

probable therefore that this fish occurs in our Atlantic waters, and it is one of the most delicate and highly esteemed of our fishes. If so, a new and valuable industry would be readily opened up, just as in the smelt fishing recently developed in certain rivers in the Maritime Provinces. The value of the smelt was not appreciated until within the last few years and in such a river as the Miramichi the smelt fishery has risen to the position of a highly remunerative industry. From investigations pursued at the Plymouth Marine Laboratory it has been shown that on the south coast of England anchovies are plentifully captured in sprat and pilchard nets, and it has been pointed out by scientific workers at that laboratory that a regular fishery could be established. On the coasts of Holland, France, Spain and Italy, such an anchovy fishery has long been carried on with profit to the fishermen. The anchovy migrates and schools much after the fashion of the mackerel, and they are netted in a similar way, when coming into the shallow waters. Whether fishes of economic value such as the anchovy, the pilchard, the sprat &c., really inhabit our waters or not, cannot be decided in our present state of knowledge. At certain seasons vast schools of small fish, roughly classed as "Britt" or regarded as "Tinkers," invade particular portions of our littoral waters, and a thorough study of these smaller forms must yield important knowledge and throw light upon the productiveness and range of our fish supply. Recent fishery investigations have more and more clearly demonstrated that a knowledge of small fishes, whether small species i.e., distinct kinds, or merely the young of larger and familiar forms is of supreme value. And it is precisely of these smaller and often despised fishes that exact knowledge is most lacking. It is possible in a great degree to foretell the probable abundance or scarcity of fish in future seasons, from observations on the schools of young fish which make their appearance in certain areas. At present it is a matter of little interest to those whose living depends upon the prosperity of the fisheries, what the precise nature of these young fish may be, and their presence in the coastal waters has not been regarded as of much importance from a practical point of view. But it is not so. The studies of the scientific observer have proved the fallacy of this common opinion, and have established, beyond doubt, that these schools of fry directly and indirectly indicate a good or bad fishing season. Directly they do this because when these schools are carefully examined by competent authorities they often prove to be the fry of fish most valued as food, or again if not themselves the young of such fishes, they form a favourite food of esteemed kinds. In the warm summer months vast schools of minute fishes—one or two inches in length, occur off the Bay of Chaleur and farther north. The local fishermen regard them as young mackerel, others as herring, others as cod and hake. As a matter of fact these important schools of small fry have never been studied by any observer, and of what kind of fish they really consist has never been decided. More than this, the work carried on in other countries has shown that we can never understand the fisheries, the conditions of their prosperity or decadence without a knowledge of the eggs and spawning grounds. Almost nothing is known of this great subject so far as Canadian waters are concerned. Nor can such studies be successfully carried on until a properly equipped basis of operations has been provided in a marine station where this work could be prosecuted. On the foundation of such a station these important problems would be attacked at once and much desired knowledge obtained.

Not only is a knowledge of the distribution and comparative abundance of the economic fishes in our waters needed, but the general conditions and the probabilities of success in stocking new waters, or it may be re-stocking depleted waters, require to be studied. The discovery of unnoticed or unknown species and the introduction of new and valued kinds are not only possible, but under scientific guidance may be matters of certainty. The capture of a new and valuable food fish, the tile fish, off the New England coast, in 1880, shows that useful kinds of fish may remain still to be discovered and that the treasures of our waters have not yet been fully made known by the operations of fishermen. Further, the extirpation of predatory kinds which destroy nets, food-fishes, and are a terror to the fisherman, would be a matter of study.*

* In 1892 myriads of voracious dogfish (*Acanthias*) appeared in the Bay of Fundy in the month of February.