"If we assume that the entire run was cut off from the Upper Section for one or all of the three years of the cycle, we must furnish a plausible, a workable, theory to account for the restoration of the runs in the three lean years. That is not difficult. Dr. Gilbert, by his study of the growth and structure of the scales of the sockeye, has demonstrated that while the race of sockeye that frequent the Fraser are predominately four-year-old fish, there is in the run of every year, three-year-old, four-year-old and five-year-old fish. He demonstrated 'clearly that in the Fraser basin a high percentage of four-year-old fish accompanied a large pack or stated conversely, a small pack is occasioned mainly by a deficiency in four-year-old fish.'*

"In four runs he found an average of 82 per cent. of four-year-old fish. In the catch of 1912 he found 21.5 per cent. of three-year-old fish, and 10 per cent. of five-year-old fish. The presence of from 54 to 99 per cent. of four-year-old fish in five consecutive runs and plus per cent. to 46 per cent. of five-year-old fish in the same runs, establishes the fact that from each year's spawning a proportion of five-year-old fish are produced. We have here evidence of the existence in the run of the year that was not obstructed the nucleus for a future run. The period taken to build up a run from such a scant seeding must have been an extended one. Had this constituted the only seed that reached the beds in the three lean years the run following the big year should have been more readily built up than the run in the two following years. In fact, the record of the pack demonstrates that the catch in the year following the big run has always been greater than in the two following years.

"We are not, however, confined to the conclusion that if the run for three years, was entirely destroyed, that the run in the lean years was built up entirely from the spawning of five-year-old fish. Granting the premises of the home stream theorists that salmon bred in a stream return to that stream to spawn because the weight of evidence favours their contention—there is abundant evidence on this coast and in New Zealand, where the Pacific salmon have been established, to show that some of the salmon bred in one stream have, on reaching maturity, entered a different stream to spawn. Further, it has not been shown or claimed that all the fish bred in a watershed return to the identical tributary of that watershed in which they were propagated. There is sufficient evidence to warrant the conclusion that some salmon propagated in the Lower Section of the Fraser have entered the Upper Section and spawned there. We hav therefore three strings to our bow to account for the existence of the runs of the lean years. (1) The escapes at high or low stages of water during the original blockade; (2) The overlapping five-year-old fish bred in the Upper Section by the run that did survive, and (3) the fish bred in the Lower Section that passed to the Upper Section and spawned there.

"The building up of a run to the Upper Section of the Fraser by any or all of the measures here indicated would, of necessity, have taken a long period of time. We cannot estimate it, but we are not compelled to place it in the dark ages, or even two or three centuries ago. We can, however, postulate, that, during that period the Indians of the Uppeer Sections, and in the Fraser Canyon, were catching such fish as they could secure up to the limit of their demands, and were in consequence interfering with a more rapid development of a run. The records of Simon Fraser, the discoverer

*B. C. Fishermen Report, 1915, pp. 29 and 30.

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