

Salmon, Strangest of Fish

By Francis J. Dickie

WHERE the mother salmon spawns, there will her young return in four years time to spawn in turn, overcoming all obstacles, or die in the attempt. Magic of earth is this, far more strange, more wonderful than any tale of old Arabia. Out of the mysterious and unfathomed deep of the far-floored Pacific from no man knows where nor why, the salmon horde, uncounted millions numbering, moves upon the Pacific coastal line of North America in answer to the primal urge of that abysmal fecundity which down through all the ages, at the bidding of the Divine will, has stocked and restocked earth and sea and sky with all manner of living things.

It is early December as these lines are written, and the salmon season has just closed, even in Alaskan waters where the run is latest. From early March until the middle of November the great annual breeding of the salmon goes on. Upon 1700 miles of coast line, from Bristol Bay in Alaska to the Fraser River in British Columbia, the salmon swarm moves in regular and wonderfully regulated procession up the various fresh water streams and rivers to spawn and die, as their parents did four years before.

Though all the varied species—the King salmon, the Cohoe, Sockeye, Steelhead, Humpback and Dog—apparently reach coastal waters in one great drift, they are yet governed by some marvellous force of organization that allots to each kind a time and place for spawning. And there is never any failure in the salmon generalship. How far this strange scheme is carried may be best instanced by the fact that even two salmon of the same species coming from rivers very adjacent still have marking which vary. To a white man the difference is not apparent, but to the Indian, whose race have taken the salmon for uncounted generations, the very locality from which a fish comes is apparent. Thus, for example, while far out at sea, as he hauls in his net and lifts therefrom the silvery prizes, an Indian fisherman will tell you when questioned: "This fish from the Naas river," or again, "this fish from Fraser, Skeena," etc., as the case may be.

The first salmon of the year is the King. As its name denotes, it is the royalty of the species. In addition to being the highest priced and best food, the King is a game fish, giving royal battle to the fisherman using light tackle. The first run of the King comes about the beginning of March into the northern rivers, such as the Skeena, Oxtail, etc., and lasts until the end of June. The fish is both red and white and runs in weight from 8 to 60 pounds. Commercially, practically the entire take of the species is cold stored for shipment fresh to the tables of the Eastern States and Canada three thousand miles away.

Following the King comes the Cohoe, both a cold storage and cannery fish. It runs from 12 to 14 pounds in weight. And almost on its heels the sockeye, the best and until recently the principal species canned. The Sockeye is a red salmon and weighs between 6 and 10 pounds. With the Sockeye comes also the Steelhead variety, similar in weight and color of flesh. A great many of these were salted in the past. Next come the Humpback. This species is a pink salmon, and run from 5 to 10 pounds in weight. Like the camel this fish has a large hump on its back, and just as the camel swells after drinking heavily of fresh water, so does the salmon's hump get larger after it strikes the fresh water. The run of this species last from the beginning of July to the end of September. Moving about the same time is the Dog salmon, a fish terribly ferocious in appearance, though this is as far as it goes, the dog variety being no more belligerent than any of the others. Great teeth stick out on either side of its mouth, which, like the hump of the humpback, become more noticeable after the fish has been a short time in fresh water.

Though the salmon is one of the most important food fish of the human race, its history still remains largely a mystery to man, though exhaustive experiment and careful watching of the species has been going on for many years. That the salmon comes and spawns where it was laid as an egg is known. That this return

occurs in four year cycles has been satisfactorily established. Beyond that? Question and conjecture. Out into the deep go the new hatched young to where no one knows. All over the seas of the entire hemisphere men travel, and still none yet have found the salmon in the intervening time.

height of fifteen feet. This feat, one seeming contrary to natural laws the salmon still performs. Choosing a point where the fall of the water is heaviest it rushes up it with all its great swimming powers, the thickest point of the fall being chosen because it gave greatest resistance to the fins. In 1913 a transcontinental railway while building through the Canadian Rockies followed the bank of the Fraser river as the easiest passage way. This river is one of the greatest

department rushed to the rescue. Gangs of men worked day and night clearing the rock away so the rush of the water might be lessened sufficiently for the fish to pass. While the work was going on, men with great dip nets worked to aid the salmon. The fish as they came up to make the attempt were lifted a few at a time in these nets and dropped into a trough of running water which was extended around the too swift water. In this manner thousands of salmon were helped up the river while the big rock was being cleared way. But only a small number of the grand total reached the spawning beds.

Research has fairly well established the fact that the salmon comes to spawn on the fourth year after its birth. Here again is shown another of the many strange things connected with this fish, for in this horde, all the same age, or so presumed, are salmon of widely different size, some weighing ten, some fifty pounds.

Once the eggs are laid and the male has swam over them the salmon parents do not leave the spot, but continue in the vicinity, moving very little, and exerting the fins only enough to maintain their position which is always in quiet waters. Tens of thousands gather in such a spot, remaining but faintly moving, and these, their maternal and paternal duties performed, remain actually rotting away alive. In late Autumn the upper reaches of all streams where the salmon runs present the ghastly and awful odored sight of great masses of these fish rotting away alive, and dead. And hurrying to the feast comes the bear, the crow and the eagle, to gorge upon an inexhaustible supply of food that lasts until the fall rains raise the water sufficiently high and strong to sweep the putrid mess away.

The exact time taken in spawning is not known, but is about ten days. In twelve weeks the salmon eggs hatch into pollywogs, which grow very rapidly, attaining the length of eight inches in about ten weeks, when they go out to the open sea and disappear from the sight and knowledge of man until they return full grown, and ready in turn to propagate the species.

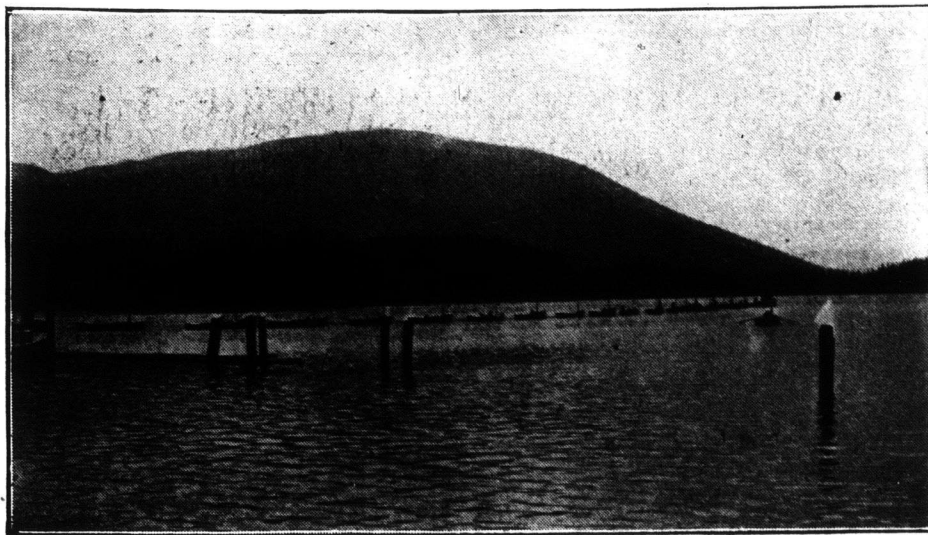
From the time the mother salmon, in answer to the primal urge leaves the ocean, until the young return, the salmon faces and is preyed upon by more varied enemies than any other denizen of the deep. Man, bears, birds, eat the mature fish, as do also the hair seal and the sea lion. The eggs are a rich and eagerly sought food by trout and ducks, and other fresh water fish and birds. The young fish, too, are preyed upon by many species of larger fish. Yet, in face of such tremendous odds, the salmon for countless ages has maintained the balance of numbers largely in its favor.

But slowly of late years, with the rapid expansion of the fishery industries, the salmon is being depleted until now in 1917, unbelievable as it may seem to many, even the former uncountable millions of salmon have been so largely killed before spawning that extinction of the species in the Fraser river at least looms large as a possibility for the near future.

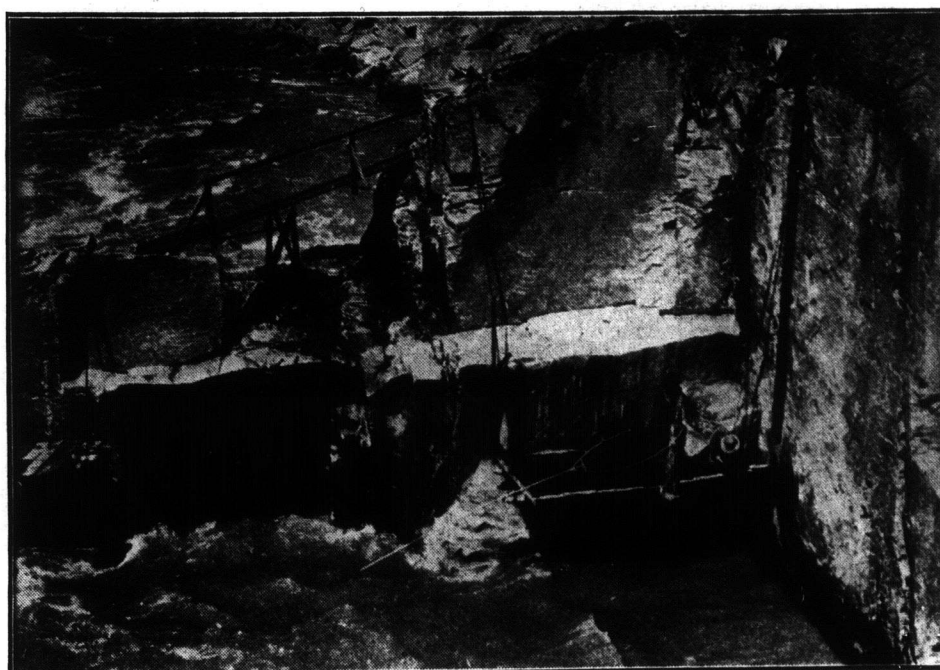
Man, the looting vandal indiscriminate, the ruthless, lustful, uncaring, by his own wasteful blindness, is slowly but surely emptying the food lockers of the world, built up and hoarded by a careful nature through toilsome generations of labor.

Salmon fishing and canning are among the most important industries shared in common by the province of British Columbia, the State of Washington and the territory of Alaska. The 1917 output of Alaska salmon was exceedingly good, and, according to packing officials, broke all records save that of 1913. In all 3,500,000 cases, valued at \$25,000,000, came out of northern waters this year. This was fortunate to make up the shortage of the world supply occasioned by the terrific shortage in British Columbia and State of Washington waters. To handle the shipments, many solid trains loaded exclusively with canned salmon moved eastward in the late fall to supply the great centres of New York, Philadelphia, Chicago and other great cities and communities in the east and middle west.

In Washington State and British Columbia, the 1917 output was the poorest in history. As has already been stated the salmon returns when four years old to spawn. This does not, of course, mean that spawning only occurs



Salmon Fleet being towed out to the grounds.



Unique method of helping salmon over blocked Fraser river.



One hundred thousand fish on floor of cannery.

Leaving the salt water of the ocean for the fresh water streams of the Pacific coast the salmon quickly changes color from silver to blood red. In tune with this metamorphosis the fish also gradually loses the firmness of its flesh. A slow but steady deterioration sets in. The fish, once its appointed time has come to move to its appointed place, runs in with a big tide that goes far up the rivers. And in reaching the desired grounds in quiet fresh water far from the sea the salmon performs almost unbelievable feats. Small waterfalls it will jump, greater ones it swims up to the

salmon breeding grounds in the world. But in making the right-of-way the railroad builders at one point blasted thousands of tons of rock into the river, partially choking the channel. The force of the water through that remaining, open was so increased that the fish coming up to spawn could not reach the beds beyond. Uncounted millions marched up the river and made the attempt again and again. The situation was a very serious one, the effects of which were felt in the year 1917 when the smallest catch in history was taken. Government officials of the fishery