## BULLETIN OF THE UNITED STATES FISH COMMISSION. 203

## 65.-CARP IN FRANCE.\*

The carp is generally well known. It has a strongly-curving back of an olive or bluish color, yellowish below, and with a whitish belly. The spines forming the first ray of the dorsal and the anal fins are strong and toothed. It has pharyngeal teeth, flat and grooved at the crown. There is a lateral line of 48 black points; the dorsal fin has 21, 22, or 24 rays; anal, 8 or 9; each ventral, 9; and there are 3 toothed rays to the dorsal and the anal fins. The caudal and the ventral fins are of a violet color; the anal fin is of a reddish-brown; and the gill-covers are glossy and without notches. There are 4 barbels, 2 of which are at the angles of the jaw. Its scales are large and hard. The bony parts of the anatomy of this fish are very numerous, and 4,386 pieces have been counted. The head is strong, large, and blunt, and the eyes are small.

The carp comes from the central and southern parts of Europe, and has been acclimatized almost everywhere. [It seems to have come originally from Central Asia, whence it was introduced into Europe as a food fish.] It thrives in the quiet waters of France, where it sometimes attains the length of nearly 4 feet. It grows readily in ponds, and is of a good flavor. Clear and gently-flowing waters are suitable for it; and at the same time it finds in these waters some qualities which escape our notice, since it remains in certain portions of a stream or river and is found only in these portions. The sensibility of the carp on this point is so great that those which have been raised and set free in other parts of these streams go to rejoin the other carp in these places and do not restock the whole length of the watercourse. Carp multiply rapidly in ponds; the muddy water, however, of these bodies of water is apt to give a muddy taste to their flesh. It is easy to rid the fish of this muddy flavor elsewhere by putting them for at least eight days into clear running water.

When the carp is about to spawn, it leaves the large watercourses to seek more quiet places, and is not stopped on its way by waterfalls of 6 feet in height, which it ascends with as much dexterity and perseverance as trout. In spawning it rubs against weeds in order to aid in the ejection of its eggs; and often it is almost entirely out of the water, especially during a pleasant spring and under the rays of a warming sun. At spawning time the flesh is soft and flabby.

The young carp are much exposed to the teeth of their enemies, and an immense number become the food of fish, birds, and animals; but after they are three years old they have little to fear from pikes and others. Carp have a very long life. Those that we call salmon carp have

\*From the Moniteur de la Pisciculture, &c., Paris, November 28, 1885. Translated by H. P. JERRELL. red flesh and are delicious eating. The growth of this fish in a place where it gets good food is rapid, for in the period of seven years it passes from a weight of 8 grams to 8 kilograms [ $\frac{2}{7}$  ounce to 17 $\frac{2}{3}$  pounds, about], increasing a thousand fold, but after reaching this size it increases much more slowly. We often see very large specimens, with the head much rounded in front and with blunt noses. A race with large scales has been produced, some individuals of which have the skin bare in places; and some are entirely scaleless. These varieties are called Queen Carp, Mirror Carp, Leather Carp, &c.

The carp is not very voracious, but it lives upon spawn, insects, and many vegetable and animal substances that it finds in the mud. When the carp is lean its head seems to be very large in comparison with its body.

The small carp are not good eating, but the large ones are plump and their flesh is firm and delicate when they are caught in living water. The Rhine carp and those of Montreuil-sur-Mer are highly esteemed, while those of the Lot River pass as excellent. In the Saône River these fish are of very good quality, while the rapid and clear waters of the Moselle and the Loire furnish carp that are little sought.

M. Bienne, of the fish-cultural establishment at Hüningen, found on December 15, in the Lake of Constance, carp whose eggs and milt were fully matured. Can this indicate that this fish spawns twice a year?

PARIS, November 28, 1885.

## 66.-THE PREPARATION AND COOKING OF CARP.

## By ALFRED DOLGE.

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

In very many cases the carp is taken from muddy, half stagnant water of a high temperature, and is immediately killed, and then cooked after a fashion. Such a fish is utterly unfit to eat, and is apt to make the partakers of the meal sick. Now imagine a carp taken out of such water and transported to market, or even not eaten until the next day. Yet this is what is very often done, and the outcome of it is the general verdict that carp is worthless as a table fish. In Germany the professional fisherman does not bring pond carp for sale to market until they have been in big boxes for from two to three weeks in running river water, so as to be rid of the muddy taste which they acquire in ponds. Any clear running water will do it. Then they are put into big tubs, brought to market in good shape, swimming around, and the purchaser picks out his fish and brings it home alive, where it is killed when wanted for the table. Such a fish when properly cooked is really a delicacy. I usually have a great many visitors at the time when I