where many salmon were depositing their eggs, carefully dug up the gravel and several thousand eggs. He separated the eggs from the gravel, and placed the former, after counting them, in the hatching boxes. After twenty-four hours, he found large numbers of these eggs turning white, showing that the milt had failed to come in contact with the eggs. After throwing out all the eggs found not to be fecund, there were left 8 per cent of the whole number gathered, which were found to be fertile. When the eggs and milt are artificially brought in contact out of the water, it would be carelessness or inexperience that would prevent 95 per cent of the eggs from being fertilized.

11. The following tables will show the number and weight of salmon transported on the railroads and steamboats from the Sacramento and San Joaquin rivers to the cities of San Francisco and Stockton, from points on the river below the cities of Sacramento and Stockton, from 1st November, 1874, to 1st August, 1876; and from 1st November, 1876, to 1st August, 1877. They do not include the catch of the fisheries at Tehama or near the mouth of the Feather river, nor do they include the fish taken on the upper waters of the Sacramento and San Joaquin, nor the salmon brought to market by fisherman in their own boats; therefore, to the totals should be added, at least, 25 per cent to show an approximation of the actual catch.

12. In our last report, after adding 25 per cent to the statements of the catch which we obtained, we showed the total weight as transported from the same places, from 1st November, 1874, to 1st August, 1875, to be 5,098,781 pounds. Adding the same percentage to the totals in the above tables, and they show the catch from 1st November, 1875, to 1st August, 1876, to be 5,311,423 pounds, and from 1st November, 1876, to 1st August, 1877, 6,493,563 pounds.

13. This shows a gain of more than 1,000,000 pounds in the legal catch over any year since the organization of the Commission, and may be ascribed to the fact that our waters are now beginning to feel the beneficial effects of the millions of salmon hatched artificially and turned into the headwaters. We have no means of ascertaining the weight of fish taken out of season, but estimate that between 1st August and 1st November of this year, not less than 2,000,000 pounds were taken in defiance of law.

Close season for Salmon.

14. We are informed that a determined effort will be made to induce the Legislature to alter the time of the close season, so that fishing for salmon may be permitted in August and September, and that the close season may be changed from these months to July. With this object in view, it is reported that the proprietors of the present "canneries," and capitalists, who have in contemplation the construction of other "canneries," have been obtaining the evidence of fishermen, to present to the Legislature, to show that July is the proper month when fishing should not be permitted.

15. As we have shown, in July the spring run of fish has about ceased and the fall run but commencing. It is one of the months when fish are most scarce. To permit unlimited fishing during all the months in the year except July, would have the effect of exhausting our rivers of salmon within ten years. It is a simple proposition that if some of the ripe fish are not permitted to reach their spawning grounds, they cannot reproduce naturally, neither can the United States nor the State obtain eggs from which to restock the river by artificial hatching. One of the fishermen who was approached with the object of obtaining his testimony in favor of a change to July, wrote to the Commissioners, 30th September, as follows:—"The close season should never, on any possible pretence or persuasion, be pressed outside the months of August and September to give opportunity for fishing in those months. Right there is the life of the matter. The regularity, the multitudes and urgency of the seed run, the consequent ease and certainty of the catch, the fine weather for work, all present a weighty temptation to both catcher and canner." The object of a close season is, that some of the fish may be permitted to reach the headwaters to spawn. If they are not allowed to do so the race will soon be extinct. Cupidity and desire for immediate profit should not be permitted to influence legislation with she ultimate result of the extinction of the last fish. The interest of the public is that the fish be continued in the river. A change in the law that will omit August and September from the close season cannot but result in material and permanent injury.

Temperature of Air and Water.

16. The following statistics will be found of much importance, They exhibit the temperature of the water and air at two stations, each on the Sacramento and San Joaquin rivers, taken for three years during the months the great army of salmon are passing up to their spawning grounds. They will show conclusively that the Sacramento salmon lives for weeks, if not months, in water much warmer than any other fish of the same family. They also show the strong probability that these fish may be successfully introduced into rivers in still lower latitudes than those of which they are native—without doubt into the waters that flow into the Gulf of Mexico, and with many prospects of success into the rivers of Europe emptying into the Mediterranean.

TEMPERATURE—(FAHRENHEIT).

Railroad Crossing at Sacramento, Sacramento River, latitude 38° 35′ *N., longitude* 121° 30′ *W.*

—	AUGUST.									SEPTEMBER.								
	1875.			1876.			1877.			1875.			1876.			1877.		
	Air.	Water at Surface.	Water at Bottom.	Air.	Water at Surface.	Water at Bottom.	Air.	Water at Surface.	Water at Bottom.	Air.	Water at Surface.	Water at Bottom.	Air.	Water at Surface.	Water at Bottom.	Air.	Water at Surface.	Water at Bottom.
Maximum...	106°	81°	81°	98°	80°	79°	99°	80°	80°	96°	75°	75°	97°	75°	75°	105°	77°	77°
Minimum...	71	75	75	75	72	71	80	73	73	72	71	71	73	70	69.50	76	70	70
Mean... ..	92.96	78.83	78-83	87.93	76.40	75.37	91.54	77.22	77.22	88.93	73	73	85.53	72.13	71.30	90.56	73.76	73.76