

of rowing and sculling, as it were, with their fins and tail ; and this powerful impetus bears them upwards in the air, on the same principle that a few tugs of the oar make a boat shoot outwards after one has ceased to row."—Ephemera says, "the ascending motion is caused by the Salmon striking the water downwards with its pectoral, ventral, and dorsal fins, aided by bodily muscular action." There is no doubt this muscular exertion often gives to the fish, its curvilinear form.

The Salmon do not breed in lakes, nor ponds, nor any deep or still water. It is only in the shallows, where the waters run clean and swift over gravelly and sandy bottoms, that they deposit their eggs. It is for this that they seek the heads of the streams, shooting up the rapids and leaping the water falls, counting no exertion nor fatigue too great, if they may but safely deposit the hopes of future years where the highly aerated waters rippling over their procreant cradle, may quicken the embryo Salmon into life.

In the ascent, the females lead the way. After reaching the river sources, when the water has cooled to about 42° Fahrenheit, they prepare to deposit their spawn. By this time the male and female have put on respectively the appearance known as "Red" fish and "Black" fish. The female seek out their mates, and pairing off, they choose a spawning place, from which, if possible, they drive away all other fish. Ephemera, describing the manner in which they deposit their eggs, says, "a Salmon spawning-bed is constructed thus :—The fish having paired, chosen their spot for bed-making, and being ready to lie-in, they drop down a stream a little, and then rushing back with velocity towards the spot selected, they dart their heads into the gravel, burrowing with their snouts into it. This burrowing action, assisted with the powers of the fins, is performed with great force, and the water's current aiding, the upper part or roof of the excavation is removed. The burrowing process is continued, until a first nest is dug sufficiently capacious for a first deposition of ova. Then the female enters this first hollowed link of the bed and deposits therein a portion of her ova. That done, she retires down stream and the male instantly takes her place, and pouring, by emission, a certain quantity of milt over the deposited ova, impregnates them. After this, the fish commences a second excavation immediately above the first, and in a straight line with it. In making the excavations they relieve one another. When one fish grows tired of its work it drops down stream until it is refreshed, and then with renovated powers resumes its labors, relieving at the same time its partner. The partner acts in the same spirit, and so their labor progresses by alternate exertion. The second bed completed, the female enters it as she did the first, again depositing a portion of ova, and drops a little down stream. The male forthwith enters the excavation, and impregnates the ova in it. The different nests are not made on the same day, but on different days, progressively. The ova in the first nest are covered with gravel and sand dug from the second, being carried into it chiefly by the action of the current. The excavating process just described is day by day continued until the female has no more ova to deposit. The last deposition of ova is covered in by the action of the fish and water,