

pools. These are the favorite hiding places and winter quarters of the fish, as the aquatic plants grow in profusion in quiet water, supplying ample nourishment for insect life, and quantities of food are usually brought together in such places by the currents. Wherever there are no such pools they can easily be made artificially, for which purpose cross-dikes are constructed in the bed of the stream, at a distance of one hundred to one hundred and fifty feet, and strengthened by sod, sand, and stones. Below these dikes holes are dug, three to five feet deep and six to seven feet long, in each of which are placed some large and several small stones, or flagstones. The fish are thus provided with suitable hiding places, and fish thieves are foiled in their endeavors to catch trout with nets. As these dikes produce small waterfalls, the pools are increased by every high water, if proper care is only taken that the floods do not carry the dikes away. They should extend several feet on the bank, so as to prevent the water from flowing past them; and then the soil carried along by the stream will continually make the dikes stronger and stronger.

In our age, when it is often so exceedingly difficult for a man to make a living, it is absolutely necessary for the farmer and landed proprietor to husband his resources, and to derive the greatest possible benefit from his property. A stream or a pond, unless used for purposes of irrigation, was formerly considered almost like dead capital, and attempts were even made to lay it dry, with the view of using the land thus gained to greater advantage. In our days no landed proprietor should be found guilty of such folly. By utilizing such waters for pisciculture, the first expenses of which are, as a general rule, very slight, a tenfold greater profit can be realized than by laying them dry and using them for agricultural purposes. In nearly every part of our country there are thousands of such ponds and streams which at present are entirely useless, but which if stocked with fine food-fish would become a rich source of income to their owners. Of all the various branches of pisciculture, trout culture is certainly the easiest and most profitable, and all persons who are in any way in a condition to carry on this business should give all possible attention to it.

130.—SCARCITY OF SALMON IN THE LITTLE SPOKANE AND OTHER STREAMS ON THE PACIFIC COAST.

By LIVINGSTON STONE.

[From a letter to Prof. S. F. Baird.]

It looks as if this year would prove a poor one for salmon at the Spokane River as well as McCloud River. A letter from Lane C. Gilliam, of Spokane Falls, Wash., dated September 17, 1883, says: "I have just completed my second trip to Little Spokane, and as yet no salmon to speak of are running. The Indians, who are encamped here in great

numbers anticipating a large run, are uneasy and fear the fish are not coming. Yesterday morning they caught eight, which was the largest number taken at any one time as yet. A white man living in the neighborhood told me that last year he made a rough estimate of the salmon taken by the Indians. He thinks they had between 40,000 and 50,000 drying at one time, about October 1. I will make another investigation about October 1."

The injury to the McCloud River salmon this year, due to the blasting of the Northern Pacific Railroad, which will be completed this winter, is, I am happy to say, in all probability, but temporary. The next year's run will probably be the same that it would have been if the railroad had not been built.

The result of my researches on the Snake River are that no salmon ascend as high as the crossing of the Utah and Northern Railroad, and that there are no salmon as high as the foot of the American Falls on the Oregon Short Line Railroad. The salmon probably cannot get over Shoshone Falls. In the spawning season there are a great many salmon at the foot of these falls, 27 miles from the Oregon Short Line Railroad.

CHARLESTOWN, N. H., *October 5, 1883.*

131.—TOTAL AMOUNT OF SHAD AND HERRING CAUGHT ON THE POTOMAC RIVER DURING THE SPRING OF 1882.

By GWYNN HARRIS,

Inspector of Marine Products for the District of Columbia.

During the month of February there were 5 shad and 925 herring caught. The first shad was caught February 21, about 75 miles down the river, and just below Mathias Point. The totals for the season are as follows:

	Shad.	Herring.
Landed in Washington	349, 140	6, 500, 726
Landed in Alexandria	105, 000	3, 600, 000
Landed in Georgetown	8, 000	815, 000
Shipped to Baltimore from Glymont	3, 372
Sold on different shores	2, 500	600, 000
Totals.....	468, 012	11, 515, 726

Some of the fishing shores have quite a local trade; for instance, Chapman's, Budd's Ferry, Moxley Point, Bryant's Point, Freestone, and other shores. I think the estimate for these sales is small. The amount put down for Georgetown I think will also include the fish caught at Little Falls and Chain Bridge.

WASHINGTON, D. C., *July 1, 1882.*