

The *Idus* has the habits of a river fish, likes deep better than shallow water. It seeks under plants and stones such food as larvæ, worms, and snails. It takes almost the same food the carp takes, including bread, cooked cornmeal, &c. Vegetable food it will not take.

The golden ide should not be kept in the same pond with carp. The carp make the water muddy and the ides destroy the ova of the carp. Carp should never be kept in an ide pond if it is desired that such ponds should be clear and that the ides should show to a good advantage.

The golden ide spawns in the neighborhood of Washington in April and the beginning of May, and in cool ponds (spring water) at the end of May. In the Southern States they spawn by the middle of March.

In regard to hatching in ponds, they would do better in large and deep ponds, with a good crowded vegetation, than in small or shallow ponds. The water in such smaller ponds, during cool nights, often attains a low temperature, which would prevent the ova from hatching out advantageously.

WASHINGTON, D. C., June 1, 1885.

68.—FISH-CULTURE AT GOUVILLE, FRANCE.

By LEON D'HALLOY.

[From a letter to C. Raveret-Wattel.*]

Eighteen months ago we placed in the lake at Gouville 1,400 trout a year and a half old. The year before we had placed there 6,000 about six months old. Of these last not one has been recovered, as they were probably too small to defend themselves in that body of water (about 11 acres). This year we have caught 1,016 three-year-old trout, resembling those we put in. These trout sold in the market for an average of 2 francs [38 cents] apiece. Our *fontinalis* have grown less rapidly than either the Scotch or the lake trout; we are now placing in the lake some two-year-old trout. The Rocky Mountain trout from California is a splendid variety. Following your advice, I have imported eggs for two years; and this year I have again had 20,000 which hatched well, although there was a considerable loss owing to the long voyage. We have now some good breeders; and during this year we have obtained 40,000 eggs, while next year (1884-'85) I hope to get 100,000. I think that now the question of industrial fish-culture is settled, or at least, is on the point of being settled. Our expenses are as follows: One man, 1,200 francs; food for the trout, 300 francs; total, 1,500 francs a year (and we have never spent more). The lake fishing would have returned 2,000 francs if we had not reserved some breeders, and the different

* From Bulletin of French Acclimatization Society, July, 1884, p. 600.

fisheries in the river would give us at least 1,500 francs a year; total, 3,500 francs. This year we intend to place 2,500 two-year-old trout in the lake, which will greatly increase the fishing; and I hope that here in a few years we shall put in the lake 5,000 or 6,000 a year, for I think it can hold 20,000. We have much less mortality among the fry coming from eggs obtained at Gouville than from those bought elsewhere, for while the journey does not prevent hatching, it renders the fry more delicate. I forgot to say to you that the trout in the lake have not received special food for eighteen months, but have lived on insects, minnows, &c. This year we have had, including the foreign eggs, 100,000 fish hatched.

69.—FISHING ON AN EDGE OF THE GRAND BANKS.

By Capt. J. W. COLLINS.

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

Capt. George A. Johnson, master of schooner Augusta H. Johnson, who has just returned from a fresh-halibut trip to the Grand Banks, tells me that he fished around the edges of the deep-water pocket on the eastern side of the banks (in north latitude $44^{\circ} 3'$), which he reported some time ago to the Hydrographic Office at Washington.

A remarkable feature of the fishing in that region is the great abundance of ground-sharks. So plentiful were these that Captain Johnson could not leave his trawl-lines out over night, since, if he did, the sharks would get on the hooks and destroy the gear by rolling up in the lines, breaking them, &c. On one occasion his men caught and killed 46 sharks in one day, one dory getting 18 of them on its trawl. Many of these sharks were of extraordinary size, the men reporting them to be much longer than their dories. As a dory is more than 19 feet long over all, this method of measuring would make some of the sharks from 20 to 25 feet in length. This species of shark is noted for its sluggishness, and it is not uncommon for large specimens to be hauled up on trawl-lines, though I have never before known of its occurrence in such numbers as reported by Captain Johnson.

In the deepest part of this pocket the bottom is muddy. Grenadiers (*Macrurus*) are abundant, and some very large specimens of Newfoundland turbot (*Platysomatichthys hippoglossoides*) were taken. The latter weighed more than 20 pounds on an average, as Captain Johnson thinks, which is an extraordinary size. They generally do not average more than from 5 to 10 pounds. Several icebergs were grounded in the pocket. One, which lay about 3 miles inside the pocket's mouth, was grounded on the northern side in 125 fathoms, as Captain Johnson ascertained by sounding near it.

GLOUCESTER, MASS., July 20, 1885.