

A.

COD

REPORTER:

HAROLD THOMPSON

I. Varying Degree of Geographical Coincidence in Year-Class Abundance.

Representative sampling over a long period of years is necessary to provide adequate data on this subject. This is not available.

From the available data (see accompanying figure) we may conclude:

(1) There are occasional years (e. g., 1924, and possibly 1912, 1917, 1924, 1927) when plentiful year-classes are produced more or less over the whole range of the cod's distribution in the North Atlantic.

(2) There are, on the contrary, probably years of production of poor classes more or less generally over the area. Unfortunately, attention is seldom drawn to the occurrence of poor year-classes, and we are left to infer that 1914, 1916, and 1920 may, among others, have been such years.

(3) There are most certainly years in which good year-classes are produced in some regions, and moderate or poor year-classes in others. Not only so, but regions themselves can on physical grounds be subdivided. Thus we must distinguish east from west Newfoundland, and east and north Iceland from west and south Iceland.

(4) Strictly local or seasonal sampling is liable to cause confusion owing to migrational complications. Thus McKENZIE has found, in the autumn spawning race at Halifax, that the relative abundance of the 1928 and 1925 year-classes was reversed in 1934.

(5) Regions covering an extensive range of latitude (e. g., Norway) show great fluctuations, whereas a small and probably self-contained region like Faroe, where currents and eddies may be more uniform from year to year, is said to have no particularly rich or poor year-classes, and certainly cannot be correlated with Iceland.

II. Correlation of other Phenomena with Fluctuations.

(1) The varying strength of major currents apparently determines, in some areas, whether fry will be distributed in one or other of the portions of a region. In the northern Newfoundland area, for example, fry may become aggregated in the region of Belle Isle Straits, off southern Labrador, or off the north-eastern Newfoundland coast, according, possibly, to the degree of activity of the Arctic current. At Iceland a year-class may fetch up almost entirely off the north and east, or occupy the more normal south-westerly area. It is conceivable that in occasional years young cod are almost entirely swept out of certain areas. Thus Greenland may be recruited from fish spawning at Iceland.

(2) The degree of availability of the requisite type of food for the newly-hatched fish is often mentioned as a likely cause of varying degree of survival. There is no direct evidence on this subject so far.

Cod Fluctuations.

● Good year-classes. ○ Poor year-classes. (L) Local.

	1912	1913	1914	1915	1916	1917	1918	1919	1920	1921	1922	1923	1924	1925	1926	1927	1928	1929	1930	Authority
Norway	●			●		●		●	○		●		●							SUND.
Iceland	●	●		●		●		●	○		●		●		●(L)	●			●(L)	{ TÄNING. FRIBRIKSSON.
Greenland	●					●					●		●		●	●				TÄNING.
Newfoundland													●		●(L)	●	●	●(L)	●(L)	{ THOMPSON. McKENZIE.
Nova Scotia					○			○				○				●	●	●		{ THOMPSON. SCHROEDER.
U. S. A.											●	●	●?	○						SCHROEDER.
North Sea	●									○	○	●	●	●	○		●			GRAHAM.