

**87.—REPORT ON THE PACKING OF SALMON ON THE PACIFIC COAST
FROM 1883 TO 1886.**

By LOREN W. GREEN.

I have lately visited all the salmon canneries on the Sacramento River and seen their agents, for the purpose of obtaining the statistics of the catch of salmon for this and past seasons. Among the results of my visit is a table giving the pack of salmon (in cases, each containing 48 one-pound tin cans) for each river on the Pacific coast for the years 1883, 1884, 1885, and 1886, which is appended to this report. Also I append a table showing the names of the canneries on the Sacramento River, with their locations, brands, and agents at San Francisco.

In the year 1883 but little effort was made to secure all the salmon required, and large numbers were allowed to pass on their way to the headwaters for the purpose of depositing their spawn.

In 1884 a scarcity was noticeable, and immediately seines were enlarged, more boats and men employed, and fishing was carried on generally with greater diligence. But, notwithstanding all the extra exertion employed, the decrease from the pack of 1883 on the Sacramento River alone was 65,000 cases, and the decrease of those reaching the headwaters was, at a moderate estimate, 60 per cent.

In 1885 fishing was again diligently carried on from the beginning to the end of the season, and the decrease from 1884, as seen by the figures given, was 46,500 cases. The number of salmon reaching the headwaters was only about one-half as many as those of the preceding year.

During the present year (1886) the agents have used all available means for securing a large number of fish. As the demand for canned salmon is steadily increasing, upwards of 1,000 boats and 2,000 men were employed in fishing for salmon on the Sacramento River. But it must be stated that matters have been somewhat unfavorable for them in this year's fishing, for in the early spring the water was unusually high, which confined these fishermen more to the bars and allowed a considerable percentage of the first run to pass their seines; also, the California fish commissioners caused a law to be passed prohibiting the fishing with seines after September 1, which was one month sooner than in past seasons. The total number of cases canned for this season was 30,000.

In talking with the agents of the canneries, as well as with those engaged in the fishing, I found them to differ somewhat in opinion as regards the cause of this decrease in salmon. Some believed that the sea-lions are doing great damage in the way of destroying the large salmon as they come in from the ocean on the way to their spawning grounds. Others, that the catfish are very destructive, following the salmon to

their spawning grounds and feeding upon their eggs and young fry. Some hold that the natural spawning grounds are being destroyed by mud and rubbish from mining operations. Another thing proposed as the cause is the excessive and destructive mode of fishing practiced by the Chinese in the Sacramento River. It should be stated also that many people in the upper counties along the Sacramento attribute this decrease of salmon principally to the excessive fishing at the canneries.

I have taken much pains to ascertain the cause of this decrease, and have followed the Sacramento River from the ocean to its headwaters. Beginning with the sea-lions in the Bay of San Francisco, it is safe to say that they destroy a great many large salmon that otherwise would ascend our rivers, but I see no reason for supposing that the number destroyed of late years is in excess of their consumption of previous years.

Taking the catfish into consideration, it is probable that a small percentage of the young fry, as they first rise from their gravelly beds, find their way into the stomachs of these ugly little catfish, yet I think to no alarming extent. In our rivers also, where salmon deposit their eggs on the swift riffles over clean, gravelly beds, I think that very few of these eggs are disturbed by the catfish, which are more inclined to follow the slow, muddy places in the river.

As regards the Chinese, it must be borne in mind that they are not communicative in respect to any matter of business in which they are interested, and they will not knowingly impart any information that may in the slightest degree be utilized by those of other races. Yet by closely inspecting the streams near the locality in which they reside, it is found that they are using a beardless hook, something of their own manufacture and peculiar in shape. Strong lines are placed across the stream or a portion of it, as the case may be. These hooks are fastened to short leaders, which vary in length, and which are suspended from the main line to a depth of 1 foot from the surface to the bottom of the river. Hundreds of hooks are used on a line, and quantities of the larger fish are caught as they endeavor to pass; many more are fatally wounded, but make their escape, only to die in the streams above. They also take many young fish, which are dried and exported to China.

I also found a point of the river, near Sacramento, where many of the young salmon are lost in their downward course to the ocean. It is a well-known fact that for the past few years the bed of the Sacramento River has gradually been rising, caused by hydraulic mining on the streams above, and the filling up of the river has caused an overflowing of its banks during high water. Levees have been constructed to prevent damage of property in the city, and to confine the water to its own channel, but at present many places in the levees are broken, and there are also points some distance above where in high water the river overflows and sinks into a large tract of marsh land. In seasons when the first rise of water, which carries the young salmon down to the ocean,

overflows the banks, a great many of the young fish are carried through the breaks and low places and are left to die by thousands. At other seasons, when the first rise is moderate, they go safely to the ocean through the main channel.

Whatever may be the cause, or the combination of causes, all parties agree in the opinion that artificial hatching and the restocking of our streams is the only means by which the required supply of salmon can be maintained; and that unless measures are taken other than those now in operation the salmon supply in our rivers must soon become exhausted. No artificial hatching has been done, and consequently no young salmon have been planted in our rivers, since the suspension of the United States salmon-breeding station on the McCloud River. The California State hatchery, which was established on Hat Creek in 1885, has thus far been of no use, owing to the fact that salmon do not run there in sufficient numbers to justify the taking of eggs.

UNITED STATES TROUT PONDS,
MCCLOUD RIVER STATION,
Baird, Cal., October 4, 1886.

TABLE I.—Statistics of the packing of salmon on the Pacific coast from 1883 to 1886, showing the total production for each river.

Locality.*	1883.	1884.	1885.	1886.†
	Cases.	Cases.	Cases.	Cases.
Sacramento River, California‡	160,000	95,000	48,500	30,000
Eel River, California	15,000	8,000	5,700	.....
Rogue River, Oregon	16,000	12,000	9,100	2,000
Coquille River, Oregon	7,000	7,300	3,800	.....
Umpqua River, Oregon	.....	5,700	10,500	.....
Smith's River, Oregon	.....	5,000	1,500	.....
Tillamook River, Oregon	.....	4,500	9,800	.....
Columbia River, Oregon and Washington Ter.	629,400	629,000	553,800	521,000
Puget Sound, Washington	.....	.....	48,500	.....
Fraser River, British Columbia	175,000	.....	.....	.....
Rivers in British Columbia	568,000	175,800	106,900	100,000
Alaska	36,000	45,000	74,800	.....
Total	1,106,400	985,300	872,900	653,000

* The reports from other rivers in California have not yet been obtained.

† The 1886 statistics are incomplete.

‡ The estimated pack on the Sacramento previous to 1883 was: 1878, 36,500; 1879, 31,000; 1880, 51,000; 1881, 181,200; 1882, 200,300.

§ Exclusive of the Fraser River pack.

TABLE II.—Salmon canneries on the Sacramento River.

Name of cannery.	Location.	Brand.	Agents in San Francisco.
Benicia Packing Company	Benicia	Sac. River salmon.	George W. Hume.
Carquinez Packing Company.	do	Spread Eagle	Do.
Booth & Co., S.	Black Diamond	Seal	Scotchler & Gibbs.
Joseph Hume	do	Pioneer	Joseph Hume.
Bradford & Company	Chipp's Island	Crescent	W. B. Bradford.
Sacramento River Packing Co.	do	Star of Columbia	Do.
Courtland Packing Company.	Courtland	Spring Sac. fish	William T. Coleman & Co.
Joseph Black	Martinez	Capitol	Cutting and Packing Company.
Capitol Packing Company	Sacramento		D. L. Beck & Sons.