

DISTRIBUTION AND ABUNDANCE OF THE POLYCHAETE, *MANAYUNKIA SPECIOSA* LEIDY, IN WESTERN LAKE ERIE¹

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ABSTRACT

The abundance and distribution of the freshwater polychaete, *Manayunkia speciosa*, in 1961, are described for western Lake Erie. Previous records reveal that the species has either been generally overlooked or presently its numbers have greatly increased in the area considered.

Although annelids of the class Polychaeta live predominantly in marine and brackish environments, a few species occur in fresh water. One freshwater species, *Manayunkia speciosa* Leidy, was first discovered in the Schuylkill River, Pennsylvania, by Joseph Leidy (1858), and first reported from the Great Lakes (Duluth, Minnesota, harbor, western Lake Superior) by Meehan (1929). Individuals of this genus were later collected and described from Lake Erie, east of the Bass Islands, by Krecker (1939). He believed them to be specifically different from the worms found previously in the United States, and proposed the name *M. eriensis*. Additional specimens were recorded from this general area by Pettibone (1953), who, following the interpretation of Hartman (1951), considered them to be *M. speciosa* and relegated *M. eriensis* to synonymy. Through personal communication with Dr. N. Wilson Britt, I have learned that he recorded this species from western Lake Erie in 1954.

M. speciosa was found from Lake Erie again in 1961, when personnel of the U.S. Bureau of Commercial Fisheries collected samples for a study of the benthos of the extreme western end of the lake. This species was found in many of the samples—often in great numbers (fig. 1). It was most abundant at a station in the mouth of the Detroit River where one station yielded an average of 45,292 per square meter. One sample with a Petersen dredge (approximate area of 1/14 m²) contained more than 6,530 worms. Such abundance is in sharp contrast to findings in the earlier studies. Pettibone (1953) reported "Some 23 specimens. . ."; Krecker (1939) found a single specimen originally and "additional specimens" later; and Wright (1955) reported no polychaetes in his 1928-30 study of the bottom fauna of western Lake Erie and the mouth of the Detroit River. Wright's study and the 1961 survey by the Bureau of Commercial Fisheries covered the same area and had many stations in common. To wash the bottom samples, Wright used even smaller mesh screening materials (0.5 mm) than were used in the 1961 study (ca. 0.65 mm, U.S. Standard No. 30). Wright is of the opinion (personal communication) that a few individuals could have been overlooked because of the low magnification used in sorting his samples, but that it is unlikely that the worms would have escaped notice if they had been abundant.

The distribution and frequency of occurrence of *M. speciosa* in western Lake Erie apparently is influenced by the Detroit River and its outflow. The species was not found off the mouth of the Maumee River. This wide variation in population density may be due to differences in sediment type, nature of the currents, water quality, or other factors. Although organic substances are known to favor the occurrence of certain marine polychaetes (Reish, 1960), the possible

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effect of the concentration of organic materials in the Detroit River on the distribution of this freshwater species in western Lake Erie is not known.

The distribution of *M. speciosa* extends also to certain connecting waters of the Great Lakes. I have found numbers of them in bottom samples from Lake St. Clair and from the St. Marys River. A sample taken in central Lake St. Clair revealed 195 specimens. A few dozen were found in a sample from St. Marys River.

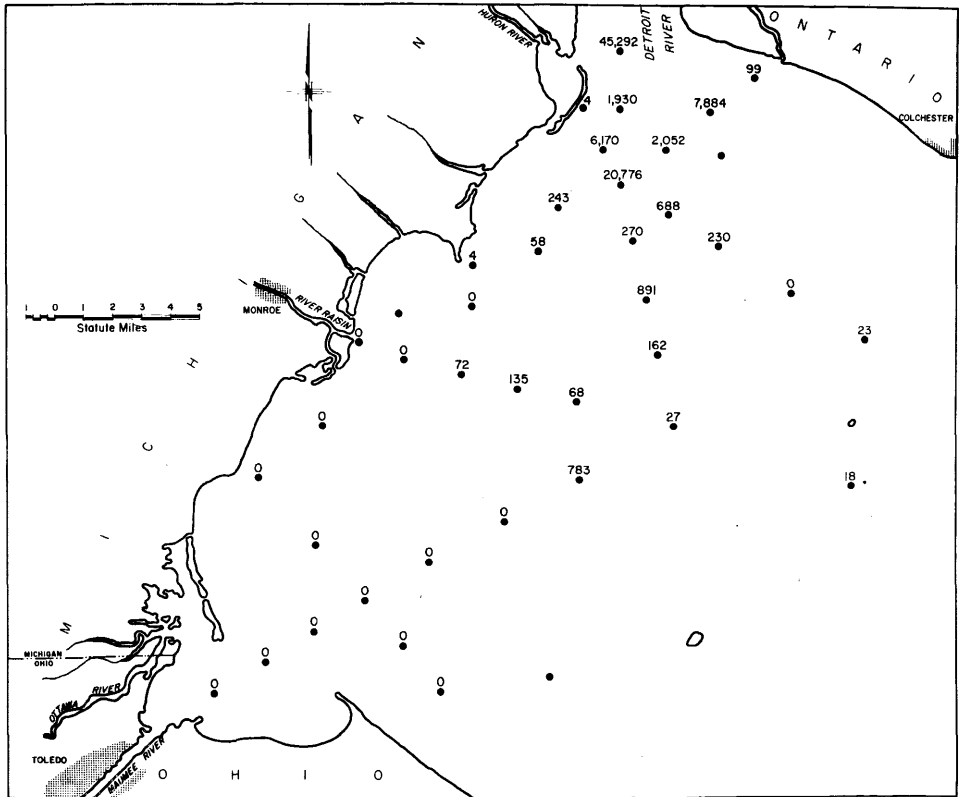


FIGURE 1. Station location and number of Polychaeta per square meter in western Lake Erie. Each sampling station is indicated by a dot. Three samples were taken at each station with a Petersen dredge; screened samples were examined with magnification of 15X. The number above each dot shows the average number of polychaetes per square meter. The figures for three stations are omitted due to unreliable treatment of the samples from those stations.

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