

XXVIII.—THE FUTURE OF THE HERRING FISHERIES ON THE COAST OF BOHUSLÄN.*

BY AXEL VILHELM LJUNGMAN.

As it is well known that the different Bohuslän herring periods resemble each other, in that they show regular changes in the course of the fisheries, caused by a change of the locality where the herring approach the coast and by a change of time when this takes place, and as, therefore, it is possible to judge with some degree of certainty, from the course of the fisheries during a preceding period, how the course will be during a coming period, I will endeavor to give some such prognostications. Unfortunately, we possess no exact and full data as regards the close of any of the former herring periods, but those which we have from the last century are sufficient to serve as a guide. In a report on the herring fisheries in 1758 we read, relative to the place where the fisheries were carried on, the following: "In 1747 and 1748 a large number of herring began to approach the northern portion of the coast of Bohuslän; later they went farther south, as far as Marstrand, and in 1752 they made their appearance near Gothenburg;" and in a report dated April 22, 1761, it is stated that "from the year 1750 (?) the herring were principally found on the southern portion of the coast of Bohuslän, between Gothenburg and Marstrand, and about 3 or 4 miles north of the last-mentioned town." From a report for 1764 it appears that "in autumn the herring were principally found on both sides of the island of Marstrand, and some years in great quantities near the Gothenburg coast, and even as far south as the coast of the province of Halland;" but that "in autumn and towards winter they went farther north, as far as the Gullmars fiord, and occasionally up to the Norwegian boundary line."

From a pamphlet published in 1765, and entitled "The necessity for appointing a director of fisheries in the districts of Bohus and Gothenburg," it appears that the principal place of sojourn of the herring was the central and southern portion of the coast of Bohuslän, which is also confirmed by the so-called "Oil-refuse Act" and numerous other reports. If we compare these data with those gathered during the pres-

* "*Det förestående sillfisket i Bohuslänska skärgården.*" Gothenburg, 1883. Translated from the Swedish by HERMAN JACOBSON.

ent herring period, it will be found that during the winter of 1877-'78 the herring fisheries commenced in the northern portion of the coast of Bohuslän (principally in the neighborhood of Norrviken); and that during the winter of 1881-'82 they went as far south as Marstrand, and during last winter (1882-'83) as far south as the northern portion of the Gothenburg coast; and, therefore, it is to be expected that during the approaching fisheries the herring will in still larger number visit the last-mentioned coast, although probably they will not, as in 1752, enter the canals of the Gothenburg Harbor and be caught as far inland as Tingstad. There is, therefore, reasonable hope that the herring, during the approaching portion of the herring period, will be found principally on the central and southern coast, and that later during the period they will again show a decided preference for the coast north of Marstrand. Towards the end of the year, and about the beginning of the new year, however, it is probable that the northern part of the coast will also be visited by herring.

As regards the time of the year when the herring begin to approach the coast in considerable numbers, it appears that during the first fifteen years of a herring period they came a little earlier every year, and that after the fifteenth year they gradually came later and later. According to the "Oil-refuse Act," the fisheries, which during the first part of the period were carried on with nets, began as follows:

Year.	Day of beginning.	Year.	Day of beginning.	Year.	Day of beginning.
1753.....	Sept. 29	1764.....	Sept. 7	1775.....	Not given.
1754.....	Sept. 16	1765.....	Sept. 10	1776.....	Not given.
1755.....	Sept. 11	1766.....	Sept. 9	1777.....	Not given.
1756.....	Sept. 22	1767.....	Sept. 25	1778.....	Nov. 4
1757.....	Sept. 3	1768.....	Oct. 5	1779.....	Oct. 24
1758.....	Sept. 9	1769.....	Oct. 3	1780.....	Not given.
1759.....	Aug. 23	1770.....	Oct. 4	1781.....	Oct. 24
1760.....	Aug. 20	1771.....	Oct. 17	1782.....	Not given.
1761.....	Sept. 8	1772.....	Oct. 14	1783.....	Nov. 4
1762.....	Aug. 16	1773.....	Oct. 14		
1763.....	Aug. 29	1774.....	Not given.		

For the first six years of the period we have no exact data, but probably in the beginning of a period the fisheries have always been somewhat uncertain, and have gradually begun earlier from year to year. During the present period rich fisheries on the coast began in 1877 during the first half of December, in 1878 and 1879 about Christmas, in 1880 in the beginning of December, in 1881 about the middle of November, and in 1882 in the beginning of November (the herring having already begun to approach the coast towards the end of October). If the course of the fisheries is nearly the same during the present as during the last period, it may be expected that during the coming autumn (1883) they will begin in October, possibly towards the end of September, and that during the period from 1889 to 1893 they will approach the coast in August, and after that time in September, and continue to come about that time till the year 1897 or 1898, when they

will gradually come later and later. From the above data it appears, however, that the approach of the herring to the coast does by no means take place regularly at the exact time at which it was expected, but that there are exceptions, amounting to two and sometimes to three weeks, probably caused by irregularities in the state of the weather. As long as meteorology and hydrology are in their present undeveloped condition, it is impossible to give an absolutely correct explanation of these irregularities in the course of the fisheries, or to give any reliable hints to the fishermen. Some light, however, might be thrown on the subject by judicious experiments; and it is therefore much to be regretted that what has been done in this direction by Superintendents Smitt and Von Yhlen has been done in such an utterly unsystematic way as to yield no satisfactory results. It is necessary for the fishermen to make their calculations beforehand, and so long as no reliable scientific data were furnished they had to be satisfied with the historical data as a basis for such calculations.

The exceptional condition of the weather during last summer, and the very unexpected course of the herring fisheries on the east coast of Scotland (the northeasterly portion of the coast having the richest fisheries, while during the preceding ten years this condition of affairs was entirely reversed), have doubtless tended to increase the uncertainty regarding this year's fisheries, more especially as we have no data from former periods to guide us in this matter. We hope for the best and look for early and rich fisheries.

Further on in the herring period, when the herring approach the coast as early as August and the first half of September and spawn there, it may be expected (to judge from the experience of the last century) that a larger number of so-called *inmat* herring will be caught on the inner coast than are now caught with floating nets on the outer coast. These *inmat* herring, which spawn in autumn, must not be confounded with the somewhat larger herring which spawn towards the end of winter or the beginning of spring, and which are caught much later in autumn and in winter, principally on the northern coast of Bohuslän, where they might form the object of much more extensive fisheries than is the case at the present time, if the purse-seine was more generally introduced.

As regards the undoubted influence of the weather on the course of the fisheries and on their yield, the proposition has been made to introduce floating-nets, with the view to carrying on the fisheries advantageously and on a large scale during a larger portion of the year than hitherto, and without being influenced by the condition of the weather, as is the case now when our common herring nets are used. There is a good deal of truth in this, as during autumn the weather is often such as to cause the fisheries to begin later than had been expected, and to enable the fishermen to catch herring with floating-nets some distance from the coast, as was done in the beginning of last autumn. The state

of the weather can, therefore, be of such a kind that fisheries with floating-nets may commence several weeks sooner than the fisheries near the coast; but strong west winds may prevent floating-net fisheries of any importance from taking place before the fisheries begin near the coast. This uncertainty, which during the approaching portion of the herring period, when the herring will come to the coast a little earlier every year, will make itself particularly felt, will certainly render futile all attempts to induce the Bohuslän fishermen to adopt Professor Smitt's proposition to exchange the common nets for floating-nets. Floating-nets certainly yield a much larger percentage of large herring than our common herring nets; but this advantage is considerably diminished during that portion of the herring period when the herring, independent of the condition of the weather, approach the coast for the purpose of spawning, and when the fisheries carried on with our common herring nets yield a large percentage of so-called *maties* herring. It has been said that floating-nets would not catch the spent herring nor the smaller so-called "medium herring," but the experience of Scotland utterly disproves this assertion; and it may be said that the floating-net is the apparatus best adapted to catch the spent herring, which, as is well known, can not be caught with our common herring nets.

As regards the percentage of *inmat* herring which may reasonably be expected from the floating-net fisheries conducted on a large scale off the coast of Bohuslän, we may state, by way of illustration and in order to give some basis for an estimate, that in Fraserburgh, the principal fishing station in Scotland, the following number of barrels were stamped with the crown stamp during the year 1881: 54,498½ "fulls," 43,048 "maties," and 15,910 "spents," or considerably more than half of the number of herring of the lower grades, which number, of course, would have been larger if the herring which were not stamped could have been taken into account. There is no reason to suppose that there should be on the coast of Bohuslän more "maties" than on the east coast of Scotland, particularly as the fisheries on the inner coast of Bohuslän show that the number of so-called "medium" herring and of large "spents" is enormous. These fish come from the sea and enter the fiords, and they certainly might be caught with floating-nets on a large scale in the Skager Rack just as well as on the east coast of Scotland. Fishermen using floating-nets should here, as in Scotland, be glad to catch these small herring, which make the fisheries more profitable. The character of the fish caught during the same season varies very considerably; one boat will catch only "maties" and another so-called "medium" herring or "spents." According to the Fish Trades Gazette, No. 5, p. 99, the average prices of these different kinds of herring, when bearing the stamp, on the east coast of Scotland, are as follows: "Fulls," 34 shillings; "maties," 24 shillings; and "spents," 25 shillings. A barrel of salt "fulls" has, therefore, less value than 2 barrels of the lower grades. For smoking or for use while fresh the *inmat*

herring offer far less advantages, as compared with the lower grades, than for salting. Whether we shall ever have floating-net fisheries on a large scale will depend on the yield as compared with the expenditure for buying and keeping the apparatus, the labor required, and the general advantages to the fishermen. They will, of course, choose the apparatus which in every respect offers them the greatest advantages.

In judging this question, which is of the utmost importance for the development of the Bohuslän coast fisheries, we should have due regard to the vast difference between fisheries on a large scale, whose yield is to a great extent prepared for exportation, and small fisheries, whose yield is principally consumed, either fresh or slightly smoked, near the fishing stations. It is an erroneous idea that a fishing apparatus or a method of fishing can be introduced with us to any advantage simply because one could obtain necessarily high prices for small quantities of herring sold in Gothenburg by the score at a time of the year when very few fresh herring are brought into the market. It would also be a mistake to draw comparisons between the price of herring, based on their actual value, when brought into the market in large quantities, and the fancy prices paid for herring when they are scarce, prices which are paid without any regard to the apparatus or method of fishing employed. It should also be remembered that because a certain way of earning a living is profitable in one locality it need not be the same in another where the natural conditions, the character of the population, and the facilities for selling are entirely different. Before introducing a new method of earning a living it should be ascertained whether all the necessary conditions of success are either found in the locality in question or can be furnished. Otherwise the mistakes of former times would only be repeated, and the means already possessed by the people, which with proper and careful use might yield good results, would be uselessly squandered. This has been the experience in Scotland and Bohuslän during the last century.

As attempts made during the last herring period to inaugurate fisheries on a large scale with floating nets on the Dutch plan proved failures, the royal fishery commission in 1770 [1870?] proposed that an attempt should be made to have floating-net fisheries on a small scale and with cheap apparatus. The same proposition was made somewhat later by Rev. Mr. Ekström, but without success. This proposition to use seines on the mackerel boats for catching a small quantity of herring during the light season of the year was again made by the author in 1880, as a desirable and comparatively harmless experiment; but this proposition is entirely different from the one made by Professor Smitt to carry on the Bohuslän herring-fisheries exclusively with floating-nets, as on the east coast of Scotland, instead of with seines, which, strange to say, he thinks should be entirely prohibited. The floating-net fisheries will prove undesirable only when they, like the fixed nets on the west coast of Nor-

way, shall be used to such an extent as to prevent the use of the more advantageous net called the purse-seine (*snörpvad*).

We shall now have to inquire what are the prospects of introducing floating-net fisheries on a large scale, and what would be the effect of their introduction on the coast of Bohuslän. With the view to answering this question we shall have to make a brief statement showing the relative cost of the different apparatus, the amount of labor required, and the relative yield, and in doing this we will institute a comparison between the floating-net fisheries on the east coast of Scotland and the Bohuslän seine fisheries.

The floating nets employed in the Scotch herring-fisheries represent a value of about 12,000,000 crowns [\$3,216,000], one-third of which sum must be counted every year for the wear and tear of these nets, while a number of seines with which fully as many herring might be caught would cost only about 1,000,000 crowns [\$268,000]. The value of the nets and boats employed in the Scotch herring-fisheries is more than 20,000,000 crowns [\$5,360,000], and the number of fishermen engaged in these fisheries is about 40,000; while on the coast of Bohuslän, during the best portion of the last herring period, scarcely 6,000 fishermen, with nets and boats whose value (according to modern prices) would be only about 1,250,000 crowns [\$335,000], during a small portion of the year would catch a larger quantity of herring than has ever been caught in Scotland during the longer portion of the year when the Scotch herring-fisheries are going on. The maximum annual yield of the Bohuslän fisheries during the last herring period was about 2,000,000 barrels (1 barrel = 1.65 hectoliters and contains almost 44 gallons) of herring, while in Scotland the maximum annual yield has never exceeded 1,750,000 barrels. The sums expended in buying and keeping in repair the material of the Scotch floating-net fisheries are so enormous that the Bohuslän fishermen could never succeed, even during an entire herring period, in raising them. With the means at their command they could get only a small quantity of floating-nets, and the slight increase in the yield of the fisheries resulting therefrom would hardly justify the change. The question of expense, therefore, principally stands in the way of a change from our nets to the Scotch floating-nets. A first-class Scotch floating-net boat, fully equipped, costs (see British Fisheries Directory, p. 193) more than 9,000 crowns [\$2,412], or at least as much as three sets of Bohuslän nets and boats. A Scotch floating-net boat requires a crew of 6 or 8 men, while an entire set of Bohuslän boats only requires from 12 to 16 men.

It would be a mistake to think that floating-net fisheries could be successfully managed on a large scale on the coast of Bohuslän with a smaller number of floating-nets, fewer boats, and fewer men than on the east coast of Scotland. If floating-net fisheries on a large scale are to pay, they must be carried on with sufficient material and with a sufficient number of men. Three men will never be able to haul in a set of

Scotch floating-nets filled with herring, and any one making such an assertion simply shows his entire ignorance of these fisheries. The large Dutch and English floating-net boats generally have a larger crew (the boats used in the great Dutch fisheries have 14 or 15, and the Yarmouth boats have from 9 to 12 men), but, in spite of the greater number of men they often find it very difficult, especially in bad weather, or when the catch is unusually large, to haul in the floating-nets.

The average quantity of herring caught by the boats engaged in the fisheries on the east coast of Scotland during the exceptionally favorable year 1882 was as follows:

Locality.	Boats.	Barrels per boat.	Locality.	Boats.	Barrels per boat.
At Wick	600	116½	At Fraserburgh	900	155
At Lybster	157	11	At Peterhead	822	151
At Holmsdale	160	24½	At Aberdeen	482	166½
At Buckie	62	73½	At Montrose	160	173½
At Macduff	66	148	At Eyemouth	381	157

At most of the smaller fishing stations, not given in the above statement, the average quantity of herring caught was less than 100 barrels. In average years or in unfavorable years the figures are of course much lower than those given above; but even at best they are too low to induce a Bohuslän fisherman to make a change to the Scotch method. The reason why the Scotch fishermen can continue their fisheries even after such a small yield as in 1882 at Lybster is that they make a good living either by catching herring at other seasons of the year in other localities than the east coast of Scotland, or by engaging in other fisheries. If we look at the difference in the quantity of fish caught by boats belonging to the same fishing station, we shall find that it is still greater than the difference in the quantities caught at the different stations, for floating-net fisheries in great measure resemble a game of chance.

If we now compare, on the basis of the above data, the Scotch floating-net fisheries and our seine fisheries, as regards their economical advantage, we shall find that for catching a certain quantity of herring with floating-nets near the Scotch coast there are needed at least seven times as many men and an apparatus costing eighteen times as much as is needed on the coast of Bohuslän for catching the same quantity of herring. This also explains why the Bohuslän herring-fisheries did not amount to much during the herring period of the seventeenth century, for during that period the fisheries were exclusively carried on with large nets resembling the seines, which required a very large number of fishermen but which yielded only a small quantity of fish. Only with the seines employed in Bohuslän at the present time is it possible to make big catches with a small number of fishermen and cheap apparatus. If in making this comparison we also take into account the difference in

the total value of the fish caught, and the different percentage of "full" herring among them, our nets will be found far superior; for, as has been said above, the difference in the character of the fish caught is not by any means sufficiently great to correspond to the difference between the quantity of the fish and the cost of the material. If the sale of fish was better arranged, the Bohuslän fishermen, with their cheap material, would derive greater profits from their fisheries than the Scotch do from theirs.

The expensive material, the uncertain and occasionally very small yield, the greater risk of losing both material and life, the short fishing season on the coast of Bohuslän, and the unfavorable natural conditions (such as the great depth of the water and the prevailing land winds), and, finally, the strong competition with the common herring-nets and the so-called *snörpvader* (purse-seines), will always prevent the introduction on a large scale of apparatus and methods like the Scotch. A fisherman will hardly content himself with smaller yields, a smaller income, and fewer chances to gain a competency simply to prove the truth of Professor Smitt's assertion that the more uncertain and less productive method of fishing would be more advantageous in the distant future. It should likewise be remembered that the Bohuslän fishermen are, as a general rule, not like the fishermen of Great Britain and the Netherlands, practiced in the herring fisheries from their earliest youth, but that, on the contrary, they become herring fishermen merely to earn some money during a short portion of the year, after which they return to their proper vocations as soon as the herring fisheries are over. This is a necessary consequence of the secular periodicity of the Bohuslän herring-fisheries, and it is impossible to make a change in this respect. The inconveniences attending the fisheries are numerous enough, even if the coast population does not, as Professor Smitt proposes, leave its principal pursuit, agriculture, as early as the middle of August, in order to engage in large floating-net fisheries on the Scotch plan. Any one who will impartially examine our circumstances will find that our population acts wisely in first giving attention to its principal pursuit, and after that has been done (late in autumn) in engaging in the herring fisheries, and employing a method and apparatus which promises a better income than the expensive apparatus proposed by Professor Smitt.

As regards the often-repeated assertion that large permanent coast fisheries like the Scotch could be established in the eastern portion of Skager Rack by fishing with floating-nets instead of with seines, both experience and science have completely refuted it, and have proved that the sea-herring visit the coast of Bohuslän at secular periods, and that peculiar natural conditions, differing very much from those found in the North Sea, render it utterly impossible permanently to establish such rich coast fisheries in the Eastern Skager Rack.

If we consider the experience from the Bohuslän herring period of the

seventeenth century, and the data given above relative to the equipment and labor needed for the two methods under discussion and their respective results, we shall soon find that those persons who have proposed that the Bohuslän herring fisheries should be conducted on a large scale, with floating-nets instead of with seines, can hardly have understood the full bearing of their proposition, for it is so utterly unreasonable that no thoughtful person, acquainted with the circumstances of the case, could ever have made it.

As it is desirable, however, that the Bohuslän herring-fisheries should be still further developed by the introduction of other apparatus than our common herring-seines, it has, for very good reasons, been proposed to introduce as generally as possible the American purse-seine (*snörpvad*) as the first step most suitable toward the improvement of our fisheries. This excellent apparatus can be used with equal advantage near the coast and at a distance from it, and for catching different kinds of fish which go in schools (such as mackerel, herring, and cod); while our nets will catch only fish having a size corresponding to the size of the meshes.

The purse-seine, which possesses all the good qualities of the other seines, has this additional advantage, that, as it can be used without a landing-place, there is no danger of infringing upon the rights of the owners of the coast or of interfering with other nets. It, moreover, insures more certain and better catches, as the valuable *inmat* herring cannot, as a general rule, be caught to any great extent with our common seines. The assertions that the purse-seine could only be used when the fish are near the surface of the water, and that the quality of the herring caught in it could never be as fine as of those caught in a floating-net, are entirely erroneous, and are mere inventions of the zealous defenders of the floating-net. The purse-seine, used at the same time and in the same locality as a floating-net, will catch exactly the same kind of fish, but in a less damaged condition. As regards the rumors spread on the coast of Bohuslän that the use of the purse-seine is to be prohibited, we may state authoritatively that there is no foundation at all for them.

The question of introducing this excellent apparatus has been raised also in Scotland, and at the suggestion of Mr. Birkbeck, M. P., an American fishing schooner is to be hired to sail along the coast of Scotland and instruct the fishermen in the use of the purse-seine. This is done in a country whose fishing industry is acknowledged to be the most advanced of any country. In Sweden, however, a professor of the Academy of Sciences is commissioned to write a treatise recommending the use of the floating-net and condemning the purse-seine, which treatise, based on erroneous information and defective knowledge of the subject, is published in the official journal of the kingdom and thence has made its way through our entire press.

The purse-seine was introduced into Europe by Mr. Andersen, of Aalesund, Norway, the Norwegian commissioner at the Philadelphia Ex-

hibition of 1876, and by Mr. Wallem, a newspaper editor of Bergen. From Norway the purse-seine was brought to Bohuslän, where several newspaper articles directed public attention to it, and caused several persons to order this apparatus, which soon, owing to the good results obtained with it, found more general favor. In the last official report on the Bohuslän sea-fisheries the following is said regarding this new apparatus:

"Purse-seine No. 1, from Öckerö, has caught fish to the value of 29,000 crowns [\$7,772], and the three other purse-seines which were received here in autumn caught fish to the value of 16,000, 6,000, and 3,500 crowns [\$4,288, \$1,608, and \$938], respectively. In consequence twenty more of these purse-seines have been ordered, some by the Fishery Association and some by private individuals."

If we take into consideration the circumstance that the above-mentioned large sums were received for fish sold by the boat-load, which under other conditions of sale might have brought a much higher price, and that our fishermen have had but little experience in the use of this apparatus, there ought to be no longer any doubt that the purse-seine is far more profitable than any other apparatus used in the herring fisheries. The object of the Bohuslän fishermen in engaging in the herring fisheries is to earn money, and they will, therefore, choose that apparatus which promises the largest income. The Bohuslän fishermen do not care in the least for the highly scientific theories promulgated by the Stockholm Academy, and all attempts to induce them to abandon an apparatus which has proved profitable will be futile. Professor Nilsson was fully aware of this, and declared openly that floating-nets could only be generally introduced at Bohuslän if the use of seines was prohibited. As there is no longer any talk of prohibiting the use of seines, the victory of this apparatus may be considered complete.

In developing the fishing industries it is impossible to do everything at once and to introduce every possible improvement at the same time; but the proper way is to follow a well-arranged plan, according to which new improvements will gradually and in a perfectly natural way gain ground. Such a step towards a wise development of our herring fisheries is the introduction of the purse-seine, as thereby not only our herring fisheries will be greatly furthered, but also our deep-sea fisheries will be saved from extinction, to which they are otherwise certainly doomed. The last official report on the Bohuslän sea fisheries can no longer conceal the sad facts, but makes the statement that the fishing fleet engaged in the bank fisheries in 1882 decreased by 22 vessels. The floating-net fisheries, on the other hand, as the experience of Germany and other countries teach us, do not form such an advantageous starting point for a new development of the sea fisheries. There is a great difference between endeavors to introduce an apparatus like the floating-net, whose use is uncertain and in which the fishermen have no confidence, and the attempts to make the use of the purse-seine more

general. The floating-net, moreover, can be used largely only at a considerable distance from the coast, and is thus much dependent on the weather, while the purse-seine can be used near the coast and under conditions that are more favorable and encouraging.

Purse-seine fisheries also have the great advantage that they teach the fishermen to seek the fish and to cross the sea in every direction with swift vessels, a pursuit which is admirably adapted to the character of our Bohuslän fishermen.

With regard to any plans for promoting the herring fisheries, it will at once become evident that the principal and foremost means for obtaining good catches will be to further and facilitate in every possible way the sale of herring, for only if a good market and high prices can be obtained for the fish is it possible properly to develop the fisheries. As it is impossible to dispose of, while fresh, the vast quantity of fish caught by our fishermen, the only way to dispose of them advantageously is to prepare the greater portion of them for the market. It will therefore be evident that it would be very imprudent at this juncture for the Government to introduce an apparatus which presupposes a ready market and a high degree of perfection in the manner of curing fish. Much might be learned in this respect from Scotland, the very country which some of our theorists imagine that they are imitating. In Scotland many and strenuous efforts were made and great sums of money were spent in order to establish herring fisheries on the Dutch plan, but all these endeavors proved futile; but since efforts were directed towards finding new markets for the herring, and towards preparing a first-class article, the fishing industries began to develop very rapidly and a new form of herring-fisheries peculiar to Scotland was developed on a truly national basis, and the Scotch herring-fisheries became the first of the world, as far as the total value of the fish is concerned.

What is needed, therefore, to promote the Bohuslän-herring fisheries is, first of all, to introduce the Scotch method of salting herring, and, secondly, to adopt the Scotch herring barrel. If this had been done, instead of having these innovations opposed for such a length of time by Mr. Von Yhlen, the Bohuslän herring industry would even now stand very high.