

the most part lost, owing, as I think, to the circumstance that the water was allowed to flow too rapidly and violently through the hatching jar.

The behavior of the hatching jar was most admirable, but would have been still better had there been a larger quantity of eggs put into the apparatus. The most meritorious feature of the apparatus is the almost entire non-development of the saprolegnious fungus, which causes so great a mortality in some other forms of hatching contrivances in which all of the ova are not in continual movement. The very gradual, gentle, and continual rolling movement of the ova upon each other in the jar apparently prevents the spores of the fungus from adhering. The cleanliness of the apparatus is also to be commended, whereby the use of skim nets for cleaning is dispensed with, while the material of which it is made—glass—enables one to watch the progress of development very satisfactorily from the outside of the jar with a hand-glass or pocket lens of moderate power.

On the seventeenth day of the experiment the hatched embryos were in the condition of those normally developed at 70° to 75° Fahr., the yelk being ovoidal, clear, and plump. At the rate at which the development progressed, it would take five times as long to absorb the bulk of the yelk of an embryo at a temperature of 53°.75 Fahr. as at 75° Fahr., or about 25 days. This period, added to the prolonged time of incubation at 53°.75 Fahr., would cover a space of forty days, or more than twice the time required to carry embryo shad to the farthest confines of Europe. The probability therefore is, that we have exceeded the lowest temperature practically required for this purpose; 55° Fahr. being a much more favorable and less dangerous temperature than that prevailing during the successful experiment of which we have just given a detailed account.

WASHINGTON, *April 26, 1882.*

GROWTH AND SPAWNING OF GERMAN CARP IN ALABAMA.

By A. G. BARNES.

[Letter to Prof. S. F. Baird.]

It will perhaps interest you to have a report from my German carp. Those received January 12, 1881, are now 20 inches in length. The first indications noticed of their breeding were in March last (the nineteenth day). A lot of eggs, found attached to the grass, was taken and place in a tub, and the young were seen on the seventh day afterwards—the weather cool and wet. Again, on 2d instant I saw them depositing their eggs. A lot of these eggs placed in a tub hatched out on the fourth day—the weather warm and pleasant—the water during the day indicating about 70°. Those hatched 26th March are now 1½ inches in length.

Your prediction that they would spawn in the South in their second year proved true. My carp have made more rapid growth, and have propagated a year sooner than in their native waters. I have not tested their eating qualities, but as my pond is now well stocked I propose to try one or two of my breeders, as soon as they recuperate from the exhaustion necessary to spawning. My success, so far, has been eminently satisfactory, and now when I find, by test, that I have, in addition to this other good quality, a good *food* fish, I shall be more than compensated for my trouble, expense, and waiting. With my experience, I do not hesitate to say the Southern waters are peculiarly well adapted to the propagation and raising of carp.

GAINESVILLE, ALA., April 21, 1882.

NOTES ON THE FISHERIES OF GLOUCESTER, MASSACHUSETTS.

By S. J. MARTIN.

[No. 1.—Letter to Prof. S. F. Baird.]

The George's vessels have not done much the last week. They have to go to Grand Manan after bait; that makes the trips longer. Three halibut fares have been landed this week; small fares. Halibut bring a high price, selling during the past week at 9 cents a pound for white and 6 cents a pound for gray. The outlook for fresh fish is good. Had-dock have not been sold for less than 2½ cents a pound. Cod have been sold for 3 cents per pound all the week. There is a good school of cod in Ipswich Bay—large fish. Schooner Rising Star caught 20,000 pounds in three days. The rest of the boats did as well. One of the Rockport boats set 12 nets, where they were getting 6,000 pounds on trawls in one day. When they hauled the nets they took 200 pounds. They cannot get trawl fish in nets, or net fish on trawls. That has been well tried. The Southern mackerel fleet have not done much. The schooner Mertie Delmar was in New York Monday; she had 130 barrels of medium-sized mackerel caught thirty miles southeast from Cape Henry. Last year the first mackerel were caught on the 23d day of March. The next, April 19, when 12 sail arrived with 1,705 barrels. The next were caught April 25, when 30 sail arrived in New York with 6,000 barrels of fresh mackerel. The mackerel sold in New York Tuesday at 12 and 10 cents each. All the old mackerel are out of the market. The first salt mackerel will bring a good price. I hope the mackerel-catchers learned a lesson last summer about selling their mackerel out of pickle to save inspection. They began to sell mackerel out of pickle five years ago. The last three summers it has been carried on extensively. Mackerel sold out of pickle last year for \$4 per barrel were sold afterwards for \$10 per barrel. I do not see where the general inspector gets his pay when the mackerel are sold out of pickle; that