CARP PROPAGATION AND BLUE CARP.

BY GEORGE ECKARDT.

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

I am here to construct spawning ponds in Forest Park for the Missouri Fish Commission. The success it had last year in those park ponds is not satisfactory, but good enough to fill all the applications. We have carp six months old from 4 to 14½ inches long and in very fine condition, only not of the right shape. I have to go to Germany, *militaria causa*, and will bring over some adult blue carp for the Missouri Commission next February. The blue carp is just the fish for the country, because it likes warm climate better than the other, and is only spawning when they have a good summer in Germany.

ST. LOUIS, MO., *December* 8, 1882.

FEEDING CARP WITH INDIAN CORN.

By CARL NICKLAS.

[From "Deutsche-Fischerei-Zeitung," vol. V, No. 38, Stettin, September 19, 1882.*]

What would be the proportion of nutritive matter in 1 kilogram of boiled Indian corn if mixed with 1 kilogram of "meat-flour?"

According to Professor Wolff, "meat-flour" contains: 68 per cent. of digestible albumen, no hydrates of carbon, and 11.2 per cent. of fat; Indian corn, 8.4 per cent. of albumen, 60.6 per cent. hydrates of carbon, and 4.8 per cent. of fat. The proportion of nutritive matter in "meat-flour" is, therefore, Nh : Nfr = 1 : 0.4; and in Indian corn 1 : 8.6; consequently the proportion in Indian corn is 21.5 times greater than in "meat-flour." In 1 kilogram (1,000 grams) "meat-flour" there are contained 689 grams albumen, no hydrates of carbon, and 112 grams fat; in 1 kilogram Indian corn: 84 grams albumen, 606 grams hydrates of carbon, and 48 grams fat. Even if one were to suppose—which, however, is hardly possible—that, in feeding carp, the proportion of nutritive substances is immaterial, and that only the quantity of albumen is essential, it would take 8 kilograms of albumen to reach the same quantity of nutritive substance as 1 kilogram "meat-flour," because the quantity of albumen in 8 kilograms Indian corn is about the same as that contained in 1 kilogram "meat-flour." Indian corn is, therefore, among the most irrational and expensive articles of food for carp. Boiling does not change this, but only tends to make the Indian corn a little more digestible. If you boil 1 kilogram Indian corn with 3.5 kilograms *dry* blood, so that the fluid is entirely absorbed by the corn, you will get the right proportion of nutritive substances, viz: about 1 : 0.6. It is preferable to make a paste of corn-meal and blood in the above mentioned quantities.

*"Fütterung der Karpfen mit Mais." Translated from German by H. Jacobson.