age-composition of spawning shoals in the two species appears from the following examples :

	Annual Class.												
	2	3	4	5	6	7	8	9	10	11	12	13	14
Percentage of sprat . .	30	42	19	8	1	...	...	...	...	...	...	...	...
Percentage of herring .	...	2	22	19	15	13	19	3	2	2	1	1	...

Sund found that the majority of sprats spawn when two to four years old, while Dahl found that the herrings spawn from the 3rd to the 14th year, the majority between four and eight years old. This difference is fundamental in the life-history of the two species. The life-cycle of the sprat is rapid, indicating a rapid renewal, while the herring lives much longer, spawns for a great number of years, and spawning commences two years later than in the sprat. The herring is a typically boreal fish, its southern limit to the south-west of Britain conforming to that of all the boreal bottom-fishes (see Chapter VII.). Herrings live, at least sometimes, at considerable depths, depositing their eggs on the bottom of the coast banks during winter and spring, now in shallow, now in deeper water.

The sprat is distributed far south in the Atlantic, occurring, according to Day, round the Iberian Peninsula. It is a surface fish occurring in boreal waters mainly where high summer temperatures prevail; it spawns during summer, the eggs being pelagic.

From the study of the age of fishes I was induced to hope that the variations in the magnitude of the fish-stock might be estimated, and my collaborators have made very extensive investigations with most important results. This applies to the cod family as well as to the sprat and the herring. I will here only review some of our results from the herring investigations.

For a number of years samples for age-analysis have been collected during the various herring fisheries on the coast of Norway, the analysis of which has proved that the age-composition of immature herrings, as well as the shoals of spawning herrings, vary considerably from year to year. These variations are mainly due to the fact that certain annual classes are exceedingly prolific, while others are very poorly represented. The following table records the results of an analysis of