

exercising the procreative function. From this point observers of his habits differ as to his future career. Those who have made a careful study of the subject, such as Professor Livingston Stone, the gentlemen for years in charge of the United States fish hatcheries on the Sacramento and the Clackamas, and others who have taken more than a surface view of the matter, assert that the salmon, after he enters fresh water, ceases to take nourishment, but lives upon his own vitality, which is constantly being exhausted by his desperate struggles in the long journey to the spawning grounds, often a thousand miles inland. Upon arriving at their destination and performing the act of making a nest, depositing the eggs and milting them, both the male and female, bruised, sore and exhausted by the journey, the contact with rocks and the struggle with cascades and rapids, and no longer buoyed up by the intense desire implanted in their breasts by nature to exercise the procreative function, lose all ambition and strength, and being unable to accomplish the long journey to the sea, rapidly weaken and die. If this be true, then so long as the process of nature in spawning be not interfered with, there can be no harm in catching as many of the fish as possible on their inland journey. But this proposition that the salmon do not return to the sea is disputed by some of the fishermen and others who have an opportunity to observe their habits. These men say that in the lower river they have seen salmon going down stream, and point to the fact that, whereas the weight of a four-year-old female is about twenty pounds, fish weighing sixty and eighty pounds are occasionally caught. It is argued that these large fish are older than the others. This is admitted by the pisciculturists, who agree that some of the salmon enter the river so late in the season, or spend so much time about its mouth before beginning their upstream journey, that the roe becomes ripe and they drop it in the stream before having proceeded far, and these still possessing strength and having lost the motive for ascending the stream, turn about and succeed in reaching the ocean again. This, however, has but little bearing upon the question of catching small salmon, except as it establishes the general principle that salmon do not return to the ocean from the spawning grounds.

The next question to look into is that of the nature of the small Chinook salmon. It is claimed by Professor Stone and all others who are competent to judge, from having made a special study of the subject, that they are fully developed males. That they are all males is admitted by every one, for the thousands that have been caught prove this incontestably; but whether they be fully matured or not is something of which the ordinary observer is not competent to judge. However, Professor Stone and several other careful observers, who have made their investigations on the spawning grounds, assert that these males perform the function of milting the eggs deposited by the females in the same manner that the larger males do, and must, therefore, be fully developed fish, and not young fish entering the river without the procreating instinct and faculty. In fact, it seems difficult to account for these small males making that long and fatal journey to the headwaters of the rivers for any other reason than that of propagation.

Assuming that the observations of scientists have led them to the right conclusion on this subject, and there is little evidence upon which to base a denial of the facts they assert, there can be no harm in catching these small Chinooks as they ascend the stream. There are enough of the males to fructify all the eggs, and as these small ones never return, but die at the end of their arduous journey, every one of them caught in a fishwheel and thrown back into the water, represents so much money absolutely thrown away. Indeed, it is a question whether it would not have a better effect upon the salmon themselves were those undersized males prevented from participating in the work of propagating the species. Certainly, if the same natural laws prevail that we see in other forms of life, they must have a tendency to keep down the average size of full grown fish.

After all, the only permanent solution of the question of maintaining the supply of Chinook salmon in the river lies in the operation of fish hatcheries on a large scale. No less than 20,000,000 young salmon should be artificially hatched in these institutions and deposited in the streams annually. By this means the supply can be maintained regardless of the quantity caught. It would seem the true policy of the state to encourage, rather than restrict, the taking of fish from the river and the converting of them into money. In that form only are they valuable. A resource is practically worthless unless utilized, and the greater the quantity of fish placed on the market the greater the receipts of the state. The legislature, then, should turn its attention to increasing the facilities of the fish hatchery. Let it be so completely equipped and so well supported that five times the number of young fish now put into the stream will be hatched annually, and there will be little need for laws to limit the catch.

There is no reason why the salmon pack of the Columbia river can not be as high as a million cases a year, instead of one-half or one-third that quantity. The phenomenal run of fish in Alaskan waters can not last forever, and the Columbia ought to be able to successfully compete even if it should. Let the state legislature provide means for conducting artificial propagation on a large scale and pass laws to keep the waters of the Columbia and its tributaries clear, and the question will be solved.

## THE FAR WEST

A combination has been effected by some of the Alaska canning companies. There are now thirty-eight companies engaged in business there, having headquarters in San Francisco. Of these the eight located on Karluk river, Kodiak island, have united. These eight companies represent over \$2,000,000 in capital, and are the Karluk Packing Company, owned by the Alaska Commercial Company, Kodiak Packing Company, Aleutian Islands Fishing and Mining Company, Hume Packing Company, Antarctic Packing Company, Royal Packing Company, Russian Packing Company, and the Alaska Improvement Company. These companies employed a force of 550 men last year, and put up 200,000 cases of salmon, there being forty-eight pounds to each case. The present year they propose to take more salmon than last, and yet they will reduce their force of men to 160. The companies will agree to employ the same force of men as catchers, then a superintendent will be appointed, and he will see that each day's catch is equally divided among the eight companies. Each cannery is to be allowed the privilege of private labels as at present. It is claimed this consolidation is not for the purpose of raising the price of salmon, but expressly to reduce the cost of taking, so that these canneries can compete with the other thirty canneries of the territory and make money. However, it is looked upon generally as the first step in organizing a huge salmon trust.

Columbia county is conceded to be very rich in natural resources. In this connection we are justified in asserting that nowhere in the state are to be found such immense deposits of iron as exist from near Scappoose, extending along the Columbia river slope, to Oak Point. A great many claims have been taken up on this iron belt, and it is only a question of time until it will be developed. In richness it is far superior to the Oswego production, and as there seems to be quite a demand for iron, it is strange the ore in this country is not being worked. We are informed by parties interested, however, that arrangements are being made, whereby the numerous claimants will place their interests in the hands of two or more responsible men, and let them negotiate with capitalists to put in a plant and work the ore, or organize a company within themselves for that purpose.—*Oregonist*.

R. P. Archibald returned Tuesday from the moss agate fields, situated on Sulphur creek, about forty miles southeast of Yakima. He brought with him a handsome specimen of agate that weighed nearly three pounds, which is to be cut into arrow heads by a man living near Wallula, who has discovered the ancient Indian method of chipping and shaping this stone. The agate beds are between forty and fifty feet wide and 300 yards long from the creek to where they extend into the mountains. It is extremely difficult to quarry the agate in very large pieces, owing to its turning the point of steel, but an effort is being made to mine it by blasting, by which method it is thought large slabs can be secured.—*Yakima Herald*.

A petition bearing 2,000 signatures of persons living in the southern two tiers of Spokane county and the northern three of Whitman county will be presented to the legislature of Washington, asking that they be erected into a separate county. As the petition has been signed by nearly every voter in the proposed new county, it can hardly fail to impress the legislature forcibly, backed up, as it will be, by a large delegation of supporters. A similar effort failed at the last session, but the present movement gives great promise of being successful.

Hillsboro is on the move and demonstrating its right to be called one of the live towns of Oregon. It has an active board of trade, is taking steps to secure electric light and water systems, has organized a fire department, and is negotiating for the establishment there of a foundry and a large tannery and belting factory.

Two large deposits of iron ore have been discovered in Stevens county, Washington, one near Colville and the other near Chewelah. Ore will be shipped to the Spokane and Tacoma smelters to be used as a flux. Good coking coal has been found thirty miles from Colville.

The Eugene Manufacturing Company has been incorporated at Eugene, Oregon, with a capital stock of \$15,000, to engage in the manufacture of woodenware.