

29.—SWEDEN AT THE GREAT INTERNATIONAL FISHERY EXPOSITION AT LONDON, 1883.*

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As a pamphlet has been distributed in the Swedish Parliament, relative to the resolution passed by the lower house February 28, last, to grant only 25,000 crowns (\$6,700) for meeting the expenses connected with Sweden's representation at the International Fishery Exposition, to be held during this year in London, and as this pamphlet is principally directed against me, I deem it proper to say a few words in reply.

The pamphlet, which bears the signature of Prof. F. A. Smitt, begins with a testimony to the enormous importance of fishery expositions for the advancement of the fishing industries; and this is, strange enough, followed by a comparison between the poor condition of the Swedish fisheries and those of foreign countries. This second part of the pamphlet in question, which is, moreover, accompanied by statistics intended to prove the author's assertion, is, however, utterly at variance with the first part, where the beneficial influence of expositions is spoken of with the highest praise; for if fishery expositions were really so beneficial to the fishing industries, the Swedish fisheries ought to rank very high, considering that Sweden has taken part in these expositions in the most energetic manner. I shall, further on, show that our too energetic participation in the fishery exposition has been one of the principal causes why the development of our fishing industries has not kept step with that of foreign countries, but has remained far behind them. I therefore take the liberty to repeat here what I said in the lower house, that, if fishery expositions are to prove a real benefit, they should be managed upon an entirely different plan from that followed at our Swedish expositions, and especially at the Berlin Exposition of 1880. The prejudices of the Norwegians, in this respect, are very significant.

Professor Smitt speaks of the great importance of expositions for fish-culture. With regard to this subject we will quote the following from the writings of a prominent author, who has made fish-culture a specialty.† He says: "Although the culture of salmon, salmonoids and various kinds of *Coregonus* has been carried on, on a large scale, in several countries of Europe for thirty years, we have no positive proof from any European country that this culture has, to any considerable extent, increased the quantity of fish in the open waters, * * *

* *Sveriges deltagande i internationella fiskeriställningen i London, 1883.* Germåle. Stockholm, 1883. Translated from the Swedish by HERMAN JACOBSON.

† A. J. Malmgren: "*Utlåtande angående lämpigheten af artificiell fiskodlings införande Finland.*" Helsingfors, 1883.

or has been followed by financial results in proportion to the amount of money expended, or by results of general importance. It is absolutely certain, that in those very countries which have for the longest time and most energetically labored to increase the quantity of fish in the open waters, by the artificial production of young fish, confidence in the economical importance of artificial fish-culture has been thoroughly shaken. * * * In fact, it must be said that in Europe fish-culture has left nothing but disappointed hopes, and in many cases has caused serious financial losses." The importance of fish-culture is, therefore, far from having been proved; and the fishery expositions have not furnished a solution of the greatest difficulty, viz, the care of the young fry. All that fish-culture, an industry the value of which is openly questioned, can gain from an exposition, is a comparison of the various apparatuses. But as regards the manner in which these apparatuses are used, and in fact in all other respects, the necessary knowledge must be obtained in the place where the fish are raised, where fisheries are carried on, and where fish are prepared. As regards the care to be taken of fish, the fisheries, and the preparation of fish, but little knowledge can be gained at an exposition, as Professor Smitt himself seems to think. If this had not been his view of the matter, he ought to have produced more proof, especially with regard to the Berlin Exposition, of the benefits of such expositions, than the introduction of "Japanese traps" in Södermanland. All this only goes to prove the correctness of my assertion, that the Norwegians act wisely in only granting a small appropriation for the London Exposition, whilst care is taken that many persons who have made fisheries a specialty are enabled to travel to foreign countries to gather knowledge, the results of their observations, as well as those of the commissioners sent to the exposition, being published and spread broadcast over the land. It should not be forgotten that my remarks in the lower house were aimed at the way in which fishery expositions have hitherto been managed by our commissioners, and at the condemnable habit of spending more than necessary for this purpose.

During the long controversy regarding the Bohuslän herring fisheries, I have repeatedly maintained, in opposition to Professor Smitt, that the first condition for flourishing fisheries is a well-organized fish trade and a regular and rapid sale of the fish. Particularly, as regards the herring fisheries, it will be evident, even to a superficial observer, that if herring can be prepared as a valuable article of commerce, and in such a manner as to keep a long time, and bear transportation to distant countries, the market for them will extend, thus enabling the fishermen to get better pay for their fish; and the fisheries in general will be benefited thereby, for a high price of fish encourages the fishermen, and enables them to get better and more expensive apparatus, and to introduce new and improved methods. With this view I have always urged that it was of primary importance that the Government should

facilitate the sale of fish, if necessary, by introducing improved methods of preparation; but my words were in vain, principally owing to Professor Smith's influence; and on the Bohuslän coast people had to wait till the year 1882 for measures introducing the salting of herrings according to the Scotch method, simply because the money needed for this purpose was spent on the Berlin Exposition and on Professor Smitt's resultless experiments with floating nets. Professor Smitt does not seem to recognize the importance of ready sales for the fishing industries, and he, of course, prescribes expositions as the best remedy for our, undoubtedly, unsatisfactory sales. If expositions, however, were beneficial in this respect, it is more than strange that our sales of fish are far from satisfactory, in spite of the lively interest taken by Sweden in all foreign fishery expositions, and that Professor Smitt can show no convincing proof that the great Berlin Exposition of 1880 has caused any increase in our exportation of fresh salmon, herring, &c. The exportation of these kinds of fish went on even when there were no expositions, and has not been noticeably increased by them. Successful efforts to increase the sale of fish made during an exposition need moreover not necessarily owe this success to the expositions. Such efforts should be made at all times, and, as far as our sales in England are concerned, the sooner they are made the better, as good fresh fish may always count on ready buyers in the great Billingsgate fish-market. Thus an arrangement has recently been made for selling the fish from the Bohuslän bank-fisheries fresh from the sea to steamboats; and this arrangement was made independent of any exposition. The same might also be done in other cases. The "hints as to improving their condition," which, although not heretofore made known, are said to have been given to our fish-dealers by the Berlin Exposition, they could easily have done without. More vigorous public measures and a more thorough knowledge of the fisheries, and not these mystic "hints," are what are needed for furthering our fishing industries. The facts produced by Professor Smitt only show that some insignificant results may be obtained by comparatively slight efforts during a fishery exposition. How much greater results could, therefore, be obtained by steady efforts in the same direction, made with due circumspection and a thorough knowledge of the subject? That country of Europe whose fisheries are at the present time more important than those of any other country, Great Britain, which has raised its fishing industries to a very high condition of excellence, has brought about this result by entirely different means than fishery expositions.

Professor Smitt's attempt to find a reason for the present condition of our fish trade, by saying that the Berlin Exposition has injured the exportation of our preserved fish, is only another proof of his way of deceiving the public. Germany's new customs legislation has, at the same time, not injured the exportation from other countries of preserved and smoked fish.

Since the Scotch method of salting herrings has, in spite of violent opposition and in spite of expositions, been introduced on the coast of Bohuslän the price for herrings salted according to this method rose immediately. From the southern part of Sweden nothing but fresh herring are exported, whilst Scotland exports large quantities of smoked herring and gets a higher price for this article. By introducing better methods of salting and smoking and by preparing the small fish as sardines, the income from our large herring and small herring fisheries could doubtless be doubled; but, as will be shown below, expositions have positively hindered the introduction of such improvements.

Among the most remarkable and most incorrect statements in Professor Smitt's pamphlet is the following relative to the Edinburgh Exposition, which also aimed at laying down the law in matters pertaining to the fisheries: "The knowledge gained by the exposition has been productive of great life and activity, especially on the coast of Bohuslän. Salters, packers, and smokers have been brought over from Scotland, large and improved cooper shops have been set up, and many new salteries, oil refineries, and guano factories have been established." All this sounds very well; it is only a pity that the above-mentioned exposition has had nothing whatever to do with these improvements. The greater life and activity has simply been caused by the greater abundance of fish, particularly during the winter of 1881-'82; and the measures for introducing improved methods of preparing fish had been taken prior to said exposition. Of the oil refineries, one was in full blast long before the exposition, and the other had been planned before the exposition was opened; and the third and smallest has not been established in consequence of any knowledge gained in Scotland, where this industry is not carried on. As regards the salting of herring, there had been, long before the Edinburgh Exposition, a strong sentiment in favor of the Scotch method, principally fostered by the press and by descriptions of this method published in pamphlet form and distributed on the coast as early as January, 1878. This sentiment also determined one of the largest herring firms on the coast of Bohuslän to introduce the Scotch method of salting *long before* the Edinburgh Exposition, and induced the great cooper establishment at Uddevalla to adopt the shape and size of the Scotch herring barrel. Herring-barrel factories do not exist in Scotland, where all barrels are hand-made. The fact that three fishermen were, at the expense of an association, sent to Scotland to attend the exposition, has not benefited our fishing industries, as the information gained by them was very little compared with what they would have gained by a visit to the east coast of Scotland during the period when herring are caught and salted. The resolution passed by the association referred to, to introduce Scotch coopers and salters was, doubtless, owing to the idea that something might be learned from a country where the herring industry had reached a very high degree of perfection, and not because knowledge had been gained at an exposition.

The true value of fishery expositions to the Bohuslän herring salteries may be learned from the fact that soon after the Berlin Exposition, which had decreed gold medals to the Bohuslän salteries for the excellence of their productions, a notice was inserted in the Bohuslän papers, by the most prominent Gottenburg fish-dealers, that, owing to the inferior character of the Bohuslän salt herring, they would no longer deal in this article. Truly a brilliant result of the exposition prizes!

Whenever the introduction into Sweden of improved methods of preparing fish is urged, it is met with indifference or opposition from those of our salters who have gained prizes at expositions, who think that they represent the very perfection of this industry and consider themselves the only models worthy of imitation. These prizes which, at the expositions, are generally given in proportion to the space occupied by a country, and in the distribution of which personal motives are frequently all-powerful, and which, therefore, are by no means absolute proofs of the excellence of the articles which have gained prizes, have, together with newspaper articles highly laudatory of the productions of their own country, contributed not a little towards spreading erroneous ideas among the public and also towards throwing difficulties in the way of improvements, which will only be introduced when the opinion has gained ground that they are absolutely needed. The expositions have also produced a number of far-famed exposition heroes, who live on the praise bestowed on them by these expositions, assert an undue influence over the industries, and have even gone so far as to obtain prizes for their friends and favorites.

The circumstance that expositions are in such high favor with the general public is, no doubt, owing to the manner in which they have flattered the vanity, not only of some exhibitors, but also of entire nations. As the participation in an exposition does not involve any expense to the exhibitors, and as every one, of course, hopes to gain a prize, it is not astonishing that the applications are so numerous, especially as no effort is spared to go beyond all bounds in the preparations for such expositions. These expositions have very much the same attraction to manufacturers as lotteries, where the government, so to speak, furnishes the tickets and the exhibitor only loans his apparatus or the product of his industry for exhibition. Many a person feels his vanity tickled by the knowledge that he has taken part in a world's exposition, and that his name has figured in the catalogue, more especially as these honors may be gained without any expense.

Professor Smitt says that Sweden, in order to remove the disproportion between her importation and exportation of fishery products, should, "in the first place, aim at increasing the value of her deep-sea fisheries and of her salmon fisheries." Strange to say, the professor seems to have abandoned all hope of ever improving the Baltic and Kattegat fisheries. To improve these two important fisheries, which are full of promise, experience has taught us that far different and more

vigorous measures than expositions are required. As regards the much talked of Bohuslän herring fisheries, the use of floating nets in these fisheries is nothing new. During the eighteenth century this implement was employed far more extensively than now, and with the same results. Even in our day it has been repeatedly employed on the coast of Bohuslän, even before Professor Smitt came in the winter of 1880-'81, and, aided by a Government subsidy, made a great ado about it in the papers, in spite of which, owing to very plain causes, matters remained pretty much as they had been before. Four years ago I stated, relative to the proposition, made too soon, then, to introduce floating nets for the herring fisheries on the Bohuslän coast, the following, which ought to be taken to heart by those concerned: "To introduce with advantage a new implement or a new method of fishing requires that its application will pay. Thus futile attempts were made to introduce floating nets for the mackerel fisheries on the coast of Bohuslän as long as the price of mackerel was so low that the larger number of fish caught with the floating nets was not sufficient to pay for the getting and keeping of these expensive implements. When the price of mackerel rose, the floating nets were quickly introduced; but if the price of mackerel should again decrease, the floating nets would again disappear, and the common and inexpensive nets would soon again be in general use." If the Bohuslän people are to use floating nets on a large scale for the herring fisheries, it is of course necessary for them to be able to count on catching every year a sufficiently large quantity of herring before the fisheries commence near the coast to make it worth their while to get these expensive implements. That this applies to a small quantity of fish which, when brought into the Gottenburg market, are, owing to their small number, sold by the score or by the piece, does by no means prove that this will also apply to large fisheries; for as soon as very large quantities of fish are brought into the market prices decline. Whether the herring fisheries can be profitably carried on with floating nets will, in Bohuslän, as in Scotland, depend on the price which the salters can pay for the herrings. In order to form some idea as to the prospects of such fisheries, one ought to know the average catch per boat in tons. To judge of the prospects of a certain method of fishing by the prices which are paid when only small quantities of herring are brought into the market, would be just as erroneous as to judge of the prospects of the potato harvest from the prices which early in the season are paid in the city markets for new potatoes. It should be borne in mind that both herring and potatoes are the poor man's food, and that the large quantity of each of these articles makes it necessary for them to be sold cheap. It is highly characteristic of Professor Smitt's method of proving his assertions that he does not venture to state the quantity of herring caught by each boat, or by the one which caught most. All he gives is the excessively high price paid for herring when they are scarce. If the herring fisheries on the

coast of Bohuslän are to be carried on with floating nets, care should be taken to bring about the conditions on which the success of such fisheries will absolutely depend; and, thanks to Professor Smitt's uncalled-for interference with the Bohuslän sea-fisheries, this is either delayed or hindered. Owing to the Berlin Exposition and utterly resultless experiments with floating nets, the introduction of improved methods of preparing herrings, which was essential for the future success of the Bohuslän herring industries, had to be deferred. We have also to thank the professor that special laws for these industries, by which in time they might have been properly regulated, are still among the things to be desired.

As the new settler first cultivates the most promising part of his ground, and afterwards, when he is better prepared, the poor ground, so also does the fisherman in choosing the method for a new fishery. The easy, cheap, and promising modes of fishing are taken in hand first, and the less promising or more expensive methods are only applied in proportion as the fisheries begin to pay better. Less profitable apparatus must also, when the fisheries again become more productive, give way before profitable apparatus, which principally determines the prices during the entire fisheries. It thus happened in the eighteenth century in Bohuslän, when the fishermen who came to our coast from Schoner had soon to exchange their nets for those in general use on the Bohuslän coast, as otherwise their fisheries would hardly have paid them for their trouble. As Professor Smitt has abandoned his former assertion relative to the unsuitableness for salting of the herring caught according to the present method, and has voluntarily declared that the Bohuslän herrings, as caught at present, may "by an improved method of preparing reach such a degree of excellence as to fetch the same price which is now paid for Scotch herring." It seems evident that there is little prospect that herring fisheries, carried on with floating nets on a large scale, will, in the near future, be able to compete with the present method, which insures a much larger catch. As it has been stated that the most successful Bohuslän boat, which employed a floating net, had been able to sell small quantities of herring by the score, to the amount of 1,880 crowns [\$503.84], we will, for comparison's sake, here state the fact that last winter the Marstrand fishermen sold their rich catch from stationary nets by the boat-load or by the barrel, and realized about 23,000 crowns [\$6,164]. (A common Bohuslän net, with boats and everything belonging to it, costs from 2,600 to 3,000 crowns [\$696.80 to \$804], according to size, whilst the floating-net boat, according to the Government standard, cost, as Professor Smitt tells us, 7,350 crowns [\$1,969.80].) Even richer catches than those mentioned above are reported as having been made with the American purse-seine (*snörpvad*), an apparatus which can be used both in the coast waters and farther out at sea, and the practical character of which has made it impossible to introduce floating nets in America. But no improvements in the methods of fish-

ing or fishing apparatus find favor in the sight of Professor Smitt, who is a lover of antiquities.

That Professor Smitt now, in contradiction to his assertion made in 1878, feels compelled to agree with me in my views regarding the spawning-season of the Bohuslän sea herring, which I propounded as early as 1874, is hereby gratefully acknowledged, although the professor is not able to increase our knowledge as regards either place or time of spawning by any facts gained by his own personal observations.

With regard to the exhibition of scientific collections at a fishery exposition, it must be said that they are of some use, as they will throw some light on the entire fishing industries of a country. This does not, however, apply to portions of the Swedish exhibit, such as the collection made during the voyage of the Vega, and other collections, which have not the remotest connection with our fisheries, but which require an increase of space and an increased expense. When we read in the papers that it is proposed to exhibit "fishing tshukts" and "five skeletons of whales, of kinds which are so rare that they are not even found in the British Museum," &c., this cannot fail to awaken some disapproval, mixed with distrust, as to the object of our representation at the exposition, and regarding the manner in which the directors of our museums fulfill their duties.

The sum appropriated by the lower house of the Swedish Parliament is, considering the extent of our fisheries, the population of our country, and our financial resources, larger, comparatively, than that which, according to Professor Smitt, has been appropriated by the United States of America for the same purpose.

With regard to the appropriation for the exposition, Professor Smitt has evidently not been able to find sufficient reason why Sweden's small fisheries require so much larger an appropriation than Norway's extensive fisheries. When he objects to my not counting with the sums appropriated by Sweden for the fisheries the extra appropriations, the ones granted by the upper house and by the "economical society," and, moreover, lays special stress on the circumstance that among these extra appropriations is the sum granted by the herring industries of Bohuslän, he must certainly know very well that even counting in these amounts does not materially change the disproportion between the amounts granted for the fisheries direct and those appropriated for the representation of Sweden at the fishery exposition, a disproportion which seems all the greater when we compare our circumstances with those of Norway. It should also be remembered that among the sums appropriated for the fisheries in Norway for 1882-'83 I have not counted the extra appropriation of 12,000 crowns [\$3,216], which was asked to aid fishermen and men engaged in the fishing industries to travel to foreign countries, and that I have not given the maximum amount of the Norwegian appropriation, as given in the *Norsk Fiskeritidende*. As regards the small grants which I have enjoyed for nine years for carrying on my

investigations of the herring fisheries, I must candidly state that they have not been large enough to cover my expenses, but that I have been obliged every year to put my hand in my own pocket and make considerable sacrifices. Why does not Professor Smitt, who is backed by the Government and its powerful aid, count my expenses among the sums appropriated? Why does he hint, in utter disregard of actual facts, that I had every year enjoyed "a very considerable subsidy" whilst he takes good care not to mention the fact that since the summer of 1880 he has, annually, enjoyed a much larger Government subsidy for his work in connection with the fisheries? Professor Smitt's disregard of facts certainly does not tend to further his cause.

STOCKHOLM, *March 24, 1883.*

30.—THE INSTRUCTION OF NAVAL MIDSHIPMEN IN TAXIDERMY, ICHTHYOLOGY, ETC., AT THE UNITED STATES NATIONAL MUSEUM AND ON BOARD THE STEAMERS OF THE UNITED STATES FISH COMMISSION.

By Prof. SPENCER F. BAIRD.

In the American naval service the cadets start with four years' study in the Naval Academy at Annapolis. They are then sent to sea for two years, and do not obtain the rank of midshipman until they have passed an examination at the end of this period, or of six years after their entrance. They are then sent to sea again, or placed on waiting orders.

About a year ago the Navy Department made inquiry of the Smithsonian Institution as to its willingness to receive six recently appointed midshipmen, and assign them to some duty in the Institution or National Museum that would enable them to take advantage of any opportunities they might have for natural history research during their future cruises, with the understanding that they were to be treated in every way as regular employés of the Institution and required to do regular work.

The proposition was responded to favorably, and the six persons were assigned respectively to curators of ichthyology, marine invertebrates, ethnology, paleontology, geology, and mineralogy. The experiment somewhat unexpectedly proved to be a very great success. The young gentlemen devoted themselves earnestly to their work and became proficient in it.

A course of special instruction was given in regard to the taxidermy of mammals and birds, which all the midshipmen attended with great diligence, becoming quite expert in the preparation of skeletons and in mounting excellent skins of mammals and birds.

The two assigned to ichthyology and marine invertebrates were detailed for service on board the Fish Commission steamer *Fish Hawk*, where they had ample opportunity of becoming familiar with collecting at sea, as also with the methods and appliances of deep-sea dredging,●