

VIII.—THE SARDINE FISHERIES.

There will be but few of our readers who do not know the fish called "*Sardine*," or at least but few who have never seen a sardine-box. Empty sardine-boxes are met everywhere, even among people who have never tasted a sardine. These small boxes, made of thin tin, are used in many different ways, and people will keep them for various purposes. For the benefit of those of our readers who do not know the sardine or sardel, we would state that they are a kind of herring which somewhat resembles our common sprat, and which in large numbers is caught in the Mediterranean and on the west coast of France. Frenchmen first commenced to put up these small herring in oil and to export them to other countries as a great delicacy, thereby deriving a considerable revenue from their sardine fisheries. It may interest our readers to learn something respecting these fisheries, and we therefore give the following information, principally derived from a French journal.

The importance of the sardine fisheries will become evident from the fact that they employ 25,000 to 30,000 fishermen during seven months in the year; the number of boats employed in these fisheries is also very large, as a boat's crew is composed of 4 men and 1 boy. The preparation of the sardines requires a similar number of persons. In 1875 a single fishing village prepared 2,650,000 pounds sardines in oil and as many pounds of salt sardines, called in the interior of France fresh sardines.

The fishing-boats are 20 feet long, with square sterns, and sharp sheer forward, which makes them fast sailers, but crank. They have two masts leaning slightly backward, and two square lugger-sails of considerable size, so that the slightest breeze carries them through the waves.

The nets have no weights below. They are 30 to 45 yards long and 9 to 12 yards deep, are made of very fine twine, and have such narrow meshes that the sardines can get their heads in and be caught by the gills. The buoy-line has cork floats, which keep the net near the surface of the water. Every net has its own peculiar nickname, "Fool them," "Greedy-guts," &c., by which names they are invariably known among the fishermen.

In the sardine fisheries the bait is of much greater importance than

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the net. As bait codfish roe is used, which mostly comes from Norway, and is salted down in barrels. Norway annually exports about 35,000 tons of codfish roe, at an average price of 36 crowns (\$9.64) per ton. When the roe is to be used as bait it is soaked and stirred in water and mixed with sand, so as to make it sink quicker when thrown into the sea.

Various signs indicate the approach of the sardines. Floating bunches of algæ are a good indication. The experienced fishermen can also recognize the approach of the sardines by the peculiar odor caused by the oil flowing from the sardines when they are devoured by fish of prey. But birds are a particularly certain indication of the approach of the sardines. When the cormorant scarcely touches the water with its bill it is a sign that the sardines are near the surface of the water, and when the terns descend straight, with their wings close to the body, the sardines are deeper in the water.

The sails are now taken in and the nets are set, whilst the roe is thrown into the sea by the first mate. If he is successful in making the sardines rise (move from the deep water toward the surface), a greenish shimmer is noticed in the furrows of the waves. The roe is then cast out more plentifully, and numberless schools of fish may be seen near the nets. The sardines move rapidly backwards and forwards and make a rush at the bait, fighting for it among themselves, and are thus caught by the treacherous net, which gradually grows heavy from the weight of the fish. The nets are now hauled in, the fish are taken out of the meshes and thrown into the hold, and the boat returns to the shore.

In former times it was no rare occurrence for a boat to catch in a single trip 12, 15, and even 20,000 sardines. Nowadays they rarely catch more than 5,000 to 6,000 sardines in a single trip. The yield of the fisheries varies not only from one year to the other, but also between different points of the coast, even if close together. No special reason can be assigned for this. People have endeavored to explain this phenomenon by accidental changes in the current of warm water which comes from the equator and runs all along the northwest coast of France. Migratory fish like this warm current and follow it in all its changes of direction. It is not astonishing that the fish do not approach the coast in large numbers when strong winds continue to blow from one direction for any length of time and force the current to assume another course, thus making the water near the coast cold instead of warm.

The sardine-fishers generally return between six and ten o'clock in the morning. The scene at that time is very animated. When the time approaches for the fishermen's return, people hasten towards the coast from all directions, and whilst the crowd gathers on the shore the sardine fleet appears on the horizon like a swarm of giant birds, whose white and brown wings glide along the surface of the waters.

The boats come as near the shore as the depth of the water will allow. At the moment when they are about to cast anchor the scene is particularly lively. Hundreds of boats containing fish-dealers of both sexes and agents of the factories are engaged in an eager race to reach the fishing boats. Some people roll up their pants or gather up their dresses and boldly step into the water, whilst others take a complete bath.

After the price has been fixed the fish are gathered in baskets which hold about 500 fish each. The bearers generally dip the baskets a few times in the water so as to make the fish look fresh, and carry them up to the shore, where they are salted if destined to be eaten immediately. During the fishing season sardines take the place of money and are not refused by any one. Carriers and other laborers are paid in sardines, and it is said to be a common sight to see a child go into a store, buy some candy, and pay for it with two or three sardines.

Some factories have their own fishing-vessels, others have a contract with some fishermen to supply them regularly with sardines, whilst some only buy their fish whenever they need them. These factories only take sardines which are very fresh, and which have not been salted in the least. As soon as the fish are received at the factory they are immediately prepared; women cut off the heads of the fish, clean them, and lay them side by side on flat stones, which are thinly covered with salt. This is called the "first drying." Whilst the fish lie on these stones for some time, enormous boilers with the finest olive-oil are placed over the fire, and as soon as the oil boils the sardines are put, by layers, in wire baskets. These baskets are dipped into the boiling oil, and are then placed on frames to let the oil drip off. When the fish have become tolerably dry, they are taken into the drying-rooms, where they are exposed to the sea air, and where they remain a longer or shorter time, according to the condition of the atmosphere. They are thereupon sorted, the largest being used for select sardines.

The packing is done very carefully; after the sardines are put in the boxes, they are placed under an oil tank where fresh oil is constantly filled in. At last the lid is closed. This must be done very carefully, as the slightest break or hole, invisible to the naked eye, is apt to spoil the contents of a box. To ascertain that the boxes are properly closed, they are for a few seconds put in boiling water. Those boxes which are not well closed will bulge out; and in that case they are cut open, the fish are taken out and placed in another box. After the boxes have received the factory mark they are ready for the market.

