

eral miles out to sea, and affects the rivers for a long distance inland, making the surface smooth and calm. Fish are dying by thousands and floating like chips on the surface of the water. It is supposed that they are poisoned by this oily scum, but whence the destroyer comes nobody knows. A suggestion that a ship loaded with oil may have foundered in the vicinity is scouted, because from Lockwood's Folly all the way to Little River the scum is found, and the coast is strewn with the dead fish all the way. In the salt water about Shallotte River and Tubb's Inlet are immense quantities of dead fish of every kind, and it is feared that there are no live fish left in Shallotte River or within 10 miles of its mouth. The water appears to have become as oil, and the wind seems to make no impression on it. [From the *Narragansett Herald*, Narragansett Pier, R. I., July 3, 1886.]

61.—FISH IN PUGET SOUND.

By J. P. HAMMOND.

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

I have been engaged in the fishing business (making oil from herring and dogfish, and salting and smoking salmon and herring) on Puget Sound for the last seventeen years, and am well acquainted with the different species of fish caught on the sound, and in the Strait of Juan de Fuca.

From 1869 to 1877 it was not an uncommon occurrence for us to catch from 200 to 300 barrels of herring in a night, but since 1877 they have been growing less in number, until now the largest night's work is about 20 barrels. This is a great falling off, and it is much the same way with all other fish on the sound. Previous to 1869 there had been a great business done in catching codfish and winter salmon on the same fishing ground where we catch herring. The cod were dried and the salmon pickled and shipped to San Francisco, but at the time of my coming (in 1869) these two varieties were almost extinct. For then, in an entire season of three and one-half months at the most, we caught 4 or 5 cod with our herring, and it is the same now. This is winter fishing, from the middle of November to the 1st of March.

If we then caught 3 or 4 barrels of salmon, that was considered a good catch, and now 30 or 40 salmon is the best we can do. We have a species of salmon averaging about 7 pounds, which come every year in September and run until October, a space of about six weeks; but they are also becoming scarce, although there is still quite a business done with them. Then there is another species called by white people the hump-back salmon, on account of their getting a large hump on the male salmon's back about the time they are ready to spawn. The Indians call them haddo salmon.

There is also the dogfish, which we catch for the oil contained in its

liver. This has become entirely extinct on some of the old fishing grounds, and on many others where a man with 500 hooks would take from 300 to 500 dogfish in a night, he would not take that many in an entire season now.

Then there is the halibut, of which a few years ago a great many were caught in the sound, but now it is a very rare occurrence to catch one. Fishermen have to go into the Fuca Strait for them, and that is also where they get the most dogfish now.

These fish that I have mentioned are the principal ones we ever had in these waters. We have quite a number of smelt and several varieties of flounders, but they are very scarce now, and one cause of this is on account of the Chinese fishermen we had here a few years past, who salted and dried them for the Chinamen in this country. We have also a "perch," a very inferior fish, which brings forth its young alive the same as our dogfish. These "perch" also are rare. There are some sculpins, and a small fish called a minnow. Then there is the rock-cod, an excellent fish which is very scarce on the sound now, but ten years ago they were very abundant.

We have also a good many shrimps, but they are very small; also four distinct varieties of clams. Oysters are met with in a few parts of the sound, but in limited quantities and of very small size, the largest being about the size of a silver dollar. Cockles and mussels are found. The mussels are small and inferior, but at Cape Flattery, in Fuca Strait, there is a mussel about 6 inches long, very finely flavored, and of a different species from those on the sound. We have four kinds of crabs, and with one exception they are all small and inferior, but the large ones are of the same species as the crabs in California.

There have never been any laws here to protect the fish, with one exception. This was a law to protect the spawning ground of the herring, which spawn near our fishing ground. It takes in a shore line of about 15 miles, but all the other spawning grounds are unprotected.

Everything—gurry, sawdust, and every description of filth and rubbish—is thrown into the water. The mill-owners have let the sawdust run into the sound ever since they built their mills; some only a part, but others all of it. I am living in a saw-mill town, and the mill-owners have thrown most of the sawdust into the water, and the consequence is that the bay has filled in about 10 feet since I came here.

There are many lakes adjacent to the sound with outlets into it. Three miles back from Seattle Bay there are three lakes: Washington, about 20 miles long and 3 to 4 miles wide; Union, 2 miles long and one mile wide; Green, $1\frac{1}{2}$ miles each way. Ten miles back from Seattle is Samamish Lake, about 10 miles long and about two to three miles wide. All these lakes have deep water, and are good lakes to stock with all kinds of fresh-water fish. The only fish in them is a species of trout, very few in number, the largest of which are about a foot in length.