

## SIPHONOPHORES IN THE GULF OF MEXICO

By MARY SEARS, *Woods Hole Oceanographic Institution*

The siphonophores most often recorded from the Gulf of Mexico are the two large conspicuous species with floats above the surface of the water, *Physalia physalis* L. and *Velella velella* L. Possibly *Porpita umbella* O. F. Muller<sup>1</sup> should also be included with these (Whitten, Rosene, and Hedgpeth, 1950). As early as 1886, Fewkes wrote, "I have many new localities for this medusa [i. e., *Velella*] in the Gulf of Mexico." The *Atlantis* in the winter of 1951 sailed through swarms of *Physalia* together with large quantities of *Velella* some miles in extent (Stetson, personal communication) out in the Gulf off the northwest coast of Florida, and newspapers give frequent account of the contamination of west Florida bathing beaches.

The smaller, more common species, however, have scarcely been noted in the Gulf except at a few localities around its periphery, chiefly at the Tortugas (Mayer 1900) and in adjacent bodies of water such as the Straits of Florida (Bigelow 1918), the Caribbean (Fewkes 1889), and the Gulf Stream proper (Bigelow 1918; Fewkes, 1882, 1886, 1889). These records are indicative that about 25 of the better known species in all probability occur in the Gulf of Mexico proper:

*Abyla carina* Haeckel; *Abylopsis tetragona* Otto; *A. eschscholtzii* Huxley; *Agalma okeni* Eschscholtz; *Amphicaryon aculeum* Chun; *Bassia bassensis* Quoy and Gaimard; *Ceratocymba sagittata* Quoy and Gaimard; *Chelophyes appendiculata* Eschscholtz; *Diphyes bojani* Chun; *Diphyes dispar* Chamisso and Eysenhardt; *Enneagonum hyalinum* Quoy and Gaimard; *Eudoxoides spiralis* Bigelow; *Galettia australis* Quoy and Gaimard; *Hippopodius hippopus* Forskål; *Lensia fowleri* Bigelow; *Rhizophysa eysenhardti* Gegenbaur; *Rhizophysa filiformis* Forskål; *Sphaeronecles truncata* Will; *Stephanomia rubra* Vogt; *Sulculeolaria monoica* Chun; *Sulculeolaria quadridentata* Quoy and Gaimard; *Vogtia glabra* Bigelow; *Vogtia pentacantha* K  lliker (as they are now named).<sup>2</sup>

In the Gulf of Mexico, one might expect to find possibly 50 other species of Calycophorae, which have been taken in the tropical Atlantic and perhaps as many more among the Physophorae, Rhizophysaliae, and Chondrophorae combined. Most of these species have been taken at one time or another in the tropical Atlantic and might be expected to be carried by the currents into the Gulf of Mexico. The depth of the sill at the entrances to the Caribbean and Gulf of Mexico is sufficiently great to permit entry of even the species that live at considerable depths, a factor which, for example, apparently prevents some siphonophore species from entering the Mediterranean (Bigelow and Sears 1937).

In short, it would not be surprising to find any one of the 140 or more siphonophore species, now known, in the Gulf of Mexico.

### LITERATURE CITED

- BIGELOW, H. B.  
1911a. Biscayan plankton collected during a cruise of H. M. S. *Research*, 1900. XIII. The Siphonophora. Trans. Linn. Soc., London, Ser. 2, Zool., 10 (10): 337-358, pl. 28.  
1911b. Reports on the scientific results of the Expedition to the Eastern Tropical Pacific, 1904-1905. XXIII. The Siphonophorae. Mem. Mus. Comp. Zool., Harvard College, 38: 171-402, 32 pls.  
1913. Medusae and Siphonophorae collected by the U. S. Fisheries Steamer *Albatross* in the Northwestern Pacific, 1906. Proc. U. S. Nat. Mus. 44: 1-119, pls. 1-6.  
1918. Some Medusae and Siphonophorae from the Western Atlantic. Bull. Mus. Comp. Zool., Harvard College, 62 (8): 365-442, 8 pls.  
1919. Hydromedusae, siphonophores, and ctenophores of the *Albatross* Philippine Expedition. Bull. U. S. Nat. Mus., No. 100, 1 (5): 279-362, pls. 39-43.  
1931. Siphonophorae from the Arcturus Oceanographic Expedition. Zoologica, N. Y., 8 (11): 525-592, text figs. 185-220.  
BIGELOW, H. B., and M. SEARS.  
1937. H. 2. Siphonophorae. Rept. Danish Ocean. Exped., 1908-10, to the Mediterranean and adjacent seas, Biol. 2: 1-144, 83 text figs.

<sup>1</sup> See Bigelow and Sears (1937) for use of this name.

<sup>2</sup> References which are especially helpful and readily accessible in establishing the accepted names are: Bigelow, 1911a, 1911b, 1913, 1918, 1919, 1931; Bigelow and Sears, 1937; Sears, in press; Totton, 1932, 1941, in press.

## FEWKES, J. W.

1882. No. 7. Explorations of the surface fauna of the Gulf Stream, under the auspices of the U. S. Coast Survey . . . 1. Notes on acalephs from the Tortugas, with a description of new genera and species. Bull. Mus. Comp. Zool., Harvard College, 9: 251-289, 7 pls.

1886. Report on the medusae collected by U. S. Fish Commission Steamer *Albatross* in the region of the Gulf Stream in 1883-84. Ann. Rept. Comm. Fish and Fish. for 1884: 927-980, 10 pls.

1889. Report on the medusae collected by the U. S. Fish Commission Steamer *Albatross* in the region of the Gulf Stream in 1885 and 1886. Ann. Rept. Comm. Fish and Fish. for 1886: 513-536, 1 pl.

## MAYER, A. G.

1900. Some medusae from the Tortugas, Florida. Bull. Mus. Comp. Zool., Harvard College, 37 (2): 82 pp., 44 pls.

## SEARS, MARY

1953. Notes on siphonophores. 2. A revision of the Abylinae. Bull. Mus. Comp. Zool., Harvard College, 109 (1): 1-119, 29 text figs.

## TOTTON, A. K.

1932. Siphonophora. Brit. Mus. (N. H.) Great Barrier Reef Expedition 1928-29, Sci. Repts. 4 (10): 317-374, 36 text figs.

1941. New species of the siphonophoran genus *Lensia* Totton, 1932. Ann. Mag. Nat. Hist., Ser. 11, 8: 145-168, 29 text figs.

## WHITTEN, H. L., ROSENE, H. F., and HEDGPETH, J. W.

1950. The invertebrate fauna of Texas coast jetties: a preliminary survey. Pub. Inst. Mar. Sci. 1 (2): 53-86, 1 pl., 4 text figs.