

THE
YAQUINA CASH STORE,
 YAQUINA CITY, OREGON.
 HAS ON HANDS A FULL LINE OF
GENERAL MERCHANDISE,
 Gents' Furnishing Goods, Underwear, Hats,
 Shoes, Oil Clothing, Ladies' and
 Childrens' Shoes, Stationery,
GROCERIES, FLOUR and FEED.
 ALL GOODS SOLD AT REASONABLE PRICES.
PETER TELLEFSON,
 Proprietor.

TOO LATE! TOO LATE!!

It is too late to get an Abstract of Title to a piece of land after you have bought it and found out that there are judgements and tax liens against it. The proper thing to do is to have the

LINCOLN COUNTY ABSTRACT COMPANY,
 of Toledo, make you an Abstract of Title before investing your money. A business man now days never buys real estate without first obtaining evidence of a good title. We warrant our work to be absolutely correct. Address.

Crosno & Peairs.

BOOTH'S!

CASH - STORE

Yaquina City, Oregon.

Staple and Fancy Groceries

Hardware, Tinware, Etc.

Goods Sold at
 San Francisco Prices.

J. S. BOOTH, Prop.,
 YAQUINA CITY, OREGON.

THE REVIEW OF REVIEWS
 Monthly Illustrated

Edited by **ALBERT SHAW**

"If only one magazine can be taken, we would suggest the REVIEW OF REVIEWS, as covering more ground than any other magazine."—Board of Library Commissioners of New Hampshire, 1896.

THIS magazine is, in its contributed and departmental features, what its readers, who include the most noted names of the English-speaking world, are pleased to call "absolutely up to date," "thoroughly abreast of the times," "invaluable," and "indispensable." It is profusely illustrated with timely portraits, views, and cartoons. Its original articles are of immediate interest, by the best authorities on their respective subjects. The Editor's "Progress of the World" gives a clear, rightly proportioned view of the history of the human race during the current month. The "Leading Articles of the Month" present the important parts of the best magazine articles that have been written in every part of the world. The newest and most important books are carefully reviewed. Indexes, chronological records, and other departments complete the certainty that the reader of the Review or Reviews will miss nothing of great significance that is said or written or done throughout the world.

Send 5 Cents
 in Stamps for
 Specimen Copy

THE REVIEW OF REVIEWS CO., 13 Astor Place, New York.
 Single Copy, 75c.; Trial (five months), \$1.00; Year, \$2.50.

The Habits of Salmon.
 (Continued from last page.)

time. While my experiments have not determined this part of the question, I have no doubt as to the correctness of Mr. Buist's view regarding the same, and the record shows that it was generally accepted at that time. However, as regards the migration of the first crop 18 months from time of spawning, I think my observations substantiate the results of Mr. Buist's experiments, as though from situation, I was unable to keep the young fry in ponds until they would migrate of their own volition. I turned them out in a creek near by from whence I took the water by a ditch to supply ripening ponds and hatchery, and 18 months from spawning, a good number came down the ditch into the ripening ponds and from thence proceeded into the bay. These were about 7 inches in length, bright, shiny and showed the smolt spots very plainly. This happened every year that any number was turned out from the hatchery.

This I believe fully supports Mr. Buist's statement regarding the first crop, which migrate to the sea. Regarding the migration of those which remain until the second year, although no positive proof has been shown by the experiments in this country, to my mind the proposition has much support, by the fact that immense numbers of very small salmon are taken by the fish wheels in the upper waters of the Columbia, the identity of which has been a matter of speculation to those interested. These may be the parr, and there seems good reason to believe so, from the fact that none of this kind are taken in the lower river, although millions have been caught at the Cascades and above. Another fact is that the smolt loses its spots during the second year, which would account for the silvery brightness and lack of smolt spots of the small fish taken in that part of the Columbia. These must not, however, be considered the same as the grilse, or the blueback, which is taken with seines in the lower river, when returning from the sea, as the latter are much greater in size, having increased largely in girth, and shaped up to a form nearer like that of the adult salmon. Having sufficiently treated this last important question, the next proposition, viz: Where is there sea habitat, etc.? will receive our attention. During the experiments at Stormontfield, and just previous to the departure of the young smolts. Mr. Buist says that quite a number were marked by cutting off the adipose fin and that three or four months later quite a number of these marked fish were taken in the Firth of Tay and adjacent waters. As to the fact that some of these marked fishes were taken as stated by Mr. Buist, we have a living witness in the person of Mr. Geo. Harris, a worthy Scot, who resides near Chetco, Or., who was connected with the Tay fisheries during the time that Mr. Buist made his experiments at Stormontfield.

In conducting my experiments, I followed the plan of Mr. Buist in holding a portion of the young fry in the ponds, but as I was not prepared to feed them until they were ready to go of their own accord, I kept them only five or six months, at which time they were about 4 inches in length, when, after marking quite a number by cutting off the adipose fin, I turned them loose. Some of these were caught as grilse weighing five or six pounds and mature fish were taken bearing this mark several years later.

We also had reports from both the Coquille river in Oregon, and Smith river in California, that salmon so marked had been taken by

the fishermen at those rivers. These experiments with the marked salmon were made in 1879, and as I was satisfied that salmon returned to their birthplace, I did not continue the experiment further. However, by later developments I am satisfied that where the natural spawning grounds of the fish taken for spawning are situated near the head waters of long streams, if the young fry hatched from their eggs are turned out near the sea, their character or habits may become in such a measure changed as to cause a portion to wander to adjacent waters, perhaps to a distance of from 50 to 75 miles. I am compelled to believe this for the reason that about the time I built my hatchery on Rogue river, I also engaged in salting salmon on the Coquille river, and at that time the "Salmo Quinnet" were entirely different in appearance from those of Rogue river, but within the past five years I have inspected the runs of this character of salmon, on the Coquille river and find them identical in every particular with the run at the same season of the year, in Rogue river. Among other reasons for believing that the salmon native to a particular stream do not go very far from its mouth during the time they spend in the sea, is that each river has salmon which are different in marking than that of another, and the fact that by an artificial change in their conditions some wander into another stream near at hand does not prove to the contrary.

The fact also that while the "Salmo Quinnet" is common to the coast streams from the Sacramento to the Columbia, and also to Alaska, where it is known as king salmon, it nowhere arrives to the condition of fatness and flavor as in the waters of the Columbia, Rogue, Klamath and Sacramento. This would seem to preclude the idea that salmon migrated to great distances, as in that case the run of one year would not be identical in character with that of another, for reason of the general mix up. The fact that the young return in the grilse form and remain some time in the tidewater, would shorten the time so materially that they could make no long journey before it would be the season for them to come again, to say nothing of the time necessary for feeding, to account for their astonishing increase in weight each year.

The well-understood principle that great activity is not conducive to increase in weight and fatness would seem to indicate that instead of making long journeys, when at sea, the salmon remained very near the mouths of the rivers to which they common, and that the reason for the difference in degrees of fatness of the same variety of salmon would be found by a consideration of the fact that those rivers mentioned take their rise in everlasting snow, the melting of which causes a large flow of fresh water to extend to the ocean, and by that means produce a better feeding-ground for its salmon than those shorter streams which take their rise in the mountains of the coast. However, let the theory be correct or not, the fact as to the quality remains, as well as that of the chinook, or "Salmon Quinnet," being found in very limited quantities north of the Columbia, until Prince William's sound is reached, and neither there nor in any of the streams from thence to the Yukon are there any streams in which they are plentiful. This last-mentioned stream not being developed, there is no way to determine what quantity of salmon it may carry, but as it is frozen a good part of the year it is doubtful if the "Salmo Quinnet" are plentiful in that section. Therefore it would seem that

were there not some natural homing instinct inborn in the salmon that in a general mix up the Columbia being among the most suitable for the development of this species, by means of sending to sea a greater volume of fresh water than any of the rivers of Oregon or California, she would draw to herself the supply of that species to the detriment of the smaller streams. That this is not the case is shown by the decrease in the supply of chinook in the Columbia, while the coast streams are holding their own or increasing in supply.

Another support to the proof of homing instincts of the salmon is found in the fact that many of our coast streams become barred by sand owing to heavy westerly swells during the running time of the salmon natural to the stream, and at such times I have seen the salmon laying close to the mouths of such streams, and often trying to get into them by taking an overland trip, although there was an open river many times the size within a distance of three miles. This has been observed by hundreds of people, and is considered a matter of regular procedure on the part of salmon by residents of the coast. The fact that some fish may be taken which have been branded with peculiar hieroglyphics, I think is no proof that such salmon have taken trips to the Orient, as we have so many people that are waggishly inclined, and I am inclined to believe that such salmon had been branded near where they were discovered. Another reason for doubting that the work was done on the coast of Asia is that none of the species common to the waters of Coos bay are found in any of the rivers of Japan.

In conclusion I would refer to the necessity of additional legislation for the preservation and propagation of salmon in the rivers of Oregon, for reason that from the pressure which the product of the Fraser river and Alaskan waters put on those operating the fisheries of Oregon there is great danger that the industry will be lost to the state. All matters pertaining to legislation for the preservation of the supply should be placed with a board of commissioners selected from among the best minds of the state who have made a study of the subject, and this commission should acquire all the data possible to submit to each branch thereof, and prior to the sitting publish such findings as they would suggest as necessary legislation in the journal having the largest circulation in the state, that the public might have full notice, and free discussion be had, that the legislators might be well informed, and the introduction of "cinch" bills or the passage of bad laws be thereby prevented. Under the present system it is difficult to give adequate protection and at the same time enable the people to take in their different seasons those fish which are suitable for food supply, as the laws at present furnish in greater degree protection to the steelhead than to the chinook, thereby doing as much harm as good for reason that the steelhead is of the least value commercially and one of the greatest of the trout salmon.

The greatest protection afforded this species the greater the detriment to the run of "chinook salmon." What we require are laws that appeal to the citizen as being based upon common sense and good reason; therefore not to be more honored in the breach than observance, which is largely the case under those existing at present. After careful examination and passage the laws should be strictly enforced if any good is to be derived."

Subscribe for the LEADER.