

14.—SEA FISHERIES OF FRANCE AND ALGERIA IN 1885.*

[Abstracted from the report to the minister of marine and the colonies.]

FRANCE.

General statements.—During the year 1885 there were engaged in the fisheries 23,877 vessels or boats, with a capacity of 160,299 tons, and manned by 85,915 registered sailors. To these should be added 338 Italian fishing boats, carrying 764 tons and manned by 1,094 men, which were engaged in fishing on the coast of the fifth maritime district (Toulon). Also 57,088 persons (men, women, and children) engaged in fishing on foot from the shore. These figures, as compared with those for 1884, show a decrease of 60 vessels, 2,225 tons, and 1,268 men.

On the other hand, the value in silver of the products of the fisheries amounted to 92,736,585 francs† [\$17,898,161], showing an increase of 4,775,461 francs [\$921,664] over that of 1884, as is shown in Table I. This increase is particularly noticeable in the cod and sardine fisheries, while there was a considerable falling off in the herring fishery and the fisheries for those kinds designated as "other fish."

The products of the cod fisheries at Newfoundland and Iceland, and of the herring, mackerel, and anchovy fisheries, as well as of all those designated as "other fish," amounted in 1885 to 187,853,359 kilograms [414,141,515 pounds], against 149,661,099 kilograms [329,942,859 pounds] in 1884, showing an increase in 1885 of 38,192,260 kilograms [84,198,656 pounds]. There was also an increase in 1885 of 82,258,815 sardines, 7,302,022 oysters, 52,366 hectoliters [148,196 bushels] of mussels, 69,218 hectoliters [195,887 bushels] of other shell-fish, and 205,381 kilograms [452,783 pounds] of shrimps; while there was a decrease of 131,816 crustaceans (lobsters, &c.).

On December 31, 1885, there were along the coast 48,621 fishery establishments, occupying an area of more than 13,879 hectares [34,295 acres], and employing 49,068 persons.

Cod fisheries.—The fishing schooners fitted out in the French colony of St. Pierre and Miquelon, the number of which in 1885 was 182, worked especially on Banquereau, where cod were found in great abundance; while the vessels sent from France to fish on the Newfoundland banks also made a good catch.

* "Statistique des pêches maritimes et de l'ostréiculture pour l'année 1885." Paris, 1887. Translated from the French by H. P. JERRELL. For a corresponding article for 1884, see F. C. Bulletin for 1886, pages 219 and 305.

† Throughout this article reductions have been made according to the following equivalents: 1 franc = 19.3 cents; 1 kilogram = 2.2046 pounds; 1 hectoliter = 2.83 United States bushels; 1 cubic meter = 35.31 cubic feet; and 1 hectare = 2.471 acres.

The first vessels for the season from France for the Iceland cod fishery left during the latter part of February, but the most of the fleet did not leave till the first part of March. The results of the fishery on the east and west coasts of Iceland show a marked difference.

Vessels on the west coast began operations near Torlak with fair results. In May and June cod of good size were found very abundant at Sneefield and Brede Bay. In the following months the fishermen sailed back from Patrikfiord to Isafiord, where they still obtained good results. Fares of from 55,000 to 60,000 were not uncommon, and some even took as many as 65,000 codfish.

Vessels on the east coast fished to the southeastward, from Ingolf to Walsback, during the first part of the season, with but slight success. By the end of May the smallest capture of a vessel on this coast was about 9,000, and the largest was about 25,000, which numbers were fairly satisfactory for this time in the year. Towards the middle of June the vessels were scattered from Ingolf to Langanæs, but everywhere the fishery yielded slight results, nor did it improve in July. Fishing on the east coast, then, where the cod are generally large and of fine quality, was not so favorable as usual; and several vessels, after the first part of the season, left for the west coast where they completed their fares.

Of the total product of the cod fisheries in 1885, Newfoundland furnished 26,871,000 kilograms [59,239,806 pounds], valued at 9,068,903 francs [\$1,750,298], and Iceland furnished 12,913,352 kilograms [28,468,776 pounds], valued at 7,331,910 francs [\$1,415,059], both showing a considerable increase in quantity and value over the product of 1884. Two vessels were lost during the fishing season, the *Travailleur* and the *Lorraine*, both of Dunkirk; but the crews were saved.

Herring fishery.—The number of boats fitted out in 1885 for this fishery was 142, being 10 less than in 1884. About the end of June most of the boats from Boulogne left that port for the North Sea; while those from St.-Valery-en-Caux and some from Fécamp joined them in July. Up to the end of that month they had met few herring, and had generally fished for cod; but during the first days of August large shoals of herring appeared from 60 to 80 miles off the coast, between Peterhead and Aberdeen. In a few tides the vessels made full catches, carried them to France, and returned about August 20 off the Scotch coasts, where the fishery continued successfully till the last of September, especially off Montrose and St. Abb's Head. Off Yarmouth the herring were equally abundant, but after October 10 bad weather baffled the fleet and drove it back to the French ports in a few days. Soon after this the fishery for fresh herring began, and ended in March, 1886, having given good results.

On the whole, the fish were taken in large enough quantities; but the few markets the fishermen have for disposing of their catch, the

high rates of the railway companies, and the impossibility of forwarding the fish by all the trains, are the principal causes which annually keep down to a low figure the net returns of this fishery.

Sardine fishery.—Although yielding results greater than those of 1884, the amount of sardines caught in 1885 was not large. These fish for many years have come on the French coast late and at rare intervals, seeming to stop generally off the coasts of Portugal and Spain, where they are caught in great abundance. In 1885, sardines of good size appeared on the French coast from the middle of June to that of July, when they left, to come on again in small quantities in September. The fishermen of Douarnenez and Audierne are about the only ones who have realized any profits from this fishery, though the scarcity of sardines resulted in a rise in price, which has kept up all the season.

Fisheries for fresh fish.—These fisheries (comprising those for turbot, dabs, soles, flounders, rays, gurnards, mullets, whiting, salmon, sturgeon, tunnies, congers, lampreys, &c.) were satisfactory in the amounts taken, but the value of the products suffered a slight depreciation, which is due in part to the sale of tunnies, the price of which fell considerably in consequence of the reappearance of the epidemic of cholera, rendering the disposal of the catch of tunnies somewhat difficult. Steam craft always obtained good results, as did also decked vessels of sufficient size to leave port at almost any time, while the smaller boats remained inactive in harbors during part of the winter.

Oyster fishery.—During the year 126,579,817 oysters (native and Portuguese), the yield of the coast and boat fishing, sold for 1,674,826 francs [\$323,242]. These figures, as compared with those for 1884, show a gain of 7,302,022 oysters in number, and a loss of 70,109 francs [\$13,530] in value.

During 1885, a total of 597,164,013 oysters, born or raised in parks, tanks, ponds, and other oyster-cultural establishments on the coast, have been sold for public consumption, bringing 12,744,716 francs [\$2,459,730]; while in 1884, 529,768,767 oysters were sold for 13,577,926 francs [\$2,620,540]. This shows that the production was greater in 1885, but that it was not accompanied by a corresponding increase in value. This state of things should be attributed to the excess of the Portuguese oysters (*Ostrea angulata*), which were sold at 10 francs [\$1.93] per 1,000, and to the decrease in price of the native oysters (*Ostrea edulis*), which decrease amounted to from 6 to 13 francs a thousand according to locality.

Marine fertilizers, &c.—The marine plants, commonly called sea-weeds or *Algæ*, are put in three classes:

1. Sea-weed growing near the shore.
2. Sea-weed cast up on the beach—wrack.
3. Sea-weed growing in the sea.

Sea-weeds of the second class, whose collection is permitted all the year, comprise the bulk of what is taken. All three classes are generally employed in fertilizing the land and making chemical products. Moreover, there is a kind of sea-weed, common in the bay of Granville and called *zostera* or *pailleule* which is eagerly sought for making different kinds of bedding, and sells at the rate of 150 to 170 francs per cubic meter [82 to 93 cents per cubic foot]. The value of the total amounts of sea-weed collected in 1885 was 5,495,052 francs [\$1,060,545], which was 302,453 francs [\$58,374] less than in 1884.

ALGERIA.

General.—During 1885 there were engaged in the fisheries on the Algerian coast 1,047 boats, with a total capacity of 3,999 tons, manned by 4,495 men. These figures, as compared with those of 1884, show for 1885 a decrease of 13 boats, with an increase of 411 tons and 31 men. Fishing from the shore is but little practiced in Algeria.

The value in silver of the products obtained reached the sum of 4,101,380 francs [\$791,566], and shows an increase of 343,990 francs [\$66,390] over that of 1884, which increase arises largely from greater returns from the coral fishery and from those indicated by "other fish."

The products of the fisheries for mackerel, bonitos, tunnies, anchovies, and the different kinds designated as "other fish," amounted in 1885 to 4,216,512 kilograms [9,295,723 pounds], against 4,039,985 kilograms [8,906,551 pounds] in 1884, showing an increase in 1885 of 176,527 kilograms [389,172 pounds]. There was also an increase in 1885 of 28,292,394 *allaches*, 4,372 kilograms [9,639 pounds] of shrimps, and 254 hectoliters [718 bushels] of other shell-fish; while there was a decrease of 10,942,111 sardines, 36,120 oysters, 14 hectoliters [40 bushels] of mussels, and 6,205 crustaceans (lobsters, &c.). More complete details are to be found in Table II appended.

Coral fishery.—The coral beds which formerly existed in great numbers on the coast of Algeria, especially in the waters of the old district of Calle, were worked almost exclusively by Italian fishermen, who carry off to their own country; at the end of the season, the produce of their work. These beds were protected only by the prohibition of fishing implements recognized as injurious; but even this prohibition has remained a dead letter, as the means of surveillance at the disposal of the authorities were always insufficient. This state of things would soon result in the destruction of the coral beds, and it was to remedy this that the decree of November 22, 1883, was interposed to regulate the coral fishery in Algeria and Tunis.

Loss of life.—During 1885, 363 enrolled sailors on boats engaged in the fisheries on the coasts of France and Algeria have been drowned or lost at sea, leaving 212 widows and 416 orphans; while during the previous year 413 fishermen were lost.

The following tables give a recapitulation for two years of the sea fisheries of France proper and of the French colony of Algeria :

TABLE I.—Quantity and value of the sea fisheries of France in 1884 and 1885.

Kind.	1884.		1885.		Value in 1885 compared with 1884.	
	Quantity.	Value.	Quantity.	Value.	Increase.	Decrease.
Cod..... pounds..	80, 510, 764	\$2, 643, 332	87, 708, 582	\$3, 165, 357	\$522, 025	.....
Herring..... do..	101, 352, 473	1, 720, 844	99, 062, 136	1, 067, 987	.....	\$52, 857
Mackerel..... do..	21, 162, 427	712, 487	19, 077, 420	732, 139	19, 652	.....
Sardines..... number..	411, 819, 005	1, 702, 949	494, 077, 820	2, 205, 463	502, 514	.....
Anchovies..... pounds..	11, 460, 503	201, 354	87, 548, 994	211, 185	9, 831	.....
Other fish..... do..	115, 456, 692	7, 043, 843	120, 744, 383	6, 918, 003	.....	125, 180
Oysters..... number..	119, 277, 795	336, 772	126, 579, 817	323, 242	.....	13, 530
Mussels..... bushels..	1, 361, 966	356, 549	1, 510, 162	460, 646	104, 097	.....
Other shell-fish..... do..	1, 040, 529	246, 184	1, 236, 416	258, 674	12, 490	.....
LOBSTERS, &c..... number..	1, 927, 229	528, 184	1, 795, 413	488, 846	.....	39, 338
Shrimps..... pounds..	3, 466, 623	865, 080	3, 910, 406	405, 414	40, 334	.....
Marine fertilizers..... cu. feet..	88, 174, 261	1, 118, 919	84, 378, 047	1, 060, 545	.....	58, 374
Total.....	.....	16, 976, 497	.....	17, 898, 161	921, 664	.....

TABLE II.—Quantity and value of the sea fisheries of Algeria in 1884 and 1885.

Kind.	1884.		1885.		Value in 1885 compared with 1884.	
	Quantity.	Value.	Quantity.	Value.	Increase.	Decrease.
Mackerel..... pounds..	847, 148	\$67, 754	324, 848	\$15, 735	.....	\$52, 019
Sardines..... number..	110, 138, 331	134, 508	99, 190, 220	108, 860	.....	25, 648
Anchovies..... pounds..	688, 031	34, 455	1, 225, 240	70, 229	\$35, 774	.....
Other fish..... do..	7, 027, 057	357, 128	7, 307, 515	387, 272	30, 144	.....
LOBSTERS, &c..... number..	34, 510	12, 890	28, 305	11, 143	.....	1, 747
Alaches..... do..	30, 639, 640	43, 874	58, 932, 034	52, 981	9, 107	.....
Othershell-fish..... bushels..	207	383	925	2, 817	2, 434	.....
Shrimps..... pounds..	95, 968	8, 276	105, 607	9, 616	1, 340	.....
Bonitos..... do..	232, 186	14, 924	144, 245	7, 959	.....	6, 965
Tunnies..... do..	112, 179	7, 303	203, 875	25, 394	18, 091	.....
Coral..... do..	11, 323	42, 437	25, 102	98, 940	56, 512	.....
Mussels..... bushels..	125	505	85	107	.....	398
Oysters..... number..	238, 020	739	201, 900	504	.....	235
Total.....	.....	725, 176	.....	791, 566	66, 390	.....

PARIS, FRANCE, January 25, 1887.

15.—RAINBOW TROUT IN SOUTHWESTERN MISSOURI.

By Dr. H. J. MAYNARD.

Very great success has been gained in stocking Spring River, and this indicates what can be done in all the waters of Southwestern Missouri, from and including the Osage River on the north and the Gasconade River on the east.

October 9, 1885, I went to the head of Spring River with Dr. E. P. Hansard, of Pierce City, Lawrence County, Missouri, to classify a trout