The Speed of Migrating Salmon in the Columbia River.

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(Abstract.)[1]

In the solution of this problem I devised a scheme whereby individual fishes could be given individual tags that would render identification absolutely certain if the fish should be recaptured. This plan was nothing more or less than the use of the conventional stock-marking aluminum buttons. These buttons are light and cannot be torn apart and they carry serial numbers on one face; on the other can be placed such special marks as one may select.

On August 14, 1908, I marked fifty-nine fish at Sand Island, just within the mouth of the Columbia River. These fish were liberated in the river in the hope that some would be retaken, and thus we might glean the story of their migration. The fish were marked by inserting numbered buttons through the caudal fin.

Seventeen of the fifty-nine fish liberated were retaken and reported to me; sixteen buttons were also returned to me. The fish were retaken along the river from a point four miles below where they were liberated up to the Dalles of the Columbia, just below Celilo Falls, a total distance of two hundred and fourteen miles. Near the upper limit quite a number of fish were taken and six of these had traveled a distance which, when rated, gives an average individual speed of from six and one-third to seven and one-half miles a day.

The following table is constructed to show the actual time from liberation to recapture, the distance covered, the probable time consumed in the straight-away run on a basis of the speed of number 76 (seven and one-half miles), and the days unaccounted for. My view is that these unaccounted days are chiefly spent in the lower estuary of the river in becoming acclimated to the fresh water.

Species and Number.	Distance Traveled in Miles.	Days Out.	Days Required to Cover the Distance at a Speed of $7\frac{1}{2}$ Miles a Day.	Days Unaccounted for, i. e., Available Acclimatization.
Silver.................................... 76	210	28	28	0
Silver.................................... 75	210	29	28	1
Silver.................................... 89	210	30	28	2
Silver.................................... 79	210	33	28	5
Silver.................................... 97	210	33	28	5
Steelhead................................124	210	33	28	5
Chinook 80	15	11	2	9
Steelhead................................ 98	210	52	28	24
Steelhead................................125	70	35	9	26
Chinook..................................123	15	31	2	29
Silver.................................... 87	70	57	9	48
Chinook..................................113	4	6	0	6

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