. If the map with the isotherms at 200 m is superimposed on that with the records for L. conoidea, it appears the species is absent from the warmer regions of the ocean (fig. 14).

Off San Diego it was found both during day and at night from about 200 to 500 m (Alvariño, 1967b).

This species was found all the year round in the California Current region, except in March 1954, when the distribution apparently was being limited by the maximal isotherms of 8°C to 10°C at 200 m (Alvariño, 197 b). It was not observed in the Sea of Cortés (Alvariño, 1965a). In the South China Sea it appeared from May to the following February (Alvariño, 1963, 197 a).

Lensia hotspur extends in the Pacific from about 42°N to 45°S, mainly in the epipelagic levels, except for some specimens at the equator and another taken midway from California to Hawaii at the mesoplanktonic level (fig. 15). It is extremely abundant in the California region; off San Diego it was obtained in the upper 100 m (Alvariño, 1967b). In the California Current region, it appeared all the year round, except for February and March 1954, and the distribution was limited by the maximal isotherms of 8°C to 11°C at 200m, and 9°C to 10°C during 1958 (Alvariño, 197 b). This species was not observed in the Sea of Cortés (Alvariño, 1965a). It was present in the South China Sea all the year round, but only during August in the Gulf of Thailand (Alvariño, 1963, 197 a).

Lensia meteori appears scattered in the South Pacific except for specimens found below 1000 m off Baja California, another in the central west part of the equatorial region observed below 1000 m at 2°30'S and one in the upper 200 m at 3°00'N (fig. 16).

Lensia multicristata populates the eastern half of the Pacific, extending from 38°N to 48°S. This species was also found at a spot in the western part of the Transition Region where there is a strong incidence of warm high-saline water (see figs. 14, 15, 17 in Alvariño, 1962). It is possible that such a population might be carried by the Kuroshio Current from the populations of high density of the South China Sea (fig. 17). The species is present largely in the upper 200 m, but meso- and bathypelagic specimens were obtained between Baja California and Hawaii and in the equatorial region. It is most abundant in the zones of the California and the Peru Currents and in the eastern tropico-equatorial water masses and the Subtropical Convergence. Off San Diego it was observed at depths of 250 to 525 m in the daytime and from the surface to 840 m at night (Alvariño, 1967b). It was observed in the California region in zones of 8°C of temperature at 200 m (Alvariño, 197 b) during February and December of 1954, and all year in 1958 except for February and March. It was found in the collections examined from the Sea of Cortés (Alvariño, 1965a). In the South China Sea it was present only during the February-March cruise in 1960 (Alvariño, 197 a).

Lensia reticulata was observed only from July to October 1958 in the California Current region in zones at 9°C at 200 m (Alvariño, 197 b). It was not found in the collections examined from the Sea of Cortés (Alvariño, 1965a), figure 18.

Lensia subtilis was observed in abundance in the California region. Other records correspond to those found in the Hawaiian region, off Japan, in the southeast Pacific and in the region of the Subtropical Convergence (fig. 19).



It was observed in the California region during April, May and August of 1954, its distribution limited by the maximal isotherm of 8°C at 200m depth. It was present in all the monthly cruises of 1958 in this region and its distribution appeared limited by the maximal isotherm of 9°C or 10°C at 200 m (Alvariño, 197 b). It was not present in the collections from the Sea of Cortés (Alvariño, 1965a).

Lensia subtiloides was observed only at four places, three off California and one midway between Hawaii and Baja California. Off San Diego it was found in the upper 100 m and only during daylight (Alvariño, 1967b), figure 20. This species was present all the year round in the South China Sea and in the Gulf of Thailand (Alvariño, 1963, 197 a).

It is noteworthy that in the same place (30°30'N, 120°00'W) among samples taken at various depths during a short span of time (27 August to 8 September 1965) several species which were not polymorphs of Lensia appeared in the same column of water (L. achilles, L. ajax, L. challenger, L. conoidea, L. grimaldii, L. havock, L. hostile, L. hotspur, L. lelouvetau, L. multi-cristata, L. reticulata and L. subtiloides); L. challenger, L. hotspur and L. subtiloides appeared in the upper 100 m and the remainder were confined to levels below 200 m.

Chuniphyes moserae was observed in the northeast Pacific, with a few records in the tropico-equatorial west Pacific, mainly at depths below 1000 m (fig. 21). In the Sea of Cortés it occurred below 1000 m during April 1959 (Alvariño, 1965a). In the South China Sea it was present only during the May-June cruise in 1960 (Alvariño, 197 a).

Chuniphyes multidentata was found mainly at levels below 200 m except for some specimens in the Central Equatorial Pacific and the California region. It was observed only in the eastern Pacific, except for a single record in the northwest (off the Sea of Okhotsk). It appears evident from the pattern of the isotherms that any expansion into the western Pacific would be at deeper levels with lower temperatures than those sampled. The species extends from 45°N to about 59°S (fig. 22).

Representatives of the eudoxid form (Chuniphyes problematica Moser 1925) were observed coincident with the presence of the polygastric form. This eudoxid occurred off San Diego, California, in a region extending from the upper layers to 170 m at night and from 400 to 1700 m during daylight hours (Alvariño, 1967b). Chuniphyes multidentata appeared in the California Current region in April and May in locations limited by the maximal isotherm of 8°C at 200 m (Alvariño, 197 b). It was not observed in the Sea of Cortés (Alvariño, 1965a). In the Gulf of Thailand and the South China Sea, it was present from April to May and from May to June, respectively (Alvariño, 197 a).

Chuniphyes multidentata and Ch. moserae were observed off San Diego, California, during both daylight and nighttime from 400 to 3040 m or to 2460 m, the greatest depths of the samples (Alvariño, 1967b).

Clausophyes galeata was observed in two regions: far off San Francisco at levels below 200 m and off San Diego from 400 m to 3000 m (Alvariño, 1967b),

figure 23.

A number of species of Diphyinae and Chuniphyinae were observed only in the CalCOFI 6508-2 samples collected off San Diego, California, (Alvariño, 1967b). They may be listed as follows:

Lensia achilles (extending from 200-1250 m at night and from 1350-3040 m during daylight); L. ajax (from 850-1000 m at night); L. grimaldii (700-850 m at night); L. havock (250-1250m at night and 2200-2650m during daylight); L. hostile (700-2700 m at night); L. lelouveteau (650-2460 m at night and 1350-2650 m during daylight); Clausophyes ovata (1900-2600 m at daylight); Crystallophyes amigdalina (below 700 m at night and below 1300 m during daylight); Heteropyramis maculata (from the upper layers to 2300 m at night and from 900-1250 m during daylight). The following species of Diphyinae were observed in the Pacific and also in the California region but were not present in the BONGO opening-closing net hauls taken off San Diego: Diphyes dispar, D. bojani, D. mitra, L. campanella, L. meteori, L. subtilis; the species of Diphyinae observed only in the material collected during the NAGA Expedition in the South China Sea and the Gulf of Thailand were: Muggiaea delsmanni, Diphyes chamissonis, Sulculeolaria brintoni and Enneagonum searsae (Alvariño, 197 a).

Abyla bicarinata was observed twice southeast of Hawaii at levels below 1000 m (fig. 24) and in July and August of 1958 in the California region in zones of 9°C at 200 m (Alvariño, 197 b). It was not present in the Sea of Cortés (Alvariño, 1965a). In the South China Sea it was present only in February and March (Alvariño, 197 a).

Abyla brownia was found twice in a line between southern California and Hawaii, once in the upper 200 m and once below 1000 m (fig. 25). It was observed in the California region during February, March and July of 1958, in a zone limited by the minimal isotherm of 10 °C at 200 m (Alvariño, 197 b). It was not observed in the Sea of Cortés (Alvariño, 1965a).

Abyla carina occurred along the Equatorial region, mainly in the upper 200 m except for one case below 1000 m (fig. 26). It was found only during the February-March cruise in the South China Sea (Alvariño, 197 a).

Abyla bicarinata, A. brownia and A. carina appear restricted to a band along the low latitudes of the oceans, according to these data and published information (table 3).

Abyla haeckeli populated the tropico-equatorial Pacific, northward from about 28 °S to both the California region and Japan (fig. 27). Except for the specimens taken off California and Perú, its distribution in the North Pacific appeared to be roughly limited by the 8°C isotherm at 200 m and the 12°C isotherm in the south; thus substantiating the published information on the distribution of the species (table 3) that the species inhabits the upper warmer layers. It was observed all year in the California region during 1958, but none were obtained in 1954. The distribution appears limited by the minimal isotherm of 10°C at 200 m during winter and that of 8°C during summer (Alvariño, 197 b). It was not observed in the material from the Sea of Cortés (Alvariño, 1965a).

*Abyla ingeborgae* was obtained five times, four times in the epiplanktonic levels of the region extending from the Philippines to Japan, and once in the northeast tropical region (fig. 28).

*Abyla peruana* was observed twice in the South Pacific (fig. 29).

*Abyla schmidti* extended in a belt within 10°N to 10°S of the equator, except for two examples at about 12°N and 17°S in the western and central parts of the ocean (fig. 30). It was observed all year in the South China Sea (Alvariño, 1963, 197 a).

*Abyla ingeborgae*, *A. peruana*, and *A. schmidti* appear to be tropico-equatorial species, according to the present data and the published information (table 3).

*Abyla tottoni* was found only in the northwest part of the Transition Region in the Pacific (fig. 31).

*Abylopsis eschscholtzi* constitutes, with *A. tetragona*, a paired complex, the former being less abundant than the latter although inhabiting the same regions of the Pacific. It extended from about 37°N to 32°S, reaching farther north in the eastern than in the western Pacific; it was less abundant in the central equatorial region. In the south Pacific its distribution appears to be limited by the 12° C isotherm at 200 m, and this could be the case in the north Pacific also, except for a region off southern California. The data for the California region, however, include the monthly cruises of several years with seasons of possibly higher temperatures than average (fig. 32). In the California Current region it was observed only in May 1954, and during January, April, July and October of 1958, its distribution being limited by the minimal isotherm of 10°C at 200 m (Alvariño, 197 b). in the Sea of Cortés it appeared in the April 1956 collections (Alvariño, 1965a). In the South China Sea it was present all year (Alvariño, 1963, 197 a).

*Abylopsis tetragona* is an abundant species widely distributed throughout the oceans. It extends in the Pacific from about 37°N to 35°S (fig. 33). Its distribution appears to be limited by the 8°C isotherm in the north and the 10°C in the south. The species is mainly found in the epiplanktonic layers although it was found at times at meso- and bathypelagic levels in the Indonesian Seas, the equatorial region, the Hawaiian Islands region and off California. In the California region it was observed almost continuously throughout the year, in the regions limited by the maximal isotherm of 10°C or 11°C at 200 m (Alvariño, 197 b). It was not in the collections from the Sea of Cortés (Alvariño, 1965a). Bigelow and Sears (1937) reported its presence in waters of more than 13 °C, agreeing with Wust (1932) and Leloup and Hentschel (1938). This species was a year-round inhabitant of the South China Sea (Alvariño, 1963, 197 a).

*Bassia bassensis* appears generally to be distributed through the tropical and subtropical belts of the Pacific, Atlantic and Indian Oceans. It is widely distributed in the Pacific, extending from about 35°N to about 41 °S and it appears almost exclusively in the upper 150 m except for three positive locations for the species southeast of Japan (in the bathypelagic layers) and northeast of the Hawaiian and Easter Islands (in the mesoplanktonic levels), figure 34.

In the California region it was observed in June 1954 in a location with 10°C at 200 m, and during April, June and October of 1958 in localities limited by the minimal isotherm of 10°C or 12°C (Alvariño, 197 b). This species was present in the Sea of Cortés (Alvariño, 1965a). In the South China Sea and the Gulf of Thailand it appeared all year (Alvariño, 1963, 197 a).

*Ceratocymba dentata* appears scattered along the tropico-equatorial region extending north and northwest of the Hawaiian Islands to about 32 °N. In the tropico-equatorial central Pacific, it appears mainly in the meso- or bathypelagic levels, which in some cases agrees with a reduction of temperature at a depth of 200 m (fig. 35). This species was present in the South China Sea from February to October (Alvariño, 197 a).

*Ceratocymba intermedia* was observed once east of Luzon (fig. 36). In the South China Sea it was present only during the November-December cruise (Alvariño, 197 a).

*Ceratocymba leuckarti* appears more abundant than any other species of this genus. It extends from 33°N to 24°S although it was not present in the California Current region. The northern distribution in the western Pacific is probably due to the Kuroshio Current. The species mainly populates epipelagic levels, but there were some scattered specimens in the meso- or bathypelagic layers southeast of the Hawaiian Islands, west of the Solomon Islands and between Easter Island and Tuamotu Archipelago (fig. 37). In the California region it was observed only in December 1954, in a zone limited by the minimal isotherm of 12°C at 200 m. It was not present in the collections from the Sea of Cortés (Alvariño, 1965a). It appeared in the South China Sea all year (Alvariño, 1963, 197 a).

*Ceratocymba sagittata* appears scattered in tropico-equatorial waters, mainly south of the equator, except for one location in the Transition Region (42°57'N, 169°28.1'E) and one in the South Pacific (26°57'N, 145°01.5'W). Several deep specimens were obtained in the equatorial region, mainly in locations where the temperature is greater than 20°C at 200 m (fig. 38). It was present in the South China Sea (Alvariño, 1963, 197 a).

The genus *Ceratocymba* appears to be restricted to the tropico-equatorial oceanic regions although its distribution extended into median latitudes along with the progression of the warm current (see table 3).

It is interesting to note that only one representative of the Family Abylinae (*C. dentata*) was obtained in the stratified samples collected off San Diego, California, during the night collections from 1450 to 1710 m (Alvariño, 1967b).

*Enneagonum hyalinum* is found only (except for specimens observed east of Japan at 34°06'N, 144°36.5'E) in the epipelagic of the tropico-equatorial waters of the Pacific, being more abundant at the eastern than at the western side of that belt (fig. 39). It seems clear that the single observation off Japan corresponds to an extension of the population inhabiting the China Sea where it is an abundant species (Alvariño, 197 a). It was not observed in the California region, but appeared in February in the Sea of Cortés (Alvariño, 1965a). In the South China Sea and the Gulf of Thailand it appeared all year (Alvariño, 1963, 197 a).

Enneagonum searsae probably appears all year in the South China Sea, extending its distribution into the Gulf of Thailand during April and May (Alvariño, 197 a).

Sulculeolaria angusta extends along the epipelagic layers from 35 °N in the east and 30 °N in the west to 30°S. In the central and eastern parts of the tropico-equatorial region and off Baja California it is at times observed at meso- or the bathypelagic levels (fig. 40). It was observed in the California region during June 1958, and in the Sea of Cortés in April 1956 (Alvariño, 197 b, 1965a).

Sulculeolaria bigelowi apparently is restricted to the western Pacific, according to the published information (table 3). In the South China Sea it was observed only during May and June (Alvariño, 197 a).

Sulculeolaria biloba was observed in the equatorial Pacific, its distribution roughly limited by the 18°C isotherm at 200 m (fig. 41). It was found in the South China Sea all year except for January and February, and in the Gulf of Thailand it was observed only during April, May and November (Alvariño, 1963, 197 a).

Sulculeolaria brintoni appeared all year in the South China Sea, and in the Gulf of Thailand it was common all months except January and February (Alvariño, 197 a).

Sulculeolaria chuni appeared in the California region in April 1958, in zones of 9°C at 200 m (Alvariño, 197 b). It was found all year in the Gulf of Thailand, and in the South China Sea it was common all months except November and December (Alvariño, 1963, 197 a).

Sulculeolaria monoica appears scattered along the tropico-equatorial region except for a single specimen off California (fig. 42). It appeared in the South China Sea all year and in the Gulf of Thailand only in August (Alvariño, 1963, 197 a).

Sulculeolaria quadrivalvis extends from about 43°N to about 28°S. The 8°C isotherm in the north and the 10°C isotherm in the south at 200 m appear to define the limits of the population toward higher latitudes (fig. 43). During the monthly cruises off California it was not observed in March, August or October of 1954, and the distribution appeared limited by the maximal isotherms of 8°C to 10°C and 12°C at 200 m during December. It was all year during 1958, limited by the maximal isotherm of 9°C to 11°C at 200 m (Alvariño, 197 b). This species was not found in the Sea of Cortés (Alvariño, 1965a). It appears all year in the South China Sea and the Gulf of Thailand (Alvariño, 1963, 197 a).

Sulculeolaria turgida was observed only once in the California region (April 1958) in a zone limited by the maximal isotherm of 9°C at 200 m (Alvariño, 197 b). It appeared all year in the South China Sea and only in January 1960 in the Gulf of Thailand (Alvariño, 197 a).

No species of the Sulculeolariinae were observed in the CalCOFI 6508-2 collections (Alvariño, 1967b). In the material collected during the NAGA Expedition in the South China Sea and the Gulf of Thailand the following species were observed: S. bigelowi, S. biloba, S. brintoni, S. chuni, S. monoica, S.

quadrivalvis and S. turgida.

Hippopodius hippopus is a widely distributed species, spreading along the epipelagic layers of the Pacific from 38°N to 45°S in the east and 43°N to 41°S in the west. It was also observed at meso- and bathypelagic levels in the central and eastern parts of the tropico-equatorial region and in some localities between California and the Hawaiian Islands. The latitudinal extent of its distribution pattern appears to be limited by the 8°C isotherm at 200 m in the north and probably the 10° isotherm at 200 m in the south (fig. 44). The species appears all year in the California region, the maximal isotherm of 9°C or 10°C at 200 m apparently limiting its distribution (Alvariño, 197 b). In the Sea of Cortés it appeared in the February collections (Alvariño, 1965a). In the South China Sea it was observed all year (Alvariño, 1963, 197 a).

Vogtia glabra appears to have scattered distribution in the northwest part of the Transition Region and off Japan (42°07.9'N, 169°28.1'E; 38°58.6'N, 144°51'E; 33°33.9'N, 154°29.1'E), the central part of the equatorial region (3°13'N, 173°54'W), the Galápagos Islands (2°59.5'S, 90°06'W) and off Perú (12°59'S, 85°01'W; 9°13'S, 109°42'W). Bigelow and Sears (1937) considered it mainly from 400 m strata (fig. 45).

Vogtia kuruae appears widely distributed in the upper layers off the Sea of Okhotsk, Japan, Formosa, the Philippines, the Coral Sea, Perú and the region of the Subtropical Convergence; at mesoplanktonic levels it was observed southeast of the Hawaiian Islands and northwest of Easter Island; at the bathypelagic level, in a region between Southern California and Baja California to the Hawaiian Islands and in the central-eastern tropico-equatorial region. Off San Diego, California, it was observed (Alvariño, 1967b) from 400-1050 m during night collections and from 400-1700 m during daylight hours (fig. 46). In the South China Sea it was present in the collections from May to June and in the Gulf of Thailand from April to May (Alvariño, 197 a). V. kuruae was the only Hippopodiidae observed in the stratified series obtained off San Diego (Alvariño, 1967b).

Vogtia pentacantha appears widely distributed in the epipelagic levels at the eastern and western parts of the Transition Region, in the central tropico-equatorial region, off Guayaquil, Ecuador, and off Perú. At one station southeast of the Hawaiian Islands it was obtained both below 200 m and below 1000 m (fig. 47). In the South China Sea it was only present from May to October (Alvariño, 197 a).

Vogtia serrata was observed only in the region of the Aleutian range and the Aleutian Islands to the Kamchatka Peninsula; that is, along the Aleutian Trench. The species corresponds to deep strata, below 200m and 1000m in that region, although it was observed in the upper 200 m off Perú (fig. 48). Bigelow and Sears (1937) observed it at considerable depths in the Bay of Cadiz (1066 and 2900 m) and Moser (1925) considers that it occasionally appears at the surface.

Vogtia spinosa is found abundantly in the epipelagic levels of the eastern, central and western parts of the tropico-equatorial region, off northern, southern and Baja California and off Japan (the northern extension of the

Kuroshio Current) and the Subtropical Convergence. It was observed in the mesoplanktonic layer northeast and southeast of the Hawaiian Islands and in the bathypelagic layers off Perú and the central and eastern parts of the tropico-equatorial region. The locations of the meso- and bathypelagic specimens coincided with zones of convergence (fig. 49). In the California region it appeared in June 1954, in zones of 10 °C at 200 m depth (Alvariño, 197 b). It was observed in the Gulf of California (Alvariño, 1965a). In the Gulf of Thailand it was found only in October (Alvariño, 197 a).

The genus Nectodroma occurs as follows: N. dubia was observed only off San Diego (Alvariño, 1967b) in hauls made from 460 m and in the Arctic Ocean and the South China Sea (Alvariño, 197 a and unpublished records). It also appeared off Point Conception, California, in January, February and August of 1954 and July 1958, in a region limited by the maximal isotherm of 9°C at 200 m. In these locations deep-water organisms are particularly abundant in the upper 200 m (Alvariño, 197 b).

Nectodroma reticulata was observed in the epiplanktonic levels off California and in the eastern and central parts of the equatorial regions, but southeast of the Hawaiian Islands it appears below 1000 m (fig. 50). In the stratified sampling obtained off San Diego (Alvariño, 1967b) it appears from 250-1720 m during daylight and in the upper 100 m at night. In the California region it was present during July and October 1958, in locations limited by the maximal isotherm of 9°C at 200 m (Alvariño, 197 b). N. reticulata was observed in the South China Sea (Alvariño, 1963, 197 a).

Neither N. dubia nor N. reticulata were present in the Sea of Cortés collections (Alvariño, 1965a).

Rosacea plicata has an interesting distribution in the Pacific, extending along the epiplanktonic levels from the Aleutian Islands to the California and Baja California regions, in eastern equatorial waters, off Chile, in a region north of the Solomón Islands and along the Subtropical Convergence. In the mesoplanktonic levels it appears off Southern California and the central and eastern parts of the equatorial region. Specimens below 1000 m correspond to those found in a region between Mexico and the Hawaiian Islands. The distribution pattern of this species appears to indicate a cold-water organism sinking at various depths in the warmer oceanic regions, but its presence in the upper layers of the warm region could be due to upwelling phenomena (fig. 51). In the collections off San Diego (Alvariño, 1967b) it appears from 235 to 460 m at night and from 2210 to 2630 m during daylight hours. In the California region it appeared only in May 1954 and April and July of 1958, in zones of 9°C at 200 m (Alvariño, 197 b). In the Sea of Cortés it was present in deep hauls (more than 1000 m) taken during the Vermillion Sea Expedition (Alvariño, 1965a). In the South China Sea, it appeared from May to October (Alvariño, 1963, 197 a).

The genus Nectopyramis is represented by four species in the collections studied from the Pacific. N. diomedae was observed in the Antarctic-Subantarctic region at levels below 1000 m (fig. 52). It was present in June 1954 in the California region in a zone of 8° C at 200 m depth (Alvariño, 197 b).

N. spinosa was represented by only a few specimens; it is found off Baja California (below 200 m and 1000 m), off Tehuantepec (at the epipelagic levels), in the central equatorial region (below 1000 m) and at the eastern part of the Subtropical Convergence (in the upper levels), figure 53. L. thetis was observed in the mesoplanktonic levels in the western part of the Subarctic-Transition region, in the epipelagic levels off Baja California and the central equatorial region and below 1000 m in the tropical region between the Hawaiian Islands and Mexico (fig. 54). In some material collected off San Diego (Alvariño, 1967b), N. diomedea, N. natans, (Archisoma natans) and N. thetis were observed from 410 to 775 m, 530 to 620 m and 860 to 1030 m, respectively. None of these species was observed in the collections examined from the Sea of Cortés (Alvariño, 1965a).

Of the three species of Amphicyon only A. acaule and A. ernesti were observed during these studies. A. acaule occurs at the epipelagic levels from about 42°N to the equatorial region except for one observation below 1000 m in the eastern part of the Transition region in a zone of crisscrossing eddies (fig. 55). A. ernesti is found in scattered numbers at epipelagic levels (except for some deep specimens found below 1000 m off Northern California, Baja California and in the central equatorial region); it occurs in the mesoplanktonic levels northeast of the Hawaiian Islands and the central and eastern part of the equatorial waters (from about 43°N to 45°S), figure 56. It appears more abundantly in the eastern tropico-equatorial waters than in the western. Off San Diego (Alvariño, 1967b), A. acaule is found in the upper 100 m during daylight and from 690 to 840 m at night; A. ernesti only at night in the upper 100 m.

Amphicyon acaule appeared all year in 1954 (except from February to April) and only during March, April, July and October of 1958 in the California Current region; its distribution appeared to be limited by the maximal isotherm of 10 °C at 200 m (Alvariño, 197 b). In the South China Sea it was present only in January and February (Alvariño, 1963, 197 b). A. ernesti appeared in the California region during February, March and June of 1954, in locations with 8°C at 200 m (Alvariño, 197 b). In the South China Sea it appeared all year (Alvariño, 1963, 197 a). No representative of this genus was obtained from the samples examined from the Sea of Cortés. In the Pacific its distribution appears limited by the isotherms of 8°C and 12°C at 200 m, respectively, in the northern and southern hemispheres.

Agalma okeni is a widely distributed species found mainly in the epipelagic levels from 40°N to 43°S, together with some specimens in the meso- and bathypelagic layers corresponding to the central and eastern parts of the tropico-equatorial region (fig. 57). The distribution appears limited by the isotherms of 8°C and 12°C at 200m, respectively, in the northern and southern hemispheres. In the California region it appears all year, its distribution limited apparently by the minimal isotherms of 9°C or 10°C at 200 m (Alvariño, 197 b). In the Sea of Cortés it was found only in February (Alvariño, 1965a). In the South China Sea it is common all year (Alvariño, 1963, 197 a).

Bargmannia elongata was mainly observed in the eastern Pacific except



for some specimens in the central-western part of the equatorial region and in the Subtropical Convergence (below 1000 m). It was observed either in the upper layers or below 1000 m (fig. 58). Off San Diego it was observed from 250 to 525 m during daylight hours and from 235 to 460 m at night (Alvariño, 1967b). The species appeared in the California region off the Channel Islands in March and June of 1954 and from January to June of 1958, in a zone apparently limited by the maximal isotherm of 8°C at 200 m (Alvariño, 197 b). It was found in the South China Sea only during the January-February cruise (Alvariño, 1963, 197 a).

Erenna richardi was observed only a few times: in the Sea of Cortés (in the upper 200 m in a region of strong upwelling), off Baja California, southeast of the Hawaiian Islands and in the Antarctic region at levels below 1000 m. The author observed a complete colony, with nectophores ranging in size from 8 to 40 mm wide, in a sample from the AZUL II Expedition, at 19° 15'N, 105° 27'W (fig. 59). It was present in the bathypelagic collections from the Sea of Cortés (Alvariño, 1965a).

Marrus orthocannoides was observed only twice: in the central-northern part of the tropico-equatorial region (southwest of Hawaii), in the upper layers; in the equatorial region southeast of Hawaii, below 1000 m (fig. 50). In the California region it appeared only in January and May in zones with 10 °C at 200 m (Alvariño, 197 b). It was not present in the Sea of Cortés (Alvariño, 1965a).

Stephanomia bijuga is a typical species of the Pacific Ocean off the United States and Baja California, extending along the continental shelf and slope regions from Seattle to south of San Diego and farther from shore off the southern part of Baja California. This species was also present off southwest Japan (fig. 61). During the stratified sampling off San Diego (Alvariño, 1967b) it was observed during daylight from 110 to 0 m and 401 to 525 m and at night from 235 to 460 m.

In the California region it is present all year, its distribution apparently limited by the maximal isotherm of 8°C, 9°C or 10°C at 200 m (Alvariño, 197D). It was present in the Sea of Cortés (Alvariño, 1965a). It was abundant in the South China Sea (except from May to September) and in the Gulf of Thailand was absent from January to February (Alvariño, 1963, 197 a).

Stephanomia rubra occurred in the eastern Pacific from 38 °N to about 47 °S but was absent from the easternmost part of the tropico-equatorial region; it appeared in the western Pacific, extending from off Japan (32 °N) to the tropico-equatorial region. It was mainly found in the upper layers, except for some specimens below 200 m and 1000 m off Baja California and the central eastern part of the equatorial region (fig. 62). The species was observed off San Diego (Alvariño, 1967b) only during daylight, extending from 250 to 350 m depth. This species was observed in the California region during June and July of 1958 (a year warmer than normal), and it was also common in the Sea of Cortés (Alvariño, 1965a, 197 b). In the South China Sea it was observed only in the September-October cruise (Alvariño, 197 a).

In the California region, the two species S. bijuga and S. rubra are indicators of the cold and warm inflow, respectively.

During these studies, Physophora hydrostatica was observed only in the tropico-equatorial region, southeast of the Hawaiian Islands below 1000 m and in the epiplankton. Off Baja California it was observed at more than 1000 m; northwest of Easter Island it was found below 200 m; off Chile it was observed in the upper layers. Off San Diego (Alvariño, 1967b) it was found during daylight only from 250 to 350 m (fig. 63) and in the California region it was observed in April and October of 1958 in a zone of 9°C at 200 m (Alvariño, 197 b). No representative of this species was found in the collections studied from the Sea of Cortés (Alvariño, 1965a). It appears that the species is mainly restricted to the eastern Pacific, probably because of the wider extension of the warmer waters in the western Pacific (see fig. 1, Hutchins, 1947, and Sverdrup, Johnson and Fleming, The Oceans: maps of isotherms).

Melophysa melo was observed in the epiplanktonic levels off California, Baja California and the eastern equatorial region (fig. 64). In California it was observed only in June 1954, in a region of 10°C at 200 m (Alvariño, 197 b). It was not observed in the Sea of Cortés (Alvariño, 1965a).

Dromalia alexandri was observed in an epiplanktonic haul made in the eastern equatorial region and also off California (fig. 65). Although most of siphonophores are pelagic with anatomical structures adapted for floating and for smooth-swimming displacements, at least one exception is known. This is Dromalia alexandri reported originally by Bigelow (1911a) from plankton samples collected in the Hawaiian Islands region. In January 1965 Dr. E. W. Fager, during submersion off Southern California in the Diving Saucer at depths of 99 to 180 m, observed oval organisms of bright reddish color crawling with their long tentacles along the floor of the ocean and their buoyancy maintained by means of the pneumatophore and nectophores. More than a dozen specimens were then collected, ranging in size from 60 mm × 40 mm 40 mm × 29 mm; their identification was determined by the author.

Species of Siphonophorae present in the equatorial Atlantic, Guianas Basin (Alvariño, 1967c) but not observed in the collections studied here from the Pacific, were Lensia cossack Totton 1941, L. leloupi Totton 1954, Abyla trigona Quoy and Gaimard 1827 (description and synonyms in Sears, 1953) and Forskalia edwardsi Kölliker 1853 (description and synonyms in Totton, 1954 and Totton and Bargmann, 1965).

Porpita pacifica was obtained only once off Perú in the epiplanktonic levels. In the Gulf of Thailand it was observed in the January-February cruise (Alvariño, 1963, 197 a), figure 66.

One specimen of Velella sps. (70 mm longest axis) was obtained with a dip net off San Diego (30°30'N, 120°00'W) 8 September 1965 (CalCOFI 6508-2). The sail had a NW-SE orientation. Millions of specimens of Velella sps. invaded the coastal waters and were spread on the beaches of La Jolla in May 1967. Extended swarms of these organisms were observed by the author in the eastern tropical region of the South Pacific during the PIQUERO Expedition. More references to the distribution of this species appear in table 3.

TABLE 3 Geographical Distribution of Siphonophorae.

Region	Localities	Reference
Chelophyes appendiculata	Eschscholtz	1829
Atlantic Ocean	<p>Iberian Atlantic: 36°52'N, 07°39'W off Cape Santa Maria in the Sea of Spain, 37°22'N - 09°13'W off the Algarve coast, 38°01'N - 09°02'W off Cape Espichel, 38°21'N - 09°25'W off the mouth of the Tagus, 42°23'N - 09°00'W off Arosa Bay, 43°38'N - 08°48'W off Ferrol Bay</p> <p>Off Long Island to Atlantic City, off Georges Bank, off Cape Town (33°47'S-15°48'E), off South Africa (32°30'S-09°04'E, 31°11'S-00°55'E, 30°23'S-02°47'W, 30°09'S-04°42'W), SW of St Helena (19°13'S-13°44'W, 18°58'S-10°15'W), S of Liberia (00°56'N - 11°29'W), Gulf of Mexico (NW of Cuba, off Florida), Florida Straits, Nassau Harbor, N of Puerto Rico, E of the Small Antilles: (23°31.5'N - 55°00'W, 22°18'N - 45°00.5'W, 22°59.5'N - 44°58.2'W, 16°45'N - 46°28.8'W), off the Amazon (09°09.6'N - 47°02.7'W, 10°63.8'N - 45°00'W, 12°24.4'N - 51°17.1'W), off the Amazon (20°13'N - 60°07'W, 18°13'N - 59°57'W, 16°45'N - 59°46'W, 15°15'N - 59°39'W, 15°33'N - 57°39'W, 19°54'N - 53°24'W, 18°41'N - 52°58'W, 16°47'N - 52°16'W, 13°39'N - 49°46'W, 11°34'N - 49°58'W, 10°53'N - 50°54'W, 09°35'N - 52°31'W, 08°58'N - 53°29'W, 08°18'N - 54°22'W, 07°28'N - 54°52'W, 09°21'N - 51°43'W, 10°31'N - 53°22'W), off Guatemala (15°56.7'N - 88°20'W), off Honduras (16°59'N - 86°11'W, 16°57'N - 85°15.6'W, 16°26'N - 84°53'W, 16°07'N - 84°40'W), off Nicaragua (15°18'N - 83°09'W, 14°57.2'N - 83°15.2'W, 14°19.4'N - 83°08.6'W, 13°56'N - 82°59'W, 13°38'N - 82°38'W, 13°12'N - 82°25'W, 12°31'N - 81°51.5'W, 12°11'N - 81°38'W), off Costa Rica (10°04.4'N - 80°21.5'W), near the mouth of the Orinoco River, Bay of Biscay (47°31'N - 06°04'W, 46°50'N - 05°22'W, 45°41'N - 05°12'W, 47°04'N - 04°27'W)</p>	<p>Alvariño, 1957b</p> <p>Alvariño (unpublished data)</p>

TABLE 3 (cont.)

Region	Localities	Reference
Atlantic Ocean Caribbean Sea, Gulf of Mexico	Equatorial Region, off the Amazon	Alvariño, 1967c
	Alvariño, 1969	
	Bay of Biscay (46°52'N - 05°30'W), off Morocco (34°00'N - 08°09'W), NW of the Canary Islands (30°48'N - 25°18'W, 30°47'N - 24°52'W), SW of the Cape Verde Islands (14°19'N - 27°13'W), W of Gibraltar (36°08'N - 08°02'W)	Bedot, 1904
	Bay of Biscay (46°43'N - 47°29'N and 07°15'W-08°18'W)	Bigelow, 1911b
	South of Martha's Vineyard and Newport (Rhode Island)	Bigelow, 1914
	From Chesapeake Bay to Bermuda, off Bermuda, Bermuda to Bahamas, NE Providence Channel, Straits of Florida, N of Bahama Bank	Bigelow, 1918
	ESE of Bermuda-Azores, NE of Sombbrero (27°53'N - 46°24'W), SE of Bermuda (30°49'N - 61°21'W), S of Bermuda (32°00'N - 65°00'W)	Bigelow, 1931
	Bay of Biscay, N of Spain (off Lugo), off Portugal (southward from 42°N), off Cape San Vicente, Sea of Spain	Bigelow and Sears, 1937
	Off Long Island and Delaware Bay	Bigelow and Sears, 1939
	Madeira (30°49'N - 16°27'W)	Candeias, 1929
	Off the Algarve (Portugal)	Candeias, 1932
	Off North Africa (27°00'N - 12°51'W)	Cervigón, 1961
	S of Iceland, from off the northern part of the Bay of Biscay to Ascension and across the Atlantic passing along Fernando de Noronha to the Amazon, Bermuda and the Gulf Stream off New England	Chun, 1897
	Northeast Atlantic (Scottish Shelf)	Fraser, 1961, 1967

TABLE 3 (cont.)

Region	Localities	Reference
Chelophyes appendiculata (cont.)	Morocco (Tangier to Cabo Juby) more abundant at the southern part than at the northern, rare at the center	Furnestin, 1957
Atlantic Ocean	Off Morocco	Furnestin, 1964
	Slope Waters-Long Island-Chesapeake Bay, Gulf Stream, Sargasso Sea	Grice and Hart, 1962
	Belfast Bay, Ireland	Hyndman, 1841
	Iceland (Stokksresgrunn: 63°42'N - 14°10'W) and in Spitsbergen and Greenland waters	Kramp, 1939
	SW of Ireland (51°36'N - 15°36'W)	Le Danois, 1913
	Off the Iberian peninsula, Azores, Cape Verde Islands, St. Paul Island; Trindade Island, along the Brazilian coastal waters, off the Rio de la Plata, N of Tristan da Cunha	Leloup, 1932a
	W of Gibraltar: 36°08'N - 08°02'W, 36°17'N - 11°30'W 36°19'N - 08°40'W 36°16'N - 10°50'W 36°21'N - 08°53'W, Bay of Biscay: 45°30'N - 05°56'W 45°28'N - 05°43'W 45°27'N - 06°05'W, off West Coast of Spain: 42°59'N - 09°09'W 43°04'N - 19°42'W 42°58'N - 18°30'W, off West Coast of Portugal: 38°02'N - 10°44'W 40°40'N - 13°45'W 41°29'N - 15°44'W 40°19'N - 13°11'W 38°46'N - 10°10'W 41°50'N - 13°20'W, off West Coast Brittany: 48°31'N - 07°47'W, off Morocco: 35°44'N - 11°52'W 35°13'N - 08°06'W 30°41'N - 17°46'W 33°47'N - 14°23'W 35°13'N - 07°40'W 33°40'N - 14°50'W 35°53'N - 08°05'W 35°56'N - 08°00'W 32°21'N - 12°31'W, near the Canary Islands: 28°04'N - 16°49'W 27°43'N - 18°28'W 28°10'N - 17°30'W 28°43'N - 18°34'W 28°38'N - 17°59'W 26°55'N - 26°25'W 26°30'N - 27°20'W, W of the Canary Islands: 26°10'N - 20°20'W,	

TABLE 3 (cont.)

Region	Localities	Reference
Atlantic Ocean	<p>NW of the Canary Islands:  31°46'N - 25°00'W 32°18'N - 23°58'W  33°06'N - 25°07'W 32°20'N - 18°00'W  31°10'N - 19°39'W 30°40'N - 19°56'W  30°46'N - 26°41'W,  N of the Canary Islands:  30°45'N - 17°40'W 29°16'N - 16°11'W,  near the Azores: 37°08'N - 28°28'W  39°44'N - 28°25'W 38°05'N - 25°48'W  36°17'N - 28°53'W, 12 miles NNW of  Sao Miguel, E of the Azores:  37°28'N - 25°53'W 37°15'N - 20°30'W  38°04'N - 26°07'W 37°20'N - 21°40'W  37°00'N - 17°30'W 37°33'N - 23°30'W  37°30'N - 22°39'W 37°12'N - 18°30'W  37°10'N - 21°40'W,  NW of the Azores:  38°30'N - 34°40'W 39°26'N - 31°23'W,  S of the Azores:  36°24'N - 30°00'W 36°35'N - 27°12'W,  near Madeira: 33°06'N - 15°40'W  33°04'N - 16°00'W 32°28'N - 17°20'W,  Sargasso Sea: 25°50'N - 30°30'W  25°45'N - 33°30'W 25°50'N - 34°00'W  26°40'N - 36°40'W 27°35'N - 38°40'W  28°39'N - 39°30'W 28°50'N - 40°14'W  29°00'N - 40°28'W 29°20'N - 40°50'W  30°00'N - 42°35'W 31°48'N - 42°39'W  33°03'N - 41°08'W 33°51'N - 34°03'W  35°30'N - 31°35'W 36°30'N - 29°50'W,  North Sea: 57°26'N - 04°42'E,  near Punta Delgada</p> <p>Cape Verde Islands, middle of the ocean.  off George Town, off Pará, NW of  St. Paul Rocks, between Cape Verde and  St. Paul Rocks, off Freetown, off  Monrovia, Gulf of Guinea, from Pará to  Cape San Roque, along Brazilian waters,  Fernando de Noronha Islands, between  Cape San Roque and Pernambuco, N of  Trindade Island, off Buenos Aires, NW  of Tristan da Cunha, off the Cape, off  Gr. Fish Bay</p> <p>Antillas Sea (22°01'N - 27°21'W)</p>	<p>Leloup, 1933</p> <p>Leloup, 1934a</p> <p>Leloup, 1935b</p>

TABLE 3 (cont.)

Region	Localities	Reference
Atlantic Ocean	West equatorial Atlantic: 01°33'N - 25°30'W 00°50'N - 28°26'W to 01°04'N - 29°16'W 00°25'N - 33°20'W 00°22'S -38°40'W 00°06'N - 36°10'W	Leloup, 1937
	N of Galicia (NW Spain): 45°26'N - 09°20'W 40°56'N - 09°28'W, off Morocco Coast: 35°32'N - 07°07'W 33°47'N - 08°27'W 35°10'N - 07°55'W, near the Canary Islands: 28°52'N - 14°16'W 28°02'N - 17°18'W 28°02'N - 14°17'W, W of the Canary Islands: 28°42'N - 20°00'W, Sargasso Sea: 29°06'N - 25°02'W 36°52'N - 39°55'W 34°59'N - 33°01'W 34°44'N - 47°52'W 37°09'N - 38°05'W 36°10'N - 40°00'W 31°00'N - 52°55'W, near the Azores: 36°53'N - 29°47'W 38°30'N - 28°37'W 37°37'N - 29°25'W, N of the Azores: 46°48'N - 27°46'W 45°26'N - 25°45'W, NE of the Azores: 46°58'N - 19°06'W, S of the Grand Banks: 40°17'N - 50°39'W, SW of Ireland: 48°29'N - 13°55'W 50°13'N - 11°23'W, South central Atlantic: 28°11.8'S-22°41.6'W 32°35'S-30°00'W 32°50'S-35°00'W, off Southwest Africa: 34°02'S-15°48'E 32°29'S -20°07'E, off central Argentina: 38°58.3'S-57°10.7'W off the Angola coast: 16°22.5'S-11°23.2'E, 16°03.5'S- 09°29'E, 15°08'S-02°05.9'E, off central Brazil coast: 15°54'S -30°03'W 16°20'S -33°19'W, equatorial Atlantic: 01°01'S-30°00'W, 02°38'S-39°21'W, 02°40.3'S- 16°36.8'W, 04°13'N - 34°25.5'W, 03°07'S-19°24'W, 10°12.4'N - 26°36.1'W, 03°30'S-22°35.5'W, 05°30'N - 42°53'W, 04°21'S-26°21.8'W, 09°16.8'N - 38°21.3'W, 06°11'S- 32°34'W,	Leloup, 1955

TABLE 3 (cont.)

Region	Localities	Reference
Atlantic Ocean	<p>off Sierra Leone:  07°09.3'N - 21°16.3'W, 05°04'N -  14°56.6'W, 08°14.5'N - 19°25.1'W,  off Liberia: 04°54.8'N - 09°28.1'W,  02°42.6'N - 09°28.8'W,  Gulf of Guinea: 04°19'N - 00°59.8'W,  01°54.8'N - 02°03.9'E, 02°26.3'N -  06°22.6'E, 03°03'N - 00°58'W,  03°47.9'N - 08°28.5'E,  N of Cape Verde Islands:  19°17.4'N - 24°59.5'W, 19°16.8'N -  22°30.6'W, 01°07'N - 24°57.5'W,  Cape Verde Basin: 18°31.7'N -  36°45.4'W, 14°31.7'N - 29°37.8'W,  15°43.4'N - 43°28.1'W, 15°45.6'N -  27°19.4'W,  N of French Guiana: 07°48.7'N -  52°14'W, 06°50.1'N - 52°51.1'W,  07°25'N - 52°44'W</p>	<p>Leloup and  Hentschel, 1938</p>
	Bermuda	Moore, 1949
	Florida Current, off Miami	Moore, 1953
	Florida Current	Moore, Owre, Jones and Dow, 1953
	Gulf of Biscay, Benguela Current, near Madeira, Portogrande, off Liberia at about 17°W, SW of Ascension, W of St. Helena and N of Trindade, between Trindade and Tristan da Cunha, N of Tristan da Cunha, between Tristan da Cunha and South Africa, off West South Africa (07°-04°-02°E and 05°W), S and N of St. Helena, between St. Helena and Ascension, SE of Ascension, Ascension, between St. Paul and St. Tomé, NE of St. Paul, S and N of Cape Verde Islands, Cape Verde Islands, Azores	Moser, 1925
	Florida Current, off Miami	Moore, 1955
	Florida Current, off Miami	Moore and Corbin, 1956
	Bay of Biscay	Patrity, 1965
	Irminger Sea	Römer, 1902
	Gulf of Mexico	Sears, 1954



TABLE 3 (cont.)

Region	Localities	Reference
Atlantic Ocean	Off Brazil (Rio Grande, Catarina Island, Santos, Rio de Janeiro, Abrolhos Island)	Seguin, 1965
	Bermuda (32°08'N - 32°16'N and 64°40'W-64°31'W)	Totton, 1936
	Northern coast of Ireland, Irminger Sea (60°N)	Vanhöffen, 1906
Mediterranean	Gulf of Naples	Bedot, 1882
	Alborán Sea (northern and eastern part), North Africa, Balearic Sea, Ionian Sea, Thyrenian Sea, Adriatic Sea, Aegean Sea (as far as 30°E), Gulf of Corinth, except the Sea of Marmara and the Dardanelles	Bigelow and Sears, 1937
	Gulf of Naples	Chun, 1887
	Messina	Cialona, 1901
	Naples	Costa, 1836
	Gibraltar and Alborán Sea	Furnestin, 1958
	Gulf of Lyon, Eastern Corsica	Furnestin, 1960
	Messina	Gegenbaur, 1854
	Adriatic Sea	Huré, 1955
	Messina	Keferstein and Ehlers, 1861
	S of Ischia, Capri and Bocca Grande (Gulf of Naples)	Kinzer, 1965
	Messina	Kölliker, 1853
	Off the French Riviera:	
	43°18'N - 07°16'E 43°40'N - 07°35'E	
	42°52'N - 06°35'E,	
	off the Italian Riviera:	
	42°53'N - 08°22'E 43°15'N - 07°50'E	
	42°58'N - 08°56'E 43°24'N - 07°56'E	
	42°40'N - 08°20'E 42°46'N - 08°08'E,	
	Balearic Sea: 40°28'N - 02°14'E,	
	41°40'N - 04°00'E 41°56'N - 04°41'E	
	40°33'N - 03°55'E 41°32'N - 03°52'E,	

TABLE 3 (cont.)

Region	Localities	Reference
Mediterranean	near Mallorca: 39°45'N - 03°27'E, 38°35'N - 03°06'E 38°19'N - 02°14'E, Alborán Sea: 35°50'N - 05°50'W, 36°05'N - 04°43'W 36°51'N - 01°30'W, Western Mediterranean, N of Algeria: 37°00'N - 00°50'W 38°20'N - 02°30'E 38°20'N - 01°31'E 37°55'N - 00°55'W 37°39'N - 00°20'E 40°48'N - 06°16'E 38°02'N - 01°50'E 36°21'N - 01°25'W 38°24'N - 02°24'E, Gulf of Lyon: 42°55'N - 03°07'E, Calvi (NW of Corsica), Monaco, Villefranche-sur-Mer	Leloup, 1935a
	Monaco, off Mont Angel, entrance to Roquebrune Bay, Cape Ferrat, Bay Beaulieu	Leloup, 1936a
	Alborán Sea (36°05'N - 04°42'W)	Leloup, 1955
	Nice	Leuckart, 1853, 1854
	Capri	Lo Bianco, 1903
	Villefranche-sur-Mer	Lochman, 1914
	Adriatic, off Skardo-Isto	Moser, 1917
	Gulf of Naples, Villefranche-sur-Mer	Moser, 1923
	Gulf of Aegina (Insel Angistri) on the Greek Coast	Moser, 1925
	Naples	Müller, 1871
	Gulf of Naples	Neppi, 1921
	Mentone	Pagenstecher, 1869
	Naples	Pavesi, 1869
	Gulf of Naples	Schneider, 1898
	Naples	Spagnolini, 1868, 1870
	Villefranche	Totton, 1954
	Nice	Vogt, 1854

TABLE 3 (cont.)

Region	Localities	Reference
Mediterranean	Western Mediterranean: Balearic Sea to N of Africa	Wirz and Beyeler, 1954
Pacific Ocean and adjacent seas	South China Sea	Alvariño, 1963
	Off San Diego, California	Alvariño, 1967b
	Gulf of Panama	Alvariño, 1969
	South China Sea, Gulf of Thailand	Alvariño, 197 a
	Bay of Amboina (Indonesia)	Bedot, 1896
	Baja California, Manzanillo, Acapulco, Costa Rica, Galápagos, off Aguja Point in Perú, Callao, Easter Island, Albatross plateau, E of Marquesas	Bigelow, 1911a
	San Francisco to Unalaska Island, Eastern Sea, off the east coast of Kyushu (Japan), Suruga Gulf	Bigelow, 1913
	China Sea, vicinity of Hong Kong, off the coast of Luzón, between Siquigor and Bohol, vicinity of Darvel Bay, Borneo, Gulf of Tomini, Celebes, Molucca Passage, Buton Strait	Bigelow, 1919
	Tagus Cove, Albemarle, N of Marborough (00°17'S-91°34'W), NW of Marborough (00°00'-91°53'W)	Bigelow, 1931
	Santa Barbara Channel (California)	Clarke, 1966
	Peruvian Current, Juan Fernández Islands, New Pomerania, E of Tasmania (41°S to 44°S)	Leloup, 1932a
	Bay of Nhatrang	Leloup, 1956
	Tortugas, Sumatra, New Guinea, west Australia (35°00'S-66°30'E), N of Ceram Island (02°30'S-129°00'E), Singapore	Moser, 1925
	Manila Bay	Rees and White, 1966
	Great Barrier Reef (outside and in Trinity opening)	Russell and Colman, 1935

TABLE 3 (cont.)

Region	Localities	Reference
Pacific Ocean and adjacent seas	Marshall Islands (outside lagoon Bikini Atoll, inside lagoon Rongelap Atoll, outside lagoon Rongerik Atoll)	Sears, 1950
	Great Barrier Reef	Totton, 1932
Indian Ocean and adjacent seas	Central Indian Ocean waters	Alvariño, 1964b
	Maldivé Islands	Bigelow, 1904
	Chagos, Mauritius, Nazareth, Saya de Malha, Farquhar, Amirante	Browne, 1926
	Rattle Snake voyage: Bass's straits and southern part of Indian Ocean	Huxley, 1859
	Between St. Paul and the Mascareñas, SE of the Mascareñas, S of Madagascar, Port Natal, NE of Mauritius (03°S-79°E)	Moser, 1925
	Gulf of Aden, south and east coasts of Africa, south Indian Ocean (31°58.1'S-114°52.2'E to 32°00'S-29°43.3'E), northwest Indian Ocean	Totton, 1954

TABLE 3 (cont.)

Region	Localities	Reference
Chelophyes appendiculata, eudoxid form:		
Eudoxia russelli	Totton 1932	
Atlantic Ocean	Off Long Island to Atlantic City	Alvariño (unpublished data)
	Between Pernambuco and Ascension Island, off Rio Grande do Sul	Leloup, 1934a
	Pernambuco, Ascension Island, Rio Grande do Sul	Leloup and Hentschel, 1938
Pacific Ocean	Off San Diego, California	Alvariño, 1967b
	Great Barrier Reef (outside and in Trinity Opening)	Russell and Colman, 1935
	Outside the Great Barrier Reef	Totton, 1932

TABLE 3 (cont.)

Region	Localities	Reference
Chelophyes contorta	(Lens and Riemsdijk) 1908	
Atlantic Ocean	Gulf of Honduras SW of St. Helena (19°13'S-13°44'W), off Guatemala (19°56.7'N - 88°20.0'W), off Honduras (16°59'N - 86°11'W), Gulf of Cariaco (Venezuela)	Alvariño, 1969 Alvariño (unpublished data)
	Gulf of Cariaco (Venezuela) 40°N - 30°S, E of St. Paul (01°N - 19°W), Cape Verde Islands, N of Cape Verde Islands, N of St. Paul (28°30'S-69°00'E)	Legaré, 1961 Moser, 1925
	Bermuda (32°08'N - 32°16'N and 64°40'W-64°31'W)	Totton, 1936
Pacific Ocean and adjacent seas	South China Sea	Alvariño, 1963
	Sea of Cortés	Alvariño, 1965a
	Gulf of Panama to Manzanillo, Mexico	Alvariño, 1969
	Gulf of Thailand and South China Sea	Alvariño, 197 a
	Amboina	Bedot, 1896
	Acapulco, southern Baja California, Manzanillo, Guatemala, Panama Gulf, Galápagos, NE of Sala y Gómez Island, Easter Island	Bigelow, 1911a
	Eastern Sea (East China Sea)	Bigelow, 1913
	China Sea, vicinity of Hong Kong, off Corregidor Light, W of Luzón, vicinity of Darvel Bay, Borneo, Gulf of Tomini, Celebes, Moluccas Passage, Buton Strait	Bigelow, 1919
	New Pomerania, northern coast of Börger Bay	Leloup, 1932a
	Malay Archipelago, west coast of Flores, S of Saleyor, Sulu, N of Ubian, Sian, Kagoa Island, Salomakil, Misoal, Sabuda, W of New Guinea, Gisser and Ceram, Manipa, N of Manipa Strait, N of Kabia, W of Binongka, S of Lucipara, Ternate	Lens and Riemsdijk, 1908
	Anchorage Philippines	Moser, 1913

TABLE 3 (cont.)

Region	Localities	Reference
Pacific Ocean and adjacent seas	Sumatra, New Guinea, St. George's Canal, Bismarck Sea (03°36'S-144°04'E)	Moser, 1925
	Manila Bay	Rees and White, 1966
	Great Barrier Reef (outside and in Trinity Opening)	Russell and Colman, 1935
	Marshall Islands (between 02°15'S-09°00'N and 166°39'E-168°00'E) (inside and outside lagoon in Bikini Atoll, inside lagoon in Rongelap Atoll, inside and outside lagoon in Rongerik Atoll, inside and outside lagoon in Eniwetok Atoll)	Sears, 1950
	Great Barrier Reef	Totton, 1932
Indian Ocean and adjacent seas	Equatorial waters	Alvariño, 1964b
	Chagos, Mauritius, Nazareth, Farquhar, Saya de Malha, Amirante, Alphonse	Browne, 1926
	Red Sea (La Grande Vallée in the Gulf of Eylath, Aqaba)	Furnestin, 1958
	Seychelles	Moser, 1913
	Gulf of Aden (11°32.3'N - 52°03'E), southeast Indian Ocean (part of 90°E line), northwest Red Sea: northern, central, southern part: 25°08.5'N - 35°40.0'E - northern 21°53'N - 37°41'E - central 15°08'N - 42°01'E - southern, Kosier and Jaffatin Islands, Gulf of Aqaba, Port Sudan, SE of Cape Agulhas (37°50.1'S-35°46.6'E), SW of Madagascar (27°24.3'S-39°21.2'E), Mozambique Channel (24°35.6'S-39°53.5'E, 14°25'), NW of Madagascar (05°39.1'S-46°22.3'E, 00°06'S-49°45.4'E, 07°42.1'S-44°14.1'E), off the Somali Coast (04°25.9'S-47°10.0'E, 07°08.6'N - 52°19.3'E), (02°39.4'N - 50°46.4'E, °06°05'N - 52°00'E), (00°57.8'S-49°26.7'E)	Totton, 1954
Mediterranean	Alborán Sea (35°19'N - 04°46'W, 35° 47'N - 05°06'W)	Alvariño, 1957a

TABLE 3 (cont.)

Region	Localities	Reference
Dimophyes arctica	Chun 1897	
Atlantic Ocean	Off the Amazon (09°09.6'N - 47°02.7'W)	Alvariño (unpublished data)
	Equatorial region off the Amazon	Alvariño, 1967c
	Gulf of Mexico	Alvariño, 1969
	SE slope of Georges Bank, outside the Continental Shelf, off Shelburne (Nova Scotia), near Lurcher Shoal, Eastern Channel	Bigelow, 1926
	S of Iceland and near the entrance to the Belts in the North Sea	Chun, 1897
	Greenland Sea, Skagerrak, Norwegian Sea	Damas and Kofoid, 1907
	Scottish Shelf (Northeast Atlantic)	Fraser, 1961, 1967
	South Georgia Islands, between South Georgia Islands and the Malvinas (50°26'S-30°27'W, 53°59'S-36°11'W, 54°19'S-35°03'W)	Hardy and Gunther, 1935
	Labrador Sea	Kielhorn, 1952
	Western Greenland waters (63°06'N - 56°00'W, 61°47'N - 52°55'W), SW of Iceland (63°19'N - 26°50'W, 59°30'N - 45°23'W, 58°35'N - 48°10'W, 61°28'N - 63°44'W, 61°39'N - 62°08'W, 62°19'N - 56°00'W, 66°51'N - 57°40'W, 69°50'N - 61°36'W, 75°26'N - 62°26'W, 76°04.5'N - 80°56'W, 74°20'N - 75°56'W, 74°50'N - 69°00'W, 70°44'N - 52°16.5'W, 70°20'N - 53°50'W, 69°44'N - 51°29.5'W, 68°07'N - 59°27'W, 67°42'N - 60°31'W), Kapisigdlit (64°27'N - 50°15'W), off Ameralikfjord (64°03'N - 51°40'W), mouth of Kangeq Sound (64°40'N - 50°10'W), Narssarmint (65°53'N - 53°15'W), Sardloq (64°22'N - 51°40'W), Kangeq (61°00'N - 48°30'W), off Qarusuk (64°20'N - 51°30'W), off Nugssuaq (70°40'N - 54°30'W), off Hunde Eiland (68°52'N - 53°00'W), mouth of Godthaabsfjord (64°10'N - 51°45'W), Umanak Fjord and Vaigat, estending as far north as Jones Sound and Melville Bay	Kramp, 1942





TABLE 3 (cont.)

Region	Localities	Reference
Atlantic Ocean	<p>off south Brazil:  29°15'S-43°40'W 32°44'S-46°00.5'W,  off central Brazil: 11°50'S-35°12'W,  Argentine Basin: 48°47'S-51°37'W,  48°21'S-35°21'W 48°21'S-42°36'W,  S of Cape Horn: 57°19'S-65°18'W,  W of south Georgia: 54°57'S- 39°24.5'W,  E of South Sandwich Islands:  55°00'S-21°58'W 54°58'S- 16°00'W,  S of Bouvet Island (Subantarctic):  58°53'S-04°54'E, off Angola:  15°16.5'S-06°32'E 08°58'S-08°57.7'E,  off South West Africa:  21°53'S-12°27'E 22°00'S-11°07.2'E,  near Sts. Peter and Paul:  00°36'N - 29°12'W,  tropical north Atlantic waters:  00°36'N - 29°12'W 14°03'N - 45°59'W  05°07.6'N - 33°19.5'W, 19°10.8'N -  30°12.5'W, 14°31.7'N - 29°37.8'W,  off Guinea: 09°01'N - 17°40'W,  N of Cape Verde Islands:  19°16.8'N - 22°30.6'W,  off French Guiana: 07°48.7'N - 52°14'W,  07°25'N - 52°44'W</p>	<p>Leloup and  Hentschel, 1938</p>
	<p>Porto Grande (Cape Verde Islands),  between St. Paul and Ascension Islands,  SW of Ascension Island, N of Trindade  Island, off South Africa, between St.  Helena and Ascension Islands, S of  Ascension Island, SE of St. Paul, N of  Cape Verde Islands, W of the Canaries  (35°W), Spitsbergen, Greenland,  Kattegat</p>	<p>Moser, 1925</p>
	<p>Bay of Biscay  Herdla and Hjeltelfjordes (Norway)  North Sea, Kattegat, Belt Sea  North Atlantic, 44°N - 15°W, West  European-Basin, near South Georgia:  54°53'S - 39°40'W 55°43'S - 36°51'W  55°21'S-36°48'W 54°01'S-35°14'W  55°09'S-36°48'W 55°06'S-36°57'W  54°51'S - 36°44'W 53°37'S - 37°06'W  55°47'S-34°11'W 54°36'S-39°14'W  55°40'S-34°23'W 53°28'S-37°08'W</p>	<p>Patriti, 1965  Runnström, 1932  Russell, 1939</p>

TABLE 3 (cont.)

Region	Localities	Reference
Atlantic Ocean	<p>55°33'S - 34°35'W 53°45'S - 35°46'W  55°20'S - 34°47'W 54°19'S - 35°03'W  54°17'S - 35°06'W 54°17'S - 34°47'W  54°15'S - 34°47'W 53°25'S - 35°15'W  54°13'S - 34°18'W 52°26'S - 37°14'W  54°11'S-33°49'W 52°36'S-37°14'W  53°07'S - 34°48'W 52°46'S - 37°12'W  53°16'S - 35°02'W 53°00'S - 37°11'W  53°38'S-35°35'W 53°06'S-37°14'W  53°33'S-37°45'W 53°17'S-37°10'W  53°41'S - 38°24'W 53°47'S - 35°48'W  53°34'S - 38°36'W 53°10'S - 39°44'W  55°20'S-34°46'W 53°17'S-39°31'W  53°24'S-39°17'W 53°28'S-38°55'W  54°56'S-39°57'W 53°46'S-35°47'W,  near the South Sandwich Islands:  57°36'S-29°54'W, 56°32.2'S-  27°21.9'W,  NE of South Georgia:  53°34'S - 30°25'W 43°08'S - 30°15'W  49°58'S - 29°52'W 50°26'S - 30°27'W,  W of Tristan da Cunha:  38°10'S-30°10'W,  Agulhas Basin, S of Cape of Good Hope:  43°07.4'S-25°04.6'W, 45°03'S-17°03'E,  39°04'S-17°38'E,  S of Cape of Good Hope:  35°29'S-18°33'E,  between South Georgia and the Falklands:  53°19'S-45°16'W 51°58'S-55°42'W  52°19'S-52°11'W,  S of the Falklands: 62°55'S-57°40'W</p>	Totton, 1954
Antarctic Ocean	<p>Subantarctic and Antarctic waters,  Bellingshausen and Weddell Seas,  South Sandwich and Weddell regions,  Bransfield Strait, South Orkneys to  South Shetland</p>	Mackintosh, 1934
	<p>Bellingshausen Sea:  70°15'S - 87°27'W 69°55'S - 82°36'W  69°54'S-82°49'W 69°51'S-82°36'W  70°41'S-90°14'W 70°21'S-82°48'W  71°15'S-87°28'W</p>	Leloup, 1938
	N of Heard Island, Antarctica at about 64°S-80°E	Moser, 1925
	W of Palmer Peninsula (66°11'S-71°50'W)	Totton, 1954

TABLE 3 (cont.)

Region	Localities	Reference
Pacific Ocean and adjacent seas	South China Sea	Alvariño, 1967a
	Off San Diego, California	Alvariño, 1967b
	Northeast Pacific (50°00'N - 145°00'W, 55°58'N - 150°46'W)	Berkeley and Berkeley, 1960
	San Francisco to Unalaska Island (Sta. 4760), Bering Sea (Stas. 4763, 4767), W of Aleutians to Kamchatka by way of Komandorski and Bering Islands (Stas. 4785, 4793), off the southeast coast of Kamchatka (Sta. 4797), Sea of Okhotsk (Sta. 4800), E of Kurile Islands (Stas. 4805, 4806), Sea of Japan (Sta. 4820)	Bigelow, 1913
	Great Barrier Reef (not in the lagoon)	Russell and Colman, 1935
	Marshall Islands (outside lagoon in Bikini Atoll)	Sears, 1950
	Great Barrier Reef	Totton, 1932
	Near New Zealand (42°46.3'S-176°14.8'E)	Totton, 1954
	Between Providence and Alphonse (08°16'S-51°26'E)	Browne, 1926
	Port Natal, between Kerguelen and St. Paul, St. Paul, N of St. Paul, S of the Mascareñas, S of Madagascar	Moser, 1925
Indian Ocean and adjacent seas	Somali Basin: 06°05'N - 52°00'E, 00°06'S-49°45.4'E, 02°39.4'N - 50°46.4'E, 00°57.8'S-49°26.7'E, E of Seychelles: 04°25.9'S-47°10'E, E of Zanzibar: 07°42.1'S-44°14.1'E, SE of South Africa coast: 34°47.6'S-34°27.9'E, 37°50.1'S-35°46.6'E	
Arctic Ocean	Spitsbergen	Damas and Koefoid, 1907
	Canadian Eastern Arctic (Clyde River)	Dunbar, 1942
	Amundsen Gulf, M'Clure Strait	Grainger, 1955

TABLE 3 (cont.)

Region	Localities	Reference
Arctic Ocean	Spitsbergen: 77°03'N - 16°00'E (in Hornsund), 78°05'N - 26°40'E (Olgastrasse), 78°18'N - 27°25'E (Olgastrasse), 81°20'N - 20°30'E (Karajakfjord on the west coast of Greenland), in the North Sea (57°N - 58°N), in the Bäreninsel, and in the Eismeer by Spitsbergen (81 °N)	Römer, 1902
	Gulf Stream and Irminger Sea (59°N to 60°N), Karajakfjord on the west coast of Greenland (70°N to 71°N), in the Bäreninsel, by Spitsbergen (81°N)	Vanhöffen, 1906

TABLE 3 (cont.)

Region	Localities	Reference
<i>Diphyes antarctica</i>	Moser 1925	
Atlantic Ocean	South Georgia Islands, and between South Georgia and the Malvinas (Falkland)	Hardy and Gunther, 1935
	Near the Azores (39°44'N - 28°25'W)	Leloup, 1936b
	N of Tristan da Cunha	Moser, 1925
Antarctic Ocean	Subantarctic region in the Pacific	Alvariño, 1964b
	Atlantic Antarctic: off Dahlrymple Head, Bouvet Island (between 5°E and 8°40'W)	Kramp, 1949
	56°53'S - 03°14'E 60°18'S - 04°44'E	
	57°49'S - 03°30'E 59°53'S - 08°40'E	
	59°40'S - 05°00'E 56°30'S - 01°30'E	
	60°01'S - 02°30'E 57°05'S - 02°25'E	
	Bellingshausen Sea: Peter Island (68°49'S-90°25'W), E of Peter Island (69°54'S-82°49'W)	Leloup, 1938
	Coldest parts of the Antarctic, northern boundary in the region of the Malvinas, South Shetland, South Georgia, South Sandwich, Bransfield Strait, South Orkneys to South Shetland, Bellingshausen Sea	Mackintosh, 1934
	Indian Ocean Subantarctic and Antarctic: Heard Island (S of the Kerguelen), E of Heard Island (58°S-90°E), off Antarctica (Wilkes Land), Kerguelen, Kerguelen to St. Paul	Moser, 1925

TABLE 3 (cont.)

Region	Localities	Reference
Diphyes bojani	(Eschscholtz) 1829	
Atlantic Ocean	Caribbean Sea, Gulf of Mexico Off Long Island to Atlantic City, S of Liberia (00°56'N - 11°29'W), Gulf of Mexico (NW of Cuba, off Florida), E of the Small Antilles: (23°31.5'N - 55°00'W, 22°18'N - 45°00.5'W, 22°59.5'N - 44°58.2'W, 16°45'N - 46°28.8'W), off the Amazon: (09°09.6'N - 47°02.7'W, 10°03.8'N - 45°00'W, 12°24.4'N - 51°17.1'W, 18°13'N - 59°57'W 16°45'N - 59°46'W 15°15'N - 59°39'W 14°36'N - 58°35'W 15°33'N - 57°39'W 16°55'N - 56°20'W 19°54'N - 53°24'W 18°41'N - 52°58'W 16°47'N - 52°16'W 13°39'N - 49°46'W 10°53'N - 50°54'W 08°18'N - 54°22'W 07°28'N - 54°52'W 09°21'N - 51°43'W 10°31'N - 53°22'W), off Guatemala: (15°56.7'N - 88°20'W), off Honduras: (16°59'N - 86°11'W, 16°57'N - 85°15.6'W, 16°26'N - 84°53'W, 15°44.4'N - 83°54'W), off Nicaragua: (15°18'N - 83°09'W, 13°56'N - 82°59'W, 13°12'N - 82°25'W, 12°31'N - 81°51.5'W, 12°11'N - 81°38'W, 11°26.9'N - 81°14.5'W), off Costa Rica: (10°43.8'N - 80°45.3'W, 10°04.4'N - 80°21.5'W), entrance to the Gulf of Cariaco (10°30'N - 65°11'W), near the mouth of the Orinoco River Equatorial region, off the Amazon	Alvariño, 1969 Alvariño (unpublished data)
	Chesapeake Bay to Bermuda: (35°27'N - 73°14'W, 34°41'N - 73°23'W, 33°22'N - 73°37'W, 32°33'N - 72°14'W, 32°29'N - 71°29'W, 32°27'N - 69°55'W, 32°30'N - 65°48'W), off Bermuda: (32°20'N - 64°21'W, 31°52'N - 65°14'W), Bermuda to Bahamas: (29°19'N - 68°35'W, 28°59'N - 69°22'W, 28°51'N - 70°08'W, 28°35'N - 73°33'W, 28°51'N - 75°13'W), N of Bahama Bank: (27°46'N - 78°46'W 27°57'N - 78°15'W 27°59'N - 77°25'W 28°08'N - 76°48'W 28°10'N - 76°18'W), Straits of Florida: (24°18'N - 81°50'W, 23°32'N - 81°48'W, 25°34'N - 79°24'W, 27°32'N - 79°21'W)	Alvariño, 1967c Bigelow, 1918

TABLE 3 (cont.)

Region	Localities	Reference
Atlantic Ocean	SE of Bermuda, NE of Sombbrero (25°56'N - 55°42'W), ESE of Bermuda to SW of Azores, NE of Sombbrero (27°53'N - 46°24'W), SE of Bermuda (30°49'N - 61°21'W), W of Bermuda (32°48'N - 67°09'W)	Bigelow, 1931
	Madeira (30°49'N - 16°27'W)	Candeias, 1929
	Off Africa (19°N - off Portuguese Guinea, Cabo Blanco)	Cervigón, 1961
	Canary Islands	Chun, 1892
	Gulf Stream, Sargasso, central Atlantic (between Sargasso Sea and the Canary Islands), Cape Verde Islands, Guinea, and in the South Equatorial Current	Chun, 1892
	Morocco (Tangier to Cabo Juby)	Furnestín, 1957
	Off Morocco	Furnestín, 1964
	Shelf waters off Long Island, slope waters off Long Island to Chesapeake Bay, Gulf Stream, Sargasso Sea	Grice and Hart, 1962
	Bermuda	Hela, Moore and Owre, 1953
	Gulf of Cariaco (Venezuela)	Legaré, 1961
	Canary Islands, Cape Verde Islands, St. Paul Rocks, Brazilian coast, off Rio de la Plata	Leloup, 1932a
	NW of Azores: 40°28'N - 36°32'W, SW of Cape Verde Islands: 14°45'N - 29°19'W, Canary Basin: 31°46'N - 25°00'W, 33°06'N - 25°07'W, near Madeira Islands: 33°04'N - 16°00'W, Sargasso Sea: 26°40'N - 36°40'W 28°30'N - 39°30'W 27°20'N - 38°00'W 33°03'N - 41°08'W 27°35'N - 38°40'W, W of Azores: 37°30'N - 22°39'W 38°30'N - 34°40'W, off Morocco: 32°21'N - 12°31'W	Leloup, 1933
	Off Georgetown (19°15'N - 37°21'S), middle of ocean, Cape Verde Islands, off Freetown, off Monrovia,	



TABLE 3 (cont.)

Region	Localities	Reference
Atlantic Ocean	off Cape Palmas, Gulf of Guinea, off Gr. Fish Bay, Ascension Island, from Pará to Cape São Roque, off Bahía, Trindade Island, off Rio de Janeiro, off Florianópolis, off Rio Grande do Sul, off Buenos Aires	Leloup, 1934a
	Equatorial Atlantic: 01°33'N - 25°35'W 00°50'N - 28°26'W 00°25'N - 33°20'W 00°06'N - 36°10'W	Leloup, 1937
	Off Morocco: 33°47'N - 08°27'W, near Canary Islands: 28°52'N - 14°16'W, Sargasso Sea: 31°20'N - 35°07'W 36°10'N - 40°00'W 31°24'N - 34°47'W 34°10'N - 45°24'W 34°44'N - 47°52'W 29°00'N - 56°55'W, SW of Azores: 31°00'N - 29°00'W, off southern Brazil: 29°52'S-41°37'W 32°21'S-50°10'W 29°15'S-43°40'W 23°35'S-40°52'W 32°39'S-48°54'W	Leloup and Hentschel, 1938
	Off Argentina: 32°21'S-51°53'W, off Angola coast: 16°22'S-11°23'E 16°03'S - 09°29'E 15°16'S - 06°32'E, Angola Basin: 15°08'S-02°59'E 14°58'S-00°07'W, Brazilian Basin: 15°54'S-30°03'W 16°20'S - 33°19'W 20°30'S - 35°25'W, Equatorial Atlantic: 08°49'S - 16°40'W 08°14'N - 19°25'W 02°40'S - 16°36'W 08°59'S - 25°59'W 09°01'N - 17°40'W 03°07'S - 19°24'W 07°09'N - 21°16'W 05°04'N - 14°56'W 03°30'S - 22°35'W 02°42'N - 09°28'W 02°08'S - 13°58'W 04°21'S - 26°21'W 02°28'S - 39°21'W 09°07'N - 50°56'W 06°11'S - 32°34'W 09°16'N - 38°21'W, off central Brazil: 12°45'S - 37°24'W 05°48'S - 34°43'W, Gulf of Guinea: 03°59'N - 00°55'W 01°07'N - 00°59'W 03°03'N - 00°58'W 01°54'N - 02°03'E 02°12'N - 01°03'W 03°47'N - 08°28'E 02°26'N - 06°22'E 00°30'N - 01°51'E 03°52'S-01°05'E, E of Cape Verde Islands: 17°48'N - 19°31'W 17°22'N - 22°00'W,	

TABLE 3 (cont.)

Region	Localities	Reference
Atlantic Ocean	Cape Verde Basin: 19°15'N - 27°27'W 17°52'N - 39°19'W 16°34'N - 42°00'W 10°57'N - 36°00'W 14°31'N - 29°37'W 14°03'N - 45°59'W, off French Buiana: 07°48'N - 52°14'W 07°25'N - 52°44'N 06°50'W - 52°51'W,	Leloup and Hentschel, 1938
	Bermuda	Moore, 1949
	Florida Current, off Miami (winter max. in Bermuda and in autumn in Florida, max. in the upper 100 m., extending to about 200 m. depth)	Moore, 1953
	Florida Current, off Miami	Moore, 1955
	Florida Current	Moore, Owre, Jones and Dow, 1953
	Cape Verde Islands, between St. Paul and St. Tomé (at about 04°N - 17°W and 01°30'S - 17°W), SW of Ascension (12°S- 18°W and 14°S- 18°30'W), N of Trindade, off west South Africa, S and N of St. Helena, SE of Ascension, Ascension, E of St. Paul (at about 18°30'W), NE of St. Paul, Cape Verde Islands, N of Cape Verde Islands, W of the Canary Islands (at about 28°N - 35°W)	Moser, 1925
	Gulf of Mexico	Sears, 1954
	Off Brazil (Rio Grande, St. Catarina Island, Santos, Rio de Janeiro, Abrolhos Island)	Seguin, 1965
	N of Corsica (42°53'N - 08°22'E)	Leloup, 1933
	South China Sea	Alvariño, 1963
Mediterranean	Gulf of Panama to Manzanillo, Mexico	Alvariño, 1969
Pacific Ocean and adjacent seas	South China Sea, Gulf of Thailand	Alvariño, 197 a
	Bay of Ambon	Bedot, 1896
	Manzanillo, Acapulco (Mexico), Guatemala, Galapagos, 08° to 10°W of Callao, between Callao and Easter Island, Albatross plateau, E of Marquesas	Bigelow, 1911a

TABLE 3 (cont.)

Region	Localities	Reference
Pacific Ocean and adjacent seas	China Sea, vicinity of Hong Kong,	Bigelow, 1919
	Malampaya Sound, Palawan, off	
	Corregidor Light, west coast of Luzón, off east coast of Luzón	
	NW of Marborough (00°00' - 91°53'W)	Bigelow, 1931
	Southern coast of New Guinea	Huxley, 1859
	Misaki (Japan)	Kawamura, 1915
	Juan Fernández Islands (30°S-126°W, 33°S - 88°W)	Leloup, 1932a
	Bay of Nhatrang	Leloup, 1956
	W of Flores, west coast of Gebe Island,	Lens and Riemsdijk, 1908
	N of Ceram, Paternoster Island, N of	
	Solomskil, Sulu Archipelago, between	
	Gisser and Ceram, S of Saleyer, E of	
	Kajoa, E of Misoal, N of Sabuda, W of	
	New Guinea, under <i>D. indica</i> synonym,	
	Buton Strait, Sulu Archipelago, S of	
Indian Ocean and adjacent seas	Lucipara Island	
	Tortugas, New Guinea	Moser, 1925
	Great Barrier Reef (outside and in	Russell and Colman, 1935
	Trinity Opening)	
	NE of Solomons (between 02°15'S-	
	09°00'N and 166°39'E - 168°00'E),	Sears, 1950
	Marshall Islands, inside lagoon in	
	Rongelap Atoll, inside and outside	
	lagoon in Rongerik Atoll	
	Great Barrier Reef	Totton, 1932
	Equatorial waters	Alvariño, 1964b
	Chilka Lake	Annandale, 1915
	East coast of Luzon, between Siquijor	Bigelow, 1919
	and Bohol, between Negros and	
	Siquijor, Macassar Strait	
	Chagos, Mauritius, Saya de Malha,	Browne, 1926
	Farquhar, Alphonse, Amirante	
	S of Madagascar	Moser, 1925

TABLE 3 (cont.)

Region	Localities	Reference
Indian Ocean and adjacent seas	Gulf of Aden, off south and east coasts of Africa, southeast Indian Ocean, northwest Indian Ocean	Totton, 1954

TABLE 3 (cont.)

Region	Localities	Reference
<i>Diphyes chamissonis</i>	Huxley 1859	
Atlantic Ocean	Newport	Fewkes, 1881
Pacific Ocean and adjacent seas	South China Sea and Gulf of Thailand	Alvariño, 1963b, 197 a
	Western Pacific, Philippines and Indonesian waters	Alvariño, 1964
	Eastern Sea (Sta. 4896), off east coast of Kyushu, Japan (Sta. 4955), Suruga Gulf (Sta. 5064)	Bigelow, 1913
	Off Corregidor Light, west coast of Luzon, off northern Mindanao, Buton Strait, Macassar Strait	Bigelow, 1919
	Java Sea, Sunda Strait	Delsman, 1939
	East coast of Australia	Huxley, 1858
	East coast of Australia, and Louisiade Archipelago	Huxley, 1859
	North Pacific, Misaki (Japan)	Kawamura, 1915
	Bay of Nhatrang	Leloup, 1956
	Malay Archipelago	Lens and Riemsdijk, 1908
	Japan, Philippines, Sumatra, New Guinea	Moser, 1913
	Sumatra, and at Padang, Balintang, New Guinea (03°36'S-114°0.4'E, 05°17'S-148°32'E, 04°57'S- 150°06'E, 04°30'S-151°58'E), St. George's Canal, Blanche Bucht, Japan	Moser, 1925
	Manila Bay	Rees and White, 1966
	Off east coast of Australia, Great Barrier Reef (outside and in Trinity Opening)	Russell and Colman, 1935
	Marshall Islands (between 02°15'S-09°00'N and 166°39'E-168°00'E): inside and outside lagoon Bikini Atoll, inside lagoon Rongelap Atoll, inside and outside lagoon Rongerik Atoll, inside lagoon Eniwetok Atoll	Sears, 1950

TABLE 3 (cont.)

Region	Localities	Reference
Pacific Ocean and adjacent seas	Great Barrier Reef	Totton, 1932
Indian Ocean and	Scarce: Chagos, Cargados Carajos, Farquhar, Alphonse, between Providence and Alphonse, Amirante	Browne, 1926
	Red Sea, Ceylon, Singapore, Batavia, Tumbath Island	Leloup, 1932a
	Off the Madras coast	Leloup, 1934b
	Seychelles	Moser, 1913, 1925
	Red Sea: South, Kamaram Islands, Port Sudan, Gulf of Aden (11°32.3'N - 52°03'E), E of Zanzibar (07°32.3'S - 44°41.1'E)	Totton, 1954

TABLE 3 (cont.)

Region	Localities	Reference
<i>Diphyes dispar</i>	Chamisso and Eysenhardt 1821	
Atlantic Ocean	Caribbean Sea, Gulf of Mexico	Alvariño, 1969
	Off Long Island to Atlantic City, off	Alvariño
	South Africa (32°30'S-09°04'E,	(unpublished
	31°11'S-00°55'E), S of Liberia	data)
	(00°56'N - 11°29'W), Gulf of Mexico,	
	(off Key West, off Florida), Florida	
	Straits, off Melbourne Beach	
	(28°05'N - 80°10.5'W), Nassau Harbor,	
	E of the Small Antilles (22°59.5'N -	
	44°58.2'W), off the Amazon:	
	(20°13'N - 60°07'W 18°13'N - 59°57'W	
	16°45'N - 59°46'W 14°36'N - 58°35'W	
	15°33'N - 57°39'W 19°54'N - 53°24'W	
	08°18'N - 54°22'W 07°28'N - 54°52'W	
	06°45'N - 55°20'W 09°21'N - 51°43'W	
	10°31'N - 53°22'W), off Honduras	
	(16°57'N - 85°15.6'W, 16°26'N - 84°53'W),	
	off Nicaragua (12°31'N - 81°51.5'W),	
	Gulf of Cariaco (Venezuela)	
	Equatorial region off the Amazon	Alvariño, 1967c
	Off Portugal (38°35'N - 15°04'W),	Bedot, 1904
	off Morocco (34°00'N - 08°09'W),	
	Azores (37°51'N - 26°53'W)	
	Fogo Island (Newfoundland)	Bigelow, 1909
	Nantucket, S of Martha's Vineyard,	Bigelow, 1914
	surface waters of the Gulf Stream	
	Chesapeake Bay to Bermuda, off	Bigelow, 1918
	Bermuda, Bermuda to Bahamas, NE of	
	Providence Channel, Straits of Florida,	
	N of Bahama Bank	
	Near Bermuda, ESE of Bermuda, SW of	Bigelow, 1931
	Azores, NE of Sombbrero (27°53'N -	
	46°24'W), SE of Bermuda (31°22'N -	
	62°35'W), W of Bermuda (32°48'N -	
	67°09'W)	
	Off Cape San Vicente, Sea of Spain	Bigelow and
		Sears, 1937
	Madeira (30°49'N - 16°27'W)	Candeias, 1929
	Off North Africa (25°00'N - 15°70'N)	Cervigón, 1961

TABLE 3 (cont.)

Region	Localities	Reference
Atlantic Ocean	Central Atlantic (31°N - 25°N), Cape Verde Islands, Guinea, from Ascension Island to off the Amazon	Chun, 1897
	Morocco (Tangier to Cabo Juby)	Furnestin, 1957
	Gibraltar Strait	Furnestin, 1958
	Off Morocco	Furnestin, 1964
	Shelf waters off Long Island, slope waters off Long Island to Chesapeake Bay, Gulf Stream, Sargasso Sea	Grice and Hart, 1962
	Gulf of Cariaco (Venezuela)	Legaré, 1961
	Azores, Canary Islands, Cape Verde Islands, St. Paul Rocks, Fernando Noronha Islands, Trindade Island, Rolas Island (west coast of Africa), N of Tristan da Cunha, along the Brazilian coastal waters, off the Mar del Plata	Leloup, 1932a
	Azores area:	Leloup, 1933
	39°09'N - 26°13'W	
	38°59'N - 28°20'W	
	39°42'N - 28°00'W	
	37°51'N - 26°53'W	
	38°00'N - 26°10'W	
	38°04'N - 26°07'W,	
	W of Azores: 39°26'N - 31°22'W	
	40°28'N - 36°32'W	
	38°30'N - 34°40'W	
	39°22'N - 31°12'W	
	38°35'N - 22°57'W,	
	E of Azores: 37°30'N - 22°39'W,	
	SE of Azores:	
	36°20'N - 23°30'W	
	30°45'N - 25°47'W	
	31°10'N - 19°39'W	
	31°01'N - 23°45'W	
	32°30'N - 24°00'W	
	30°40'N - 19°50'W	
	30°46'N - 26°41'W	
	32°20'N - 18°00'W	
	28°00'N - 23°50'W	
	26°00'N - 27°50'W,	
	off Morocco:	
	34°20'N - 19°05'W	
	34°00'N - 08°09'W,	
	off Portugal:	
	37°13'N - 10°10'W	
	38°35'N - 15°04'W,	
	Cape Verde Islands:	
	28°38'N - 17°59'W	
	27°43'N - 18°28'W,	
	off Flores and Corro (Azores),	
	Sargasso Sea:	
	35°30'N - 31°35'W	
	36°30'N - 29°50'W	
	33°30'N - 38°20'W	
	31°46'N - 25°00'W,	
	NNW of São Miguel (Azores)	



TABLE 3 (cont.)

Region	Localities	Reference
Atlantic Ocean	From 17°52'N to 58°53'S, Cape Verde Islands, off Freetown, Gulf of Guinea, between Ascension and Trindade Island, off Rio de Janeiro, off Rio Grande do Sul, NW of South Georgia Islands, S of Bouvet Island, off the Cape	Leloup, 1934a
	Morocco coast: 35°32'N - 07°07'W 35°10'N - 07°55'W 35°36'N - 08°25'W, Canary Islands: 28°52'N - 14°16'W 28°02'N - 17°18'W 28°02'N - 14°17'W, S of Canary Islands: 26°03'N - 14°36'W 26°03'N - 10°00'W, W of Canary Islands: 28°42'N - 20°00'W, Canary Basin: 29°06'N - 25°02'W 31°24'N - 34°47'W 31°20'N - 35°07'W, Azores: 39°37'N - 29°25'W, SW of Azores: 34°59'N - 33°01'W 36°53'N - 29°47'W, Sargasso Sea: 36°52'N - 39°55'W 29°00'N - 56°55'W 34°44'N - 47°52'W	Leloup, 1955
	Argentina Basin (48°21'S-42°36'W), SW of Cape Agulhas (38°35'S-17°46'E), south central Atlantic (32°49'S-40°01'W), S of Bouvet (58°53'S-04°54'E), between Trindade and Ascension (15°19'S-23°59'W), off Rio de Janeiro (23°35'S-40°52'W), off Sierra Leone (08°14'N - 19°25'W), Gulf of Guinea (04°30'N - 01°00'W, 03°03'N - 00°58'W, 01°54'N - 02°03'E, 03°47'N - 08°28'E), SE of Cape Verde Islands (14°39'N - 17°40'W), E of Cape Verde Islands (17°48'N - 19°31'W), W of Cape Verde Islands	Leloup and Hentschel, 1938
	Bermuda	Hela, Moore and Owre, 1953
	Bermuda	Moore, 1949
	Florida Current off Miami; it appears to be a summer form in the Bermuda region, whereas in the Florida Current was sporadic, although it could be considered being a spring and autumn form.	Moore, 1953
	Florida Current, off Miami	Moore, 1955

TABLE 3 (cont.)

Region	Localities	Reference
Atlantic Ocean	Florida Current	Moore, Owre, Jones and Dow, 1953
	Porto Grande (Cape Verde Islands), between St. Helena and Cape São Roque in Brazil (11°S-18°W), Trinidad, S of Trinidad, N of Tristan da Cunha, off South Africa, off west South Africa (2° -4° -6°E, 5°W), St. Helena, S and N of Cape Verde Islands, Cape Verde Islands, St. Paul, N of St. Paul, W of the Canary group at about 40 °W, Azores	Moser, 1925
	Gulf of Mexico	Sears, 1954
	Off Brazil (Rio Grande, Catarina Island, Santos, Rio de Janeiro, Abrolhos Island)	Seguin, 1965
	Bermuda (32°08'N - 32°16'N and 64°40'W-64°31'W)	Totton, 1936
Mediterranean	Newport and Narragansett Bay	Vanhöffen, 1906
	Between the Balearic Islands and Sardinia	Bigelow and Sears, 1937
Pacific Ocean and adjacent seas	Off Villefranche-sur-Mer	Leloup, 1933
	South China Sea	Alvariño, 1963
	Banda Sea	Alvariño, 1964b
	Sea of Cortés	Alvariño, 1965a
	Gulf of Panama to Manzanillo, Mexico	Alvariño, 1969
	South China Sea and Gulf of Thailand	Alvariño, 197a
	Bay of Amboina (Indonesia)	Bedot, 1896
	Channel Islands in California, Baja California, Manzanillo, Acapulco, Guatemala, Costa Rica, Panama, SE of Galápagos, between Callao and Easter Island, N of Eastern Islands, Albatross plateau	Bigelow, 1911a

TABLE 3 (cont.)

Region	Localities	Reference
Pacific Ocean and adjacent seas	Eastern Sea (Sta. 4896), off the east coast of Kiushui, Japan (Stas. 4952, 4955), south coast of Nipon, line from Kobe to Yokohama (Sta. 4978), Suruga Gulf (Sta. 5064)	Bigelow, 1913
	China Sea, vicinity of Hong Kong, off Corregidor light, west coast of Luzon, off northern Mindanae, vicinity of Darvel Bay, Borneo, Gulf of Tomini, Celebes, Molucca Passage, Buton Strait, Macassar Strait	Bigelow, 1919
	S of Tower (00°03'N - 89°50'W), N of Cocos (05°56'N - 86°52'W)	Bigelow, 1931
	North Head, Sydney	Dakin and Colefax, 1933
	Off New South Wales to 14 miles off the coast at 36°31'S	Huxley, 1859
	New Pomerania, Juan Fernández Islands, (35°00'S-88°00'W, 33°58'S-89°11'W, 32°00'S-90°00'W, 30°00'S-84°05'W, 33°00'S-87°00'W, 26°00'S-79°00'W, 26°00'S-78°00'W, 34°00'S-86°00'W, 36°00'S-94°00'W)	Leloup, 1932a
	Bay of Nhatrang	Leloup, 1956
	W of Flores, Sulu Archipelago, Sian Island, Ceram, west coast of Binongka, N of Ubian, Ternate Anchorage, N of Salomakil, N of Daram Island, S of Manipa Island, Manipa Strait, Buton Strait, between Nusa-Besi and northeast point of Timor, Sulu Harbor, Sawan-Sian Island, N of Gebe Island, N of Sabuda Island, coast of New Guinea, between Gisser and Ceram, N of Saleyer Island, Paternoster Island	Lens and Riemsdijk, 1908
	Misaki (Japan)	Kawamura, 1915
	Tortugas, New Guinea, New Pomerania, Isla Mysory (01°30'S-135°05'E) in Indonesia, N of New Mecklenburg (02°05'N - 149°03'E)	Moser, 1925
	Manila Bay	Rees and White, 1966

TABLE 3 (cont.)

Region	Localities	Reference
Pacific Ocean and adjacent seas	Great Barrier Reef (outside and in Trinity Opening)	Russell and Colman, 1935
	Marshall Islands (between 02° 15'S-09° 00'N and 166° 39'E-168° 00'E): inside and outside lagoon in Bikini Atoll, inside lagoon in Rongelap Atoll, outside lagoon in Eniwetok Atoll	Sears, 1950
Indian Ocean and adjacent seas	Great Barrier Reef	Totton, 1932
	Between Siquijor and Bohol	Bigelow, 1919
	Chagos, Mauritius, Saya de Malha, Alphonse, Amirante, Nazareth, between Providence and Alphonse, Farquhar, Cargados Carajos	Browne, 1926
	Ceylon (30°S-126°E), Tumbath (E coast of Africa)	Leloup, 1932a
	Off the Madras coast	Leloup, 1934b
	N of St. Paul, S of the Mascareñas, S of Madagascar, Port Natal, S of Mauritius (26°S-59°E)	Moser, 1925
	Red Sea, South, Central, and Port Sudan, Gulf of Aden, off south and east coasts of Africa (1554-89), south-east Indian Ocean (2685-8, 2886, 2894-5), southwest Australia to South Africa along parallels 32°S and 31°S (31°58.0'S-114°52.2'E to 31°54.7'S-29°48.1'E and 32°00'S-29°43.3'E)	Totton, 1954

TABLE 3 (cont.)

Region	Localities	Reference
<i>Diphyopsis mitra</i>	Huxley 1859 = <i>Eudoxoides mitra</i>	Totton 1932
Atlantic Ocean	Iberian Atlantic (37°40'N - 09°18'W off Cape Sines, 37°22'N - 09°13'W off Algarve coast)	Alvariño, 1957b
	Off Long Island to Atlantic City, off Cape Town (33°47'S-15°48'E), Gulf of Mexico (NW of Cuba, off Florida), N of Puerto Rico (24°27.1'N - 65°09.4'W), E of the Small Antilles (23°31.5'N - 55°00'W, 22°18'N - 45°00.5'W, 22°59.5'N - 44°58.2'W, 16°45'N - 46°28.8'W), off the Amazon: (09°09.6'N - 47°02.7'W, 12°24.4'N - 51°17.1'W, 20°13'N - 60°07'W 18°13'N - 59°57'W 16°-45'N -59°46'W - 15°15'N - 59°39'W 14°36'N - 58°35'W 15°33'N - 57°39'W 16°55'N - 56°20'W 16°47'N - 52°16'W 13°39'N - 49°46'W 11°34'N - 49°58'W 10°53'N - 50°54'W 09°35'N - 52°31'W 08°58'N - 53°29'W 08°18'N - 54°22'W 06°45'N - 55°20'W 09°21'N - 51°43'W 10°31'N - 53°22'W), off Honduras (16°59'N - 86°11'W, 16°57'N - 85°15.6'W, 16°26'N - 84°53'W 16°07'N - 84°40'W, 15°54.2'N - 84°16.8'W), off Costa Rica (10°43.8'N - 80°45.3'W, 10°04.4'N - 80°21.5'W), Gulf of Cariaco (Venezuela)	Alvariño (unpublished data)
	Equatorial region off the Amazon	Alvariño, 1967c
	Caribbean Sea and Gulf of Mexico	Alvariño, 1969
	From Chesapeake Bay to Bermuda, off Bermuda, Bermuda to Bahamas, Straits of Florida, N of Bahama Bank	Bigelow, 1918
	SE of Bermuda (31°22'N - 62°35'W)	Bigelow, 1931
	Off north Africa (24°40'N - 20°15'N)	Cervigón, 1961
	Morocco (Tangier to Cabo Juby), more abundant in autumn than in spring	Furnestín, 1957
	Off Morocco	Furnestín, 1964
	Slope waters off Long Island, Chesapeake Bay, Gulf Stream, Sargasso Sea	Grice and Hart, 1962
	Gulf of Cariaco (Venezuela)	Legaré, 1961

TABLE 3 (cont.)

Region	Localities	Reference
Atlantic Ocean	Equatorial Atlantic: 04°00'N - 27°00'W 07°00'N - 21°00'W 01°00'S - 23°00'W 01°00'N - 24°00'W 01°00'S - 26°00'W 03°00'N - 29°00'W 08°00'N - 26°00'W, W of Trindade: 18°00'S-35°00'W, S of the Cape Verde Islands: 13°30'N - 24°00'W 10°00'N - 24°00'W	Leloup, 1932a
	Canary Islands area: 27°43'N - 18°28'W, W of Madeira Islands: 31°46'N - 25°00'W 32°18'N - 23°58'W 33°06'N - 25°07'W, Sargasso Sea: 30°04'N -42°29'W 33°51'N - 34°04'W 33°03'N - 41°08'W 38°30'N - 34°40'W	Leloup, 1933
	Cape Verde Islands, middle of the ocean, off Georgetown, off Pará, St. Paul Rocks, Gulf of Guinea, Ascension Island, along Brazilian coastal waters from Pará to Cape San Roque, off San Roque Cape, off Rio Grande do Sul, off Buenos Aires, off Cape Buena Esperanza, off Orange River, off Walfish Bay, off Gr. Fish Bay, off St. Paul de Loanda	Leloup, 1934a
	Equatorial Atlantic: 01°33'N - 25°30'W 00°06'N - 36°10'W 00°25'N - 33°20'W 00°50'N - 28°26'W to 01°04'N - 29°16'W 02°08.4'S-13°58.8'W, 02°40.3'S- 16°36.8'W	Leloup, 1937
	Sargasso Sea: 31°20'N - 35°07'W 36°52'N - 39°55'W 34°59'N - 33°01'W 34°44'N - 47°52'W, NW of Canary Islands: 28°42'N - 20°00'W 29°06'N - 25°02'W	Leloup, 1955
	Equatorial Atlantic: 04°13'N - 34°25.5'W, 09°16.8'N - 38°21.3'W, 06°18.9'N - 31°46.9'W, 10°57.1'N - 36°00'W, 08°11.7'N - 29°31.0'W, 09°05'S-08°27'W, 10°12.4'N - 26°36.1'W, 08°49'S - 16°40'W, 10°12.4'N 11°01.7'N - 49°33.4'W, 01°01'S- 30°00'W, 09°07'N - 50°56.9'W, 00°36'N - 29°12'W, 02°06'N - 27°42.5'W, 06°11'S-32°34'W, 03°32'N - 26°01'W, 02°28'S-34°56'W, 03°30'S-22°35.5'W, 00°58.3'S-	

TABLE 3 (cont.)

Region	Localities	Reference
Atlantic Ocean	<p>38°44.1'W, 04°57'S-30°04'W,  02°23.8'N - 35°27.9'W, 03°55.1'S-  32°33.7'W, E of Cape Verde Islands:  19°16.8'N - 22°30.6'W, 17°22.2'N -  22°00.8'W, Cape Verde Basin:  19°15.7'N - 27°27.4'W, 17°52.7'N -  30°19'W, 18°31.7'N - 36°45.4'W,  12°03.2'N - 34°12.2'W, 14°31.7'N -  29°37.8'W, off French Guiana:  07°48.7'N - 52°14.0'W, 06°50.1'N -  52°52.1'W, off northern Brazil:  01°04.3'N - 46°24.5'W,  W of Cape Verde Islands:  15°45.6'N - 27°19.4'W,  N of Cape Verde Islands:  19°17.4'N - 24°59.5'W,  W of Sierra Leone: 07°09.3'N -  21°16.3'W, 09°01'N - 17°40'W,  08°14.5'N - 19°25.1'W, off Liberia:  05°04.0'N - 14°56.6'W, Guinea Basin:  00°03'N - 09°30'W, 01°54.8'N -  02°03.9'E, 03°03'N - 00°58'W,  00°30.8'N - 01°51.8'E, 02°12.1'N -  01°03.2'W, 03°52.3'S-01°05.5'E,  01°07.5'N - 00°59.0'W, 01°17.5'S-  09°30.9'W, Gulf of Guinea: 03°56.4'N -  06°00.5'E, 03°47.9'N - 08°28.5'E,  SW of Cape Agulhas: 36°40.0'S -  16°22.5'E, off southwest Africa:  28°35'S-11°14'E, off southern Brazil:  32°21'S-50°10'W, off southern  Argentina: 36°32'S-53°42'W,  Central south Atlantic:  36°53'S-21°18'E 21°53'S-12°17'E,  W of Helena: 16°03.5'S - 09°29.0'E,  St. Helena: 15°16'5'S-06°32.6'E,  E of St. Helena: 15°08'S-02°59'E,  W of St. Helena: 15°02.6'S-00°06.7'W,  E of Ascension: 08°52.2'S - 12°38.3'E</p>	<p>Leloup and  Hentschel, 1938</p>
	Bermuda	Moore, 1949
	Florida Current, off Miami; no marks of seasonal maximum in the Bermuda region; sporadic in the Florida Current, appearing as a winter or spring form.	Moore, 1953
	Florida Current off Miami	Moore, 1955

TABLE 3 (cont.)

Region	Localities	Reference
Atlantic Ocean	Florida Current	Moore, Owre, Jones and Dow, 1953
	Florida Current off Miami	Moore and Corbin, 1956
	Widely distributed in the tropical Atlantic	Moser, 1913
	S and N of Cape Verde Islands, between St. Paul and Ascension, SW of Ascension, St. Helena, between St. Helena and Ascension, SE of Ascension, Ascension, N of Ascension, between Ascension and St. Paul, NE of St. Paul, Cape Verde Islands, W of Canaries (35°W), S of the Azores	Moser, 1925
	Bermuda (32°08'N - 32°16'N and 64°40'W-64°31'W)	Totton, 1936
Pacific Ocean and adjacent seas	South China Sea	Alvariño, 1963
	Sea of Cortés	Alvariño, 1965a
	Gulf of Panama to Manzanillo, Mexico	Alvariño, 1969
	South China Sea	Alvariño, 197a
	Bay of Amboina (Indonesia)	Bedot, 1896
	S of Cape San Lucas, Manzanillo, Acapulco, Guatemala, Costa Rica, Panama Gulf, Galápagos, SE of Galápagos, off Aguja Point, 5° to 10°W of Callao, between Callao and Easter Island, E, N and W of Albatross plateau	Bigelow, 1911a
	Off Corregidor Light, W of Luzon, off northern Mindanao, between Siquijor and Bohol, Gulf of Tomini, Celebes, Molucca Passage, Buton Strait	Bigelow, 1919
	W of Tower (00°20'N - 90°10'W), N of Cocos (05°56'N - 86°52'W), S of Cocos (04°50'N - 87°00'W)	Bigelow, 1931
	Malay Archipelago, New Pomerania	Leloup, 1932a



TABLE 3 (cont.)

Region	Localities	Reference
Pacific Ocean and adjacent seas	Sulu Archipelago, Ternate Anchorage, E of Kajou Island, N of Salomakil (Damar) Island, west coast of Gebe Island, NE of Daram Island, east coast of Misoal, N of Sabuda Island, W of New Guinea, between Gisser and Ceram Sea, W of Binongka, Sian Island, S of Manipa Island, Manipa Strait, Soler Island	Lens and Riemsdijk, 1908
	New Guinea in Vulcan Island, N of New Britain (05° 17'S-148° 32'E, 04° 25'S-150° 47'E)	Moser, 1925
	Manila Bay	Rees and White, 1966
	Great Barrier Reef (outside and in Trinity opening)	Russell and Colman, 1935
	Marshall Islands: outside lagoon Bikini Atoll	Sears, 1950
	Great Barrier Reef	Totton, 1932
	Equatorial waters	Alvariño, 1964b
Indian Ocean and adjacent seas	Chagos, Mauritius, Nazareth, Saya de Malha, Farquhar, Alphonse, Amirante	Browne, 1926
	SE of Mauritius (Rattlesnake voyage)	Huxley, 1859
	Kerguelen Islands, SE of Mascareñas, S of Mascareñas, SE of Madagascar, S of Madagascar, SW of Madagascar	Moser, 1925
	Gulf of Aden, off south and east coast of Africa, southeast Indian Ocean, south Indian Ocean (31° 58.1'S-114° 52.2'E to 32° 00.0'S-29° 43.3'E)	Totton, 1954

TABLE 3 (cont.)

Region	Localities	Reference
<i>Muggiaea atlantica</i>	Cunningham 1892	
Atlantic Ocean	Gulf of San Blas (Caribbean Sea)	Alvariño, 1969
	Bay of Biscay (47° 11'N - 05° 38'W)	Alvariño (unpublished data)
	Off Portugal (39 °N), Sea of Spain, Gibraltar, northern part of Alborán Sea, N of Africa as far as Tunis, eastern part of the Sidra Sea, SE of Crete, and a doubtful record in the Ligurian Sea	Bigelow and Sears, 1937
	Martha's Vineyard to Cape Hatter as (40°N to 35° 55'N)	Bigelow and Sears, 1939
	English Channel, Irish Sea, S and W of Ireland, off Plymouth	Blès, 1892
	Off Africa from 22° 30'N to 14° 27'N	Cervigón, 1961
	Off Plymouth, S of Eddystone, Plymouth Breakwater, inside Plymouth Sound	Cunningham, 1892
	Northern North Sea	Fraser, 1961
	Northeast Atlantic and Scottish region	Fraser, 1967
	Moroccan Atlantic (Tangier to Cabo Juby) with maximum in spring and minimum in autumn and in waters where the bottom is not deeper than 60 to 100 m	Furnestín, 1957
	Off Morocco	Furnestín, 1964
	English Channel, Irish Sea, S and W of Ireland, off Plymouth	Gough, 1905
	Canary Islands (as <i>M. pyramidalis</i> )	Haeckel, 1888
	Off the west and southwest coasts of Africa, between Cape Blanco and Cape Verde, off Cape Verde, off Gr. Fish Bay, off the Cape	Leloup, 1934a
	Sea of Spain (36° 53'N - 06° 48'W) (14° 39'N - 17° 40'W, 18° 20'N - 16° 46'W, in the Benguela Current, Cape Verde Current), (16° 35'S-11° 44'E, 17° 13'S- 11° 43'E, and in the Cape Verde Current 36° 52'S - 18° 09'E, 34° 02'S- 15° 48'E, 36° 53'S-21° 18'E	Leloup, 1955 Leloup and Hentschel, 1938

TABLE 3 (cont.)

Region	Localities	Reference
Atlantic Ocean	Bay of Biscay	Patrity, 1965
	English Channel, off Plymouth	Russell, 1934
	English Channel	Russell, 1935
	Off English Channel	Russell, 1939
	Off west South Africa:	Totton, 1954
	34°09'S-18°05'E 34°57'S-18°46'E	
	35°23'S-19°40'E 35°16'S-19°08'E	
	34°56'S-19°02'E 35°06'S-18°27'E	
	35°15'S- 18°58'E 34°23'S- 18°03'E	
	33°13'S-17°38'E 33°44'S-18°21'E	
	33°10'S-17°38'E 34°09'S-18°05'E	
	33°03'S-17°05'E 33°35'S-17°20'E	
Mediterranean	33°10'S-17°34'E 33°40'S-16°55'E	
	35°07'S-17°46'E	
	West Alborán Sea (35°57'N - 05deg;06'W, 35°53'N - 05°00'W)	Alvariño, 1957a
	Northern part of Alborán Sea, N of Africa as far as Tunis, eastern part of the Sidra Sea, SE of Crete, and a doubtful record in the Ligurian Sea	Bigelow and Sears, 1937
	Gulf of Lyon	Furnestin, 1960
Pacific Ocean and adjacent seas	Between Cape Palos and Oran (36°09' N - 00°06'E)	Wirz and Beyeler, 1954
	Sea of Cortés	Alvariño, 1965a
	Off San Diego, California	Alvariño, 1967b
	Gulf of Panama to the Gulf of Tehuantepec	Alvariño, 1969
	Northern Ladysmith Harbor, V. I., Friday Harbor, Wash.	Berkeley and Berkeley, 1960
	Off the Channel Islands in California, S of Acapulco, S of Guatemala Basin, Aguja Point in Perú, S of Callao	Bigelow, 1911a
	Off Japan	Bigelow, 1913

TABLE 3 (cont.)

Region	Localities	Reference
Pacific Ocean and adjacent seas	Monterey Bay (California) (as <i>Sphaerionectes truncata</i> )	Bigelow and Leslie, 1930
Indian Ocean and adjacent seas	Gulf of Aden, Alayu, Red Sea (off Port Sudan, at 10, 35 and 40 miles E of Sauganab Lighthouse)	Totton, 1954

TABLE 3 (cont.)

Region	Localities	Reference
<i>Muggiaea bargmannae</i> Totton 1954		
Atlantic Ocean	Off South Africa (36°01.8'S-00°04.3'E), N of South Georgia Islands (43°08'S- 30°15.5'W), off SW of South Africa in the subtropical convergence (45°01.3'S- 00°33.7'E), E of Bouvet Island (54°20'S- 03°48'E), between South Georgia and Sandwich Islands (53°34.5'S-30°25.5'W and 53°32'S-30°20'W), S of South Georgia Islands (55°13'S-36°09.5'W), Antarctic region (56°32.2'S-27°21.9'W), 56°34.3'S-00°06.7'E, 59°23.8'S- 00°09.3'E, 61°46.5'S-00°35.1'E), off Livingstone Island, S of Shetland (62°49'S-60°10'W), Antarctic region (64°31.9'S-00°28.6'E, 67°14.3'S- 00°39.7'E, 66°51'S-15°24'W, 68°17'S- 14°26'W)	Totton, 1954
Indian Ocean	E of Crozet (47°22.5'S-56°19.5'E)	Totton, 1954
Arctic Ocean	Several locations.	personal communication of Mr. Delton Shirley

TABLE 3 (cont.)

Region	Localities	Reference
<i>Muggiaea delsmanni</i>	Totton 1954	
Pacific Ocean and adjacent seas	Gulf of Thailand	Alvarinho, 197a
	Gulf of Thailand	Dawdoff, 1937
	Java Sea (05°57'S-108°23'E)	Totton, 1954
	Philippines, Singapore	Rees and White, 1966
Indian Ocean	Zanzibar	Rees and White, 1966

TABLE 3 (cont.)

Region	Localities	Reference
<i>Muggiaea kochi</i>	Will 1844	
Atlantic Ocean	Iberian Atlantic: off Cabo Raso (38°47'N - 09°34'W), off Porto (41°18'N - 09°06'W)	Alvariño, 1957b
	Caribbean Sea and Gulf of Mexico	Alvariño, 1969
	East and west North Atlantic, off Long Island, Atlantic City	Alvariño (unpublished data)
	Gulf of Mexico (off Key West), off the Amazon: (07°28'N - 54°52'W, 06°45'N - 55°20'W), off Honduras: (16°07'N - 84°40'W, 15°54.2'N - 84°16.8'W, 15°44.4'N - 83°54.0'W), off Nicaragua: (15°18'N - 83°09'W, 14°19.4'N - 83°08.6'W), Gulf of Cariaco (Venezuela), Bay of Biscay (47°31'N - 06°04'W, 47°11'N - 05°38'W, 47°04'N - 04°27'W, 47°24'N - 04°47'W)	Alvariño (unpublished data)
	Bay of Biscay (46°43'N - 47°29'N and 07°15'W-08°18'W)	Bigelow, 1911b
	Martha's Vineyard to Cape Hatteras (southernmost part of this region)	Bigelow and Sears, 1939
	Off North Africa from 25°N to 18°40'W	Cervigón, 1961
	Canary Islands, Malaga on the coast of Spain	Chun, 1886
	Northeast and Scottish region	Fraser, 1967
	Moroccan waters (not very abundant)	Furneston, 1957
	Gulf of Cariaco (Venezuela)	Legaré, 1961
	Cape Verde Islands, middle of the ocean, Gulf of Guinea, N of Rio de Janeiro	Leloup, 1934a
	Gulf of Cadiz: 36°53'N - 06°48'W, Sargasso Sea: 31°20'N - 35°07'W, 31°24'N - 34°47'W	Leloup, 1955
	East of Cape Verde Islands: 17°48'N - 19°31'W, West of Guinea: 10°57'N - 36°00'W, Gulf of Guinea: 04°36'W- 01°00'W, 03°33'N - 05°06'E, Brazil coast near Rio de Janeiro: 23°08'S- 42°05'W	Leloup and Hentschel, 1938

TABLE 3 (cont.)

Region	Localities	Reference
Atlantic Ocean	Bay of Biscay	Patriti, 1965
	English Channel	Russell, 1934
	Off the English Channel	Russell, 1939
	Off Brazil (Rio Grande, St. Catarina Island, Santos, Rio de Janeiro)	Seguin, 1965
Mediterranean	Alborán Sea (35°21'N - 04°40'W)	Alvariño, 1957a
	Alborán Sea:	Alvariño, 1958
	35°19'N - 04°46'W 35°47'N - 05°06'W	
	36°24'N - 05°00'W 36°24'N - 04°59'W	
	Gulf of Naples	Chun, 1892
	Gulf of Lyon, Eastern Corsica	Furnestin, 1960
	Adriatic (42°32'N - 17°57'E), S of Andrija Lighthouse	Huré, 1955
	N of Ischia	Kinzer, 1965
	Villefranche-sur-Mer	Leloup, 1935a
	Monaco	Moser, 1917
	Gulf of Naples	Neppi, 1921
	Gulf of Panama	Alvariño, 1969
Pacific Ocean and adjacent seas	Off northern Chile (at about 23°S), NE of Sala and Gómez Island (of the group of the Eastern Islands)	Bigelow, 1911a
Indian Ocean and adjacent seas	Chagos, Amirante Islands	Browne, 1926



TABLE 3 (cont.)

Region	Localities	Reference
<i>Eudoxia galathea</i>	Moser 1925	
Atlantic Ocean	Antarctic waters S of Bouvet Island: (58°53'S-04°54'E)	Leloup and Hentschel, 1938
	Cape Verde Islands and Cape Verde	Moser, 1925

TABLE 3 (cont.)

Region	Localities	Reference
<u>Eudoxia macra</u>	Totton 1954	
Atlantic Ocean	W of Cape Town: 33°20'S - 15°18'E 33°46'S - 15°08'E N of Sts. Peter and Paul: 10°59.3'N - 27°03.8'W, off Sierra Leone: 07°58'N - 16°36.3'W	Totton, 1954
Indian Ocean	SE of South Africa: 37°50.1'S- 35°46.6'E, 34°47.6'S-34°27.9'E W of Seychelles: 07°42.1'S-44°14.1'E, 04°25.9'S-47°10.0'E, off Somali Republic: 00°57.8'S - 49°26.7'E, 07°08.6'N - 52°19.3'E, 02°39.4'N - 50°46.4'E, (11°32.3'N - 52°03.0'E), 06°05'N - 52°00'E (entrance to Gulf of Aden)	Totton, 1954

TABLE 3 (cont.)

Region	Localities	Reference
<i>Eudoxoides spiralis</i>	Bigelow 1911	
Atlantic Ocean	Iberian Atlantic (37°22'N - 09°13'W off the Algarve, 37°40'N - 09°18'W off C. Sines, 38°01'N - 09°21'W off C Espichel, 38°21'N - 09°25'W off Nossa Senhora de Cabo)	Alvariño, 1957b
	Off Long Island, off Atlantic City, off Georges Bank, off Cape Town (33°47'S-15°48'E), off South Africa (32°30'S-09°04'E, 31°11'S- 00°55'E, 30°23'S - 02°47'W, 30°09'S-04°42'W), Florida Straits, N of Puerto Rico (24°27.1'N - 65°09.4'W), off the Amazon: (20°13'N - 60°07'W, 18°13'N - 59°57'W 16°45'N - 59°46'W 15°15'N - 59°39'W 14°36'N - 58°35'W 15°33'N - 57°39'W 19°54'N - 53°24'W 18°41'N - 52°58'W 16°47'N - 52°16'W 11°34'N - 49°58'W 10°53'N - 50°54'W 09°35'N - 52°31'W 08°58'N - 53°29'W 08°18'N - 54°22'W 07°28'N - 54°52'W 06°45'N - 55°20'W 09°21'N - 51°43'W), off Guatemala (15°56.7'N - 88°20.0'W), off Honduras (16°59'N - 86°11'W, 16°57'N - 85°15.6'W, 16°26'N - 84°53'W), off Nicaragua (15°18'N - 83°09'W, 13°38'N - 82°38'W, 12°31'N - 81°51.5'W), off Costa Rica (10°04.4'N - 80°21.5'W), Gulf of Cariaco (Venezuela), Bay of Biscay (47°31'N - 06°04'W, 45°41'N - 05°12'W, 46°43'N - 04°44'W, 47°04'N - 04°27'W)	Alvariño (unpublished data)
	Equatorial region off the Amazon Estuary	Alvariño, 1967c
	Caribbean Sea and Gulf of Mexico	Alvariño, 1969
	Chesapeake Bay to Bermuda (35°27'N - to 73°14'W to 32°30'N - 65°48'W), off Bermuda, line from Bermuda to Bahamas, N of Bahama Bank (28°10'N - 76°18'W)	Bigelow, 1918
	SW of Cape San Vicente, Sea of Spain	Bigelow and Sears, 1937
	SE of Long Island	Bigelow and Sears, 1939
	Madeira (30°49'N - 16°27'W)	Candeias, 1929

TABLE 3 (cont.)

Region	Localities	Reference
Atlantic Ocean	Coast of Algarve (Portugal) at 36°37'N - 07°57'W	Candeias, 1932
	Off North Africa (20°15'N) and off Sahara coasts	Cervigón, 1961
	Scottish region	Fraser, 1961
	Northeast and Scottish region	Fraser, 1967
	Morocco (Tangier to Cabo Juby)	Furnestin, 1957
	Off Morocco	Furnestin, 1964
	Slope waters off Long Island, Chesapeake Bay, Gulf Stream, Sargasso Sea	Grice and Hart, 1962
	Gulf of Cariaco (Venezuela)	Legaré, 1961
	Ile Saint Paul (30°52'N - 13°52'W)	Leloup, 1932a
	Canary Islands area (30°41'N - 17°46'W, 27°43'N - 18°28'W), between the Canary and Azores Islands (31°46'N - 25°00'W, 32°18'N - 23°58'W, 33°06'N - 25°07'W), Azores area (38°28'N - 25°53'W, 37°08'N - 28°28'W, 39°26'N - 31°23'W), off Portugal (42°58'N - 08°56'E, off western Morocco (35°10'N - 10°00'W, 33°55'N - 12°45'W 32°28'N - 16°38'W 32°21'N - 12°31'W 32°16'N - 15°45'W), Sargasso Sea: 25°50'N - 30°30'W, 27°20'N - 38°00'W 26°20'N - 35°30'W 28°30'N - 39°30'W 26°40'N - 36°36'W 29°50'N - 42°00'W 26°40'N - 36°40'W 30°04'N - 42°29'W 31°20'N - 42°38'W 33°03'N - 41°08'W 31°40'N - 42°40'W 33°51'N - 34°03'W 38°30'N - 34°40'W	Leloup, 1933
	Cape Verde Islands, middle of the ocean, off Georgetown, off Pará, between St. Paul Rocks and Cape Verde Islands, off Freetown, off Monrovia, Gulf of Guinea, Ascension Island, off Brazil from Cape San Roque to Pará, off Cape San Roque, off Bahía, between Bahía and Rio de Janeiro, off Rio de Janeiro, off Florianopolis, off Rio Grande do Sul, Trindade Island, between St. Helena Island and Tristan da Cunha, off Cape	

TABLE 3 (cont.)

Region	Localities	Reference
Atlantic Ocean	Buena Esperanza, off Orange River, off Gr. Fish Bay	Leloup, 1934a
	Antillas Sea (22°01'N - 27°21'W)	Leloup, 1935b
	Sargasso Sea (28°50'N - 40°14'W)	Leloup, 1936b
	West equatorial system (00°50'N - 28°26'W to 01°04'N - 32°16'W, 00°06'N - 36°10'W)	Leloup, 1937
	West Morocco coast (35°32'N - 07°07'W, 33°47'N - 08°27'W), near the Canary Islands (28°52'N - 14°16'W, 28°02'N - 17°18'W), Sargasso Sea: 31°20'N - 35°07'W 37°09'N - 38°05'W 31°24'N - 34°47'W 36°52'N - 39°55'W 34°59'N - 33°01'W 34°44'N - 47°52'W 36°53'N - 29°47'W 31°00'N - 52°55'W	Leloup, 1955
	C of Tristan da Cunha (41°03'S- 01°55'E), SW of Cape Agulhas (39°10'S- 14°03'E), off South Africa coast (28°35'S-11°14'E, 28°28'S-08°26.5'E, 33°52.5'S-10°16.5'E, 28°30'S-03°48'E, 28°31'S-00°29'E), line across the South Atlantic from Southwest Africa to southern Brazilian coast (28°02'S- 04°50'W, 28°00'S- 07°50'W, 27°45'S- 13°06'W, 28°05'S-19°22'W, 28°25.8'S-26°30'W, 29°15'S-30°00'W, 29°31'S-32°33'W, 28°37'S-45°38.5'W), Agulhas Basin (44°35'S-14°56.5'W, 41°17'S-17°26'W), S of Cape Agulhas (36°52'S-38°09'E, 39°46'S-22°12'E), central South Atlantic (32°35'S-30°00'W, 32°50'S-35°00'W, 21°30'S-15°36'W, 21°30.3'S-11°42.6'W), southern Brazilian coast (32°21'S- 50°10'W), E of St. Helena (16°35.1'S- 11°44.5'E, 16°03.5'S-09°29'E), W of St. Helena (15°08'S-02°59'E, 15°02.6'S- 00°06.7'W), Brazilian Basin (15°54'S- 30°03'W, 16°20'S-33°19'W), off Brazilian coast (17°42'S-37°53'W, 23°35'S-40°52'W, 12°45'S-37°24'W, 20°30.5'S-35°25.3'W, 23°51.5'S- 39°33.0'W, 23°08'S-42°05.1'W, 23°44'S-34°54'W), E of Trindade (22°39'S-27°55'W, 21°36'S-20°29'W), E of Ascension (09°07.8'S-02°02.5'W,	

TABLE 3 (cont.)

Region	Localities	Reference
Atlantic Ocean	<p>09°05'S-08°27'W, 08°45'S-14°20.1'W),  W of Ascension (09°02.6'S-19°49.6'W),  West equatorial Atlantic (08°59.6'S-  25°59.7'W, 03°55.1'S-32°33.7'W,  02°28'N - 39°21'W, 16°34.6'N - 42°00'W,  14°03'N - 45°59'W, 09°07'N - 50°56.9'W),  S of Sts. Peter and Paul (01°01'S-  30°00'W), off Sierra Leone (08°14.5'N -  19°25.1'W), off Guinea (09°01'N -  17°40'W), S of Liberia (01°17.4'N -  09°35.5'W), Guinea Basin: (10°03'N -  09°30'W, 00°16'N - 01°03'W, 02°12.1'N -  01°03.2'W, 01°54.8'N - 02°03.9'E,  01°07.5'N - 00°59'W 00°30.8'N -  01°51.8'E, 01°17.5'S-09°30.9'W),  East equatorial system: (02°08.4'S-  13°58.8'W, 03°30'S-22°35.5'W,  02°40.3'S-16°36.8'W, 03°07'f'S-19°24'W,  SE of Sts. Peter and Paul: (04°21'S-  26°21.8'W), S of Fernando de Noronha:  (06°11'S-32°34'W), N of Sts. Peter and  Paul (06°18.9'N - 31°46.9'W), S of Cape  Verde Islands (10°12.4'N - 267°36.1'W,  11°24.6'N - 23°59.0'W), NE of Cape  Verde Islands (19°16.8'N - 22°30.6'W,  17°22.2'N - 22°00.8'W), NW of Cape  Verde Islands (19°15.7'N - 27°27.4'W,  19°10.8'N - 30°12.5'W), 18°59'N -  33°25'W, 18°31.7'N - 36°45.4'W,  19°17.4'N - 24°59.5'W), off French  Guiana (07°48.7'N - 52°14'W, 07°25'N -  52°44'W, 06°50.1'N - 52°51.1'W),  northern Brazil coast (01°04.3'N -  46°24.5'W), SW of Cape Verde Islands  (15°45.6'N - 27°19.4'W)</p>	Leloup and Hentschel, 1938
Bermuda		Hela, Moore and Owre, 1953
Bermuda		Moore, 1949
In the Florida Current, off Miami		Moore, 1953, 1955
Florida Current		Moore, Owre, Jones and Dow, 1953
Porto Grande (Cape Verde Islands), off Port Nolloth (South Africa), off west South Africa, near St. Helena, N of St. Helena and up to Ascension Island,		

TABLE 3 (cont.)

Region	Localities	Reference
Atlantic Ocean	central Atlantic off Guinea, central Atlantic about the equator, SW of Fernando Noronha and from here to Trindade Island	Moser, 1925
	Bay of Biscay	Patriti, 1965
	Gulf of Mexico	Sears, 1954
	Off Brazil (Rio Grande, Catarina Island, Santos, Rio de Janeiro, Abrolhos Island)	Seguin, 1965
	Bermuda (32°08'N - 32°16'N and 64°40'W-64°31'W)	Totton, 1936
Mediterranean	Algeciras, Alborán Sea (northern part), N of Africa, Balearic Sea, Ionian Sea, Thyrrenian Sea, Aegean Sea as far as 28°E; it was not found in the Sea of Marmora	Bigelow and Sears, 1937
	Gulf of Lyon	Furnestin, 1960
	Adriatic	Huré, 1955
	Bocca Grande (Gulf of Naples), S and N of Ischia, S of Capri	Kinzer, 1965
	Alborán Sea (36°20'N - 04°08'W, 36°40'N - 02°45'W, 36°51'N - 01°30'W)	Leloup, 1933
	Western Mediterranean (37°00'N - 00°50'W, 37°55'N - 00°55'W, 38°02'N - 01°50'W, 37°39'N - 00°20'E)	Leloup, 1933
	Villefranche-sur-Mer	Leloup, 1935a
	Monaco	Leloup, 1936a
	Alborán Sea (36°05'N - 04°42'W)	Leloup, 1955
	Adriatic, Naples	Moser, 1917
	Balearic Sea and northern Africa (40°17'N - 02°50'E to 36°09'N - 00°36'E)	Wirz and Beyeler, 1954
	South China Sea	Alvariño, 1963
Pacific Ocean and adjacent seas	Sea of Cortés	Alvariño, 1965a

TABLE 3 (cont.)

Region	Localities	Reference
Pacific Ocean and adjacent seas	Off San Diego, California	Alvariño, 1967b
	Gulf of Panama to El Salvador	Alvariño, 1969
	South China Sea and Gulf of Thailand	Alvariño, 197a
	S of Cape San Lucas, Manzanillo, N and E of Easter Island	Bigelow, 1911a
	Off the east coast of Kyushu, Japan	Bigelow, 1913
	Misaki (Japan)	Kawamura, 1915
	Chile coast: 20°S to 25°S along 73°W, 39°S-79°W, Sharks Bay, Inner Barbis	Leloup, 1932a
	South Passage, Chile coast: 24°S-73°W, 23°40'S-72°40'W, 26°S-78°W	
	Bay of Nhatrang	Leloup, 1956
	Territory of New Guinea, Tortugas (Galápagos), New Pomerania (151°58'E - 04°04'S, 144°04'E - 03°36'S)	Moser, 1925
	Manila Bay	Rees and White, 1966
	Great Barrier Reef (outside and in Trinity Opening)	Russell and Colman, 1935
	Marshall Islands, outside lagoon in Bikini Atoll, inside lagoon in Rongelap Atoll	Sears, 1950
	Great Barrier Reef, Australia	Totton, 1932
Indian Ocean and adjacent waters	Central waters	Alvariño 1964b
	Chagos, Mauritius, Farquhar, Amirante	Browne, 1926
	N of St. Paul, E of Madagascar, S of Madagascar, SW of Madagascar, Port Natal	Moser, 1925
	Off south and east coasts of Africa (1554-89), southeast Indian Ocean (2685-8, 2886, 2894-5), south Indian Ocean (31°58.1'S-114°52.2'E to 32°00'S-25°43.3'E), northwest Indian Ocean	Totton, 1954



TABLE 3 (cont.)

Region	Localities	Reference
<u>Eudoxia tottoni</u>	Leloup 1934	
Atlantic Ocean	SW of Luderitz, south west Africa: 28°35'S-11°14'E	Leloup and Hentschel, 1938

TABLE 3 (cont.)

Region	Localities	Reference
<u>Sphaeronectes</u> sp.		
Atlantic Ocean	Iberian Atlantic	Alvariño, 1957b
	Bay of Biscay: (47°11'N - 05°38'W, 46°50'N - 05°22'W 46°43'N - 04°44'W 47°04'N - 04°27'W 47°24'N - 04°47'W)	Alvariño (unpublished data)
	Canary Islands (Orotava)	Chun, 1892
	Bay of Biscay	Patriti, 1965
	Gulf of Mexico	Sears, 1954
Mediterranean	Gulf of Naples	Bedot, 1882
	Villefranche-sur-Mer	Leloup, 1935a
	Gulf of Naples	Neppi, 1921
Pacific Ocean	Monterey Bay (California)	Bigelow and Leslie, 1930
	Santa Cruz (California)	Fewkes, 1889
	Torres Strait off the south coast of New Guinea, east coast of Australia	Huxley, 1859
	Chagos, Farquhar, Alphonse, Amirante	Browne, 1926
Indian Ocean	Red Sea (Aqaba), off south and east coasts of Africa	Totton, 1954

TABLE 3 (cont.)

Region	Localities	Reference
<u>Lensia achilles</u>	Totton 1941	
Atlantic Ocean	Northeast and Scottish region	Fraser, 1967
	W of Cape St. Martin, South Africa: 33°07'S-04°30'E 33°20'S- 15°18'E 33°46'S-15°08'E,	Totton, 1941
	W of Cape Town, South Africa: 34°05'S-16°00'E	
Indian Ocean	Off East Africa, between Durban and southern part of Madagascar: 27°24.3'S-39°21.2'E	Totton, 1941
Pacific Ocean	Off San Diego, California	Alvariño, 1967b

TABLE 3 (cont.)

Region	Localities	Reference
<u>Lensia ajax</u>	Totton 1941	
Atlantic Ocean	Northeast and Scottish region	Fraser, 1967
	N of Annobón: Island: 01°11'S-05°38'E,	Totton, 1941
	W of Cape St. Martin, South Africa:	
	33°20'S-15°18'E 33°46'S- 15°08'E	
Pacific Ocean	Off San Diego, California	Alvariño, 1967b



TABLE 3 (cont.)

Region	Localities	Reference
Pacific Ocean and adjacent seas	South China Sea	Alvariño, 1963
	Western Pacific, Philippines, Indonesian waters	Alvariño, 1964b
	Off entrance to the Sea of Cortés	Alvariño, 1965a
	Off Acapulco, Mexico	Alvariño, 1969
	South China Sea	Alvariño, 197a
	Bay of Nhatrang	Leloup, 1956
	New Guinea	Moser, 1925
	Great Barrier Reef (not in the lagoon)	Russell and Colman, 1935
	Marshall Islands: Bikini Atoll (outside lagoon), Rongerik Atoll (outside lagoon)	Sears, 1950
	Great Barrier Reef	Totton, 1932
Red Sea	Port Sudan, North-Koseir and Jaffatin Islands	Totton, 1954

TABLE 3 (cont.)

Region	Localities	Reference
<u>Lensia challengeri</u>	Totton 1954	
Atlantic Ocean	Off Panama and between Haiti and Jamaica	Alvariño, 1969
	Off Africa (19° 12'N) as <u>L. conoidea</u> , but the illustration corresponds either to <u>L. challengeri</u> or <u>L. fowleri</u>	Cervigón, 1961
Indian Ocean	Central Indian Ocean waters	Alvariño, 1964
Pacific Ocean and adjacent seas	South China Sea	Alvariño, 1963
	Sea of Cortés	Alvariño, 1965a
	Off San Diego, California	Alvariño, 1967b
	Gulf of Panama to Manzanillo, Mexico	Alvariño, 1969
	South China Sea	Alvariño, 197a
	Off the coast of Baja California: (23° 51'N - 112° 59'W, from 21° 41'N - 111° 43'W to 31° 12'N - 117° 31'W)	Totton, 1954

TABLE 3 (cont.)

Region	Localities	Reference
<u>Lensia conoidea</u>	Keferstein and Ehlers 1861	
Atlantic Ocean	Off Long Island, Atlantic City	Alvariño (unpublished data)
	Off Cape Town (33°47'S-15°48'E), Bay of Biscay (46°43'N - 04°44'W)	Alvariño (unpublished data)
	Equatorial region off the Amazon estuary	Alvariño, 1967c
	Bay of Biscay	Bigelow, 1911b
	Gulf of Maine region, northeastern slope of Georges Bank, northeastern basin of Gulf, off Grand Manan	Bigelow, 1926
	Bay of Biscay to N of Spain (off Lugo), off Portugal (off Lisbon), SW of Cape San Vicente, Sea of Spain	Bigelow and Sears, 1937
	Martha's Vineyard to Cape Hatteras (40°30'N - 38°05'N)	Bigelow and Sears, 1939
	Northeast Atlantic (Scottish Shelf)	Fraser, 1961, 1967
	In the Epiplankton of the Moroccan Atlantic (Tangier to Cabo Juby)	Furnestin, 1957
	Gibraltar Strait	Furnestin, 1958
	Off Morocco	Furnestin, 1964
	Slope waters off Long Island, Chesapeake Bay, Sargasso Sea	Grice and Hart, 1962
	E of the Malvinas (as <u>G. truncata</u> )	Hardy and Gunther, 1935
	Southwest Iceland (63°19'N - 26°50'W), southern part of the Davis Strait: 62°19'N - 56°00'W 61°47'N - 52°55'W	Kramp, 1942
	N of Cape Finisterre (43°06'N - 08°54'W), Bay of Biscay (46°15'N - 07°09'W), Canary Islands (28°04'N - 16°49'W), off Canary Islands (27°43'N - 18°28'W), W of Madeira (31°46'N - 25°00'W), W of Madeira (33°06'N - 25°07'W), Azores (37°15'N - 27°50'W), Azores (37°08'N - 28°28'W), S of Horta, Azores (36°17'N - 28°53'W), leaving Madeira, SW of Azores (30°04'N - 42°29'W),	



TABLE 3 (cont.)

Region	Localities	Reference
Atlantic Ocean	SW of Azores (31°41'N - 42°40'W), Azores (39°09'N - 26°13'W), Bay of Biscay (46°38'N - 05°26'W), Azores (38°30'N - 34°40'W)	Leloup, 1933
	South Atlantic to 60°S	Leloup, 1934a
	Cape Verde Islands, main ocean, off Georgetown, off the Amazon, NW of St. Paul Rocks, Gulf of Guinea, along Monrovia, along Brazil from Pará to Cape San Roque, off Cape San Roque, between Bahía and Rio de Janeiro, off Florianopolis, off Rio Grande do Sul, off Buenos Aires, Ascension Island, Trindade Island, NW of South Georgia, Gough Island, between Tristan da Cunha and St. Helena, St. Helena, off Cape Buena Esperanza, off Orange River, off Walfish Bay, off Great Fish Bay, off São Paulo de Loanda	Leloup, 1934a
	N of Cape Finisterre (45°26'N - 09°20'W), E of Canary Islands (28°52'N - 14°16'W), La Palmas, Canary Island (28°42'N - 20°00'W), SW of Azores (36°52'N - 39°55'W, 34°44'N - 47°52'W), NE of Flemish Cap. (48°02'N - 36°53'W), N of Azores (46°48'N - 27°46'W), NE of Azores (46°58'N - 19°06'W), N of Azores (45°26'N - 25°45'W), ESE of Rockall (off Scotland) (56°33'N - 09°30'W), W of Hebrides (57°41'N - 11°48'W), NW of Shetland Island (60°57'N - 04°38'W), South Atlantic to 60°S, S of Uruguay (41°27'S-52°47'W), W of Gough Island (41°12.8'S-17°05.0'W), E of Gough Island (41°05'S-03°53'W), NW of Gough Island (39°10'S - 14°03'E), W of Tristan da Cunha group (36°40'S- 16°22.5'E), N of Tristan da Cunha group (28°44'S-14°30'E. 28°35'S- 11°14'E), SE of St. Helena Island (28°31'S-00°29'E), S of St. Helena Island (28°00'S-07°50'W), NNE of Tristan da Cunha group (27°52'S- 15°56'W), S of Rio de Janeiro (29°52'S- 41°37'W, 29°15'S-43°40'W), off Flori- anopolis, Brazil (28°37'S-45°38.5'W), N of Shag Rock (48°21'S-42°36'W), W of Gough Island (41°17'S-17°26'E), S of	

TABLE 3 (cont.)

Region	Localities	Reference
Atlantic Ocean	<p>Cape of Good Hope (38°35'S - 17°46'E, 36°52'S-18°09'E), NE of Tristan da Cunha group (34°02'S-15°48'E, 34°00'S-03°00'E), SE of Paranagua, Brazil (32°49'S-40°01'W), SE of Montevideo, Uruguay (37°21'S-51°53'W), off Angola, South Africa (16°22.5'S - 11°23.2'E), off Mocamedes, Angola (16°03.5'S-09°29.0'E), W of Mocamedes, Angola (15°16.5'S-06°32.6'E), NW of St. Helena Island (15°07'S-09°50'W), NE of Trindade Island (15°19'S-23°59'W), N of Trindade Island (15°54'S-30°03'W), off Caravelas, Brazil (17°42'S-37°53'W), SW of Trindade Island (23°36'S-31°48'W), SW of St. Helena Island (21°27'S-13°48'W, 21°53'S-12°27'E), off Walvisbaai, South Africa (22°00'S-11°07.2'E), off Luanda, Angola (08°52.2'S-12°38.3'E), W of Luanda, Angola (09°00'S-06°00'E), NE of St. Helena Island (09°07.8'S-02°02.5'W), W of Recife, Brazil (08°59.6'S-25°59.7'W), Fernando de Noronha Rocas (03°55.1'S-32°33.7'W), off Monrovia, Liberia (05°04'N - 14°56.6'W), S of Cape Palmas, Liberia (01°17.4'N - 09°35.5'W, 00°03'N - 09°30'W), S of Abidjan, Ivory Coast (02°06.8'N - 05°13.4'W), off Accra, Ghana (04°30'N - 01°00.4'W, 03°59.5'N - 00°55.8'W, 03°03'N - 00°58'W), S of Accra, Ghana (02°12.1'N - 01°03.2'W), S of Dahomey (01°54.8'N - 02°03.9'E), Gulf of Guinea (01°25'N - 04°49'E, 00°30.8'N, 01°51.8'E), NW of Ascension Island (03°07'S-19°24'W), off Natal, Brazil (06°11'S-32°34'W), N of Natal, Brazil (02°26.7'S-34°57.4'W), off Fortaleza Brazil (02°28'S-39°21'W), NW of Sts. Peter and Paul Rocks (02°23.8'N - 35°27.9'W, 04°13'N - 34°25.5'W), SW of Cape Verde Islands (10°12.4'N - 26°36.1'W), S of Cape Verde Islands (11°24.6'N - 23°59'W), off Dakar, Senegal (14°39.8'N - 17°40.2'W), N of Cape Verde Islands (19°16.8'N - 22°30.6'W), off Spanish Sahara (17°22.2'N - 22°00.8'W), NW of Cape Verde Islands (19°15.7'N - 27°27.4'W), W of Cape Verde Islands (18°31.7'N -</p>	

TABLE 3 (cont.)

Region	Localities	Reference
Atlantic Ocean	36°45.4'W), E of Barbados Islands (14°03'N - 45°59'W), NE of French Guiana (11°01.7'N - 49°33.4'W, 09°07'N - 50°56.9'W), N of French Guiana (07°48.7'N - 52°14'W, 07°25'N - 52°44'W), off Maracá Island, Brazil (03°43'N - 44°23'W), NW of Sts. Peter and Paul Rocks (09°16.8'N - 38°21.3'W), Cape Verde Islands (14°31.7'N - 29°37.8'W, 15°45.6'N - 27°19.4'W), N of Cape Verde Islands (19°17.4'N - 24°59.5'W)	Leloup and Hentschel, 1938
	South Atlantic to 60°S, Tortugas, W and N of Ascension, N and E of Tristan da Cunha, Ascension, St. Paul, NE of St. Paul, Cape Verde Islands, Bergen	Moser, 1925
	Bay of Biscay	Patriti, 1965
	Christiania Fjord, Faerøe Islands, Hebrides Sea	Römer, 1902
	Herdla and Hjeltelfjordes (Norway)	Runnström, 1932
	North Sea, Kattegat, Belt Sea	Russell, 1939
	Norway up to 61°30'N, near Florø	Sars, 1846
	Bermuda (32°08'N - 64°40'W, 32°16'N - 64°31'W)	Totton, 1936
	Off the Irish coast, SW of Ireland, W of Cape St. Martin (33°20'S-15°18'E) W of Cape Town (33°46'S-15°08'E)	Totton, 1954
	Norway	Vanhöffen, 1906
Indian Ocean	Equatorial Indian Ocean	Alvariño, 1964b
	Rattlesnake voyage ( <i>Sphaeronecistruncata</i> )	Huxley, 1859
	Off New Pomerania	Leloup, 1932a
	E of East London, South Africa (32°35'S-30°00'E), SW of Cape Agulhas, South Africa (39°46'S-22°12'E)	Leloup and Hentschel, 1938
	Between St. Paul and Madagascar	Moser, 1925

TABLE 3 (cont.)

Region	Localities	Reference
Indian Ocean	Off south and east coasts of Africa, southeast Indian Ocean, south Indian Ocean, northwest Indian Ocean	Totton, 1954
Mediterranean	Gibraltar, Alborán Sea, N of Africa, Balearic Sea, Balearic Island to Sardinia, N of Corsica, Sardinia to Sicily, Messina, Aegean, Sea of Marmara Gulf of Lyon, Eastern Corsica Naples  Monaco (43°17'N - 07°22'E), Corsica (42°44'N - 08°48'E, 42°53'N - 08°22'E, 42°58'N - 08°56'E), Monaco (43°10'N - 09°08'E), Barcelona (40°52'N - 02°38'E), Almeria, Spain (36°51'N - 01°30'W), N of Algiers (38°02'N - 01°50'E), Monaco (43°15'N - 07°38'E), off Monaco, Almeria, Spain (36°18'N - 02°31'W), Monaco (43°40'N - 07°35'E), Perpignan, France (42°55'N - 03°07'E) Villefranche-sur-Mer Monaco Off Monaco museum, off Mont Angel, Monaco Off Gibraltar (36°05'N - 04°42'W) Villefranche Villefranche, Monaco Naples	Bigelow and Sears, 1937  Furnestin, 1960 Keferstein and Ehlers, 1860 Leloup, 1933       Leloup, 1935a Leloup, 1936 Leloup, 1936a  Leloup, 1955 Lochman, 1914 Moser, 1925 Spagnolini, 1868, 1870 Alvariño, 1963
Pacific Ocean and adjacent seas	South China Sea  Tropical equatorial region Off San Diego, California South China Sea	Alvariño, 1964d Alvariño, 1967b Alvariño, 197a

TABLE 3 (cont.)

Region	Localities	Reference
Pacific Ocean and adjacent seas	Eastern tropical region	Bigelow, 1911a.
	Line from San Francisco to Unalaska Island (B.C.) (Stas. 4759, 4760), Bering Sea (Stas. 4763, 4766, 4767, 4775), line from western Aleutians to Kamchatka by way of Komandorskiye Island and Beringa Island (Stas. 4785, 4793), off southeast coast of Kamchatka (Sta. 4797), Eastern Sea near Goto Island (Sta. 4896), off east coast of Kyushu, Japan (Sta. 4955)	Bigelow, 1913
	Monterey Bay ( <i>D. truncata</i> )	Bigelow and Leslie, 1930
	S of Juan Fernández Island (39°S-79°W), Malay Archipelago	Leloup, 1932a
	Malay region	Lens and Riemsdijk, 1908
	New Guinea, Sumatra	Moser, 1925
	Marshall Islands: Bikini Atoll (inside and outside lagoon), Rongelap Atoll (inside lagoon), Eniwetok Atoll (outside lagoon), between 02°15'S-09°00'N and 166°39'E-168°00'E	Sears, 1950

TABLE 3 (cont.)

Region	Localities	Reference
<u>Lensia cossack</u>	Totton 1941	
Atlantic Ocean	Equatorial region off the Amazon estuary	Alvariño, 1967c
	Haiti (Caribbean Sea)	Alvariño, 1969
	Scottish region	Fraser, 1961, 1967
	Sargasso Sea	Grice and Hart, 1962
	Bermuda	Moore, 1949
	Florida Current, off Miami	Moore, 1953
	SW of Azores (36°47'N - 46°31'W), NE of Belém, Brazil (08°15'N - 36°10'W), W of Cape St. Martin (33°20'S-15°18'E), SW of Cape St. Martin (33°46'S-15°08'W), off Annobón Island (01°11'S-05°38'E), W of Gough Island (40°25'S-30°06'W), SW of Tristan da Cunha group (38°10'S - 30°10'W, 38°03'S - 29°48'W), SW of Trindade Island (22°36'S-30°01'W, 21°13'S-29°55'W), NW of Trindade Island (20°11'S-29°57'W), N of Trindade Island (15°37'S-29°53'W, 15°38'S-29°49'W), NW of Sts. Peter and Paul Rocks (02°59'N - 29°59'W, 02°59'N - 30°04'W, 04°05'N - 30°00'W), SW of Fogo Island (Cape Verde Island) (12°21'N - 30°07'W), W of Fogo Island (14°39.3'N - 25°51.7'W), SE of Maceió, Brazil (10°26.6'S-34°54.7'W), SE of Salvador, Brazil (14°01.4'S-36°30.7'W), SE of Rio de Janeiro (24°40.7'S-41°30.8'W), SE of Porto Alegre (31°37.1'S-45°00.0'W), Carnegie Stas. 16, 24, 49, 52, 55, 56, 82, 87, 88, 91, 103, 104, 105, 109, 111, 113, 137, 138, 139, 155	Totton, 1941
Indian Ocean	SE of East London, South Africa (36°42.4'S-36°04.4'E), E of East London (34°01.8'S-34°01.7'E), SE of East London (37°50.1'S-35°46.6'E), SW of Cape St. Marie, Madagascar (27°24.3'S-39°21.2'E)	Totton, 1941
	“This species was reported by Browne from Chagos, Mauritius, Farquhar and Amirante under the name of <u>Diphyes</u>	

TABLE 3 (cont.)

Region	Localities	Reference
Indian Ocean	<u>subtiloides</u> . I have re-examined eight of the eleven anterior and the two posterior nectophores which are now in the British Museum collection." Also states "The record by Browne is not for this species but for <u>Lensia cossack</u> ."	Totton, 1954
Pacific Ocean and adjacent seas	Gulf of Panama	Alvariño, 1969
	Bay of Nhatrang	Leloup, 1956
	Marshall Islands: Bikini Atoll (outside lagoon), Rongerik Atoll (outside lagoon)	Sears, 1950
	NW of Easter Island (23°16'S-114°45'W), SW of Easter Island (31°28'S-112°51'W, 32°03'S-110°55'W), S of Easter Island (31°49'S-109°04'W), SE of Marquesas Islands (14°52'S-126°07'W), off Marutea Island (18°05'S-145°33'W), off Bora Bora Island (16°42'S-150°41'W), W of Society Islands to N of Cook Island (15°44'S-160°25'W), W of Wake Island (19°19'N - 166°23'E), NW of Wake Island (20°12'N - 161°19'E), SE of Marcus Island (18°43'N - 156°16'E) SE of Volcano Island (23°32'N - 144°08'E), E of Sumisu Jima (31°00'N - 144°16'E), E of Yokohama, Japan (34°44'N - 141°04'E), NE of Hawaii Islands (24°02'N - 145°33'W, 22°53'N - 151°15'W), NE of Maui Island (21°47'N - 155°31'W), NE of Christmas Island (03°01'N - 149°46'W), SE of Pitcairn Island (42°30'S-124°51.7'W)	Totton, 1941

TABLE 3 (cont.)

Region	Localities	Reference
<u>Lensia exeter</u>	Totton 1941	
Atlantic Ocean	W of Cape St. Martin, South Africa (33°20'S-15°18'E), SW of Cape St. Martin, South Africa (33°46'S-15°08'E), NW of Tristan da Cunha group (34°08'S-29°50'W), S of Cape of Good Hope (38°02.9'S-18°39.7'E)	Totton, 1941



TABLE 3 (cont.)

Region	Localities	Reference
<i>Lensia fowleri</i>	Bigelow 1911	
Atlantic Ocean	Off South Africa (30°09'S-04°42'W), off the Amazon (20°13'N - 60°07'W)	Alvariño (unpublished data)
	Gulf of Mexico	Alvariño, 1969
	Bay of Biscay (46°43'N - 47°29'N and 07°15'W-08°18'W)	Bigelow, 1911b
	Line from Chesapeake Bay to Bermuda, off Bermuda, Bermuda to Bahamas, Straits of Florida (27°32'N - 79°21'W), N of Bahama Bank (27°46'N - 78°46'W)	Bigelow, 1918
	Bay of Biscay, Sea of Spain, off Tangier	Bigelow and Sears, 1937
	Off 39°40'N (SE of Long Island)	Bigelow and Sears, 1939
	Northeast Atlantic (Scottish Shelf and Scottish region)	Fraser, 1961, 1967
	S of Wyville Thomson Ridge	Fraser, 1963
	Gulf Stream, Sargasso Sea	Grice and Hart, 1962
	Cape Verde Islands, main ocean, off George Town, off the Amazon, NW of St. Paul Rocks, Gulf of Guinea, between St. Paul Rocks and Ascension, Trindade Island, between Cape Buena Esperanza and Tristan da Cunha, off Orange River, S of St. Helena, off Gr. Fish Bay	Leloup, 1934a
	E of Lanzarote Island, Canary Islands (28°52'N - 14°16'W), W of Canary Islands (29°06'N - 25°02'W), SW of Azores (31°20'N - 35°07'W 36°53'N - 29°47'W 36°52'N - 39°55'W 34°44'N - 47°52'W), NW of Azores (48°02'N - 36°52'W), N of Azores (46°48'N - 27°46'W)	Leloup, 1955
	N of Cape Verde Islands (19°16.8'N - 22°30.6'W), W of Cape St. Martin, South Africa (34°00'S-03°00'E), NW of Cape St. Martin (28°31'S-0029'E), W of Mocamedes, Angola (16°03.5'S- 09°20.0'E), NW of Trindade Island (15°54'S-30°03'W), SW of Trindade Island (23°44'S-34°54'W, 23°36'S- 31°48'W), SE of Trindade Island (22°01.5'S-23°47.0'W), S of St. Helena	

TABLE 3 (cont.)

Region	Localities	Reference
Atlantic Ocean	Island (21°28'S-04°54.5'W), off Cape Palmas, Liberia (03°59.3'N - 09°25'W), SW of Cape Palmas (02°42.6'N - 09°28.8'W), SW of Annobón (Gulf of Guinea) (03°50.3'S-01°05.1'E), NW of Ascension Island (03°07'S-19°24'W), NW of Sts. Peter and Paul Rocks (02°23.8'N - 35°27.9'W), SE of Cape Verde Islands (off Dakar) (13°42'N - 19°49'W), N of Cape Verde Islands (19°16.8'N - 22°30.6'W, 17°22.2'N - 22°00.8'W), NW of Cape Verde Islands (19°15.7'N - 27°27.4'W, 18°31.7'N - 36°45.4'W), E of Lesser Antilles (Martinique) (14°03'N - 45°59'W), off French Guiana (07°25'N - 52°44'W), E of French Guiana (06°59.7'N - 41°04.5'W), N of Cape Verde Islands (19°17.4'N - 24°59.5'W)	Leloup and Hentschel, 1938
	Bermuda	Moore, 1949
	Florida Current, off Miami	Moore, 1953
	Southern region	Moser, 1925
	Bay of Biscay	Patriti, 1965
	Gulf of Mexico	Sears, 1954
Indian Ocean	Chagos, Farquhar, between Providence and Alphonse, Amirante	Browne, 1926
	Off south and east coasts of Africa (1554-89), southeast Indian Ocean (2685-8, 2886, 2894-5), south Indian Ocean (31°58.1'S-114°52.2'E to 32°00'S-29°43.3'E)	Totton, 1954
Mediterranean	Alborán Sea, North Africa, from Balearic Sea to Sardinia, N of Corcega, Sardinia to Sicily, off Italy, Tyrrhenian Sea, Messina, Ionian Sea, Aegean Sea as far east as 28°E	Bigelow and Sears, 1937
	Adriatic, S of Capri, Bay of Naples	Gamulin, 1966
	Adriatic Sea (42°32'N - 17°57'E), S of Andrije Lighthouse	Huré, 1955

TABLE 3 (cont.)

Region	Localities	Reference
Mediterranean	Gulf of Naples, Ischia, Capri	Kinzer, 1965
Pacific Ocean	Manzanillo (Mexico), Gulf of Panama, Galápagos, southeast of Galápagos, SW of Aguja Point, Stas. 4587, 4634, 4638, 4646, 4657, 4659 Great Barrier Reef (not in lagoon)	Bigelow, 1911a  Russell and Colman, 1935
	Marshall Islands: Bikini Atoll (outside lagoon)	Sears, 1950
	Off Great Barrier Reef	Totton, 1932
Red Sea	Port Sudan, Koseir, Jaffatin Islands, Gulf of Aqaba	Totton, 1954

TABLE 3 (cont.)

Region	Localities	Reference
<u>Lensia grimaldii</u>	Leloup 1933	
Atlantic Ocean	S of Azores (33°06'N - 25°07'W)	Leloup, 1933
	Cape Verde Islands, off George Town, Gulf of Guinea, along Brazil from Pará to Cape San Roque, off Cape San Roque, off Rio Grande do Sul, Ascension Island, NW of St. Helena	Leloup, 1934a
	SE of Porto Alegre, Brazil (32°44'S- 46°00.5'W), NW of St. Helena (14°58'S- 12°29'W), SW of Ascension Island (08°54.7'S-10°24'W, 08°49'S-16°40'W), NE of Natal, Brazil (04°52'S-33°44'W), S of Ivory Coast (Gulf of Guinea): (02°06.8'N - 05°13.4'W), Gulf of Guinea (03°33.6'N - 05°06.7'E, 02°26.3'N - 06°22.6'E), NW of Ascension Island (02°40.3'S-16°36.8'W), NE of Fortaleza, Brazil (02°26.7'S- 34°57.4'W), NE of Cape Verde Islands (17°48.8'N - 19°31.8'W, 17°22.2'N - 22°00.8'W), NE of French Guiana (09°07'N - 50°56.9'W), N of French Guiana (07°48.7'N - 52°14'W, 07°25'N - 52°44'W)	Leloup and Hentschel, 1938
	Bay of Biscay	
	Off Annobón Island (Gulf of Guinea) (01°11'S-05°38'E), W of Cape Town (34°05'S-16°00'E), W of Cape St. Martin, South Africa (33°20'S-15°18'E), SW of Cape St. Martin (33°46'S- 15°08'E), E of Fernando de Noronha Rocks (03°17'S-29°57'W, 03°20'S- 30°03'W), W of Cape Verde Islands (14°27'N - 30°02'W), Carnegie VII, St. 64 (including both <u>L. grimaldii</u> and <u>L. lelouvetean</u> )	Patrity, 1965 Totton, 1941
Pacific Ocean	Off San Diego, California	Alvariño, 1967b
	Marshall Islands: Bikini Atoll (outside lagoon)	Sears, 1950
	W of Drake Passage (61°56.3'S- 79°57'W), NW of Adelaide Island (65°55.8'S-73°51.5'W)	Totton, 1941

TABLE 3 (cont.)

Region	Localities	Reference
<i>Lensia hardy</i>	Totton 1941	
Atlantic Ocean	SW of Africa (32°30'S-01°23'W), NE of Falkland Islands (45°06'S-49°00'W), SW of Africa (33°07'S-04°30'E, 34°05'S-16°00'E 33°20'S-15°18'E 33°46'S - 15°08'E 33°50'S-16°04'E 34°13'S-15°49'E), S of Cape of Good Hope (35°29'S-18°33'E). Tristan da Cunha group (37°20'S-12°47'W), SW of Africa (35°14'S-06°49'E), N of Tristan da Cunha Islands (29°34'S-14°24'E), SW of southern tip of Africa (44°57'S-12°57'E, 44°56'S-12°54'E), SW of Tristan da Cunha Islands (40°25'S-30°06'W, 44°52'S-30°17'W, 43°08'S-30°15'W), SW of tip of Africa (37°31'S-04°33'E, 37°29'S-04°39'E), off Bouvetoya Island (54°05'S-03°57'E, 54°07'S-04°03'E), off Montevideo, Uruguay (35°09.5'S-47°00'W), N of Falkland Islands (44°22'S-53.32.2'W, 42°08.8'S-51°35'W), E of Gough Island (41°04.4'S-00°14.3'W), SE of Lesser Antilles (11°02'N - 37°06'W)	Totton, 1941
Indian Ocean	SE of East London, South Africa (36°46.6'S-38°18.4'E), N of Ile Amsterdam (32°04.1'S-77°59.6'E), SE of Cape Agulhas (38°08'S-20°56.1'E, 43°07.4'S-25°04.6'E)	Totton, 1941

TABLE 3 (cont.)

Region	Localities	Reference
<u>Lensia havock</u>	Totton 1941	
Atlantic Ocean	SE of Necochea, Argentina (43°20'S-46°02'W), NW of Tristan da Cunha group (35°20'S-19°01'W), W of Cape St. Martin, South Africa (33°07'S-04°30'E) NW of Tristan da Cunha group (34°05'S-16°00'E), W of Cape St. Martin (33°20'S-15°18'E, 33°46'S-15°08'E), Bermuda, SW of Cape of Good Hope (37°31'S-04°33'E, 37°29'S-04°39'E), W of South Sandwich Islands - Scotia Sea (57°36'S-29°54'W, 57°36'S-29°35'W), NE of South Georgia Islands (49°58'S-29°52'W, 49°58'S-30°13'W), midway between South Georgia Islands and Tristan da Cunha group (43°08'S-30°15'W), W of Shag Rocks - Scotia Sea (53°48.7'S-46°27.7'W)	Totton, 1941
Indian Ocean	SW of Cape St. Marie, Madagascar, Mozambique Channel (27°24.3'S-39°21.2'E)	Totton, 1941
Pacific Ocean	Santa Barbara Channel (California), Santa Cruz Basin (California)	Alvariño (unpublished data)
	Off San Diego, California	Alvariño, 1967b

TABLE 3 (cont.)

Region	Localities	Reference
<u>Lensia hostile</u>	Totton 1941	
Atlantic Ocean	W of Cape Town (34°05'S-16°00'E)	Totton, 1941
Indian Ocean	SW of Cape St. Marie, Madagascar, Mozambique Channel (27°24.3'S- 39°21.2'E), W of Perth, Australia (32°05.9'S-105°23'E), NE of Ile Amsterdam (32°01.5'S-93°40'4'E)	Totton, 1941
Pacific Ocean	Off San Diego, California	Alvariño, 1967b

TABLE 3 (cont.)

Region	Localities	Reference
Lensia hotspot	Totton 1954	
Atlantic Ocean	Caribbean Sea and Gulf of Mexico	Alvariño, 1969
	Off Cape Town (33°47'S-15°48'E), off the Amazon (16°45'N - 59°46'W, 14°36'N - 58°35'W, 16°47'N - 52°16'W, 11°34'N - 49°58'W, 06°45'N - 55°20'W), off Honduras (16°59'N - 86°11'W, 16°26'N - 84°53'W), off Costa Rica (10°04.4'N - 80°21.5'W)	Alvariño (unpublished data)
	Northeast and Scottish region	Fraser, 1967
	N of Azores (46°48'N - 27°46'W)	Leloup, 1955
	W of Cape Town (34°05'S-16°00'E), NW of Cape St. Martin, South Africa (33°20'S-15°18'E, 33°46'S-15°08'E), S of Cape of Good Hope (35°29'S- 18°33'E), N of Annobón Island (Gulf of Guinea) (01°11'S-05°38'E), SW of Cape of Good Hope (36°14'S-16°09'E, 39°03'S-16°11'E), between South Georgia Islands and southwest Tristan da Cunha (43°08'S-30°15'W), W of Tristan da Cunha group (38°10'S-30°10'W, 38°03'S-29°48'W), S of Trindade Island (31°16'S-29°56'W, 26°06'S-30°06'W), NW of Trindade Island (20°11'S-29°57'W), E of Maceió, Brazil (09°47'S-29°51'W), E of Atoll of Fernando de Noronha Rocks (03°17'S-29°57'W, 03°20'S-30°03'W), SW of Sts. Peter and Paul Rocks (00°25'S-29°56'W), NW of Sts. Peter and Paul Rocks (02°59'N - 29°59'W, 02°59'N - 30°04'W), NW of Sts. Peter and Paul Rocks (04°05'N - 30°00'W), SW of Cape Verde Islands (12°21'N - 30°07'W), W of Cape Verde Islands (14°27'N - 30°02'W), SW of Cape Verde Islands (19°59.3'N - 27°03.8'W), SE of Maceió, Brazil (10°20.6'S-34°54.7'W), SE of Salvador, Brazil (14°01.4'S-36°30.7'W), SW of Cape of Good Hope (36°04.8'S-13°34.5'E), Carnegie Stas. 35, 36, 41, 42, 75	Totton, 1941
Indian Ocean	SE of East London, South Africa (36°42.4'S-36°04.4'E), off south and east coasts of Africa (Stas. 1554-89)	Totton, 1941



TABLE 3 (cont.)

Region	Localities	Reference
Indian Ocean	Southeastern region (Stas. 2685-8, 2886, 2894-5), northwestern region	Totton, 1954
Pacific Ocean and adjacent seas	South China Sea	Alvariño, 1963
	Off San Diego, California	Alvariño, 1967b
	Gulf of Panama to Manzanillo (Mexico)	Alvariño, 1969
	South China Sea, Gulf of Thailand	Alvariño, 197a
	Bay of Nhatrang	Leloup, 1956
	Marshall Islands: Rongerik Atoll (outside lagoon)	Sears, 1950
	W of Galápagos Islands (01°32'S-93°10'W), S of Galápagos Islands (14°15'S-92°05'W), SE of Pitcairn Island (41°03.1'S-126°03.9'W), S of Panama (06°32'N - 80°04'W, 06°16'N - 80°17'W), E of Galápagos Islands (01°37'S-86°58'W), W of Galápagos Islands (01°32'S-93°10'W)	Totton, 1941
Red Sea	Central region, Port Sudan, Koseir Island, Jaffatin Islands, Gulf of Aqaba	Totton, 1954

TABLE 3 (cont.)

Region	Localities	Reference
<u>Lensia hunter</u>	Totton 1941	
Atlantic Ocean	NW of Tristan da Cunha group (35°18'S-19°01'W), W of Cape Town (33°53'S-09°26'E), W of Cape Town (34°05'S-16°00'E), W of Cape St. Martin (33°20'S-15°18'E, 33°46'S-15°08'E), SW of Trindade Island (34°08'S-29°50'W)	Totton, 1941
Indian Ocean	SE of Durban, South Africa (31°50.3'S-32°20.5'E), SW of Cape St. Marine, Madagascar (27°24.3'S-39°21.2'E)	Totton, 1941
Pacific Ocean	NW of Juan Fernández Islands (31°54'S-88°17'W)	Totton, 1941

TABLE 3 (cont.)

Region	Localities	Reference
Lensia leloupi	Totton 1954	
Atlantic Ocean	Equatorial region off the Amazon estuary	Alvariño, 1967c
	Near Cape López in the Gulf of Guinea, not far from the Ogowe River (01°44'S- 08°38'E)	Totton, 1954

TABLE 3 (cont.)

Region	Localities	Reference
<u>Lensia lelouveteau</u>	Totton 1941	
Atlantic Ocean	Gulf of Campeche	Alvariño, 1969
	Northeast and Scottish region	Fraser, 1967
	SW of Azores (34°44'N - 47°52'W)	Leloup, 1955
	W of Cape St. Martin, South Africa	Totton, 1941
	(33°20'S-15°18'E, 33°46'S-15°08'E, 475-0), N of Annobón Island, Gulf of Guinea (01°11'S-05°38'E, 300-0), NE of Natal, Brazil (04°52'S-33°44'W, 100-50), NW of Ascension Island (02°40.3'S-16°36.8'W, 1000-220), NE of Cape Verde Island (17°48.8'N - 19°31.8'W, 600-400)	
Pacific Ocean	Off San Diego, California	Alvariño, 1967b

TABLE 3 (cont.)

Region	Localities	Reference
Lensia meteori	Leloup 1934	
Atlantic Ocean	Gulf Stream, Sargasso Sea	Grice and Hart, 1962
	Cape Verde Islands, off Free Town, off Monrovia, Gulf of Guinea, N of Ascension Island, off Florianópolis, off Rio Grande do Sul, SE of Trindade Island, SW of St. Helena Island, NW of Tristan da Cunha group, off Orange River, off Cape of Good Hope	Leloup, 1934a
	SW of Cape of Good Hope (39°10'S-14°03'E), SW of Lüderitz, South Africa (28°35'S-11°14'E), NW of Tristan da Cunha group (28°07'S-19°20'W), SE of Florianópolis (29°15'S-43°40'W), NW of Tristan da Cunha group (32°29'S-20°07'W), SE of Porto Alegre, Brazil (32°39'S-48°54'W), SE of Trindade Island (22°01'S-23°47'W), SW of St. Helena Island (21°30'S-11°42'W), W of Conakry, Guinea (09°01'N - 17°40'W), SW of Monrovia, Liberia (05°04'N - 14°56'W), S of Ivory Coast, Gulf of Guinea (02°06'N - 05°13'W), SW of Sts. Peter and Paul Rocks (03°30'S-22°35'W), N of Cape Verde Island (19°17'N - 24°59'W)	Leloup and Hentschel, 1938
	Off Santos (Brazil)	Seguin, 1965
	Southwest Ireland (50°48'N - 11°04'W), N of Flemish Cap (48°01'N - 39°46'W)	Totton, 1954
Indian Ocean	Equatorial region	Alvariño, 1964b
	SE of Cape Agulhas, South Africa (39°46'S-22°12'E)	Leloup and Hentschel, 1938
	E of Mogadiscio, Somali (02°39.4'N - 50°46.4'E), SE of Dante, Somali (06°05'N - 52°00'E), SE of East London, South Africa (37°50.1'S-35°46.6'E), SE of East London (34°47.6'S-34°27.9'E), E of Zanzibar (07°42.1'S-44°14.1'E), SE of Mogadiscio (00°57.8'S-49°26.7'E), off Alphonse Island (Seychelles) (07°08.6'N - 52°19.3'E)	Totton, 1954
Mediterranean	South Adriatic Sea (42°32'N - 17°57'E), S of Andrije Lighthouse	Huré, 1955

TABLE 3 (cont.)

Region	Localities	Reference
<i>Lensia multicristata</i>	Moser 1925	
Atlantic Ocean	Off South Africa (30°23'S-02°47'W), SW of St. Helena (19°13'S-13°44'W), S of Liberia (00°56'N - 11°29'W), off the Amazon (15°33'N - 57°39'W)	Alvariño (unpublished data)
	Equatorial region off the Amazon estuary	Alvariño, 1967c
	Off Florida and off Tampico (Gulf of Mexico)	Alvariño, 1969
	Bay of Biscay	Bigelow, 1911b
	Bay of Biscay down to off Spain (Lugo), off Portugal (south from 40 °N), off Cape San Vicente, Sea of Spain	Bigelow and Sears, 1937
	Scottish region	Fraser, 1961
	S of Wyville Thomson Ridge	Fraser, 1963
	Northeast and Scottish region	Fraser, 1967
	Off George Town, off Cape San Roque	Leloup, 1934a
	Off Porto, Portugal (40°56'N - 09°28'W), NE of Azores (46°58'N - 19°06'W)	Leloup, 1955
	Off George Town, N of French Guiana (07°48.7'N - 52°14'W), SE of Fernando de Noronha Island (04°57'S-30°04'W)	Leloup and Hentschel, 1938
	Cape Verde Islands, between St. Paul and St. Helena, NE of St. Paul, N of Cape Verde Islands, W of the Canaries at about 34 °W, southern region	Moser, 1925
	Bay of Biscay	Patriti, 1965
	SE of Bermuda (32°08'N - 32°16'N and 64°40'W-64°31'W)	Totton, 1936
	Bermuda, E of Cape St. Martin, South Africa (33°25'S-06°31'E), off Cape Town (34°05'S-16°00'E), SW of Cape St. Martin (33°20'S-33°46'S and 15°18'E-15°08'E), S of Cape of Good Hope (35°29'S-18°33'E), N of Annobón Island (01°11'S-05°38'E), SE of Cape Verde Islands (12°08'N - 20°53'W), N of	

TABLE 3 (cont.)

Region	Localities	Reference
Atlantic Ocean	<p>South Georgia Islands (44°52'S-30°17'W, 43°08'S-30°15.5'W), W of Tristan da Cunha group (38°10.5'S-30°10.0'W to 38°03.5'S-29°48.0'W), NW of Tristan da Cunha (34°08'S-29°50.5'W, 31°16'S-29°56.5'W), S of Trindade Island (26°06.5'S-30°06.0'W, 21°13'S-29°55'W), N of Trindade Island (20°11'S-29°57'W, 15°37'S-29°53.5'W to 15°38.5'S-29°49.5'W), E of Fernando de Noronha (03°17.5'S-29°57.5'W to (03°20'S-30°03'W), N of St. Paul Rocks (02°59.5'N - 29°59'W to 02°59.5'N - 30°04'W), between Cape Verde Islands and St. Paul Rocks (07°28'N - 30.00.5'W, 08°54'N - 30°02.5'W to 08°54.5'N - 30°01'W), SW of Cape Verde Islands 09°15'N - 30°01.5'W, 12°21.5'N - 30°07.5'W), W of Cape Verde Islands (14°27'N - 30°02'W), SW of Cape Verde Islands (10°59.3'N - 27°03.8'W, 07°17'N - 28°01.9'W), NE of St. Helena Is land (14°25.9'S-02°51.5'W), off Canary Islands (27°26.4'N - 19°30.6'W), SW of Luanda, Angola (10°19'S-09°36.4'E), NW of Luanda, Angola (08°26.5'S-05°59.4'E), S of Ivory Coast (Gulf of Guinea) (02°53.2'S-04°21.5'W), W of Monrovia, Liberia (05°38.7'N - 14°03.1'W), W of Free Town, Sierra Leone (07°58'N - 16°36.3'W), SW of Port Guinea (10°29.8'N - 18°46.1'W), SE of Necochea, Argentina (42°08.8'S-51°35'W), SW of Lüderitz, South Africa (28°52.9'S-13°20.4'E)</p>	Totton, 1954
Indian Ocean	<p>Amirante, Chagos (under the name of <i>Diphyes bigelowi</i>)  S of Cape Agulhas, South Africa (38°08'S-20°56.1'E), Northwest Prince Edward Island (45°48.4'S-27°13.6'E), S of Port Elizabeth, South Africa (43°07.4'S-25°04.6'E), NE of Ile Amsterdam (32°01.5'S-93°40.4'E), NW of Prince Edward Island (40°42'S-36°05.5'E), SE of East London, South Africa (34°47.6'S-34°27.9'E), SW of Cape St. Marie, Madagascar (27°24.3'S-39°21.2'E), E of Zanzibar</p>	Browne, 1926

TABLE 3 (cont.)

Region	Localities	Reference
Indian Ocean	(07°42.1'S-44°14.1'E), SE of Mogadiscio, Somali (00°06'S-49°45.4'E) E of Mogadiscio (02°39.4'N - 50°46.4'E), SE of Dante, Somali (06°05'N - 52°00'E), off Alphonse Island, Seychelles (07°08.6'N - 52°19.3'E)	Totton, 1954
Mediterranean	Western region off Gibraltar (35°54'N - 05°09'W) Western part of Alboran Sea, N of Africa, from Balearic Islands to Sardinia and Corsica, French Riviera, Ionian Sea as far east as 19°E, in the Gulf of Sirte Gulf of Lyon Gulf of Naples, Bocca Grande, S of Capri	Alvariño, 1957a Bigelow and Sears, 1937 Furnestin, 1960 Kinzer, 1965
Pacific Ocean and adjacent seas	Off San Diego, California  South China Sea Marshall Islands: Bikini Atoll (outside lagoon) SE of Tasmania (47°18.2'S-150°20.8'E), S of Pitcairn Island (47°16.9'S-132°25.1'W), SE of Pitcairn Island (42°30'S-124°51.7'W, 45°36.1'S-122°09.5'W), E of South Island, New Zealand (45°28.4'S-179°06.4'E), SE of South Island, New Zealand (47°41.6'S-178°16'W), SE of Pitcairn Island (41°03.1'S-126°03.9'W)	Alvariño, 1967b  Alvariño, 197a Sears, 1950 Totton, 1954



TABLE 3 (cont.)

Region	Localities	Reference
<u>Lensia reticulata</u>	Totton 1954	
Atlantic Ocean	Off Tuxpan (Gulf of Mexico)	Alvariño, 1969
Indian Ocean	SE of Mogadiscio, Somali (00°06'S- 49°45.4'E), E of Mogadiscio (02°39.4'N - 50°46.4'E)	Totton, 1954
Pacific Ocean	Western region, Philippine and Indonesian waters	Alvariño, 1967b
	Off San Diego, California	Alvariño, 1967b

TABLE 3 (cont.)

Region	Localities	Reference
<i>Lensia subtilis</i>	Chun 1886	
Atlantic Ocean	Off Long Island, Atlantic City, off Georges Bank, off the Amazon (16°45'N - 59°46'W, 16°55'N - 56°20'W), off Costa Rica (10°04.4'N - 80°21.5'W), Bay of Biscay (47°31'N - 06°04'W, 45°41'N - 05°12'W, 46°43'N - 04°44'W)	Alvariño (unpublished data)
	Equatorial region off the Amazon estuary	Alvariño, 1967c
	Off Panama in the Caribbean Sea	Alvariño, 1969
	Bay of Biscay (46°43'N - 47°29'N and 07°15'W-08°18'W)	Bigelow, 1911b
	Off Africa	Cervigón, 1961
	Canary Islands	Chun, 1888
	Moroccan region (Tangier to Cabo Juby)	Furnestin, 1957
	Gulf Stream, Sargasso Sea	Grice and Hart, 1962
	Off Free Town, Cape Verde Islands, along George Town, off the Amazon, NE of St. Paul Rocks, Gulf of Guinea, along Brazil from Pará to Cape San Roque, off Cape San Roque, from Cape San Roque to Bahía, off Bahía, off Rio de Janeiro, off Florianopolis, off Rio Grande do Sul, off Buenos Aires, Trindade Island, be- tween St. Helena and Tristan da Cunha, off Cape Buena Esperanza, off Orange River, off Gr. Fish Bay, off São Paulo de Loanda	Leloup, 1934a
	W of Azores, SW of Azores	Leloup, 1955
	Off Cape of Good Hope (36°40'S - 16°22.5'E), off south west Africa (28°35'S-11°14'E, 28°28'S-08°26.5'E), 28°30'S-03°48'E, 28°31'S-00°29'E, 28°02'S-04°50'W, 28°00'S-07°50'W), N of Tristan da Cunha group (27°45'S- 13°06'W, 27°52'S-15°56'W), NW of Tristan da Cunha group (28°05'S- 19°22'W, 28°25.8'S-26°30'W), off southern Brazil (29°31'S-32°33'W, 29°41'S-35°02'W, 29°52'S-41°37'W, 29°15'S-43°40'W, 28°37'S-45°38.5'W,	

TABLE 3 (cont.)

Region	Localities	Reference
Atlantic Ocean	<p>28°05.5'S-46°44.5'W), E of Uruguay (32°35'S-30.00'W, 32°39'S -48°54'W, 32°21'S-50°10'W), SE of Montevideo (37°21'S-51°53'W), E of St. Helena Island (15°02.6'S-00°06.7'W), N of Trindade Island (15°54'S-30°03'W), off east coast of Brazil (17°12'S-35°42'W, 20°30.5'S-35°25.3'W), off Rio de Janeiro (23°08.5'S-42°05.1'W, 23°44'S-34°54'W), SW of Trindade Island (23°36'S-31°48'W), S of Trindade Island (22°39'S-27°55'W), SE of Trindade Is-and (22°01.5'S-23°47'W), E of Trindade Isand (21°36'S-20°29'W, 21°30.3'S-11°42.6'W), S of St. Helena Island (21°28'S-04°54.5'W), W of Luanda, Angola (09°00'S-06°00'E), E of Ascension Island (09°07.8'S-02°02.5'W, 09°05'S-08°27'W)a E of Recife, Brazil (08°59.6'S-25°59.7'W), off Salvador, Brazil (12°45'S-37°24'W), off Natal, Brazil (05°48'S-34°43'W), off Guinea, Africa (09°01'N - 17°40'W), S of Liberia (00°03'N - 09°30'W), off Ghana (04°30'N - 01°00.4'W), off Fernando Poo, Africa (03°47.9'N - 08°28.5'E), Gulf of Guinea (00°30.8'N - 01°51.8'E) S of Liberia (01°17.5'N - 09°30.9'W), SW of Fernando de Noronha Rocks (02°28'S-34°56'W), NW of Fortaleza (02°03'S-39°20'W), Sts. Peter and Paul Rocks (05°07.6'N - 33°19.5'W), NW of Peter and Paul Rocks (06°18.9'N - 31°46.9'W), W of Guinea (10°12.4'N - 26°36.1'W), SE of Cape Verde Islands (13°42'N - 19°49'W), N of Cape Verde Islands (19°16.8'N - 22°30.6'W), off Cape Verde Islands (17°22.2'N - 22°00.8'W), NW of Cape Verde Islands (19°15.7'N - 27°27.4'W, 18°59'N - 33°25'W, 18°31.7'N - 36°45.4'W), N of French Guiana (09°07'N - 50°56.9'W, 07°48.7'N - 52°14'W), N of Belém, Brazil (01°04.3'N - 46°24.5'W), SW of Cape Verde Islands (14°31.7'N - 29°37.8'W), W of Cape Verde Islands (15°45.6'N - 27°19.4'W), N of Cape Verde Islands (19°17.4'N - 24°59.5'W)</p>	Leloup and Hentschel, 1938

TABLE 3 (cont.)

Region	Localities	Reference
Atlantic Ocean	Bermuda	Moore, 1949
	Florida Current, off Miami	Moore, 1953
	Gulf of Biscay; (49°N - 35°S), Benguela Current, Trindade Island, between Tristan da Cunha and South Africa, off western South Africa, (at about 07° - 04° or 01°E-02°W), St. Helena Island, SE of Ascension Island, between St. Paul and St. Tomé, St. Paul Island	Moser, 1925
Indian Ocean	Bay of Biscay	Patrity, 1965
	Central waters	Alvariño, 1964b
	Chagos	Browne, 1926
	SE of Cape Agulhas (39°46'S-22°12'E)	Leloup and Hentschel, 1938
	Between St. Paul and Madagascar, SE of Madagascar	Moser, 1925
	Off south and east coasts of Africa, Cape Agulhas, Madagascar, SE of Mogadiscio, Somali (00°06'S-49°45.4'E), E of Mogadiscio (02°39.4'N - 50°46.4'E), E of Chagos (05°02'S-89°47'E), NW of Chagos (02°00'S-89°40'E)	Totton, 1954
Mediterranean	Adriatic (42°32'N - 17°57'E), S of Andrije Lighthouse	Huré, 1955
	Insel Procida (north entrance to Gulf of Naples)	Kinzer, 1965
	Villefranche-sur-Mer, off Cape Ferrat	Leloup, 1935a
	Monaco (as <u>L. subtilis</u> Lens and Riemsdijk, thus it could be <u>L. subtiloides</u> )	Leloup, 1936
	Monaco	Leloup, 1936a
	Mediterranean	Moser, 1925
	Villefranche	Totton, 1954
Pacific Ocean	Gulf of Thailand	Alvariño, 1963

TABLE 3 (cont.)

Region	Localities	Reference
Mediterranean	Villefranche-sur-Mer	Leloup, 1935a
	Adriatic (48°01'N - 39°46'W), Villefranche	Totton, 1954
Pacific Ocean	Tropical equatorial Pacific	Alvariño, 1964b
	Bay of Nhatrang	Leloup, 1956
Red Sea	Port Sudan, north Gulf of Aqaba	Totton, 1954

TABLE 3 (cont.)

Region	Localities	Reference
Pacific Ocean	Bay of Nhatrang	Leloup, 1956
	New Guinea	Moser, 1925
	Marshall Islands: Bikini Atoll (inside and outside lagoon), Rongelap Atoll (inside lagoon), Rongerik Atoll (inside and outside lagoon), between 02° 15' S- and 09° 00' N and 166° 39' E-168° 00' E	Sears, 1950
	Great Barrier Reef	Totton, 1932
Red Sea	Central part, Port Sudan, N of Gulf of Aqaba	Totton, 1954

TABLE 3 (cont.)

Region	Localities	Reference
<i>Lensia subtiloides</i>	(Lens and Riemsdijk) 1908	
Atlantic Ocean	Iberian region, off southern tip of Portugal (37°22'N - 09°13'W), off Cape Espichel (38°01'N - 09°21'W) Off Georges Bank	Alvariño, 1957b  Alvariño (unpublished data)
	Bay of Biscay	Bigelow and Sears, 1937
	S of Portugal (35°36'N - 08°25'W), SW of Azores (34°59'N - 33°01'W), off Azores (36°53'N - 29°47'W), N of Azores (46°48'N - 27°46'W)	Leloup, 1955
Indian Ocean and adjacent seas	Chagos, Mauritius, Farquhar, Amirante	Browne, 1926
	Gulf of Aden: Alayu, Mukalla, Aden, Bulhar, W of Perth, Australia (31°58.1'S-114°52.2'E), NE of East London, South Africa (31°54.7'S - 29°48'E), NE of East London (32°00'S-29°43.3'E)	Totton, 1954
Mediterranean	Western region: off Gibraltar (35°54'N - 05°09'W, 35°53'N - 05°00'W, 36°24'N - 04°59'E)	Alvariño, 1957a, 1958
Pacific Ocean and adjacent seas	South China Sea	Alvariño, 1963
	Western region, Philippines, Indonesian waters	Alvariño, 1964b
	Off San Diego, California	Alvariño, 1967b
	South China Sea, Gulf of Thailand	Alvariño, 197a
	Java Sea, Sunda Strait	Delsman, 1939
	Bay of Nhatrang	Leloup, 1956
	Malayan region: Sulu Island, Ternate Anchorage, E of Kojoa Island, N of Salomakil, W of Gebe Island, N of Sabuda, Gisser and Ceram, S of Manipa Island, N of Manipa Strait, W of Binongka	Lens and Riemsdijk, 1908
	Manila Bay	Rees and White, 1966
	Great Barrier Reef (outside and in Trinity Opening)	Russell and Colman, 1935

TABLE 3 (cont.)

Region	Localities	Reference
Pacific Ocean and adjacent seas	Marshall Islands: Bikini Atoll (outside lagoon), Rongerik Atoll (outside lagoon)	Sears, 1950
	Great Barrier Reef	Totton, 1932
Red Sea	Port Sudan, off Kamaran, Jaffatin Islands	Totton, 1954



TABLE 3 (cont.)

Region	Localities	Reference
<u>Lensia tottoni</u>	A. Daniel and R. Daniel 1963	
Atlantic Ocean	Equatorial region off the Amazon estuary	Alvariño, 1967c
Indian Ocean	Bay of Bengal	Daniel and Daniel, 1963

TABLE 3 (cont.)

Region	Localities	Reference
<i>Chuniphyes moserae</i>	Totton 1954	
Atlantic Ocean	Off South Africa (30°09'S-04°42'W), SW of St. Helena (19°13'S-13°44'W, 18°58'S-10°15'W), S of Liberia (00°56'N - 11°29'W)	Alvariño (unpublished data)
	SW of Ascension Island, N of Trindade Island, E of St. Paul Island, NE of St. Paul Island, Cape Verde Islands, N of Cape Verde Islands	Moser, 1925
	Off Bermuda, Atlantic Antarctic (66°16.7'S-13°3'W)	Totton, 1954
Indian Ocean	Off Somalia (06°05'N - 52°00'E), off Zanzibar	Totton, 1954
Pacific Ocean	Sea of Cortés	Alvariño, 1965a
	South China Sea (13°34'N - 110°37'E)	Alvariño, 197a

TABLE 3 (cont.)

Region	Localities	Reference
<i>Chuniphyes multidentatus</i> and Riemsdijk 1908		
Atlantic Ocean	Off Cape Town (33°47'S-15°48'E), off South Africa (32°30'S-09°04'E, 31°11'S-00°55'E, 30°23'S-02°47'W, 30°09'S-04°42'W), SW of St. Helena (18°58'S-10°15'W), S of Liberia (00°56'N - 11°29'W)	Alvariño (unpublished data)
	Bay of Biscay (46°43'N - 47°29'N and 07°15'W-08°18'W)	Bigelow, 1911b
	Chesapeake Bay to Bermuda (32°26'N - 69°21'W)	Bigelow, 1918
	ESE of Bermuda (27°42'N - 46°59'W)	Bigelow, 1931
	Bay of Biscay, off Lisbon, off Cape San Vicente, Sea of Spain	Bigelow and Sears, 1937
	Northeast Atlantic, Scottish Shelf Area	Fraser, 1961, 1967
	South Georgia Islands	Hardy and Gunther, 1935
	SW of Iceland (63°19'N - 26°50'W), SW of Cape Farewell (59°30'N - 45°23'W), southern part of Davis Strait (62°19'N - 56°00'W, 61°47'N - 52°55'W)	Kramp, 1942
	Near Azores (38°N - 18°W)	Leloup, 1932a
	Bay of Biscay (46°38'N - 05°26'W, 46°31'N - 05°13'W, 46°29'N - 05°19'W, 45°28'N - 05°43'W, 46°15'N - 07°09'W), off Portuguese coast (42°58'N - 08°56'W, 38°02'N - 10°44'W), Azores area (36°35'N - 27°12'W, 38°04'N - 26°07'W, 37°28'N - 25°53'W, 36°17'N - 28°53'W), W of Azores (38°30'N - 34°40'W), E of Azores (37°13'N - 19°10'W), between the Canaries and the Azores (31°06'N - 24°06'W, 31°46'N - 25°00'W, 30°46'N - 26°41'W)	Leloup, 1933
	Along the Brazilian coast, off Georgetown, off the Amazon, Gulf of Guinea, between St. Helena and Tristan da Cunha	Leloup, 1934a
	Canary Islands region (29°16'N - 16°11'W)	Leloup, 1936b

TABLE 3 (cont.)

Region	Localities	Reference
Atlantic Ocean	Off Portugal (40°56'N - 09°28'W), near Gibraltar (35°36'N - 08°25'W, 35°10'N - 07°55'W), W of the Canary Islands (29°06'N - 25°02'W), Sargasso Sea (31°20'N - 35°07'W, 36°53'N - 29°47'W, 34°44'N - 47°52'W, 34°59'N - 33°01'W, 36°52'N - 39°55'W), northern North Atlantic (39°30'N - 49°42'W, 47°34'N - 43°11'W, 48°02'N - 39°55'W, 48°02'N - 36°53'W, 48°04'N - 32°25'W, 45°26'N - 25°45'W, 46°58'N - 19°06'W, 48°24'N - 13°55'W), SW of Ireland (50°13'N - 11°23'W), NW of Ireland (56°33'N - 09°30'W), NW of Scotland (57°41'N - 11°48'W)	Leloup, 1955
	Canary Islands (28°02'S-40°50'W), N of Ascension (02°06.8'S-05°13.4'W), East Equatorial Current system (12°37.6'N - 47°36.1'W, 11°01.7'N - 49°33.4'W, 03°43'N - 44°23'W, 07°25'N - 52°44'W)	Leloup and Hentschel, 1938
	01°S to 30°S, 53°N - 32° S	Moser, 1925
	Bay of Biscay	Patriti, 1965
	Bermuda (32°08'N - 32°16'N and 64°40'W-64°31'W)	Totton, 1936
Pacific Ocean and adjacent seas	Santa Barbara Channel and Santa Cruz Basin (California)	Alvariño (unpublished data)
	Gulf of Thailand, South China Sea (09°54'N - 110°34'E)	Alvariño, 197 a
	E of Albatross plateau, NE of Eastern Islands	Bigelow, 1911a
	Line from San Francisco to Unalaska Island, Eastern Sea	Bigelow, 1913
	China Sea, vicinity of Hong Kong	Bigelow, 1919
	Off California	Bigelow and Leslie, 1930
	Malayan region (01°04'S-127°25.3'E)	Lens and Riemsdijk, 1908

TABLE 3 (cont.)

Region	Localities	Reference
<i>Chuniphyes multidentata</i> adoxid form:		
<i>Chuniphyes problematica</i> Moser 1925		
Atlantic Ocean	SW of South Africa (47°33'S - 12°40'E), W of St. Helena (16°20'S-33°19'W), E of Ascension (08°44'S-12°27.3'W), W of Ascension (08°49'S-16°40'W), off Liberia (05°04'N - 14°56.6'W), off northern Brazil (00°58.3'S-38°44.1'W, 03°43'N - 44°23'W), off French Guiana (07°48.7'N - 52°14'W), tropical North Atlantic (15°04'N - 44°39.3'W, 12°37.6'N - 47°36.1'W, 09°07'N - 50°56.9'W)	Leloup and Hentschel, 1938
	Cape Verde Islands	Moser, 1925
	Bay of Biscay	Patrity, 1965
Pacific Ocean	Off San Diego, California	Alvarino, 1967b

TABLE 3 (cont.)

Region	Localities	Reference
<u>Clausophyes galeata</u>	Lens and Riemsdijk 1908	
Antarctic Ocean	Off the Antarctic Ice edge in the Australian Basin (58°35'S-92°06.2'E)	Totton, 1954
Pacific Ocean	Off San Diego, California	Alvariño, 1967b

TABLE 3 (cont.)

Region	Localities	Reference
<i>Clausophyes ovata</i>	Keferstein and Ehlers 1861	
Atlantic Ocean	Bay of Biscay (46°15'N - 70°09'W, 46°38'N - 05°26'W), N of the Canary Islands (30°41'N - 17°46'W), NW of the Canary Islands (31°46'N - 25°00'W, 30°46'N - 26°41'W), near the Azores (37°28'N - 25°53'W, 36°17'N - 28°53'W, 39°36'N - 26°05'W), W of the Azores (38°30'N - 34°40'W)	Leloup, 1933
	Near the Azores (36°17'N - 28°53'W)	Leloup, 1936b
	St. Paul (05°07'N - 33°19'W)	Leloup and Hentschel, 1938
	Between St. Paul and St. Tomé, NE of St. Paul, Cape Verde Islands, N of Cape Verde Islands	Moser, 1925
	Bay of Biscay	Patriti, 1965
	W of Cape Town (33°20'S-15°18'E, 34°46'S-15°08'E, 33°50'S-16°04'E, 34°13'S-15°49'E), E of South Georgia (54°17'S-34°47'W), NE of South Georgia (49°58'S-29°52'W to 49°58'S-30°13'W), SW of Tristan da Cunha (43°08'S-30°15'W), NW of Tristan da Cunha (34°08'S-29°50'W), tropical North Atlantic (08°54'N - 30°02'W, 14°27'N - 30°02'W)	Totton, 1954
Mediterranean	Off the French Riviera (42°53'N - 08°22'E)	Leloup, 1933
	Villefranche-sur-Mer	Moser, 1925
Indian Ocean	SE of South Africa (37°50.1'S-35°46.6'E), Indian Antarctic off Wilkes Land (58°35'S-92°06.2'E), N of St. Paul (32°12'S-75°32.6'E)	Totton, 1954
Pacific Ocean	Off San Diego, California	Alvariño, 1967b

TABLE 3 (cont.)

Region	Localities	Reference
<i>Crystallophyes amygdaloides</i> Moser 1925		
Atlantic Ocean	South Georgia Islands, between South Georgia Islands and the Malvinas W of South Georgia Islands (54°45'S) South Georgia Islands (54°45'S -43°23'W)  E of Sandwich Islands (57°36'S-29°54.5'W), between South Georgia and Sandwich Islands (53°34.5'S-30°25.5'W), N of South Georgia Islands (43°08'S-30°15.5'W), off South Africa (33°20'S-15°18'E to 33°46'S-15°08'E), E of Bouvet (54°20'S-03°48'E), N of South Georgia Islands (53°28'S-36°20'W, 53°28'S-37°08'W), E of South Georgia Islands (54°19'S-35°03'W, 54°13.5'S-34°18.5'W to 54°10.5'S-34°16.5'W, 54°11'S-33°49'W to 54°08'S-33°47.5'W), S of South Georgia Islands (55°33'S-36°49.5'W to 55°31.5'S-36°49.5'W, 55°09'S-36°48'W, 55°13'S-36°09.5'W), NE of South Georgia Islands (53°07'S-34°48'W to 53°07.5'S-34°45.5'W, 53°16.5'S-35°02.5'W to 53°17'S-34°58'W), off Guinea (10°29.8'N -18°46.1'W), N of South Georgia Islands (53°34'S-38°15'W), NW of South Georgia Islands (53°19'S-45°16'W), NE of South Georgia Islands (55°20'S-34°46'W, 54°01'S-35°14'W)	Hardy and Gunther, 1935 Leloup, 1934a Leloup and Hentschel, 1938 Totton, 1954
Indian Ocean	Off Somali coast (00°06'S-49°45.4'E), off Somali (02°39.4'N -50°46.4'E) Indian Ocean Antarctic: NE of Iles Crozet (44°46.8'S-55°29.5'E), SE of Iles Crozet (47°22.5'S-56°19.5'E), SE of Heard Island (57°35.7'S-82°49.2'E, 57°49.2'S-84°23.9'E, 58°35'S-92°06.2'E)	Totton, 1954 Totton, 1954
Antarctic Ocean	Wilkes Land at about 63°S-80°E, off Antarctica Antarctic between 59°E and 98°E, Ice edge (60°06.7'S-102°02'E), SW of Australia (60°06.7'S-102°48.6'E, 53°14.9'S-107°02'E)	Moser, 1925 Totton, 1954
Pacific Ocean	Off San Diego, California	Alvariano, 1967b



TABLE 3 (cont.)

Region	Localities	Reference
<i>Conophyes diaphana</i>	Leloup 1934	
Atlantic Ocean	NW of Cape Verde Islands (18°31'N - 36°45'W)	Leloup, 1934

TABLE 3 (cont.)

Region	Localities	Reference
<i>Heteropyramis maculata</i> Moser 1925		
Atlantic Ocean	Northeast and Scottish region	Fraser, 1967
	N of French Guiana (07°25'N - 52°44'W), S of Cape Verde Islands (11°24.6'N - 23°59'W), Gulf of Guinea (00°30.8'N - 01°51.8'E), NW of St. Helena (06°11'S - 32°34'W), W of S. George (54°45'S - 43°23'W)	Leloup and Hentschel, 1938
	SE of Fernando de Noronha at about 11 °S, Ascension Island, W and NW of St. Paul, Cape Verde Islands	Moser, 1925
	W of Ireland (54°15'N - 14°32'W), SW of Cape of Good Hope (33°20'S-15°18'E to 33°46'S-15°08'E), N of St. Paul Rocks (02°59.5'N - 29°59'W), between Cape Verde Islands and St. Paul Rocks (08°54'N - 30°02.5'W), SW of Cape Verde Islands (14°27'N - 30°02'W), off Angola (08°26.5'S-05°59.4'E), W of Monrovia, Liberia (05°38.7'N - 14°03.1'W)	Totton, 1954
Indian Ocean	Off Somali (00°57.8'S-49°26.7'E, 00°06'S-49°45.4'E, 06°05'N - 52°00'E)	Totton, 1954
Pacific Ocean	Off San Diego, California	Alvariño, 1967b

TABLE 3 (cont.)

Region	Localities	Reference
<i>Thalassophyes crystallinus</i> Moser 1925		
Atlantic Ocean	Northeast and Scottish region NW of South Georgia (487°21'S-42°36'W)  W of Cape Town (33°20'S-15°18'E, 33°53'S-09°26'E, 33°45'S-15°08'E), SW of Cape Agulhas (35°29'S-18°33'E, 45°03'S-17°03'E), E of the South Sandwich Islands (57°36'S-29°24.5'W), between South Georgia and the South Sandwich Islands (53°34.5'S- 30°25.5'W), NE of South Georgia (49°58'S-29°52'W, 45°01.3'S- 00°33.7'E, 43°08'S-30°15'W), off South West Africa (18°26.5'S- 05°59.4'E), Guinea Basin (02°53.2'S- 04°21.5'W), near South Georgia (53°33'S-37°45'W), W of South Georgia (55°20'S-34°46'W), NW of Eagle Island, off Livingston Island, South Shetland (62°49'S-60°10'W), SW of Prince Edward Island (52°26'S-37°14'W, 55°33'S-34°35'W, 53°39'S-35°47'W, 53°07'S-34°48'W, 55°40'S-34°23'W)	Fraser, 1967 Leloup and Hentschel, 1938 Totton, 1954
Indian Ocean	S of the Kerguelen Islands, Port Natal E of Cape Agulhas (34°47.6'S- 34°27.9'E), off the Somali Republic (00°06'S-49°45.4'E, 07°08.6'N - 52°19.3'E), entrance to the Gulf of Aden (11°32.3'N - 52°03'E), Indian Antarctic (58°02.2'S-58°01.3'E, 56°35'S-78°07.8'E, 57°55.6'S- 61°49.8'E, 58°35'S-92°06.2'E, 60°06.7'S-102°48.6'E), between Crozet and Kerguelen Islands (47°22.5'S-56°19.5'E)	Moser, 1925 Totton, 1954

TABLE 3 (cont.)

Region	Localities	Reference
<i>Abyla bicarinata</i>	Moser 1925	
Atlantic Ocean	SW of St. Helena (18°55'S- 10°15'W)	Alvariño (unpublished data)
	Southeast Atlantic, W of Angola (08°13'S-02°53'E)	Sears, 1953
Pacific Ocean	South China Sea	Alvariño, 197 a
	South Fiji Basin (24°46.5'S-170°18.5'E, 25°54'S-172°36.9'E, 27°21'S- 175°11'E), E of Sydney (33°33'S- 154°94'E), South China Sea (15°22'N - 115°20'E), Formosa Strait (25°27'N - 121°30'E), S of Japan (30°20'N - 138°60'E), Banda Sea (05°28'S- 130°39'E)	Sears, 1953
Indian Ocean	Deep layers of the Indian Ocean equatorial region, close to Indonesia in the northeastern part of the region sampled by the Monsoon Expedition	Alvariño, 1964b
	S of the Mascareñas	Moser, 1925
	SW of the Nicobar Islands (05°50'N - 93°28'E), N and E of the Seychelles (00°07'S-63°56'E, 01°12'N - 62°19'E, 03°36'S-58°19'E), N of Madagascar (11°24'S-50°05'E), SW of Madagascar (25°19'S-36°13'E)	Sears, 1953

TABLE 3 (cont.)

Region	Localities	Reference
<i>Abyla brownia</i>	Sears 1953	
Pacific Ocean	Western Pacific, Philippine and Indonesian waters	Alvariño, 1964b
	South Fiji Basin (25°54'S-172°36.9'E), South China Sea (12°44'N - 110°45'E)	Sears, 1953
Indian Ocean	NE of the Seychelles (03°36'S-58°19'E), Mozambique Channel (25°19'S-36°13'E)	Sears, 1953

TABLE 3 (cont.)

Region	Localities	Reference
<i>Abyla carina</i>	Haeckel 1888	
Atlantic Ocean	SW of St. Helena (18°58'S-10°15'W), off the Amazon (15°33'N - 577°39'W)	Alvariño (unpublished data)
	Equatorial region off the Amazon estuary	Alvariño, 1967c
	Near Ascension (08°26'S-15°11'W), off Morocco (33°08'N - 10°22'W), near the Azores (41°55'N - 32°22'W), E of Ascension (17°34'S-08°48'W)	Sears, 1953
	Gulf of Mexico	Sears, 1954
	Off Africa in the Sierra Leone Basin (05°30'N - 17°45'W), SE of the Cape Verde Islands (12°08'N - 20°53'W), SW of the Cape Verde Islands (14°27'N - 30°02'W), near Fernando de Noronha (03°26.2'S-32°08.3'W), off Africa in the Guinea Basin (02°53.2'S-04°21.5'W)	Totton, 1954
Pacific Ocean	South China Sea	Alvariño, 197 a
	Bay of Amboina (Indonesia)	Bedot, 1896
	South Fiji Basin (24°46.5'S-170°18.5'E, 25°54'S-172°36.9'E), off east Austra- lian coast (33°33'S-154°94'E), Banda Sea (05°52'S-131°14'E, 05°28'S- 130°39'E, 04°05'S-128°16'E), Moluccas Islands area (02°22'S-126°58.5'E), N of western New Guinea (03°40.5'N - 137°53'E), E of Honshu (36°20'N - 143°00'E)	Sears, 1953
Indian Ocean	Deep layers of the equatorial region close to Indonesia	Alvariño, 1964b
	Near Cocos (12°05'S-96°45'E), between the Maldives and the Seychelles (00°07'S- 63°56'E, 01°12'N - 62°19'E), near the Seychelles (03°36'S-58°19'E, 03°45'S- 56°33'E), N of Madagascar (11°24'S- 50°05'E), Mozambique Channel (18°30'S- 42°18'E, 25°19'S-36°13'E)	Sears, 1953

TABLE 3 (cont.)

Region	Localities	Reference
<i>Abyla haeckeli</i>	Lens and Riemsdijk 1908	
Atlantic Ocean	Off the Amazon (16°45'N - 59°46'W, 15°15'N - 59°39'W, 08°58'N - 53°29'W), off Honduras (16°26'N - 84°53'W), entrance to the Gulf of Cariaco (10°30'N - 65°11'W)	Alvariño (unpublished data)
	Equatorial region off the Amazon estuary	Alvariño, 1967c
	Caribbean Sea	Alvariño, 1969
	SW of Canary Islands (24°N - 20'W)	Leloup, 1932a
	NW of Canary Islands (31°18'N - 22°55'W)	Leloup, 1933
	Vicinity of Sts. Peter and Paul Rocks in equatorial Atlantic (00°50'N - 28°26'W to 01°04'N - 29°16'W) and W of Sts. Peter and Paul Rocks	Leloup, 1937
	Near the Canaries and in Equator (10°N - 10°S)	Moser, 1925
	Between Tenerife and Saint Tomás	Totton, 1925
Pacific Ocean and adjacent seas	South China Sea	Alvariño, 1963, 197 a
	Guatemala to Manzanillo	Alvariño, 1969
	W of Panama Gulf, S of Galápagos, 8°W of Callao, 6°W of Callao, NW of the Albatross plateau, Acapulco	Bigelow, 1911a
	South China Sea	Dawydoff, 1937
	Torres Strait	Huxley, 1859
	Malay Archipelago (Sulu Archipelago, Kabia Island)	Lens and Riemsdijk, 1908
	Torres Strait	Moser, 1925
	Great Barrier Reef (outside and in Trinity Opening)	Russell and Colman, 1935
	Banda Sea	Sears, 1953
	Great Barrier Reef	Totton, 1932

TABLE 3 (cont.)

Region	Localities	Reference
Indian Ocean and adjacent seas	Deep layers of the equatorial waters, close to Indonesia	Alvariño, 1964b
	N of Chagos (04° 16'S-71° 53'E)	Browne, 1926
	Malay Archipelago (Sulu Archipelago, Kabia Island)	Lens and Riemsdijk, 1908
	SE and NE of St. Paul Island	Moser, 1925
	Northeast Indian Ocean, northwest	Sears, 1953
	Indian Ocean, NE of Seychelles, off northern Madagascar, Mozambique Channel, off Lorenzo Marquez (South Mozambique Channel)	
	East Africa	Totton, 1954



TABLE 3 (cont.)

Region	Localities	Reference
<i>Abyla ingeborgae</i>	Sears 1953	
Atlantic Ocean	Southeast Atlantic (07°34, 5'S - 08°84'W), E of Ascension (00°31'S-11°02'W), equatorial region (08°13'S-02°53'E), off Angola	Sears, 1953
	Sierra Leone Basin (05°30'N - 17°45'W), SE of Cape Verde Islands (12°08'N - 20°53'W), W of Cape Verde Islands (14°27'N - 30°02'W), N of Fernando de Noronha (03°26.2'S-32°08.3'W)	Totton, 1954
Indian Ocean	NE of Seychelles (01°12'N - 62°19'E, 03°36'S-58°19'E), N of Madagascar (11°18'S-50°03'E), off Mozambique (25°19'S-36°13'E)	Sears, 1953
Pacific Ocean	Torres Strait, off New Guinea	Huxley, 1859

TABLE 3 (cont.)

Region	Localities	Reference
Abyla Peruana	Sears 1953	
Pacific Ocean	Off Peru	Bigelow, 1911a

TABLE 3 (cont.)

Region	Localities	Reference
<i>Abyla schmidti</i>	Sears 1953	
Atlantic Ocean	Off Cape Town (33°47'S- 15°48'E)	Alvariño (unpublished data)
	Off Margarita Island (Venezuela)	Alvariño, 1969
	Southeast Atlantic between Ascension and Angola Coast (08°13'S-02°54'E)	Sears, 1953
Pacific Ocean	South China Sea	Alvariño, 1963, 197a
	Off Guatemala	Alvariño, 1969
	South Fiji Basin (27°21'S-175°11'E), off east Australian coast (33°17'S- 152°45'E, 29°37.5'S-156°46'E), Banda Sea (05°52'S-131°14'E, 05°28'S- 130°39'E, 04°05'S-128°16'E, 02°22'S- 126°58.5'E), Moluccas Sea (00°29'N - 125°54'E, 01°42'N - 124°29'E), South China Sea (07°13.5'N - 111°49'E, 12°44'N - 110°45'E, 13°57'N - 112°45'E, 15°22'N - 115°20'E), Formosa Strait (25°27'N - 121°30'E, 20°03.5'N - 120°50'E), N of west New Guinea (03°40.5'N - 137°53'E)	Sears, 1953
Indian Ocean	Deep layers of equatorial waters near Indonesia	Alvariño, 1964b
	Near Cocos Island (12°05'S-96°45'E), near the Nicobar Islands (05°50'N - 93°28'E), NE of the Seychelles (00°07'S- 63°56'E, 01°12'N - 62°19'E, 03°36'S- 58°19'E), N of Seychelles (03°45'S- 56°33'E), N of Madagascar (11°24'S- 50°05'E), Mozambique Channel (18°30'S- 42°18'E, 25°19'S-36°13'E)	Sears, 1953
	E of Zanzibar (07°42.1'S-44°14.1'E), Gulf of Aden, W of Seychelles (05°39.1'S- 46°22.3'E, 04°25.9'S-47°10'E), between Seychelles and Somali coast (00°06'S- 49°45.4'E, 02°39.4'N - 50°46.4'E), off the Somali coast (06°05'N - 52°00'E, 07°08.6'N - 52°19.3'E, 11°32.3'N - 52°03'E), NW of St. Paul (32°12'S- 75°32.6'E)	Totton, 1954

TABLE 3 (cont.)

Region	Localities	Reference
<i>Abyla tottoni</i>	Sears 1953	
Atlantic Ocean	Near St. Helena in southeast Atlantic (15°41'S-05°50'W), between Ascension and St. Helena (11°00'S-07°36'W), E of Ascension (07°34'S-08°48'W)	Sears, 1953
	Southeast Atlantic, E of St. Helena (14°25.9'S-02°51.5'W), southwest Atlantic, off Brazil (11°02.1'S- 29°51'W)	Totton, 1954
Pacific Ocean	Western Pacific, Philippine and Indonesian waters	Alvariño, 1964b
	Between Timor and New Guinea (05°28'S-130°39'E)	Sears, 1953

TABLE 3 (cont.)

Region	Localities	Reference
<i>Abyla trigona</i>	Quoy and Gaimard 1827	
Atlantic Ocean	Equatorial region off the Amazon estuary	Alvariño, 1967c
	NW of the Canary Islands (30°47'N - 24°52'W)	Bedot, 1904
	Line from Chesapeake Bay to Bermuda, off Bermuda, line Bermuda to Bahamas, Straits of Florida, N of Bahama Banks	Bigelow, 1918
	Sargasso Sea, central Atlantic (28 °N - 30°N and 34°W, 25°N - 30°W), Cape Verde Islands, Guinea, South Equatorial Current	Chun, 1897
	Morocco (Tangier to Cabo Juby)	Furnestin, 1957
	Gibraltar Strait	Furnestin, 1958
	Off Morocco	Furnestin, 1964
	Sargasso Sea	Grice and Hart, 1962
	Along the Brazilian waters (31°N to 27 °N and 21 °W to 22 °W, 15°S-34°W 24°S-35°W, 13°30'N - 24°00'W, 10°N - 24°W, 01°S-23°W, 01°N - 24°W, 25°30'N to 15°N and 12°W to 20°20'W, 30°52'N - 13°52'W, 38°N - 18°W, 21°S- 25°W, 28°S-26°W, 20°N - 35°W)	Leloup, 1932a
	NW of the Canary Islands (30°47'N - 24°52'W, 27°43'N - 18°28'W), W of the Azores (38°30'N - 34°40'W)	Leloup, 1933
	Antillas Sea (22°01'N - 27°21'W)	Leloup, 1935b
	Western Canary Islands area (28°02'N - 17°18'W, 28°42'N - 20°00'W, 28°54'N 20°14'W), Sargasso Sea (34°59'N 33°01'W, 36°52'N - 39°55'W, 34°44'N - 47°52'W, 34°10'N - 45°24'W, 31°00'N - 52°55'W)	Leloup, 1955
	Bermuda	Moore, 1949
	Florida Current, off Miami (small number in autumn and winter)	Moore, 1953
	57°N - 27°S	Moser, 1925

TABLE 3 (cont.)

Region	Localities	Reference
Atlantic Ocean	NW of Tristan da Cunha (35°49'S-23°09'E), N of Tristan da Cunha (30°15'S-13°15'E), near St. Helena (15°41'S-05°50'E), S of Liberia (00°31'S-11°02'W), E of Sierra Leone (08°26'N - 15°11'W), Azores region (39°57'N - 24°59'W, 41°51'N - 32°22'W)	Sears, 1953
Pacific Ocean and adjacent seas	Southeastern Galápagos, Callao, between Callao and Easter Island, South Galápagos	Bigelow, 1911a
	Verde Island passage, off east coast of Luzon, China Sea, vicinity of Formosa, vicinity of Darvel Bay, Borneo, Gulf of Tomini, Celebes, Macassar Strait	Bigelow, 1919
	Torres Strait	Huxley, 1859
	Juan Fernandez Islands, New Pomerania (33°S-85°W)	Leloup, 1932
	Bay of Nhatrang	Leloup, 1956
	Malayan region (Saleyer Island, W of Binongka)	Lens and Riemsdijk, 1908
	Bismarck Archipelago (New Hannover, New Mecklenburg), Ceram Island, New Guinea	Moser, 1925
	Great Barrier Reef (not in the lagoon)	Russell and Colman, 1935
	Marshall Islands: outside lagoon in Bikini Atoll	Sears, 1950
	N of Formosa (24°15'N - 122°00'E), South China Sea (19°20'N - 119°48'E)	Sears, 1953
Indian Ocean and adjacent seas	Chagos, Mauritius, Saya de Malha, Farquhar, between Providence and Alphonse, Amirante	Browne, 1926
	S of Madagascar	Moser, 1925
	S of Java (09°09'S-114°47'E), NE of the Seychelles (01°06'N - 62°25'E, 03°36'S-58°19'E), Mozambique Channel (18°30'S-42°18'E)	Sears, 1953
	Gulf of Aden	Totton, 1954

TABLE 3 (cont.)

Region	Localities	Reference
<i>Abylopsis eschscholtzi</i> Muxley 1859		
Atlantic Ocean	Off Long Island, off Atlantic City, off Georges Bank, Gulf of Mexico (NW of Cuba, off Florida), N of Puerto Rico (24°27.1'N - 65°09.4'W), E of the Small Antilles (23°31.5'N - 55°00'W, 22°18'N - 45°00.5'W, 22°59.5'N - 44°58.2'W, 16°45'N - 46°28.8'W), off the Amazon (09°09.6'N - 47°02.7'W, 10°63.8'N - 45°00'W, 12°24.4'N - 51°17.1'W, 20°13'N - 60.07'W, 18°13'N - 59°57'W, 16°45'N - 59°46'W, 15°15'N - 59°39'W, 14°36'N - 58°35'W, 15°33'N - 57°39'W, 19°54'N - 53°24'W, 18°41'N - 52°58'W, 16°47'N - 52°16'W, 11°34'N - 49°58'W, 10°53'N - 50°54'W, 08°18'N - 54°22'W, 09°21'N - 51°43'W, 10°31'N - 53°22'W), off Honduras (16°59'N - 86°11'W, 16°57'N - 85°15.6'W, 16°26'N - 84°53'W, 15°44.4'N - 83°54'W), off Nicaragua (15°18'N - 83°09'W, 14°57.2'N - 83°15.2'W, 14°19.4'N - 83°08.6'W, 14°07'N - 83°01'W, 13°12'N - 82°25'W, 12°31'N - 81°51.5'W), off Costa Rica (10°43.8'N - 80°45.3'W, 10°04.4'N - 80°21.5'W), off Panama (09°24.7'N - 79°57.2'W), Gulf of Cariaco (Venezuela), near the mouth of the Orinoco River	Alvariño (unpublished data)
	Equatorial region off the Amazon estuary	Alvariño, 1967c
	Caribbean Sea and Gulf of Mexico	Alvariño, 1969
	Line from Chesapeake Bay to Bermuda, off Bermuda, line from Bermuda to Bahamas, Straits of Florida, N of Bahama Bank (28°10'N - 76°18'W)	Bigelow, 1918
	SE of Bermuda (30°49'N - 61°21'W)	Bigelow, 1931
	Off Africa (25°00'N - 20°15'N)	Cervigón, 1961
	Tropical region	Chun, 1888
	From about 41°N in the western region (Gulf Stream), and 30°N in central region to the South Equatorial Current (from Ascension to off the Amazon), off the Canary Islands	Chun, 1897

TABLE 3 (cont.)

Region	Localities	Reference
Atlantic Ocean	Moroccan region (Tangier to Cape Juby)	Furnestin, 1957
	Off Morocco	Furnestin, 1964
	Slope waters off Atlantic City, Chesapeake Bay, Gulf Stream, Sargasso Sea	Grice and Hart, 1962
	Off Bermuda	Hela, Moore and Owre, 1953
	Gulf of Cariaco (Venezuela)	Legaré, 1961
	Off Canary Islands, off Cape Verde Islands, off St. Paul Island, off coast of Brazil, off Rolas Island (west coast of Africa)	Leloup, 1932a
	W of Corvo Island, Azores (40°28'N - 36°32'W), NW of Azores (41°40'N - 41°27'W), off La Palma, Canary Islands (28°38'N - 17°59'W), off Hierro, Canary Islands (27°43'N - 18°28'W), W of Madeira (31°46'N - 25°00'W, 33°06'N - 25°07'W), SW of Canary Islands (26°55'N - 26°25'W, 25°45'N - 33°30'W, 26°00'N - 35°10'W), SW of Azores (29°50'N - 42°00'W, 30°00'N - 42°35'W, 31°44'N - 42°38'W, 33°03'N - 41°08'W), SW of Horta, Azores (33°51'N - 34°04'W), off Corvo, Flores Island, Azores (38°30'N - 34°40'W)	Leloup, 1933
	Tropical region, southern region	Leloup, 1934
	Off Cape Verde Islands, main ocean, off George Town, off the Amazon, off St. Paul Rocks, from Cape Verde Islands to St. Paul Rocks, off Free Town, off Monrovia, Gulf of Guinea, off Fernando de Noronha, from St. Paul Rocks to Ascension Island, S of Ascension Island, off Trindade Island, from Trindade Island to Tristan da Cunha group, off Rio Grande do Sul, between St. Helena and Tristan da Cunha group, off Cape Buena Esperanza	Leloup, 1934a
	Antillas Sea (22°01'N - 27°21'W)	Leloup, 1935b



TABLE 3 (cont.)

Region	Localities	Reference
Atlantic Ocean	Off Sts. Peter and Paul Rocks (01°33'N - 25°30'W, 00°50'N - 28°26'W, 01°04'N - 29°16'W)	Leloup, 1937
	Off La Palma, Canary Islands (28°42'N-20°00'W), SW of Azores (31°20'S-35°07'W), SW of Horta, Azores (34°59'N - 33°01'W), off Horta, Azores (06°53'N - 29°47'W), between Bermuda and Azores (34°44'N - 47°52'W), SW of Azores (36°10'N - 40°00'W), E of Bermuda (31°00'N - 52°55'W), SE of Bermuda (29°00'N - 56°55'W)	Leloup, 1955
	Off Cape Town, South Africa (34°49'S-17°47.5'E), off South West Africa (28°30'S-03°48'E, 28°02'S-04°50'W, 28°00'S-07°50'W), off Lüderitz, South West Africa (27°45'S-11°00'W), S of Trindade Island (28°25.8'S-26°30'W), off Cape Town, South Africa (34°02'S-15°48'E), S of Trindade Island (32°35'S-30°00'W), SE of Porto Alegre, Brazil (32°39'S-48°54'W, 32°21'S-50°10'W), midway between Ascension Island and Trindade Island (15°36'S-26°57'W), SE of São Salvador, Brazil (16°20'S-33°19'W), SE of Trindade Island (22°01.5'S-23°47'W), E of Ascension Island (08°44'S-12°27.3'W), SW of Ascension Island (09°02.6'S-19°49.6'W), E of Recife, Brazil (08°59.6'S-25°59.7'W), off Atoll of Fernando de Noronha Rocks (03°55.1'S-32°33.7'W), off Sts. Peter and Paul Rocks (00°36'N - 29°12'W), off Free Town, Sierra Leone (08°14.5'N - 19°25.1'W), off Conakry, Guinea (09°01'N - 17°40'W), off Monrovia, Liberia (05°04'N - 14°56.6'W), S of Cape Palmas, Liberia (00°03'N - 09°30'W), S of Accra, Ghana (03°03'N - 00°58'W, 01°07.5'N - 00°59'W), S of Cape of Three Points, Ghana (00°30.8'N - 01°51.8'E), NE of Sts. Peter and Paul Rocks (03°07'S-19°24'W, 06°11'S-32°34'W), S of Cape Verde Islands (10°12.4'N - 26°36.1'W), off Cape Verde Islands (17°22.2'N - 22°00.8'W), W of Cape Verde Islands (17°52.7'N - 39°19'W), off French	

TABLE 3 (cont.)

Region	Localities	Reference
Atlantic Ocean	Guiana (06°50.1'N - 52°51.1'W), off Mouths of Amazon River (01°04.3'N - 46°24.5'W), W of Cape Verde Islands (14°31.7'N - 29°37.8'W)	Leloup and Hentschel, 1938
	Tropical region	Mayer, 1900
	Off Bermuda	Moore, 1949
	Florida Current, off Miami (in Bermuda showed a winter maximum, but in Florida region it was more sporadic, appearing as a spring and autumn form)	Moore, 1953
	Florida Current, off Miami	Moore, 1955
	Florida Current, off Miami	Moore and Corbin, 1956
	Florida Current	Moore, Owre, Jones and Dow, 1953
	Tortugas, 40°N - 33°S, Port Natal, off Cape Verde Islands, SW of Ascension Island, N of Trindade Island, between Trindade Island and Tristan da Cunha group, N of Tristan da Cunha group, S of St. Helena Island, off St. Helena Island, N of St. Helena Island, SE of Ascension Island, off Ascension Island, N of Ascension Island, between St. Paul and St. Tomé, NE of St. Paul, off Cape Verde Islands, N of Cape Verde Islands, W of Canary Islands (about 35°W)	Moser, 1925
	Gulf of Mexico	Sears, 1954
	Off Brazil (Rio Grande, Catarina Island, Santos, Rio de Janeiro, Abrolhos Island)	Seguin, 1965
	Bermuda (32°08'N - 32°16'N and 64°40'W-64°31'W)	Totton, 1936
Mediterranean	Alborán Sea	Alvariño, 1957a
Indian Ocean and adjacent seas	Equatorial region	Alvariño, 1964b
	Off Chagos, Mauritius, Saya de Malha, Farquhar, Alphonse, Amirante Islands	Browne, 1926

TABLE 3 (cont.)

Region	Localities	Reference
Indian Ocean and adjacent seas	Rattlesnake voyage	Huxley, 1859
	Off southwest coast of Australia, off New Pomerania, off Bank of Patagonia, in Sharks Bay	Leloup, 1932a
	SW of Port Elizabeth, South Africa (39°46'S-22°12'E)	Leloup and Hentschel, 1938
	New Pomerania, between St. Paul and the Mascareñas, S of the Mascareñas, Sumatra, by Padang, N of New Pomerania, Baling Bing and Telvek Kasei, west coast	Moser, 1925
Mediterranean	Alborán Sea	Alvariño, 1957a
	Gulf of Lyon	Furneston, 1960
	Mediterranean, NW of Corsica	Leloup, 1933
	(42°53'N - 08°22'E), E of Cape Gata	
	(36°51'N - 01°30'W), off Cartagena	
Pacific Ocean	(37°39'N - 00°20'E), SE of Cape Gata	
	(36°27'N - 01°21'W), SW of Pityusae Isles (38°40'N - 01°10'E), E of Gibraltar (36°12'N - 04°40'W), SE of Pityusae Isles (38°24'N - 02°24'E)	
	South China Sea	Alvariño, 1963
	Tropical equatorial region extending into the central region	Alvariño, 1964b
	Off the entrance to the Sea of Cortés	Alvariño, 1965
	Gulf of Panama to Manzanillo	Alvariño, 1969
	South China Sea	Alvariño, 197 a
	Bay of Amboina	Bedot, 1896
	S of Manzanillo, off Acapulco, off Costa Rica, NE of Galàpagos, SE of Galàpagos, SW of Aguja Point, 10°W of Callao, off Callao, NE of Sala y Gómez Island, NE of Albatross plateau, off Galàpagos, W of Albatross plateau	Bigelow, 1911a
	Eastern Sea	Bigelow, 1913

TABLE 3 (cont.)

Region	Localities	Reference
Pacific Ocean	Off Corregidor Light, west coast of Luzon, off northern Mindanao, in the Molucca Passage	Bigelow, 1919
	Tagus Cove, Albemarle (08°16' or 17'S-91°34'W), NW of Marborough (00°00'-91°53'W)	Bigelow, 1931
	50 miles SW of Cape Male, Panama	Boone, 1933
	South China Sea	Dawydoff, 1937
	Bay of Nhatrang	Leloup, 1956
	West coast of Flores, Sulu Archipelago, off Sulu Island, off Menado, off eastern Kajoa, N of Salomakil, NE of Daram, W of New Guinea, between Gisser and Ceram, S of Manipa, in Buton Strait, off Paternoster Island	Lens and Riemsdijk, 1908
	New Guinea, Vulcan Island, N of Martins Island, St. George's Canal, Cape St. George in St. George Island	Moser, 1925
	Manila Bay	Rees and White, 1966
	Great Barrier Reef (outside and in Trinity Opening)	Russell and Colman, 1935
	Marshall Islands: inside and outside lagoon in Bikini Atoll, inside lagoon Rongelap Atoll, inside and outside lagoon Rongerik Atoll, outside lagoon Eniwetok Atoll, midway between Gilbert and Solomon Islands, 02°15'S-09°00'N and 166°39'E-168°00'E	Sears, 1950
	Great Barrier Reef	Totton, 1932
	Kamaran Islands	Totton, 1954
Red Sea		

TABLE 3 (cont.)

Region	Localities	Reference
<i>Abylopsis tetragona</i>	Otto 1823	
Atlantic Ocean	Iberian region: off Cape Santa Maria in Sea of Spain (36°52'N - 07°39'W), off Cape San Vicente (37°22'N - 09°13'W), off Villa Nova Milfontes (37°40'N - 09°18'W), off Cape Espichel (38°01'N - 09°21'W), off Cape Raso (38°21'N - 09°25'W)	Alvariño, 1957b
	Off Long Island, off Atlantic City, off Georges Bank, off Cape Town (33°47'N - 15°48'E), off South Africa (32°30'S - 09°04'E, 30°09'S - 04°42'W), SW of St. Helena (19°13'S - 13°44'W), Gulf of Mexico (NW of Cuba, off Florida), off the Amazon (12°24.4'N - 51°17.1'W, 20°13'N - 60°07'W, 15°15'N - 59°39'W, 15°33'N - 57°39'W, 13°39'N - 49°46'W, 11°34'N - 49°58'W, 09°35'N - 52°31'W, 08°58'N - 53°29'W, 08°18'N - 54°22'W, 07°28'N - 54°52'W, 09°21'N - 51°43'W), off Guatemala (15°56.7'N - 88°20'W), off Honduras (16°59'N - 86°11'W, 16°57'N - 85°15.6'W, 16°26'N - 84°53'W, 16°07'N - 84°40'W, 15°44.4'N - 83°54'W), off Nicaragua (15°18'N - 83°09'W, 14°57.2'N - 83°15.2'W), off Panama (09°24.7'N - 79°57.2'W), entrance to the Gulf of Cariaco (10°30'N - 65°11'W), near the mouth of the Orinoco River	Alvariño (unpublished data)
	Equatorial region off the Amazon estuary	Alvariño, 1967c
	Caribbean Sea and Gulf of Mexico	Alvariño, 1969
	E of Azores (38°32'N - 16°35'W)	Bedot, 1904
	Line from Chesapeake Bay to Bermuda, off Bermuda, line from Bermuda to Bahamas, NE of Providence Channel (25°27'N - 77°16'W), Straits of Florida, N of Bahama Bank	Bigelow, 1918
	NE of Sombbrero: 25°29'N - 51°00'W (mid-Atlantic)	Bigelow, 1931
	Northern part of Bay of Biscay, off Spain (Lugo), off Portugal (Lisbon and Cape San Vicente), Sea of Spain	Bigelow and Sears, 1937

TABLE 3 (cont.)

Region	Localities	Reference
Atlantic Ocean	Martha's Vineyard to Cape Hatteras (40°25'N - 35°50'N)	Bigelow and Sears, 1939
	Off Africa (27°N - 12°51'N)	Cervigón, 1961
	Gulf Stream: 37°N - 57°W to 31°N - 64°W (N of Bermuda), off entrance to Sea of Spain, off Canary Islands, central region (26°N - 32°W and 29°W), off Cape Verde Islands, Guinea, South Equatorial Current to off Brazil (01°S-44°W)	Chun, 1897
	Northeast and Scottish region	Fraser, 1967
	Moroccan region (Tangier to Cabo Juby), mainly in autumn and winter, and in waters with bottom at 175 to 400 m deep	Furnestin, 1957
	Off Morocco	Furnestin, 1964
	Slope waters off Atlantic City, Chesapeake Bay, Gulf Stream, Sargasso Sea	Grice and Hart, 1962
	Off Bermuda	Hela, Moore and Owre, 1953
	Gulf of Cariaco (Venezuela)	Legaré, 1961
	Off Canary Islands, off Cape Verde, off St. Paul, off Fernando de Noronha, off Trindade Island, off Rio de la Plata	Leloup, 1932a
	W of La Rochelle, France (46°15'N - 07°09'W), S of Horta, Azores (36°17'N - 28°53'W), SW of Azores (27°36'N - 38°29'W, 31°41'N - 42°40'W), W of Cape Finisterre, Spain (42°58'N - 18°30'W)	Leloup, 1933
	Off Cape Verde Islands, off George Town, W of St. Paul Rocks, Gulf of Guinea, Fernando de Noronha Islands, off Ascension Island, off São Paulo de Loanda, off St. Helena, E of Trindade Island, off Bahía de la Baleine, between St. Helena and Tristan da Cunha, off The Cape, along Brazilian coast from Bahía to Rio de Janeiro, off Florianó- polis, off Rio Grande do Sul, off Buenos Aires	Leloup, 1934a

TABLE 3 (cont.)

Region	Localities	Reference
Atlantic Ocean	E of Sts. Peter and Paul Rocks (01°33'N - 25°30'W, 00°50'N - 28°26'W to 01°04'N - 29°16'W), W of Sts. Peter and Paul Rocks (00°25'N - 33°20'W, 00°06'N - 36°10'W), N of Fortaleza, Brazil (00°22'S-38°40'W)	Leloup, 1937
	Midway between Bermuda and Azores (34°44'N - 47°52'W), S of St. John's, Newfoundland (40°17'N - 50°39'W)	Leloup, 1955
	W of Cape Town (34°49'S-17°47.5'E), off South West Africa (28°31'S-00°29'E), N of Tristan da Cunha group (27°45'S- 13°06'W), E of Florianopolis, Brazil (27°54'S-47°15'W), E of Rio Grande do Sul (32°21'S-50°10'W), SE of Montevideo, Uruguay (37°21'S-51°53'W), W of St. Helena Island (15°07'S-09°50'W), E of Caravellas, Brazil (17°42'S- 37°53'W), E of Trindade Island (22°01.5'S-23°47'W), SW of St. Helena Island (21°30'S-15°36'W, 21°30.3'S- 11°42.6'W), W of Walvis Bay, South Africa (22°00'S-11°07.2'W), off Luanda, Angola (08°52.2'S-12°38.3'E), near Ascension Island (08°44'S- 12°27.3'W), W of Ascension Island (08°49'S-16°40'W), E of Recife, Brazil (08°59.6'S-25°59.7'W), off Cape Coast, Ghana (04°30'N - 01°00.4'W), S of Cape Coast (02°12.1'N - 01°03.2'W), S of Cape Three Points, Ghana (01°54.8'N - 02°03.9'E), E of Natal, Brazil(06°11'S- 32°34'W), off Fortaleza, Brazil (02°28'S-34°56'W, 02°23.8'S- 35°27.9'W), NW of Sts. Peter and Paul Rocks (04°13'N - 34°25.5'W), off El Mahara, Mauritiana (18°52.8'N - 18°01.2'W), Cape Verde Islands (17°48.8'N - 19°31.8'W, 17°22.2'N - 22°00.8'W), NW of Cape Verde Islands (19°15.7'N - 27°27.4'W), E of Martinique (15°43.4'N - 43°28.1'W), NE of French Guiana (09°07'N - 50°56.9'W), NE of Maroni River Delta, French Guiana (06°50.1'N - 52°51.1'W), SE of Cape Verde Islands (12°03.2'N - 34°12.2'W), N of Cape Verde Islands (19°17.4'N - 24°59.5'W)	Leloup and Hentschel, 1938

TABLE 3 (cont.)

Region	Localities	Reference
Atlantic Ocean	Bay of Tangier	Mettey and Hamon, 1950
	Off Bermuda	Moore, 1949
	Florida Current, off Miami	Moore, 1953
	Florida Current, off Miami	Moore, 1955
	Florida Current, off Miami	Moore and Corbin, 1956
	Florida Current	Moore, Owre, Jones and Dow, 1953
	Port Natal, Cape Verde Islands, between St. Paul and Liberia (04° -16°30'W), SW of Ascension Islands, N of Trindade, off Port Nolloth in western South Africa (04°E, 02°W, 05°W), off St. Helena, N of St. Helena, SE of Ascension Island, off Ascension Island, between St. Paul and St. Tomé, NE of St. Paul, Cape Verde Islands, N of Cape Verde Islands, SW of Canary Islands (25°N - 34°W), W of Canary Islands (46°W), Tortugas	Moser, 1925
	Gulf of Mexico	Sears, 1954
	Off Brazil (Rio Grande, Catarina Island, Santos, Rio de Janeiro, Abrolhos Island)	Seguin, 1965
	Off Bermuda (32°08'N - 32°16'N to 64°40'W-64°31'W)	Totton, 1936
Indian Ocean and	Equatorial region	Alvariño, 1964b
	Off Chagos Archipelago, off Nazareth, off Farquhar, off Alphonse Island, off Amirante Islands	Browne, 1926
	Rattlesnake voyage	Huxley, 1859
	S of the Mascareñas, Sumatra by Padang, west coast of Australia (21°S-114°E)	Moser, 1925
Mediterranean	Western Mediterranean: off Tetuan (35°18'N - 04°50'W), E of Tetuan (35°29'N - 05°06'W, 35°34'N -04°59'W, 35°47'N - 05°06'W, 35°54'N - 05°09'W, 35°53'N - 05°00'W), E of Gibraltar (36°24'N - 04°59'W, 36°24'N - 04°57'W)	Alvariño, 1957a, 1958



TABLE 3 (cont.)

Region	Localities	Reference
Mediterranean	Off Naples	Bedot, 1882
	Alborán Sea (northern part), Balearic Sea, off North Africa, all along Mediterranean as far East as 19°30'E	Bigelow and Sears, 1937
	Off St. Raphael, SSE of southern France	Boone, 1933
	Off Málaga	Busch, 1851
	Off Naples	Chun, 1885
	Off Naples	Costa, 1836
	Off Naples	Delle Chiaje, 1822
	Off Gibraltar	Eschscholtz, 1829
	In Aegean Sea	Forbes, 1844
	Gibraltar, Alborán Sea	Furnestin, 1958
	Gulf of Lyon, eastern Corsica	Furnestin, 1960
	Off Naples, Messina	Gegenbauer, 1854
	Off Gibraltar	Gegenbauer, 1860
	Off Villefranche	Graeffe, 1860
	In Adriatic Sea (42°32'N - 17°57'E)	Huré, 1955
	Off Naples, Messina	Keferstein and Ehlers, 1861
	Gulf of Naples, off Capri, Ischia	Kinzer, 1965
	Off Messina	Kölliker, 1853
	Off Naples	Koretneff, 1884
	Western Mediterranean Basin,	
	Gibraltar (37°00'N - 01°30'W), off Calvi,	
	Corsica (42°44'N - 08°48'E, 42°53'N - 08°22'E), E of Almeria, Spain (36°51'N - 01°30'W), S of Formentera Island, Spain (38°02'N - 01°50'E), off Menorca Island, Balearic Island (40°33'N - 03°55'E), off Nice, France (43°15'N - 07°38'E), off Majorca (38°35'N - 03°06'E), off	

TABLE 3 (cont.)

Region	Localities	Reference
Mediterranean	Monaco (43°31'N - 07°35'E), off Marseille (43°00'N - 05°27'E), off St. Tropez (42°52'N - 06°35'E), off Nice (43°38'N - 07°32'E, 43°40'N - 07°35'E), off Almeria, Spain (36°17'N - 01°58'W), off Oran (36°21'N - 01°25'W, 37°40'N - 00°20'W, 37°46'N - 00°05'W), off Ibiza, Balearic Islands (38°20'N - 01°31'E), between Sardinia and Balearic Islands (39°36'N - 05°56'E), off Sardinia (40°48'N - 06°16'E), off Perpignan, France (42°55'N - 03°07'E), off Mostaganem, Algeria (36°48'N - 00°18'W), off Constantine, Algeria (38°03'N - 04°46'E), off Corsica (42°40'N - 08°10'E, 42°46'N - 08°08'E), off Barcelona (41°32'N - 03°52'E), off Balearic Islands (38°24'N - 02°24'E), off Algiers (36°46'N - 01°44'W)	Leloup, 1933
	Off Villefranche-sur-Mer, off Cape Ferrat	Leloup, 1935a
	Off Monaco	Leloup, 1936a
	Off Monaco, off Mont Angel, entrance to Roquebrune Bay, Cape Ferrat, Beaulieu Bay, off Cape Roux, between Monaco and Cape Martin	Leloup, 1936a
	E of Gibraltar (36°05'N - 04°42'W)	Leloup, 1955
	Off Capri	Lo Bianco, 1903
	Off Villefranche	Lochman, 1853, 1854
	Adriatic Sea off Ragusa, Lucietta, in the Pomo Basin, in the southern basin	Moser, 1917
	Off Messina	Moser, 1925
	Off Naples	Müller, 1871
	Off Naples	Neppi, 1921
	Off Naples	Otto, 1823
	Off Naples	Pavesi, 1869
	Off Gibraltar	Quoy and Gaimard, 1827

TABLE 3 (cont.)

Region	Localities	Reference
Mediterranean	Off Messina	Sars, 1857
	Off Naples	Sars, 1859
	Off Naples	Schmidtlein, 1880
	Off Naples	Schneider, 1898
	Off Naples	Spagnolini, 1870
	Off Villefranche	Totton, 1954
	Off Villefranche	Vogt, 1854
	Off Algiers, along coastal Algerian waters and from here to Ibiza (Balearic Islands)	Wirz and Beyeler, 1954
Pacific Ocean	South China Sea	Alvariño, 1963
	Tropical equatorial Pacific, extending into the central waters	Alvariño, 1964b
	South China Sea	Alvariño, 197 a
	Off Galápagos, SE of Galápagos, off Aguja Point, SE of Aguja Point, off Callao, Callao, SW of Callao, between Callao and Easter Island, E of Albatross plateau, N of Albatross plateau, E of Albatross plateau, W of Albatross plateau, E of Marquesas Islands	Bigelow, 1911a
	Eastern Sea (4906, 4928, 4930), off the east coast of Kyushu Island, Japan (Sta. 4951), Suruga Gulf (Sta. 5064)	Bigelow, 1913
	Verde Island passage, between Marinduque and Luzon, off Corregidor Light, west coast of Luzon, off northern Mindanao, vicinity Darvel Bay, Borneo, Gulf of Tomini, Celebes, Molucca Passage, Macassar Strait	Bigelow, 1919
	SE of Cocos Island (03°23'N - 83°33'W), NE of Tower (00°40'N - 88°51'W), W of Tower (00°17'N - 90°02'W), off northeast coast of Albemarle (00°05'N - 91°11.5'W), SE of Hood (01°20'S-89°31'W), S of Hood (01°51'S-89°50'W), S of Cocos	

TABLE 3 (cont.)

Region	Localities	Reference
Pacific Ocean	(04°50'N - 87°00'W), Tagus Cove, Albemarle (00°16'S-91°34'W)	Bigelow, 1931
	Off southeast coast of New Guinea, east coast of Australia, Torres Strait, about the Louisiade Archipelago	Huxley, 1859
	Bay of Nhatrang	Leloup, 1956
	Shalaya region, S of Salayer, Sulu Archipelago, N of Salomakil, east coast of Misool, N of Saluda Island, W of New Guinea, between Gisser and Ceram, off Manipa, Buton Strait, W of Binongka, S of Lucipara Island, between Nusa Besi and Timor	Lens and Riemsdijk, 1908
	Gazelle: Anchorage Island, Bismarck Archipelago (New Hanover, New Mecklenburg)	Moser, 1925
	Manila Bay	Rees and White, 1966
	Great Barrier Reef (outside and in Trinity Opening)	Russell and Colman, 1935
	Marshall Islands: Bikini Atoll (outside lagoon), Rongelap Atoll (inside lagoon), Eniwetok Atoll (outside lagoon), between 02°15'S-09°00'N and 166°39'E-168°00'E	Sears, 1950
	Great Barrier Reef	Totton, 1932
	Between 5 and 40 miles E of Sanganab Lighthouse off Port Sudan, Port Sudan (21°53'N - 37°41'E, 25°08.5'N - 35°40'E), Koseir and Jaffatin Islands, Gulf of Aqaba	Totton, 1954
Red Sea		

TABLE 3 (cont.)

Region	Localities	Reference
<i>Bassia bassensis</i>	Quoy and Gairmard 1834	
Atlantic Ocean	Gibraltar Strait (36°08'N - 05°55'W), off Cape San Vicente (37°02'N - 09°07'W), off the Atlantic coast of Algarve (37°22'N - 09°13'W), off Villa Nova de Milfontes (37°40'N - 09°18'W), off Cape Espichel (38°01'N - 09°21'W), off the entrance to the Tagus estuary (38°21'N - 09°25'W)	Alvariño, 1957b
	N of Puerto Rico (24°27.1'N - 65°09.4'W), off the Amazon (20°13'N - 60°07'W, 18°13'N - 59°57'W, 16°45'N - 59°46'W, 15°15'N - 59°39'W, 14°36'N - 58°35'W, 19°54'N - 53°24'W, 18°41'N - 52°58'W, 16°47'N - 52°16'W, 13°39'N - 49°46'W, 10°53'N - 50°54'W, 08°18'N - 54°22'W, 07°28'N - 54°52'W), off Honduras (16°26'N - 84°53'W, 16°07'N - 84°40'W), near the mouth of the Orinoco River, Bay of Biscay (46°50'N - 05°22'W), off Long Island to Atlantic City	Alvariño (unpublished data)
	Equatorial region off the Amazon estuary	Alvariño, 1967c
	Gulf of Paria and Gulf of Honduras	Alvariño, 1969
	From Chesapeake Bay to Bermuda, off Bermuda, from Bermuda to Bahamas, N of Bahama Bank	Bigelow, 1918
	SE of Bermuda (30°49'N - 61°21'W)	Bigelow, 1931
	Off Portugal (southward from 39°35'N), Cape San Vicente, Sea of Spain	Bigelow and Sears, 1937
	Martha's Vineyard to Cape Hatteras (40°00'N - 36°50'N)	Bigelow and Sears, 1939
	Off Africa (26°N - 19°N)	Cervigón, 1961
	Azores, Sea of Spain, Cape Verde Islands, Guinea, Fernando de Noronha, W along South Equatorial Current, off Las Rocas, Brazil, Guinea Current, Sargasso Sea and Gulf Stream (off America)	Chun, 1897
	Northeast Atlantic (Scottish area)	Fraser, 1961, 1967

TABLE 3 (cont.)

Region	Localities	Reference
Atlantic Ocean	Moroccan Atlantic (Tangier to Cabo Juby) with maximum in autumn, less abundant in winter and spring, and rare in summer, mainly in waters where bottom is deeper than 100 m; this is an oceanic species	Furnest, 1957
	Off Morocco	Furnest, 1964
	Slope waters from Long Island to Chesapeake Bay, Gulf Stream, Sargasso Sea	Grice and Hart, 1962
	Bermuda	Hela, Moore and Owre, 1953
	Off coasts of Spain, Gibraltar, N of Canary Islands, W of St. Paul Island, off Brazil and off Rio de la Plata	Leloup, 1932a
	Area of Tenerife Island (Canary Islands, 28°04'N - 16°49'W), to La Palma Island (Canary Islands, 28°38'N - 17°59'W), N of La Palma (30°41'N - 46°00'W), Hierro, Canary Islands (27°43'N - 18°28'W), W of Madeira (31°46'N - 25°00'W, 32°18'N - 23°58'W, 33°06'N - 25°07'W), S of Horta Island, Azores (36°17'N - 28°53'W), S of Azores (30°46'N - 26°41'W), Santa Maria, Azores (36°47'N - 26°35'W), Cape Sao Vicente, Portugal (36°43'N - 14°30'W, 36°29'N - 11°20'W). Cádiz, Spain (36°15'N - 07°00'W), Morocco, North Africa (35°13'N - 07°40'W, 35°13'N - 08°06'W, 35°13'N - 08°50'W), mid-Atlantic (30°04'N - 42°29'W), SW of Azores (33°03'N - 41°08'W), S of Horta, Azores (36°40'N - 29°00'W), Azores (38°55'N - 29°40'W, 37°13'N - 19°10'W), N of Madeira (37°07'N - 17°00'W), off Portugal (36°30'N - 13°20'W), Gibraltar (36°40'N - 02°45'W), Almeria, Spain (36°51'N - 01°30'W), Strait of Gibraltar (35°56'N - 08°00'W), Lisbon, Portugal (38°02'N - 10°44'W), Porto, Portugal (40°40'N - 13°45'W), Morocco (32°21'N - 12°31'W), Azores (38°30'N - 43°40'W)	Leloup, 1933
	Cape Verde Islands, main ocean off George Town, between Cape Verde Islands and St. Paul Rocks, W of	

TABLE 3 (cont.)

Region	Localities	Reference
Atlantic Ocean	St. Paul Rocks, off Free Town, Gulf of Guinea, Ascension Island, Fernando de Noronha, along the Brazilian coast from Pernambuco to Bahia, off Bahia, between Bahia and Rio de Janeiro, off Florianópolis, off Rio Grande do Sul, off Buenos Aires, Trindade Island, between Trindade Island and Tristan da Cunha, along the African coast off the Moçâmedes (16°03.5'S-09°29'E, 15°16.5'S-06°32.6'E, 15°03'S-02°59'E)	Leloup, 1934a
	W of Madeira (33°06'N - 25°07'W), Azores (36°46'N - 26°41'W), Strait of Gibraltar (35°13'N - 08°06'W)	Leloup, 1936b
	São Luis, Brazil (00°06'N - 36°10'W)	Leloup, 1937
	Porto, Portugal (40°56'N - 09°28'W), Strait of Gibraltar (35°36'N - 08°25'W), Cádiz, Spain (36°53'N - 06°48'W), Kenitra, Morocco (35°10'N - 07°55'W), Casablanca, Morocco (33°47'N - 08°27'W), W of Canary Islands (29°06'N - 25°02'W), S of Azores (31°20'N - 35°07'W), Azores (34°59'N - 33°01'W), Horta Island, Azores (36°53'N - 29°47'W), mid-Atlantic (34°44'N - 47°52'W), Azores (36°10'N - 40°00'W)	Leloup, 1955
	S of St. Helena Island (28°02'S-04°50'W), Tristan da Cunha group (27°45'S-13°06'W), S of Trindade Island (28°25.8'S-26°30'W, 29°15'S-30°00'W), SW of Trindade Island (29°31'S-32°33'W), S of Rio de Janeiro (29°15'S-43°40'W), off Florianópolis (28°36'S-45°38.5'W, 28°05.5'S-46°44.5'W, 27°54'S-47°15'W), off Porto Alegre (32°23.8'S-49°58.3'W, 32°21'S-50°10'W), off Uruguay (37°21'S-51°53'W), off St. Helena Island (16°03.5'S-09°29'E, 15°08'S-02°59'E), E of St. Helena Island (15°02.6'S-00°06.7'W), E of Caravellas, Brazil (17°42'S-37°53'W), E of Victoria, Brazil (20°30.5'S-35°25.3'W), SE of Macae, Brazil (23°35'S-40°52'W), SW of Trindade Island (23°44'S-34°54'W), S of	

TABLE 3 (cont.)

Region	Localities	Reference
Atlantic Ocean	<p>Trindade Island (22°39'S-27°55'W),  Trindade Island (22°01.5'S-23°47'W),  W of Trindade Island (21°30'S-15°36'W),  S of St. Helena Island (21°30.3'S-  11°42.6'W), E of Ascension Island  (09°05'S-08°27'W), off Ascension Island  (08°45'S-14°20.1'W, 08°49'S- 16°40'W),  S of Ascension Island (10°41'S-  33°02'W), off Salvador, Brazil (12 °45'S-  37°24'W), off Fernando de Noronha  Rocks (04°52'S-33°44'W, 03°55.1'S-  32°33.7'W), off Sierra Leone  (08°14.5'N - 19°25.1'W, 09°01'N -  17°40'W), off Cape Palmas, Liberia  (00°03'N - 09°30'W), off Ghana(03°03'N -  00°58'W, 01°07.5'N - 00°59'W), Gulf of  Guinea (01°54.8'N - 02°03.9'E), off Cape  Palmas (03°47.9'N - 08°28.5'E), S of  Cape Palmas (01°17.5'S-09°30.9'W),  St. Peter and St. Paul Rocks  (02°40.3'S-16°36.8'W), S of Sts. Peter  and Paul Rocks (03°07'S-19°24'W), off  Fernando de Noronha Rocks (04°21'S-  26°21.8'W, 06°11'S-32°34'W, 02°28'S-  34°56'W), off São Luis, Brazil (02°28'S-  39°21'W), off Fortaleza, Brazil  (02°23.8'S-35°27.9'W), mid-Atlantic  (04°13'N - 34°25.5'W), S of Cape Verde  Islands (10°12.4'N - 26°36.1'W), off  Cape Verde Islands (17°20.2'N -  23°58.5'W), N of Cape Verde Islands  (19°16.8'N - 22°30.6'W), off Cape Verde  Islands (17°22.2'N - 22°00.8'W), W of  Cape Verde Islands (19°10.8'N -  30°12.5'W, 18°59'N - 33°25'W,  18°31.7'N - 36°45.4'W, 17°52.7'N -  39°19'W, 16°34.6'N - 42°00'W,  15°43.4'N - 43°28.1'W, 15°04'N -  44°39.3'W), E of Martinique (14°03'N -  45°59'W, 12°37.6'N - 47°36.1'W), NE of  French Guiana (09°07'N - 50°56.9'W), N  of French Guiana (07°25'N - 52°44'W,  06°50.1'N - 52°51.1'W), off Cape Verde  Islands (12°03.2'N - 34°12.2'W,  15°45.6'N - 27°19.4'W, 19°17.4'N -  24°59.5'W)</p>	<p>Leloup and  Hentschel, 1938</p>
	Bermuda	Moore, 1949



TABLE 3 (cont.)

Region	Localities	Reference
Atlantic Ocean	Florida Current, off Miami (in Bermuda it is a spring or winter form, and a winter form in Florida; more abundant in upper 50 m from moonrise to sunrise, spreading down to about 125 m depth; at moonset the maximum appeared over the 100 m depth, spreading the population to about 250 m depth)	Moore, 1953
	Florida Current, off Miami	Moore, 1955
	Florida Current	Moore, Owre, Jones and Dow, 1953
	Cape Verde Islands, N of Cape Verde Islands, W of the Canaries (about 35°W), Azores (Simrotu), Port Natal, all about Madeira, S of the Canaries, NE of Fernando de Noronha, SW of Ascension Island, NE of Trindade Island, N of Tristan de Cunha group, off Port Nolloth (5°W), off St. Helena, N of St. Helena, SE of Ascension, N of Ascension, between St. Paul and St. Tomé, NE of St. Paul, 47°N – 32°S, Tortugas	Moser, 1925
	Bay of Biscay	Patriti, 1965
Indian Ocean	Gulf of Mexico	Sears, 1954
	At nearly all stations, off Chagos Archipelago, off Mauritius, off Nazareth Bank, off Cargados Carajos, off Saya de Malha Bank, off Farquhar Atoll, between Providence and Alphonse, off Amir ante	Browne, 1926
	Rattlesnake voyage, off southern shores of Tasmania, Bass Straits	Huxley, 1859
	N of New Pomerania, S of Madagascar	Leloup, 1932a
	Gazelle: off Kerguelen, off Seychelles, Sumatra	Moser, 1925
Mediterranean	Gibraltar, off North Africa, Cape Tres Forcas (along path of Atlantic Current) Mediterranean eastern basin including: Aegean Sea, E of Sicily, Ionian Sea	Bigelow and Sears, 1937

TABLE 3 (cont.)

Region	Localities	Reference
Mediterranean	Gibraltar Strait, off Cape Tres Forcas	Furnestín, 1958
	Gulf of Lyon, eastern Corsica	Furnestín, 1960
	Adriatic Sea (42°32'N – 17°57'E)	Huré, 1955
	Outside Gibraltar Strait, Alboran Sea, off Almeria, off Cape Gata	Leloup, 1933
	Villefranche-sur-Mer, off Cape Ferrat	Leloup, 1935a
	Off Monaco	Leloup, 1936a
	Off Monaco Museum	Leloup, 1936a
	Off Naples, off Ragusa, Adriatic Sea	Moser, 1917
Pacific Ocean	Off Oran (36°09'N – 00°36'W)	Wirz and Beyeler, 1954
	South China Sea, Gulf of Thailand	Alvariño, 1963
	Sea of Cortés	Alvariño, 1965a
	Gulf of Panama to Guatemala	Alvariño, 1969
	South China Sea, Gulf of Thailand	Alvariño, 197 a
	Bay of Amboina	Bedot, 1896
	Off Acapulco, off Manzanillo,	Bigelow, 1911a
	off Guatemala, off Costa Rica, N of	
	Galápagos, SE of Galápagos, off Callao,	
	N of Easter Island, S of Galápagos, N of	
	Albatross plateau, Aguja Point, SW of	
	Aguja Point, 5°-10°W of Callao	
	Eastern Sea (Sta. 4921), off east coast	Bigelow, 1913
	of Kyushu, Japan (Sta. 4952)	
	Cape Verde Islands Passage, off	Bigelow, 1919
	Corregidor hight, west coast of Luzon,	
	Buton Strait, Macassar Strait	
	W of Tower (00°20'N – 90°10'W)	Bigelow, 1931
	South China Sea and Gulf of Thailand	Dawydoff, 1937
	Java Sea, Sunda Strait	Delsman, 1939

TABLE 3 (cont.)

Region	Localities	Reference
Pacific Ocean	Off Timor, in different parts of the Pacific	Huxley, 1859
	Along coast of Chile, off Juan Fernández Islands	Leloup, 1932a
	Bay of Nhatrang	Leloup, 1956
	Malaysian region, S of Salayer Islands, off Salayer Islands, Sulu Archipelago, Sulu Island, off Menado, E of Kajoa, N of Salomakil, NE of Daram Island, W of New Guinea, between Gisser and Ceram, S of Manipa, Buton Strait, W of Binongka	Lens and Riemsdijk, 1908
	S of Lucipara, W of Taam Island	
	Off New Guinea, W of Volcan Island, St. Georges Channel, WSW of Cape St. George	Moser, 1925
	Manila Bay	Rees and White, 1966
	Great Barrier Reef (outside and in Trinity Opening)	Russell and Colman, 1935
	Marshall Islands: Bikini Atoll (inside and outside lagoon), Rongelap Atoll (inside lagoon), Rongerik Atoll (inside and outside lagoon), Eniwetok Atoll (outside lagoon), between 02° 15' S–09° 00' N and 166° 39' E 168° 00' E	Sears, 1950
	Great Barrier Reef	Totton, 1932
Red Sea	Kamaran Islands, Port Sudan, 21° 53' N – 37° 41' E	Totton, 1954

TABLE 3 (cont.)

Region	Localities	Reference
Ceratocymba dentata	Bigelow 1918	
Atlantic Ocean	Off the Amazon (09°09.6'N – 47°02.7'W, 15°33'N - 57°39'W)	Alvariño (unpublished data)
	Equatorial region off the Amazon estuary	Alvariño, 1967c
	Line from Chesapeake Bay to Bermuda: 32°33'N – 14°00'W and 32°27'N – 69°55'W	Bigelow, 1918
	Moroccan Atlantic (off Qued Draa) in winter and places where bottom is at 200 m depth	Furnestin, 1957
	Off Morocco	Furnestin, 1964
	Bermuda	Moore, 1949
	W of Cape Verde Islands (under synonym <i>A. quadrata</i> ), Cape Verde Islands	Moser, 1925
	W of Luanda, Angola (08°13'S–02°54'E), off Ascension Island (08°26'S–15°11'W), off St. Helena Island (15°41'S–05°50'W)	Sears, 1953
	Bermuda (32°08'N – 32°16'N and 64°40'W–64°31'W)	Totton, 1936
	Off Bermuda, South Atlantic (between Cape Verde Islands and 32°S), Discovery Stas. 280-298 on a line starting from the west coast of Africa on the equator and running westward and northward to the Cape Verde Islands and stations on another line running up to the 30° meridian from 28°30'S to the Cape Verde Islands, as well as Sta. 81 at the same south latitude, but nearer the Cape; Guinea current (03°06'S–03°53'W), midway between fits. Peter and Paul Rocks and Bissan (07°27'N – 23°08'W), SW of Luanda Africa (10°19'S– 09°36.4'E), S of Ivory Coast (01°47'S– 06°13'W)	Totton, 1954
Indian Ocean	Deep layers of equatorial region near Indonesian region	Alvariño, 1964b

TABLE 3 (cont.)

Region	Localities	Reference
Indian Ocean	Off southern tip of Africa (35°49'S–23°09'E), N of Inhambane, Mozambique (25°19'S–36°13'E), N of Madagascar (11°24'S–05°05'E), NE of Madagascar (00°07'S–63°56'E, 01°12'N – 62°19'E, 03°36'S–58°19'E, 03°45'S–56°33'E), Northwest Indian Ocean (NW of Chagos, Arden), W of Maldivé Archipelago, NE of Seychelles, N of Madagascar, Mozambique Channel, S of Mozambique Channel	Sears, 1953
	N of Madagascar (00°06'S–49°45.4'E), off Perth, Australia (32°01.2'S–115°17.5'E)	Totton, 1954
Pacific Ocean and adjacent seas	Off San Diego, California	Alvariño, 1967b
	Off Panama, off Costa Rica and off Nicaragua	Alvariño, 1969
	South China Sea	Alvariño, 197a
	Banda Sea, Celebes Sea, South China Sea, Galápagos Islands (02°52'N – 87°38'W), off Sydney, Australia (33°33'S–154°04'E), Banda Sea, off Ceram (04°05'S–128°16'E), off Celebes (00°29'N – 125°54'E), off VietNam (12°44'N – 110°45'E), S of Taiwan (20°03.5'N – 120°50'E)	Sears, 1953

TABLE 3 (cont.)

Region	Localities	Reference
Ceratocymba intermedia	Sears 1953	
Pacific Ocean	South China Sea	Alvariño, 197a
	Western region, Philippines, Indonesian waters	Alvariño, 1964b
	N of New Guinea (03°40.5'N – 137°53'E), N of Saigon, VietNam (12°44'N – 110°45'E), Banda Sea (05°28'S – 130°39'E), off Amboina Island (04°05'S – 128°16'E), W of Molucca Island (02°22'S – 126°58.5'E), Celebes Sea, South China Sea	Sears, 1953

TABLE 3 (cont.)

Region	Localities	Reference
<i>Ceratocymba leuckarti</i> Huxley 1859		
Atlantic Ocean	Off the Amazon (09°09.6'N – 47°02.7'W, 10°63.8'N – 45°00.0'W, 12°24.4'N – 51°17.1'W, 15°15'N – 59°39'W, 10°53'N – 50°54'W), off Honduras (16°59'N – 86°11'W, 16°07'N – 84°40'W)	Alvariño (unpublished data)
	Equatorial region off the Amazon estuary	Alvariño, 1967c
	Gulf of Cariaco and Gulf of Honduras	Alvariño, 1969
	Line from Bermuda to Bahamas (28°51'N - 75°13'W)	Bigelow, 1918
	ESE of Bermuda, SW of Azores, NE of Sombbrero (27°53'N - 46°24'W)	Bigelow, 1931
	Moroccan region (Tangier to Cabo Juby)	Furnestin, 1957
	Gibraltar Strait	Furnestin, 1958
	Off Morocco	Furnestin, 1964
	Sargasso Sea	Grice and Hart, 1962
	E of St. Paul Island (01°N – 24°W), E of Trindade Island (21°S–25°W), NE of Sts. Peter and Paul Islands (04°N – 27°W)	Leloup, 1932a
	W of Canary Islands (28°54'N – 24°14'W, 29°06'N – 25°02'W), S of Azores (31°24'N – 34°47'W), S of Grand Banks (34°44'N – 47°52'W)	Leloup, 1955
	Florida Current, off Miami	Moore, 1953
	In the Atlantic (30°N – 35°S), Canary Islands, equator, Ascension Island, Tristan da Cunha, N of Tristan da Cunha, S of Ascension, SE of St. Paul, NE of St. Paul, W of Canaries at about 35°W, NE of Lesser Antilles (27°07'N – 51°10'W), E of Ascension Island (07°34'S–08°48'W), SW of Cape Palmas, Liberia (00°31'S–11°02'W), SW of Ascension Island (08°26'S–15°11'W), NW of Azores (41°55'N – 32°22'W)	Moser, 1925
	St. Catarina Island, Brazil	Seguin, 1965

TABLE 3 (cont.)

Region	Localities	Reference
Indian Ocean	In equatorial waters near Indonesian region	Alvariño, 1964b
	Chagos, Saya de Malha, between Providence and Alphonse	Browne, 1926
	New Pomerania	Leloup, 1932a
	S of Java (09°09'S–114°47'E), off Cocos Island (12°05'S–96°45'E), S of Nicobar Island (05°50'N – 93°28'E), NE of Seychelles (00°07'S–63°56'E, 01°12'N – 62°19'E), N of Seychelles (03°36'S–58°19'E, 03°45'S–56°33'E), N of Madagascar (11°24'S–50°05'E) > W of Madagascar (18°30'S–42°18'E), off Lourenço Marques (25°19'S–36°13'E), off southern tip of Africa (35°49'S–23°09'E)	Sears, 1953
	Pacific Ocean and adjacent seas	Agassiz and Mayer, 1902
	South China Sea	Alvariño, 1963
	Upper layers near subtropical convergence	Alvariño, 1964b
	Off Manzanillo, Mexico	Alvariño, 1969
	South China Sea	Alvariño, 197a
	S of Manzanillo Basin, 10°W of Callao, 08°W of Callao, SW of Callao, E of Albatross plateau	Bigelow, 1911a
Pacific Ocean and adjacent seas	Off east coast of Luzon, Gulf of Tomini, Celebes, Macassar Strait	Bigelow, 1919
	SE of Cocos (03°23'N – 83°33'W)	Bigelow, 1931
	East coast of Australia	Huxley, 1859
	Bay of Nhatrang	Leloup, 1956
	Ternate anchorage, west coast of Binongka	Lens and Riemsdijk, 1908
	Gazella: E of Amirante Islands (02°30'S–149°00'E)	Moser, 1925



TABLE 3 (cont.)

Region	Localities	Reference
Pacific Ocean and adjacent seas	Marshall Islands (outside Bikini Atoll)	Sears, 1950
	N of Samoa Islands (11°00'S- 172°36'W), W of New Guinea (05°52'S-131°14'E, 05°28'S-130°39'E), S of Celebes (04°05'S-128°16'E, 02°22'S- 126°58.5'E, 00°29'N - 125°54'E), W of Celebes (01°42'N - 124°29'E), Sulu Sea (08°34'N - 119°55'E), N of Borneo (07°13.5'N - 111°49'E), off VieNam, South China Sea (12°44'N - 110°45'E, 13°57'N - 112°45'E), W of Manila (15°22'N - 115°20'E), E of Taiwan (23°30.5'N - 125°28'E, 24°15'N - 122°00'E), Luzon Strait (20°03.5'N - 120°50'E), N of New Guinea (03°40.5'N - 137°53'E), Luzon Strait (19°20'N - 119°48'E), Shikoku Basin (30°20'N - 138°00'E), SE of Sendai, Japan (36°20'N - 143°00'E)	Sears, 1953

TABLE 3 (cont.)

Region	Localities	Reference
<i>Ceratocymba sagittata</i>	Quoy and Gaimard 1827	
Atlantic Ocean	Off South Africa (32°30'S–09°04'E), SW of St. Helena (19°13'S–13°44'W)	Alvariño (unpublished data)
	W of Lisbon, Portugal (38°32'N - 16°35'W), E of Azores (38°30'N - 19°15'W)	Bedot, 1904
	Line from Chesapeake Bay to Bermuda, off Bermuda, line from Bermuda to Bahamas, Straits of Florida, N of Bahama Bank	Bigelow, 1918
	NE of Sombrero (25°29'N – 51°00'W), SE of Bermuda (30°00'N – 60°00'W), E of Chesapeake Bay (36°55'N – 74°12'W)	Bigelow, 1931
	Off Portugal (39°35'N), off Cape San Vicente, Sea of Spain	Bigelow and Sears, 1937
	Off Chesapeake Bay	Bigelow and Sears, 1939
	Canary Islands	Chun, 1888
	Sargasso Sea, Canary Islands, Cape Verde Islands, Guinea, Sea of Spain, at entrance to Gibraltar, in north equatorial current at 13°N - 44°W	Chun, 1897
	Northeast and Scottish region	Fraser, 1967
	Moroccan region, off Tangier, off Safi, off Juby, out from Continental Shelf	Furnestín, 1957
	Straits of Gibraltar	Furnestín, 1958
	Off Morocco	Furnestín, 1964
	Sargasso Sea	Grice and Hart, 1962
	Gulf of Cariaco (Venezuela)	Legaré, 1961
	Off Sts. Peter and Paul Rocks (01°N – 24°W), N of Sts. Peter and Paul Rocks (03°N – 26°W), NE of Vitoria, Brazil (18°S–35°W), SE of Trindade Island (22°S–22°W), SE of Porto Alegre, Brazil (31°50'S–46°30'W, 33°00'S–32°30'W), off Azores (40°N – 27°W)	Leloup, 1932a

TABLE 3 (cont.)

Region	Localities	Reference
Atlantic Ocean	W of Lisbon, Portugal (38°32'N – 16°35'W), E of Azores (38°30'N – 19°15'W), S of Azores (31°46'N – 25°00'W, 33°06'N – 25°07'W), off Azores (37°08'N – 28°28'W), S of Azores (30°46'N – 26°41'W), off Cádiz, Spain (36°29'N – 11°20'W), off Madeira (31°32'N – 17°22'W), off Grand Banks (38°58'N – 44°55'W)	Leloup, 1933
	Warm region in the north and south regions	Leloup, 1933, 1934
	Off São Paulo de Loanda	Leloup, 1934a
	Strait of Gibraltar (35°32'N – 07°07'W, 35°36'N – 08°25'W, 35°10'N – 07°55'W), off Canary Islands (28°52'N – 14°16'W, 28°02'N – 14°17'W), W of Palma, Canary Islands (28°42'N – 20°00'W), W of Canary Islands (29°06'N – 25°02'W), SW of Azores (31°20'N – 35°07'W), off Azores (34°59'N – 33°01'W, 36°53'N – 29°47'W, 37°37'N – 29°25'W), W of Azores (36°52'N – 39°55'W), NE of Bermuda (34°44'N – 47°52'W), NW of Azores (48°04'N – 32°25'W)	Leloup, 1955
	Near St. Paul de Loanda, Angola: 09°00'S–07°00'E	Leloup and Hentschel, 1938
	Off Bermuda	Moore, 1949
	Near Cape Verde Islands, Trindade Island, Ascension Island, St. Helena Island, warm region in the North and South Atlantic, Canary Islands, SE of Trindade Island, NW of Tristan da Cunha, N of Tristan da Cunha, Ascension Island, S of Cape Verde Islands, St. Helena Island	Moser, 1925
	Strait of Gibraltar	Quoy and Gaimard, 1827
	Gulf of Mexico	Sears, 1954
	NW of Tristan da Cunha group (35°36'S–21°12'W)	Totton, 1925

TABLE 3 (cont.)

Region	Localities	Reference
Atlantic Ocean	Off Bermuda: 32°08'N – 32°16'N and 64°40'W–64°31'W	Totton, 1936
Indian Ocean	Deep layers in equatorial region close to Indonesia	Alvariño, 1964b
	Indian Ocean, Farquhar	Browne, 1926
	S of the Mascareñas, Gazella: E of Amsterdam Island (35°03'S–100°00'E), NW of Amsterdam Island (36°S–75°E)	Moser, 1925
Mediterranean	Gibraltar, Alborán Sea (off Algiers Bay)	Bigelow and Sears, 1937
Pacific Ocean and adjacent seas	South China Sea	Alvariño, 1963
	Upper layers near subtropical convergence	Alvariño, 1964b
	South China Sea	Alvariflo, 197 a
	08 °W of Callao, off Callao, E of Albatross plateau, off Galápagos, N Albatross plateau, between Callao and Easter Island (as C. asymetrica Lens and Riemsdijk)	Bigelow, 1911a
	SE of Cocos (03°23'N - 83°33'W), W of Tower (00°17'N - 90°02'W)	Bigelow, 1931
	Malayan region: Sulu Archipelago, N of Kabia, W of Binongka, N of Java (07°20.7'S–117°58.3'E)	Lens and Riemsdijk, 1908

TABLE 3 (cont.)

Region	Localities	Reference
Enneagonum hyalinum	Quoy and Gaimard 1827	
Atlantic Ocean	Iberian region, about 17 miles SW of Cape Espichel	Alvariño, 1957b
	Off Long Island, off Atlantic City, off the Amazon (18°13'N – 59°57'W, 13°39'N – 49°46'W, 07°28'N – 54°52'W), off Guatemala (15°56.7'N – 88°20'W), off Nicaragua (12°11'N – 81°38'W), Gulf of Cariaco (Venezuela)	Alvariño (unpublished data)
	Equatorial region off the Amazon estuary	Alvariño, 1967b
	Gulf of Cariaco	Alvariño, 1969
	Straits of Florida (as cuboides)	Bigelow, 1918
	Off Portugal (Lisbon), off Cape San Vicente, Sea of Spain	Bigelow and Sears, 1937
	Off Africa (21 °N - 19 °N)	Cervigón, 1961
	Canary Islands	Chun, 1888
	Canary Islands	Chun, 1892
	Off Florida Current (39°N - 57°W to 33°N - 63°W), Sargasso Sea, Cape Verde Islands, Las Rocas, Brazil	Chun, 1897
	Northeast and Scottish region	Fraser, 1967
	Slope waters off Long Island, Chesapeake Bay	Grice and Hart, 1962
	Temperate regions	Haeckel, 1888
	Off Lisbon, off Azores (40°28'N – 36°32'W), off Morocco (32°21'N – 12°31'W)	Leloup, 1933
	Cape Verde Islands, Gulf of Guinea, off Rio Grande do Sul	Leloup, 1934a
	Off Canary Islands (29°16'N – 16°11'W)	Leloup, 1936b
	Off São Luis, Brazil (00°06'N – 36°10'W)	Leloup, 1937

TABLE 3 (cont.)

Region	Localities	Reference
Atlantic Ocean	Off Rio Grande do Sul (32°21'S–50°10'W), off Gabon, Africa (03°47.9'N – 08°28.5'E), E of Cape Verde Island (18°52.8'N – 18°01.2'W, 17°48.8'N – 19°31.8'W, 17°22.2'N – 22°00.8'W)	Leloup and Hentschel, 1938
	Florida Current, off Miami (as an indicator of Gulf water)	Moore, 1953
	Between St. Helena and Ascension Islands, Cape Verde Islands	Moser, 1925
	Gulf of Mexico	Sears, 1954
	Off St. Catarina Island, Brazil	Seguin, 1965
Indian Ocean and adjacent seas	Off Chagos, off Nazareth, between Providence and Alphonse, off Amirante Islands	Browne, 1926
	Off Seychelles, N of New Pomerania	Moser, 1925
Mediterranean	Off Ceuta (36°24'N – 05°00'W), in Algiers Bay (36°08'N – 05°23'W)	Alvariño, 1957a, 1958
	In Alborán. Sea, off North Africa, Balearic Islands to Sardinia	Bigelow and Sears, 1937
	Off Almeria, Spain (36°51'N – 01°30'W), N of Algiers (38°02'N – 01°50'E), off Cartagena, Spain (37°39'N – 00°20'E, 36°18'N – 02°31'W, 36°17'N – 01°58'W, 37°46'N – 00°05'W), off Balearic Islands (38°24'N – 02°24'E), Balearic Islands to eastern part of Alborán Sea	Leloup, 1933
	Off Gibraltar (36°05'N – 04°42'W)	Leloup, 1955
	Gulf of Naples (as <u>Calpe pentagona</u> Quoy and Gaimard, 1827)	Neppi, 1921
	Gibraltar Strait	Quoy and Gaimard, 1827
	NW of Mostaganem, North Africa (36°37'N – 00°37'W)	Wirz and Beyeler, 1954
Pacific Ocean and adjacent seas	South China Sea, Gulf of Thailand	
	Western Pacific, Philippines, Indonesian Sea	Alvariño, 1963; Alvariño, 1964b

TABLE 3 (cont.)

Region	Localities	Reference
Pacific Ocean and adjacent seas	Sea of Cortés	Alvariño, 1965a
	South China Sea, Gulf of Thailand	Alvariño, 197a
	Bay of Amboina	Bedot, 1896
	S of Guatemala Basin, N of Panama,	Bigelow, 1911a
	between Cocos and Malpelo Islands, S of	
	Galápagos, Aguja Point, off southern	
	Perú and northern Chile, off Callao, N	
	of Easter Island, off the equator at about	
	117°W; Stas. 4613, 4617, 4619, 4634,	
	4646, 4652, 4663, 4667, 4669, 4673, 4661,	
	4676, 4699, 4743	
	Off Corregidor Lighthouse, west coast	Bigelow, 1919
	of Luzon, northern Mindanao	
	S of Cocos Island	Bigelow, 1931
	Off the southeastern and southern	Huxley, 1859
Red Sea	coasts of New Guinea, east coast of	
	Australia	
	Bay of Nhatrang	Leloup, 1956
	Malayan region, Sulu Archipelago, NE	Lens and
	of Daram, E of Misoal, W of New Guinea	Riemsdijk,
		1908
	Off New Guinea	Moser, 1925
	Manila Bay	Rees and White,
		1966
	Great Barrier Reef of Australia	Russell and
	(outside and in Trinity Opening)	Colman, 1935
	Marshall Islands (Bikini Atoll), outside	Sears, 1950
	lagoon	
	Great Barrier Reef of Australia	Totton, 1932
	Off Port Sudan at 15°08'N – 42°01'E	Totton, 1954

TABLE 3 (cont.)

Region	Localities	Reference
Enneagonum searsae	Alvariño 1968	
Pacific Ocean	South China Sea	Alvariño, 1968a, 197 a



TABLE 3 (cont.)

Region	Localities	Reference
<i>Sulculeolaria angusta</i>	Totton 1954	
Atlantic Ocean	Off the Amazon (09°09.6'N – 47°02.7'W, 12°24.4'N – 51°17.1'W, 20°13'N – 60°07'W, 18°13'N – 59°57'W, 16°45'N – 59°46'W, 10°31'N – 53°22'W)	Alvariño (unpublished data)
	Moroccan Atlantic (Oued Draá Ifni and Canarian Strait, off the Continental Shelf)	Furnestin, 1957
	Off Morocco	Furnestin, 1964
Indian Ocean	Indian Ocean equatorial region	Alvariño, 1964b
	Off Natal Coast, NE of East London, South Africa (31°46.6'S–29°46.3'E), E of Mogadiscio, Somali (02°39.4'N – 50°46.4'E)	Totton, 1954
Pacific Ocean	Sea of Cortés	Alvariño, 1965a
	South China Sea, Gulf of Thailand	Alvariño, 197a

TABLE 3 (cont.)

Region	Localities	Reference
Sulculeolaria bigelowi(Sears) 1950		
Pacific Ocean	Off Manzanillo, Mexico	Alvariño, 1969
	South China Sea	Alvariño, 197a
	Marshall Islands: Bikini Atoll (outside lagoon), Rongerik Atoll (outside lagoon)	Sears, 1950

TABLE 3 (cont.)

Region	Localities	Reference
Sulculeolaria biloba	Sars 1846	
Atlantic Ocean	Off Long Island	Alvariño (unpublished data)
	Off the Amazon (20° 13'N – 60°07'W)	Alvariño, 1967c
	Off Laguna Madre, Mexico	Alvariño, 1969
	Line from Chesapeake Bay to Bermuda, Off Bermuda, line from Bermuda to Bahamas, NE of Providence Channel, Straits of Florida, N of Bahama Bank	Bigelow, 1918
	S of Bermuda (28°10'N – 64°35'W), SE of Bermuda (30°49'N – 61°21'W), S of Bermuda (32°00'N – 65°00'W), W of Bermuda (32°48'N – 67°09'W)	Bigelow, 1931
	Bay of Biscay, SW of Cape San Vicente, Sea of Spain	Bigelow and Sears, 1937
	Midway between Madeira and Canary Islands (30°49'N - 16° 27'W)	Candeias, 1929
	Northeast Atlantic (Scottish Shelf)	Fraser, 1961
	N of Ireland and W of Scotland	Fraser, 1963, 1967
	Sargasso Sea	Grice and Hart, 1962
	Canary Islands (31°N – 27°N and 21°W–22°W), Cape Verde Islands, Saint Paul Island, Trindade Island, along the Brazilian coast, Trindade Island, N of Sts. Peter and Paul Rocks (04°N – 27°W), SW of Cape Verde Islands (15°N – 27°W), S of Cape Verde Islands (13°50'N – 24°00'W), S of Cape Verde Islands (10°N – 24°W), N of Cape Verde Islands (30°52'N – 13°52'W), N of Sts. Peter and Paul Rocks (03°N – 26°W), E of Vitoria, Brazil (20°S–35°W), NE of Vitoria, Brazil (18°S– 35°W), SE of Trindade Island (22°S–22°W)	Leloup, 1932a
	Off Azores, 38°-04'N – 26°07'W and 38°30'N – 34°40'W	Leloup, 1933
	Off the Amazon estuary, off Rio Grande do Sul	Leloup, 1934a

TABLE 3 (cont.)

Region	Localities	Reference
Atlantic Ocean	Off Sts. Peter and Paul Rocks (01°33'N – 25°30'W), off São Luis, Brazil (00°06'N – 36°10'W)	Leloup, 1937
	Off Brest, France (47°27'N – 08°36'W), Gibraltar Strait (35°32'N – 07°07'W, 35°36'N – 08°25'W, 35°10'N – 07°55'W), W of Canary Islands (29°06'N – 25°02'W), SW of Azores (31°20'N – 35°07'W, 31°124'N – 34°47'W), off Azores (34°59'N – 33°01'W, 37°37'N – 29°25'W), W of Azores (36°52qN – 39°55'W), NE of Bermuda (34°44'N – 47°52'W), SW of Cape Clear, Ireland (50°13'N – 11°23'W), W of Glasgow, Scotland (26°15'N – 08°28'W, 56°33'N – 09°30'W), off Rockall Banks, West Scotland (57°45'N – 13°40'W), SW Azores (36°10'N – 40°00'W)	Leloup, 1955
	NE of Maracá Island, Brazil (05°30'N - 42°53'W), SE of Porto Alegre, Brazil (32°39'S-48°54'W)	Leloup and Hentschel, 1938
	Off Bermuda	Moore, 1949
	Florida Current off Miami	Moore, 1953
	Port Natal, from Greenland to the Benguela Current (65°N - 35°S), near Madeira Islands, middle of Atlantic at about 04°N - 17°W, N of Trindade Island, middle of Atlantic at about 30°S-15°W, SE of St. Paul, off Cape Verde Islands, N of Cape Verde Islands, off west South Africa at about 07° E	Moser, 1925
	Bay of Biscay	Patrity, 1965
	Near the Hebrides (Gulf Stream influence)	Römer, 1902
	Northern region as far north as the Norwegian coast and Spitzbergen	Sars, 1846
	Gulf of Mexico	Sears, 1954
	St. Catarina Island, Brazil	Seguin, 1965
	Celtic Sea	Totton, 1954
	Hebrides Islands	Vanhöffen, 1906

TABLE 3 (cont.)

Region	Localities	Reference
Indian Ocean	Equatorial region	Alvariño, 1964d
	Chagos, Farquhar, Saya de Malha, Amir ante Islands	Browne, 1926
	During the <u>Rattlesnake</u> voyage	Huxley, 1859
	N of North Amsterdam in St. Paul Islands, N of New Pomerania	Moser, 1925
	Various locations	Quoy and Gaimard, 1833
	SE of South Africa (37°50.1'S–35°46.6'E, 34°47.6'S–34°27.9'E), between Cocos Islands and Amsterdam Island	Totton, 1954
Mediterranean and adjacent seas	Off Almeria, off North Africa, Balearic Islands to Sardinia, N of Corsica, Tyrrhenian Sea, Messina Straits, Eastern Basin, S of Ionian Sea, Aegean Sea east to 30°E	Bigelow and Sears, 1937
	Off Naples	Chun, 1885
	Gulf of Lyon, E of Corsica	Furnestin, 1960
	Off Messina	Gegenbauer, 1854
	Off Messina	Keferstein and Ehlers, 1861
	South of Ischia, in Bocca Grande, Gulf of Naples	Kinzer, 1965
	Adriatic, southern basin	Moser, 1917
	Off Messina	Sars, 1857
	Off Naples	Schneider, 1898
	South China Sea	Alvariño, 1963
Pacific Ocean and adjacent seas	South China Sea, Gulf of Thailand	Alvariño, 197a
	Off east coast of Kyushu, Japan, south coast of Nippon, from Kobe to Yokohama, eastern Sea, Suruga Gulf (as <u>Galeolaria australis</u> ), Philippines (as <u>Clausophyes galatea</u> )	Bigelow, 1913

TABLE 3 (cont.)

Region	Localities	Reference
Pacific Ocean and adjacent seas	Off northern Mindanao, Gulf of Tomini, Celebes, Macassar Strait	Bigelow, 1919
	SW of Islas Juan Fernández (33°S–85°W, 33°S–88°W)	Leloup, 1932a
	W of Flores, Sulu Archipelago, N of Solomakie (Daram) Island, east coast of Misool, N of Sabide Island, west coast of New Guinea (between Gisser and Ceram)	Lens and Riemsdijk, 1908
	New Guinea	Moser, 1925
	Marshall Islands: (as <i>G. australis</i> ) outside lagoon Bikini Atoll (between 02° 15.5'N – 09° 00'N and 166° 39'E–168° 00'E)	Sears, 1950

TABLE 3 (cont.)

Region	Localities	Reference
Sulcleolaria brintoniPacific Ocean	Alvariño 1968 South China Sea, Gulf of Thailand	Alvariño, 1968a, 197a

TABLE 3 (cont.)

Region	Localities	Reference
<u>Sulculeolaria chuni</u>	Lens and Riemsdijk 1908	
Atlantic Ocean	Gulf of Honduras, Caribbean Sea, Gulf of Mexico	Alvariño, 1969
	Off Long Island, off Cape Town (33°47'S–15°48'E), S of Liberia (00°56'N – 11°29'W), off the Amazon River (16°45'N – 59°46'W, –15°15'N – 59°39'W, 18°41'N – 52°58'W, 16°47'N – 52°16'W, 08°18'N – 54°22'W), off Honduras (16°59'N – 86°11'W, 16°26'N – 84°53'W, 16°07'N – 84°40'W), off Nicaragua (12°31'N – 81°51.5'W, 11°26.9'N – 81°14.5'W), off Costa Rica (10°43.8'N – 80°45.3'W)	Alvariño (unpublished data)
	Slope waters off Long Island, Chesapeake Bay, Sargasso Sea	Grice and Hart, 1962
	S of Canary Islands, midway between Lesser Antilles and Azores (31°42'N – 42°52'W)	Leloup, 1932a
	Tortugas, 29°N to 18°S, SW of Ascension Island, N of Trindade, Cape Verde Islands, off Liberia at about 18°W, middle of the Atlantic at about 18°W on the equator	Moser, 1925
Indian Ocean	Off Rio Grande and Santos, Brazil	Seguin, 1965
	Chagos, Saya de Malha, Amirante, Farquhar Islands	Browne, 1926
	N of Sabuda Island	Lens and Riemsdijk, 1908
	New Pomerania	Moser, 1925
	Gulf of Aden	Totton, 1954
Pacific Ocean and adjacent seas	South China Sea,	Alvariño, 1963
	Off Manzanillo, Mexico	Alvariño, 1969
	South China Sea, Gulf of Thailand	Alvariño, 197a
	Bay of Nhatrang	Leloup, 1956
	New Guinea	Moser, 1925
	Manila Bay	Rees and White, 1966



TABLE 3 (cont.)

Region	Localities	Reference
Pacific Ocean and adjacent seas	Great Barrier Reef (outside and in Trinity Opening)	Russell and Colman, 1935
	Marshall Islands: inside and outside lagoons at Bikini Atoll, inside lagoon at Rongelap Atoll, between 02°15'S–09°00'N and 166°39'E–168°00'E	Sears, 1950
	Great Barrier Reef	Totton, 1932
Red Sea	Port Sudan, southern region (15°08'N – 42°01'E), central region (21°53'N – 37°41'E), northern region (25°08.5'N – 35°40'E), Kossier and Jaffatin Islands, Gulf of Aqaba	Totton, 1954

TABLE 3 (cont.)

Region	Localities	Reference
Sulculeolaria monoica Atlantic Ocean	Chun 1888 Off South Africa (30°09'S–04°42'W), off the Amazon (15°33'N – 57°39'W, 11°34'N – 49°48'W)	Alvariño (unpublished data)
	Western part of the Gulf of Mexico	Alvariño, 1969
	Line from Chesapeake Bay to Bermuda, Line from Bermuda to Bahamas, NE of Providence Channel (off Andros Islands, 25°27'N – 77°16'W), Straits of Florida	Bigelow, 1918
	S of Bermuda (28°10'N - 64°35'W)	Bigelow, 1931
	Madeira (N of Canary Islands, 30°49'N – 16°27'W)	Candeias, 1929
	Canary Islands	Chun, 1892
	Gulf of Cariaco (Venezuela)	Legaré, 1961
	From the Azores to Ascension Island in the South, NE of Sts. Peter and Paul Rocks (01°N – 24°W, 08°N – 26°W), E of Sts. Peter and Paul Rocks (01°N – 24°W), NE of Sts. Peter and Paul Rocks (08 °N – 26°W), from N of the Azores to Ascension Island	Leloup, 1932a
	W of Azores (38°30'N – 34°40'W)	Leloup, 1933
	Sts. Peter and Paul Rocks (01°33'N – 25°30'W), W of Sts. Peter and Paul Rocks (00°25'N – 33°20'W, 00°06'N – 36°10'W)	Leloup, 1937
	Kenitra, Morocco (35°32'N – 07°07'W), W of Canary Islands (29°06'N – 25°02'W), SW of Azores (31°20'N – 35°07'W, 31°24'N – 34°47'W), S of Azores (36°53'N – 29°47'W), W of Azores (36°52'N – 39°55'W)	Leloup, 1955
	Bermuda	Moore, 1949
	Florida Current off Miami, single specimens occasionally throughout the year	Moore, 1953

TABLE 3 (cont.)

Region	Localities	Reference
Atlantic Ocean	Cape Verde Islands, S of Ascension, NE of St. Paul, near the N of the Bay of Biscay	Moser, 1925
	Gulf of Mexico	Sears, 1954
Indian Ocean	Chagos, Alphonse, Farquhar, Amirante	Browne, 1926
Pacific Ocean and adjacent seas	South China Sea	Alvariño, 1963
	Western Pacific, Philippines, Indonesian waters	Alvariño, 1964b
	Gulf of Tehuantepec	Alvariño, 1969
	Off the coast of Kyushu, Japan (Sta. 4955), south coast of Nippon, line from Kobe to Yokohama (Sta. 4978)	Bigelow, 1913
	Macassar Strait	Bigelow, 1919
	W of Tower (Galápagos, 00°20'N – 90°10'W), NW of Narborough (Galápagos, 00°00'-91°53'W)	Bigelow, 1931
	Along the Chile coast and N of Juan Fernández Island (30°S–84°30'W, N of Islas Juan Fernández (30°S–84°W, 30°S–84.30'W)	Leloup, 1932a
	Bay of Nhatrang	Leloup, 1956
	Malayan region, N of Saluda Island, between Gisser and Ceram Sea	Lens and Riemsdijk, 1908
	Great Barrier Reef, outside and in Trinity Opening	Russell and Colman, 1935
	Outside lagoon Bikini Atoll (Marshall Islands)	Sears, 1950
	Great Barrier Reef	Totton, 1932

TABLE 3 (cont.)

Region	Localities	Reference
<i>Sulculeolaria quadrivalvis</i>	Blainville 1834	
Atlantic Ocean	Off Long Island, Atlantic City	Alvariño (unpublished data)
	Gulf of Mexico	Alvariño, 1969
	Bermuda to Bahamas, Straits of Florida, Gulf Stream (W of Cape May, 38°33'N – 71°20'W)	Bigelow, 1918
	Gulf Stream	Fewkes, 1882
	Azores, Canary Islands, Brazilian coast, S of Sts. Peter and Paul Rocks (04°N – 27°W, 03°N – 26°W), W of Lisbon (38°N – 18°W), SE of Trindade Island (28°S–26°W), E of Porto Alegre, Brazil (31°S–47°W)	Leloup, 1932a
	Between Azores and Canary Islands (31°46'N – 25°00'W)	Leloup, 1933
	Bermuda	Moore, 1949
	SE of St. Paul, SW of Ascension Island (but she said with 4 teeth), Port Natal	Moser, 1925
	Gulf of Mexico	Sears, 1954
	Valentia Harbour (Ireland)	Totton, 1954
Indian Ocean	Equatorial	Alvariño, 1964b
	Chagos, Amirante Island	Browne, 1926
	N of New Pomerania	Moser, 1925
Mediterranean	Gulf of Naples	Bedot, 1882
	Naples	Bigelow, 1918
	Southern part of Pantellarian Channel, N of Messina Strait, vicinity of the Balearic Islands	Bigelow and Sears, 1937
	Gulf of Lyon	Furnestin, 1960
	Messina Strait	Gegenbauer, 1854
	Naples and Messina	Kefenstein and Ehlers, 1861
	S of Ischia	Kinzer, 1965

TABLE 3 (cont.)

Region	Localities	Reference
Mediterranean	Monaco, between the Balearic Islands and Sardinia (39°36'N – 05°56'E)	Leloup, 1933
	Villefranche-sur-Mer	Leloup, 1935a
	Monaco	Leloup, 1936a
	Monaco, Beaulieu Bay, Roquebrune Bay	Leloup, 1936b
	Nice	Leuckart, 1854
	Gulf of Naples	Neppi, 1921
	Abundant at various places	Totton, 1954
	Nice	Vogt, 1854
	South China Sea, Gulf of Thailand	Alvariño, 1963, 197a
	Tropical equatorial extending into central waters	Alvariño, 1964b
Pacific Ocean and adjacent seas	From the Gulf of Panama to the Gulf of Tehuantepec	Alvariño, 1969
	Bay of Amboine	Bedot, 1896
	China Sea, vicinity of Hong Kong, Buton Strait, Macassar Strait	Bigelow, 1919
	Near Narborough Island, SE of Cocos (Galápagos, 03°23'N – 83°33'W)	Bigelow, 1931
	South China Sea, Gulf of Thailand	Dawydoff, 1936
	Juan Fernández Islands, Yauca, Perú, Constitution, Chile (35°00'S–73°00'W), NW of San Félix Island (24°00'S–73°00'W), S of Caroline Islands (05°00'N – 146°42'W), Carahue, Chile (38°50'S–74°00'W), Taltal, Chile (24°00'S–73°00'W)	Leloup, 1932a
	Bay of Nhatrang	Leloup, 1956
	Malayan region, N of Ubiar, N of Salomakie (Daram Island), E of Musool, Seleyer Island	Lens and Riemsdijk, 1908

TABLE 3 (cont.)

Region	Localities	Reference
Pacific Ocean and adjacent seas	Tortugas Island (Galápagos), Valparaiso	Moser, 1925
	Manila Bay	Rees and White, 1966
	Great Barrier Reef (outside and in Trinity Opening)	Russell and Colman, 1935
	Marshall Islands: outside lagoon Bikini Atoll	Sears, 1950
	Great Barrier Reef	Totton, 1932
Red Sea	Southern part (15°08'N – 42°01'E), central part (21°53'N – 37°41'E), northern part (25°08.5'N – 35°40'E), Port Sudan, Kossier and Jaffatin Islands, Gulf of Aqaba	Totton, 1954

TABLE 3 (cont.)

Region	Localities	Reference
<i>Sulculeolaria turgida</i>	(Gegenbaur) 1854	
Atlantic Ocean	W of Port Guinea (Sta. 2648: 10°29.8'N – 18°46.1'W), SW of Luanda, Angola (Sta. 2635: 10°19'S–09°36.4'E), Discovery and Discovery II, Stas. 89, 1008, 292, 673, 676, 677, 678, 680, 681, 682, 699, 701, 702, 703, 708, 712, 713, 2635, 2648	Totton, 1954
	Off Cape of Good Hope (34°05'S–16°00'E), W of Cape Town (33°20'S–33°46'S and 15°18'E–15°08'E), N of Sts. Peter and Paul Rocks (04°03'N – 16°57'W), W of Tristan da Cunha (38°10.5'S–30°10'W, 38°03.5'S–29°52.5'W), NW of Tristan da Cunha (33°43.5'S–29°52.5'W, 31°16'S–29°56.5'W), S of Trindade Island (28°30'S–29°58'W, 22°36'S–30°01.5'W), Trindade Island (21°13'S–29°55'W, 20°11'S–29°57'W), N of Cape Verde Islands (14°27'N – 30°02'W), S of Cape Verde Islands (14°39.3'N – 25°51.7'W, 10°59.3'N – 27°03.8'W), N of Sts. Peter and Paul Rocks (07°17'N – 28°01.9'W), Maceió, Brazil (10°20.6'S–34°54.7'W), off Florianópolis, Brazil (28°02.1'S–43°09.5'W), E of Porto Alegre, Brazil (31°37.1'S–45°00'W), W of Luanda, Angola, Africa (10°19'S–09°36.4'E), SW of Ascension Island (10°29.8'N – 18°46.1'W)	Totton, 1954
Indian Ocean	SE of southern tip of Africa (36°42.4'S–36°04.4'E), S of Durban, South Africa (31°13.1'S–31°48.7'E), N of East London, South Africa (31°46.6'S–29°46.3'E), Port Elizabeth, South Africa (34°30.8'S–26°19'E), E of Port Elizabeth (34°47.6'S–34°27.9'E), SE of Zanzibar (07°42.1'S–44°14.1'E), N of Seychelles (00°06'S–49°45.4'E), off Somali (06°05'N – 52°00'E), Dante Somali (11°32.3'N – 52°03'E), between Cocos Island and Ie Amsterdam (20°19'S–90°02'E), W of Palau (Enggano), Sumatra (05°02'S–89°47'E), W of Palau Siberut (02°00'S–89°40'E)	Totton, 1954
Mediterranean	Gulf of Lyon	Furnestin, 1960
Pacific Ocean and adjacent seas	Gulf of Panama to Manzanillo, Mexico	Alvaríño, 1969

TABLE 3 (cont.)

Region	Localities	Reference
Pacific Ocean and adjacent seas	Great Barrier Reef outside and in Trinity Opening	Russell and Colman, 1935
	Great Barrier Reef	Totton, 1932



TABLE 3 (cont.)

Region	Localities	Reference
<i>Hippopodius hippopus</i> Forskal 1776		
Antarctica	Wilkes Land	Moser, 1925
Atlantic Ocean	Off Cape Town (33°47'S–15°48'E), off South Africa (32°30'S–09°04'E, 30°23'S–02°47'W, 30°09'S–04°42'W), SW of St. Helena (19°13'S–13°44'W), S of Liberia (00°56'N – 11°29'W), N of Puerto Rico (24°27.1'N – 65°09.4'W), E of the Small Antilles (23°31.5'N – 55°00'W, 22°18'N – 45°00'W, 16°45'N – 46°28.8'W), off the Amazon (12°24.4'N – 51°17.1'W, 20°13'N – 60°07'W, 19°54'N – 53°24'W), Bay of Biscay (46°50'N – 05°22'W, 45°41'N – 05°12'W)	Alvariño (unpublished data)
	Equatorial region off the Amazon estuary	Alvariño, 1967c
	Western part of Gulf of Mexico	Alvariño, 1969
	Off Azores (40°05'N – 29°48'W)	Bedot, 1893
	E of Azores (38°32'N – 16°35'W), S of Azores (30°42'N – 27°11'W)	Bedot, 1904
	Bay of Biscay (46°43'N – 47°28'N and 07°15'W–08°18'W)	Bigelow, 1911b
	Line from Chesapeake Bay to Bermuda, off Bermuda, line from Bermuda to Bahamas, Straits of Florida, N of Bahama Bank	Bigelow, 1918
	Off Cuba, off Bermuda, Continental Edge off Cape Hatteras, Sargasso Sea to SW of Bermuda	Bigelow, 1931
	Bay of Biscay (44°21'N – 07°55'W), off Lugo, SW of Cape San Vicente, Sea of Spain	Bigelow and Sears, 1937
	British coast, SW of Ireland (49°N 12°W), NE of Azores (43°N – 24°W, 41°N – 25°W)	Chun, 1897
	Northeast region (Scottish Shelf and Scottish area)	Fraser, 1961, 1967
	Near Shetland	Fraser, 1963

TABLE 3 (cont.)

Region	Localities	Reference
Atlantic Ocean	Slope waters off Long Island, Chesapeake Bay, Gulf Stream, Sargasso Sea	Grice and Hart, 1962
	N of Azores, Canary Islands, Cape Verde Islands, Trindade Island, off the coasts of Brazil, Bank of Patagonia	Leloup, 1932a
	SW of Cape Clear, Ireland (48°22'N – 17°42'W), off Grand Banks (42°50'N – 43°04'W), off Azores (39°28'N – 30°08'W), NW of Cabo Finisterre, Spain (48°24'N – 18°18'W), W of Lisbon, Portugal (38°32'N – 16°35'W), S of Azores (30°42'N – 27°11'W, 31°06'N – 24°06'W, 32°18'N – 23°58'W, 33°06'N – 25°07'W), off Azores (37°08'N – 28°28'W), S of Horta, Azores (36°17'N – 28°53'W), S of Azores (30°46'N – 26°41'W), Cabo San Vicente, Portugal (36°31'N – 11°32'W), off Azores (36°24'N – 30°00'W, 38°04'N – 26°07'W), Straits of Gibraltar (35°56'N – 08°00'W), S of Azores (30°45'N – 25°47'W), off Grand Banks (39°09'N – 44°56'W)	Leloup, 1933
	From 20° to 40°S, Cabo Serde, George Town, center of the ocean, off Freetown, Gulf of Guinea, along Walfish Bay, between St. Helena and Tristan da Cunha group, W of Gough Island and Bouvet Island, off Florianopolis	Leloup, 1934b
	NW of Cape Verde Islands (22°01'N – 27°21'W)	Leloup, 1935b
	Straits of Gibraltar (35°32'N – 07°07'W, 35°36'N – 08°25'W, 35°10'N – 07°55'W), Casablanca, Morocco (33°47'N – 08°27'W), E of Canary Islands (28°52'N – 14°16'W, 28°02'N – 14°17'W), La Palma, Canary Islands (28°42'N – 20°00'W), W of La Palma (28°54'N – 24°14'W, 29°06'N – 25°02'W), SW of Azores (31°20'N – 35°07'W, 31°24'N – 34°47'W), off Horta, Azores (34°59'N – 33°01'W), S of Horta, Azores (36°53'N – 29°47'W, 37°37'N – 29°25'W), S of Grand Banks (40°17'N – 50°39'W), N of Flemish Cap (48°02'N – 39°55'W), NE of Flemish Cap (48°02'N –	

TABLE 3 (cont.)

Region	Localities	Reference
Atlantic Ocean	36°53'W, 48°04'N – 32°25'W), W of Shetland Islands (60°57'N – 04°38'W), SW of Azores (36°10'N – 40°00'W), E of Bermuda (31°00'N – 52°55'W), N of Azores (46°48'N – 27°46'W, 45°26'N – 25°45'W), NW of Cape Finisterre, Spain (46°58'N – 19°06'W), W of Brest, France (48°29'N – 13°55'W), SW of Cape Clear, Ireland (50°13'N – 11°23'W), NE of Northern Ireland (56°33'N – 09°30'W)	Leloup, 1955
	From about 20°N to 48°S at stations, NE of South Sandwich Island (41°12.8'S–17°05'W), W of South West Africa (28°31'S–00°29'E), E of Porto Alegre, Brazil (29°15'S–43°40'W), NE of South Sandwich Island (48°29'S–00°03'E), W of St. Helena Island (15°16.5'S–06°32.6'E), off Sts. Peter and Paul Rocks (00°36'N – 29°12'W), off Guinea (09°01'N – 17°40'W), S of Gulf of Guinea (03°50.3'S–01°05.1'E), off Cape Verde Islands (17°01.7'N – 24°57.5'W), NW of Cape Verde Islands (19°15.7'N – 27°27.4'W, 19°10.8'N – 30°12.5'W, 18°31.7'N – 36°45.4'W), N of French Guiana (07°25'N – 52°44'W), SW of Cape Verde Islands (09°16.8'N – 38°21.3'W, 12°03.2'N – 34°12.2'W)	Leloup and Hentschel, 1938
	Off Bermuda	Moore, 1949
	Florida current off Miami	Moore, 1953
	Porto Grande (Cape Verde Islands), SE of Fernando de Noronha, N of Trindade Island, NE of Tristan da Cunha, N of Tristan da Cunha, Cape Agulhas, N of St. Helena Island, SE of Ascension Island, off Ascension, SE of St. Paul, NE of St. Paul, Cape Verde Islands, N of Cape Verde Islands	Moser, 1925
	Bay of Biscay	Patriti, 1965
	W of St. Nazaire, France (47.7°N – 10.4°W)	Römer, 1902
	Gulf of Mexico	Sears, 1954

TABLE 3 (cont.)

Region	Localities	Reference
Atlantic Ocean	Abrolhos Island (off Brazil)	Seguin, 1965
	Bermuda (32°08'N – 32°16'N and 64°40'W-64°31'W)	Totton, 1936
	About 49°N	Vanhoffen, 1906
Indian Ocean and adjacent seas	Central region	Alvariño, 1964b
	Chagos Island, Farquhar Island	Browne, 1926
	Gazelle: W of Australia (34°30'S –100°00'E), between St. Paul and the Mascarenes	Moser, 1925
	Off south and east coasts of Africa, southeast Indian Ocean, south Indian Ocean, northwest Indian Ocean	Totton, 1954
Mediterranean	Gulf of Naples	Bedot, 1882
	Alborán Sea, all along Mediterranean except the sea of Marmara and the Dardanelles	Bigelow and Sears, 1937
	Gulf of Naples	Chun, 1903
	Messina	Cialona, 1901
	Messina	Claus, 1863
	Naples	Costa, O. G., 1836
	Naples	Delle Chiaje, 1828
	Naples, Sicily	Dönitz, 1871
	Messina	Gegenbaur, 1854
	Villefranche	Graeffe, 1860
	Adriatic (42°37'N – 17°57'E)	Huré, 1955
	Naples	Keferstein and Ehlers, 1861
	Gulf of Naples	Kinzer, 1965
	Messina	Kölliker, 1853
	Gulf of Naples	Korotneff, 1884

TABLE 3 (cont.)

Region	Localities	Reference
Mediterranean	Western Mediterranean, off Marseille, France (43°00'N – 05°27'E), off Imperia, Italy (43°38'N – 07°32'E), off Almeria, Spain (36°17'N – 01°58'W, 36°21'N – 01°25'W), off Cartagena, Spain (37°40'N – 00°20'W), off Balearic Islands (38°24'N – 02°24'E)	Leloup, 1933
	Villefranche-sur-Mer	Leloup, 1936a
	Monaco, entrance to Roquebrune Bay	Leloup, 1935a
	Nice	Leuckart, 1853, 1854
	Gulf of Naples	Lo Bianco, 1899
	Capri	Lo Bianco, 1903
	Villefranche	Metschnikoff, 1874
	Naples, Villefranche	Moser, 1923
	Naples	Müller, 1871
	Gulf of Naples, Villefranche, Nice	Münter, 1912
	Gulf of Naples	Neppi, 1921
	Naples	Otto, 1823
	Mentone	Pagenstecher, 1869
	Naples	Pavesi, 1869
	Strait of Gibraltar	Quoy and Gaimard, 1827
	Gulf of Naples, Villefranche	Richter, 1907
	Naples	Sars, 1857
	Naples	Schmidtlein, 1880
	Gulf of Naples	Schneider, 1898
	Naples	Spagnolini, 1868, 1870
	Villefranche	Totton, 1954
	Nice-Genoa	Verany, 1846

TABLE 3 (cont.)

Region	Localities	Reference
Mediterranean	Villefranche	Vogt, 1851
	Nice	Vogt, 1851, 1854
	Gulf of Naples	Weismann, 1883
Pacific Ocean and adjacent seas	South China Sea	Alvariño, 1963
	Off entrance to the Sea of Cortes	Alvariño, 1965a
	From the Gulf of Panama to Manzanillo, Mexico	Alvariño, 1969
	South China Sea	Alvariño, 197a
	Galápagos, SE of Galápagos, Aguja Point, SW of Aguja Point, NE of Isla Sala y Gómez (23°S–102°W), W of Albatross plateau (Stas. 4644, 4646, 4652, 4655, 4659, 4704, 4734)	Bigelow, 1911a
	Off east coast of Kyushu, Japan (Sta. 4951)	Bigelow, 1913
	Sulu Sea, off western Mindanao, vicinity Pujada Bay, Mindanao, off east coast of Luzon, between Leyte and Mindanao, off northern Mindanao, between Siquijor Island and Bohol Island, Molucca Passage, Buton Strait	Bigelow, 1919
	Galápagos, Cocos Island, Panama	Bigelow, 1931
	South China Sea	Dawydoff, 1937
	Nhatrang Bay	Leloup, 1956
	S of Licipana Island (Malaysian region)	Lens and Riemsdijk, 1908
	New Guinea	Moser, 1925
	Great Barrier Reef (not in the lagoon)	Russell and Colman, 1935
	Great Barrier Reef	Totton, 1932

TABLE 3 (cont.)

Region	Localities	Reference
<i>Vogtia glabra</i>	Bigelow 1918	
Atlantic Ocean	Off South Africa (30°23'S– 02°47'W), off the Amazon (15°33'N – 57°39'W), off Honduras (16°07'N – 84°40'W)	Alvariño (unpublished data)
	Equatorial region off the Amazon estuary	Alvariño, 1967c
	Off Honduras	Alvariño, 1969
	Straits of Florida	Bigelow, 1918
	Off Portugal, N of Lisbon (39°35'N – 09°45'W), off Cape San Vicente (36°13'N – 09°44'W), Sea of Spain (35°53'N – 07°26'W)	Bigelow and Sears, 1937
	Coast of Portugal (southwest Portugal), probably <i>H. hippopus</i> (36°37'N – 07°57'W)	Candeias, 1932
	Northeast Atlantic (Scottish area)	Fraser, 1961, 1967
	Gulf Stream, Sargasso Sea	Grice and Hart, 1962
	Temperate Atlantic between Azores, Canary Islands, coast of Portugal and Bay of Biscay; Bay of Biscay (46°15'N – 07°09'W), NW of Canary Islands (31°06'N – 24°06'W, 31°46'N – 25°00'W), S of Azores (37°08'N – 28°28'W, 36°17'N – 28°53'W), SW of Azores (33°03'N – 41°08'W), SE of Azores (38°04'N – 26°07'W), S of Azores (37°04'N – 28°01'W), off southwest Portugal (38°02'N – 10°44'W)	Leloup, 1933
	Off Bahia, S of Trindade Island, between Trindade Island and Tristan da Cunha	Leloup, 1934a
	Bay of Biscay (46°15'N – 07°09'W), Canary Islands (28°04'N – 16°49'W), E of Azores (39°44'N – 28°25'W), S of Azores (37°04'N – 28°01'W)	Leloup, 1936b
	W of Tangier (35°36'N – 08°25'W), W of Kenitra, Morocco (35°10'N – 07°55'W), SW of Azores (31°20'N – 35°07'W), S of Azores (36°53'N – 29°47'W), between Bermuda and Azores (34°44'N – 47°52'W), N of Flemish Cap (48°02'N – 39°55'W),	

TABLE 3 (cont.)

Region	Localities	Reference
Atlantic Ocean	NE of Flemish Cap (48°02'N – 36°53'W), SW of Cape Clear, Ireland (48°29'N – 13°55'W, 50°13'N – 11°23'W), NW of Northern Ireland (56°33'N – 09°30'W, 57°41'N – 11°48'W)	Leloup, 1955
	N of Tristan da Cunha group (27°52'S–15°56'W), SE of Ilha da Trindade (22°39'S–27°55'W), E of Maceió, Brazil (10°41'S–33°02'W)	Leloup and Hentschel, 1938
	Bay of Biscay	Patriti, 1965
	Gulf of Mexico	Sears, 1954
	Bermuda (32°08'N – 32°16'N and 64°40'W–64°31'W)	Totton, 1936
Indian Ocean	Gulf of Aden, NE of Ile Amsterdam (26°24'S–89°54'E), off south and east coasts of Africa, southeast Indian Ocean, south Indian Ocean, northwest Indian Ocean	Totton, 1954
Mediterranean	S of the Tyrrhenian Sea (37°57'N – 19°51'E)	Bigelow and Sears, 1937
	Eastern Corsica	Furnestin, 1960
	Near Monaco	Leloup, 1933
	S of Barcelona, Spain (40°28'N – 02°14'E), N of Corsica (42°58'N – 08°56'E)	Leloup, 1936b
	Villefranche-sur-Mer	Totton, 1954
Pacific Ocean and adjacent seas	Western Pacific, Philippines, Indonesian waters	Alvarino, 1964b



TABLE 3 (cont.)

Region	Localities	Reference
<i>Vogtia kuruae</i>	Alvariño 1967	
Atlantic Ocean	Off Cape Town (33°47'S–15°48'E), off South Africa (32°30'S–09°04'E, 30°09'S–04°42'W), SW of St. Helena (19°13'S -13°44'W, 18°58'S - 10°15'W), S of Liberia (00°56'N – 11°29'W)	Alvariño (unpublished data)
Pacific Ocean and adjacent seas	Off San Diego, California	Alvariño, 1967b
	South China Sea, Gulf of Thailand	Alvariño, 197a

TABLE 3 (cont.)

Region	Localities	Reference
<i>Vogtia pentacantha</i>	Kölliker 1853	
Atlantic Ocean	Off South Africa (32°30'S–09°04'E)	Alvariño (unpublished data)
	Equatorial region off the Amazon estuary	Alvariño, 1967c
	Bay of Biscay (46°43'N – 47°29'N and 07°15'W–08°18'W)	Bigelow, 1911b
	Straits of Florida	Bigelow, 1918
	Sea of Spain	Bigelow and Sears, 1937
	SE of Long Island (40°00'N – 70°30'W)	Bigelow and Sears, 1939
	North Equatorial Current	Chun, 1897
	Scottish region	Fraser, 1961, 1967
	S of Wyville Thomson Ridge	Fraser, 1963
	N of Canary Islands (29°16'N – 16°11'W), S off Azores (36°17'N – 28°53'W), off Azores (39°36'N – 26°05'W)	Leloup, 1936b
	Gulf of Mexico	Sears, 1954
Indian Ocean	Equatorial region	Alvariño, 1964b
	Tropical region: between Providence and Alphonse; Amirante Island	Browne, 1926
	South and east coasts of Africa, south-east Indian Ocean, south Indian Ocean, northwest Indian Ocean	Totton, 1954
Mediterranean	Western Basin (Balearic Island to Sardinia), N of Corsica, from Sardinia to Italy, N of Sicily (N of Messina Strait)	Bigelow and Sears, 1937
	Messina, Naples, Villefranche	Claus, 1863
	Eastern Corsica	Furnestin, 1960
	Messina, Naples, Villefranche	Gegenbauer, 1854
	Messina	Keferstein and Ehlers, 1861
	Gulf of Naples	Kinzer, 1965
	Messina, Naples, Villefranche	Kölliker, 1853

TABLE 3 (cont.)

Region	Localities	Reference
Mediterranean	Messina, Naples, Villefranche-sur-Mer	Leloup, 1935a
	Messina, Naples, Villefranche	Moser, 1923, 1925
	Naples (Herbst, 1912)	Moser, 1925
Pacific Ocean and adjacent seas	South China Sea	Alvariño, 197 a
	Northeast region (N of 40°N and E of 175°W)	Berkeley and Berkeley, 1960
	Monterey (California)	Bigelow and Leslie, 1930

TABLE 3 (cont.)

Region	Localities	Reference
<i>Vogtia serrata</i>	Moser 1913	
Antarctic Ocean	Wilkes Land at about 65°S–85°E, 65°S–80°E; subantarctic region	Moser, 1925
Atlantic Ocean	Bay of Cádiz (W of Kenitra, Morocco, 35°53'N – 07°26'W), Bay of Biscay (46°19'N – 06°48'W)	Bigelow and Sears, 1937
	Northeast Atlantic (Scottish area)	Fraser, 1961, 1967
	Slope waters off Long Island to Chesapeake Bay, Gulf Stream, Sargasso Sea	Grice and Hart, 1962
	Off South Georgia, South Sandwich Islands (53°25'S–35°15'W)	Hardy and Gunther, 1935
	Greenland SW of Frederikshaab in deep water (61°47'N – 52°55'W; the bottom is deep) in the southern part of the Davis Strait	Kramp, 1942
	Eastern Atlantic, from the Bay of Biscay, between the Azores and the Canary Islands, south to latitude 53°S, Bay of Biscay (46°15'N – 07°09'W), between Canary Islands and Azores (32°18'N – 23°58'W), S of Azores (37°08'N – 28°28'W, 36°17'N – 28°53'W), SW of Azores (33°03' – 41°08'W)	Leloup, 1933
	SW of Azores (31°20'N – 35°07'W)	Leloup, 1955
	From the Bay of Biscay, between the Azores and Canary Islands, south to latitude 53°S, Porto Grande (Cape Verde Islands), between Fernando de Noronha and Ascension Island, SW of Ascension Island, N of Trindade Island, S of Cabo Agulhas, SE of Ascension Island, SE of St. Paul, NE of St. Paul, Cape Verde Islands	Moser, 1925
Indian Ocean	Central Indian Ocean	Alvariño, 1964b
	Tropical Indian Ocean (Madagascar)	Moser, 1925
	Off south and east Indian Ocean	Totton, 1954

TABLE 3 (cont.)

Region	Localities	Reference
Pacific Ocean and adjacent seas	Bering Sea (Stas. 4763, 4766), line from Western Aleutians to Kamchatka by way of Komandorski and Bering Island (Sta. 4785), off the southeast coast of Kamchatka (Sta. 4797), Sea of Okhotsk (Stas. 4800, 4928, 5030), Eastern Sea (Sta. 4897), off the east coast of Kyushu, Japan (Sta. 4951)	Bigelow, 1913
	NE of Tower, Galápagos (00°40'N – 88°51'W) S of Madagascar	Bigelow, 1931 Moser, 1925

TABLE 3 (cont.)

Region	Localities	Reference
<i>Vogtia spinosa</i>	Keferstein and Ehlers 1861	
Atlantic Ocean	Off South Africa (31°11'S–00°55'E)	Alvariño (unpublished data)
	Eastern North Atlantic, near the Azores, off Spain and the Bay of Biscay (46°43'N – 47°29'N and 07°15'W–08°18'W)	Bigelow, 1911b
	Bay of Biscay, off Portugal, Sea of Spain	Bigelow and Sears, 1937
	Northeast Atlantic (Scottish area), south of Wyville Thomson Ridge	Fraser, 1961, 1967
	South Atlantic, E of Montevideo, Uruguay (37°03'S–44°17'W)	Haeckel, 1888
	Off the coast of Brazil	Keferstein and Ehlers, 1861
	Eastern North Atlantic, near Azores, off Spain, Bay of Biscay, SE of Azores (37°20'N – 21°40'W), SW of Azores (33°41'N – 36°55'W), NE of Azores (43°03'N – 19°42'W, 43°04'N – 19°42'W), W of Azores (41°29'N – 15°44'W), SW of Azores (38°30'N – 34°40'W)	Leloup, 1933
	Off Portugal (40°56'N – 09°28'W), off Tangier, Morocco, Africa (35°32'N – 07°07'W), Canary Islands (28°52'N – 14°16'W), SW of Canary Islands (34°59'N – 33°01'W), S of Canary Islands (36°53'N – 29°47'W), between Azores and Bermuda (34°44'N – 47°52'W), NE of Flemish Cap (48°02'N – 36°53'W), N of Azores (48°04'N – 32°25'W, 46°48'N – 27°46'W, 45°26'N – 25°45'W), NE of Azores (46°58'N – 19°06'W), between Azores and Cape Clear, Ireland (48°29'N – 13°55'W), W of Land's End, England (50°13'N – 11°23'W), South Atlantic	Moser, 1925
Indian Ocean	Equatorial Indian Ocean	Alvariño, 1964b
	Off south and east coasts of Africa, South Indian Ocean	Totton, 1954
Mediterranean	Off Almeria, Spain (36°33'N – 02°00'W), E of the Balearic Islands, off Cabo Tres Forcas, N of Messina Strait, Eastern Mediterranean Basin (34°21'N – 18°40'E)	Bigelow and Sears, 1937

TABLE 3 (cont.)

Region	Localities	Reference
Pacific Ocean and adjacent seas	Gulf of Thailand	Alvariño, 197a
	Eastern tropical Pacific, Galápagos, Aguja Point, Callao, 10° SW of Callao, 20 °W of Callao, Manga Reva in the Paumotu Archipelago	Bigelow, 1911a
	SE of Cocos (NE of Galápagos, 03°23'N – 83°34'W), NE of Tower (N of Galápagos, 01°14'N – 87°50'W), W of Tower (Galápagos, 00°17' N – 90°20' W), S of Cocos (off Isla del Coco, 03°52' N – 86°43'W)	Bigelow, 1931
	Coast of California ( <u>V. pentacantha</u> , but see synonyms)	Bigelow and Leslie, 1930

TABLE 3 (cont.)

Region	Localities	Reference
<i>Praya cymbiformis</i>	(Delle Chiaje) 1841	
Atlantic Ocean	Northeast and Scottish region	Fraser, 1967
	S of Azores (37°08'N – 28°28'W)	Leloup, 1933
	(as <i>Rosacea cymbiformis</i> ) Bay of Biscay (45°26'N – 09°20'W), NW of Azores (48°02'N – 39°55'W, 48°02'N – 36°53'W), N of Azores (46°48'N – 27°46'W, 45°26'N – 25°45'W)	Leloup, 1955
Mediterranean	Naples	Keferstein and Ehlers, 1861
Pacific Ocean	Valparaiso, Prince Albert	Moser, 1925



TABLE 3 (cont.)

Region	Localities	Reference
<u>Nectodroma dubia</u>	Quoy and Gaimard 1834	
Atlantic Ocean	NE and Scottish region	Fraser, 1967
	Bermuda ( <u>Nectodroma</u> species)	Moore, 1949
Indian Ocean	South Australia	Quoy and Gaimard, 1834
	Off southeast coast of Africa	Totton, 1954
Pacific Ocean and adjacent seas	Santa Barbara Channel, Santa Cruz Basin	Alvariño (personal data)
	Off San Diego, California	Alvariño, 1967b
	Off Aguja Point in Peru (Sta. 4652)	Bigelow, 1911a
	Gardner Bay, Hood (Galapagos, 01°22'S–89°39' W), S of Cocos (04°50' N – 84°00' W)	Bigelow, 1931
	Valparaiso, Prince Albert (Dr. Sander)	Moser, 1925

TABLE 3 (cont.)

Region	Localities	Reference
<i>Nectodroma reticulata</i>	Bigelow 1911	
Pacific Ocean and adjacent seas	South China Sea	Alvariño, 1963, 197 a
	Off San Diego, California	Alvariño, 1967b
	Between Callao and Easter Island (Sta. 4681), 10° off Callao (Sta. 4709)	Bigelow, 1911a
	Eastern Sea (Sta. 4928)	Bigelow, 1913
	S of Manato Point, Colombia, S. A. (05°03'N – 81°18' W), off northwestern Galápagos (00°05'N – 91°11.5'W), NW of Narborough (Galápagos, 00°00' - 91°53'W)	Bigelow, 1931
	Monterey Bay (California), Friday Harbor (Washington), Puget Sound (Washington)	Bigelow and Leslie, 1930
	50 miles SW of Cape Mala, Panama	Boone, 1933

TABLE 3 (cont.)

Region	Localities	Reference
<i>Rosacea plicata</i>	Quoy and Gaimard 1827	
Antarctic Ocean	Antarctic Ocean off Indian Ocean (47°22.5'S–56°19.5'E), Antarctic Ice Edge (58°35'S–92°06.2'E)	Totton, 1954
Atlantic Ocean	Iberian Atlantic at about 8 miles SW of Cape Carvoeiro	Alvariño, 1957b
	Off Cape Town (33°47'S–15°48'E), off South Africa (32°30'S–09°04'E, 30°23' S–02°47'W, 30°09'S–04°42'W), S of Liberia (00°56' N – 11°29'W)t Bay of Biscay (46°50'N – 05°22'W, 45°41'N – 05°12' W)	Alvariño (unpublished data)
	Equatorial region off the Amazon estuary	Alvariño, 1967b
	Bay of Biscay (46°43' N – 47°29' N and 07°15'W–08°18'W)	Bigelow, 1911b
	SW of Cape San Vicente (Portugal)	Bigelow and Sears, 1937
	Temperate North Atlantic, Bay of Biscay	Chun, 1888
	Northeast Atlantic (Scottish area)	Fraser, 1961, 1967
	S of Wyville Thomson Ridge (as <i>R. cymbiphormis</i> )	Fraser, 1963
	Sargasso Sea	Grice and Hart, 1962
	Off Buena Esperanza (Cape of Good Hope), off Gulf of the Baleine	Hardy and Gunther, 1935
	South Atlantic	Huxley, 1859
	Bay of Biscay (46°15'N – 07°09' W), S of Azores (36°17' N – 28°53' W), Azores (38°04' N – 26°07' W)	Leloup, 1933
	Off St. Paul of Loanda, between Cape Verde Islands and Africa, Buenos Aires, Gough Island, off Cape of Good Hope, off Gulf of the Baleine	Leloup, 1934a
	S of Azores (37°08' N – 28°28'W, 36°17'N – 28°53'W) (as <i>R. cymbiphormis</i> )	Leloup, 1936b

TABLE 3 (cont.)

Region	Localities	Reference
Atlantic Ocean	Bay of Biscay (46°43'N – 47°29'N and 07°15'W-08°18'W)	Leloup, 1937
	Off Portugal (40°56'N – 09°28'W), W of Canary Islands (28°42'N – 20°00'W), S of Azores (36°53'N – 29°47'W), SE of Azores (46°58'N – 19°06'W), S of Cape Clear, Ireland (50°13'N – 11°23'W), between Faeroe Islands and Shetland Islands (60°57' N – 04°38'W)	Leloup, 1955
	Off Cape of Good Hope, off Gulf of the Baleine, W of Luanda, W of Africa (09°00' S–06°00' E), NE of Cape Verde Islands (between 400 and 600 m in either sta., 17°48'N–19°31'W)	Leloup and Hentschel, 1938
	Bay of Biscay	Patrity, 1965
	Strait of Gibraltar	Quoy and Gaimard, 1827
	Bermuda ( <i>R. cymbiphormis</i> ) (32°08' N – 32°16' N and 64°40'W-64°31'W)	Totton, 1936
Indian Ocean	West of Ireland, Bay of Biscay (recorded as <i>H. hippopus</i> )	Totton, 1954
	Chagos, Mauritius, Amir ante	Browne, 1926
	Torres Strait (probably his <i>Praya diphes</i> )	Huxley, 1859
	East coast of Africa, SE of Zanzibar (07°42.1'S–44°14' E), off south and east coasts of Africa	Totton, 1954
Mediterranean	Messina	Keferstein and Ehlers, 1861
	Messina	Kölliker, 1853
	Villefranche-sur-Mer	Leloup, 1935a
	Monaco, off Cape Roux (as <i>R. cymbiphormis</i> )	Leloup, 1936a
	Nice	Vogt, 1851
	Nice	Vogt, 1854
Pacific Ocean and adjacent seas	South China Sea	Alvariño, 1963

TABLE 3 (cont.)

Region	Localities	Reference
Pacific Ocean and adjacent seas	Sea of Cortés	Alvariño, 1965a
	Off San Diego, California	Alvariño, 1967b
	Off Manzanillo, Mexico	Alvariño, 1969
	South China Sea	Alvariño, 197 a
	Bay of Amboine	Bedot, 1896
	Eastern tropical Pacific (Stas. 4661, 4684, 4685, 4705, 4732, 4740), off Callao, between Callao and Easter Island, W of Albatross plateau, Paumotu Archipelago	Bigelow, 1911a
	Bering Sea (Stas. 4764, 4766, 4767, 4775), from western Aleutians to Kamchatka by way of Komandorski and Bering Island (Sta. 4785), Sea of Okhotsk (Sta. 4800), Sea of Japan (Sta. 4865), Eastern Sea (Stas. 4902, 4920)	Bigelow, 1913
	Malayan region	Lens and Riemsdijk, 1908
	Off the Great Barrier Reef, Australia – not in the lagoon	Russell and Colman, 1935
	Outside lagoon Bikini Atoll (Marshall Islands)	Sears, 1950
	Great Barrier Reef, Australia	Totton, 1932

TABLE 3 (cont.)

Region	Localities	Reference
<i>Nectopyramis diomedea</i> Bigelow 1911		
Atlantic Ocean	Off Cape Town (33°47'S-15°48'E), off South Africa (32°30'S-09°04' E, 31°11'S-00°55' E)	Alvariño (unpublished data)
	Northeast Atlantic (Scottish area)	Fraser, 1961, 1967
	Bermuda ( <i>Nectopyramis</i> species, <i>Praya dubia</i> ) (32°08'N – 32°16'N and 64°40'W-64°31' W)	Totton, 1936
	Off Bermuda, South Atlantic (26°S to 39 °S), between South Georgia and the Ice Edge at Sta. 1999 (64°55.9'S-22°08.1'W)	Totton, 1954
Indian Ocean	South Indian Ocean (32°04.1'S-77°59.6'E, 32°00.6'S-62°11.7'E, 32°00.6'S-62°03.2'E), off southeast Africa (37°50.1'S-35°46.6'E, 34°47.6'S-34°27.9'E), off East Africa (00°06'S-49.45.4'E, 06°05'N – 52°00' E), off south and east coasts of Africa, South Indian Ocean	Totton, 1954s
Pacific Ocean and adjacent seas	Western Pacific, Philippines, Indonesian Sea	Alvariño, 1964b
	Off San Diego, California	Alvariño, 1967b
	Off Aguja Point in Perú, about 10° off Callao, 10° off Agua Point at 120 °W in the south tropics	Bigelow, 1911a
	From San Francisco to Unalaska Island (Sta. 4759), east of Kunle Islands (Sta. 4806), off Cocos Islands	Bigelow, 1931

TABLE 3 (cont.)

Region	Localities	Reference
<i>Nectopyramis natans</i>	Bigelow 1911	
Atlantic Ocean	Off South Africa (32°30'S–09°04' E)	Alvariño (unpublished data)
	Off South West Africa (33°50'S–34°13'S and 16°04+E-15°49'E), between St. Paul and the Brazilian coast, between Gulf of Guinea and Ascension Island (02°49'S–09°25'W)	Totton, 1954
Indian Ocean	Central Indian Ocean water	Alvariño, 1964b
	Off Somali (02°39.4'N – 50°46.4'E), off south and east coasts of Africa, South Indian Ocean	Totton, 1954
Pacific Ocean	Off San Diego, California	Alvariño, 1967b
	Tropical region	Bigelow, 1911a
	Celebes	Bigelow, 1919
	ESE of Cocos Islands (04°56+N – 84°35'W)	Bigelow, 1931

TABLE 3 (cont.)

Region	Localities	Reference
<i>Nectopyramis spinosa</i> Sears 1952		
Atlantic Ocean	Scottish region	Fraser, 1961, 1967
	E of Ascension Island (07°34'S–08°48'W)	Sears, 1952
	W of Ireland (54°15'N – 14°32'W), N of St. Helena Island (12°29.8'S–03°41.8'W), S of Ilha da Trindade (21°13'S–29°55'W)	Totton, 1954
Indian Ocean	NE of Madagascar (01°12'N – 62°19'E), off Mozambique, Africa (25°19'S–36°13'E), off north Madagascar (11°18' S–50°13'E)	Sears, 1952
	SE of Heard Island (58°35'S–92°06.2'E)	Totton, 1954
Pacific Ocean	Galápagos Islands (02°52'N – 87°38'W), SW of New Guinea (05°28'S - 130°39'E)	Sears, 1952



TABLE 3 (cont.)

Region	Localities	Reference
<i>Nectopyramis thetis</i>	Bigelow 1911	
Atlantic Ocean	Off South Africa (32°30'S–09°04'E), SW of St. Helena (18°58'S–10°15'W)	Alvariño (unpublished data)
	Bay of Biscay (46°43'N – 47°29'N and 07°15'W–08°18'W)	Bigelow, 1911b
	Bay of Biscay, Sea of Spain	Bigelow and Sears, 1937
	Northeast Atlantic, Scottish area	Fraser, 1961, 1967
	East temperate Atlantic	Leloup, 1932a
	SW of Azores (38°30'N – 34°40'W)	Leloup, 1932b
	Between the Azores and Canary Islands, Bay of Biscay, Canary Islands (28°04'N – 16°49'W), between Canary Islands and Azores (32°18'N – 23°58'W), off N of Azores (37°08'N – 28°28'W, 36°17'N – 28°53'W), SW of Azores (31°44'N – 42°38'W, 33°03'N – 41°08'W), off southern Azores (37°04'N – 28°01'W), off southwest Azores (38°30'N – 34°40'W)	Leloup, 1933
	S of Azores (36°46'N – 26°41'W)	Leloup, 1936b
	S of Azores (36°53'N – 29°47'W), W of Azores (34°44'N – 47°52'W), W of Brest, France (48°29'N – 13°55'W)	Leloup, 1955
	Bay of Biscay	Patriti, 1965
	Bermuda, NW of Ireland, off southern tip of Africa (33°25'S–06°31'E), off Cape Town, Africa (34°05'S–16°00'E), off Cape St. Martin, Africa (33°20'S–33°46'S and 15°18'E–15°08'E), N of South Sandwich Islands (31°16'S–29°56.5'W), NE of Tristan da Cunha group (31°40'.5'S–0°28.4'W), S of Gulf of Guinea (S of Cape Palmas, 03°24.8'S–07°51.2'W), S of Ivory Coast, Africa (02°53.2'S–02°21.5'W), NW of Scotland (58°38'N – 08°21'W), NW of Ireland (55°28'N – 09°42'W)	Totton, 1954
Indian Ocean	Central Indian Ocean waters	
	SE of Cabo Buena Esperanza (Cape of Good Hope, 37°50'S–35°46.6'E, 34°47.6'S)	Alvariño, 1964b

TABLE 3 (cont.)

Region	Localities	Reference
Indian Ocean	34°47.6'S–34°27.9'E), Indian Ocean between Durban and S of Madagascar (27°24.3'S–39°21.2'E), between East African coast and S of Madagascar (24°35.6'S–39°53.5'E), East African coast, SE of Zanzibar (07°42.1'S–44°14.1'E), S of Madagascar (00°06'S–49°45.4'E), off Somali Republic (06°05'N – 52°00'E), N of Ile Amsterdam (32°04.1'S–77°59.6'E), NW of Ile Amsterdam (31°48.9'S–65°30.3'E, 32°00.6'S–62°11.7'E, 32°00.6'S–62°03.2'E)	Totton, 1954
Pacific Ocean	Off San Diego, California	Alvariño, 1967b

TABLE 3 (cont.)

Region	Localities	Reference
Amphicaryon acaule	Chun 1888	
Atlantic Ocean	Off Honduras ( $16^{\circ}26'N - 84^{\circ}53'W$ , $16^{\circ}07'N - 84^{\circ}40'W$ ), off Costa Rica ( $10^{\circ}04.4'N - 80^{\circ}21.5'W$ )	Alvariño (unpublished data)
	Equatorial region off the Amazon estuary	Alvariño, 1967c
	Gulf of Honduras, off the Panama Canal and Gulf of Mexico	Alvariño, 1969
	Straits of Florida, N of Bahama Bank	Bigelow, 1918
	ESE of Cape Hatteras ( $34^{\circ}27'N - 71^{\circ}36'W$ )	Bigelow, 1931
	SW of Cape San Vicente	Bigelow and Sears, 1937
	Coasts of Portugal ( $36^{\circ}37'N - 07^{\circ}57'W$ )	Candeias, 1932
	Canary Islands	Chun, 1888
	Off Bermuda	Chun, 1897
	N of Scotland ( $60^{\circ}23'N - 07^{\circ}49'W$ )	Fraser, 1961, 1967
	Line from Chesapeake Bay to Bermuda, line from Bermuda to Bahamas (correct it as being <i>A. ernesti</i> ). Sargasso Sea	Grice and Hart, 1962
	W of Azores ( $38^{\circ}58'N - 44^{\circ}55'W$ ), between Canary Islands and Straits of Gibraltar ( $38^{\circ}58'N - 44^{\circ}55'W$ )	Leloup, 1933
	W of Canary Islands ( $29^{\circ}06'N - 25^{\circ}02'W$ ), SW of Horta, Azores ( $34^{\circ}59'N - 33^{\circ}01'W$ ), ESE of Bermuda ( $36^{\circ}53'N - 29^{\circ}47'W$ ), halfway between Bermuda and Azores ( $34^{\circ}44'N - 47^{\circ}52'W$ )	Leloup, 1955
	Off Bermuda	Moore, 1949
	Florida Current, off Miami	Moore, 1953
	$30^{\circ}N - 44^{\circ}S$ or $20^{\circ}N - 32^{\circ}S$ , N of Tristan da Cunha, off South Africa (about $10^{\circ}E$ ), SE of Ascension Island, SE of St. Paul Island, off Cape Verde Islands	Moser, 1925

TABLE 3 (cont.)

Region	Localities	Reference
Atlantic Ocean	Gulf of Mexico	Sears, 1954
	Off Bermuda (32°08'N – 32°16'N and 64°40'W-64°31'W)	Totton, 1936
Indian Ocean and adjacent seas	Equatorial region	Alvariño, 1964
	Chagos, Farquhar, Amirante	Browne, 1926
	Discovery II Stas. 1583 and 1581, off south and east coasts of Africa, southeast Indian Ocean	Totton, 1954
Mediterranean	Ischia, Capri, Gulf of Naples	Kinzer, 1965
Pacific Ocean and adjacent seas	South China Sea	Alvariño, 1963
	Tropical equatorial region	Alvariño, 1964b
	Off San Diego, California	Alvariño, 1967b
	South China Sea	Alvariño, 197 a
	Eastern tropical region, S of Guatemala Basin, NE of Galápagos, SW of Callao, off Chile at 20°S–92°W, 21°S–103°W, E of Albatross plateau, Stas. 4613, 4638, 4676, 4683, 4701, 4705, 4732	Bigelow, 1911a
	Off east coast of Luzon	Bigelow, 1919
	S of Hood (vicinity of Galápagos, 2°33'S–89°44'W)	Bigelow, 1931
	Great Barrier Reef (not in lagoon)	Russell and Colman, 1935
	Off Great Barrier Reef, Australia	Totton, 1932
Red Sea	Red Sea	Totton, 1954

TABLE 3 (cont.)

Region	Localities	Reference
<i>Amphicaryon ernesti</i>	Totton 1954	
Atlantic Ocean	Off the Amazon (09°09.6'N – 47°02.7'W)	Alvariño (unpublished data)
	Equatorial region off the Amazon estuary	Alvariño, 1967c
	Off the Mississippi delta, Gulf of Mexico	Alvariño, 1969
	Sargasso Sea	Grice and Hart, 1962
	SE of Cape Verde Islands (19°29.8'N – 18°46.1'W), SW of Cape Verde (12°21.5'N – 30°07.5'W), off west Africa (10°59.3'N – 27°03.8'W)	Totton, 1954
Indian Ocean and adjacent seas	Equatorial region	Alvariño, 1964b
	N of Madagascar (00°57.8'S–49°26.7'E) southeastern tip of Africa (31°46.6'S–29°46.3'E), W of Madagascar (12°50'N – 43°14'E)	Totton, 1954
Pacific Ocean and adjacent seas	Off San Diego, California	Alvariño, 1967b
	South China Sea	Alvariño, 197 a
Red Sea	Red Sea	Totton, 1954

TABLE 3 (cont.)

Region	Localities	Reference
<i>Amphicaryon peltifera</i> Haeckel 1888		
Atlantic Ocean	Off Canary Islands (28°04'N – 16°49'W)	Leloup, 1933
	Off Tangier (35°32'N – 07°07'W), off Azores (36°53'N – 29°47'W)	Leloup, 1955
	N of Tristan da Cunha, Cape Verde Islands	Moser, 1925
	Off Cape of Good Hope (33°40'S–16°55'E)	Totton, 1954
Indian Ocean	N of Madagascar (00°57.8'S–49°26.7'E), SE of Zanzibar (08°44.6'S–41°50.3'E)	Totton, 1954

TABLE 3 (cont.)

Region	Localities	Reference
<u>Maresearsia preclara</u>	Totton 1954	
Atlantic Ocean	Bermuda, off Angola, Africa ( $08^{\circ}26.5'S-05^{\circ}59.4'E$ ), between Cape Verde and St. Paul Rocks ( $07^{\circ}28'N-30^{\circ}00.5'W$ ), S of Ivory Coast ( $02^{\circ}53.2'S-04^{\circ}21.5'W$ )	Totton, 1954
Indian Ocean	SE of Zanzibar ( $08^{\circ}44.6'S-41^{\circ}50.3'E$ )	Totton, 1954

TABLE 3 (cont.)

Region	Localities	Reference
<i>Anthophysa rosea</i>	Brandt 1835	
Atlantic Ocean	SW of Madeira (30°47'N – 24°52'W, 30°42'N – 27°11'W)	Bedot, 1904
	Sargasso Sea (31°05'N – 40°07'W)	Chun, 1897
	Tortugas	Fewkes, 1882
	Tristan da Cunha group (35°45'S–18°31'W)	Haeckel, 1888
	Gulf of Guinea (03°46'N – 01°49.4'W)	Leloup, 1941a
	Canary Islands (28°02'N – 14°17'W), SW of Azores (34°59'N – 33°01'W), NW of Azores (37°09'N – 38°05'W)	Leloup, 1955
Indian Ocean and adjacent seas	Salha de Malha Bank	Browne, 1926
	Malay Archipelago	Lens and Riemsdijk, 1908
	S of Madagascar	Moser, 1925
Mediterranean	Off Algiers (36°54'N – 02°57'E)	Bigelow and Sears, 1937
Pacific Ocean	Galápagos region	Bigelow, 1911a
Red Sea	Red Sea	Schneider, 1898



TABLE 3 (cont.)

Region	Localities	Reference
<i>Apolemia uvaria</i>	Lesueur 1811	
Atlantic Ocean	NE and Scottish region	Fraser, 1967
	N of Flemish Cap (48°02'N – 39°55'W)	Leloup, 1955
Mediterranean	Naples	Costa, 1836
	Messina	Keferstein and Ehlers, 1861
	Monaco	Leloup, 1936a
	Monaco	Leloup, 1936b
	Villefranche	Totton and Bargmann, 1965

TABLE 3 (cont.)

Region	Localities	Reference
<i>Bathyphysa conifera</i>	(Studer) 1878	
Atlantic Ocean	W of Canary Islands (29°07'N – 25°32'W), off Azores (36°53'N – 29°47'W), N of Azores (45°26'N – 25°45'W)	Leloup, 1955

TABLE 3 (cont.)

Region	Localities	Reference
<i>Rhizophysa filiformis</i> Forskal 1775		
Atlantic Ocean	Off Rabat, Morocco ( $34^{\circ}41'N - 08^{\circ}09'W$ )	Bedot, 1904
	Gulf of Cariaco (Venezuela)	Legaré, 1961
	(as <i>R. eysenhardti</i> ) E of New York ( $40^{\circ}17'N - 65^{\circ}00'W$ ), SW of Azores ( $34^{\circ}00'N - 34^{\circ}20'W$ )	Leloup, 1936b
Mediterranean	Messina	Keferstein and Ehlers, 1861

TABLE 3 (cont.)

Region	Localities	Reference
<i>Agalma elegans</i>	Sars 1846	
Atlantic Ocean	Off George's Bank, off Long Island, off Atlantic City	Alvariño (unpublished data)
	Gulf of Mexico	Alvariño, 1969
	NW of Canary Islands (30°47'N – 24°52'W)	Bedot, 1904
	East Port region (Maine), Gulf Stream off Newport, Newport (Rhode Island), Gulf of Maine (eastern part)	Bigelow, 1914
	Inner edge of the Gulf Stream, inner edge of the Gulf Stream off Cape Cod	Bigelow, 1926
	Off Spanish Sahara, Africa (22°30'N and 21°00'N)	Cervigón, 1961
	Narragansett Bay	Fewkes, 1881
	Northeast Atlantic (Scottish shelf)	Fraser, 1961, 1967
	Shelf waters off Long Island, slope waters off Long Island, Chesapeake Bay, Sargasso Sea	Grice and Hart, 1962
	Little Minch; N of Irishtrahull (S of Toe Head, southern Ireland, 50°54'N – 09°06'W)	LeDanois, 1913
	Gulf of Cariaco	Legaré, 1961
	Off Cabo Finisterre, Spain (44°02'N – 12°05'W)	Leloup, 1936b
	SW of Azores (31°20'N – 35°07'W, 34°59'N – 33°01'W), off northern Ireland (56°15'N – 08°28'W, 56°33'N – 09°30'W), Rockall Island (57°41'N – 11°48'W), W of Shetland Islands (60°57'N – 04°38'W)	Leloup, 1955
	Off Bermuda	Moore, 1949
	Off Herdla and Hjeltel Fjordes (Norway)	Runnström, 1932
	Off Bermuda (32°08'N – 32°16'N and 64°40'W-64°31'W)	Totton, 1936

TABLE 3 (cont.)

Region	Localities	Reference
<i>Agalma elegans</i>	Sars 1846	
Atlantic Ocean	Valentia Harbour, Celtic Sea, NW of the British Isles (60°18'N – 12°20'W), off Luanda, Angola, Africa (09°38'S–12°42'E)	Totton, 1954
Indian Ocean and adjacent seas	Off Chagos Island	Browne, 1926
	E of southern tip of Africa (37°50.1'S–35°46.6'E), N of Madagascar (04°25.9'S–47°10'E), E of southern tip of Africa (34°47.6'Q–34°27.9'E), E of Zanzibar (07°42.1'S–44°14.1'E), N of Madagascar (00°57.8'S–49°26.7'E, 02°39.4'N – 50°46.4'E, 06°05'N – 52°00'E)	Totton, 1954
Mediterranean	Gulf of Lyon	Furnestin, 1960
	Off Messina	Kölliker, 1853
	Villefranche-sur-Mer (rare)	Leloup, 1935a
	Villefranche-sur-Mer	Totton, 1954, 1955
Pacific Ocean	Amboina (Malayan waters)	Bedot, 1896
	Northeastern Pacific: W of Queen Charlotte Island (53°30'N – 138°53'W, 52°08'N – 133°26'W), off Vancouver Island (48°00'N – 133°12'W), W of Queen Charlotte Island (53°28'N – 133°32'W), N of Queen Charlotte Island (55°00'N – 150°00'W), S of Kodiak Island (55°00'N – 155°00'W)	Berkeley and Berkeley, 1960
	Great Barrier Reef (not in the lagoon)	Russell and Colman, 1935
	Great Barrier Reef	Totton, 1932
Red Sea	Gulf of Aqaba, 5 to 35 miles E of Sangan Lighthouse, off Port Sudan off Kossier and Jaffatin Islands (21°53'N – 37°41'E)	Totton, 1954

TABLE 3 (cont.)

Region	Localities	Reference
<i>Agalma okeni</i>	Eschschoitz 1825	
Atlantic Ocean	Off Long Island, off Atlantic City, Gulf of Maine, George's Bank, Cape Cod	Alvariño (unpublished data)
	Off Cape Town (33°47'S–15°48'E), S of Liberia (00°56'N – 11°29'W), Gulf of Mexico (NW of Cuba), off the Amazon (14°36'N – 58°35'W, 10°53'N – 50°54'W, 10°31'N – 53°22'W), off Honduras (16°59'N – 86°11'W), off Nicaragua (13°12'N – 82°25'W), Gulf of Cariaco (Venezuela)	Alvariño (unpublished data)
	Equatorial region off the Amazon estuary	Alvariño, 1967c
	Caribbean Sea and the western part of the Gulf of Mexico	Alvariño, 1969
	Chesapeake Bay to Bermuda, off Bermuda, Bermuda to Bahamas, NE of Providence Channel, Straits of Florida, N of Bahama Bank	Bigelow, 1918
	SE of Cape Hatteras (34°47'N – 73°41'W)	Bigelow, 1931
	From Martha's Vineyard to 36°N	Bigelow and Sears, 1939
	Gulf Stream	Fewkes, 1882
	Slope waters from Long Island to Chesapeake Bay, Sargasso Sea	Grice and Hart, 1962
	North Atlantic	Haeckel, 1869
	Gulf of Cariaco (Venezuela)	Legaré, 1961
	W of Azores (38°58'N – 44°55'W)	Leloup, 1936b
	SW of Azores (31°20'N – 35°07'W, 34°59'N – 33°01'W), SW of Horta, Azores (36°53'N – 29°47'W, 37°37'N – 29°25'W), W of Horta, Azores (36°52'N – 39°55'W), halfway between Bermuda and Azores (34°44'N – 47°52'W)	Leloup, 1955
	Off Bermuda	Moore, 1949
	Off Port Natal, Tortugas (Hartmeyer), between St. Paul and Liberia, N of Tristan da Cunha, N of St. Helena,	

TABLE 3 (cont.)

Region	Localities	Reference
Atlantic Ocean	between St. Helena and Ascension Island, off Ascension Island, between St. Paul and St. Tomé, SE of St. Paul, N of Cape Verde Islands	Moser, 1925
	Gulf of Mexico	Sears, 1954
	Off Bermuda (32°08'N – 32°16'N and 64°40'W–64°31'W)	Totton, 1936
	Tropical region S of Cape Verde Islands and further southward (Terra Nova, Stas. 32, 63, 107), tropical region (Discovery II, Sta. 1598, 07°10.8'S–03°31.3'W, S of St. Helena Island), off Bermuda (Terra Nova, Stas. 45, 46, 56, 69, 59), off Montevideo, Uruguay (35°29'S–51°21'W), S of South Sandwich Islands (61°45'S–26°50'W), S of Sts. Peter and Paul Rocks (00°56'S–14°08'W), Tarrafal (San Antonio, Cape Verde Islands), S of Trindade Island (26°06.5'S–30°06'W), NW of Ascension Island (05°59'S–29°49'W), Rocas Fernando de Noronha (03°17'S–29°57'W, 03°20'S–30°03'W), N of Sts. Peter and Paul Rocks (02°59'N – 29°59'W, 02°59'N – 30°04'W), NW of Sts. Peter and Paul Rocks (04°05'N – 30°00'W, 07°28'N – 30°00'W), SW of Cape Verde Islands (08°54'N – 30°02'W, 08°54'N – 30°01'W, 12°21'N – 30°07'W), Sts. Peter and Paul Rocks (03°17'N – 29°14'W, 00°03.4'N – 30°36.8'W), off Portuguese Guinea (10°29.8'N – 18°46.1'W)	Totton, 1954
Indian Ocean and adjacent seas	Equatorial region	Alvariño, 1964b
	Mauritius, Farquhar	Browne, 1926
	Ceylon	Haeckel, 1888
	S of the Mascareñas, Sumatra at Padang	Moser, 1925
	W of Amirante Island, Seychelles (00°06'S–49°45.4'E), NE of Ile Amsterdam (31°51.6'S–83°35.9'E), SE of southern tip of Madagascar (31°54.5'S–51°27.9'E), halfway between Iles Crozet and southern tip of	

TABLE 3 (cont.)

Region	Localities	Reference
Indian Ocean and adjacent seas	Madagascar (31°57.6'S–49°57.4'E), E of Zanzibar (07°42.1'S–44°14.1'E), SE of Zanzibar (08°44.6'S–41°50.3'E), SE of Mogadiscio, Somali (00°06'S–49°45.4'E), E of Mogadiscio, Somali (02°39.4'N – 50°46.4'E), NW of Ile Amsterdam (32°04.5'N – 70°43.9'E, 35°21.5'S–66°22.5'E), off East Africa and South Africa, Gulf of Aden (Alays), off Moçambique, Africa (14°42'S–42°22.2'E), South Indian Ocean, northwest Indian Ocean, off Port Elizabeth, South Africa (34°30.8'S–26°19'E), off Mafia Island, Tanzania (08°44'S–41°50.3'E)	Totton, 1954
Mediterranean	Villefranche-sur-Mer Gulf of Naples ( <u>Agalmosis elegans</u> , Sars = <u>Agalma sarsi</u> , Leuckart)	Leloup, 1935a Neppi, 1921
Pacific Ocean and adjacent seas	South China Sea  Sea of Cortés Gulf of Panama to Punta San Telmo, Mexico South China Sea Bay of Amboina Panama Expedition: (Acapulco, S of Acapulco), Guatemala, Costa Rica, Panama Coves, Malpelo, Galápagos, SW of Aguja Point, between Callao and Easter Island, north Albatross plateau in west Albatross plateau (Stas. 4596, 4600, 4611, 4617, 4619, 4624, 4627, 4631, 4635, 4640, 4642, 4644, 4657, 4659, 4681, 4708, 4719, 4713, 4714, 4715, 4716, 4717, 4728, 4743 and at Sta. 3397 Albatross) Eastern Sea (Sta. 4920), south coast of Nippon, in line from Kobe to Yokohama (Sta. 4978)	Alvariño, 1965a Alvariño, 1969 Alvariño, 197a Bedot, 1896 Bigelow, 1911a  Bigelow, 1913



TABLE 3 (cont.)

Region	Localities	Reference
Pacific Ocean and adjacent seas	Malapaya Sound, Palawan, off east coast of Luzon, off northern Mindanao, between Siquijor and Bohol, Gulf of Tomini, Celebes, Macassar Strait	Bigelow, 1919
	S of Mariato Point (05°03'N – 81°18'W), SE of Cocos (04°30'N – 81°49'W), W of Tower (00°17'N – 90°02'W), northeast coast of Albemarle (00°05'N – 91°11.5'W), S of Hood (02°33'N – 89°44'W), E of Tower (00°10'N – 88°22'W), SW of Mariato Point (06°16'N – 80°48'W), S of Cocos (04°50'N – 87°00'W), NE of Tower (02°12'N – 89°01'W)	Bigelow, 1931
	South China Sea	Dawydoff, 1937
	Off Misaki	Kawamura, 1911
	Bay of Nhatrang	Leloup, 1956
	New Guinea	Moser, 1925
	Barrier Reef lagoon	Russell and Colman, 1935
	Marshall Islands: Bikini Atoll (inside and outside lagoon), Rongerik Atoll (outside lagoon), Eniwetok Atoll (outside lagoon), between 02°15'S and 09°00'N and 166°39'E and 168°00'E	Sears, 1950
	Great Barrier Reef	Totton, 1932
	Off Costa Rica, eastern tropical Pacific, off Three Kings Island, off North Island, off New Zealand	Totton, 1954
Red Sea	Red Sea	Schneider, 1898
	Port Sudan, Gulf of Aqaba, southern region (15°08'N – 42°01'E), central region (21°53'N – 37°41'E), northern region (25°08.5'N – 35°40'E)	Totton, 1954

TABLE 3 (cont.)

Region	Localities	Reference
<i>Bargmannia elongata</i>	Totton 1954	
Atlantic Ocean	SW of Azores (37°37'N – 29°25'W)	Leloup, 1955
	Off Trindade Island (21°13'S–29°55'W), S of Cape Agulhas, South Africa	Totton, 1954
	(45°03'S–17°03'E), W of Cape Town, South Africa	
	(33°43.3'S–08°38.5'E), S of Cape of Good Hope	
	(38°02.9'S–18°39.7'E), S of Cape Verde Islands (14°39.3'N –	
	25°51.7'W), SW of Cape Verde Islands (14°27'N – 30°02'W, 12°21.5'N	
	– 30°07.5'W), SW of Azores (37°37'N – 29°25'W), SE of Maceió,	
	Brazil (11°02.1'S–29°51'W), E of Natal, Brazil (06°36'S–06°25.1'W)	
Indian Ocean	In mouth of Gulf of Aden (11°32.3'N – 52°03'E), E of Somali Republic,	Totton, 1954
	Africa (00°06'S–49°45.4'E, 02°39.4'N – 50°46.4'E, 06°05'N –	
	52°00'E)	
Pacific Ocean and adjacent seas	South China Sea	Alvariño, 1963
	Western Pacific, Philippines, Indonesian Sea	Alvariño, 1964b
	Sea of Cortés	Alvariño, 1965a
	Off San Diego, California	Alvariño, 1967b
	South China Sea	Alvariño, 197a

TABLE 3 (cont.)

Region	Localities	Reference
<u>Erenna richardi</u>	Bedot 1904	
Atlantic Ocean	NE of Azores (42°12'N – 14°03'W)	Bedot, 1904
	Bay of Biscay (44°43'N – 06°24'W), Canary Islands (28°34'N – 16°37'W)	Leloup, 1936b
	NW of Cabo Finisterre, Spain (46°01.5'N – 14°47'W)	Moser, 1925
Pacific Ocean and adjacent seas	Western region, Philippines, Indonesian Sea	Alvariño, 1964b
	Sea of Cortés	Alvariño, 1965a
	At Sta. 4715 (S of the Galápagos Islands) in a trawl from 1747 fathoms	Bigelow, 1911a

TABLE 3 (cont.)

Region	Localities	Reference
<i>Marrus ortnocannoide</i> Totton 1954		
Arctic Ocean and adjacent seas	Baffin Bay, Robeson Channel, Sound	Kramp, 1942
Atlantic Ocean	Southwest entrance to the Faeroe Channel	Fraser, 1961, 1967
Indian Ocean	Equatorial region	Alvariño, 1964b
	Off south and east coasts of Africa, W tropical region (Discovery II, Sta. 1585), off Somali (00°06'S–49°45.4'E)	Totton, 1954

TABLE 3 (cont.)

Region	Localities	Reference
<i>Nanomia cara</i>	Agassiz., 1865	
Atlantic Ocean	Nahant (N of Cape Cod)	Agassiz, A., 1863
	Massachusetts Bay, Nahant, Newport, Rhode Island	Agassiz, A., 1865
	Gulf of Maine, George's Bank, off George's Bank, off Long Island, Atlantic City	Alvariño (unpublished data)
	E of Port Region (Maine), Massachusetts Bay, off Cape Ann, off Cape Cod, Massachusetts, Newport, Rhode Island, Gulf of Maine (central part), George's Bank	Bigelow, 1914
	Continental Slope abreast of the Gulf of Maine, Gulf of Maine	Bigelow, 1926
	Gulf of Maine and region of Martha's Vineyard, Chesapeake Bay	Bigelow and Sears, 1939
	Shelf waters off Long Island, slope waters off Long Island to Chesapeake Bay	Grice and Hart, 1962
	Off Godthaab, Greenland (63°50'N – 53°15'W), Ameratikfjord (64°05'N – 51°00'W), Fulla Bank (64°02'N – 52°25'W), off Godthaad, Greenland (64°01'N – 52°40'W), SW of Ireland, off west coast of Greenland as far north as 66°N and in the middle and western parts of the Davis Strait, Evighedsfjord, Særdlog, Iceland, off west of Iceland, Denmark Strait (65°45'N – 26°05'W), off northwest of Iceland (65°50'N – 26°53'W), NW of Iceland (66°53'N – 24°42'W), off south of Iceland (63°15'N – 17°35'W, 63°22'N – 21°17'W), off Breidhafjörður, Iceland (64°31'N – 23°36'W, 64°45'N – 23°09'W)	Kramp, 1939
	It evidently avoids the cold water of the polar currents and only ascends into the surface layers when their temperature is about 0°	Kramp, 1942
	Valentia Island, Ireland, Celtic Sea between Ireland and Cornwall, NW of British Isles, Norwegian waters	Totton, 1954

TABLE 3 (cont.)

Region	Localities	Reference
Arctic	82 °N, Baffins Bay and Dan's Bay	Aurivillius, 1896
Mediterranean	Naples and Messina	Kefenstein and Ehlers, 1861
	Gulf of Naples	Kinzer, 1965
Pacific Ocean	Friday Harbor (Washington)	Mackie, 1964

TABLE 3 (cont.)

Region	Localities	Reference
<i>Stephanomia bijuga</i>	(Delle Chiaje) 1841 or 1842 = <i>Nanomia bijuga</i>	Totton 1954
Atlantic Ocean	Iberian region, off Portugal (37°22'N – 09°13'W), off Cape Espichel (38°01'N – 09°21'W), off the entrance to the Tagus Estuary (38°21'N – 09°25'W)	Alvariño, 1957b
	Equatorial region off the Amazon estuary	Alvariño, 1967c
	Caribbean Sea and Gulf of Mexico	Alvariño, 1969
	Gulf of Maine, George's Bank, off Long Island to Atlantic City, off Cape Town (33°47'S–15°48'E), S of Liberia (00°56'N – 11°29'W), off the Amazon (18°13'N – 59°57'W), off Honduras (15°37'N – 83°42'W), off Nicaragua (14°19.4'N – 83°08.6'W)	Alvariño (unpublished data)
	Great Britain (Valentia, Ireland), English Channel, Salcombe, Devon, Plymouth Sound	Berrill, 1930
	West Indies	Fewkes, 1882
	Scottish region	Fraser, 1961
	Slope waters off Long Island, Chesapeake Bay	Grice and Hart, 1962
	Gulf of Cariaco, Venezuela	Legaré, 1961
	English Channel	Russell, 1935, 1939
Indian Ocean	Somali Basin (06°05'N – 52°00' E), entrance to Gulf of Aden (11°32.3'N – 52°03' E), off southeast coast of Africa, Gulf of Aden	Totton, 1954
Mediterranean	Villefranche-sur-Mer	Leloup, 1935a
	Monaco	Leloup, 1936a
	Gulf of Naples	Neppi, 1921
	Villefranche	Totton, 1954
Pacific Ocean and adjacent seas	South China Sea, Gulf of Thailand	Alvariño, 1963
	Western Pacific, Philippines, Indonesian Sea	Alvariño, 1964b

TABLE 3 (cont.)

Region	Localities	Reference
Pacific Ocean and adjacent seas	Sea of Cortes	Alvariño, 1965a
	Off San Diego, California	Alvariño, 1967b
	From El Salvador to the Gulf of Tehuantepec	Alvariño, 1969
	Western Pacific, South China Sea, Gulf of Thailand	Alvariño, 197a
	Bay of Amboina, Dutch East Indies	Bedot, 1896
	Northeast Pacific ( $52^{\circ}00'N - 127^{\circ}00'W$ ), Oak Bay in Victoria, B. C., Canada, Friday Harbor (Washington)	Berkeley and Berkeley, 1960
	Manzanillo, Costa Rica, Cocos, Malpelo Islands, between Callao and Easter Island, Stas. 4587, 4613, 4635, 4681, Albatross 1891 Sta. 53	Bigelow, 1911a
	South China Sea, Gulf of Thailand	Dawydoff, 1937
	Misaki (Japan)	Kawamura, 1911
	Bay of Nhatrang	Leloup, 1956
	S of Celebes Islands ( $05^{\circ}39' S - 122^{\circ}12' E$ ), (the species according to the author)	Lens and Riemsdijk, 1908
	Great Barrier Reef (outside and in Trinity Opening)	Russell and Colman, 1935
	Great Barrier Reef	Totton, 1932
Red Sea	Red Sea ( $15^{\circ}08' N - 42^{\circ}01' E$ ), Port Sudan, Kamaran Islands	Totton, 1954



TABLE 3 (cont.)

Region	Localities	Reference
<i>Stephanomia rubra</i>	Vogt 1852	
Atlantic Ocean	Off Long Island, Atlantic City	Alvariño (unpublished data)
	Chesapeake Bay to Bermuda (32°33' N – 72°14' W), Straits of Florida (27°17' N – 79°40' W)	Bigelow, 1918
	Shelf waters off Long Island, slope waters off Long Island, Chesapeake Bay	Grice and Hart, 1962
	Canary Islands (29°16' N – 16°11' W), S of Canary Islands (36°17' N – 28°53' W), W of Azores (39°26' N – 31°23' W), off Brest, France (47°30' N – 05°30' W), off northern Spain (44°03' N – 05°55' W), W of Azores (39°25' N – 35°14' W)	Leloup, 1936b
	SW of Azores (31°24' N – 34°47' W), S of Azores (37°37' N – 29°25' W), SW of Azores (36°52' N – 39°55' W), N of Flemish Cap (48°02' N – 39°55' W), N of Azores (46°48' N – 27°46' W)	Leloup, 1955
	Gulf of Mexico	Sears, 1954
	Bermuda (32°08' N – 32°16' N and 64°40' W–64°31' W)	Totton, 1936
Indian Ocean	Equatorial Indian Ocean	Alvariño, 1964b
	Off Somali (00°06' S–49°45.4' E, 02°39.4' N – 50°46.4' E, 06°05' N – 52°00' E), Dante, Somali (11°32.3' N – 52°03' E), SW of Cocos Island (20°19' S–90°02' E), off south and east coasts of Africa, southeast Indian Ocean, W of Cocos Islands (12°23' S–89°53' E), NW of Cocos Islands (05°02' S–89°47' E, 02°00' S–89°40' E), northwest Indian Ocean, off Somali (06°05' N – 52°00' E, 00°06' S–49°45.4' E), NW of Seychelles (02°39.4' N – 50°46.4' E), SE of southern tip of Africa (37°50.1' S–35°46.6' E, 34°47.6' S–34°27.9' E), entrance to Gulf of Aden (32°03' N – 52°03' E), off northern Madagascar	Totton, 1954
Mediterranean	In the Mediterranean as <u>Halistema rubrum</u> Messina	Huxley, 1859 Kölliker, 1853

TABLE 3 (cont.)

Region	Localities	Reference
Mediterranean	Villefranche-sur-Mer	Leloup, 1935a
	Monaco	Leloup, 1936a
	N of Corsica (43°34'N – 08°54'E), S of Cartagena, Spain (36°51' N – 01° 30' W), N of Balearic Islands (40°30' N – 02°00' E)	Leloup, 1936b
	Gulf of Naples	Neppi, 1921
	Villefranche	Totton, 1954
Pacific Ocean and adjacent seas	Sea of Cortés	Alvariño, 1965a
	Off San Diego, California	Alvariño, 1967b
	South China Sea	Alvariño, 197a
	Bay of Amboina	Bedot, 1896
	South China Sea	Dawydoff, 1937
	From Santa Barbara to the Island of Santa Cruz	Fewkes, 1889
	Bay of Nhatrang	Leloup, 1956
Red Sea	Port Sudan, Gulf of Aqaba, Red Sea (25°08.5' N – 35°40' E, 21°53' N – 37°41' E), Kossler and Jaffatin Islands	Totton, 1954

TABLE 3 (cont.)

Region	Localities	Reference
<u>Pyrostephos vanhoffei</u>	Moser 1925	
Antarctic Waters	From the antarctic convergence to the most southerly stations of the Bellingshausen and Weddell Seas and off Adelaide Island	Mackintosh, 1934
	N of Wilhelm II coast (66°S–90°E), N of Leopold and Astrid coast (64°S–84°E)	Moser, 1925
Atlantic Ocean	South Georgia Island, between South Georgia Island and the Malvinas (54°07'S–36°23'W)	Hardy and Gunther, 1935
	South Georgia Island, South Sandwich Island, Malvinas to South Georgia Island, Malvinas to Shetland	Mackintosh, 1934
Indian Ocean	S of Kerguelen Island, S of St. Paul Island, SE of St. Paul	Moser, 1925

TABLE 3 (cont.)

Region	Localities	Reference
Physophora hydrostatica	Förså 1775	
Atlantic Ocean	Off Long Island to Atlantic City	Alvarinho (unpublished data)
	W of Lisbon, Portugal (38°22'N – 16°35'W)	Bedot, 1904
	Gulf of Maine (eastern part)	Bigelow, 1914
	Sea of Spain	Bigelow and Sears, 1937
	In the region of Chesapeake Bay and Delaware	Bigelow and Sears, 1939
	Off Africa (19°11'N)	Cervigón, 1961
	Faroe to Shetland, Norwegian Sea	Damas, 1909
	Northeast Atlantic, Scottish Shelf	Fraser, 1961, 1967
	Faroe-Shetland Channel, SE of Iceland	Hansen, 1960
	Labrador Sea	Kielhorn, 1952
	Iceland, off Iceland, Djúpalsrífi (66°53'N – 24°42'W), off southeast Iceland (63°42'N – 14°19'W), off southeast Iceland, S of Myrdalsjökull (64°02'N – 14°41'W), off southwest Iceland, Vestmannaeyjar (63°31'N – 20°52'W), off southwest Iceland (63°08'N – 21°03'W), S of Iceland (63°11'N – 21°16'W), S of Iceland (63°33'N – 21°33'W), off Keflavík, Iceland (64°08'N – 22°46'W), S of Keflavík, Iceland (64°24'N – 23°20'W), S of Keflavík near Snaefellsnes (64°47'N – 24°02'W)	Kramp, 1939
	SW of Iceland (63°19'N – 26°50'W), southern Greenland between Cape Farewell and Sukkertoppen (59°30'N – 45°23'W), Frederikshaab, Greenland (62°37'N – 51°40'W), Søndre Strømfjord, Greenland (65°07.5'N – 53°29'W), Arsukfjord, Greenland (61°11'N – 49°38.5'W)	Kramp, 1942
	E of Azores (38°32'N – 17°20'W, 38°32'N – 18°20'W)	Leloup, 1936b
	S of Ireland	Leloup, 1941a

TABLE 3 (cont.)

Region	Localities	Reference
Atlantic Ocean	SW of Azores (31°20'N – 35°07'W), N of Flemish Cap (48°02'N – 39°55'W), NE of Flemish Cap (48°02'N – 36°53'W), N of Azores (46°48'N – 27°46'W), between Faroe Islands and Shetland Islands (60°57'N – 04°38'W)	Leloup, 1955
	Iceland	Paulsen, 1903
	Norwegian Sea around Iceland	Paulsen, 1909
	Northern coast of Great Britain	Römer, 1902
	North Sea, Kattegat, Belt Sea	Russell, 1939
	NW of Ireland, SW of Tristan da Cunha group (41°33'S–17°58'W), British Isles	Totton, 1954
Indian Ocean	Off South Australia, off Ceylon, northwest Indian Ocean, off south and east coasts of Africa	Haeckel, 1888
	Indian Ocean	Quoy and Gaimard, 1834
Mediterranean	Gulf of Naples	Bedot, 1882
	Balearic Islands to Sardinia, S and E of Sardinia, Tyrrhenian Sea	Bigelow and Sears, 1937
	Nice	Claus, 1860
	Messina	Claus, 1878
	Messina	Cialona, 1901
	Naples	Costa, O. G., 1836
	Naples	Delle Chiaje, 1828
	Messina	Gegenbaur, 1854
	Nice	Graeffe, 1860
	Messina, Naples	Keferstein and Ehlers, 1861
	Messina	Kölliker, 1853
	Messina	Korotneff, 1886
	Villefranche-sur-Mer	Leloup, 1935a

TABLE 3 (cont.)

Region	Localities	Reference
Mediterranean	Monaco	Leloup, 1936b
	Nice	Leuckart, 1854
	Gulf of Naples	Lo Bianco, 1899
	Villefranche	Metschnikoff, 1874
	Villefranche, Adriatic, off Lucietta, Pomo deep, Southern deep	Moser, 1917
	Gulf of Naples	Neppi, 1921
	Naples	Pavesi, 1869
	Messina	Philippi, 1843
	Nice	Risso, 1926
	Naples	Schmidtlein, 1880
	Gulf of Naples	Schneider, 1898
	Messina	Sars, 1857
	Naples	Spagnolini, 1868, 1870
	Villefranche	Totton, 1954
	Nice	Verany, 1846
	Nice	Vogt, 1851
Pacific Ocean and adjacent seas	Villefranche, Nice	Vogt, 1854
	Off San Diego, California	Alvariño, 1967b
	Off Nicaragua	Alvariño, 1969
	Off southwest Mexico (10°14'N – 96°28'W), 10°W of Callao, SW of Callao, NW of Albatross plateau, southern Galápagos, Stas. 4663, 4676, 4707, 4709, 4713	Bigelow, 1911a
	Philippines	Bigelow, 1913a
	Sulu Sea, between Palawan and Negros	Bigelow, 1919

TABLE 3 (cont.)

Region	Localities	Reference
Pacific Ocean and adjacent seas	NE of Galápagos, SE of Cocos (03°23'N – 83°33'W), S of Cocos (03°52'N – 80°43'W, 04°50'N – 87°00'W)	Bigelow, 1931
	Eastern tropical Pacific	Brandt, 1835
	South China Sea	Dawydoff, 1937
	NW of Sokotra, La Jolla, off southwest Mexico	Haeckel, 1888
	Bay of Nhatrang	Leloup, 1956
	Malayan Archipelago, NE of Celebes (01°04.5'S–127°52.6'E), off Buro Islands (03°32.5'S–124°15.5'E)	Lens and Riemsdijk, 1908
	Midway between New Zealand and South America, Discovery II Sta. 967 (41°03.1'S–126°03.9'W), off the east coast of New Zealand (Sta. 943; 45°24.4'S–179°06.4'E), Perú current (W. Scoresby Sta. 687, 766), in 07°20'S and 07°42'S, Patagonian shelf between Magellan Straits	Totton, 1954

TABLE 3 (cont.)

Region	Localities	Reference
<u>Marrus antarcticus</u>	Totton 1954	
Antarctic Ocean	SE of South Sandwich Islands (67°04.4'S–19°41'W, 66°16.7'S–13°23.3'W, 67°14.3'S–00°39.7'E, 68°53'S–13°03'W), N of Claric Coast (59°04.5'S–133°18.5'E), N of Knox Coast (53°14.9'S–107°02'E)	Totton, 1954
Atlantic Ocean	Off South Africa (32°30'S–09°04'E)	Alvariño (unpublished data)
	W of South Sandwich Islands (59°36'S–29°54'W, 57°36'S–29°35'W), SE of Gough Island (47°46'S–00°26.6'E), (subtropical convergence)	Totton, 1954
Pacific Ocean	E of South Island, New Zealand (45°28.4'S–179°06.4'E)	Totton, 1954



TABLE 3 (cont.)

Region	Localities	Reference
<u>Melophysa melo</u>	Quoy and Gaimard 1827	
Atlantic Ocean	Bermuda, off Annobon Island (01°11'S–05°38'E), W of Annobon Island (02°13'S–01°52'E), S of Liberia (00°56'S–14°08'W), NE of Fernando de Noronha Islands (02°02'N – 30°08'W), NW of Sts. Peter and Paul Rocks (07°28'N – 30°00'W), S of Cape Verde Islands (14°39.3'N – 25°51.7'W), SW of Cape Verde Islands (10°59.3'N – 27°03.8'W), S of Canary Islands (27°26.4'N – 19°30.6'W), off Angola (10°19'S–09°36.4'E), SW of Gulf of Guinea (04°50.3'S–00°47.3'W)	Totton, 1954
Indian Ocean	S of Port Elizabeth, South Africa (34°30.8'S–26°19'E), SE of Zanzibar (08°44.6'S–41°50.3'E), off Somali (02°39.4'N – 50°46.4'E), midway between Ile Amsterdam and Madagascar (32°00.6'S–62°11.7'E, 32°00.6'S–62°03.2'E), SE of Madagascar (31°55.6'S–55°06.5'E, 31°55'S–55°05.1'E), S of Madagascar (32°00.7'S–40°46.1'E, 32°05.7'S–40°44'E), SE of Zanzibar (07°42.1'S–44°14.1'E)	Totton, 1954
Pacific Ocean	Western region, Philippines, Indonesian Sea off Panama	Alvariño, 1964b Alvariño, 1969

TABLE 3 (cont.)

Region	Localities	Reference
<i>Nectalia lolig</i>	Haeckel 1888	
Atlantic Ocean	S of Liberia (00°56'N – 11°29'W)	Alvariño (unpublished data)
	Canary Islands	Haeckel, 1888
	S of Azores (36°53'N – 29°47'W)	Leloup, 1955
	South Atlantic, Gulf Stream, Grotawa, between St. Paul and Liberia, N of Tristan da Cunha, between St. Paul and St. Tomé, SE of St. Paul, NE of St. Paul	Moser, 1925
	Irminger Sea	Römer, 1902
	Bermuda (32°08'N – 32°16'N and 64°40'W-64°31+W)	Totton, 1936
	S of Iceland (60°N – 22°W and Irminger Sea	Vanhöffen, 1906
Pacific ocean and adjacent seas	South China Sea	Alvariño, 1963, 197a

TABLE 3 (cont.)

Region	Localities	Reference
<u>Dromalia alexandrii</u>	Bigelow, 1911	
Pacific Ocean	Off San Diego, California	Alvariño (unpublished data)
	Hawaii	Bigelow 1911a

TABLE 3 (cont.)

Region	Localities	Reference
<u>Athoribia rosacea</u>	Forskäl 1775	
Atlantic Ocean	Gulf of Guinea	Leloup, 1941
	Tropical Atlantic (Terra Nova Sta. 57), Canary Islands (29°56'N – 15°03'W), N of Gulf of Guinea (00°46'S–05°49'E, 01°11'S–05°38'E, 02°13'S–01°52'E), Tarrajal, San Antonio, Cape Verde Islands, N of Fernando de Noronha (05°59'S–59°49'W), SW of Cape Verde Islands (09°15'N – 30°01'W, 10°29.8'N – 18°46. 1'W), Canary Islands (30°46.3'N – 17°50.2'W), Kingstown, St. Vincent	Totton, 1954
Mediterranean	Messina	Kölliker, 1853
Red Sea	Gulf of Aqaba, SE of Cape Elba (21°53'N – 37°41'E)	Totton, 1954

TABLE 3 (cont.)

Region	Localities	Reference
<i>Forskalia edwardsii</i>	Kölliker 1853	
Atlantic Ocean	Equatorial region off the Amazon estuary	Alvariño, 1967c
	Sargasso Sea	Grice and Hart, 1962
	Off Azores (36°35'N – 27°12'W), Strait of Gibraltar (36°13'N – 08°00'W, 42°46'N – 08°08'W), E of Sable Island (43°26'N – 59°03'W)	Leloup, 1936b
Indian Ocean	Penguin Island, King George Island, South Shetland	Totton, 1954
	SE of East London, South Africa (34°30.8'S–26°19'E), SSE of South Africa (34°47.6+S–34°27.9'E), between Africa and Madagascar (24°35.6'S–39°53.5'E), SE of Zanzibar (07°42.1'S–44°14.1'E), E of Mombasa, Kenya (04°25.9'S–47°10'E), E of Somali (00°06'S–49°45.4'E, 02°39.4'N – 50°46.4'E, 06°05'N – 52°00'E)	Totton, 1954
Mediterranean	Off Messina	Kölliker, 1853
	Off Monaco Museum, Monaco (as <i>F. contorta</i> )	Leloup, 1936a
	Villefranche	Totton, 1954
Pacific Ocean	Northeast Pacific, W of Queen Charlotte Island (54°15'N – 134°40'W)	Berkeley and Berkeley, 1960
Red Sea	Southern region (15°08'N – 42°01'E), off Port Sudan, Gulf of Aqaba, central region (21°53'N – 37°41'E), northern region (25°08.5'N – 35°40'E)	Totton, 1954

TABLE 3 (cont.)

Region	Localities	Reference
<u>Porpita pacifica</u>	Lesson 1826	
Atlantic Ocean	Cape Verde Islands ( <u>P. globose</u> ), in the equatorial and temperate parts of the Atlantic ( <u>P. umbella</u> )	Huxley, 1859
	S of Azores (30°08'N – 31°19'W, 31°20'N – 35°07'W)	Leloup, 1955
	In Bear Cut (Biscayne Bay, Florida)	Reeve, 1964
Indian Ocean	Colombo, Ceylon	Annandale, 1904
	Maldiv Islands (as <u>P. lutkeana</u> -Brandt)	Bigelow, 1904
	Madras	Gravely, F. H., 1941
	as <u>P. porpita</u> : 3 miles off the coast of Madras	Leloup, 1934b
	Madras	Menon, 1931
	Arabian Sea (entrance to Gulf of Aden)	Totton, 1954
Mediterranean	Messina ( <u>P. mediterranea</u> )	Kölliker, 1853
	Monaco	Leloup, 1936a
Pacific Ocean and adjacent seas	Gulf of Thailand	Alvariño, 1963, 197 a
	N of Marquesas Islands (09°57'N – 137°47'W), Stas. 4585, 4613, 4619, 4631, 4640, 4649, 4707	Bigelow, 1911a
	Eastern Sea (Stas. 4883, 4884, 4909, 4917, 4921), off the east coast of Kyushu, Japan (Sta. 4952)	Bigelow, 1913
	Between Oahu and Midway Island	Bigelow, 1919
	NE of Galápagos (S of Monato Point; 05°03'N – 81°18'W), NE of Tower (N of Galápagos; 01°14'N – 87°50'W, 00°40'N – 88°51'W)	Bigelow, 1931
	North Head (Port Jackson, Sydney)	Dakin and Colefax, 1933
	Bay of Nhatrang	Leloup, 1956

TABLE 3 (cont.)

Region	Localities	Reference
<u>Porpita umbella</u>	O. F. Muller 1776	
	Moser, 1925, adopted the synonym <u>Porpita porpita</u> Linné, 1758, and included under it <u>Porpita umbella</u> Chun, 1897, and <u>Porpita pacifica</u> Bigelow, 1911	
Atlantic Ocean	Tortugas, Florida ( <u>P. linneana</u> Les.)	Agassiz, A., 1883
	Off Long Island to Atlantic City	Alvariño (unpublished data)
	Bay Pin near Horta (Azores; 38°35'N – 15°04'W), S of Azores (30°42'N – 27°11'W), between Azores and Lisbon	Bedot, 1904
	Antilles Sea, N of Cape Verde Islands (22°01'N – 27°21'W)	Leloup, 1935b
	S of Cape Verde Islands	Moser, 1925
	S of Abrolhos Island (Brazil)	Seguin, 1965
	Bermuda (32°08'N – 32°16'N and 64°40'W-64°31'W)	Totton, 1936
Indian Ocean	Sumatra, Mozambique (Peters)	Moser, 1925
	Off south and east coasts of Africa Discovery II, Stas. 1554, 1589	Totton, 1954
Mediterranean	Naples	Bedot, 1882
	E of Crete (35°59'N – 28°14'E), W of Crete (35°50'N – 21°30'E)	Bigelow and Sears, 1937
	Messina	Cialona, 1901
	Lyon	Forbes, 1844
	Malta	Forskäl, 1775
	Messina	Gegenbaur, 1854
	Messina	Kefenstein and Ehlers, 1861
	Messina	Kölliker, 1853
	Naples	Korotneff, 1884
	Villefranche (as <u>Porpita porpita</u> )	Leloup, 1935a
	Monaco (as <u>Porpita porpita</u> )	Leloup, 1936a

TABLE 3 (cont.)

Region	Localities	Reference
Mediterranean	Nice	Leuckart, 1854
	Naples	LoBianco, 1899
	Gulf of Naples	Neppi, 1921
	Cette, Nice, Speria	Paganstecher, 1869
	Naples	Schmidtlein, 1880
	Naples	Schneider, 1898
	Naples	Spagnolini, 1868, 1870
	Nice, Genoa	Veray, 1846
Pacific Ocean and adjacent seas	Western Pacific, Philippines, Indonesian Sea	Alvariño, 1964b
	West coast of Lombock, Great Faun Island	Lens and Riemsdijk, 1908
	New Guinea, South China Sea, North China Sea by Formosa and Sunda Straits, Polynesian region	Moser, 1925



TABLE 3 (cont.)

Region	Localities	Reference
<i>Velella velella</i>	Linné 1758	
Atlantic Ocean	Key West, Florida, Cape Florida, Tortugas	Agassiz, A., 1865
	Reaches up to Newport and Nantucket from the Straits of Florida, between Cuba and Florida Reefs, Key West Harbor, Tortugas Channels ( <i>V. mutica</i> )	Agassiz, A., 1883
	Bay of Biscay (44°45'N – 08°16' W), SE of Azores (36°54'N – 20°46'W), N of Canary Islands (32°36'N – 14°27'W), W of Canary Islands (31°04'N – 24°50'W)	Bedot, 1904
	Chesapeake Bay to Bermuda (33°22'N – 73°37'W), Straits of Florida (23°32'N – 81°48'W of Havana, 27°32'N – 79°21'W), N of Grand Bahama Island	Bigelow, 1918
	Atlantic	Chun, 1897
	Scottish region	Fraser, 1961, 1967
	N of Ireland W of 07°W to southern end of Hebrides	Fraser, 1963
	Antillas Sea to NW of Cape Verde Islands (22°01'N – 27°21'W), (as <i>V. spirans</i> )	Leloup, 1935b
	E of Cape Verde Islands (47°42'N – 16°49'W), off Canary Islands (28°38'N – 17°59'W)	Leloup, 1936b
	Off Sts. Peter and Paul Rocks (01°45'N – 24°04'W), NE of Islands Fernando de Noronha (00°50'N – 28°26'W to 01°04'N – 29°16'W), N of Fortaleza, Brazil (00°22'S – 38°40'W), (as <i>V. spirans</i> )	Leloup, 1937
	Off southwest Portugal (40°56'N – 09°28'W), W of Kenitra, Morocco (35°36'N – 08°25'W, 35°10'N – 07°55'W), off Casablanca, Morocco (33°47'N – 08°27'W, 33°27'N – 08°32'W), off Cabo Bojador, Spanish Sahara (26°03'N – 14°36'W), off West Africa (26°03'N – 10°00'W), W of Canary Islands (31°20'N – 35°07'W), SW of Azores (31°24'N – 34°47'W), (as <i>V. spirans</i> )	Leloup, 1955

TABLE 3 (cont.)

Region	Localities	Reference
Atlantic Ocean	Off Arrecife, Canary Islands, Smitwinkel's Bay (Cape Province, South Africa)	Mackie, 1960
	In Berlin Museum: NE of Tristan da Cunha (34°S–00°34'E), by Jagor, S of Canary Islands (26°N – 17°W), by Dr. Sander "Prince Albert", off Madeira (Martens), Trindade (Jagor)	Moser, 1925
	About Madeira, S of Cape Verde Islands, between St. Paul and St. Tomé, SW of Ascension Island, S of Ascension, W of Madeira about 32°W, off South Africa (as <i>V. spirans</i> Forskäll)	Moser, 1925
	Pavoa de Varzim, Leça da Palmeira, Peniche, Tejo, Coast of Algarve (as <i>V. spirans</i> )	Norbe, 1931
	Great Britain: Fistril Beach at Newquay, Cornwall, Padstow; southwest Ireland; Kerry shores of the Kenmare estuary, Valentia Harbour	Russell and Kemp, 1932
	Bermuda (32°08'N – 32°16'N and 64°40'W–64°31'W)	Totton, 1936
	South Atlantic, between St. Helena and Tristan da Cunha	Totton, 1954
	Central region	Alvariño, 1964b
Indian Ocean	Madras	Gravely, 1941
	Off Cape Agulhas, N of St. Paul, S of the Mascareñas, SE of Madagascar, S of Madagascar, Zanzibar (Sander) "Prince Albert", between Maldives and Chagos Islands (63°S–79°E), (as <i>V. spirans</i> Forskäll)	Moser, 1925
	Krusadai Island in Gulf of Manaar	Raj, 1927
	South Indian Ocean (32°10.6'S–109°16.3'E), W of Freemantle	Totton, 1954

TABLE 3 (cont.)

Region	Localities	Reference
Mediterranean	Off Naples (40°34'N – 12°56'E), Alborán	Bedot, 1904
	Eastern Alborán Sea, S and E of Balearic Islands, SW of Sardinia	Bigelow and
	(38°52'N – 07°43'E), off Balearic Islands (39°32'N – 05°15'E), S of	Sears, 1937
	Balearic Islands (38°01'N – 01°48'E), NW of Oran, Algeria (36°13'N –	
	01°28'W)	
	4-1/2 miles off Monaco	Boone, 1933
	Mediterranean	Chun, 1897
	Naples	Keferstein and
		Ehlers, 1861
	Messina	Kölliker, 1853
	Villefranche-sur-Mer (as <u>V. spirans</u> )	Leloup, 1935a
	Monaco (as <u>V. spirans</u> )	Leloup, 1936a
	N of Corsica, S of Cartagena, Spain (as <u>V. spirans</u> )	Leloup, 1936b
	Naples, Villefranche-sur-Mer	Mackie, 1960
Pacific Ocean and adjacent seas	Gulf of Naples	Neppi, 1921
	Western region, Sta. 2669	Totton, 1954
	N of Galápagos (05°36'N – 86°55'W), Long Beach, Hawaii, Japan or	Bigelow, 1911a
	China, Port Townsend, Point Buchon(California), Ponap (Caroline	
	Islands), Bonin Islands, Stas. 4691, 4694, 4696, 4698, 4707, 4708, 4710,	
	4714, 4718, 4720	
	North of Port Jackson (Sydney) (as <u>V. spirans</u> )	Dakin and
		Colefax, 1933
	California coastal waters (as <u>V. meridionalis</u> Fewkes)	Fewkes, 1889
	Easter Island (as <u>V. spirans</u> )	Leloup, 1935b
	Bay of Nhatrang	Leloup, 1956

TABLE 3 (cont.)

Region	Localities	Reference
Pacific Ocean and adjacent seas	Malayan region (as <i>V. pacific</i> ), Banda Sea (05°44.7'S–126°27.3'E), W of Tanimbar Island (05°26.7'S–129°36.5'E)	Lens and Riemsdijk, 1908
	Long Beach, Vancouver Island	Mackie, 1960
	In Berlin Museum: W of Juan Fernández Island (33°32'S–88°28'W) (Dr. Sander “Prince Albert 11”); N of Sandwich Island (35°N – 157°44'W), Towar Archipelago, New Guinea, Buka Strait, California, New Zealand, Singapore	Moser, 1925
	Auckland, New Zealand (as <i>V. cyanea</i> )	Powell, 1947
Red Sea	M. Y. Manihine, 1950-51; Port Sudan, Jan. 1951; in central part of this sea and during winter in Red Sea, Discovery II, but this record is not included in the list for the Red Sea	Totton, 1954

## BATHYMETRIC DISTRIBUTION

The analysis (Alvariño, 1967b) of the collections obtained off San Diego (30°30'N, 120°00'W) shows the following results. (1) During both daylight and night collections 30 species were observed, although some of them were not common to night and day. (2) Four species were found inhabiting exclusively the upper 100 m at night: Muggiaea atlantica, Eudoxoides spiralis, Amphicaryon ernesti and Nectodroma reticulata. During the daylight series, Eudoxia russelli, Lensia hotspur, L. subtiloides and Amphicaryon acaule were found in the upper 100 m; whereas A. ernesti was not present in these samples. (3) The polygastric form of Chelophyes appendiculata was found in the upper layers and below 100 m at night and during daylight and the eudoxid form Eudoxia russelli was observed in the upper 100 m during daylight. During the daylight hauls Lensia challengerii, Nectodroma dubia and Stephanomia bijuga were also found, and during the night hauls L. multicristata. (4) The percentage of species occurring exclusively below 200 m were (a) 76% during the night collections and (b) 70% during the daylight collections.

Bigelow (1911b) commented on the poverty of siphonophores on the surface in the region of the Bay of Biscay (46°43'N, 47°29'N and 7°15'W, 8°18'W) where only specimens of C. appendiculata (polygastric and eudoxid forms) were found; L. fowleri, M. kochi and L. subtilis were observed between 182 m and 45 m and C. multidentata below 364 m. Moore (1953) observed fluctuations in the depth reached by various species in relation to sunset, moonrise, moonset and sunrise. Leloup (1955) gave the length of the cable out during the hauls, but the samples were not stratified; thus the depth at which the species were captured could only be deduced. Moore and Corbin (1956) stated that the depth at which the average Siphonophorae population occurred (mean of eight species) "closely reflected isolume movements in the upper part of the population and isotherm movements in the lower part."

The number of species of siphonophores inhabiting the levels below 200 m appears to be higher than in the epiplanktonic layers although the number of specimens per species is much higher in the latter. The size range of the nectophores of specimens inhabiting the epiplanktonic levels corresponds to their smaller dimensions when compared to the meso- or bathypelagic individuals.

More data on the bathymetric distribution appears in table 4.

TABLE 4 Bathymetric Distribution of Siphonophorae

Species	Region	Depth in meters	Reference
Chelophyes appenoiculata	Atlantic Ocean		
	Sea of Spain	5 m	
	Iberian region off Galicia	10-5	Alvariño, 1957b
	Equatorial region off the Amazon	200-0	Alvariño, 1967c
	Bay of Biscay	Surface to 910	Bigelow, 1911b
	Bay of Biscay, Iberian Atlantic, Sea of Spain	666-0, maximum upper 200	Bigelow and Sears, 1937
	Iceland	Surface	Kramp, 1939
	Southern region	To 1000	Leloup and Hentschel, 1938
	Bermuda region	Mean day level 75 m, spread 130 m; marked diurnal migration; day-night range 87 m, abundant in the surface at night with monlight	Moore, 1949
	Florida Current off Miami	205-0	Moore, 1953
	Bermuda;	Vertical spread 180	
	10 miles off Miami in the Florida Current;	81 m	
	40 miles off Miami in the Florida Current	134 m; with mean day level at 75 m, 74 m and 221 m, respectively	Moore, and corbin, 1956
	Bay of Biscay	1200-0	Patriti, 1965

TABLE 4 (cont.)

Species	Region	Depth in meters	Reference
Eudoxia russelli	<u>Indian Ocean</u>		
	Gulf of Aden	Surface at night	Totton, 1954
	<u>Mediterranean</u>		
	All this region	1300-0, maximum in the upper 50 m	Bigelow and Sears, 1937
	Adriatic	150-0 seasonal; May, June and Aug. 125-0; Nov, 75-00; Dec, below 25 m to 150 m	Huré, 1955
	<u>Pacific Ocean</u>		
	South China Sea	153-0, 141-20, 136-45, 153-90, 164-60	
	Gulf of Thailand	17.6 m only	Alvariño, 197 a
	Off San Diego, California	450-0	Alvariño, 1697b
	Santa Barbara Channel	25-425 with peak 275-350	Clarke, 1966
	<u>Atlantic Ocean</u>		
	Ascension Island, Pernambuco Rio Grande do Sul	Upper 100 m	Leloup and Hentschel, 1938
	<u>Pacific Ocean</u>		
	Off San Diego, California	100-0	Alvariño, 1697b

TABLE 4 (cont.)

Species	Region	Depth in meters	Reference
<u>Chelophyes contorta</u>	<u>Indian Ocean</u>		
	Gulf of Aden 37°50.1'S–35°46.6'E	Surface day and night, 1350-0	
	SW of Madagascar 27°24.3'S–39°21.2'E	500-0	
	Between Africa and Madagascar 24°35.6'S–39°53.5'E	800-0	
	E of Zanzibar 07°42.1'S–44°14.1'E	1750-600, 6000-0, 100-50, 50-0	
	E of Zanzibar 05°39.1'S–46°22.3'E	250-100, 150-50, 100-0, 50-0	
	N of Seychelles 00°57.8'S–49°26.7'E	500-250, 250-100, 100-50, 50-0	
	E of Mogadiscio, Somali 00°06'S–49°45.4'E	1400-700, 500-0	
	E of Mogadiscio 02°39.4'N – 50°46.4'E	1650-950, 500-200, 250-100, 50-0	
	Off Somali 06°05'N – 52°00'E	1250-800, 450-0	
	Off Somali 07°08.6'N – 52°19.3'E	500-200, 250-100, 100-50, 50-0	
	Dante, Somali 11°32.3'N – 52°03'E		
	Entrance to Gulf of Aden	600-0, 250-100, 100-50, 50-0	Totton, 1954
	<u>Mediterranean</u>		
	Alboran Sea	Surface and 5 m	Alvariño, 1957a



TABLE 4 (cont.)

Species	Region	Depth in meters	Reference
<u>Dimophyes artica</u>	<u>Pacific Ocean</u>		
	Gulf of Thailand	42-0, 27.5, 50-0, 46-0, 52-0, 5-0	Alvariño, 197 a
	South China Sea	153-0, 141-12, 402-30, 144-0, 25-0, 146-20	
	<u>Antarctic Ocean</u>		
	SE of Peter I Island 70°15'S–87°27'W	400 m	Leloup 1938
	69°54'S–82°49'W	475 m	
	SW of Peter I Island 70°41'S–90°14'W	350 m	
	SE of Peter I Island 71°15'S–87°28'W	400 m	
	69°55'S–82°36'W	200 m	
	69°51'S–82°36'W	300 m	
	70°21'S–82°48'W	300 m	
	<u>Atlantic Ocean</u>		
	Equatorial region off the Amazon	200-0	
	Labrador Sea	Upper 150 m	
	Off Dahlymple Head, Bouvet Island	200-95	
	59°40'S–05°00'E	200-100, 400-150	Alvariño, 1967c
	60°18'S–04°44'W	200-100	
	59°53'S–08°40'W	200-100, 400-200	
	57°05'S–02°25'E	Horizontal haul; 300 m wire out	
			Kramp, 1949

TABLE 4 (cont.)

Species	Region	Depth in meters	Reference
	Southern region	3500 to 3000	Leloup and Hentschel, 1938
	Bay of Biscay	2000-0	Patriti, 1965
	Herdla and Hjeltel Fjords (Norway)	Below 100 m	Runnström, 1932
	Scotia Sta. 1199	20 m	
	Discovery Sta. 2927	1500-1000, 1000-750, 750-500	
	Discovery Sta. 2929	1500-1000, 1000-750, 750-500	
	Discovery Sta. 2935	1500-1000, 1000-750, 750-500	
	N of South Georgia Islands		
	53°38'S–35°35'W	1000-750	
	53°33'S–37°45'W	750-500, 500-250	
	53°41'S–38°24'W	500-250, 250-100	
	53°34'S–38°36'W	500-250, 250-100	
	S of South Georgia Islands		
	55°20'S–34°46'W	750-500	
	N of South Georgia Islands		
	54°01'S–35°14'W	750-500, 500-250	
	S of South Georgia Islands		
	55°06'S–36°57'W	500-250	
	N of South Georgia Islands		
	53°37'S–37°06'W	500-250, 250-100	
	54°36'S–39°14'W	500-250	
	Between South Georgia Islands and the Falkland Islands		
	53°14'S–45°16'W	1000-300, 250-100	
	52°14'S–52°11'W	500-250	

TABLE 4 (cont.)

Species	Region	Depth in meters	Reference
	54°56'S–39°57'W	500-250	
	54°53'S–39°40'W	500-250	
	S of South Georgia Islands		
	55°43'S–36°51'W	1000-750, 750-500, 500-250	
	55°21'S–36°48'W	750-500, 500-250, 250-100	
	55°09'S–36°48'W	750-500, 500-250	
	N of South Georgia Islands		
	54°51'S–36°44'W	250-100	
	S of South Georgia Islands		
	55°47'S–34°11'W	500-250	
	55°40'S–34°23'W	500-250	
	55°33'S–34°35'W	750-500, 500-250	
	55°20'S–34°47'W	180-100	
	N of South Georgia Islands		
	54°17'S–35°06'W	750-500, 500-250	
	54°15'S–34°47'W	750-500, 500-250, 250-100	
	54°13'S–34°18'W	1000-750, 750-500, 500-250, 250-100	
	54°11'S–33°49'W	100-750, 750-500	
	53°07'S–34°48'W	750-500, 500-250	
	53°16'S–35°02'W	1000-750, 750-500, 500-250	
	Near South Sandwich Islands		
	57°36'S–29°54'W	3000-2000, 1000-750, 500-250	
	NE of South Georgia Islands		
	53°34'S–30°25'W	2000-1500, 1500-1000, 1000-750, 750-500, 500-250	
	49°58'S–29°52'W	500-250	
	43°08'S–30°15'W	1500-1000, 1000-750, 750-500, 500-250	
	<u>W of Tristan da Cunha</u>		
	38°10'S–30°10'W	1000-750, 750-500	

TABLE 4 (cont.)

Species	Region	Depth in meters	Reference
	Near South Sandwich Islands		
	56°32.2'S–27°21.9'W	340-140	Totton, 1954
	<u>Indian Ocean</u>		
	Agulhas Basin		
	43°07'S–25°04.6'E	270-196	
	Somali Basin		
	06°05'N – 52°00'E	450-0	
	Gulf of Aden		
	12°39.4'N – 50°46.4'E	1650-950, 500-250, 250-100, 550-0	
	Somali Basin		
	00°06'S–49°45.4'E	1400-700, 500-0	
	00°57.8'S–49°26.7'E	500-250, 250-100	
	E of Seychelles		
	04°25.9'S–47°10'E	500-250, 250-100	
	E of Zanzibar		
	07°42.1'S–44°14.1'E	1750-600, 500-250, 250-100, 600-0	
	SE of South Africa Coast		
	34°47.6'S–34°27.9'E	1450-0	
	37°50.1'S–35°46.6'E	1350-0	Totton, 1954
	<u>Pacific Ocean</u>		
	Off San Diego, California		
	30°30'N – 120°00'W	Below 2000 m, 450-400	Alvariño, 1967b
	South China Sea		
	13°34'N – 110°37'E	From 55.9 m	Alvariño, 197 a

TABLE 4 (cont.)

Species	Region	Depth in meters	Reference
<u>Diphyes antarctica</u>	E of South Island, New Zealand		
	42°46.8'S–176°14.8'E	350-110	
	W of Drake Passage		
	66°11'S–71°50'W	460-150	Totton, 1954
	<u>Antarctic Ocean</u>		
	E of Peter I Island		
	69°54'S–82°49'W	475 m	Leloup, 1938
	<u>Atlantic Ocean</u>		
	Off Dahlrymple Head, Bouvet Island	200-95	
	Between Bouvet Island and South Sandwich Islands		
	56°53'S–03°14'E	50-0	
	57°49'S–03°30'E	200-100	
	59°40'S–05°00'E	200-100, 400-150	
	60°01'S–02°30'E	200-100, 400-200	
	60°18'S–04°44'E	200-100	
	59°53'S–08°40'E	200-100	
	56°30'S–01°30'E	200-100	
	57°05'S–02°25'E	Horizontal haul, 300 m wire out	Kramp, 1949

TABLE 4 (cont.)

Species	Region	Depth in meters	Reference
<u>Diphyes bojani</u>	<u>Atlantic Ocean</u>		
	Equatorial region off the Amazon	200-0	Alvariño, 1967c
	Southern region	To 1000 m	Leloup and Hentschel, 1938
	Bermuda region	Shallow; mean day level 40 m, spread 25 m; no diurnal migration or a slight downward movement at night	Moore, 1949
	Florida Current off Miami	220-0	Moore, 1953
	<u>Indian Ocean</u>		
	Gulf of Aden	Surface (day and night)	Totton, 1954
	<u>Pacific Ocean</u>		
<u>Diphyes chamissonis</u>	South China Sea	482-0, 153-0, 141-0	Alvariño, 197a
	Gulf of Thailand	From 27.5 and 14.5 m; from 736 and 46 m	
	Indian Ocean		
	Gulf of Aden	Surface (day and night)	Totton, 1954
	E of Zanzibar 07°42.1'S–44°14.1'E	1750-500	
	Entrance to Gulf of Aden 11°32.3'N – 52°03'E	600-0	

TABLE 4 (cont.)

Species	Region	Depth in meters	Reference
<u>Diphyes dispar</u>	<u>Pacific Ocean</u>		
	Gulf of Thailand	70-0, 66-0, 64-0, 50-0, 46-0, 34.4-0, 15-0, 11-0, 5-0	Alvariño, 197 a
	South China Sea	141-0, 85.3-0, 48.1-0, 21-0, 16-0	
	<u>Red Sea</u>		
	Off Port Sudan	366-0, 183-0	Totton, 1954
	<u>Atlantic Ocean</u>		
	Equatorial region off the Amazon	200-0	Alvariño, 1967c
	Fogo Island, Newfoundland	Surface	Bigelow, 1909
	Southern region	To 500 m	Leloup and Hentschel, 1938
	Bermuda region	Restricted almost entirely to the upper 50 m; mean day level about 10 m; spread 10 m	Moore, 1949
	<u>Indian Ocean</u>		
	Gulf of Aden	Surface (day and night) and at 980 m in an Agassiz trawl	Totton, 1954
	<u>Pacific Ocean</u>		
	Gulf of Thailand	35-0	

TABLE 4 (cont.)

Species	Region	Depth in meters	Reference
<u>Diphyopsis mitra</u>	South China Sea	736-40, 164-0, 153-0, 141-30, 20-0, 13.6-0	Alvariño, 197 a
	<u>Atlantic Ocean</u>		
	Iberian region	5 m	Alvariño, 1957b
	Equatorial region off the Amazon	200-0	Alvariño, 1967c
	Southern region	To 1000 m	Leloup and Hentschel, 1938
	Bermuda region	Mean day level 125 m; spread 105 m; diurnal migration marked, increase from below 25 m; abundant at surface at night in moonlight	Moore, 1949
	Florida Current off Miami	260-0	
	Bermuda	Vertical spread 105 m	Moore, 1953
	10 miles off Miami in Florida Current	65 m	
	40 miles off Miami in Florida Current	209 m; with mean day levels of 125, 134 and 270 m, respectively	Moore and Corbin, 1956
	<u>Indian Ocean</u>		
	Gulf of Aden	Surface (day and night)	Totton, 1954



TABLE 4 (cont.)

Species	Region	Depth in meters	Reference
<u>Muggiaea atlantica</u>	South China Sea	736-45, 164-110, 153-0, 144-115, 141-17	Alvariño, 197 a
	<u>Atlantic Ocean</u>		
	Off Portugal and Sea of Spain	Upper 100 m	Bigelow and Sears, 1937
	South Atlantic	To 450 m	Leloup and Hentschel, 1938
	Bay of Biscay	1200-0	Patrity, 1965
	Off South Africa	Near the surface	Totton, 1954
	<u>Indian Ocean</u>		
	Gulf of Aden, Alago	Surface (day and night)	Totton, 1954
	<u>Mediterranean</u>		
	Western Mediterranean	5 m	
	Alborán Sea	5 m	Alvariño, 1957a
	Western Mediterranean	Upper 200 m	Bigelow and Sears, 1937
	<u>Red Sea</u>		
	Off Port Sudan	365-0	Totton, 1954

TABLE 4 (cont.)

Species	Region	Depth in meters	Reference
<u>Muggiaea bargmannae</u>	<u>Pacific Ocean</u>		
	Off San Diego, California	100-0	Alvariño, 1967b
	<u>Antarctic Ocean</u>		
	Antarctic region in Atlantic		
	67°14.3'S–00°39.7'E	250-100, 100-50	
	64°31.9'S–00°28.6'E	500-250, 250-100, 100-50	
	61°46.5'S–00°35.1'E	250-100, 100-50, 100-0	
	59°23.8'S–00°09.3'E	500-250, 250-100, 100-50	
	56°34.3'S–00°06.7'E	750-500, 500-250, 250-100, 100-50	
	66°51'S–15°24'W	121-0	
	68°17'S–14°26'W	121-0	Totton, 1954
	<u>Atlantic Ocean</u>		
	Off SW of South Africa in the		
	subtropical convergence	650-400, 250-100	
	45°01.3'S–00°33.7'E	750-500	
	E of Bouvet Island		
	54°20'S–03°48'E	250-100	
	Off Livingstone Island and South Shetland Island		
	62°49'S–60°10'W	800-0	
	S of South Georgia Islands		
	55°13'S–36°09.5'W	390-137	

TABLE 4 (cont.)

Species	Region	Depth in meters	Reference
<u>Muggiaea delsmanni</u>	Between South Georgia Islands 53°34.5'S–30°25.5'W and Sandwich Islands 53°32'S–30°20'W	1000-750, 500-250	
	N of South Georgia Islands 43°08+S–30°15.5'W	1000-0	
	S of South Georgia Islands 56°32.2'S–27°21.9'W	340-140	
	Off South Africa Into Atlantic 36°01.8'S–00°04.3'E	520-250	Totton, 1954
	<u>Pacific Ocean</u>		
<u>Muggiace kochi</u>	Gulf of Thailand	40.2-0, 16.1, 14.7-0, 11.5	Alvariño, 197 a
	<u>Atlantio Ocean</u>		
	Gibraltar Strait	5 m	
	Sea of Spain	5 m	
	Iberian Atlantic	10 m 5 m	Alvariño, 1957 b
	Equatorial region off the Amazon	200-0	Alvariño, 1967 c
	Bay of Biscay South Atlantic	364-182, 273-0, 182-0, 91-0 To 800 m	Alvariño 1911d Leloup and Hentschel, 1938

TABLE 4 (cont.)

Species	Region	Depth in meters	Reference
	Bay of Biscay	600-0	Patriti, 1965
	<u>Mediterranean</u>		
	Alborán Sea	Surface, 15 m, 5 m	Alvariño, 1957a
	Adriatic, S of Andrija	Jan., Mar., May 150-0, Feb.,	Huré, 1955
	Lighthouse 42°32'N – 17°57'E	July, Aug, 125-0 April, June, Sept., Oct., Nov. Dec. 75-0	
<u>Eudoxia galathea</u>	<u>Atlantic Ocean</u>		
	Southern region	500-300	Leloup and Hentschel, 1938
<u>Eudoxia macra</u>	<u>Atlantic Ocean</u>		
	W of Cape Town		
	33° 20' S–15° 18' E	310-260	
	33° 46' S–15° 08' E		
	Off Sierra Leone		
	07° 58'N – 16° 36.3'W	310-0	
	N of St. Peter and st. Paul Islands		
	Sta. 2929, 10° 59.3' N – 27° 03.8'W	750-500, 236-0	Totton, 1954

TABLE 4 (cont.)

Species	Region	Depth in meters	Reference
<u>Eudoxoides spiralis</u>	<u>Indian Ocean</u>		
	SE of South Africa		
	37°50.1'S–35°46.6'E	1350-0	
	34°47.6'S–34°27.9'E	600-0	
	W of Seychelles		
	07°42.1'S–44°14.1'E	50-0	
	04°25.9'S–47°10'E	100-0	
	Off Somali Republic		
	00°57.8'S–49°26.7'E	50-0	
	02°39.4'N – 50°46.4'E	500-250, 250-100, 100-50	
	06°05'N – 52°00'E	450-0	
	07°08.6'N – 52°19.3'E	250-100, 100-50	
	Entrance to Gulf of Aden		
	11°32.3'N – 52°03'E	600-0	Totton, 1954
	<u>Atlantic Ocean</u>		
	Iberian region	10 m and 5 m	Alvariño, 1957b
	Equatorial region off the Amazon	200-0	Alvariño, 1967c
	Sea of Spain	400-0, more abundant in the upper 100 m	Bigelow and Sears, 1937
	Southern region	To 1100 m	Leloup and Hentschel, 1938
	Bermuda region	Mean day level 65 m, spread 65 m, marked diurnal migration with night increase from below 250 m	Moore, 1949

TABLE 4 (cont.)

Species	Region	Depth in meters	Reference
	Florida Current off Miami	260-0	Moore, 1953
	Bay of Biscay	600-0	Patriti, 1965
	<u>Mediterranean</u>		
	All the region	400-0, more abundant in the upper 100 m	Bigelow and Sears, 1937
	Adriatic Sea	150-0 (seasonal) in the abundance at the various levels	Huré, 1955
	<u>Pacific Ocean</u>		
	Off San Diego, California	100-0	Alvariño, 1967b
	Gulf of Thailand	42-0	
<u>Eudoxia tottoni</u>	South China Sea	153-0, 146-100, 141-70, 100-0, 25-0, 17-0	Alvariño, 197 a
	<u>Atlantic Ocean</u>		
	Southern region	100-50	Leloup and Hentschel, 1938

TABLE 4 (cont.)

Species	Region	Depth in meters	Reference
<u>Lensia achilles</u>	<u>Atlantic Ocean</u>		
	W of Cape St. Martin, South Africa		
	33°07'S–04°30'E	2000-0	
	33°20'S–15°18'E	1000-900	
	33°46'S–15°08'E	2500-2000	
	W of Cape Town, South Africa		
	34°05'S–16°00'E	1000-0	Totton, 1941
	<u>Indian Ocean</u>		
	Off East Africa between Durban and the southern part of Madagascar	1400-1000	Totton, 1941
	27°24.3'S–39°21.1'E		
<u>Lensia ajax</u>	<u>Pacific Ocean</u>		
	Off San Diego, California	More than 3000-250	Alvariño, 1967b
	<u>Atlantic Ocean</u>		
	N of Annobon Island		
	01-11'S–05°38'E	300-0	
	W of Cape St. Martin, South Africa		
	33°20'S–15°18'E		
	33°46'S–15°08'E	475-0	Totton, 1941

TABLE 4 (cont.)

Species	Region	Depth in meters	Reference
<u>Lensia campanella</u>	<u>Pacific Ocean</u>		
	Off San Diego, California	1000-800	Alvariño, 1967b
	<u>Atlantic Ocean</u>		
	Equatorial region off the Amazon	200-0	Alvariño, 1967c
	Southern region	To 600 m	Leloup and Hentschel, 1938
	Bermuda region	Mean day level 60 m, spread 25 m	Moore, 1949
	<u>Mediterranean</u>		
	Adriatic: S of Andrija 42°32'N – 17°57'E Lighthouse	150-0 March, April; 75-0 Feb., June, Dec.; 125-0 Jan.; 125-25 May	Huré, 1955
	<u>Pacific Ocean</u>		
	South China Sea	From 14.1 depth only 20-0	Alvariño, 197 a



TABLE 4 (cont.)

Species	Region	Depth in meters	Reference
<u>Lensia challengeri</u>	<u>Pacific Ocean</u>		
	Off San Diego, California	500-0	Alvariño, 1967b
	South China Sea	Only from 141, 123, 33.5 m, 736-140, 153-90, 129, 120	Alvariño, 197 a
	Off California	220-37	Totton, 1954
<u>Lensia conoidea</u>	<u>Atlantic Ocean</u>		
	Equatorial region off the Amazon	200-0	Alvariño, 1967c
	Bay of Biscay, Iberian Atlantic, Sea of Spain	1400-0, more abundant in the upper 600 m	Bigelow and Sears, 1937
	Southern region	1100-0	Leloup and Hentschel, 1938
	Bay of Biscay	2000-0	Patriti, 1965
	Herdla and Hjeltel Fjords (Norway)	400-0	Runnström, 1932
	<u>Mediterranean</u>		
	Western, Median and Eastern Basins	1400-0, more abundant from 800 to 1000 m	Bigelow and Sears, 1937

TABLE 4 (cont.)

Species	Region	Depth in meters	Reference
<u>Lensia cossack</u>	<u>Pacific Ocean</u>		
	Off San Diego, California	600-250	Alvariño, 1967b
	South China Sea	559-130, 136-130, 109-100	Alvariño, 197 a
	<u>Atlantic Ocean</u>		
	Equatorial region off the Amazon	200-0	Alvariño, 1967c
	W of Cape St. Martin, South Africa		
	33°20'S–15°18'E		
	33°46'S–15°08'E	310-260	
	Off Annobon Island		
	01°11'S–05°38'E	310-260	
	W of Gough Island		
	40°25'S–30°06'W	200-0	
	SW of Tristan da Cunha		
	38°10'S–30°10'W		
	38°03'S–29°48'W	340-0	
	SW of Ilha da Trindade		
	22°36'S–30°01'W	260-0	
	21°13'S–29°55'W	500-250, 250-0	
	NW of Ilha da Trindade		
	20°11'S–29°57'W	375-0	
	N of Ilha da Trindade		
	15°37'S–29°53'W		
	15°38'S–29°49'W	250-0	

TABLE 4 (cont.)

Species	Region	Depth in meters	Reference
	NW of São Pedro and Paulo Rocks		
	02°59'N – 29°59'W		
	02°59'N – 30°04'W	250-0	
	04°05'N – 30°00'W	210-0	
	SW of Fogo Island (Cape Verde Is.)		
	12°21'N – 30°07'W	470-0	
	W of Fogo Island		
	14°39.3'N – 25°51.7'W	240-0	
	SE of Maceió, Brazil		
	10°26.6'S–34°54.7'W	208-0	
	SE of Salvador, Brazil		
	14°01.4'S–36°30.7'W	216-0	
	SE of Rio de Janeiro		
	24°40.7'S–41°30.8'W	290-0	
	SE of Porto Alegre		
	31°37.1'S–45°00'W	200-0	Totton, 1941
	<u>Indian Ocean</u>		
	SE of East London, South Africa		
	36°01.8'S–34°04.4'E	146-0	
	E of East London		
	34°01.8'S–34°01.7'E	102-0	
	SE of East London		
	37°50.1'S–35°46.6'E	1350-0	
	SW of Cape St. Marie, Madagascar		
	27°24.3'S–39°21.2'E	500-0	Totton, 1941

TABLE 4 (cont.)

Species	Region	Depth in meters	Reference
<u>Lensia exeter</u>	<u>Pacific Ocean</u>		
	SE of Pitcairn Island		
	42°30'S-124°41.7'W	250-106, 86-0	Totton, 1941
	<u>Atlantic Ocean</u>		
	NW of Tristan da Cunha		
	34°08'S-29°50'W	750-500	
	W of Cape St. Martin, South Africa		
	33°20'S-15°18'E	475-0	
<u>Lensia fowleri</u>	SW of Cape St. Martin		
	33°46'S-15°08'E	475-0	
	NW of Tristan da Cunha		
	34°08'S-29°50'W	750-500	
	S of Cape of Good Hope		
	38°02.9'S-18°39.7'E	1500-0	Totton, 1941
	<u>Atlantic Ocean</u>		
	Bay of Biscay	Surface, 548-0, 365-0, 182-0, 137-0, 91-0, not at 457-274, 274-91, 274-0, 45-0	Bigelow, 1911b
	Bay of Biscay, Sea of Spain	666-0, more abundant from 200-100	Bigelow and Sears, 1937
	Southern region	To 800 m	Leloup and Hentschel, 1938
	Bermuda region	Mean day level 165 m	Moore, 1949

TABLE 4 (cont.)

Species	Region	Depth in meters	Reference
<u>Lensia grimaldii</u>	Bay of Biscay	600-0	Patriti, 1965
	<u>Mediterranean</u>		
	Most regions	666-0, more abundant from 200 to 100	Bigelow and Sears, 1937
	Adriatic Sea, S of Andrija		
	Lighthouse 42°32'N - 17°57'E	Feb., April 150-0, Jan., May, Sept., Oct., Nov., Dec. 150-25, March, June, July, Aug., 150-75	Huré, 1955
	Adriatic Sea	700-0	
	S of Capri, Bay of Naples	700 and 300 m	Gamulin, 1966
	<u>Atlantic Ocean</u>		
	Southern region	To 1000 m	Leloup and Hentschel, 1938
	Bay of Biscay	600-0	Patriti, 1965
	W of Cape Town		
	34°05'S-16°00'E	1000-0	
	W of Cape St. Martin, South Africa		
	33°20'S-15°18'E	2500-2000, 550-450	
	SW of Cape St. Martin		
	33°46'S-15°08'E	2500-2000, 550-450	

TABLE 4 (cont.)

Species	Region	Depth in meters	Reference
<u>Lensia hardy</u>	E of Fernando de Noronha Rocks		
	03°17'S-29°57'W	1500-0	
	03°20'S-30°03'W		
	W of Cape Verde Islands		
	14°27'N - 30°02'W	500-250	
	Off Annobon Island		
	01°11'S-05°38'E	300-0	Totton, 1941
	<u>Pacific Ocean</u>		
	Off San Diego, California	1300-200	Alvariño, 1967b
	W of Drake Passage		
	61°56.3'S-79°57'W	1500-0	
	NW of Adelaide Island		
	65°55.8'S-73°51.5'W	500-250	Totton, 1941
	<u>Atlantic Ocean</u>		
	SW of Tristan da Cunha		
	40°25'S-30°06'W	200-0	
	SW of southern tip of Africa		
	44°57'S-12°57'E		
	44°56'S-12°54'E	150-0	
	SW of Tristan da Cunha		
	44°52'S-30°17'W	470-0	
	43°08'S-30°15'W	1000-0, 500-250, 360-0, 150-0	

TABLE 4 (cont.)

Species	Region	Depth in meters	Reference
	SW of southern tip of South Africa		
	37°31'S-04°33'E		
	37°29'S-04°39'E	1300-1250	
	Off Bouvet Island		
	54°05'S-03°57'E		
	54°07'S-04°03'E	164-0	
	Off Montevideo, Uruguay		
	35°09.5'S-47°00'W	246-0	
	N of Falkland Islands		
	44°42'S-53°32.2'W	212-0	
	42°+08.8'S-51°35'W	212-0	
	E of Gough Island		
	41°04.4'S-00°14.3'W	132-0	
	SW of Africa		
	32°30'S-01°23'W	650-0	
	NE of Falkland Islands		
	45°06'S-49°00'W	45-0	
	SE of Africa		
	33°07'S-04°30'E	2000-0	
	34°05'S-16°00'E	1000-0	
	SW of Africa		
	33°20'S-15°18'E		
	33°46'S-15°08'E	765-625-310-260	
	SW of Africa		
	33°50'S-16°04'E		
	34°13'S-15°49'E	460-350-0	
	S of Cape of Good Hope		
	35°29'S-18°33'E	250-10, 100-50	

TABLE 4 (cont.)

Species	Region	Depth in meters	Reference
<u>Lensia havock</u>	Off Tristan da Cunha		
	37°20'S-12°47'W	115-110	
	SW of Africa		
	35°14'S-06°49'E	1100-850	
	N of Tristan da Cunha		
	29°34'S-14°24'E	200-0	Totton, 1941
	<u>Indian Ocean</u>		
	SE of Cape Agulhas		
	38°08'S-20°56.1'E	268-0	
	43°07.4'S-25°04.6'E	270-196	
	SE of East London, South Africa		
	36°46.6'S-38°18.4'E	113-0	
	N of Ile Amsterdam		
	32°04.1'S-77°59.6'E	450-0	Totton, 1941
	<u>Atlantic Ocean</u>		
	SE of Necochea, Argentina		
	43°20'S-46°02'W	2000-0	
	NW of Tristan da Cunha		
	35°20'S-19°01'W	1000-0	
	W of Cape St. Martin, South Africa		
	33°07'S-04°30'E	2000-0	
	NW of Tristan da Cunha		
	34°05'S-16°00'E	1000-0	



TABLE 4 (cont.)

Species	Region	Depth in meters	Reference
	W of Cape St. Martin		
	33°20'S-15°18'E	675-625, 400-100	
	33°46'S-15°08'E	2500-2000, 2500-0	
	SW of Cape of Good Hope		
	37°31'S-04°33'E		
	37°29'S-04°39'E	1300-1250	
	W of South Sandwich Islands, Scotia Sea		
	57°36'S-29°54'W		
	57°36'S-29°35'W	3000-2000, 1000-750	
	NE of South Georgia Islands		
	49°58'S-29°52'W		
	49°58'S-30°18'W	2000-1500	Totton, 1941
	<u>Indian Ocean</u>		
	SW of Cape St. Marie, Madagascar		
	27°24.3'S-39°21.2'E	1400-1000	Totton, 1941
	<u>Pacific Ocean</u>		
	Off San Diego, California	2700-200	Alvariño, 1967b
	Santa Barbara Channel	546 m	
	Santa Cruz Basin	910 m	Alvariño (personal data)

TABLE 4 (cont.)

Species	Region	Depth in meters	Reference
<u>Lensia hostile</u>	Atlantic Ocean		
	W of Cape Town		
	34°05'S-16°00'E	1000-0	Totton, 1941
	Indian Ocean		
	NE of He Amsterdam		
	32°01.5'S-93°40.4'E	2100-1150	
	SW of Cape St. Marie, Madagascar		
	27°24.3'S-39°21.2'E	1400-1100	
	W of Perth, Australia		
	32°05.9'S-105°23'E	3000-2000-0	Totton, 1941
Lensia hotspur	Pacific Ocean		
	Off San Diego, California	1200-700	Alvariño, 1967b
	Atlantic Ocean		
	W of Cape Town		
	34°05'S-16°00'E	1000-0	
	NW of Cape St. Martin, South Africa		
	33°20'S-15°18'E	675-625, 475-0, 5-0	
	33°46'S-15°08'E	2500-2000, 310-260	
	S of Cape of Good Hope		
	35°29'S-18°33'E	100-50, 50-0	
	N of Annobon Island		
	01°11'S-05°38'E	300-0	

TABLE 4 (cont.)

Species	Region	Depth in meters	Reference
	SW of Cape of Good Hope		
	36°14'S-16°09'E	106-0	
	39°03'S-16°11'E	161-0	
	Between South Georgia Islands and Tristan da Cunha		
	43°08'S-30°15'W	2000-0	
	W of Tristan da Cunha		
	38°10'S-30°10'W		
	38°03'S-29°48'W	340-0	
	S of Ilha da Trindade		
	31°16'S-29°56'W	250-0	
	26°06'S-30°06'W	250-0	
	NW of Ilha da Trindade		
	20°11'S-29°57'W	375-0	
	E of Maceió, Brazil		
	09°47'S-29°51'W	250-0	
	E of Fernando de Noronha Rocks		
	03°17'S-29°57'W		
	03°20'S-30°03'W	250-0	
	SW of Sts. Peter and Paul Rocks		
	00°25'S-29°56'W	400-0	
	NW of Sts. Peter and Paul Rocks		
	02°59'N - 29°59'W		
	02°59'N - 30°04'W	250-0	
	04°05'N - 30°00'W	210-0	
	SW of Cape Verde Islands		
	12°21'N - 30°07'W	470-0	
	W of Cape Verde Islands		
	14°27'N - 30°02'W	250-0	

TABLE 4 (cont.)

Species	Region	Depth in meters	Reference
	SW of Cape Verde Islands		
	10°59.3'N - 27°03.8'W	236-0	
	SE of Maceió, Brazil		
	10°20.6'S-34°54.7'W	208-0	
	SE of Salvador, Brazil		
	14°01.4'S-36°30.7'W	216-0	
	SW of Cape of Good Hope		
	36°04.8'S-13°34.5'E	155-0	Totton, 1941
	Indian Ocean		
	SE of East London, South Africa		
	36°42.4'S-36°04.4'E	146-0	Totton, 1941
	Pacific Ocean		
	Off San Diego, California	100-0	Alvariño, 1967b
	South China Sea	153-0, 141-120, 141-100, 141-0	
	Gulf of Thailand	From 35.9-0	Alvariño, 197 a
	SE of Pitcairn Island		
	41°03.1'S-126°03.9'W	306-145	
	S of Panama		
	06°32'N - 80°07'W		
	06°16'N - 80°17'W		
	E of Galápagos Islands		
	01°37'S-86°58'W		Totton, 1941

TABLE 4 (cont.)

Species	Region	Depth in meters	Reference
<u>Lensia hunter</u>	<u>Atlantic Ocean</u>		
	NW of Tristan da Cunha		
	35°18'S-19°01'W	1000-0	
	W of Cape Town		
	33°53'S-09°26'E	1000-0	
	34°05'S-16°00'E	1000-0	
	W of Cape St. Martin, South Africa		
	33°20'S-15°18'E	675-625, 475-0, 250-0	
	33°46'S-15°08'E	2500-2000, 1000-300, 900-10	
	SW of Ilha da Trindade		
	34°08'S-29°50'W	1000-750, 750-500	Totton, 1941
	<u>Indian Ocean</u>		
	SW of Cape St. Marie, Madagascar	1400-1000	Madagascar
<u>Lensia leloupi</u>	27°24.3'S-39°21.2'E		
	SE of Durban, South Africa		
	31°50.3'S-32°20.5'E	1200-500	Totton, 1941
	<u>Pacific Ocean</u>		
	NW of Islas Juan Fernandez		
	31°54'S-88°17'W	1000-0	Totton, 1941
<u>Lensia leloupi</u>	<u>Atlantic Ocean</u>		
	Equatorial region off the Amazon	200-0	Alvariño, 1967c
	Cape López in the Gulf of Guinea	Surface	Totton, 1954

TABLE 4 (cont.)

Species	Region	Depth in meters	Reference
<u>Lensia lelouveteau</u>	<u>Atlantic Ocean</u>		
	W of Cape St. Martin, South Africa		
	33°20'S-15°18'E		
	33°46'S-15°08'E	475-0	
	N of Annobon Island		
	01°11'S-05°38'E	300-0	
	NE of Natal, Brazil		
	04°52'S-33°44'W	100-50	
	NW of Ascension Island		
	02°40.3'S-16°36.8'W	1000-220	
	NE of Cape Verde Islands		
	17°48.8'S-19°31.8'W	600-400	
<u>Lensia meteri</u>	SW of Tristan da Cunha		
	38°00'S-18°27'W	1000-800	Totton, 1941
	<u>Pacific Ocean</u>		
	Off San Diego, California	2600-700	Alvarino, 1967b
	<u>Atlantic Ocean</u>		
	Southern region	To 1000 m	Leloup and Hentschel, 1938
	SW of Ireland		
	50°48'N - 11°04'W	183-0	Totton, 1954

TABLE 4 (cont.)

Species	Region	Depth in meters	Reference
	<u>Indian Ocean</u>		
	SE of East London, South Africa		
	37°50.1'S-35°46.6'E	1350-0	
	34°47.6'S-34°27.9'E	1400-0	
	E of Zanzibar		
	07°42.1'S-44°14.1'E	100-50	
	SE of Mogadiscio, Somali		
	00°57.8'S-49°26.7'E	250-100	
	E of Mogadiscio, Somali		
	02°39.4'+N - 50°46.4'+E	250-100	
	SE of Dante, Somali		
	06°05'N - 52°00'E	450-0	
	Off Alphonse Island (Seychelles)		
	07°08.6'N - 52°19.3'E	250-100	Totton, 1954
	<u>Mediterranean</u>		
	Adriatic, S of Andrije Lighthouse		
	42°32'N - 17°57'E	Feb., Mar., Dec. 150-0; Jan., Sept., Oct., Nov. 150-25; April 125-25; June and July 150-75	Huré, 1955
	<u>Red Sea</u>		
	Gulf of Aqaba	183-0, 135-0	
	Port Sudan	366-0	Totton, 1954

TABLE 4 (cont.)

Species	Region	Depth in meters	Reference
<u>Lensia multicristata</u>	Atlantic Ocean		
	Equatorial region off the Amazon	164-0	Alvariño, 1967c
	Bay of Biscay, Iberian Atlantic Sea of Spain	400-200 and occasionally in surface	
		hauls	
	Southern region	600-400	Bigelow and Sears, 1937 Leloup and Hentschel, 1938
	Bay of Biscay	600-0	Patriti, 1965
	W of Cape Town		
	33°53'S-09°26'E	1000-0	
	Off Cape Town		
	34°05'S-16°00'E	1000-0	
	SW of Cape St. Martin, South Africa		
	33°20'S-15°18'E		
		2500-2000, 1000-900, 310-260	
	S of Cape of Good Hope		
	35°29'S-18°33'E	250-0	
	N of Annobon Island		
	01°11'S-05°38'E	300-0	
	SE of Cape Verde Islands		
	12°08'N - 20°53'W	300-200-0	
	N of South Georgia Islands		
	44°52'S-30°17'W	470-0	
	43°08'S-30°15.5'W	2000-0	
	W of Tristan da Cunha		
	38°10.5'S-30°10'W		
	38°03.5'S-29°48'W	1500-1000, 750-500	



TABLE 4 (cont.)

Species	Region	Depth in meters	Reference
	NW of Tristan da Cunha		
	34°08'S-29°50.5'W	500-250	
	31°16'S-29°56.5'W	1500-1000, 470-0	
	S of Trindade Island		
	26°06.5'S-30°06'W	750-500	
	21°13'S-29°55'W	500-250, 250-0	
	N of Trindade Island		
	20°11'S-29°57'W	375-0	
	15°37'S-29°53.5'W to		
	15°38.5'S-29°49.5'W	750-500	
	E of Fernando de Noronha		
	03°17.5'S-29°57.5'W to		
	03°20'S-30°03'W	1500-0, 500-250, 460-0	
	N of St. Paul Rocks		
	02°59.5'N - 29°59'W to		
	02°59.5'N - 30°04'W	750-500, 500-250, 250-0	
	Between Cape Verde Islands		
	and St. Paul Rocks		
	07°28'N - 30°00.5'W	370-0	
	08°53'N - 30°02.5'W		
	08°54.5'N - 30°01'W	750-500, 500-250	
	SW of Cape Verde Islands		
	09°15'N - 30°01.5'W	460-0	
	12°21.5'N - 30°07.5'W	470-0	
	W of Cape Verde Islands		
	14°27'N - 30°02'W	500-250, 370-0, 250-0	
	SW of Cape Verde Islands		
	10°59.3'N - 27°03.8'W	236-0	
	07°17'N - 28°01.9'W	358-0	

TABLE 4 (cont.)

Species	Region	Depth in meters	Reference
	NE of St. Helena Island		
	14°25.9'S-02°51.5'W	310-0	
	W of Canary Islands		
	27°26.4'N - 19°30.6'W	700-0	
	SW of Luanda, Angola		
	10°19'S-09°36.4'E	280-0	
	NW of Luanda		
	08°26.5'S-0.5°59.4'E	950-550	
	S of Ivory Coast		
	02°53.2'S-04°21.5'W	1200-600	
	W of Monrovia, Liberia		
	05°38.7'N - 14°03.1'W	1500-800	
	W of Free Town, Sierra Leone		
	07°58'N - 16°36.3'W	310-0	
	SW of Port Guinea		
	10°29.8'N - 18°46.1'W	1450-950	
	SE of Necochea, Argentina		
	42°08.8'S-51°35'W	212-0	
	SW of Lüderitz, South Africa		
	28°52.9'S-13°20.4'E	1500-800	Totton, 1954
	<u>Indian Ocean</u>		
	S of Port Elizabeth, South Africa		
	43°07.4'S-25°04.6'E	270-196	
	NE of lie Amsterdam		
	32°01.5'S-93°40.4'E	2100-1150	
	NW of Prince Edward Island		
	40°42'S-36°05.5'E	1350-0	

TABLE 4 (cont.)

Species	Region	Depth in meters	Reference
	SE of East London, South Africa		
	34°47.6'S-34°27.9'E	1400-0	
	SW of Cape St. Marie, Madagascar		
	27°24.3'S-39°21.2'E	1400-1000, 500-0	
	E of Zanzibar		
	07°42.1'S-44°14.1'E	1750-600, 500-250	
	SE of Mogadiscio, Somali		
	00°06'S-49°45.4'E	1400-700, 500-0	
	E of Mogadiscio		
	02°39.4'N - 50°46.4'E	1650-950, 550-0, 250-100	
	SE of Dante, Somali		
	06°05'N - 52°00'E	450-0	
	Off Alphonse Island		
	07°08.6'N - 52°19.3'E	500-200	
	NW of Prince Edward Island		
	45°48.4'S-27°13.6'E	270-196	Totton, 1954
	<u>Mediterranean</u>		
	Alborán Sea	5 m	Alvariño, 1957a
	Entire region	400-200 and occasionally in surface	Bigelow and Sears, 1937
	<u>Pacific Ocean</u>		
	Off San Diego, California	3000-10	Alvariño, 1967b
	South China Sea	From 48.1 m only	Alvariño, 197 a

TABLE 4 (cont.)

Species	Region	Depth in meters	Reference
<u>Lensia reticulata</u>	SE of Tasmania		
	47°18.2'S-150°20.8'E	350-0	
	S of Pitcairn Island		
	47°16.9'S-132°25.1'W	310-106	
	SE of Pitcairn Island		
	42°30'S-124°51.7'W	250-106	
	45°36.1'S-122°09.5'W	250-100	
	E of South Island, New Zealand		
	45°28.4'S-179°06.4'E	500-0, 356-130, 250-100, 128-0	
	SE of South Island		
	47°41.6'S-178°16'W	760-500	
	SE of Pitcairn Island		
	41°03.1'S-126°03.9'W	306-145	Totton, 1954
<u>Lensia reticulata</u>	<u>Indian Ocean</u>		
	N of Seychelles		
	00°06'S-49°45.4'E	1400-700	
	E of Mogadiscio, Somali		
	02°39.4'N - 50°46.4'E	1400-0	Totton, 1954
<u>Lensia reticulata</u>	<u>Pacific Ocean</u>		
	Off San Diego, California	3000-400	Alvariño, 1967b

TABLE 4 (cont.)

Species	Region	Depth in meters	Reference
<u>Lensia subtilis</u>	<u>Atlantic Ocean</u>		
	Equatorial region off the Amazon	200-0	Alvariño, 1967c
	Bay of Biscay	182-0, 136.5-0, 45.5-0	Bigelow, 1911b
	Southern region	To 800 m	Leloup and Hentschel, 1938
	Bermuda region	Mean day level 140 m; spread 150 m; diurnal migration slight affecting chiefly upper 25 m	Moore, 1949
	Bay of Biscay	600-0	Patriti, 1965
	<u>Mediterranean</u>		
	Adriatic, S of Andrija Lighthouse 42°32'N - 17°57'E	150-0 except in Feb. and Dec. when only reaches 125-0	Huré, 1955
<u>Lensia subtiloides</u>	<u>Atlantic Ocean</u>		
	Iberian Atlantic	5 and 10 m	Alvariño, 1957b
	<u>Mediterranean</u>		
	Alborán Sea	5 and 15 m	Alvariño, 1957a

TABLE 4 (cont.)

Species	Region	Depth in meters	Reference
<u>Lensia tottoni</u>	<u>Pacific Ocean</u>		
	Off San Diego, California	100-0	Alvariño, 1967b
	Gulf of Thailand South	70-0, 60-0, 57-0, 46-0, 42-0,	Alvariño, 197a
	China Sea	34.4-0, 11.3-0, 11-0, 5-0	
		131-0, 90-0, 70-0, 56.6-18,	
		35-0, 21-0, 16-0	
<u>Lensia tottoni</u>	<u>Red Sea</u>		
	Gulf of Aden	Surface (day and night)	Totton, 1954
	<u>Atlantic Ocean</u>		
	Equatorial region off the Amazon	200-0	Alvariño, 1967c
<u>Chuniphyes moserae</u>	<u>Atlantic Ocean</u>		
	Bermuda	1800-900, 1650-1450	Totton, 1954
	<u>Indian Ocean</u>		
	Off Somali 06°05'N - 52°00'E Off Zanzibar 07°42.1'S-44°14.1'E	1250-800 1750-600	Totton, 1954

TABLE 4 (cont.)

Species	Region	Depth in meters	Reference
<u>Chuniphyes multidentata</u>	<u>Pacific Ocean</u>		
	Off San Diego, California	3000-0	Alvariño, 1967b
	South China Sea, E of Vietnam 13°34'N - 10°37'E	55.9-0 (probably is 559-0)	Alvariño, 197a
	<u>Atlantic Ocean</u>		
	Bay of Biscay	Below 364 m, 1820 m, but present for 1820 to 3640 m	Bigelow, 1911b
	Bay of Biscay, Iberian Atlantic, Sea of Spain	More than 400 m, but occasionally close to the surface	Bigelow and Sears, 1937
	South Atlantic	300-100	Leloup and Hentschel, 1938
	Bay of Biscay	1200-0	Patrity, 1965
	<u>Pacific Ocean</u>		
	Off San Diego, California	Below 400 m	Alvariño, 1967b
	Gulf of Thailand South China Sea 09°54'N - 110°34'E	From 17.6 m depth only From 630 m only	Alvariño, 197 a

TABLE 4 (cont.)

Species	Region	Depth in meters	Reference
<u>Chuniphyes problematica</u> (Eudoxid of <u>Ch. multidentata</u> )	<u>Atlantic Ocean</u> Southern region	To 1000 m	Leloup and Hentschel, 1938
	Bay of Biscay	600-0	Patriti, 1965
	<u>Pacific Ocean</u> Off San Diego, California	1700-0	Alvariño, 1967b
<u>Clausophyes galeata</u>	<u>Antarctic Ocean</u> Off the Antarctic Ice Edge in the Australian Basin 58°35'S-92°06.2'E	2400-1150	Totton, 1954
	<u>Pacific Ocean</u> Off San Diego, California	2500-400	Alvariño, 1967b
<u>Clausophyes ovata</u>	<u>Antarctic Ocean</u> Off Wilkes Land 58°35'S-92°06.2'E	2400-1150	Totton, 1954
	<u>Atlantic Ocean</u> Southern region	To 600 m depth	Leloup and Hentschel, 1938



TABLE 4 (cont.)

Species	Region	Depth in meters	Reference
	Bay of Biscay	1200-322	Patriti, 1965
	W of Cape Town		
	33°20'S-15°18'E	2500-2000	
	34°46'S-15°08'E	675-625, 310-260	
	33°50'S-16°04'E to		
	34°13'S-15°49'E	850-95	
	E of South Georgia Islands		
	54°17'S-34°47'W	750-100	
	NE of South Georgia Islands		
	49°58'S-29°52'W to		
	49°58'S-30°13'W	3000-2000	
	SW of Tristan da Cunha		
	43°08'S-30°15'W	2000-1500	
	NW of Tristan da Cunha		
	34°08'S-29°50'W	2000-1500	
	Tropical northern region		Totton, 1954
	18°54'N - 30°02'W	750-500	
	14°27'N - 30°02'W	3000-2000	
	<u>Indian Ocean</u>		
	SE of southern tip of Africa		
	37°50.1'S-35°46.6'E	1350-0	Totton, 1954
	N of St. Paul Rocks		
	32°12'S-75°32.6'E	2000-1900	

TABLE 4 (cont.)

Species	Region	Depth in meters	Reference
<u>Conophyes diaphana</u>	<u>Pacific Ocean</u>		
	Off San Diego, California	1900-260	Alvariño, 1967b
	<u>Atlantic Ocean</u>		
	Southern region	To 400 m	Leloup and Hentschel, 1938
<u>Crystallophyes amigdalina</u>	<u>Antarctic Ocean</u>		
	SW of Australia		
	60°06.7'S-102°48.6'E	800-500	
	53°14.9'S-107°02'E	800-350	Totton, 1954
	<u>Atlantic Ocean</u>		
	Southern region	700-500	Leloup and Hentschel, 1938
	SW of southern tip of Africa		
	33°20'S-33°46'S to		
	15°18'E-15°08'E	2500-2000	
	E of Bouvet		
	54°20'S-03°48'W	750-500	
	N of South Georgia Islands		
	53°28'S-36°20'W	500-250	
	53°28'S-37°08'W	750-500, 500-250	
	43°08'S-30°15.5'W	1500-1000, 1000-750	
	E of South Georgia Islands		
	54°19'S-35°03'W	750-500	

TABLE 4 (cont.)

Species	Region	Depth in meters	Reference
	S of South Georgia Islands		
	55°33'S-36°49.5'W	750-500	
	55°09'S-36°48'W	1000-750	
	E of South Georgia Islands		
	54°13.5'S-34°18.5'W	750-500	
	54°11'S-33°49'W	1000-750	
	NE of South Georgia Islands		
	53°07'S-34°48'W	750-500	
	53°16.5'S-35°02.5'W	390-137	
	Off Guinea		
	10°29.8'N - 18°46.1'W	1450-950	
	N of South Georgia Islands		
	53°34'S-38°15'W	750-500, 500-250	
	NE of South Georgia Islands		
	55°20'S-34°46'W	750-500	
	54°01'S-35°14'W	500-250	
	NW of South Georgia Islands		
	53°19'S-45°16'W	500-250	
	E of Sandwich Islands		
	57°36'S-29°54.5'W	750-500, 500-250	
	Between South Georgia Islands and Sandwich Islands		
	53°34.5'S-30°25.5'W	1000-750, 750-500	Totton, 1954
	Pacific Ocean		
	Off San Diego, California	2600-700	Alvariño, 1967b

TABLE 4 (cont.)

Species	Region	Depth in meters	Reference
<u>Heteropyramis maculata</u>	<u>Atlantic Ocean</u>		
	Southern region	800-200	Leloup and Hentschel, 1938
	SE of Fernando de Noronha		
	at		
	about 11°S	1200 m	Moser, 1925
	W of Ireland		
	54°15'N - 14°32'W	1000-250	
	SW of Cape of Good Hope		
	3.3°20'S-15°18'E		
	33°46'S-15°08'E	550-450	
	N of St. Paul Rocks		
	02°59.5'N - 29°59'W	500-350	
	Between St. Paul Rocks and		
	Cape Verde Islands		
	08°54'N - 30°02.5'W	500-250	
	SW of Cape Verde Islands		
	14°27'N - 30°02'W	500-250	
	Off Angola		
	08°26.5.'S-05°59.4'E	950-550	
	Off Liberia		
	05°38.7'N - 14°03.1'W	1500-800	
	10°29.8'N - 18°46.1'W	500-0	
	Sta. 2927	750-500	Totton, 1954
	<u>Indian Ocean</u>		
	Off Somali Republic		
	00°57.8'S-59°26.7'E	500-250	
	00°06'S-49°45.4'E	1400-700	

TABLE 4 (cont.)

Species	Region	Depth in meters	Reference
<u>Thalassophyes crystallina</u>	06°05'N - 52°00'E SE of East London, South Africa	450-0	
	37°50.1'S-35°46.6'E <u>Pacific Ocean</u>	350-0	Totton, 1954
	Off San Diego, California <u>Antarctic Ocean</u>	3000-0	Alvariño, 1967b
	SW of Australia 60°06.7'S-102°48.6'E	800-500	Totton, 1954
	<u>Atlantic Ocean</u> South Atlantic	800-600	Leloup and Hentschel, 1938
	W of Cape Town 33°20'S-33°46'S to 15°18'E-15°08'E	675-625 550-450	
	S of Cape of Good Hope 35°29'S-18°33'E	750-500	
	SW of Cape Agulhas 45°03'S-17°03'E	1000-750	
	N of South Georgia Islands 52°26'S-37°14'W	1000-750	

TABLE 4 (cont.)

Species	Region	Depth in meters	Reference
	E of South Georgia Islands		
	53°39'S-35°47'W	500-250	
	55°40'S-34°23'W	500-250	
	SE of South Georgia Islands		
	55°33'S-34°35'W	500-250	
	NE of South Georgia Islands		
	53°07'S-34°48'W	750-500	
	E of Sandwich Islands		
	57°36'S-29°54'W	1000-750, 750-500	
	Between South Georgia Islands and Sandwich Islands		
	53°34.5'S-30°25.5'W	1500-1000, 1000-750, 750-500	
	NE of South Georgia Islands		
	49°58'S-29°52'W	1000-750	
	43°08'S-30°15'W	2000-1500, 1500-1000	
	45°01.3'S-00°33.7'E	650-400	
	Off Luanda, Africa		
	08°26.5'S-05°59.4'E	950-500	
	Guinea Basin		
	02°53.3'S-04°21.5'W	1200-600	
	Near South Georgia Islands		
	53°33'S-37°45'W	1000-750	
	W of South Georgia Islands		
	55°20'S-34°46'W	750-500	Totton, 1954

TABLE 4 (cont.)

Species	Region	Depth in meters	Reference
<u>Sulculeolaria angusta</u>	<u>Indian Ocean</u>		
	Off Somali		
	00°06'S-49°45.4'E	1400-700	
	07°08.6'N - 52°19.3'E	500-200	
	Entrance to Gulf of Aden		
	11°32.3'N - 52°03'E	600-0	
	Between Crozet and Kerguelen Islands		
	47°22.5'S-56°19.5'E	395-155	
	SE of Iles Crozet		
	58°02.2'S-58°01.3'E	350-210	
	S of Iles Crozet		
	57°55.6'S-61°49.8'E	580-400	
	SE of Heard Island		
	56°35.7'S-78°07.8'E	1100-875	
	58°35'S-92°06.2'E	2400-1150	Totton, 1954
<u>Sulculeolaria angusta</u>	<u>Atlantic Ocean</u>		
	Equatorial region off the Amazon	200-0	Alvariño, 1967c
	<u>Indian Ocean</u>		
	E of Mogadiscio, Somali		
	02°39.4'N - 50°46.4'E	550-0	
<u>Sulculeolaria angusta</u>	NE of East London, South Africa		
	31°46.6'S-29°46.3'E	230-0	Totton, 1954

TABLE 4 (cont.)

Species	Region	Depth in meters	Reference
<u>Sulculeolaria bigelowi</u>	<u>Pacific Ocean</u>		
	South China Sea	128-120; only for 153, 141, 118, 33.5 and 44.8 m	
	Gulf of Thailand	From 25 m depth only	Alvariño, 197a
	<u>Atlantic Ocean</u>		
	Equatorial region off the Amazon	200-0	Alvariño, 1967c
<u>Sulculeolaria biloba</u>	<u>Pacific Ocean</u>		
	South China Sea	From 115 m depth only	Alvariño, 197 a
	<u>Atlantic Ocean</u>		
	Equatorial region off the Amazon	200-0	Alvariño, 1967c
	Southern region	Upper 50 m	Leloup and Hentschel, 1938
	Bay of Biscay	600-0	Patriti, 1965
	<u>Pacific Ocean</u>		
	South China Sea	From 21, 106 and 139 m depth only; 736-45, 140-60, 139-20	
	Gulf of Thailand	From 27.7 m depth; 10-0	Alvariño, 197a



TABLE 4 (cont.)

Species	Region	Depth in meters	Reference
<u>Sulculeolaria brintoni</u>	<u>Pacific Ocean</u> South China Sea Gulf of Thailand	153-0, 4-2-31, from 33.8 only 55-0, 45-0, 44-25, 29-20, 18-0, 33.4-11	Alvariño, 197a
<u>Sulculeolaria chuni</u>	<u>Atlantic Ocean</u> Equatorial region off the Amazon	200-0	Alvariño, 1967c
	<u>Indian Ocean</u> Gulf of Aden	Surface (night)	Totton, 1954
	<u>Pacific Ocean</u> Gulf of Thailand South China Sea	158-0, 60-0, 52 only, 42-0, 27.5 only, 24-0 140-30, 129-0, 120-115, 103-20	Alvariño, 197a
<u>Sulculeolaria monoica</u>	<u>Atlantic Ocean</u> Equatorial region off the Amazon	200-0	Alvariño, 1967c
	<u>Pacific Ocean</u> South China Sea	141-110, 25-0	Alvariño, 197a

TABLE 4 (cont.)

Species	Region	Depth in meters	Reference
<u>Sulculeolaria quadrivalvis</u>	<u>Atlantic Ocean</u>		
	Southern Portugal, Sea of Spain	Upper 43 m	Bigelow and Sears, 1937
	<u>Indian Ocean</u>		
	Gulf of Aden	Surface (day and night)	Totton, 1954
	<u>Mediterranean</u>		
	Entire region	Upper 43 m	Bigelow and Sears, 1937
	<u>Pacific Ocean</u>		
	Gulf of Thailand South China Sea	70-0, 60-0, 54-20, 46-0, 42-0, 27.5-0, 15.8-0, 14-0, 156-45, 146-19, 141-30, 141-20, 141-0; from 32.1 m depth only, 134-30, 17-0	Alvariño, 197a
<u>Sulculeolaria turgida</u>	<u>Atlantic Ocean</u>		
	Bay of Biscay, Sea of Spain	1600-0	Bigelow and Sears, 1937
	Off Cape of Good Hope	100-0 5-0	
	34°05'S-16°00'E W of Cape Town		
	33°20'S-33°46'S and 15°18'E-15°08'E		

TABLE 4 (cont.)

Species	Region	Depth in meters	Reference
	<u>Atlantic Ocean</u>		
	N of Sts. Peter and Paul Rocks		
	04°03'N - 16°51'W	110-0	
	W of Tristan da Cunha		
	38°10.5'S-30°10'W and 38°03.5'S-29°48'W	340-0	
	NW of Tristan da Cunha		
	33°43.5'S-29°52.5'W	290-0	
	31°16'S-29°56.5'W	420-0	
	S of Trindade Island		
	28°30'S-29°58'W	360-0	
	22°36'S-30°01.5'W	260-0	
	Trindade Island		
	21°13'S-29°55'W	500-250	
	20°11'-29°57'W	375-0	
	N of Cape Verde Islands		
	14°27'N - 30°02'W		
	S of Cape Verde Islands		
	14°39.3'N - 25°51.7'	242-0	
	10°50.3'N - 27°03.8'W	236-0	
	N of Sts. Peter and Paul Rocks		
	07°17'N - 28°01.9'W	358-0	
	Maceió, Brazil		
	10°20.6'S-34°54.7'W	208-0	
	Off Florianópolis, Brazil		
	28°02.1'S-43°09.5'W	224-0	
	E of Porto Alegre, Brazil		
	31°37.1'S-45°00'W	200-0	
	W of Luanda, Angola, Africa		
	10°19'S-09°36.4'E	280-0	

TABLE 4 (cont.)

Species	Region	Depth in meters	Reference
	SW of Ascension Island 10°19.8'N - 18°46.1'W	500-0	Totton, 1954
	<u>Indian Ocean</u>		
	SE of southern tip of Africa 36°42.4'S-36°04.4'E	146-0	
	S of Durban, South Africa 31°13.1'S-31°48.7'E	800-0, 135-0	
	N of East London, South Africa 31°46.6'S-29°46.3'E	230-0	
	Port Elizabeth, South Africa 34°30.8'S-26°19'E	210-0	
	E of Port Elizabeth 34°47.6'S-34°27.9'E	1400-0, 5-0	
	SE of Zanzibar 07°42.1'S-44°14.1'E	600-0	
	N of Seychelles 00°06'S-49°45.4'E	500-0	
	Off Somali 06°05'N - 52°00'E	450-0	
	Dante, Somali 11°32.3'N - 52°03'E	600-0	
	Between Cocos Island and lie Amsterdam 20°19'S-90°02'E	121-0	
	W of Palau Enggano, Sumatra 05°02'S-89°47'E	142-0	

TABLE 4 (cont.)

Species	Region	Depth in meters	Reference
<u>Abyla bicarinata</u>	W of Palau Siberut 02°00'S-89°40'E	54-0	Totton, 1954
	<u>Mediterranean</u> Entire region	Mostly in surface	Bigelow and Sears, 1937
	<u>Pacific Ocean</u> South China Sea	From 141 m only	Alvariño, 197a
<u>Abyla carina</u>	<u>Atlantic Ocean</u> Equatorial region off the Amazon	200-0	Alvariño, 1967c
<u>Abyla haeckeli</u>	<u>Pacific Ocean</u> South China Sea	From 141 and 115 m only	Alvariño, 197a
	<u>Atlantic Ocean</u> Equatorial region off the Amazon	200-0	Alvariño, 1967c
	<u>Mediterranean</u> Algeciras Bay (E of Gibraltar)	5 m	Alvariño, 1957a

TABLE 4 (cont.)

Species	Region	Depth in meters	Reference
<u>Abyla schmidti</u>	<u>Pacific Ocean</u>		
	South China Sea	153-0, 144-130, 141-60, 141-50, 141-30	Alvariño, 197 a
	<u>Indian Ocean</u>		
	E of Zanzibar		
	07°42.1'S-44°14.1'E	600-0, 100-50	
	Gulf of Aden	600-0, 100-50	
	W of Seychelles		
	05°39.1'S-46°22.3'E	1900-1850	
	04°25.9'S-47°10'E	250-100	
	Between Seychelles and Somali Coast		
	00°06'S-49°45.4'E	1400-700, 500-0	
	02°39.4'N - 50°46.4'E	1650-900, 550-0, 100-50, 50-0	
	Off the Somali Coast		
	06°05'N - 52°00'E	1250-800, 450-0, 50-0	
	07°08.6'N - 52°19.3'E	250-100	
	11°32.3'N - 52°03'E	600-0	
	NW of St. Paul Rocks		
	32°12'S-75°32.6'E	1900-0	Totton, 1954
	<u>Pacific Ocean</u>		
	South China Sea	146-100, 141-90, 136-0, 128-0, 49.5-0	Alvariño, 197 a

TABLE 4 (cont.)

Species	Region	Depth in meters	Reference
<u>Abyla trigona</u>	<u>Atlantic Ocean</u>		
	Equatorial region off the Amazon	200-0	Alvariño, 1967c
<u>Abylopsis eschscholtzii</u>	<u>Indian Ocean</u>		
	Gulf of Aden	Surface	Totton, 1954
	<u>Atlantic Ocean</u>		
	Equatorial region off the Amazon	200-0	Alvariño, 1967c
	Southern region	To 600 m	Leloup and Hentschel, 1938
	Bermuda region	Mean day level 40 m, spread 80 m, slight or mild diurnal migration	Moore, 1949
	Florida Current off Miami	275-0	Moore, 1953
	Bermuda 10 miles off Miami in the Florida Current 40 miles off Miami in the Florida Current	Vertical spread 80 m 51 m 219 m	Moore and Corbin, 1956
	<u>Indian Ocean</u>		
	Gulf of Aden	Surface (day and night)	Totton, 1954

TABLE 4 (cont.)

Species	Region	Depth in meters	Reference
<u>Abylopsis tetragona</u>	<u>Mediterranean</u>		
	Alborán Sea	5 m	Alvariño, 1957a
	<u>Pacific Ocean</u>		
	South China Sea	153-0, 141-0, from 141 only, 139-0, 35-3-0, 17-0	Alvarnio, 197 a
	<u>Atlantic Ocean</u>		
	Sea of Spain Iberian region	10 m 10 m, 5 m	Alvariño, 1957b
	Equatorial region off the Amazon	200-0	Alvariño, 1967c
	Sea of Spain, Bay of Biscay, Iberian Atlantic	500-0, more abundant in the upper 16 or 43 m	Bigelow and Sears, 1937
	Southern region	To 1000 m	Leloup and Hentschel, 1938
	Bermuda region	Mean day level 50 m, spread 40 m, a definite diurnal migration day-night range 89 m	Moore, 1949
	Florida Current off Miami	275-0	Moore, 1953



TABLE 4 (cont.)

Species	Region	Depth in meters	Reference
	Bermuda	Vertical spread 25 m	
	In Florida Current, 10 miles off Miami and 40 miles off Miami	234 m; with mean day levels of 55, 104 and 188 m, respectively	Moore and Corbin, 1956
	<u>Indian Ocean</u>		
	Gulf of Aden	Surface (day and night), from 952-0 m	Totton, 1954
	<u>Mediterranean</u>		
	Alborán Sea	Surface, 5 m, 15 m	Alvariño, 1957a
	Entire region	500-0, maximum in the upper 16 or 43 m	Bigelow and Sears, 1937
	Adriatic	Feb. and Nov. 150-0; Jan., April, June, July and Dec. 75-0; March and May 125-0; Aug., 150-75; Sept. and Oct. 150-25	Huré, 1955
	<u>Pacific Ocean</u>		
	South China Sea	763-0, 353-0, 153-90, 153-0, 141-30, 141-0, 23-0	Alvariño, 197a

TABLE 4 (cont.)

Species	Region	Depth in meters	Reference
<u>Bassia bassensis</u>	<u>Atlantic Ocean</u>		
	Gibraltar Strait Iberian region	5 m 5 m, 10 m	Alvariño, 1957b
	Equatorial region off the Amazon	200-0	Alvariño, 1967c
	Iberian Atlantic, Sea of Spain	200-0	Bigelow and Sears, 1937
	Southern region	To 1000 m	Leloup and Hentschel, 1938
	Bermuda region	Mean day level 50 m, spread 40 m; no diurnal migration and no night increase from deep water	Moore, 1949
	Florida Current off Miami	250-0	Moore, 1953
	Bay of Biscay	600-0	Patriti, 1965
	<u>Indian Ocean</u>		
	Gulf of Aden	Surface (day and night)	Totton, 1954
	<u>Mediterranean</u>		
	Entire region	200-0	Bigelow and Sears, 1937
	Adriatic Sea	In surface from Dec. to April	Huré, 1955

TABLE 4 (cont.)

Species	Region	Depth in meters	Reference
<u>Ceratocymba dentata</u>	<u>Pacific Ocean</u>		
	Gulf of Thailand South	70-6-0, 64-0, 60-0, 57-0,	Alvariño, 197a
	China Sea	46-0, 10-0, 13-0, 5-0	
		630-0, 153-0, 141-0,	
		22.5-0, 20-0, 16.4-0	
	<u>Atlantic Ocean</u>		
	Equatorial region off the Amazon	200-0	Alvariño, 1967c
<u>Ceratocymba intermedia</u>	Bermuda region	150-0	Moore, 1949
	Atlantic (SW of Luanda, Africa) 10° 19'S-09° 36.4'E	280-0	Totton, 1954
	<u>Pacific Ocean</u>		
	Off San Diego, California	1700-1500	Alvariño, 1967b
	South China Sea	153 and 118, 141 and 115 only, 128	Alvariño, 197a
<u>Ceratocymba intermedia</u>	<u>Pacific Ocean</u>		
	South China Sea	For 141 m depth only	Alvariño, 197a

TABLE 4 (cont.)

Species	Region	Depth in meters	Reference
<u>Ceratocymba leuckarti</u>	<u>Atlantic Ocean</u>		
	Equatorial region off the Amazon	200-0	Alvariño, 1967c
	<u>Pacific Ocean</u>		
	South China Sea	153-139, 153-0, 141-30, 139, 136-120	Alvariño, 197a
<u>Ceratocymba sagittata</u>	<u>Atlantic Ocean</u>		
	Off Portugal, Sea of Spain	Upper 100 m	Bigelow and Sears, 1937
	Southern region	100-50	Leloup and Hentschel, 1938
	<u>Pacific Ocean</u>		
	South China Sea	For 139 and 141 m depth only, 630-80, 141, 136	Alvariño, 197a
<u>Enneagonum hyalimum</u>	<u>Atlantic Ocean</u>		
	Iberian region	10 m	Alvariño, 1957b
	Equatorial region off the Amazon	200-0	Alvariño, 1967c
	Iberian Atlantic, Sea of Spain	1200-0, maximum 500-100	
	Southern region	eudoxids at 60 to 16 m To 400 m	Bigelow and Sears, 1937 Leloup and Hentschel, 1938

TABLE 4 (cont.)

Species	Region	Depth in meters	Reference
	<u>Indian Ocean</u>		
	Gulf of Aden	Surface (night)	Totton, 1954
	<u>Mediterranean</u>		
	Alborán Sea	5 m and 15 m	Alvariño, 1957a
	Western half	1200-0, maximum from 800 to 0	Bigelow and Sears, 1937
	<u>Pacific Ocean</u>		
	Gulf of Thailand	630-100, 153-0, 141-0, 46-0, 35-0, 34.4-10, 32-0, 25-0, 22-0, 15-0, 11-0	Alvariño, 197a
<u>Enneagonuxn searsae</u>	<u>Pacific Ocean</u>		
	South China Sea Gulf of Thailand	From 153 m only, 128 m only, 123 m depth only 27.5-0, from 17.6 m depth only	Alvariño, 197a
<u>Hippopodius hippopus</u>	<u>Atlantic Ocean</u>		
	Equatorial region off the Amazon	200-0	Alvariño, 1967c
	Bay of Biscay	Between 91 and 456 m, not deeper	Bigelow, 1911b
	NW of Spain, S of Portugal, Sea of Spain	Maximum abundance in upper 200 m	Bigelow and Sears, 1937

TABLE 4 (cont.)

Species	Region	Depth in meters	Reference
<u>Vogtia glabra</u>	South Atlantic	To 800 m	Leloup and Hentschel, 1938
	Bermuda region	Mean day level 140 m, spread 160 m	Moore, 1949
	<u>Mediterranean</u>		
	Entire region	Maximum abundance in upper 200 m	Bigelow and Sears, 1937
	Mediterranean	Surface (autumn to early spring, deeper levels in the summer)	Chun, 1887
	Adriatic 42°32'N - 17°57'E	Jan. 125-25, Feb., Mar., Dec. 15-0, April, May, June, July 150-25, Oct. 125-0, Nov. 75-0	Huré, 1955
	<u>Pacific Ocean</u>		
	South China Sea	From 153, 141, 100, 50 m to surface 144-90, 141-100, 136-100	Alvariño, 197a
	<u>Atlantic Ocean</u>		
	Equatorial region off the Amazon	200-0	Alvariño, 1967c
	Off Portugal	400-0	Bigelow and Sears, 1937

TABLE 4 (cont.)

Species	Region	Depth in meters	Reference
<u>Vogtia kuruae</u>	South Atlantic	To 400 m	Leloup and Hentschel, 1938
	Bay of Biscay	600-0	Patriti, 1965
	<u>Indian Ocean</u>		
	Gulf of Aden Central Indian Ocean 26° 24' S-89° 54' E	950-0 excluding surface 1000-750	Totton, 1954
	<u>Pacific Ocean</u>		
	Off San Diego, California	1700-400	Alvariño, 1967b
<u>Vogtia pentacantha</u>	Gulf of Thailand South China Sea	From 17.6 m depth only 630 m only	Alvariño, 197a
	<u>Atlantic Ocean</u>		
	Equatorial region off the Amazon	200-0	Alvariño, 1967c
	Bay of Biscay	546-0 but not along other levels above or below 546 m	Bigelow, 1911b
	Sea of Spain	1000-400	Bigelow and Sears, 1937

TABLE 4 (cont.)

Species	Region	Depth in meters	Reference
<u>Vogtia spinosa</u>	<u>Mediterranean</u>		
	Entire region	1000-400 or deeper	Bigelow and Sears, 1937
	<u>Pacific Ocean</u>		
	South China Sea	736-500	Alvariño, 197a
	<u>Atlantic Ocean</u>		
	Bay of Biscay	455-273	Bigelow, 1911b
	Bay of Biscay, Iberian Atlantic, Sea of Spain	Bathypelagic, confined mainly below 300 m	Bigelow and Sears, 1937
	<u>Mediterranean</u>		
<u>Sphaeronectes sp.</u>	Various locations	Bathypelagic, mainly below 300 m	Bigelow and Sears, 1937
	<u>Pacific Ocean</u>		
	Gulf of Thailand	From 27.5m only	Alvariño, 197a
	<u>Atlantic Ocean</u>		
	Iberian Atlantic Off Galicia	5 m, 10 m 5 m	Alvariño, 1957b



TABLE 4 (cont.)

Species	Region	Depth in meters	Reference
<u>Nectodroma dubia</u>	Bay of Biscay	Surface	Patrity, 1965
	<u>Pacific Ocean</u>		
	Off San Diego, California Santa Barbara Channel (identified by Alvariño in 1966)	500-0  25 to 375 m with peak at 125-200	Alvariño, 1967b  Clarke, 1966
<u>Rosacea plicata</u>	<u>Antarctic Ocean</u>		
	Antarctic Ice Edge 58°35'S-92°06.2'E	2400-1150	Totton, 1954
	<u>Atlantic Ocean</u>		
	Iberian Atlantic	5 m	Alvariño, 1957b
	Equatorial region off the Amazon	200-0	Alvariño, 1967c
	Bay of Biscay	Not for 364-0; present for 637-0, 546-364, 546-0, 455-0; not below 546	Bigelow, 1911b
	Off Lisbon and off Cape San Vicente (Portugal)	666-0	Bigelow and Sears, 1937

TABLE 4 (cont.)

Species	Region	Depth in meters	Reference
	South Atlantic (as <u>R. cymbiformis</u> )	To 750 m	
	South Atlantic ( <u>R. plicata</u> )	600-400	Leloup and Hentschel, 1938
	Bay of Biscay	2000-0	Patriti, 1965
	W of Ireland	1000-250	Totton, 1954
	<u>Indian Ocean</u>		
	SE of lies Crozet		
	47°22.5'S-56°19.5'E	395-155	
	SE of Zanzibar		
	07°42.1'S-44°14.1'E	50-0	Totton, 1954
	<u>Pacific Ocean</u>		
	Off San Diego, California	2700-200	Alvariño, 1967b
	South China Sea	From 730 and 630 m deep only, 139-130	Alvariño, 197a
<u>Nectopyramis diomedae</u>	<u>Indian Ocean</u>		
	Off south and southeast coast of Africa	2000-1500, 1060-600, 675-525	Totton, 1954

TABLE 4 (cont.)

Species	Region	Depth in meters	Reference
<u>Nectopyramis natans</u>	<u>Pacific Ocean</u>		
	Off San Diego, California	800-400	Alvariño, 1967b
	<u>Atlantic Ocean</u>		
	Off Southwest Africa		
	33°50'S-16°04'E		
	34°13'S-15°49'E	2580-2480	
	Between St. Paul and Brazilian coast	750-0	
	Between Gulf of Guinea and Ascension Island	1000-800	Totton, 1954
	02°49'S-09°25'W		
	<u>Indian Ocean</u>		
<u>Nectopyramis spinosa</u>	Somalia		
	02°39.4'N - 50°46.4'E	1650-950	Totton, 1954
	<u>Pacific Ocean</u>		
	Off San Diego, California	700-600	Alvariño, 1967b
	<u>Atlantic Ocean</u>		
	W of Ireland	1000-250	
	W of Ireland		
	54°15'N - 14°32'W	1000-250	

TABLE 4 (cont.)

Species	Region	Depth in meters	Reference
<u>Nectopyramis thetis</u>	N of St. Helena Island 12°29.8'S-03°41.8'W	500-250	Totton, 1954
	S of Ilha da Trindade 21°13'S-29°55'W	1000-750	
	<u>Indian Ocean</u>		
	SE of Heard Island 58°35'S-92°06.2'E	2400-1150	Totton, 1954
	<u>Atlantic Ocean</u>		
	Bay of Biscay, Sea of Spain	Bathypelagic species	Bigelow and Sears, 1937 Patriti, 1965
	Bay of Biscay	600-0	
	W of Cape Town, South Africa		
	33°25'S-06°31'E	1000-0	
	34°05'S-16°00'E	1000-0	
	33°20'S-15°18'E	1000-900	
	33°46'S-15°08'E	1000-900	
	N of South Sandwich Islands		
	31°16'S-29°56.5'W	2000-0	
	NE of Tristan da Cunha 31°40.5'S-00°28.4'W	2800-2300	
	S of Cape Palmas, Gulf of Guinea 03°24.8'S-07°41.2'W	1150-600	

TABLE 4 (cont.)

Species	Region	Depth in meters	Reference
	S of Ivory Coast		
	02°53.2'S-04°21.5'W	1200-600	
	NW of Scotland		
	58°38'N - 08°21'W	500-0	
	NW of Ireland		
	55°28'N - 09°42'W	700-0	
	NW of Ireland	1000-250	Totton, 1954
	<u>Indian Ocean</u>		
	SE of Cape of Good Hope		
	37°50'S-35°46.6'E	1350-0, 1400-0	
	34°47.6'S-34°27.9'E	1350-0, 1400-0	
	Between Durban and South		
	Madagascar		
	27°24.3'S-39°53.5'E	500-0	
	Between East Africa and		
	South Madagascar		
	24°35.6'S-39°53.5'E	800-0	
	SE of Zanzibar		
	07°42.1'S-44°14.1'E	600-0	
	Off South Somali Republic		
	00°06'S-49°45.4'E	500-0	
	Off Somali Republic		
	06°05'N - 52°00'E	1250-800	
	N of Ile Amsterdam		
	32°04.1'S-77°59.6'E	1050-600	
	NW of Ile Amsterdam		
	31°48.9'S-65°30.3'E	900-400	

TABLE 4 (cont.)

Species	Region	Depth in meters	Reference
<u>Amphicaryon acaule</u>	SE of Mascarene Basin 32°00.6'S-62°11.7'E		
	32°00.6'S-62°03.2'E	1700-0	Totton, 1954
	<u>Pacific Ocean</u>		
	Off San Diego, California	1100-900	Alvariño, 1967b
	<u>Atlantic Ocean</u>		
	Equatorial region off the Amazon	200-0	Alvariño, 1967c
	Off Cape San Vicente (Portugal)	500-40	Bigelow and Sears, 1937
	Off Bermuda	Mean level 80 m spread 75 m	Moore, 1949
	<u>Indian Ocean</u>		
	East Africa		
	04°25.9'S-47°10'E	600-0, 550-250	Totton, 1954
	<u>Mediterranean</u>		
	Messina Straits	500-40	Bigelow and Sears, 1937
	<u>Pacific Ocean</u>		
	Off San Diego, California	800-0	Alvariño, 1967b
	South China Sea	146-130	Alvariño, 197a

TABLE 4 (cont.)

Species	Region	Depth in meters	Reference
<u>Amphicaryon ernesti</u>	<u>Atlantic Ocean</u>		
	Equatorial region off the Amazon	200-0	Alvariño, 1967c
	S of Cape Verde Islands		
	10°29.8'N - 18°46.1'W	500-0	
	12°21.5'N - 30°02'W	470-0	
	Off West Africa		
	10°59.3'N - 27°03.8'W	230-0	Totton, 1954
	<u>Indian Ocean</u>		
	SE of tip of South Africa	230-0 100-50 200-0	Totton, 1954
	31°46.6'S-29°46.3'E N of Madagascar		
<u>Amphicaryon peltifera</u>	00°57.8'S-49°26.7'E Off Gulf of Aden 12°50'N - 43°14'E		
	<u>Pacific Ocean</u>		
	Off San Diego, California	100-10	Alvariño, 1967b
	South China Sea	From 153 m depth only; 144-45, 141-100, 141-90, 115-90	Alvariño, 197a
<u>Amphicaryon peltifera</u>	<u>Atlantic Ocean</u>		
	Off Cape of Good Hope	135-0	Totton, 1954
	33°40'S-16°55'E		

TABLE 4 (cont.)

Species	Region	Depth in meters	Reference
<u>Maresearsia preclara</u>	<u>Indian Ocean</u>		
	N of Madagascar		
	00°57.8'S-49°26.7'E	100-0	
	SE of Zanzibar		
	08°44.6'S-41°50.3'E	450-0	Totton, 1954
	<u>Atlantic Ocean</u>		
	Off Angola, Africa		
<u>Agalma elegans</u>	08°26.5'S-05°59.4'E	950-500	
	Between Cape Verde and St. Paul Rocks		
	07°28'N - 30°00.5'W	370-0	
	S of Ivory Coast		
	02°53.2'S-04°21.5'W	1200-600	Totton, 1954
	<u>Indian Ocean</u>		
	SE of Zanzibar		
<u>Agalma elegans</u>	08°44.6'S-41°50.3'E	450-0	Totton, 1954
	<u>Atlantic Ocean</u>		
	Herdla and Hjeltel Fjords (Norway)	April and June 100-0, Feb. to April and Sept. to Oct. 400-100	Runnström, 1932



TABLE 4 (cont.)

Species	Region	Depth in meters	Reference
<u>Agalma okeni</u>	<u>Atlantic Ocean</u>		
	Equatorial region off the Amazon	200-0	Alvariño, 1967c
	<u>Indian Ocean</u>		
	Gulf of Aden	Surface (day and night)	
	SE of Madagascar		
	31°57.6'S-49°57.4'E	Surface	
	E of Zanzibar		
	07°42.1'S-44°14.1'E	100 m, 50 m	
	E of Mombasa, Kenya		
	04°25.9'S-47°10'E	50 m, 0 m	Totton, 1954
<u>Bergmannia elongata</u>	<u>Pacific Ocean</u>		
	South China Sea	From 44.8 m depth only; 141 and 118, 141, 128, 20	Alvariño, 197a
	<u>Red Sea</u>		
	Aqaba Gulf	180-0, 130-0	Totton, 1954
	<u>Atlantic Ocean</u>		
	SW of Cape Verde Islands		
	14°27'N - 30°02'W	370-0	Totton, 1954

TABLE 4 (cont.)

Species	Region	Depth in meters	Reference
<u>Marrus antarcticus</u>	<u>Pacific Ocean</u>		
	Off San Diego, California	1300-300	Alvariño, 1967b
	South China Sea	Only from 115 m deep	Alvariño, 197a
	<u>Antarctic Ocean</u>		
	SE of Sandwich Islands		
	67°04.4'S-19°41'W	1750-1300	
	66°16.7'S-13°23.3'W	1750-1300	
	67°14.3'S-00°39.7'E	700-400	
	N of Knox Boast		
	53°14.9'S-107°02'E	800-350	
	SE of South Sandwich Islands		
	68°53'S-13°03'W	290-190	
	N of Clarie Coast		
	59°04.5'S-133°18.5'E	240-110	Totton, 1954
	<u>Atlantic Ocean</u>		
	W of Sandwich Islands		
	57°36'S-29°54.5'W	1500-1000	
	57°36'S-29°35'W		
	Between South Georgia Islands and Sandwich Islands		
	53°34.5'S-30°25.5'W		
	53°32'S-30°20'W		

TABLE 4 (cont.)

Species	Region	Depth in meters	Reference
	N of South Sandwich Islands 43°08'S-30°15.5'W	1000-750	
	SE of Gough Island (subtropical convergence) 47°46'S-00°26.6'E	1500-1000	Totton, 1954
	<u>Pacific Ocean</u> E of South Island, New Zealand 45°28.4'S-179°06.4'E	1000-750	Totton, 1954
<u>Marrus orthocannoides</u>	<u>Indian Ocean</u> Off Somali 00°06'S-49°45.4'E	1400-700	Totton, 1954
<u>Stephanomia bijuga</u>	<u>Atlantic Ocean</u> Iberian Atlantic Equatorial region off the Amazon <u>Indian Ocean</u> Gulf of Aden Off Somali 06°05'N - 52°00'E	10 m, 5 m 200-0  Surface (day and night) 450-0	Alvariño, 1957b Alvariño, 1967c

TABLE 4 (cont.)

Species	Region	Depth in meters	Reference
<u>Stephanomia rubra</u>	Entrance to Gulf of Aden 11°32.3'N - 52°03'E	600-0	Totton, 1954
	<u>Pacific Ocean</u>		
	Off San Diego, California	600-0	Alvariño, 1967b
	South China Sea	141 and 48.1 m depth only, 21-0, 20-0	
	Gulf of Thailand	15-0	Alvariño, 197a
	<u>Pacific Ocean</u>		
<u>Physophora hydrostatica</u>	Off San Diego, California	400-300	Alvariño, 1967b
	South China Sea	136-130	Alvariño, 197a
	<u>Atlantic Ocean</u>		
	Labrador Sea	Upper 150 m	Kielhorn, 1952
	<u>Pacific Ocean</u>		
	Off San Diego, California	400-300	Alvariño, 1967b

TABLE 4 (cont.)

Species	Region	Depth in meters	Reference
<u>Nectalia loligo</u>	<u>Pacific Ocean</u>		
	South China Sea	156-100, 136-130	Alvariño, 197a
<u>Forskalia edwardsii</u>	<u>Atlantic Ocean</u>		
	Equatorial region off the Amazon	200-0	Alvariño, 1967c
	<u>Indian Ocean</u>		
	E of Mombasa, Kenya 04°25.9'S-47°10'E	100-50	
	E of Somali Republic 00°06'S-49°45.4'E	1400-700, 500-0	
	02°39.4'N - 50°46.4'E	1650-950	Totton, 1954
	<u>Red Sea</u>		
	Southern region 15°08'N - 42°01'E	250-0	
	21°53'N - 37°41'E	200-0	Totton, 1954
<u>Porpita pacifica</u>	<u>Pacific Ocean</u>		
	Gulf of Thailand	In the haul from 15 m depth	Alvariño, 197a

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## FIGURES

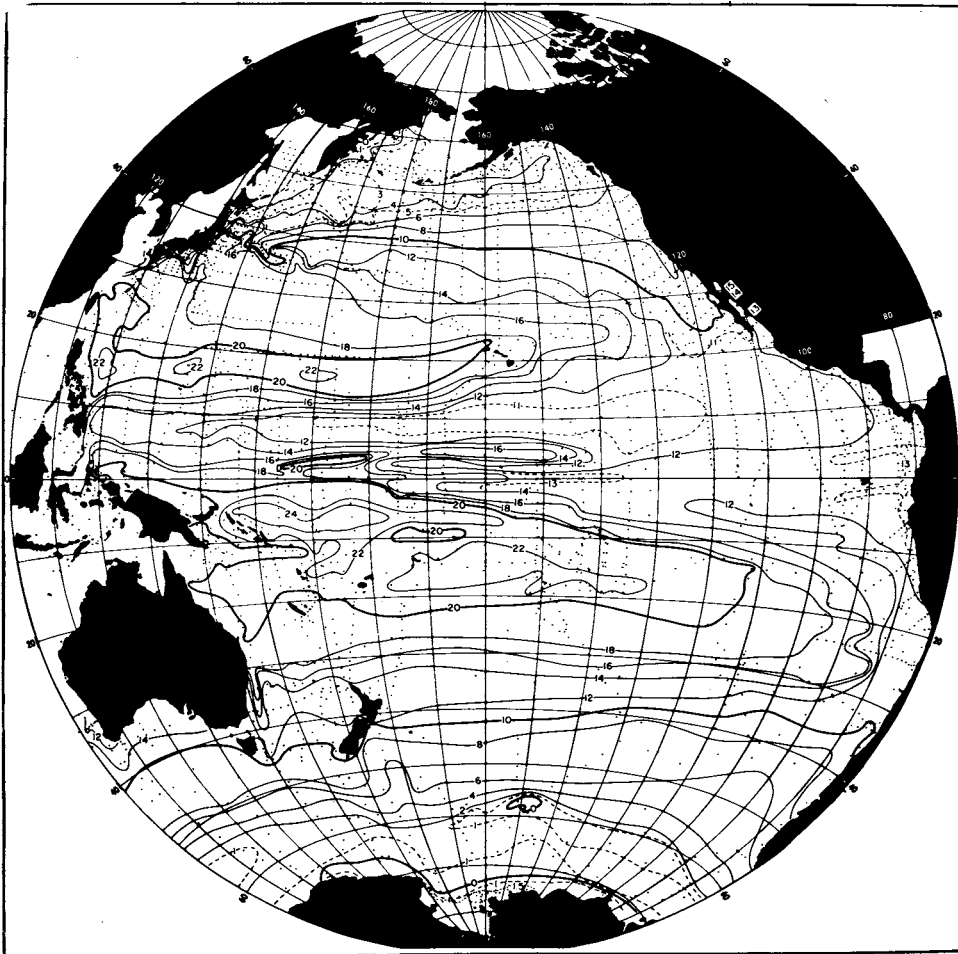


Figure 1. Map of isotherms at 200 m (J. L. Reid, Jr., personal communication).

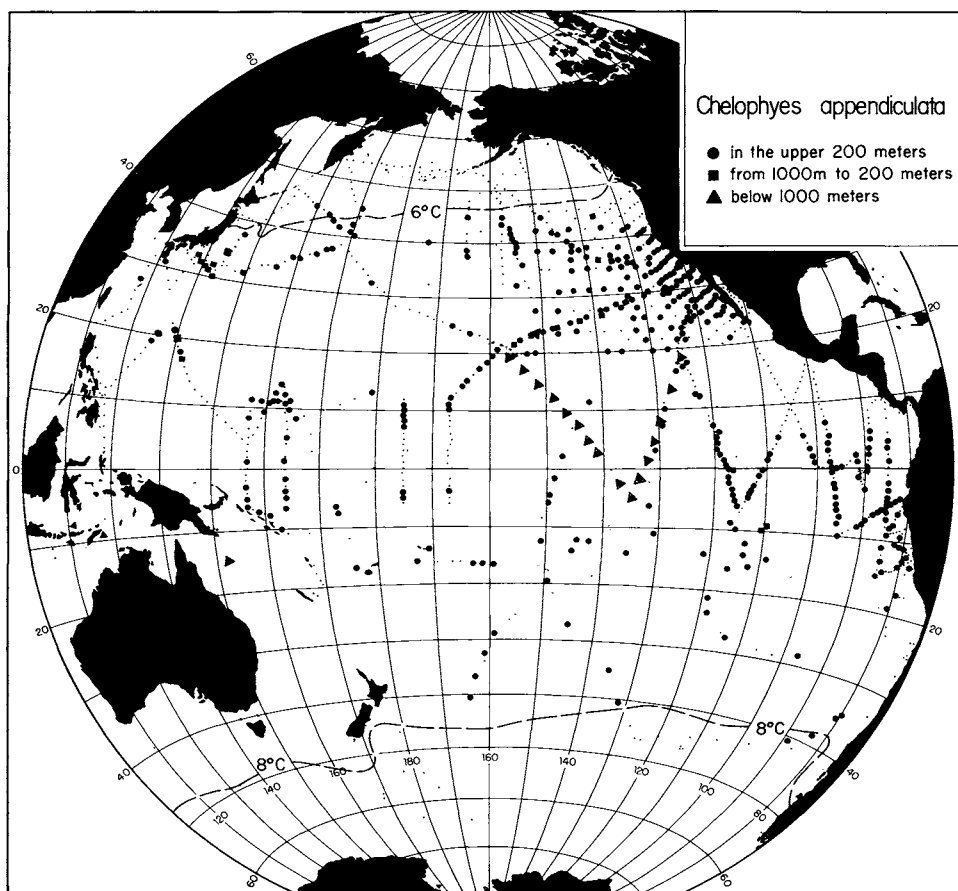


Figure 2. Distribution of *Chelophyes appendiculata* from the collections studied. Distribution appears limited by the 6°C isotherm at 200 m in the northern hemisphere and the 8°C in the southern hemisphere (broken lines: isotherms).

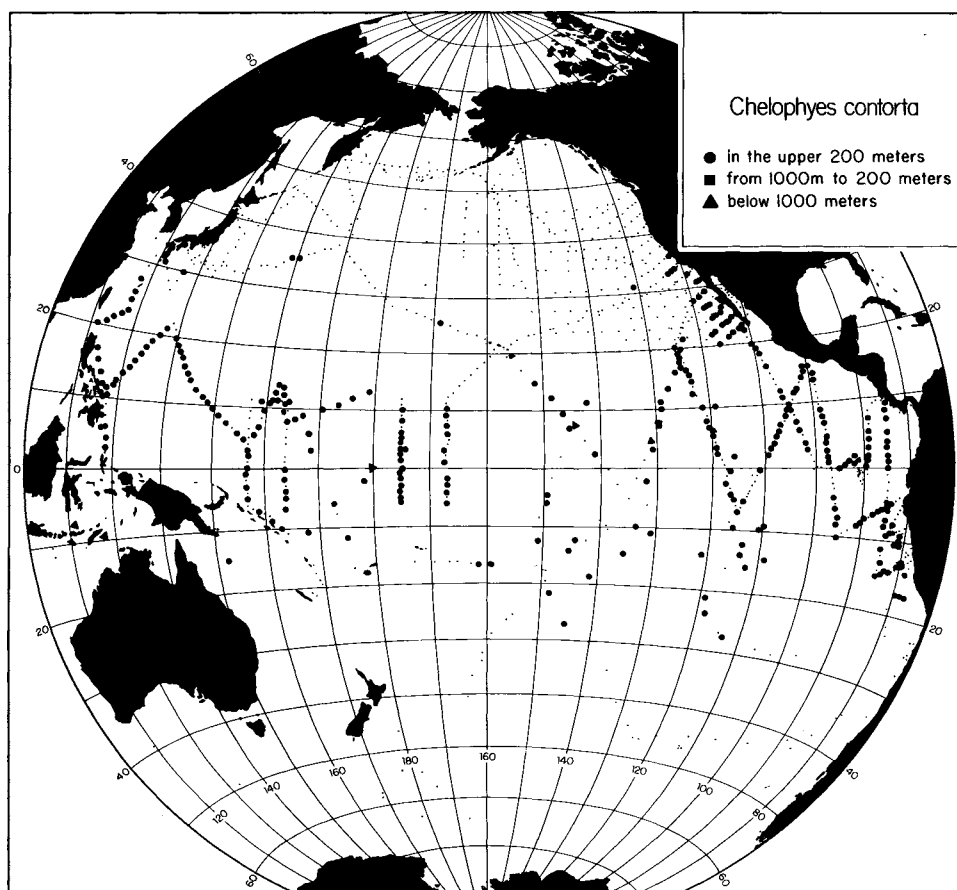


Figure 3. Distribution of *Chelophyes contorta* from the collections studied. It appears more abundant in the warmer zones of the ocean.

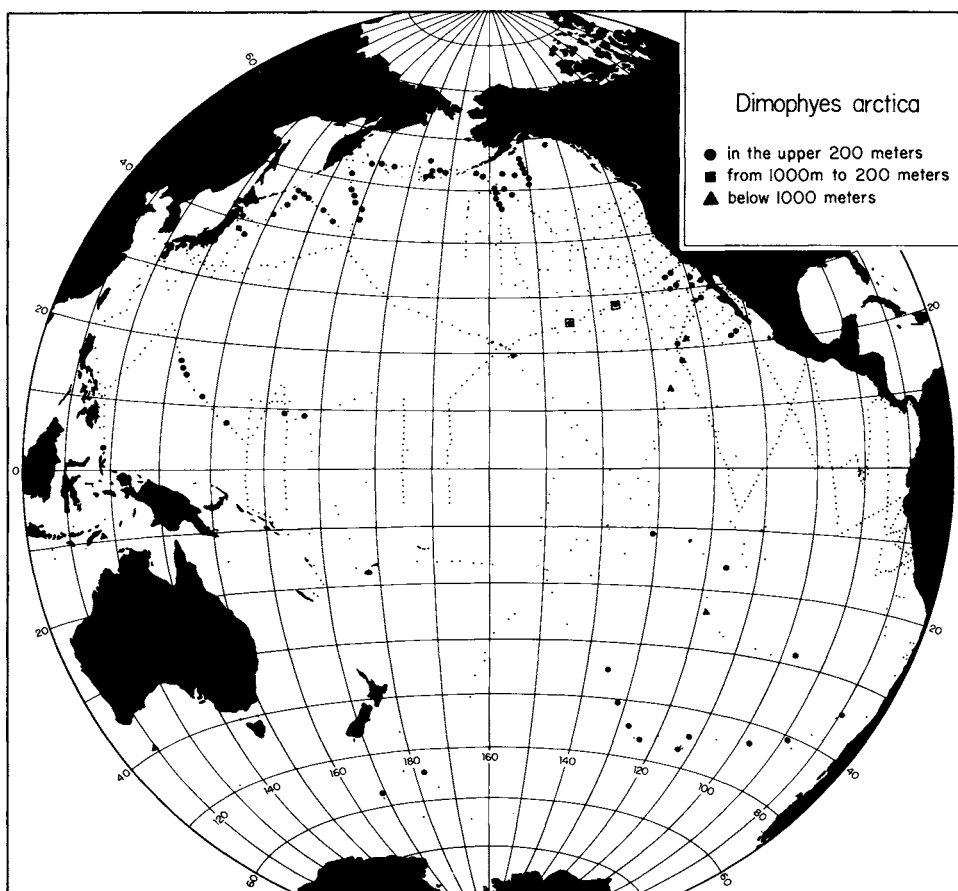


Figure 4. Distribution of *Dimophyes arctica* from the collections studied.



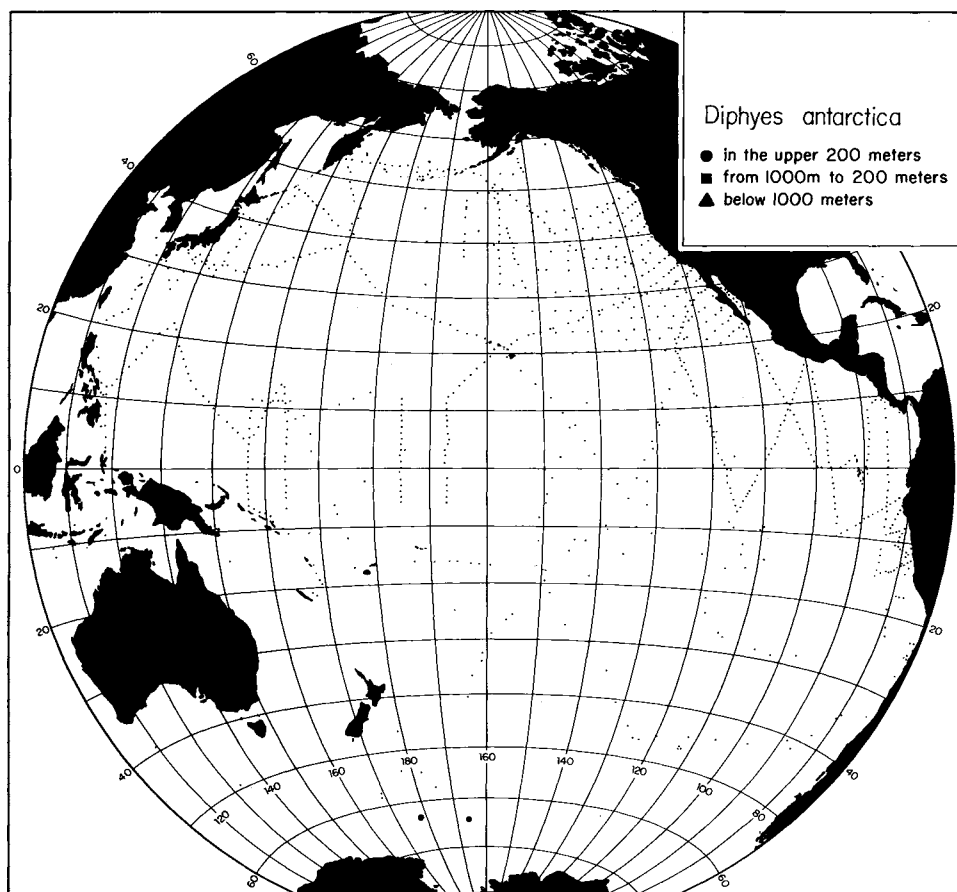


Figure 5. Distribution of *Diphyes antarctica* from the collections studied.

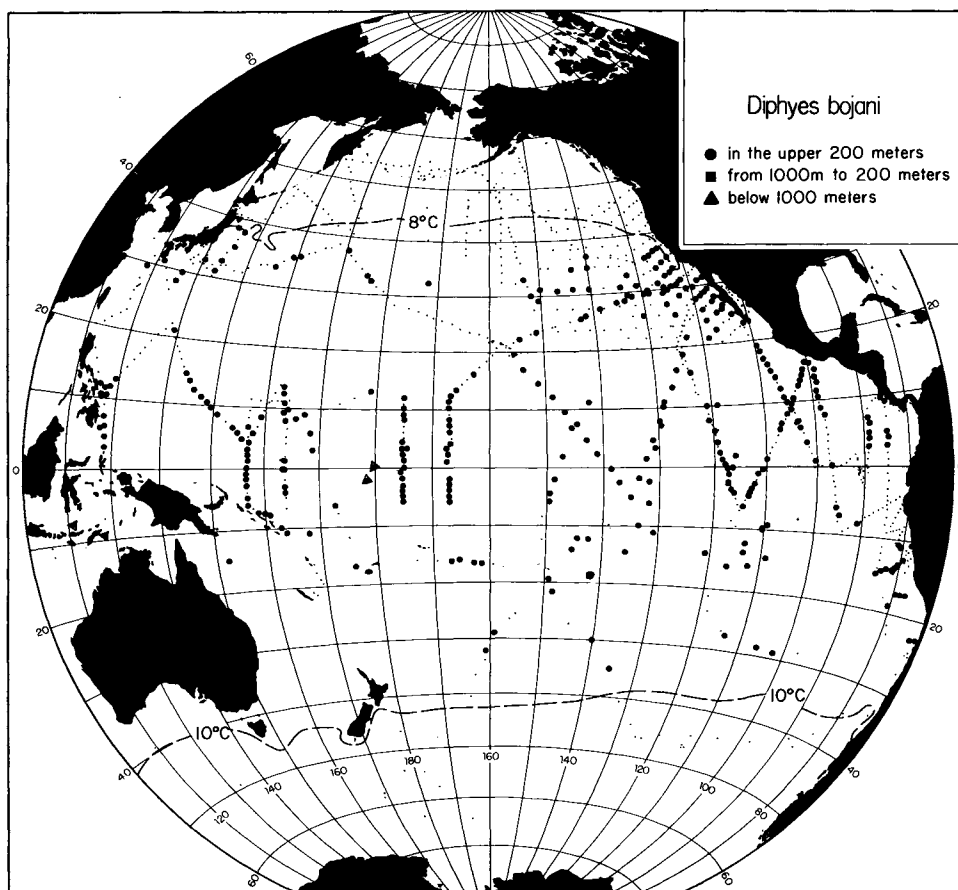


Figure 6. Distribution of *Diphyes bojani* from the collections studied. Distribution appears limited by the 8°C isotherm at 200 m in the northern hemisphere and by the 10°C in the southern hemisphere (broken lines). It is more abundant in the tropico-equatorial regions.

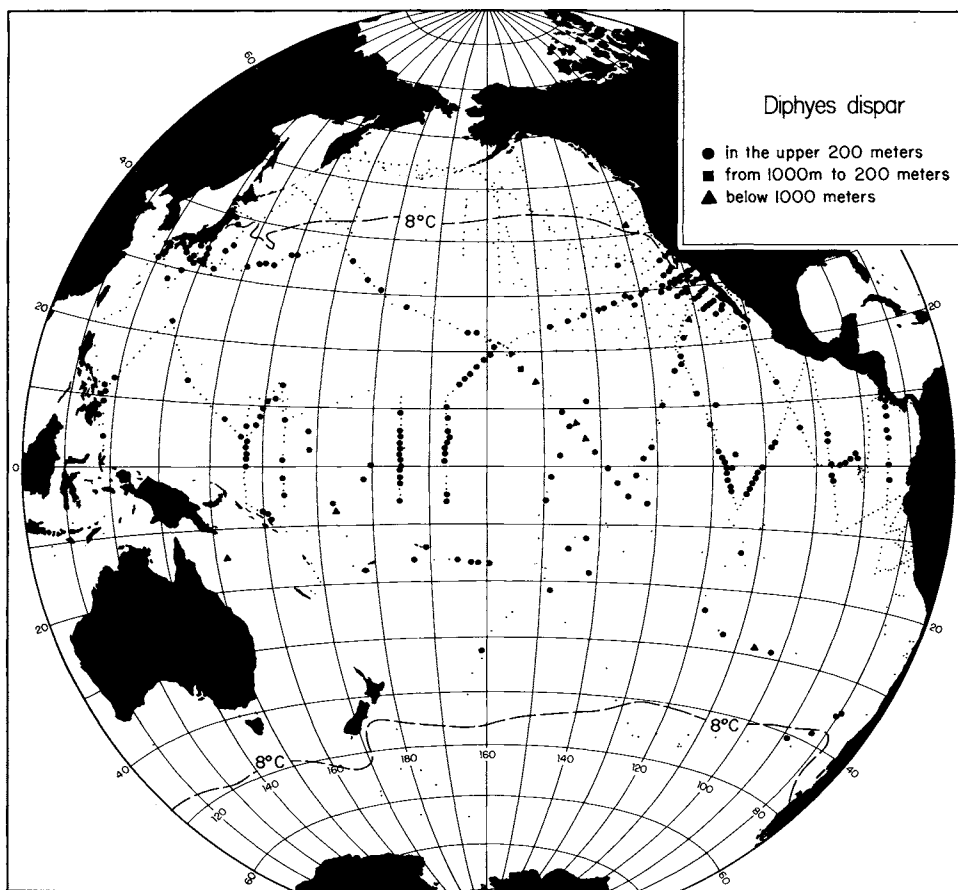


Figure 7. Distribution of *Diphyes dispar* from the collections studied. Distribution appears limited by the 8°C isotherm (broken lines) at 200 m in both hemispheres. It appears more abundant in the tropico-equatorial region but extends into the subtropical zones.

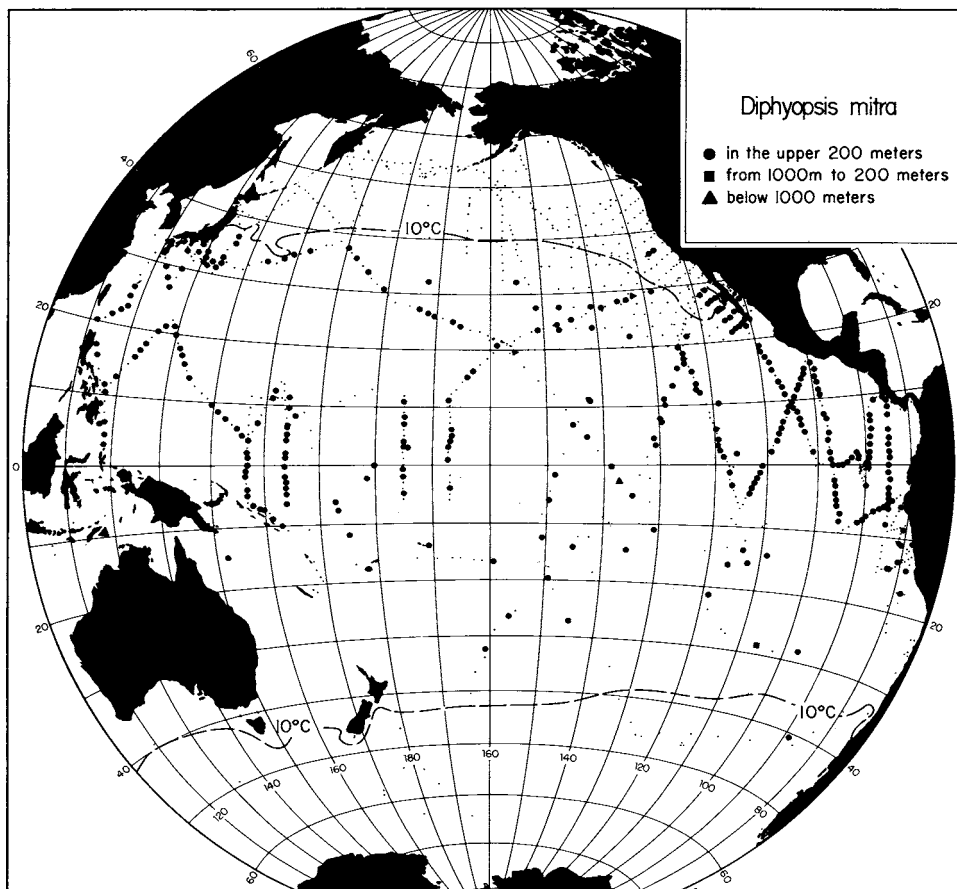


Figure 8. Distribution of *Diphyopsis mitra* from the collections studied. Distribution appears limited by the 10°C isotherm (broken lines) at 200 m in both hemispheres. It is more abundant in the tropico-equatorial regions.

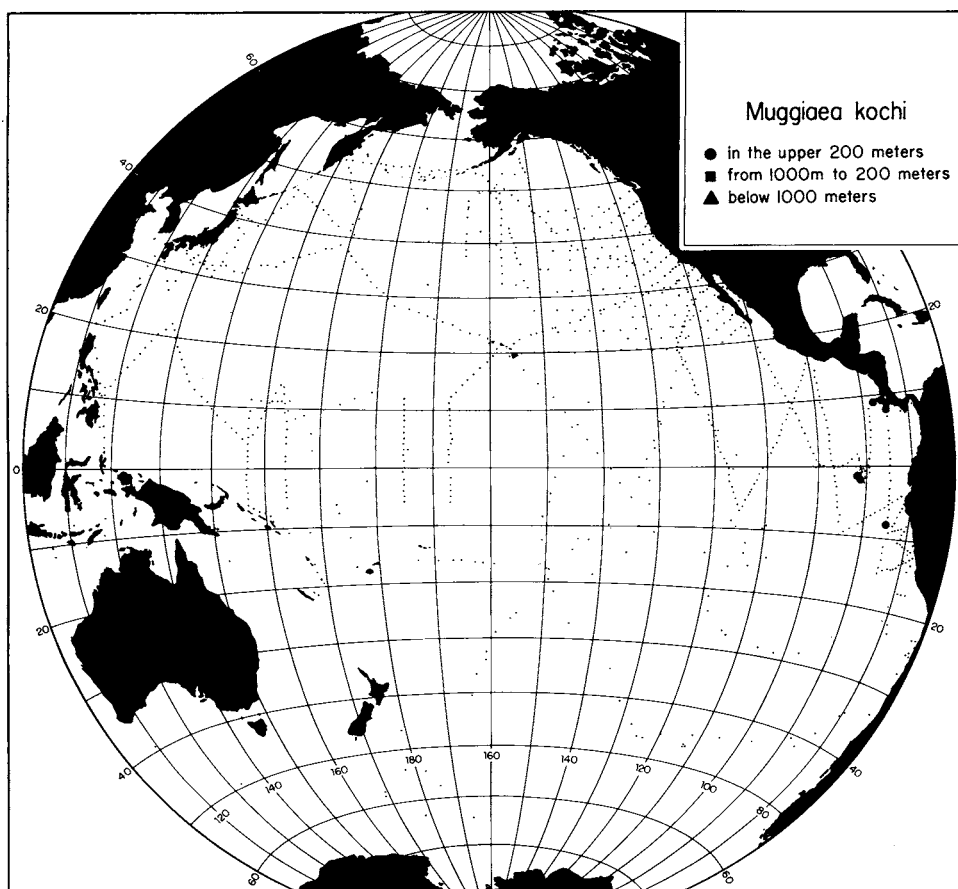


Figure 9. Distribution of *Muggiaea atlantica* from the collections studied. Notice the continuity of the populations of both sides of the Pacific along the Transition Region, and the separation of the populations of the eastern Pacific by the equatorial region.

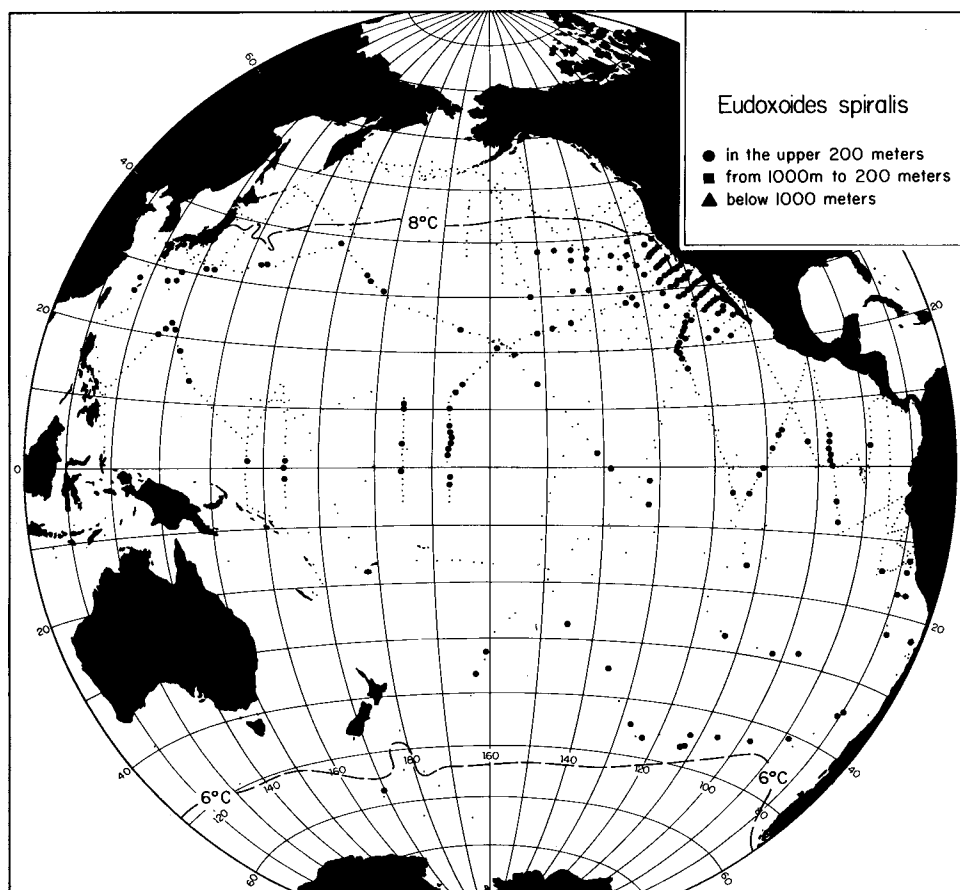


Figure 10. Distribution of *Muggiaea kochi* from the collections studied.

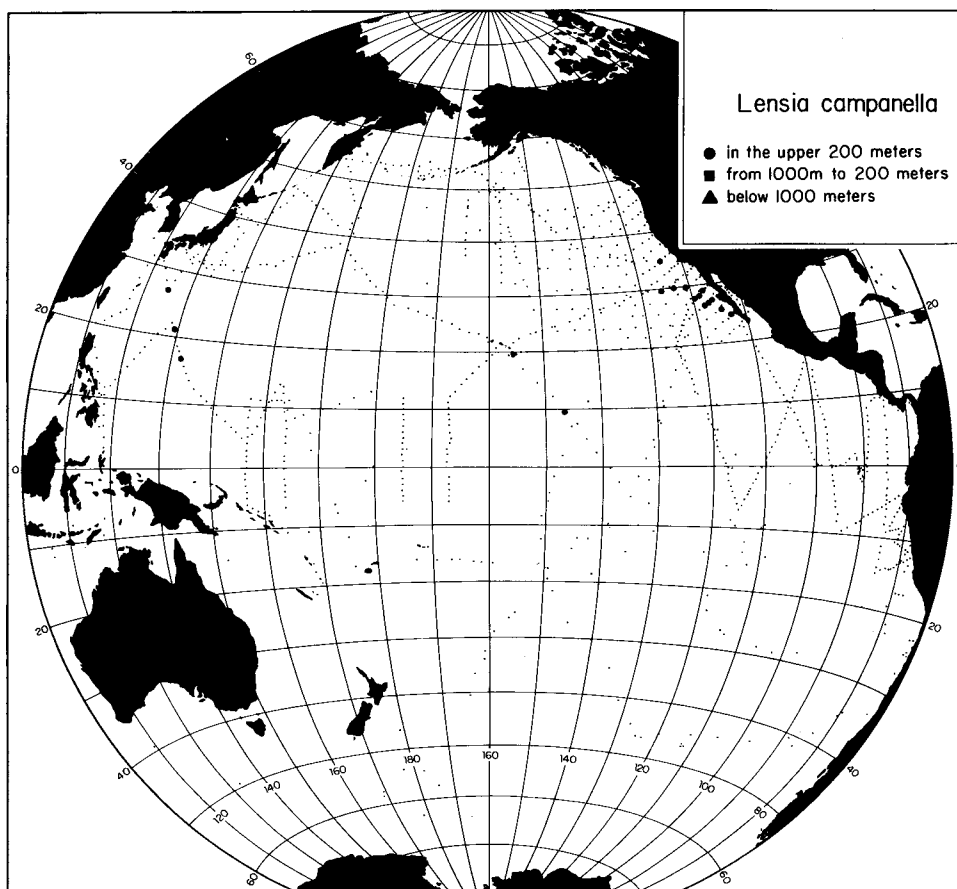


Figure 11. Distribution of *Eudoxoides spiralis* from the collections studied. Distribution appears limited by the 8°C isotherm in the northern hemisphere at 200 m and by the 6°C in the southern hemisphere (broken lines).

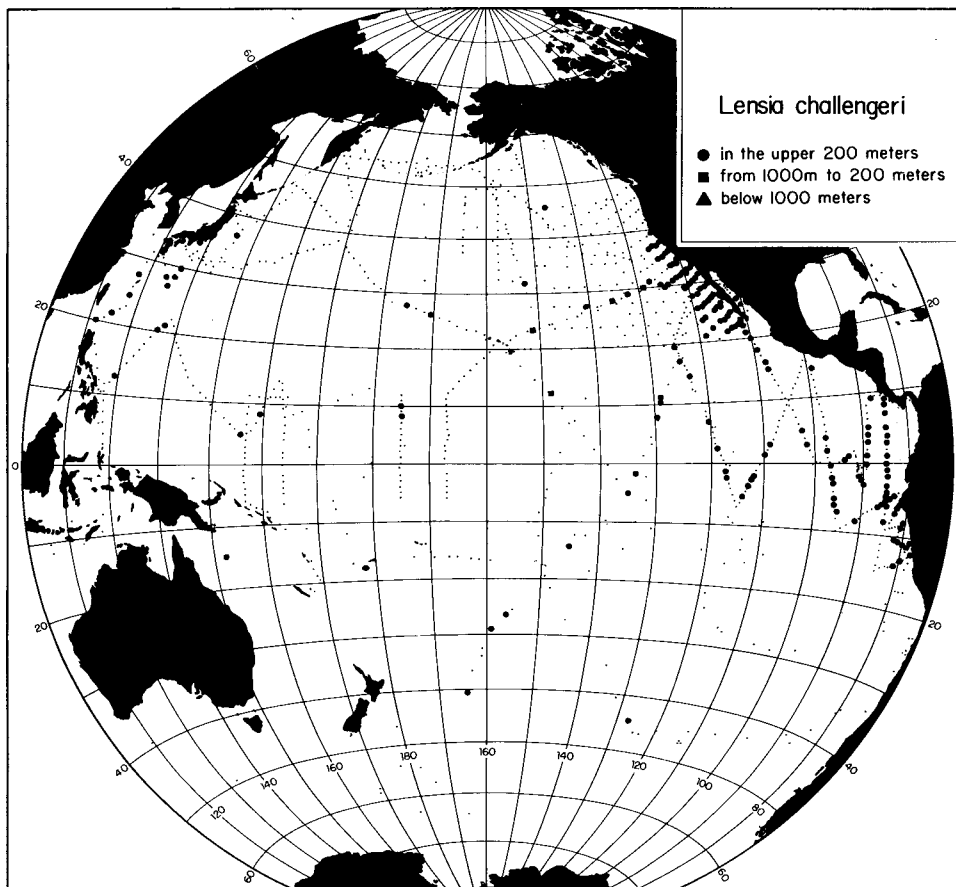


Figure 12. Distribution of *Lensia campanella* from the collections studied.



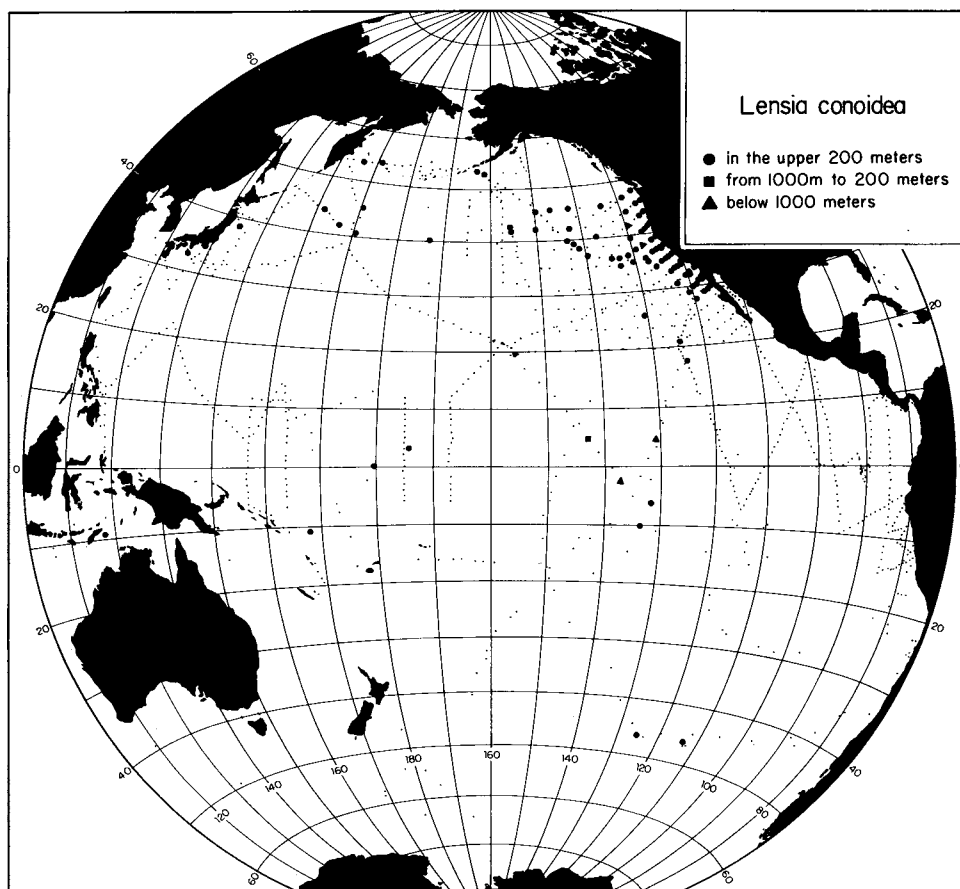


Figure 13. Distribution of *Lensia challengerii* from the collections studied.

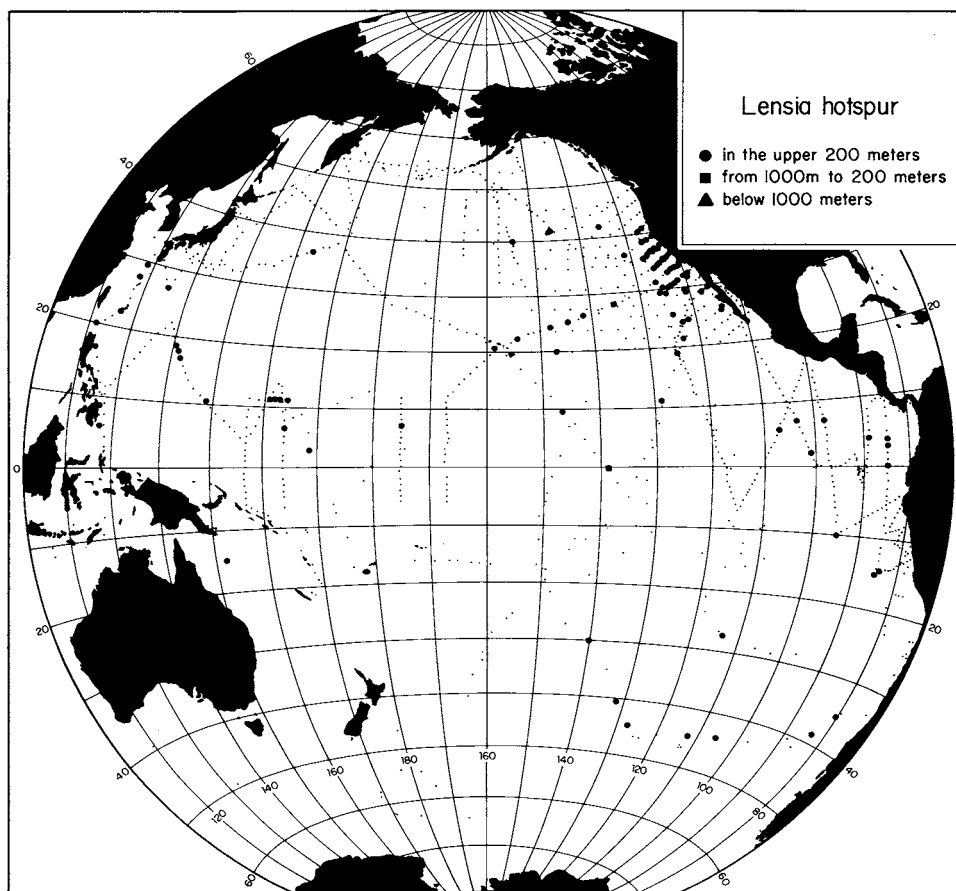


Figure 14. Distribution of *Lensia conoidea* from the collections studied.

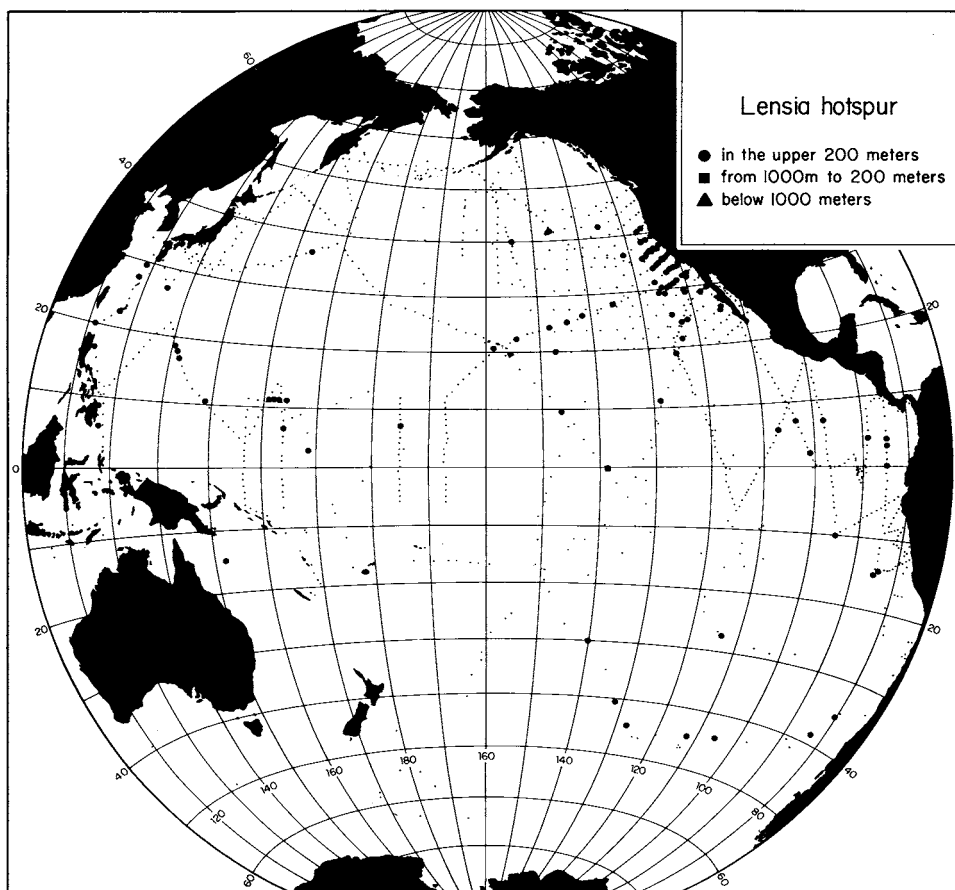


Figure 15. Distribution of *Lensia hotspur* from the collections studied.

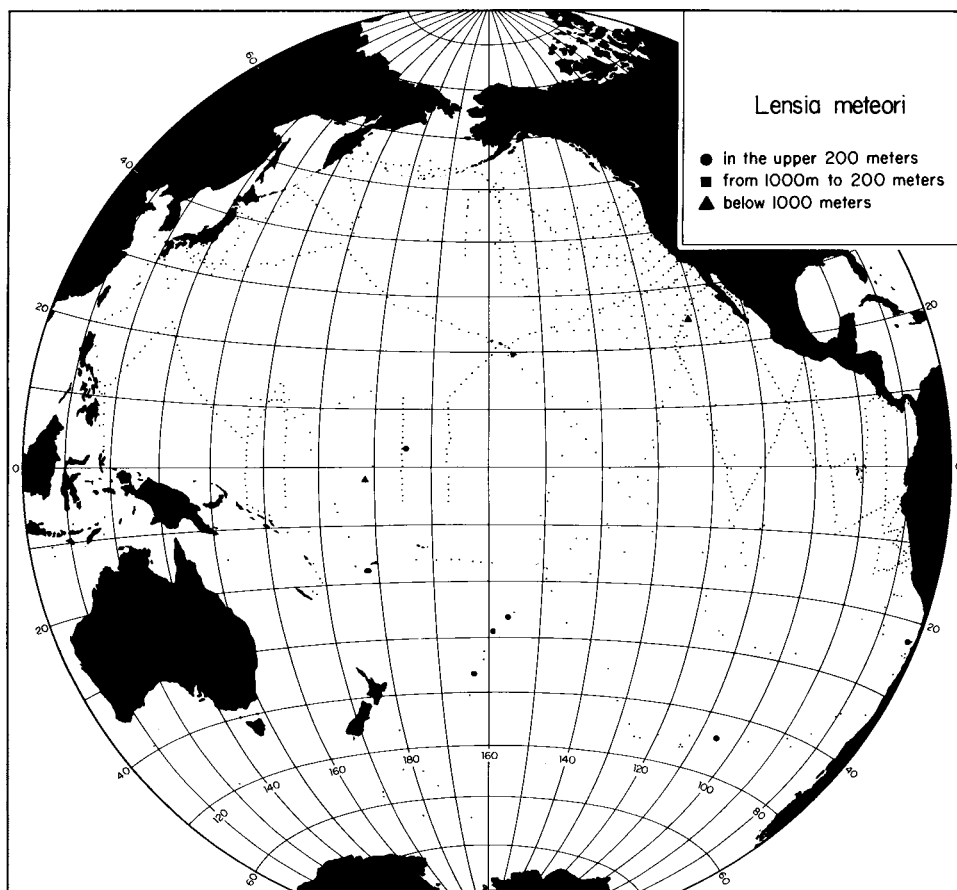


Figure 16. Distribution of *Lensia meteori* from the collections studied.

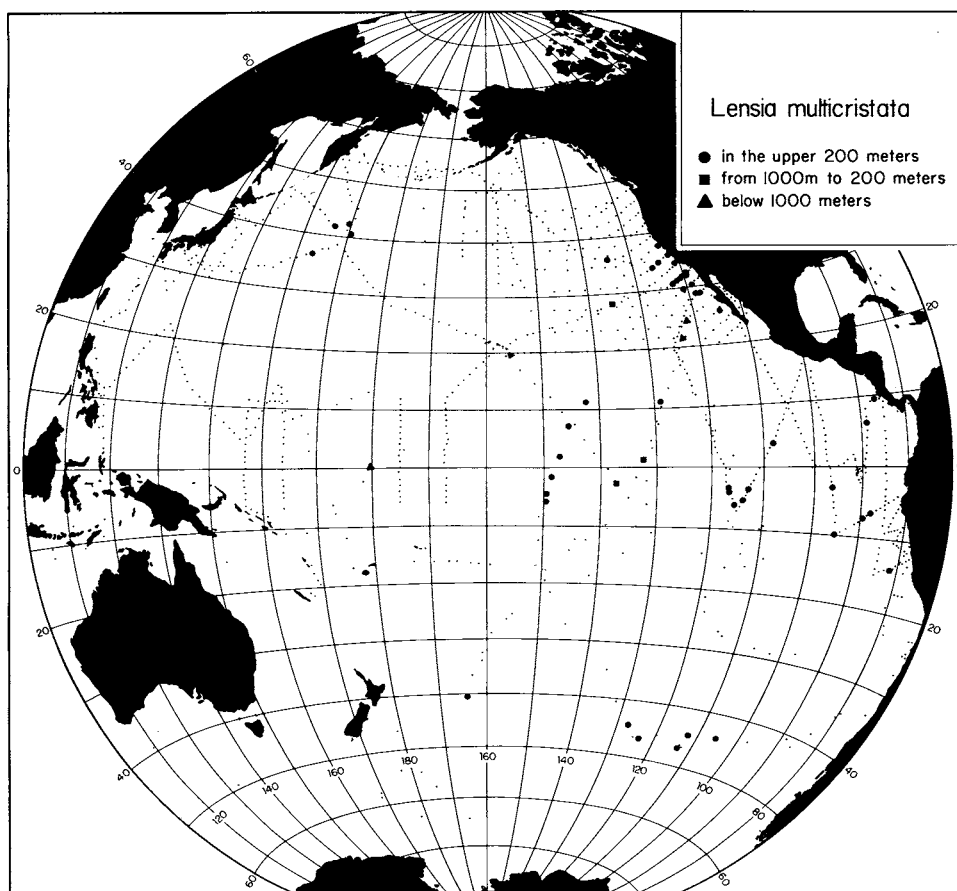


Figure 17. Distribution of *Lensia multicristata* from the collections studied.

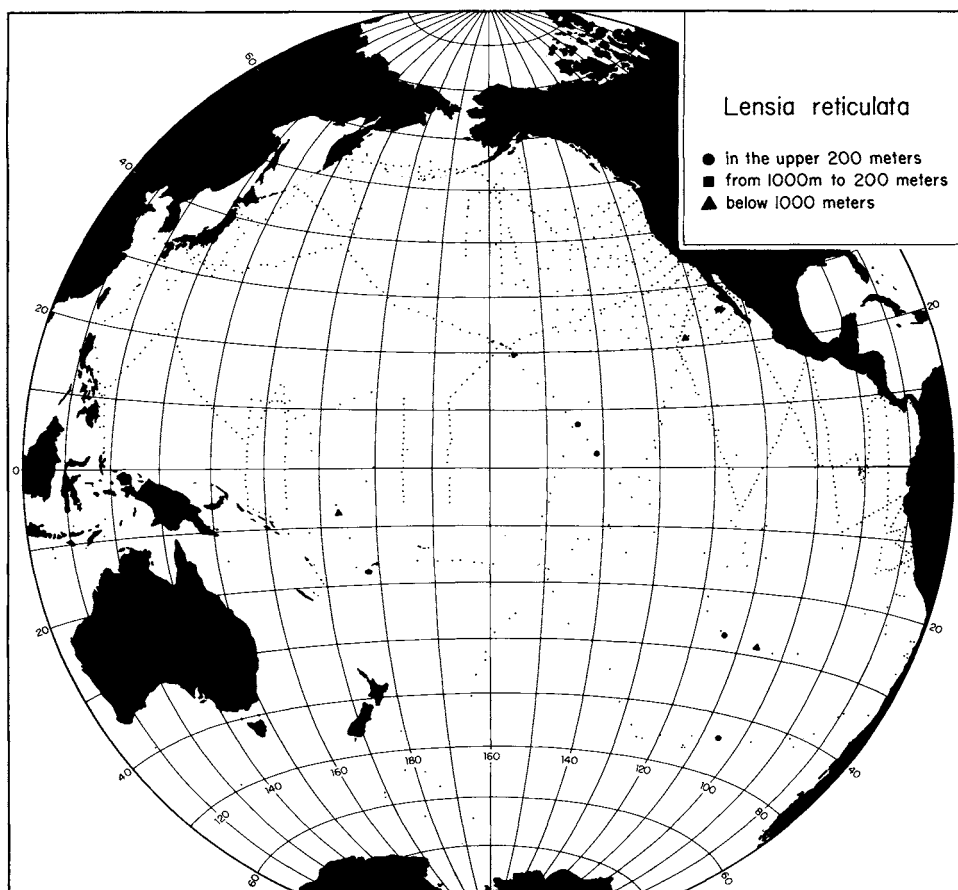


Figure 18. Distribution of *Lensia reticulata* from the collections studied.

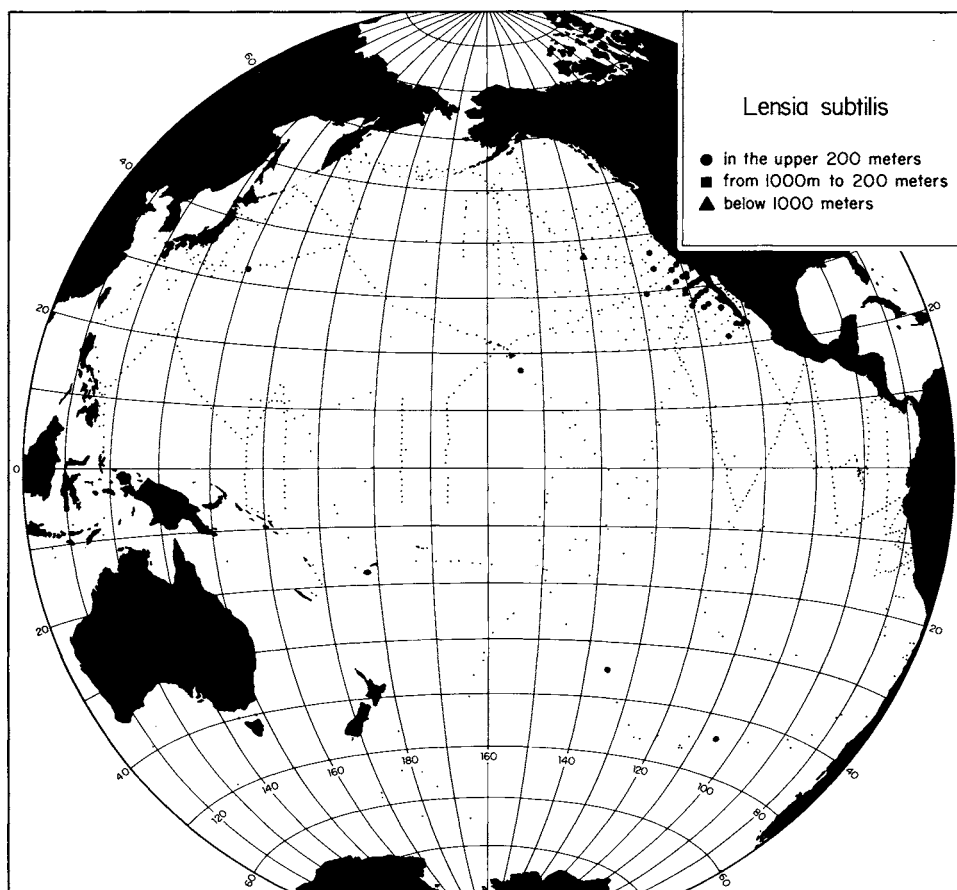


Figure 19. Distribution of *Lensia subtilis* from the collections studied.

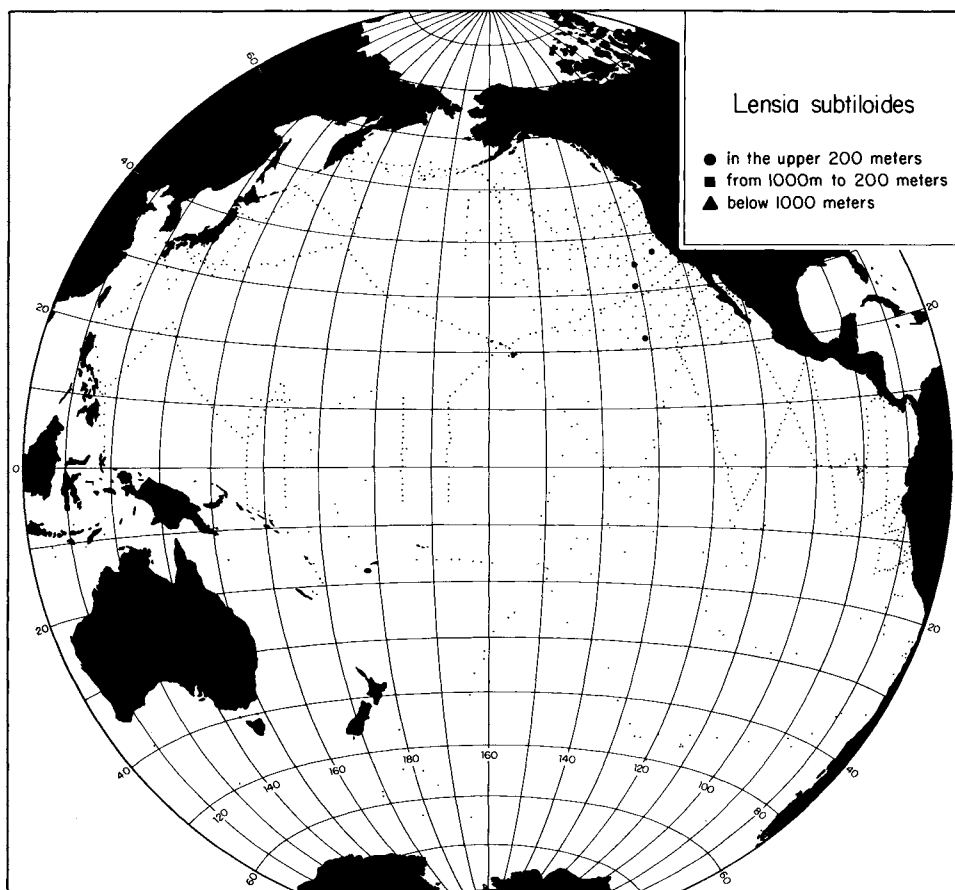


Figure 20. Distribution of *Lensia subtiloides* from the collections studied.



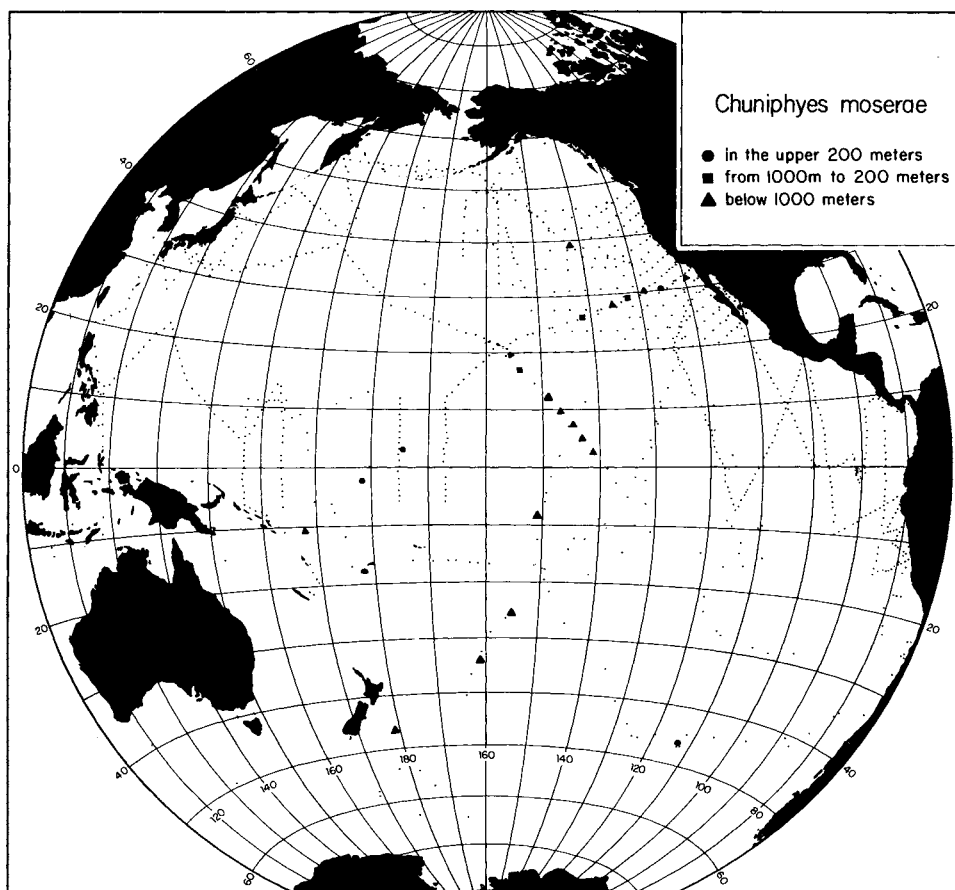


Figure 21. Distribution of *Chuniphyes moserae* from the collections studied.

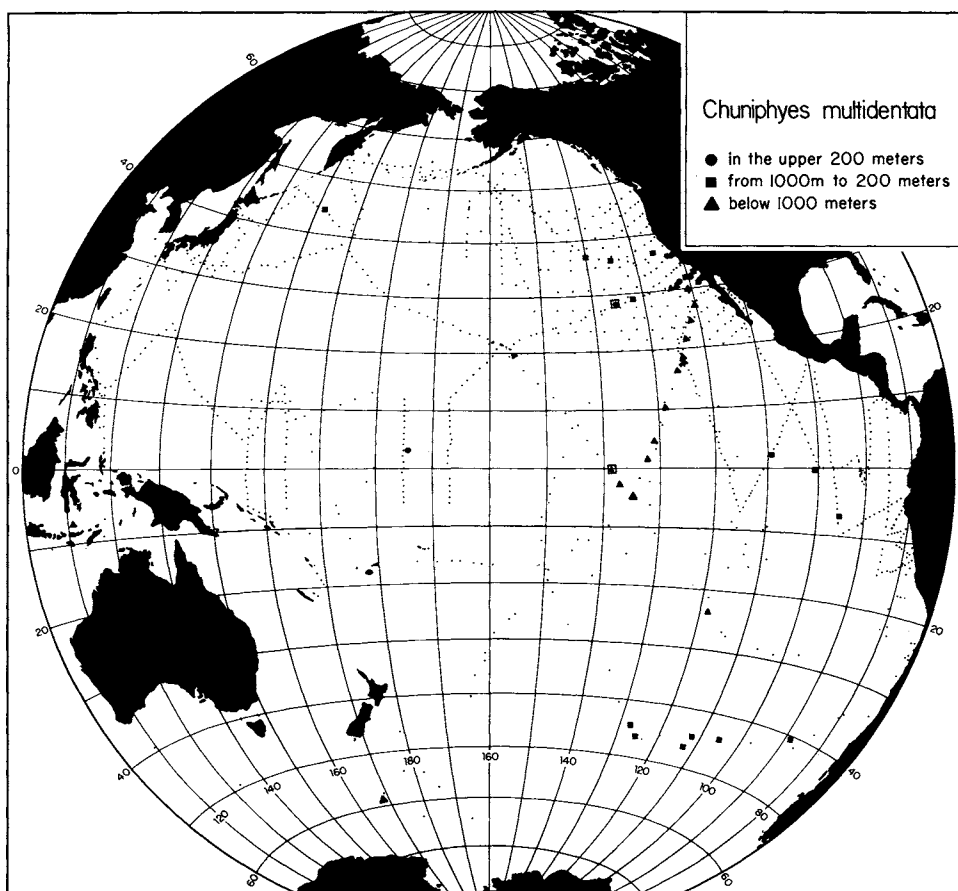


Figure 22. Distribution of *Chuniphyes multidentata* from the collections studied.

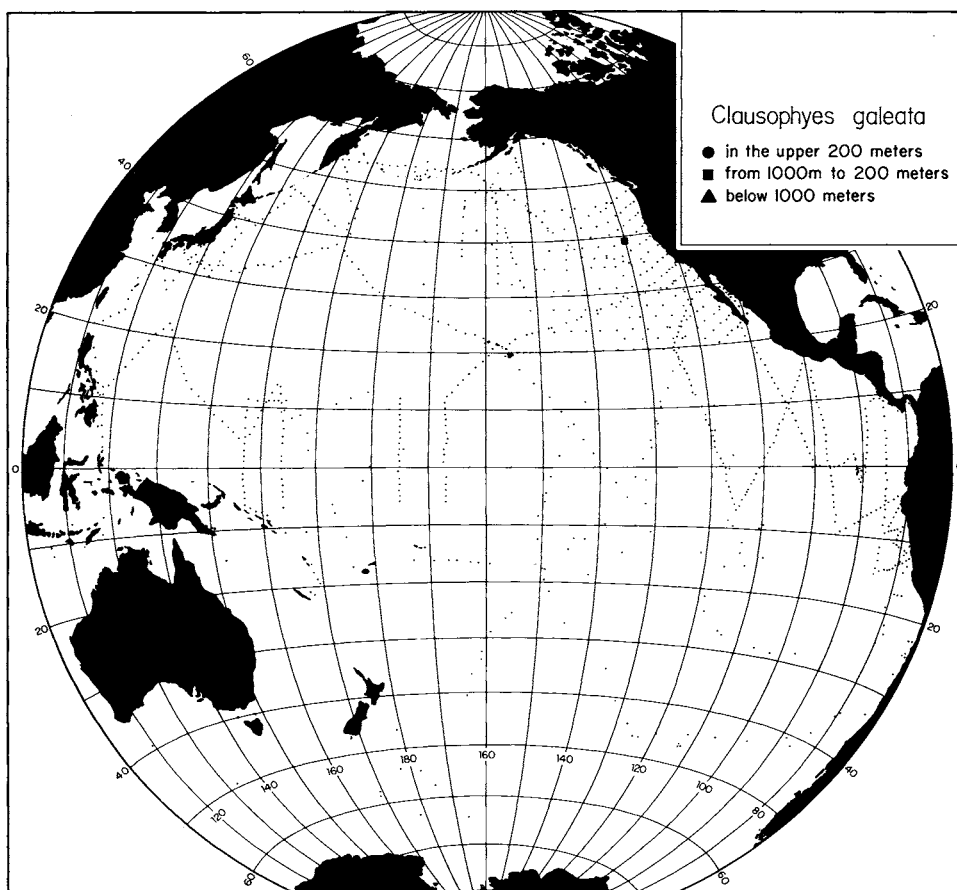


Figure 23. Distribution of *Clausophyes galeata* from the collections studied.

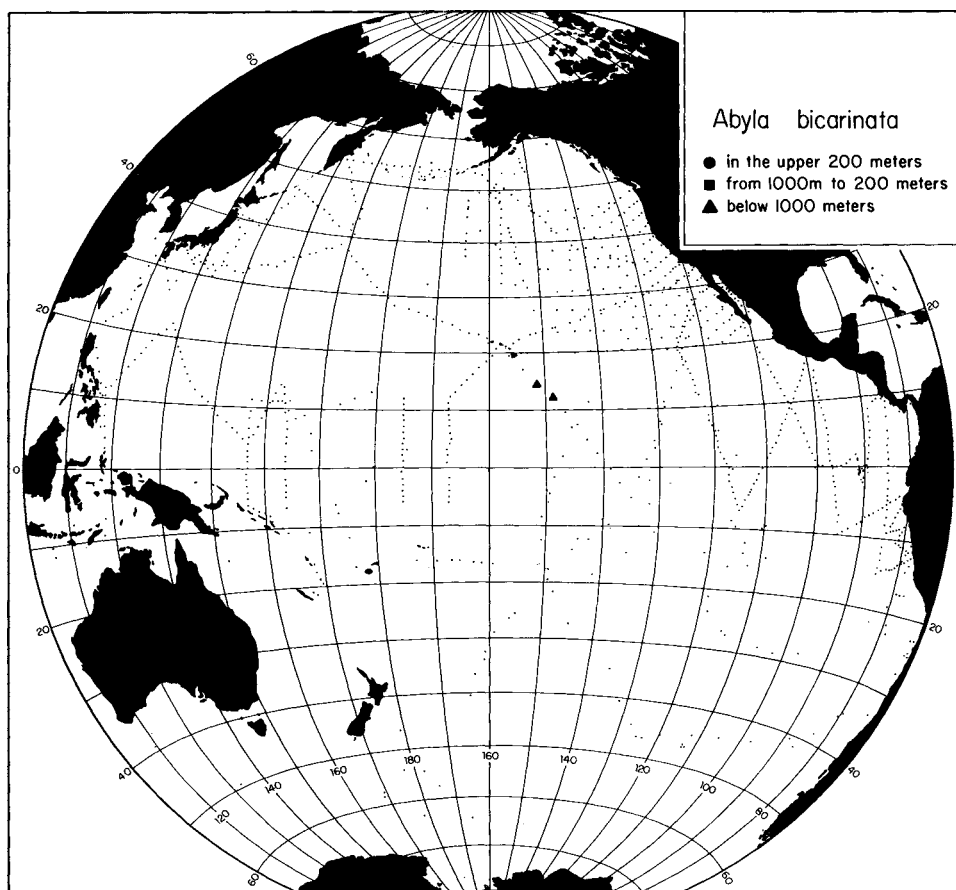


Figure 24. Distribution of *Abyla bicarinata* from the collections studied.

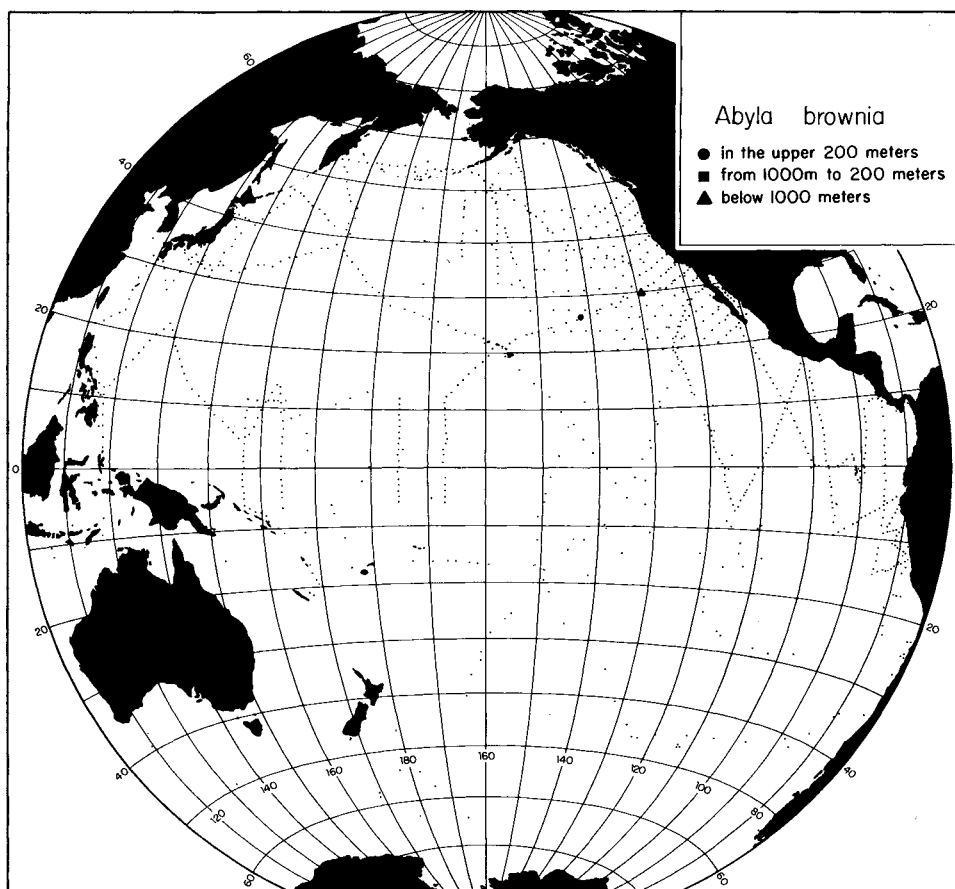


Figure 25. Distribution of *Abyla brownia* from the collections studied.

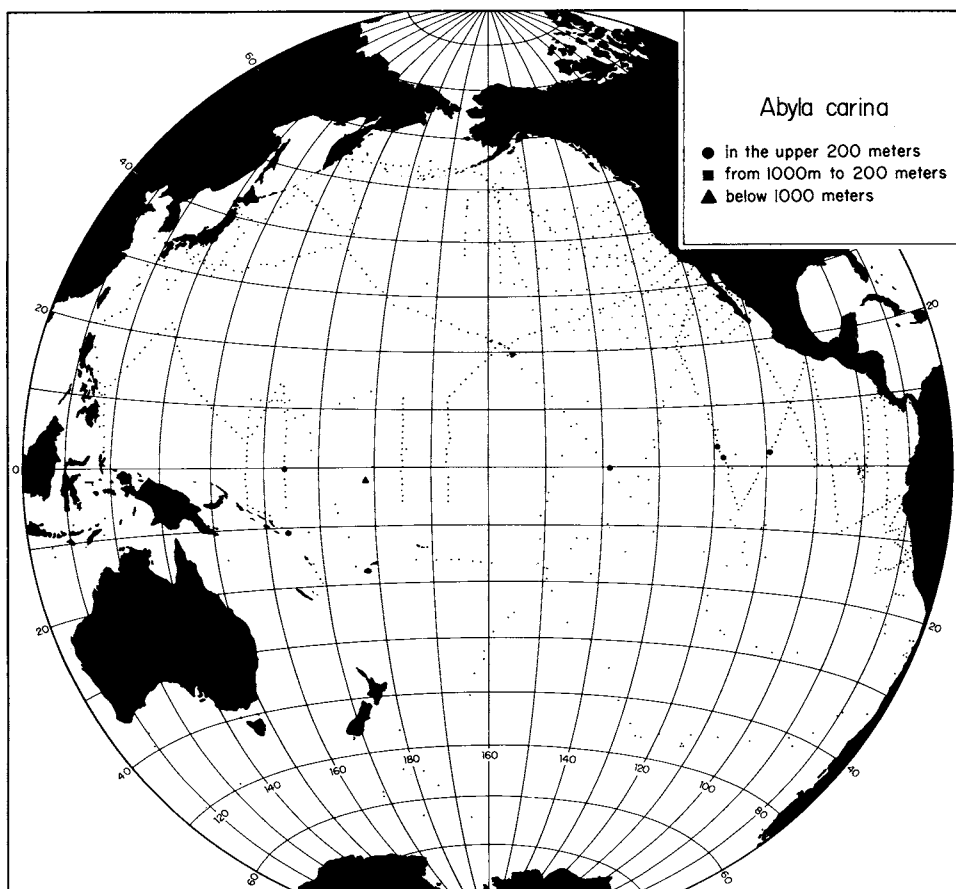


Figure 26. Distribution of *Abyla carina* from the collections studied. Distribution is tropico-equatorial.

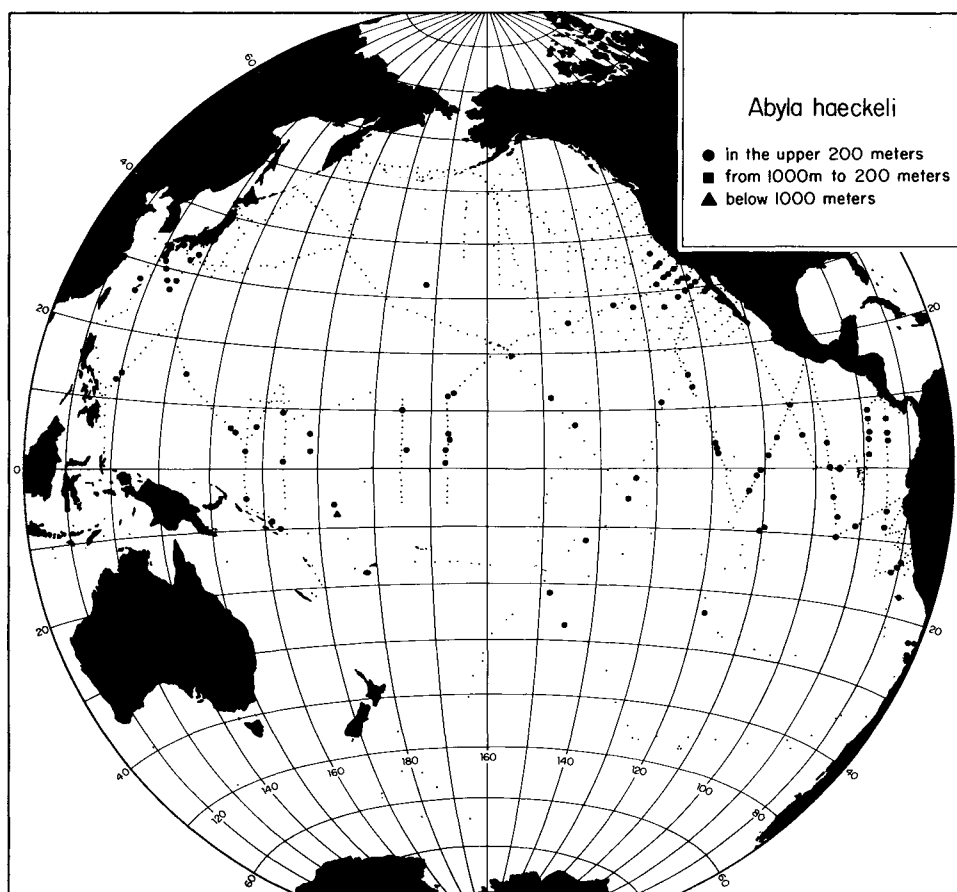


Figure 27. Distribution of *Abyla haeckeli* from the collections studied. Distribution is tropico-equatorial.

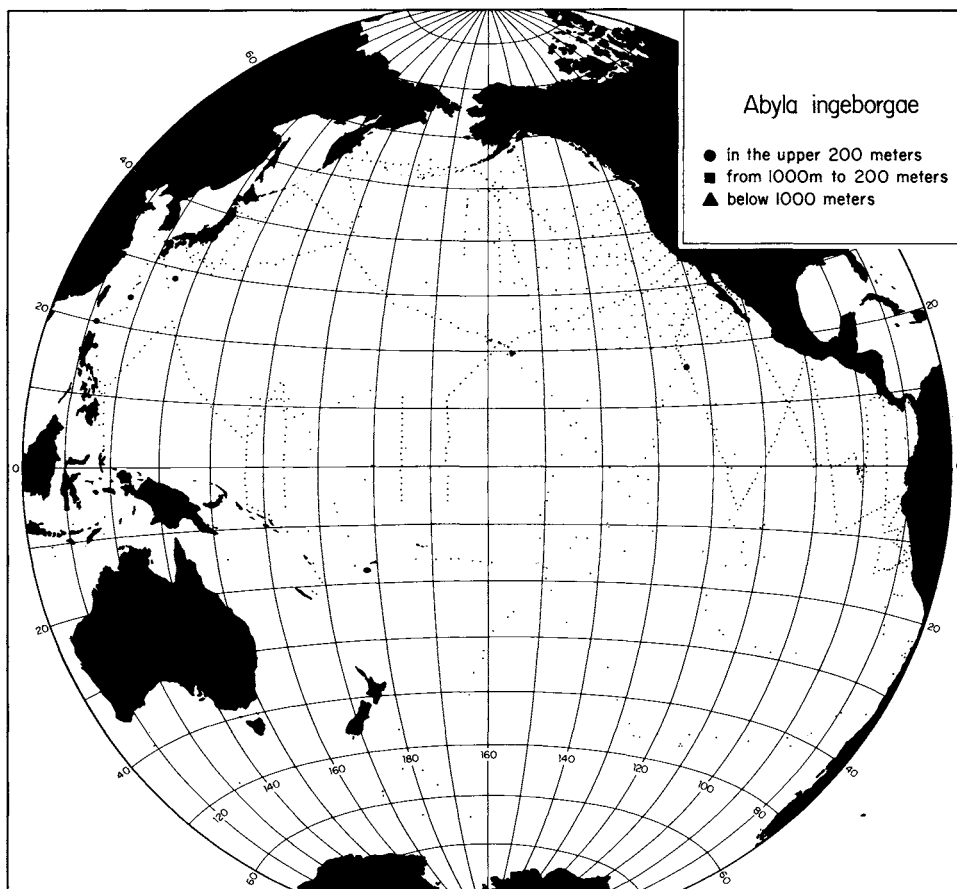


Figure 28. Distribution of *Abyla ingeborgae* from the collections studied.



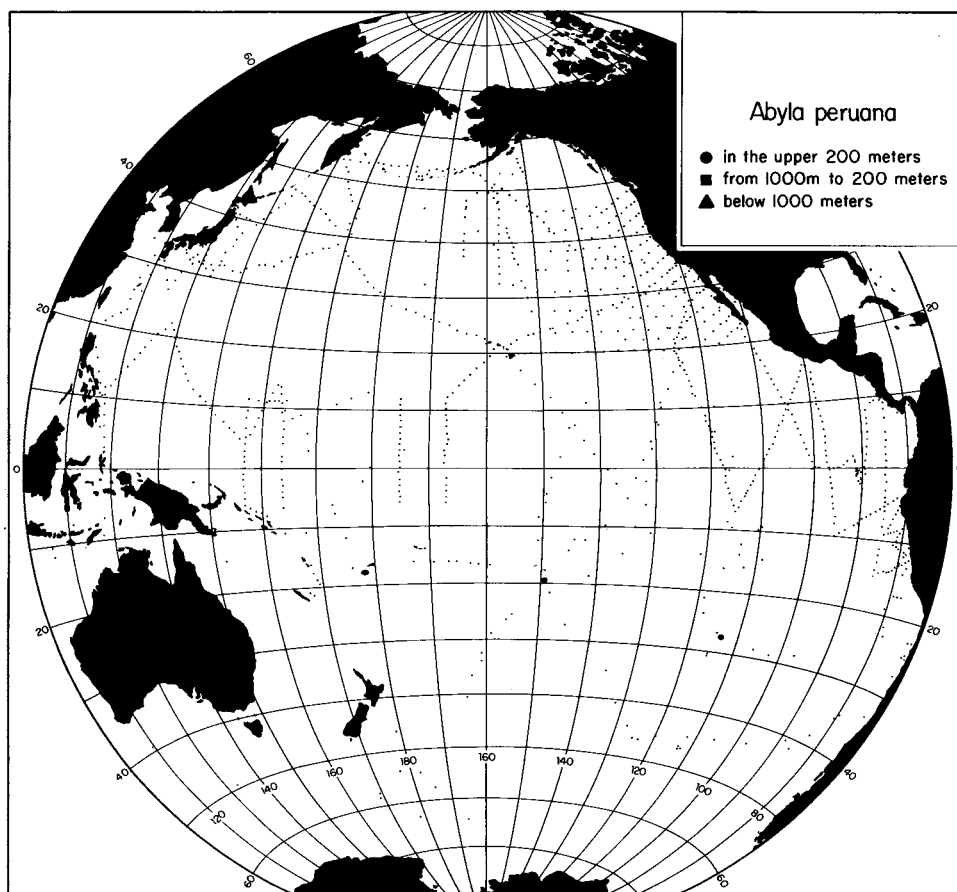


Figure 29. Distribution of *Abyla peruana* from the collections studied.

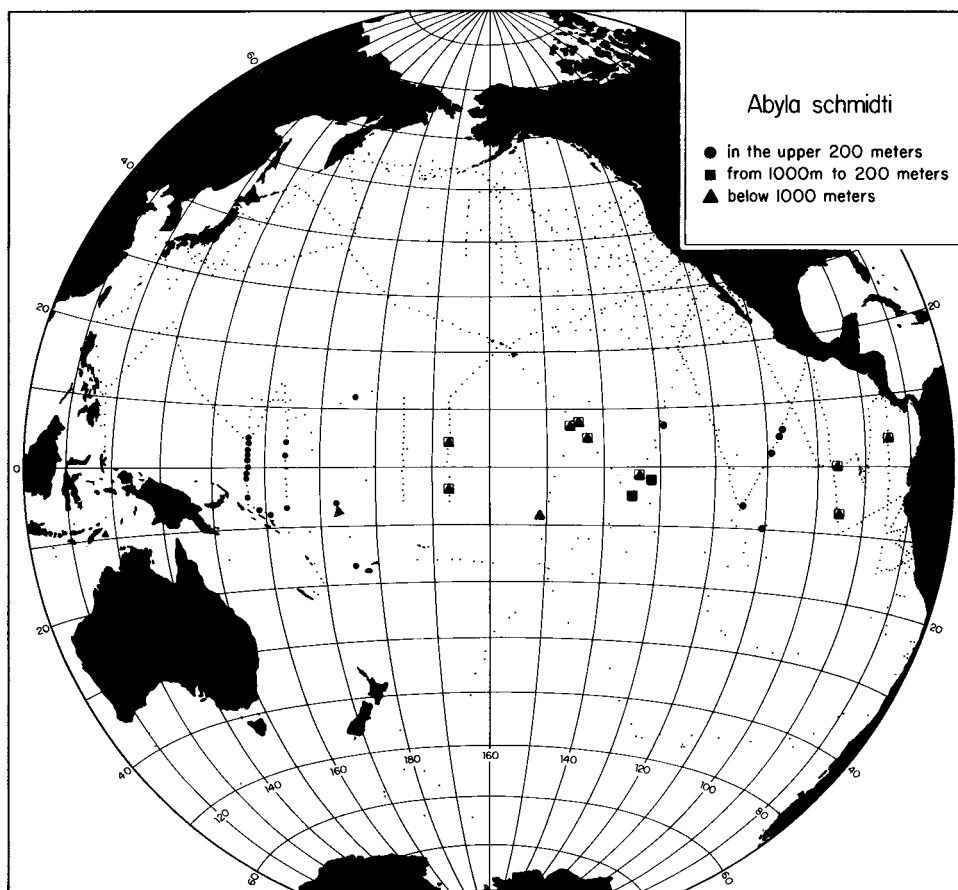


Figure 30. Distribution of *Abyla schmidtii* from the collections studied. Distribution is tropico-equatorial.

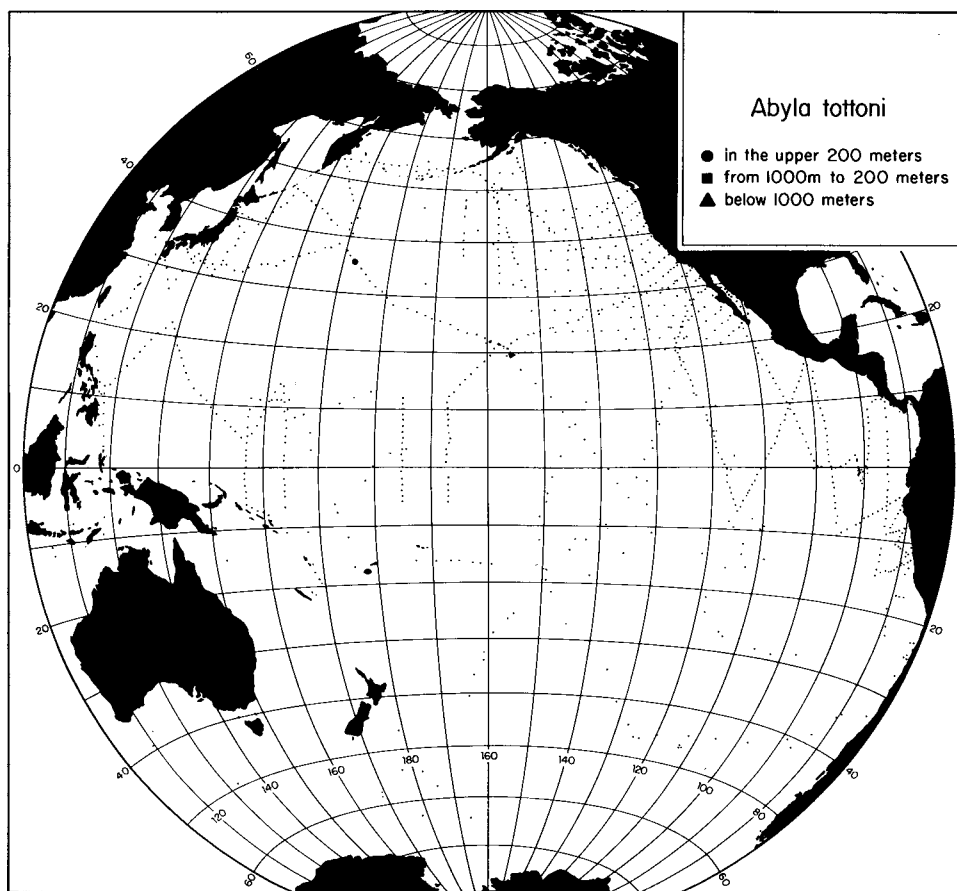


Figure 31. Distribution of *Abyla tottoni* from the collections studied.

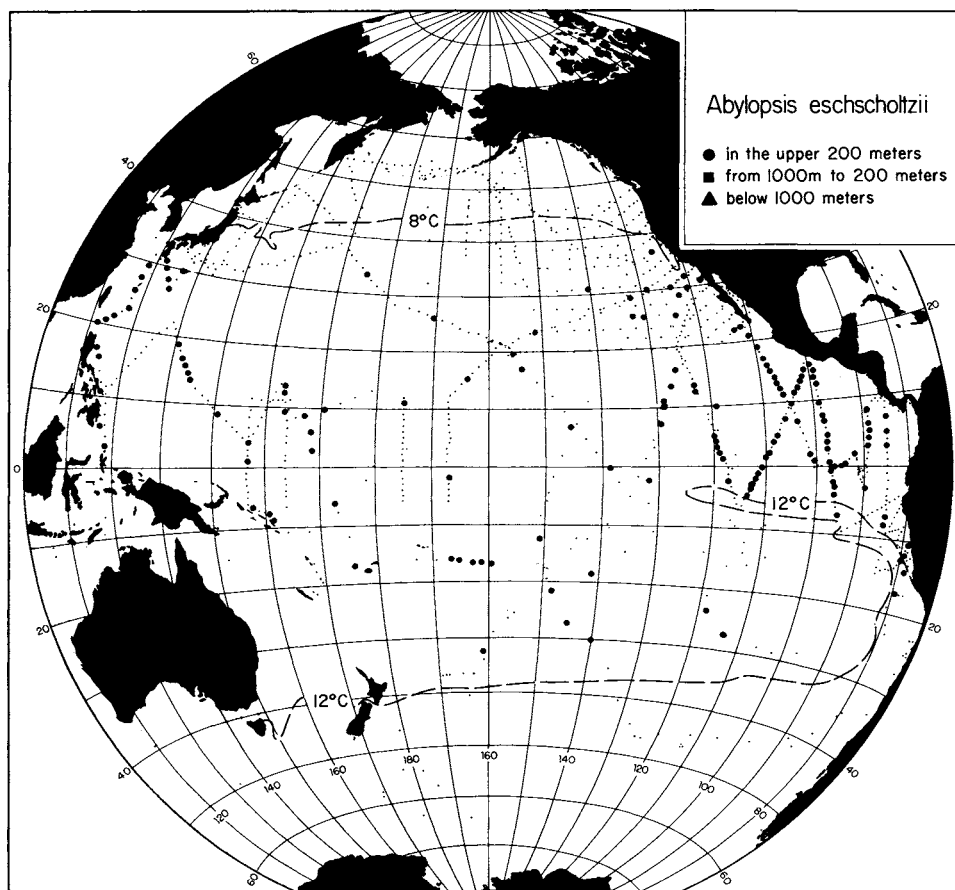


Figure 32. Distribution of *Abylopsis eschscholtzii* from the collections studied. Distribution appears limited by the 8°C isotherm at 200 m in the northern hemisphere and by the 12°C in the southern hemisphere (broken lines).

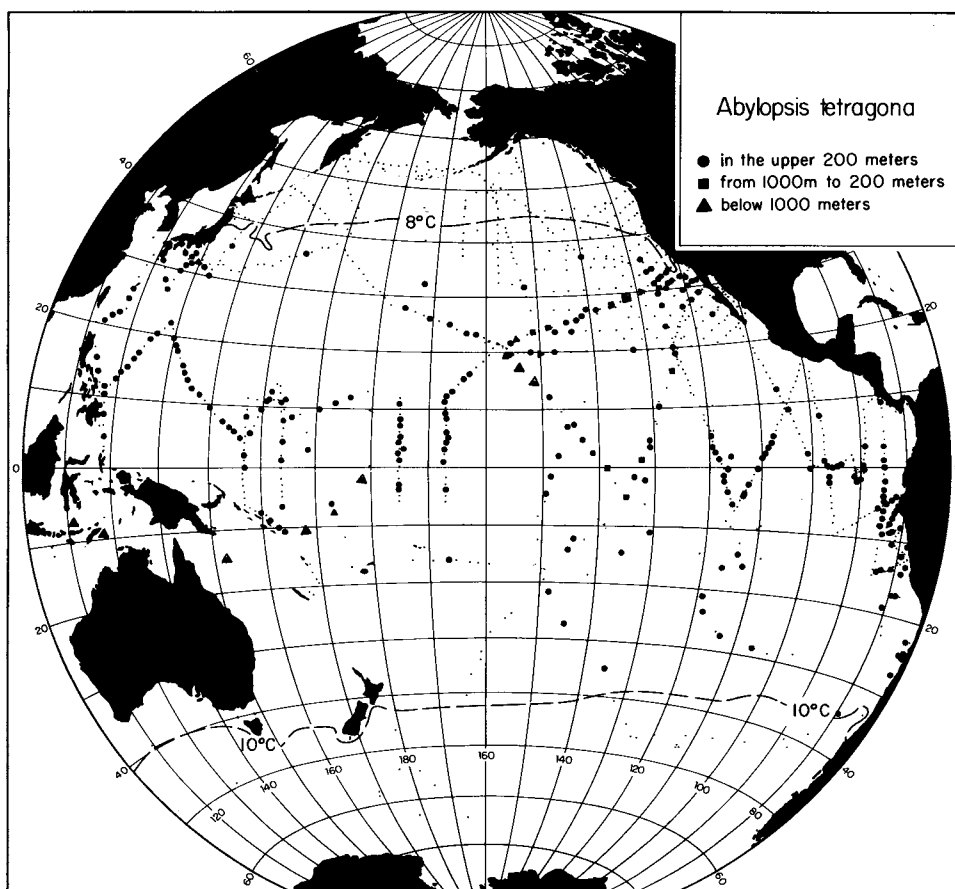


Figure 33. Distribution of *Abylopsis tetragona* from the collections studied. Distribution appears limited by the 8°C isotherm in the northern hemisphere at 200 m and by the 10°C isotherm in the southern hemisphere.

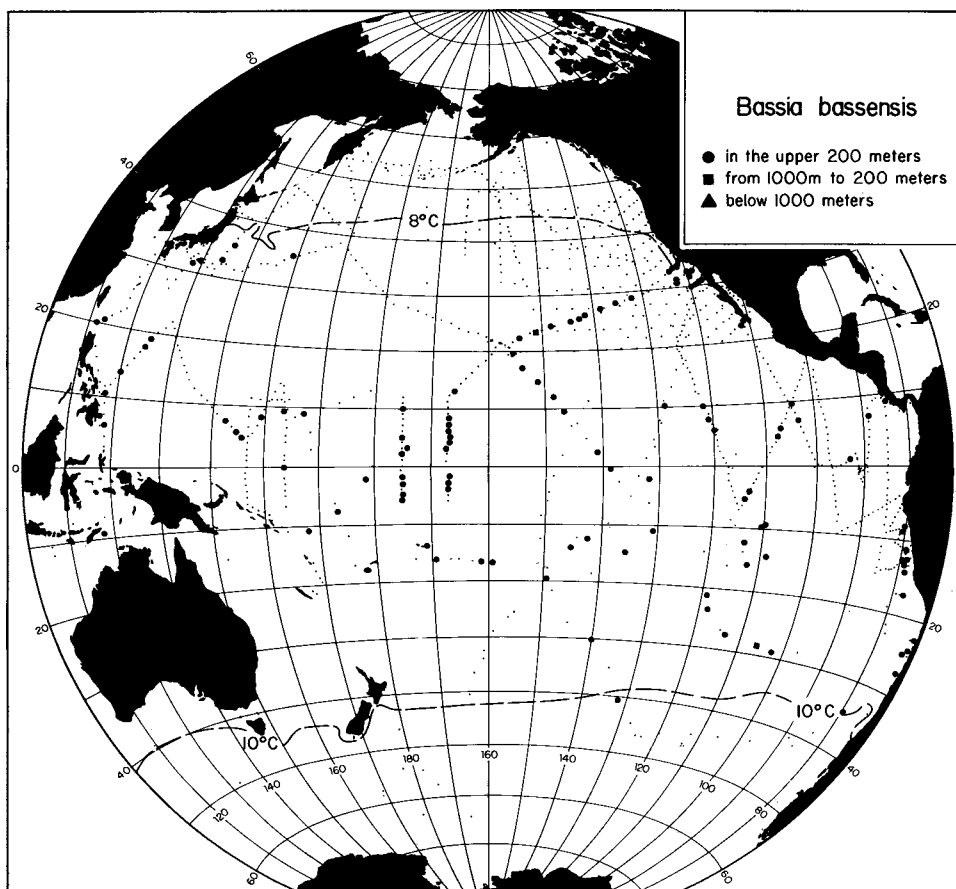


Figure 34. Distribution of *Bassia bassensis* from the collections studied. Distribution appears limited by the 8°C isotherm at 200 m in the northern hemisphere and by the 10°C (broken lines) in the southern hemisphere.

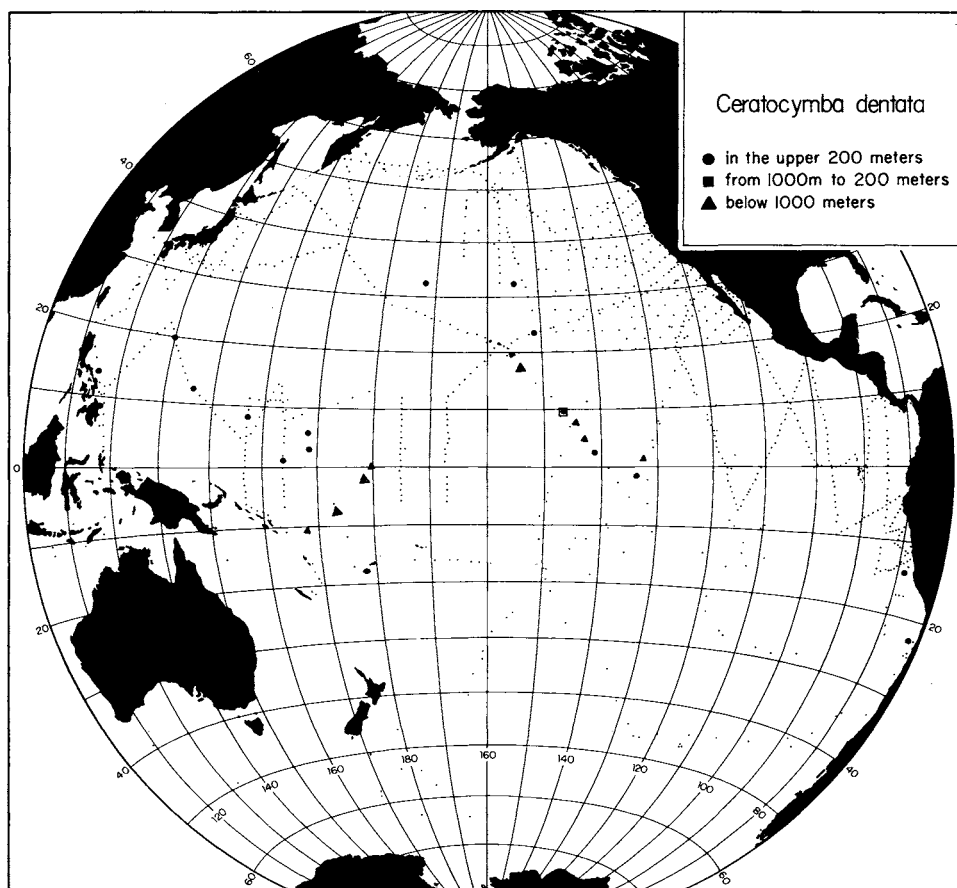


Figure 35. Distribution of *Ceratocymba dentata* from the collections studied. It is tropico-equatorial in distribution, extending into the subtropical region.

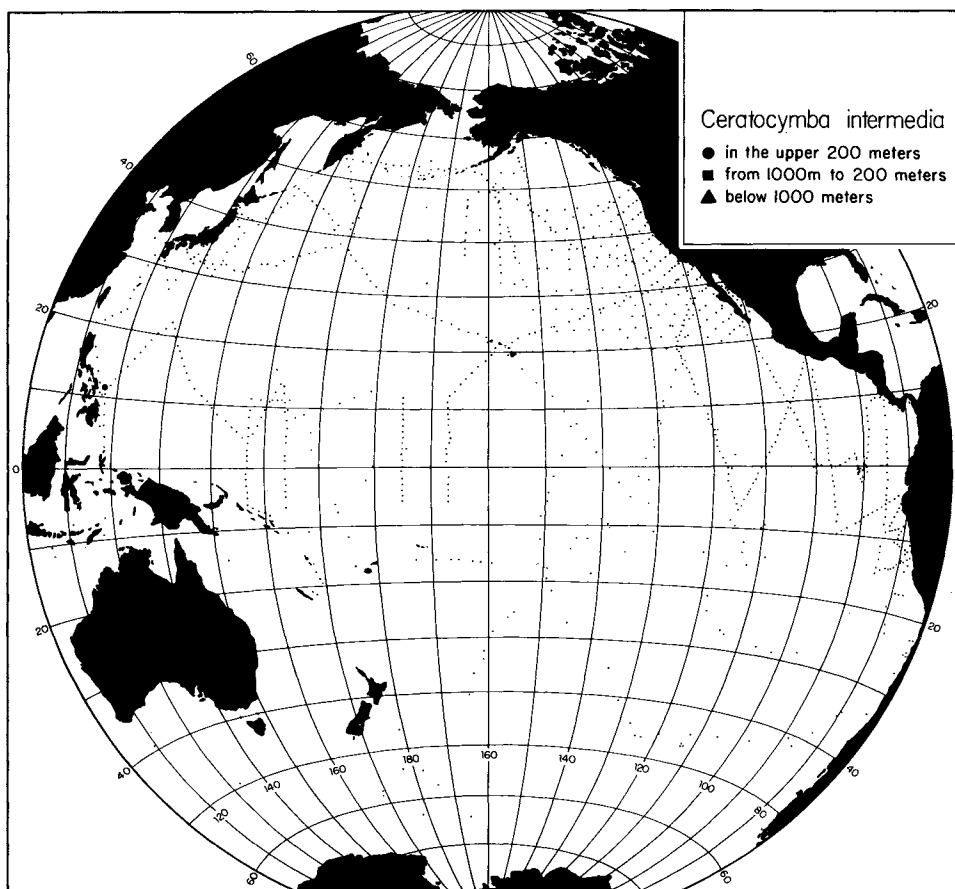


Figure 36. Distribution of *Ceratocymba intermedia* from the collections studied. It appears mainly in the tropico-equatorial region.



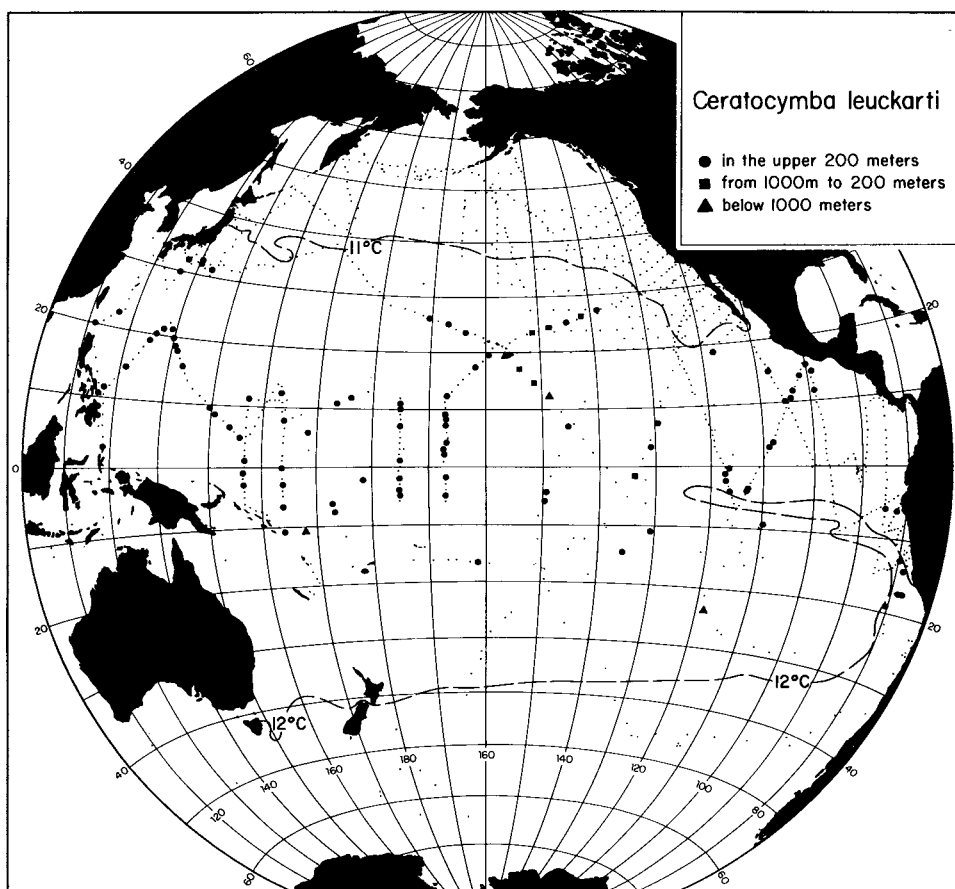


Figure 37. Distribution of *Ceratocymba leuckarti* from the collections studied. Distribution appears limited by the 11°C isotherm at 200 m in the northern hemisphere and by the 12°C (broken lines) in the southern hemisphere.

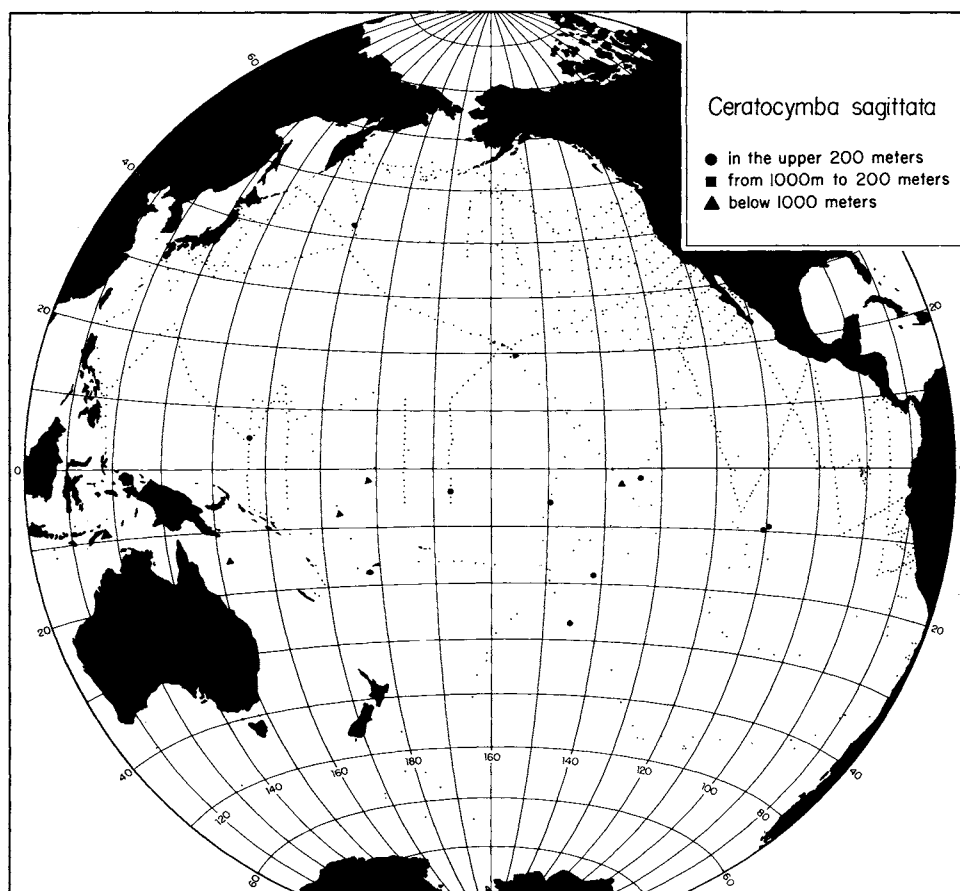


Figure 38. Distribution of *Ceratocymba sagittata* from the collections studied. It appears mainly in the tropico-equatorial region, and the specimens from the northwest Pacific correspond to the extension of the warm Kuroshio Current.

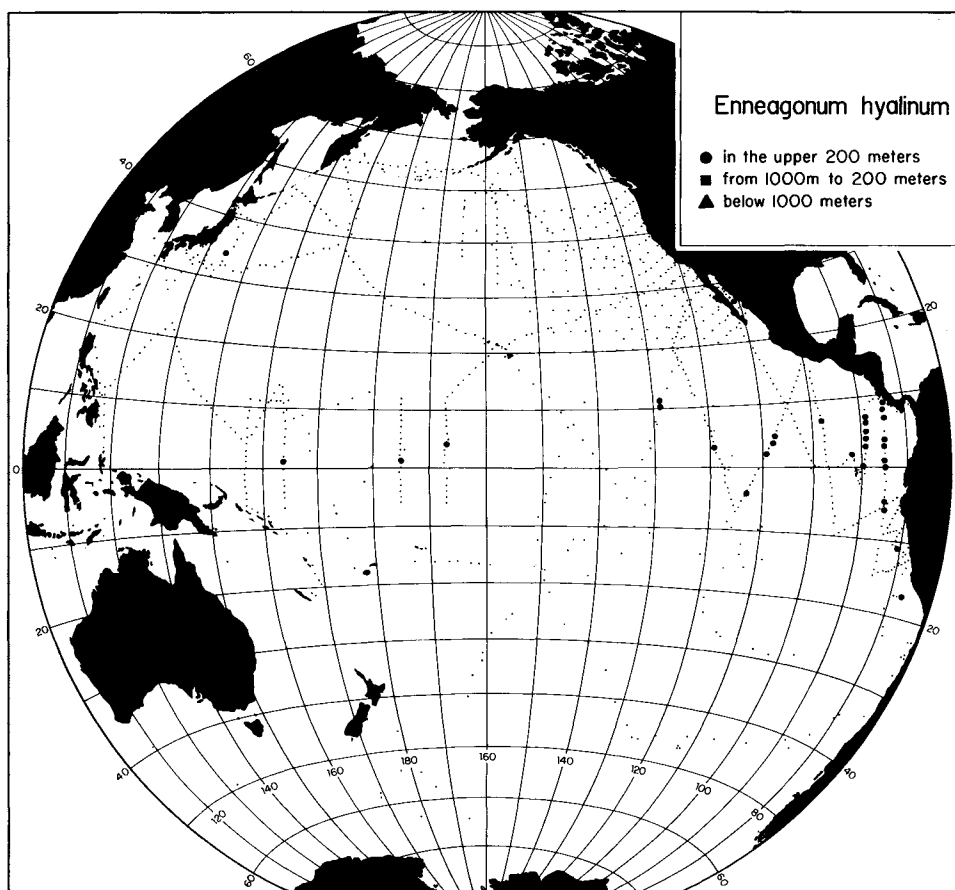


Figure 39. Distribution of *Enneagonum hyalinum* from the collections studied. It appears mainly in the tropico-equatorial region, and the specimens from the northwest Pacific correspond to the extension of the warm Kuroshio Current.

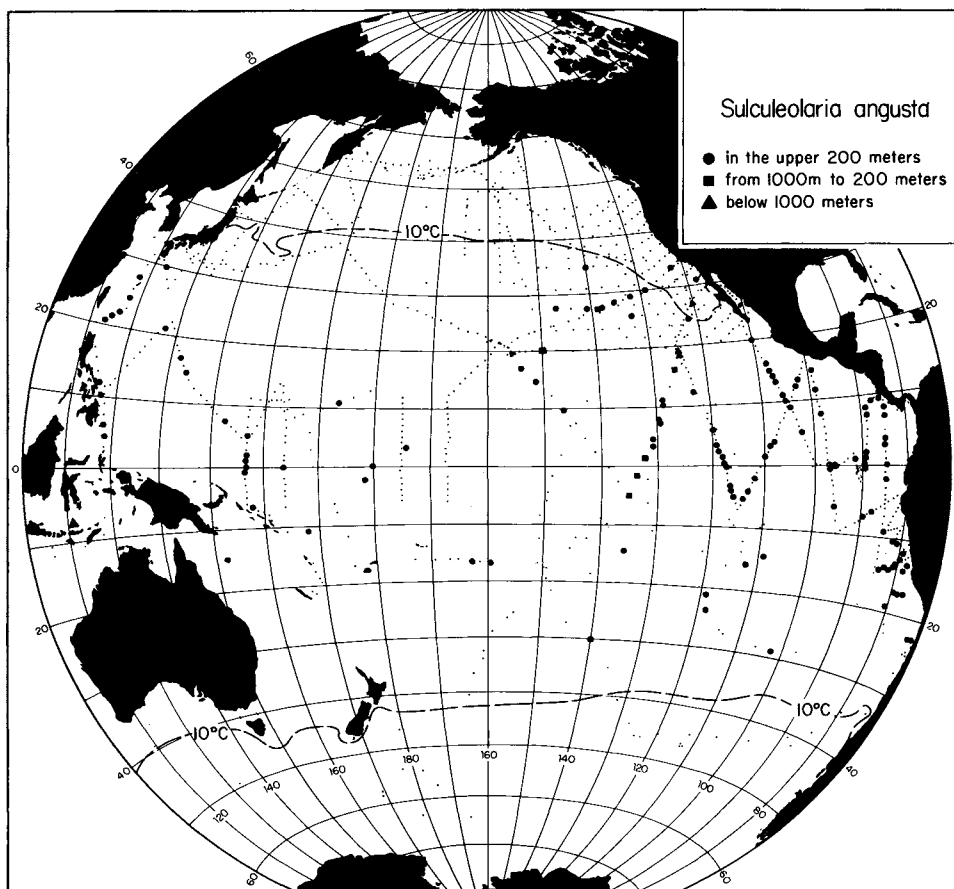


Figure 40. Distribution of *Sulculeolaria angusta* from the collections studied. Distribution appears limited by the 10°C isotherm (broken lines) at 200 m in both hemispheres.

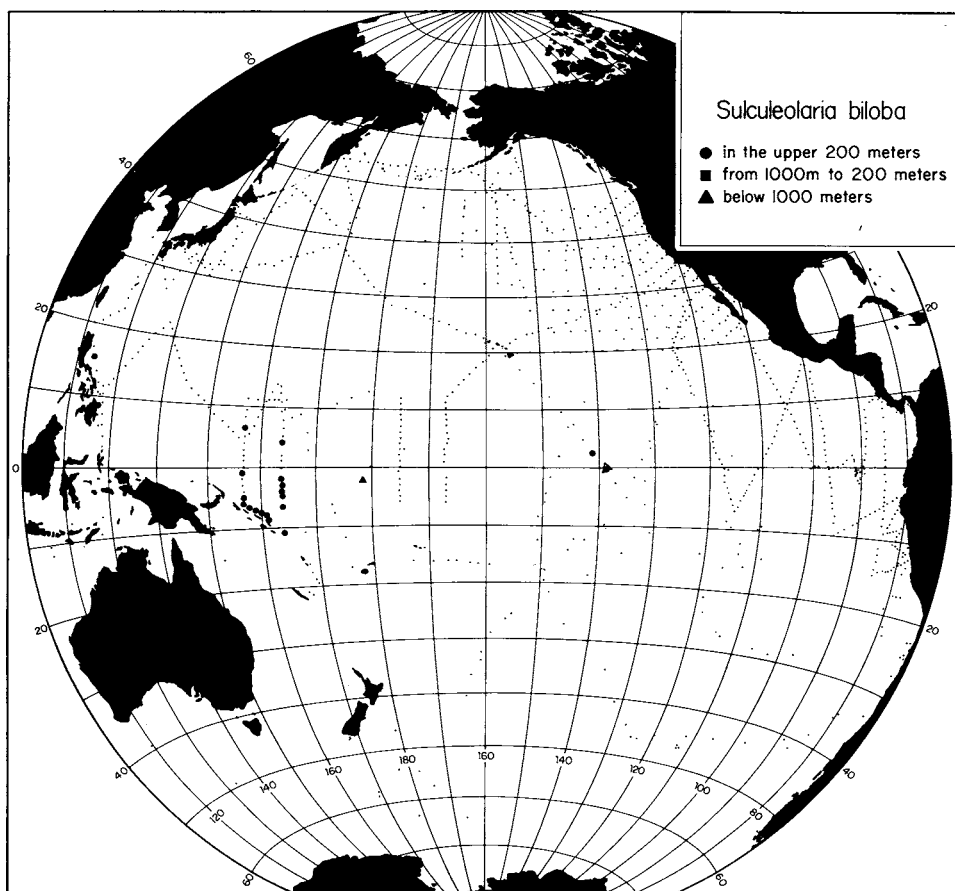


Figure 41. Distribution of *Sulculeolaria biloba* from the collections studied. Distribution appears mainly restricted to the tropico-equatorial region.

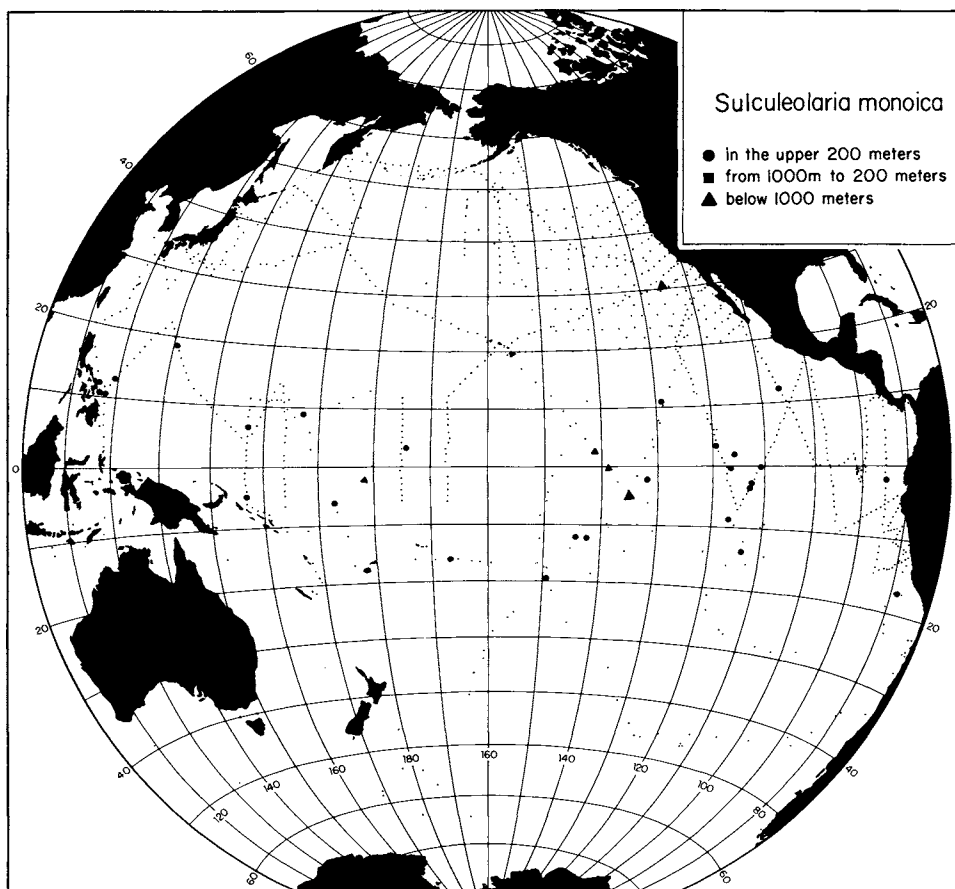


Figure 42. Distribution of *Sulculeolaria monoica* from the collections studied. Distribution appears mainly in the tropico-equatorial region.

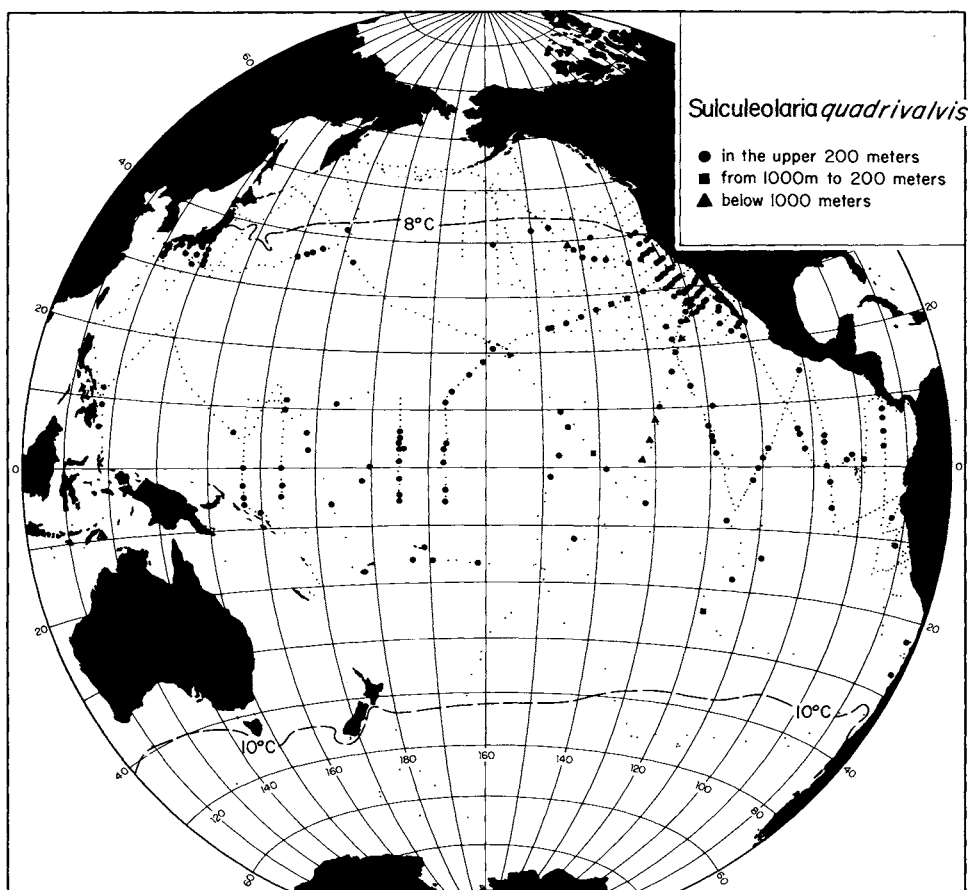


Figure 43. Distribution of *Sulculeolaria quadrivalvis* from the collections studied. Distribution appears limited by the 8°C isotherm at 200 m in the northern hemisphere and by the 10°C (broken lines) in the southern hemisphere.

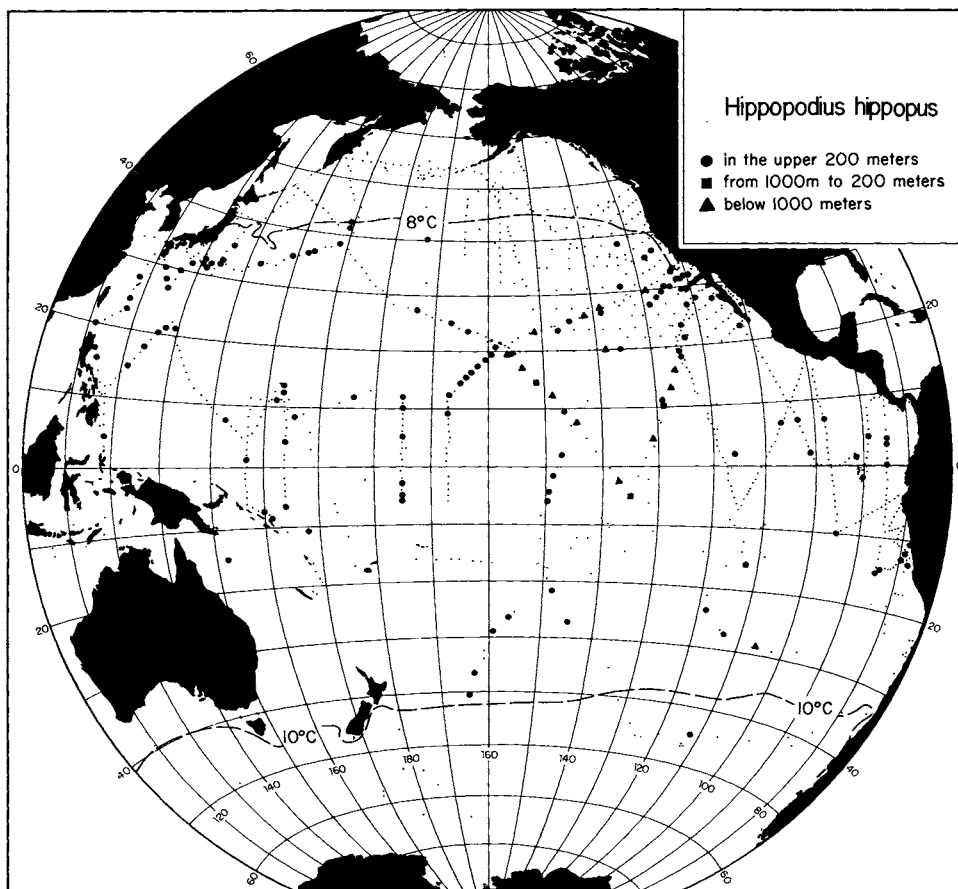


Figure 44. Distribution of *Hippopodius hippopus* from the collections studied. Distribution appears limited by the 8°C isotherm at 200m in the northern hemisphere and by the 10 °C (broken lines) in the southern hemisphere.



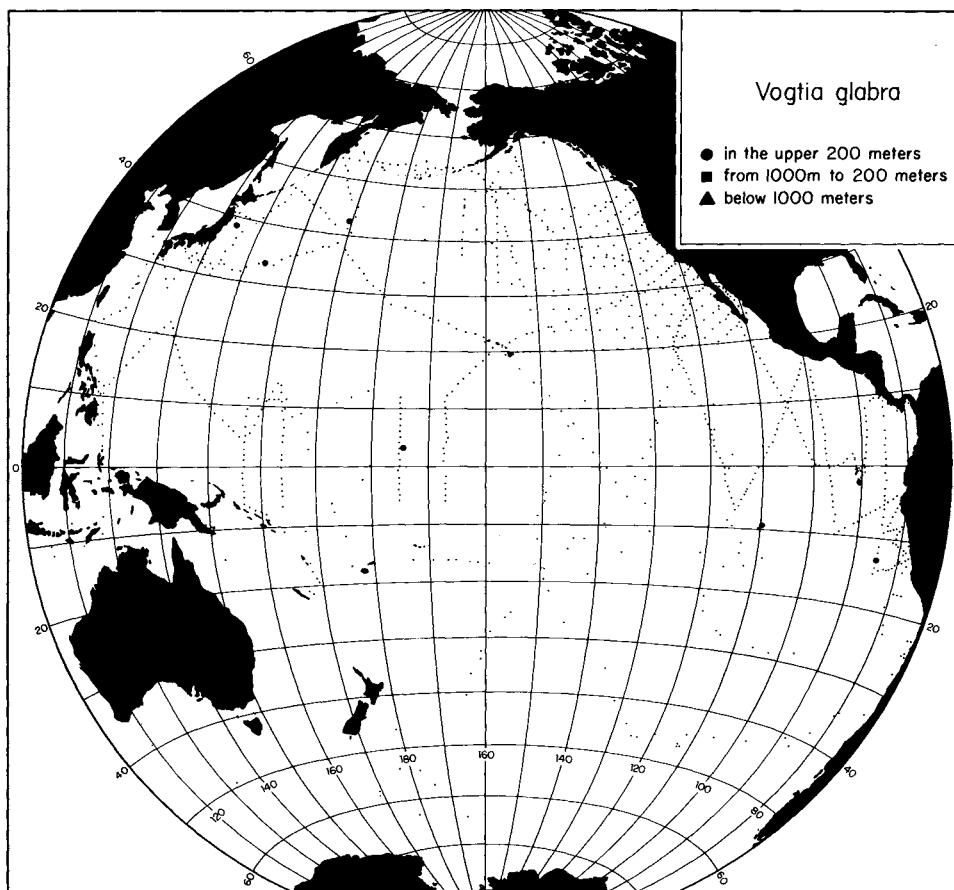


Figure 45. Distribution of *Vogtia glabra* from the collections studied.

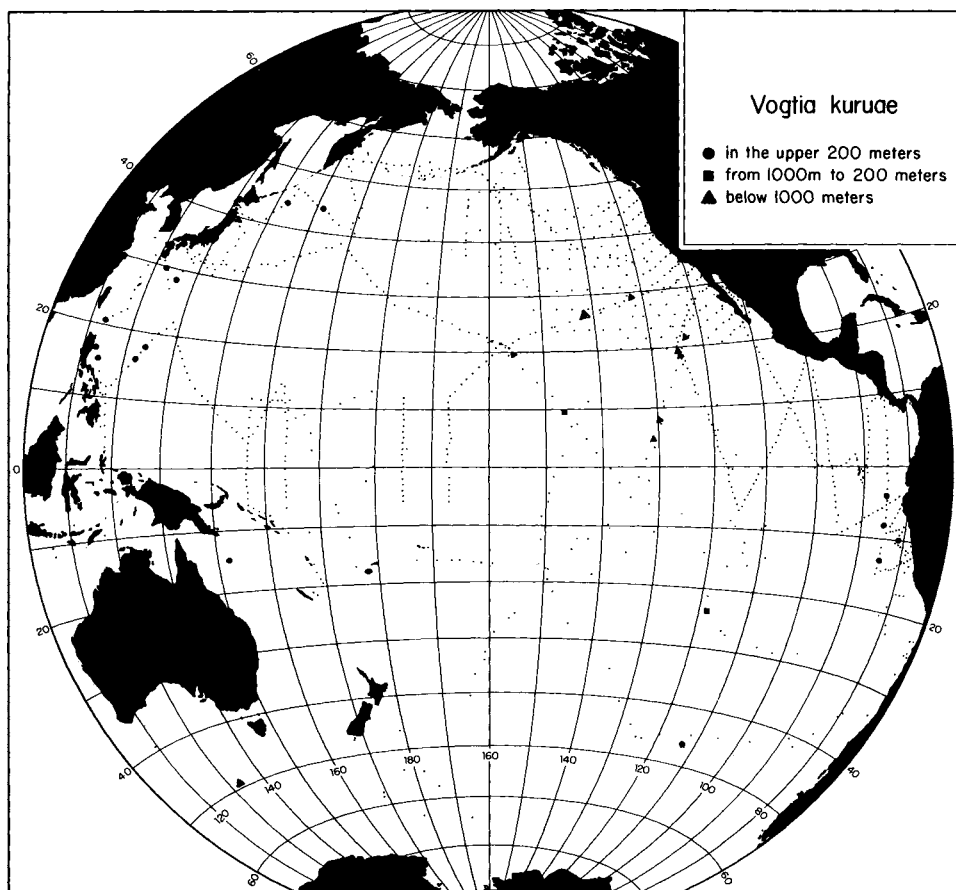


Figure 46. Distribution of *Vogtia kuruae* from the collections studied.

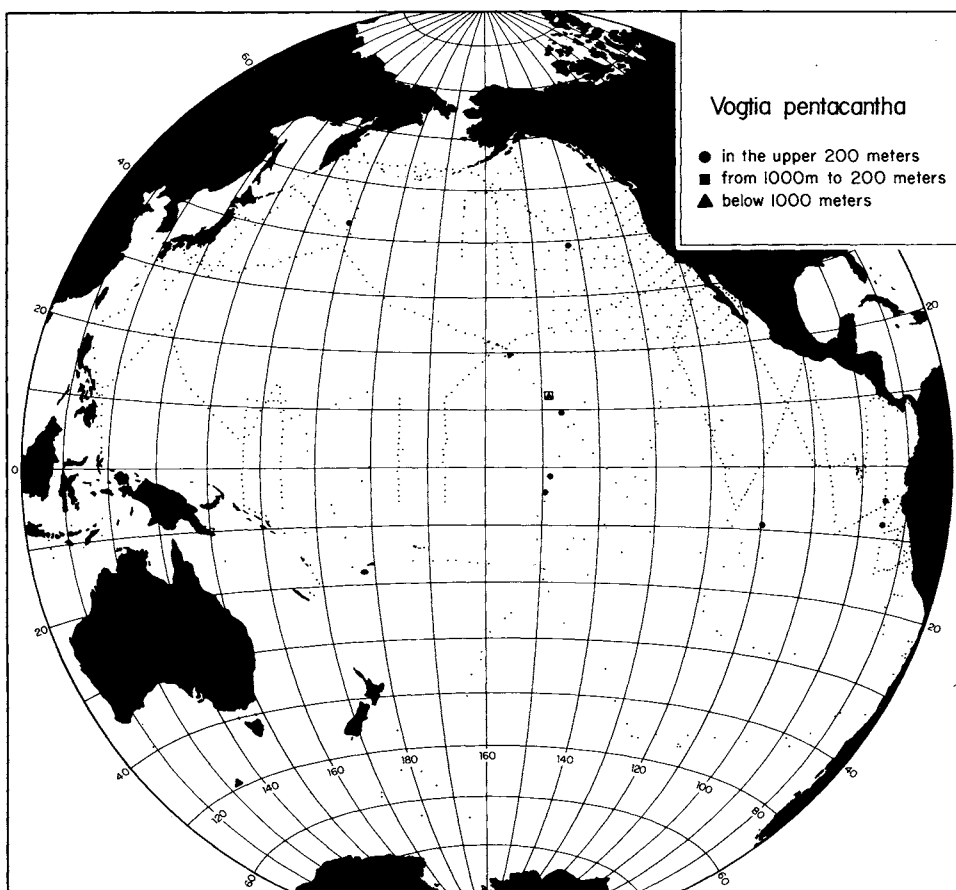


Figure 47. Distribution of *Vogtia pentacantha* from the collections studied.

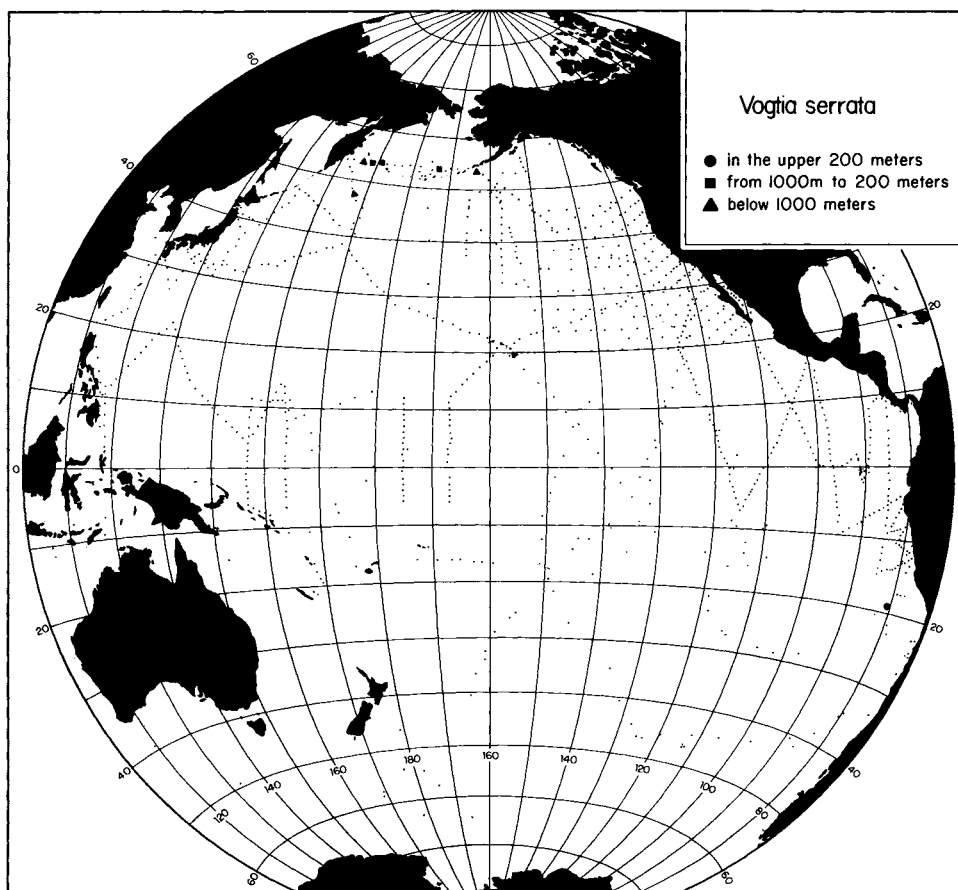


Figure 48. Distribution of *Vogtia serrata* from the collections studied.

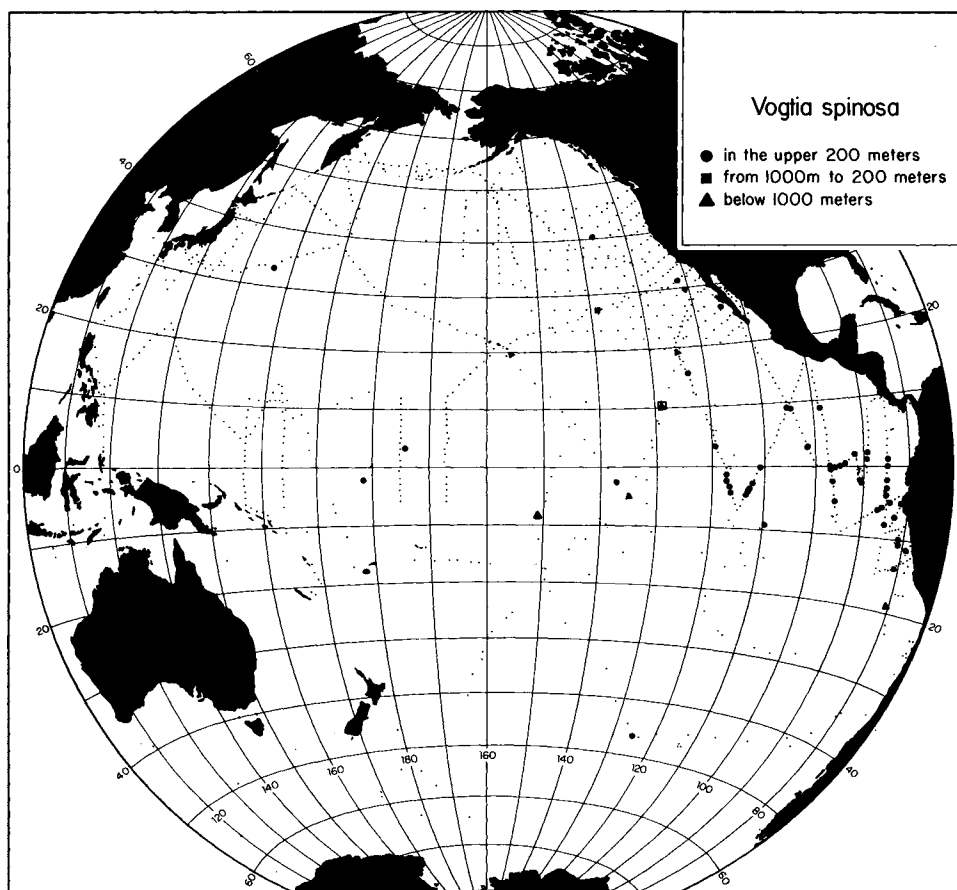


Figure 49. Distribution of *Vogtia spinosa* from the collections studied.

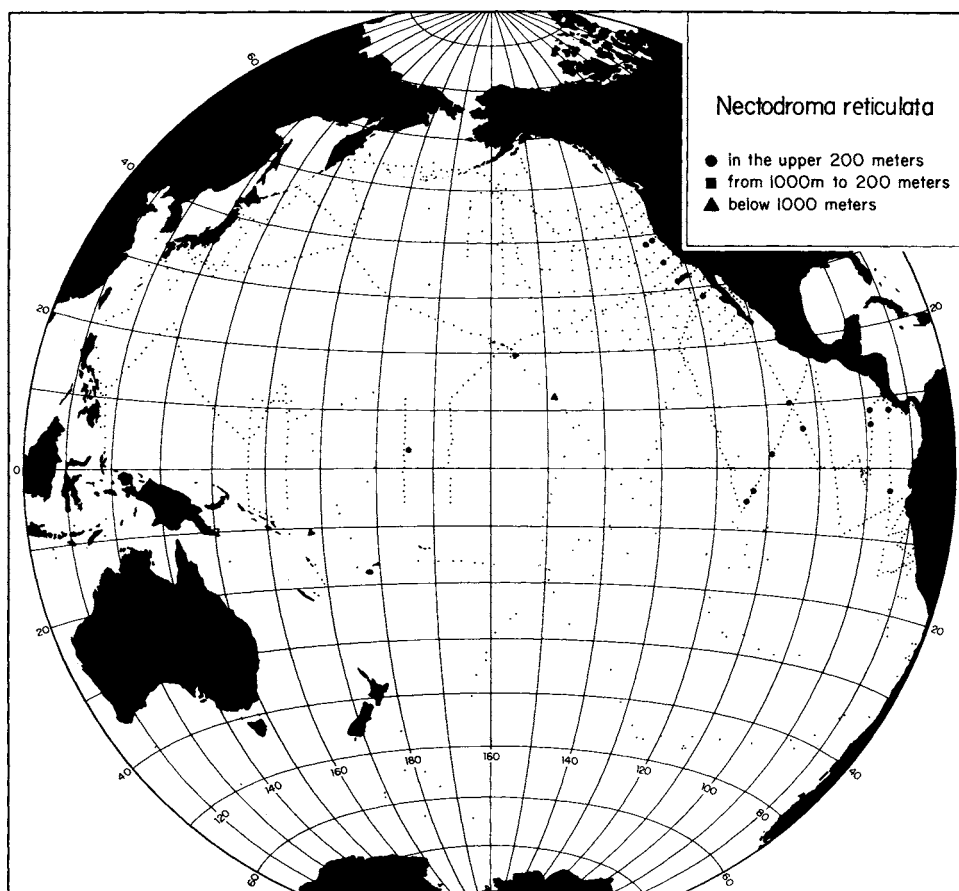


Figure 50. Distribution of *Nectodroma reticulata* from the collections studied.

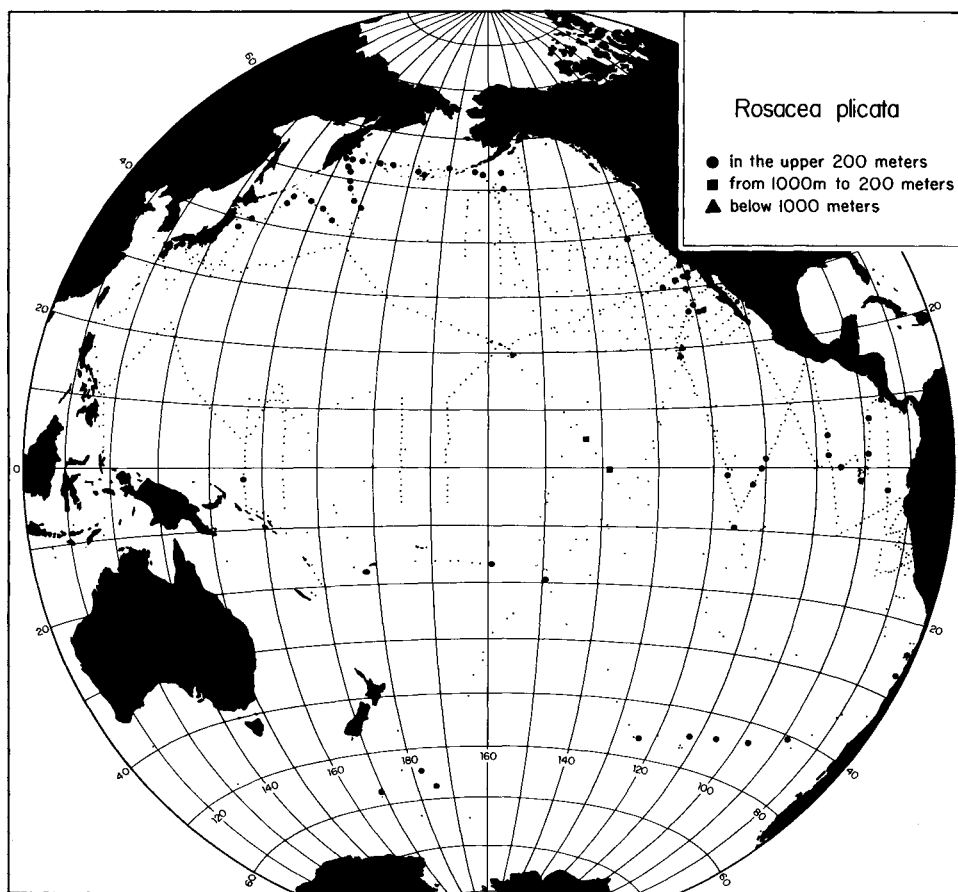


Figure 51. Distribution of *Rosacea plicata* from the collections studied.

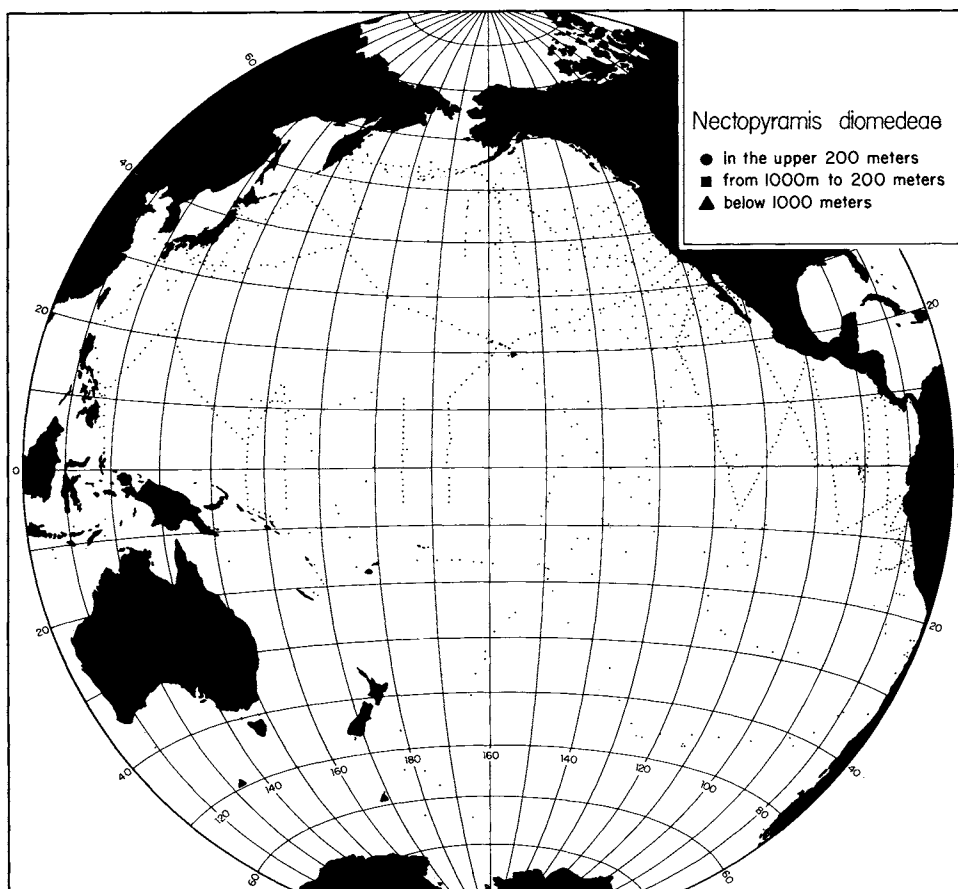


Figure 52. Distribution of *Nectopyramis diomedae* from the collections studied.



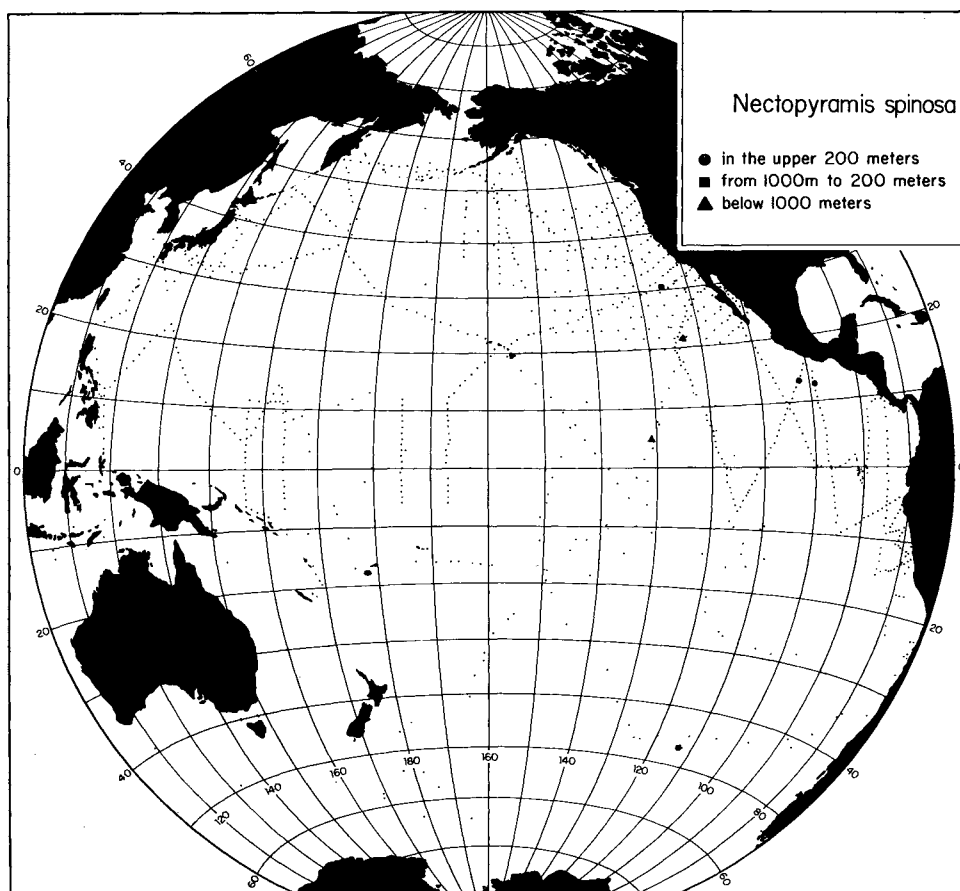


Figure 53. Distribution of *Nectopyramis spinosa* from the collections studied.

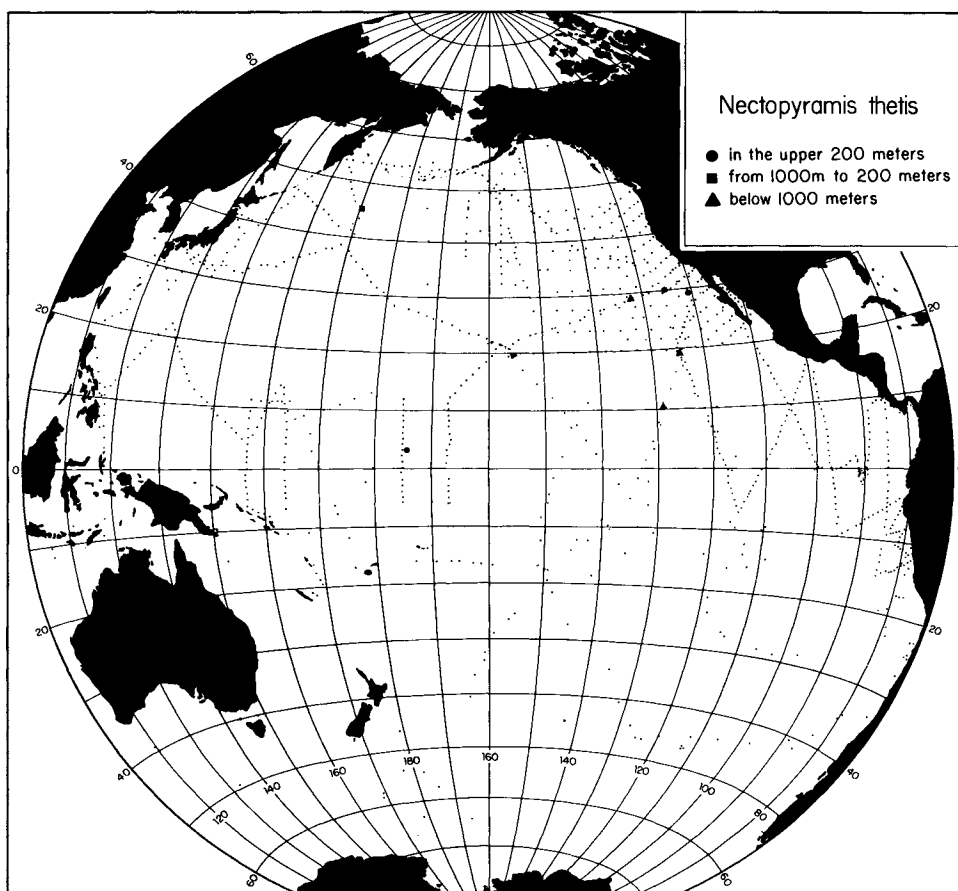


Figure 54. Distribution of *Nectopyramis thetis* from the collections studied.

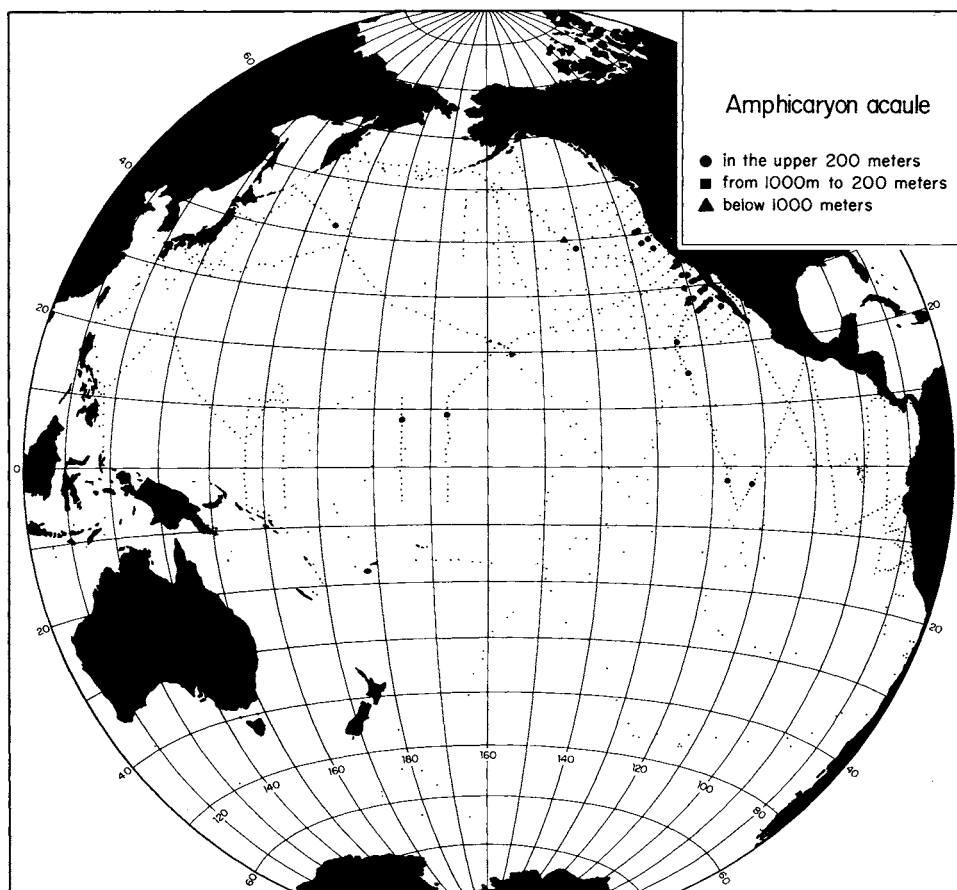


Figure 55. Distribution of Amphicaryon acaule from the collections studied.

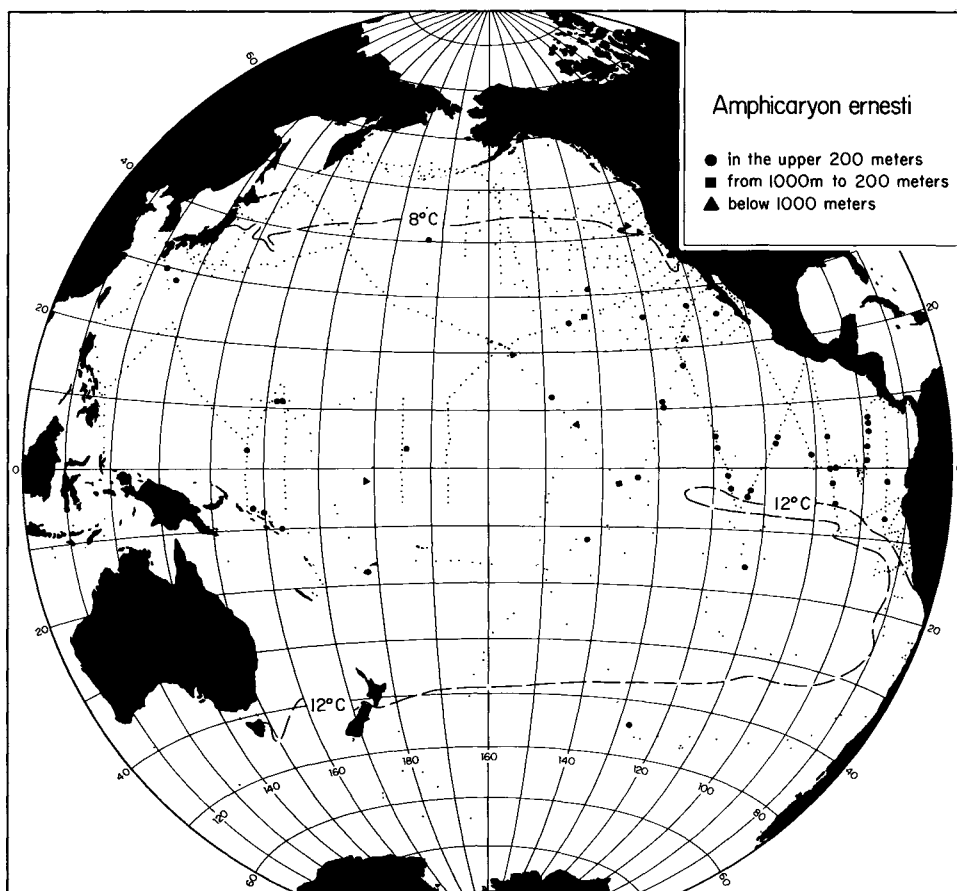


Figure 56. Distribution of *Amphicaryon ernesti* from the collections studied.

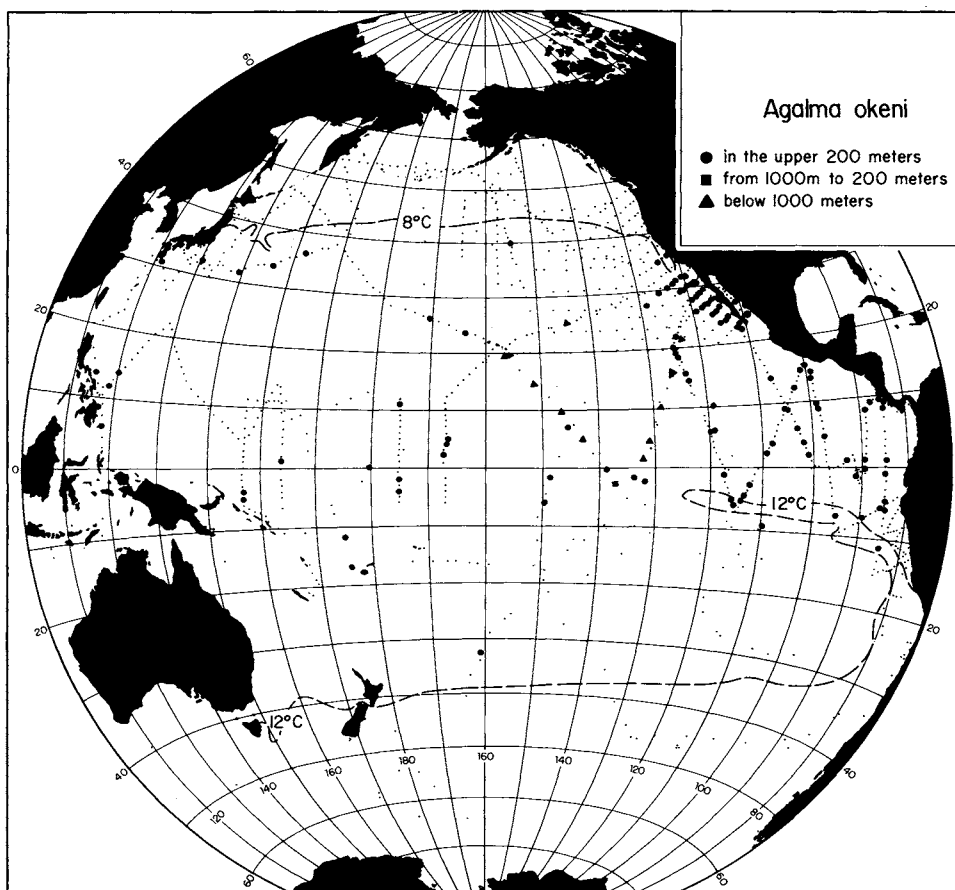


Figure 57. Distribution of *Agalma okeni* from the collections studied. Distribution appears limited by the 8°C and 12°C isotherms at 200 m in both hemispheres respectively.

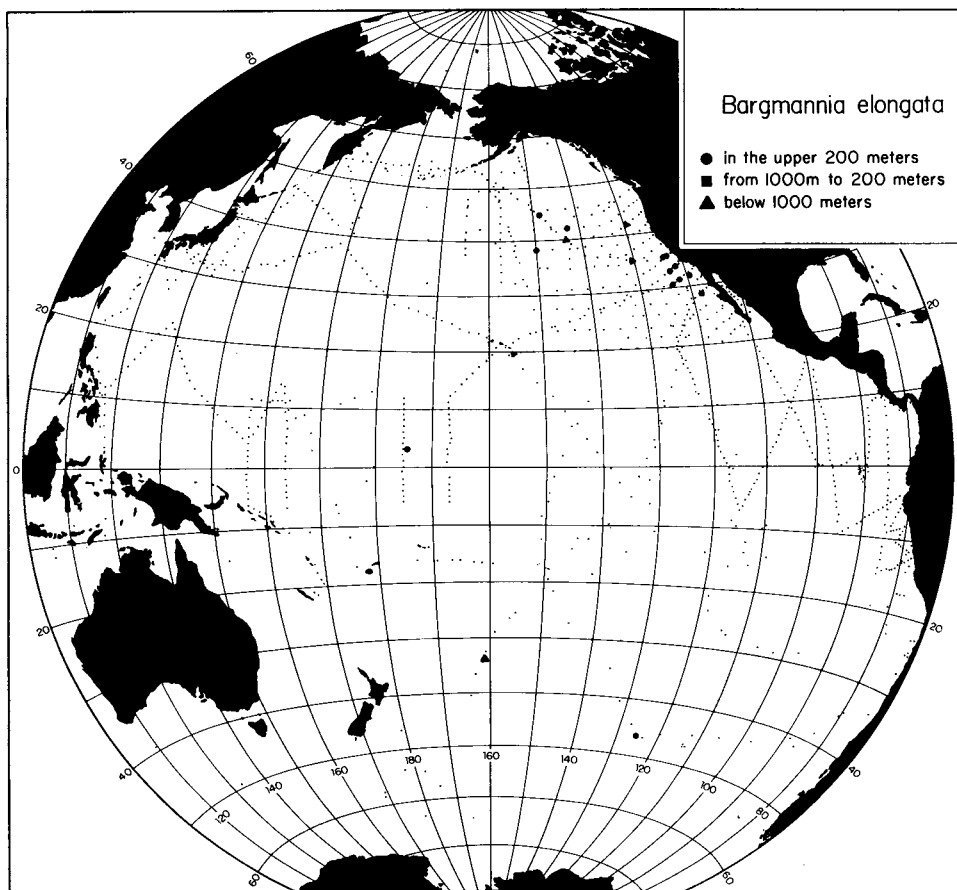


Figure 58. Distribution of *Bargmannia elongata* from the collections studied.

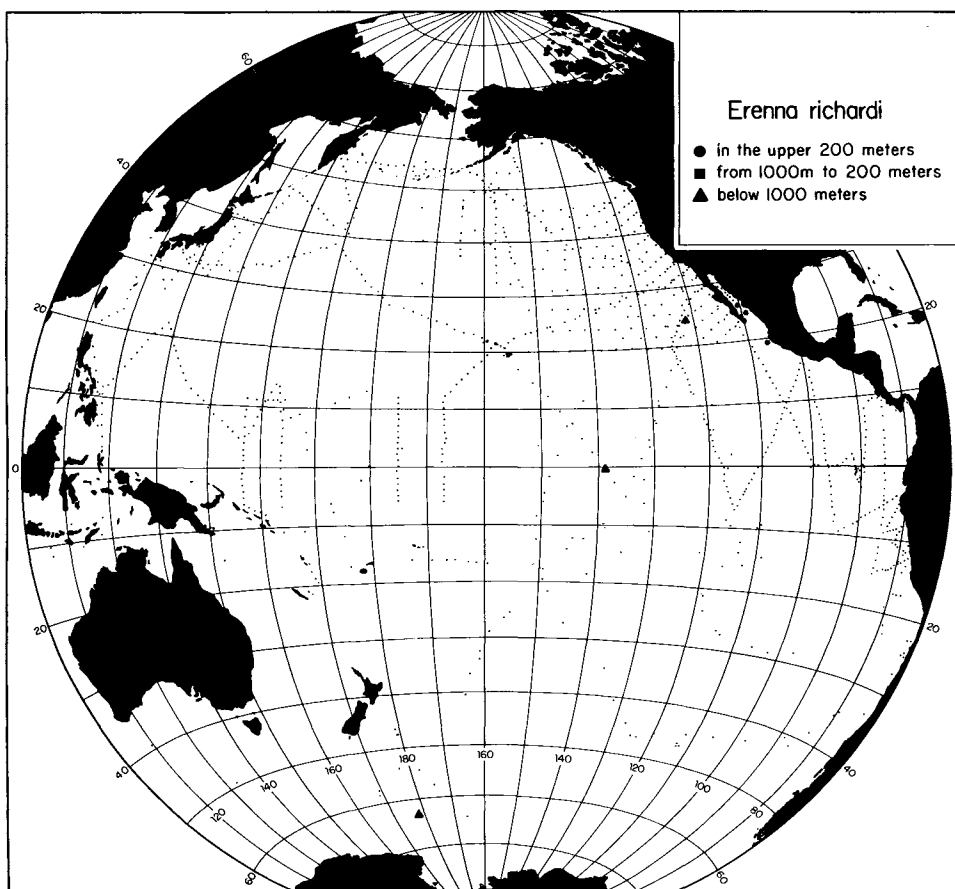


Figure 59. Distribution of Erenna richardi from the collections studied.

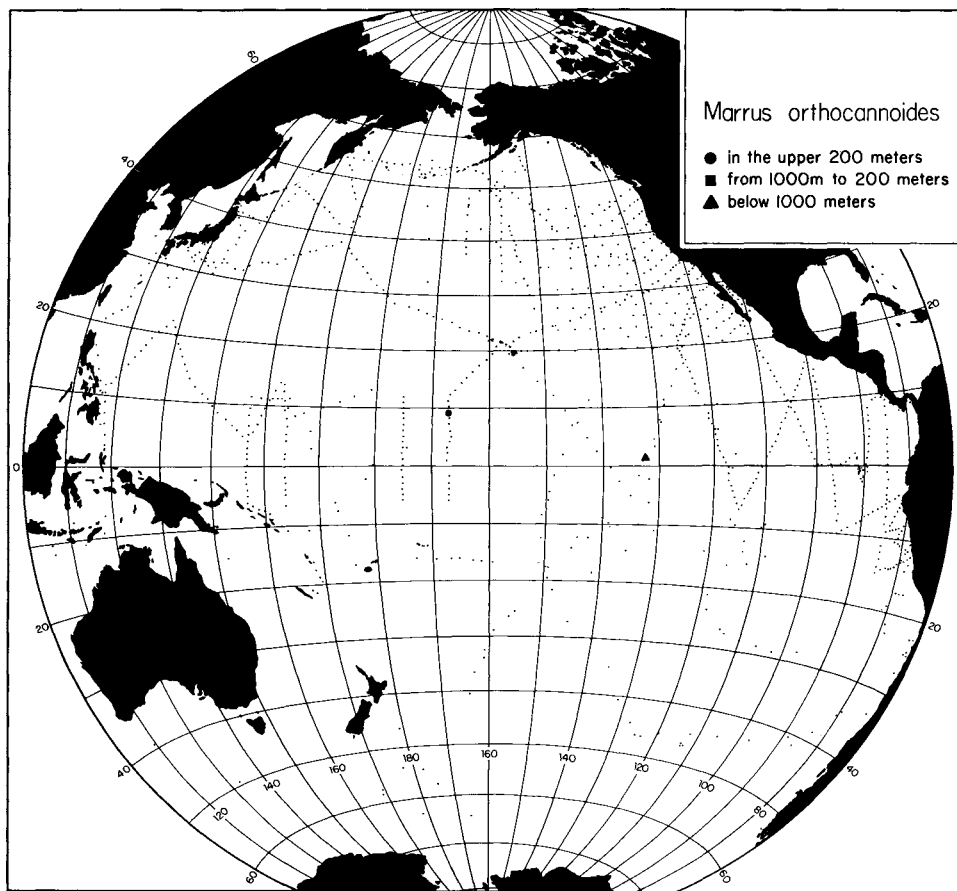


Figure 60. Distribution of *Marrus orthocannoides* from the collections studied.



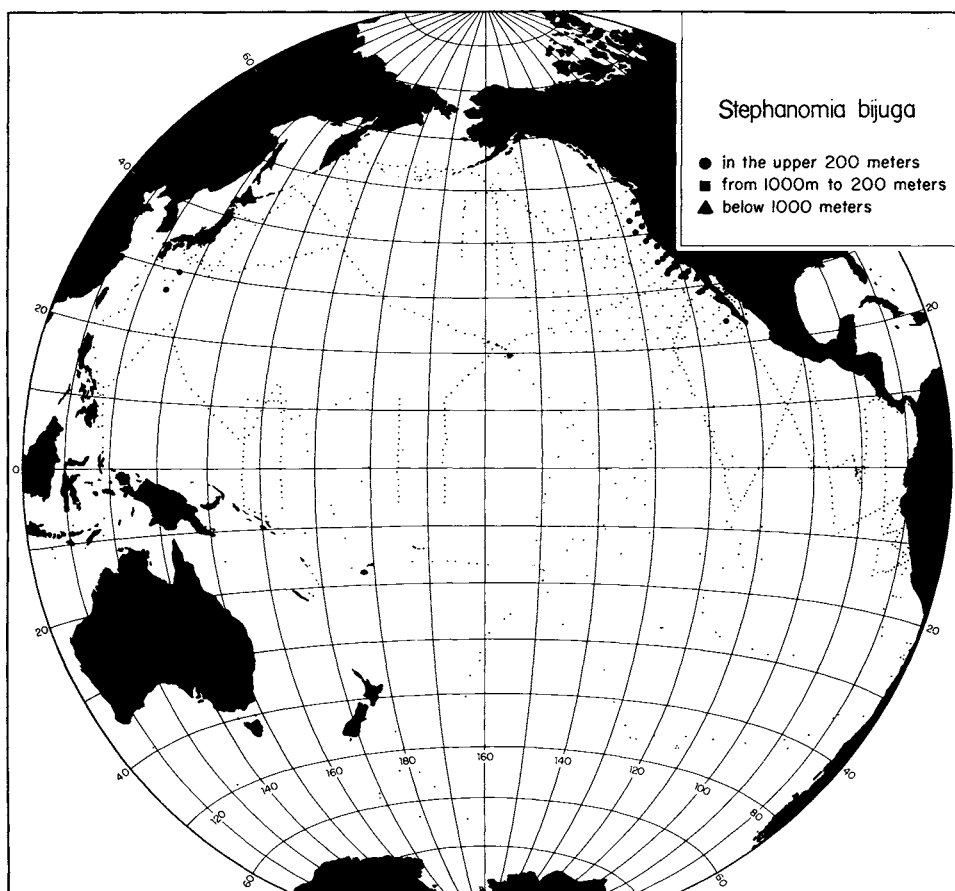


Figure 61. Distribution of *Stephanomia bijuga* from the collections studied.

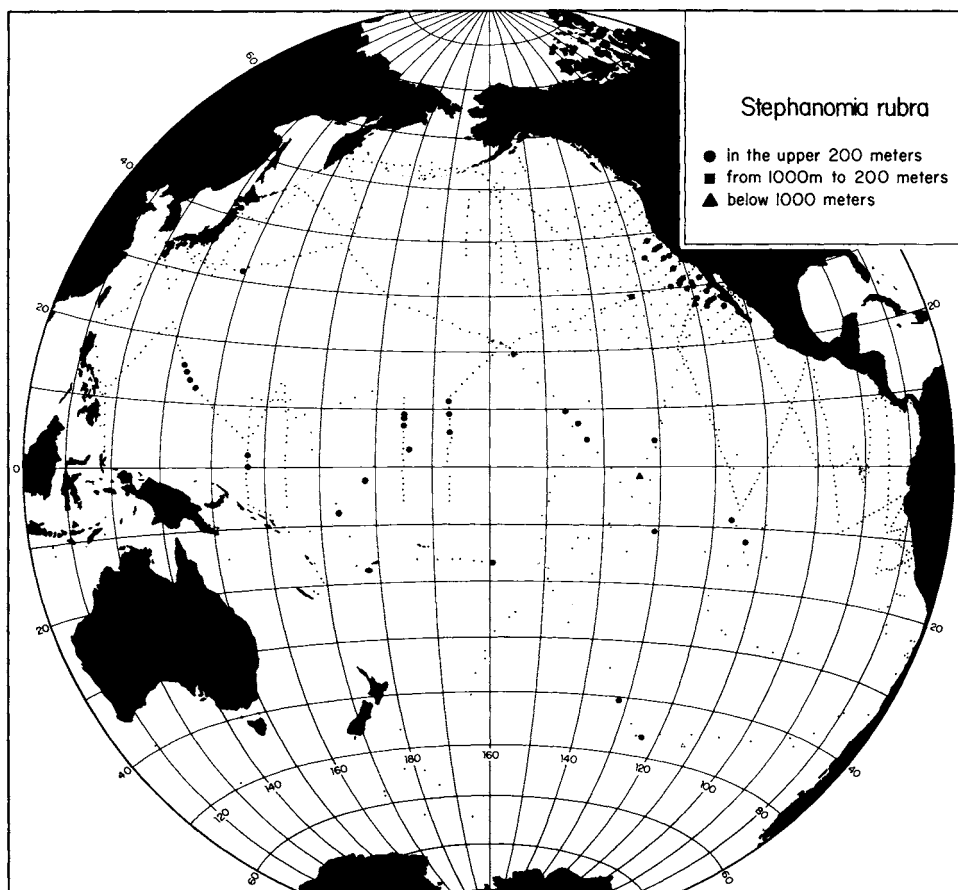


Figure 62. Distribution of *Stephanomia rubra* from the collections studied.

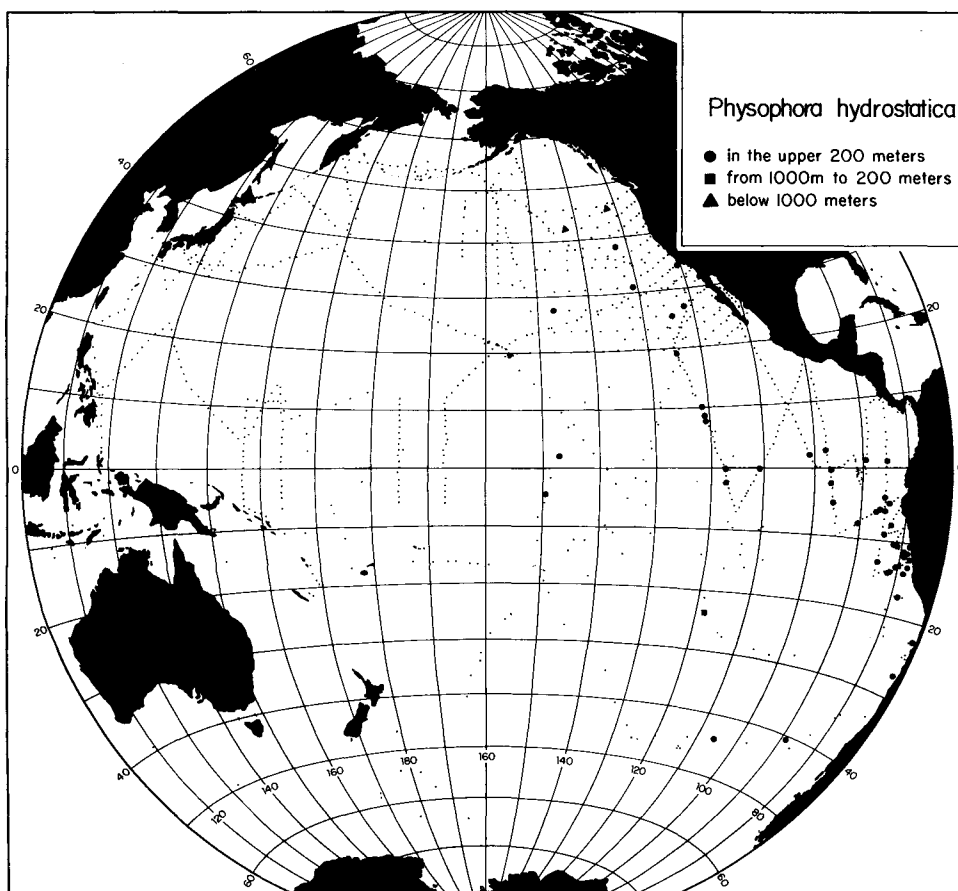


Figure 63. Distribution of *Physophora hydrostatica* from the collections studied.

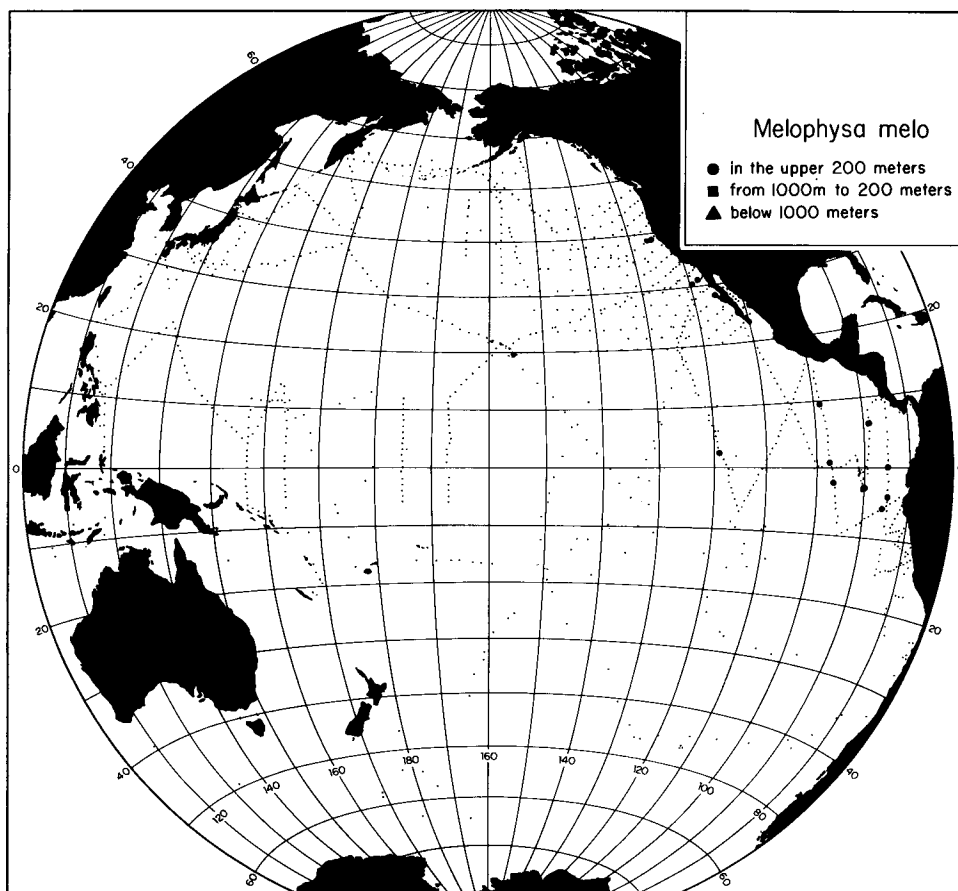


Figure 64. Distribution of *Melophysa melo* from the collections studied.

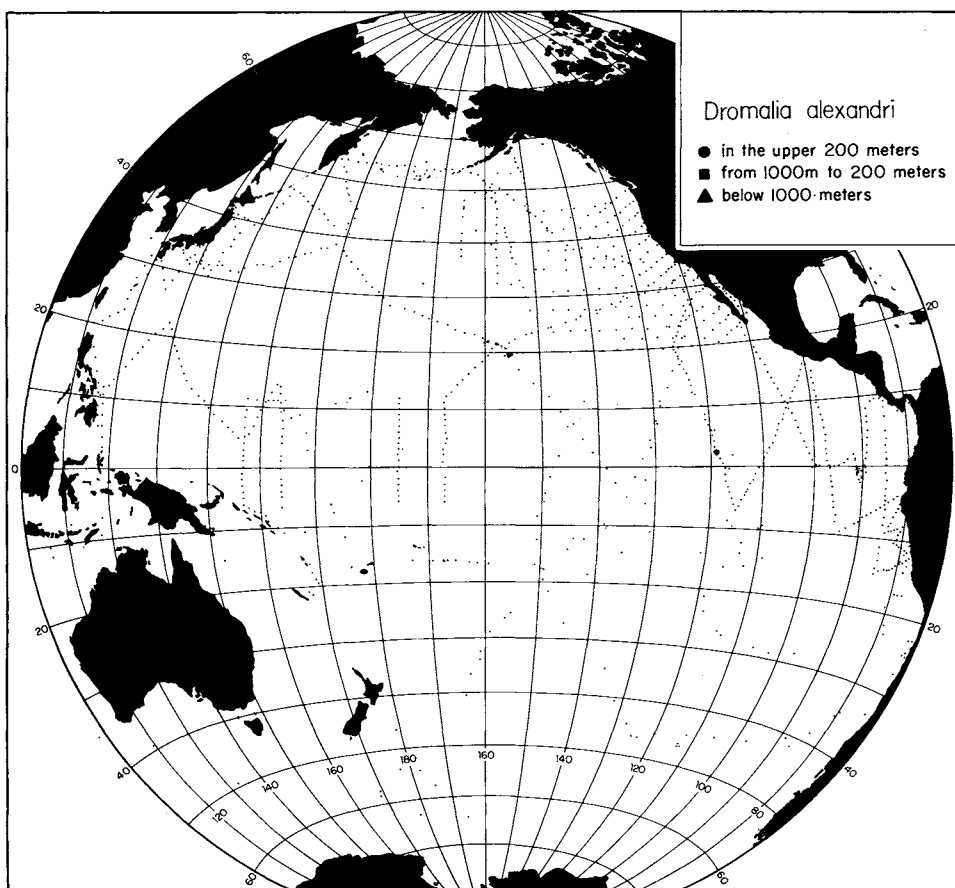


Figure 65. Distribution of *Dromalia alexandri* from the collections studied.

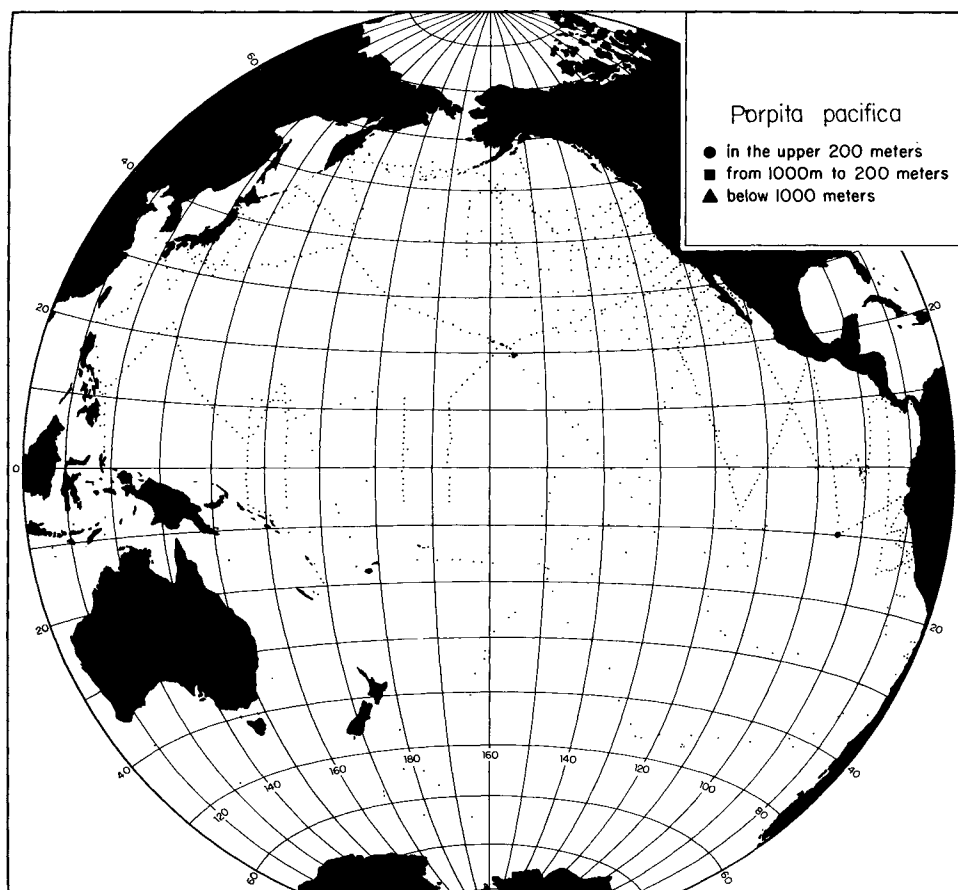


Figure 66. Distribution of *Porpita pacifica* from the collections studied.