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29.—INJURIES TO THE FISHERIES IN THE BALTIC BY SEALS.*

By Mr. HINCKELMANN,

Royal Superintendent of Fisheries.

The constantly increasing number of seals on our Baltic coasts has become so serious a danger to our coast fisheries, that it appears high time to find ways and means to keep these injurious animals away from our shores. Ten or fifteen years ago, when our fishermen still underrated their destructiveness, and at best were amused to see one of them, it was hardly thought possible that these animals would one day endanger the fisheries on the coast of Sleswick-Holstein, where they formerly appeared only in small numbers and at places where there was not much chance of their injuring the fisheries.

Those fiords suffer most where cod fisheries are carried on with nets and bow-nets during the months of October, November, and December. The damage done to the fisheries by seals in Eckernförde and Neustadt alone is very considerable, as they frequently tear about a hundred neis in one day. Unfortunately the fishermen are very slow in making such cases public and bringing them to the knowledge of persons interested.

Hunting seals on our east coast has so far had little or no result. This sport offers too few attractions, for the seal when mortally wounded invariably sinks to the bottom, where, at least in deep water, it cannot be reached. It might be said that the purpose is fully answered if the seals are killed. But who will do this? There is no use in the fishermen carrying firearms, as they have often done, because they can engage in seal-hunting only in time left over from their proper employment. Moreover, firearms are rather in the way in a boat where fishing is being carried on, because there is constant danger that the crew will come in dangerous contact with these weapons. Seal-hunting from a boat is not very pleasant for sportsmen, because it can be done only in winter, and even then is very uncertain. An effective protection against seals, therefore, cannot be obtained in this way, and even the granting of rewards for killing them would not answer the purpose, because the huntsman can only in very rare cases prove that his shot has been successful, as the dead seal cannot be taken from the surface of the water, but sinks to the bottom.

* "*Schädigungen der Fischerei in der Ostsee durch Seehunde.*" From *Mittheilungen der Section des Deutschen Fischerei-Vereins für Küsten- und Hochsee-Fischerei*, Nos. 4 and 5, Berlin, April and May, 1886. Translated from the German by HERMAN JACOBSON.

Even if the fishermen should succeed in keeping these animals at bay with firearms, this would be possible only while they were working their nets in the fishing-grounds; but as soon as the boats were gone the seals would do as much injury as before. In favorable weather nets and bow-nets remain in the water from twenty-four to forty-eight hours before they are hauled in and the fish taken out, while in stormy weather four or five days may pass before a boat will venture out to haul in the nets. Such a period, when, owing to the power of the elements, fishing is at a standstill, is made good use of by the seals, so that after such pauses torn nets and half-devoured fish are found in the fishing-grounds instead of nets full of fish.

Such occurrences are exceedingly common during the season when the seals visit our coasts, and no one who has not seen the damage done to the fishing apparatus by the seals can have an adequate idea of the extent of this calamity, especially during last winter. Among the rest, a number of bow-nets for catching cod in the Neustadt Bay had been repeatedly torn to such a degree that it took weeks and a considerable outlay of money and labor to repair the damage.

In the neighborhood of the Schlei, where there were hundreds of flounder-nets, these were so badly injured by the seals that in a few weeks they had become useless. In the inner portion of the Eckernförde Bay nets and bow-nets (a particularly large number of the latter) had been injured by the seals to such a degree that when they were taken ashore to be dried they had many holes large enough for a man to creep through. In some cases the fishermen were compelled to stop fishing, although there were plenty of fish and the prices were high, simply because the seals had destroyed their apparatus. The cod fisheries by means of bow-nets have a still greater attraction for the seals than the fisheries with stationary nets, because in the meshes of the latter the fish hang quietly while they sport about freely in the bow-nets, and thereby attract the attention of their enemies.

Frequently seals will attack bow-nets filled with fish from the outside by tearing the sides and catching and devouring the fish which try to escape through the openings. But they also know how to find their way through the neck of the bow-net by advancing from one chamber to the other until they reach the fish in the last chamber. But as the last chamber of the bow-net has a narrower entrance than the first; it sometimes happens that the robber is caught and killed by the fishermen. On the whole, however, such cases are rare, because the bow-nets do not possess the necessary power of resistance required to hold the seals, which are armed with very sharp teeth.

It is not easy to answer the question as to how the evil can best be remedied, for even the use of poisoned fish as bait (apart from the danger connected with this method) would not be of any use, because the seals are very choice in the selection of their food, and would only take to the dead bait if there was absolutely no chance to get fresh fish,

a case which will hardly ever occur in the open sea. It might be recommended to make an experiment with bow-nets made of galvanized-iron wire, painted brown, like the color of the bow-nets usually employed. The shape of these bow-nets should be that of the common bow-nets used for catching cod, but the entrances to the different chambers should be so arranged as to make it easy for the seals to slip in. Live fish—especially cod, of which the seals are very fond—might, if necessary, be put in these bow-nets when they are set; but there would probably be no lack of bait to attract the seals, as even in wire bow-nets plenty of fish are caught. Such an experiment, which should be made in places frequented by seals, would not involve any great expense, and would certainly be a step toward solving the question as to the best way of protecting the fishermen against the seals.

The chief cause why the seals infest our fishing-grounds in such large numbers must, however, be sought in the circumstance that in many places they enjoy full protection, so that sportsmen and visitors to watering-places may have a chance to follow the sport of seal-hunting. Near the Island of Rügen certain districts are rented out to seal-hunters, and the persons owning these districts take good care that the game shall not decrease, but rather increase, in number.

KIEL, GERMANY, *April*, 1886.

30.—REPORT ON THE SHAD WORK OF THE STEAMER FISH HAWK DURING THE SEASON OF 1887.

By Mate JAMES A. SMITH, U. S. N.

[Abstract.]

The shad work prosecuted by the steamer Fish Hawk during the season of 1887 covered the period from May 2 to 26, inclusive.

On May 2 the ship took a position on the east side of Chesapeake Bay and near the mouth of North East River, adjacent to the fishing shores and gilliers in that vicinity, and began the work of hatching.

On May 3 arrangements were made with the proprietors of the fishing shores and the gilliers to pay them for all impregnated shad eggs, and the spawn-takers began by tending Carpenter's Point, Red Bank, and Roche's fishing shores. As many gilliers as could be conveniently be visited by the crew of the vessel.

On May 4 the ship was visited and inspected by the Assistant Commissioner, who gave instructions for the vessel to remain on this station until further orders, and the work of collecting, hatching, depositing, and transferring was carried on until the end of the season.

On May 6, all of the cones and hatching jars being full, 1,130,000 eggs were transferred to Battery Station. The next day, spawn being plentiful, 3,157,000 impregnated shad eggs were deposited.

On May 8, spawn still being collected in great numbers, the outside hatching cylinders were put in operation and 220,000 eggs were placed