VI

ON THE AGE AND GROWTH OF THE POLLOCK IN THE BAY OF FUNDY.

I.—INTRODUCTION.

The present report represents the results of studies on the age and growth of pollock caught in the Bay of Fundy during the years 1915 and 1916. A report Mr. Douglas Macallum, prepared under the direction of the present writer, then curator of the St. Andrews Biological Station, dealing with the pollock caught in 1914, is already in the press. Mr. Macallum's report refers particularly to the older pollock of from three to six or more years growth, as determined by their scales. Besides working out the rate of growth of these pollock, he obtained indications that the most frequent year class was that of 1909. Some of the results of this report are included in the present paper for comparison with the data obtained in 1915 and 1916.

The object of the investigation has been to determine: (1) the distribution of the young pollock, (2) the rate of growth of young pollock during their first two or three years, (3) the relative frequency of the different year classes in typical commercial catches.

The writer is indebted to the members of the staff of the Biological Station at St. Andrews in 1915 and 1916 for assistance in measuring and taking the scales from fish. He is particularly indebted to Mr. E. Horne Craigie for the measurements made in July, 1915, and to Dr. A. G. Huntsman, the curator of the Station, for assistance and advice in obtaining the young pollock in 1916.

II.—METHODS OF MEASURING FISH AND STUDYING SCALES.

Two measurements for length have been employed. The *standard length* is measured from the tip of the snout to the end of the vertebral column (easily determined by feeling with the fingers). The *total length* is measured from the tip of the snout to the end of the tail, the caudal fin having its normal spread. In the case of fish over 20 cm. in length the measurements are always to the nearest centimeter; in the case of the smaller fish, under 20 cm., to the nearest millimeter. The standard length was chosen at the beginning of these investigations for the following reasons: (1) It can be more accurately determined by the ordinary methods, (2) it is not affected by the position or spread of the tail or by injuring the tail, (3) it measures the actual length of the body of the fish, (4) it has been found by Hjort, in the case of herring, that a better correspondence between actual lengths and lengths as calculated from the position of the rings on the scales is obtained by taking a length V measured from the anterior end of the pectoral fin to the end of the vertebral column, than by taking the total length. The standard length differs from V by the length of the head only, while the total length differs by the length of head and tail. The total length has been recorded for comparison with the measurements of the European investigators who use this length.

In 1914 the standard length only was recorded. In 1915, for catches No. 1 and No. 2, both the standard and total lengths were recorded, and for catches No. 3 to No. 5 only the standard lengths. In 1916 for catches No. 1 to No. 40, both standard and total lengths were recorded and for catches No. 41 to No. 62, the total length only.

The scales of the fish were taken in most cases from a region marked by the end of the right pectoral fin when extended along the side of the body in a posterior