

IV.—STATISTICAL DATA REGARDING THE SWEDISH FISHERIES.

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Sweden, extending from north to south through more than 12° of latitude, is washed by the sea on about two-thirds of its circumference, which forms, in many places, large inlets. The country itself is traversed by numerous streams, and possesses a very large number of lakes, so that nearly one-tenth of its whole area is covered with water. The natural conditions of the eastern and western coasts, as well as those of the water-courses and lakes of northern and southern Sweden, are different, so that, taken as a whole, the country possesses a very great variety of fish.

In such a country the fisheries must of course form a considerable source of income; and, it is well known, that next to agriculture, forest-culture and mining, the fisheries are the most important source of revenue, giving employment and subsistence to a large portion of the population.

The most important fisheries in Sweden are—

1. *The lake-fisheries and the coast-fisheries in the numerous narrow inlets.*
2. *The salmon-fisheries in the streams and inlets.*
3. *The herring-fisheries in the Baltic and along the coasts.*
4. *The fisheries in the Kattegat and the North Sea.*

1. *The lake and coast fisheries* in the south of Sweden are chiefly productive of *perch*, *pike*, *breem*, and fish of the carp species; as also the *burbot* and the *eel*; while in the north of Sweden, they yield mainly fish of the genus *Coregonus*, but also some of those just mentioned. The lake and coast-fisheries are carried on partly as a means of living by the fishermen residing near the lakes and coasts; and partly as a means by which those farmers, peasants, mechanics, and soldiers, who either own the right of fishing in certain places, or have temporarily secured it, may earn some little money. Although statistics regarding the Swedish fisheries have been collected for some years, it is not yet fully known how many persons are annually engaged in them; nor has the value of the implements used, and of the fish caught been ascertained. From what is known in this respect as to some of the provinces, it appears that this branch of the Swedish fisheries is of considerable financial value, in proof of which, we may mention, that in Nerike, one of the

smaller provinces of the kingdom, 489 persons are employed in them, and that the value of the implements is \$9,430.

In the other provinces, with the exception of Skåne and Blekinge, the lake and coast fisheries are carried on by a much larger number of persons. The money value of gwiniad, *Coregonus albula*, and char caught in lake Wetteren, amounts annually to \$27,775. On the Calmar coast, the fisheries are carried on by 182 persons as their exclusive source of income, while 689 having some other employment in addition, are also engaged in them. The value of the implements used is \$29,385. The fish caught in the lakes and on the coast are either sold fresh in the neighborhood, or are used in the households of the fishermen. As these people keep no account of their labors, it has been found impossible to obtain any exact data regarding the money value of these fisheries. In order to reach some approximate result, the number of men employed and the value of the implements used have been ascertained; and from these figures a tolerably correct estimate may be made regarding their great value.

2. *The salmon fisheries.*—These are carried on in the streams of the northern provinces, from the end of May till the beginning of September; and in the western streams, (Wiska, Atra, Nissa, Laga, and Quistrum,) from the beginning of April till the middle of July; and on the coasts of Blekinge and Skåne, (in the south of Sweden,) during the winter months as long as the ice does not interfere. The streams richest in salmon, are the Torneå, Luleå, Umeå, Ljusne, and Angerman, in the province of Norrland. Next come the western streams, mentioned above, whose salmon are more highly valued than those from the east coast, and which are fully as good as the Scotch salmon. The most extensive salmon fisheries in Sweden are those of Elfkartlby, in Gestrikland, and of Mörrum, in Blekinge; the former yielding an average annual income of \$11,110; and the latter, of \$8,300.

At present, the salmon is mostly sold fresh in the country, or, packed in ice, is exported from Gottenburg and Stockholm to England and Germany, and especially to Berlin. The larger portion of the salmon caught on the south coast of Sweden, during winter, is smoked and sent to Germany and Denmark. According to the most recent statistics, the annual yield of salmon from twenty-seven Swedish streams is valued at \$170,035. The salmon-fisheries on the coast of Skåne and Blekinge yield an average annual income of \$33,330.

3. *The herring-fisheries in the Baltic and along the Coasts.*—These fisheries, which are by far the most important in Sweden, are carried along the whole coast from Kullen on the sound, to the farthest point of the Gulf of Bothnia, exclusively with open boats, each manned by two or three persons. The fishermen use both stationary and floating nets; and the best fishing is at different seasons along the northern and southern coasts. On the southern coast, the herring-fishery is carried on by a population living together in large fishing villages, and depend-

ing entirely for subsistence on this fishery. On the coast of the inner Baltic, along the northern line of the Gulf of Bothnia, and on the island of Gotland, the herring-fishery is partly carried on by persons living in the interior, who, during the fishing-season come to the coast, and partly by fishermen living permanently on the coast or on the small islands near it. The Baltic herring are partly sold fresh, or smoked in the towns on the coast, partly salted, packed in casks, and sent all over the country, and of late years even exported to Germany.

As salt herring constitutes the daily food of the Swedish peasants and the lower classes in general, the amount secured in the country is not sufficient, so that a considerable quantity must be imported from Norway.

Along the coast of Sweden, from Kalmar to Malön near Haparanda, the herring fishery is carried on with 3,275 boats, and the annual yield is about 66,500 tons of salt herring. In Blekinge there were salted in 1868, 47,732 tons of herring; and in the Melmö and Christianstad districts, where the herring fishery is carried on with 685 boats, there were salted during the same year 13,600 tons. The greater portion of the herring caught in the two districts last mentioned are sold fresh to the inhabitants. On the island of Gotland, 1,911 persons, with 606 boats, are engaged in the herring-fishery, and the yield in 1869 amounted to 30,070 tons.

It may be safely assumed that on an average the total annual yield of herring on the Swedish coasts of the Baltic amounts to 150,000 tons, representing, according to last years' prices, a capital of \$833,330. Besides the herring fishery carried on in the Baltic, the *Clupea harengus* and *Clupea sprattus* are caught during the autumn and winter in the Kattegat near the coast of the province of Bohuslän. The *Clupea sprattus* is partly used fresh and partly salted or pickled, as anchovies, of which latter very large quantities have been exported during late years. The amount of herring caught near the coast of Bohuslän was, in 1871, valued at \$24,680.

4. *The fisheries in the Kattegat and North Sea.*—These fisheries are partly carried on near the coast with smaller boats and partly out on the Kattegat and along the western coast of Norway with larger vessels, of from 20 to 40 tons, and manned by twelve or fourteen persons.

The implement used is the so-called "storbackan," a line with hooks which is laid out on the fishing-banks to the depth of 100 fathoms. Muscles or pieces of fresh fish are used as bait. With this implement they catch cod, ling, flounders, halibut, and other fish. Some of these are sold fresh, but most of them having been salted either by Norwegian or Bohuslän traders, are exported. Codliver oil is prepared from the liver, and the roe is salted and exported to France to be used as bait in fishing for sardines. In 1871 Bohuslän carried on the fishery in the Kattegat and the North Sea with 126 boats, manned by 1,226 persons. The amount of fish caught by them during the same year was

valued at \$177,930. During that year 5,257 cwt. of salt-cod were exported from Gottenburg to England. The fisheries on the coast of Bohuslän, including mackerel-fisheries, employed 351 boats, manned by 1,378 persons. The income from this fishery in 1871 amounted to \$97,790.

The lobster-fishery in Bohuslän was valued in 1871 at \$22,180, and the oyster-fishery at \$4,610.

The editor of the Scandinavian Piscicultural Journal adds to the above article the following items of information: In Sweden, the following officers are appointed to manage the fisheries:

A superintendent of the lake, river, and Baltic fisheries, with two assistants, and one teacher of pisciculture. This superintendent is, at present, *Dr. Hjalmer Widgren*, and his assistants are *Dr. C. Byström* and *Mr. V. Wehlburg*; while the teacher's place is filled by *Baron C. G. Cederström*. Besides these government officials there are special superintendents over certain sections of water in some of the provinces, whose chief duty it is to see to the proper observance of the fishing-laws. Some of these superintendents receive a small addition to the salary paid them by the provinces, from the central government, while others are paid entirely by the provinces, by fishing-companies, or by large-landed proprietors. The superintendence of the open sea fisheries (Kattegat and North Sea) is intrusted to an official, who is responsible to the Bohuslän authorities. The present incumbent is *Mr. G. von Yhlen*.

The duties of the first-mentioned superintendent,* as defined by a letter from his majesty, the king, dated February 12, 1864, and by a royal proclamation, dated November, 1867, are as follows: 1, to inspect the fisheries in the different parts of the country; 2, to propose suitable fishing-laws wherever needed, and to assist the local authorities in upholding these laws; 3, to collect and compile statistics of the fisheries; 4, to superintend the government Normal Institution of Pisciculture, and all similar establishments throughout the country; and, 5, to give the necessary instructions to the other superintendents.

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