

European experts and scientists, Dr. Hjort, Director of Norwegian Fisheries, Christiania.

Dr. Hjort, who speaks very perfect English, illustrated his remarks by a fine series of stereopticon views, including Norwegian coast scenery, fishing fleets, catches of fish, and charts and diagrams. He began by showing how the quaint fishing boats of the ancient Viking type have been replaced by decked vessels, and later by large steam "drifters". Fishermen had, said Dr. Hjort, a general idea as to the dates, each season, when schools of herring and other fish appeared, and the grounds usually frequented by them. But there was always uncertainty and the varying abundance or scarcity of fish were regarded as a mystery. The causes were unexplained. To remove this uncertainty scientific researches of a systematic nature were commenced 12 or 15 years ago. The result has been that the causes of the fluctuations has in many ways been determined, the migrations and resorts of the fish ascertained, and a number of splendid new fishing areas discovered.

By means of townets, the floating eggs of fishes like the cod, haddock, torsk, and ling, and the myriads of surface-haunting young fry, have been captured in varying quantities. It was found that the number of eggs and young fish, per square metre of water, most accurately indicated the quantity of adult fish in the deeper waters below. If 4,000 eggs were counted, in one square metre, in one locality, and only forty eggs in one square metre in another locality, the fish were approximately ten times more plentiful in the former locality. This quantitative method has proved most reliable. Vast numbers of eggs and fry were taken in localities, not regarded by the fishermen as good fishing grounds; but on operating there these new fishing areas yielded great catches.

The study of the races, and what are called "year classes", as well as the discovery of the age of fish by the means of rings of growth on the scales, had given most valuable and striking results. By using "drift nets" of various meshes herring, for example, had been obtained showing great differences. The herring of Norway, on the whole, is a larger fish, at the same age, than the Scottish and English herring, and there was practically no intermingling, a diagonal line drawn from a point east of the Faroes down to the middle of the North Sea, separating the two race types. But local varieties also occurred. Large herring, fat herring and small herring, as experience showed, occur with great regularity. Thus from January to April, large spawners occur off the south-west coast of Norway, whereas a little further north such large herring occur from October to January. Fat, immature herring and small herring