

100.—WATER-BEETLES DESTROYING CARP.

By Prof. C. V. RILEY.

The large water insect which, according to the account of Mr. G. W. Peters, Caldwell, Sumner County, Kansas,* attacks and kills young carp is evidently some species of *Cybister* or *Dytiscus* of the coleopterous family *Dytiscidae*. These carnivorous water-beetles occasionally abound in certain localities and are then a serious drawback to successful fish-culture. Moreover, since the German carp is a sluggish fish, it is much more exposed to the attacks of these beetles than most other kinds of fish. Unfortunately there is no way of poisoning the beetles and their still more voracious larvæ without at the same time destroying the fish, and all that can be done is to catch the beetles by means of a net shaped like a common butterfly-net and attached to the end of a bamboo pole. With a little practice many beetles may thus be captured within a short time, and by continuing this effort throughout the year the pest may be kept in check.

WASHINGTON, D. C., March 31, 1885.

101.—EDIBLE SHELL-FISH FOUND NEAR CUBA.

By ROBT. E. C. STEARNS.

[In reply to a letter of Mr. P. Benjamin, of Fulton Market, New York City, December 27, 1884.]

I have made inquiry and have learned only this, "That oysters of fair quality are rather abundant in the waters about Santiago, Cuba." The animal or soft portion of many of the conch shells, so-called, is eaten at various places by the negroes and others both in Florida and elsewhere in the Antillean-Caribbean region; but such gasteropod forms, while locally of some business importance, can hardly be so regarded in a broad commercial sense. Of the acephalans, or bivalves, the tellins and cockles of the cooler waters, at various places in the North Pacific and North Atlantic, are not only edible but often excellent in quality. There are species belonging to these groups within the region named, and of good merchantable size, but I am unable to specify any locality where they exist in such numbers as to afford a reasonable basis

*Mr. Peters wrote: "I received last fall 20 carp in good condition, and they have wintered well. Now as spring has come there is a big bug, shaped like a turtle, that is catching and killing my carp. There will seven or eight of these bugs attack a carp at once and stick to him till they eat him up alive. They can fly. They have two legs that they use to swim as a boy uses his arms. They are always in motion. Now I want to know how to get rid of them."

for a business enterprise. A common and widely distributed West Indian tellin (*Tellina radiata*), a very handsome shell-fish, is eaten regularly (that is to say, it is a staple article of food) at Manatee, Fla., and is called by the people there the "sun clam;" and, as before stated, there are several species of cockles of edible value, some of large size, the quality of which I know nothing about. Sometimes these are eaten by the people who live along the Florida coast.

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102.—NOTES ON FISH-CULTURE IN IOWA.

By A. A. MOSHER.

WHITEFISH.—The whitefish eggs (1,000,000) sent from Northville arrived February 11, 1885, in splendid condition, and were all hatched by the 15th of April. I lost none except such as were unavoidably injured—not more than 50. They were put into Spirit Lake. This lake is about 4 miles square with a depth of about 22 feet, somewhat deeper in places. The shores are sand and gravel, with occasionally bowlders. The bottom is soft, out in the lake, say, from 20 to 40 rods; it seems to be a deposit of silt or fine mud, and seems to be full of animal life. If it is cold enough, I think they will do well. They were very lively and strong. We ought to hear from them, and no doubt would if we could catch them.

LOCH LEVEN TROUT.—The Loch Leven trout from the hatchery at Anamosa, in this State (about 30,000) were brought here by Mr. Aldrich, April 3, in good condition, and were put into West Okoboji Lake, being the only suitable lake in the State. This lake is in Dickinson County and is of the chain of lakes of which Spirit Lake is one. The water in Okoboji is very clear, never turbid, and very deep in some places—170 feet; has deep bays with gravelly shores mainly, and is about 6 miles long and from one-half to 2 miles wide. They were put in at the head.

WALL-EYED PIKE.—As to the wall-eyed pike, I have some eggs to send, but they are very glutinous. I have no trouble in impregnating them and have hurdles on which I put the eggs. I am anxious to send some eggs, but after repeated manipulations they will still adhere in bunches. Glass jars will not do. I have found that out, but by scattering them (after impregnating) on willow hurdles, I think they will be all right. In some of the eggs the embryo was very distinct, two-thirds developed forty-eight hours after impregnating. The pike are the common white-bellied ones, weighing from 2½ to 6 or 8 pounds, and are among the best fish, if not the best (excepting, of course, whitefish and trout), there are in this country. I have some pickerel (*Esox lucius*) eggs in good shape and doing well. They are not glutinous.

SPIRIT LAKE, IOWA, April 22, 1885.