

The Occurrence And Breeding Of The Chaetognatha Along The Gulf Coast Of Florida

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Abstract

FROM NOVEMBER 1948 through January 1950 plankton samples were collected at monthly intervals from three widely separated areas along the Gulf Coast of Florida. Ft. Myers Beach, Bradenton Beach, and Cedar Key were selected as base points and from each of these bases three collecting stations were located about ½, 5 and 15 miles offshore.

Quantitative plankton samples were obtained with the Clarke-Bumpus sampler from each station and in addition an oblique qualitative sample was taken with a half-meter net. Temperature records and salinity samples were also obtained from each station. In addition to determining an overall picture of the distribution and abundance of the chaetognaths in the coastal water it was desired to learn what effects temperature and salinity might have on the distribution and breeding of these animals.

The warmest water temperatures were similar at all stations (29.0-29.9°C), but the coldest water (15.9°C) by several degrees was found at the Cedar Key station nearest the shore. The greater annual temperature range noted at this station is therefore the result of cooler water temperatures.

The salinity was lowest at the inshore stations, and increased to a maximum at the offshore stations. Fluctuations in salinity were greatest at the inshore stations and were shown to be correlated with the rainfall.

Chaetognaths from each quantitative sample were classified, enumerated and placed in one of three stages of maturity. The species of chaetognaths collected were: *Sagitta hispida* Conant, 1895; *Sagitta helena* Ritter-Zahony, 1910; *Sagitta tenuis* Conant, 1896; *Sagitta enflata* Grassi, 1881; *Krohnitta pacifica* (Aida), 1897.

S. hispida was found to live almost exclusively in the dilute inshore water. The only offshore station at which it was found with any frequency was at Cedar Key where there was a persistent dilution of the offshore water from the neighboring rivers. It was present throughout the year at the inshore stations and often in numbers of approximately 50 per cubic meter. On one occasion in June, 1949, when many young forms were present 481 per cubic meter were recorded. This was the greatest concentration of chaetognaths found in this study.

S. helena and *S. enflata* were normally absent at the inshore stations where *S. hispida* was abundant. They were most numerous at the offshore stations where the salinity of the water was usually close to 35 ‰. *S. helena* was the more plentiful of the two. Both were most abundant in winter and spring.

S. tenuis appeared most frequently at the offshore stations but was occasionally found at all stations. It was usually taken in numbers of 5 to 25 per cubic meter.

Krohnitta pacifica occurred sporadically at the offshore stations and only rarely was caught close to land. The greatest concentration of this species was 28 per cubic meter taken in November, 1949. When collected at all, between one and five per cubic meter were the usual count.

The breeding season for all the species appeared to extend throughout the year with some fluctuations in intensity. In the case of *S. hispida* and *S. helena*

an increased period of breeding was indicated in the spring. This is in contrast to some records from northern waters where breeding appears to be more seasonal with periods when little or no breeding takes place.

There is a northward movement of water along the Gulf Coast which helps distribute the chaetognaths along the coast. This drift of water apparently does not interfere with the persistence of water of reduced salinity in the inshore areas.

A Survey Of The Present Knowledge Of The Gulf Of Mexico: A Progress Report

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Abstract

THE NEED for a comprehensive survey of our knowledge of the Gulf is great. While few oceanographic expeditions have been conducted in the Gulf, there is a wealth of information on the geology, physical oceanography, meteorology and marine biology of that body of water. This information is not readily available, but appears in periodicals, in Government reports and in various special publications. It is the goal of the proposed treatise to assemble these scattered results and to present them in summary form.

The tentative outline comprises 14 chapters, covering the history, submarine geology, meteorology, and oceanography, together with the various phyla of marine plants and animals, the biology of fishes, and the effects of pollution. The material is divided among 40 authors, each an expert in his respective field. At present the following completed articles have been received:

Trematoda of the Gulf of Mexico by H. W. Manter

Free-living Flatworms of the Gulf of Mexico by L. H. Hyman

Nemertean of the Gulf of Mexico by W. R. Coe

Occurrence of *Limulus* and *Phoronis* in the Gulf of Mexico by

J. W. Hedgpeth

Utilization of Mineral Resources of the Sea by C. M. Shigley

Bacteria and Fungi of the Gulf of Mexico by C. E. ZoBell

It is expected that the majority of the papers will be sent to the Editor within the next three months.

Bibliographical research conducted in the Library of Congress with the assistance of Mr. Nicholas Gregg covered primarily the early explorations of the Gulf, cartography and physical oceanography. Of considerable historical interest are the old Spanish and French records some of which give interesting data on the configuration of the coastal line and depth of water. Occasionally, these records contain references to the flora and fauna of the Gulf. The collection of bibliographical cards consists, at present, of about 500 author and 800 subject cards. Because of the absence of clerical help and the discontinuation, on August 25, of the part-time employment of Mr. Gregg, the progress in bibliographical research was slow.