

In conclusion, we may mention that Yarrell introduced the aland into his "History of British Fishes," in consequence of having heard that a single specimen had been obtained at the mouth of the Nith. He does not appear, however, to have seen the specimen, and the figure and description are borrowed from a work on Scandinavian fishes.

REPORT ON A TRIP IN GERMANY TO SECURE CARP FOR THE UNITED STATES FISH COMMISSION.

By Dr. O. FINSCH.

BREMEN, August 20, 1875.

Professor BAIRD:

Having returned on the 18th from our trip to obtain fishes for you, I hasten to give you a report.

As I wrote you in my last letter of August 10 I had decided to help in the matter as much as I could, and in consequence offered my services to arrange matters for Mr. Welsher. It was clear that a mere interpreter was not sufficient, and that the subject needed a man acquainted with the matter, and of ability to represent your interest. So I decided to assist him myself, although my own work was in many respects pressing.

I told you in my last letter that there would be great difficulty in obtaining carp, as it is not the proper season, and I am glad to learn that Mr. Hessel confirmed the statement.

I remark, though perhaps I have referred to it before, that our carp are cultivated in ponds, and are not fished for earlier than about the last of October or November. These ponds are partially emptied of the water, and the carp gather in the deep places, where they are caught with hand-nets. As the carp spawn in July, the ponds are full of young fishes, or eggs in the process of hatching, and this is the reason why the fish cultivators dislike to draw off the water, as it is apt to destroy the newly hatched fish. Besides it does not answer to empty the water during the hot weather, as the heat would then be very destructive to the fishes of all sizes.*

As I wrote you in my letter, I had endeavored to ascertain where there were smaller ponds that I might obtain a small number of each of the chief varieties, the scaled carp (*Cyprinus carpio*), the mirror carp (*C. rex-cyprinorum*), and the naked carp (*C. nudus*). Our principal difficulty was that but seldom were two of the kinds cultivated in any one place, and we were obliged to go to different places. Now the naked carp is chiefly raised in middle North Germany, the mirror carp in South Germany, and the scaled (genuine) carp in North Germany, (Mecklenberg, Holstein, &c.), in Bohemia and Silesia; the latter being

*For this reason at this time of year the fish-cultivators will not sell carp even if offered high prices.

near my birthplace, I have the addresses of many carp raisers in this vicinity.

My chief object was to get the carp from a place as near as possible to Bremen, in order that they might not be transported too long a distance; as during the hot weather we had at this time it would prove fatal to the fish. With this end in view, I wrote a great number of letters seeking the desired information. Some were unanswered, and nearly all regretted not being able to procure us carp at this season.

I wrote (July 30 and August 9) to Mr. Lewin Fischhof, near Cassel, who has a large establishment for mirror carp with ponds of more than 600 morgen (acres) in area. Received answer the 6th August; impossible to get carp now; not before October; then in sufficient numbers. Rare to get fine carp.

Wrote to the Fishery Inspector Stengel, of Giersdorf, in Silesia, a place where I know there are fine carp. Got answer in due time; he would procure me a supply of scaled carp, but as Messrs. Welsler and Green took particular interest in mirror carp and naked carp, I could not accept his kind offer; besides, it was too far away.

Wrote to W. Link, in Wittengen, province of Hanover, one of the nearest places to Bremen, but they could not furnish us now.

Wrote to Fishermaster Schieber, at Hameln, but he did not know of any carp.

Wrote to fishery establishment at Lubbinchen, near Guben, province of Brandenburg; received answer they would furnish us all three kinds, but not before November.

N. B.—Hessel obtained at Lubbinchen, goldtench (*Cyprinus tinca*, var. *auratus*).

Wrote to Mr. Traugolt Mende, at Drobrilugk, province of Brandenburg. He could not give carp now; has fine wrasse.

Wrote to the fisheries of the Prinz Schwarzenburg, in Wittengen, Bohemia, who sells about 716,700 pounds a year; received no reply.

Wrote to the fisheries of the Prince of Schaumburg-Lippe, where the finest naked carp are raised, which I know very well; received no reply before we started.

Wrote to Oberamtman Nehr Korn in Biddahausen, near Brunswick; received no reply.

Wrote to the Nassauische Fischerei Actican Gesellschaft, in Wiesbaden; replied we could have common carp, mirror carp, and goldorfe (*Idus melanotus auratus*).

When the letter of Mr. Hessel arrived I had already done this, but as he gave me the address of Nürnberg and Gunzenhausen for mirror carp, I wrote there also; but received no answer. Mr. Hessel advised me not to go to Hungary, where he took his carp, as they would starve during the hot weather, and he even thought it best to take carp at Holstein or Mecklenburg; but, unfortunately, we did not know to whom to apply, and I thought it useless to go there.

To neglect nothing, I wrote to Messrs. Kupnert & Sons, in Hamburg, the address given by Mr. Hessel, to obtain more information about the places where we could get carp. The reply was it would be useless to go there, as we could get none at this season, and not before November, and, besides this, none but the genuine scaled carp are raised in this part of Germany.

After considering all these circumstances, I thought it best to go to Wiesbaden, where we were sure to get three different kinds, common carp, mirror carp, and goldorfe. To go to Hungary was too far, and my time would scarcely have allowed it, and at all the other places we would have obtained but a single kind.

You had desired to get carp and its varieties, and as I had hoped to get naked carp at Brickeburg, I thought it possible to get all three kinds, and goldorfe as well. Of the latter you did not write, but Mr. Hessel seems to have brought some over, although in your letter you speak of only goldtench (*Cyprinus tinca-aurata*).

We started on the 14th (Sunday) to Brickeburg, which lies nearly on the route to Wiesbach, but all my endeavors to obtain a supply of naked carp were fruitless.

In the pond near the principal castle we saw a great many naked carp, among them fellows of about 30 pounds weight, but the Hofmarshall and the Oberforestmaster, the only persons who would have power to let us fish with a hook, were absent, and no one could allow us this privilege.

In the afternoon we drove to Heesen, a village in the neighborhood of Brickeburg, where, also, my efforts were fruitless. Mr. Bodeman, the superintendent of these fisheries, tried (after we went away) to catch a supply by hook and net, but without success; and you may be sure he did what he could.

In the evening we went, by the way of Hanover and Frankfort, to Wiesbaden, where we arrived at 11 o'clock a. m. the 15th. I went immediately to Mr. Kirsch, the director of the Nassauische fishery establishment. We went on Monday with him to Hochst, near Frankfort, where there is a second establishment. To my great regret, there were fewer mirror carp than he thought, and, in consequence of the extremely hot weather, he dared not run the water off, and, as there were small islands in the pond, the fish escaped the net. We could only get common scaled carp and goldorfe.

The latter, I told you, is not a genuine species, but a red variety of the aland or nerfling (*Idus melanotus*), just as the goldtench is of the common tench. Although Mr. Kirsch, who has hatched goldorfe for eight years, is convinced that it is a valid species, scientific people do not believe this; neither do they consider it as delicious a fish as the genuine species.

The aland is not valued very highly, but, on the other hand, Mr. Kirsch has kept this variety for eight years, and they are very dear, being very rare.

You may reckon at all events the goldorfe to be a rare fish, and if Mr. Hessel has brought them over, you possess one of the rarest of our fishes. There may possibly be found considerable difficulty in hatching them. You should keep them in small ponds apart from all rapacious fishes.

In accordance with with Mr. Welsher's agreements we procured—

	Marks.
39 small orfo (yearlings), at 1.70 marks	66. 30
5 middle size orfo (2 year olds), at 3 marks	15. 00
6 large orfo (4 and 5 year olds), at 6 marks	36. 00
50 small carp (common scaled), at 50 pfennigs	25. 00
	142. 30

We started with them in three tin cans (borrowed from the establishment at Wiesbaden), on the morning of the 17th, with the express steamer from Bieberich to Cologne, where we arrived at 5.30 p. m.

It was the hottest day we had had during the summer. The thermometer (Reaumur) indicated 27° in the shade (95° F.). It is needless to enumerate the difficulties we encountered in the care of the fish.

Mr. Welsher supplied them at short intervals with fresh water from the Rhine, and with great trouble I obtained a piece of ice, otherwise we should have lost all the fishes within the first hour. Many of them turned on their backs, but fresh water and ice revived them. On reaching Cologne, we had lost only two of the carp.

At Cologne I had some trouble to get the fish into the baggage-car of the express train, as this is not allowable in this country; but I spoke to the superintendent, who was kind enough to allow it. I ordered by telegraph fresh water to be ready at the few places the train stopped longer than three minutes, and so, with great trouble and much fatigue, we arrived at 4 o'clock a. m. on the 18th, the fish being all in good condition, as the night had been cool.

Here, in Bremen, we have deposited them in a fine marble water reservoir, where they continually get fresh cold water, so that they are in first-rate condition. Mr. Welsher will go on Wednesday (25th), as the Saturday steamer is so crowded there is no place for him. I have no doubt he will bring over the fishes safely, being provided with fresh water and ice.

I was disappointed to find that the carp we got at Wiesbaden were not a fine and good quality, as they are indeed hybrids between the carps (*Cyprinus carpio*) and the karausche (*Cyprinus carassius*) or brachsen (*C. brama*), a form which is very common and of little value, having too many bones and too little flesh; but when we were at Wiesbaden we did not see these smaller ones only as they were swimming through the water, and I could not exactly distinguish what kind they were. It may be that Mr. Kirsch did believe his carp were fine ones, as genuine carp are indeed rare, but, this hybrid one is common. I regret that the carp are not good, for which I will be wholly responsible; but,

as I have said before, I did not see the carp before they came to Bremen, as while we were at the establishment they could not catch a single one, so we trusted Director Kirsch, who said they were first-rate.

Besides these two kinds of fishes, Mr. Welsher will bring with him fifty hybrids between *Cyprinus carpio* (good rape) and *C. auratus* which we will get, as I told you in my last letter, from Mr. Wagner, at Oldenburg.

This hybrid is a good one, grows to 4 to 7 pounds, has a fine flavor, and will be a prolific species, as it has been crossed with fine carp.

This is all I could do to procure you fish now, but I will be able in November to send you fine first-rate carp of all varieties, as they can be carried then without a man to especially attend them.

* * * * *

Yours, very truly,

O. FINSCH.

I received your letter of August 20, including Mr. Hessel's; but letters reach me here even if my name is not correctly written, as I am well known. So it was not necessary to send the letter again, though it was cautious.

I received after awhile some information from Director Kirsch, at Wiesbaden, in regard to the goldorfe. They spawn in June and July, depositing their eggs on roots and small twigs of trees, from which material a wall is built across the pond, which measures, perhaps, 25 to 30 long and 15 to 20 broad. As soon as the eggs are deposited the year-old fishes must be removed, because they eat up the eggs themselves; this is an important fact.

In regard to the transportation of carp, I think, after my experience, they can be carried even in hot weather (as we were out the hottest day of the whole year) if one has sufficient means to arrange things before, as ice, fresh water, &c. The ride on the railway did not injure the fish as the water had motion, but should be made only at night when it is cool (our nights are cooler than in America); during the day they ought to be kept quiet to refresh them. The worst part of it was not getting the carp, for, I think, we could have brought them all in safety.

If you should want a supply of fine carp, I could procure you all three kinds, but I ought to have complete instructions and power long enough beforehand to make all preparation; then I would go myself to places in Bohemia and Silesia when fishing commences in order to choose, myself, every specimen, so that you would get true carp. Naked and mirror carp are, as you know, only cultivated varieties and not genuine species. Some pisciculturists prefer these carp as being more valuable, but others consider them of less value, as they grow slowly and are not good for propagation.

The tench is a fish which I recommend you highly, being hardy and

thus easy to transport. In case you want carp again write me early. I think the following way would be best and cheapest: I would go after the carp to the ponds where they are caught, taking with me an assistant to carry the fish to Bremen, and I would settle with the Lloyd Company and with the captain of the steamer—some of whom I know personally—offer him a reward in order to have one of the crew look after the fishes several times a day. As the weather is cold in November, the fishes will require no other attention than fresh water occasionally, and this can as well be given by a common sailor. When the steamer arrives you could send an experienced man to convey them to their place of destination. In this way the expense would be much diminished, and I shall be able to have the necessary funds here. You will trust me to do all I can, just as I did this time. But now circumstances were against me, and I regret that I was not better able to fulfill your expectations. But Mr. Welsher will tell you that I neglected nothing. As I have told you before, the carp we obtained are not true carp, but a hybrid form; it will be of less importance if Mr. Welsher does lose them. They were injured in catching, not being handled carefully, some of them showing spots destitute of scales, and these specimens will surely starve. Such fish, when they lose slime and scales, are sure candidates for death.

In regard to the shad, Mr. Welsher will tell you. After his statement, I am sure the eggs were spoiled before they reached the steamer, so that it would not be correct to say they died at sea. As the hatching apparatus of Mr. Green is no doubt perfect, I see no reason why the fishes could not be hatched on the route. It has never been tried before to carry shad eggs by railway, and experience has shown that this spoils the eggs, as they are too delicate to endure the shocks. But I believe if they were taken down the Hudson in a small steamer they would reach the Lloyd steamer in safety, and, with Messrs. Welsher and Green, I believe they would have been hatched successfully. So if there is courage enough to try them the third time, it will be successful. I know you have much perseverance, and I am in hopes that next year you will make a new experiment. In this case it would be best not to take men who have already crossed the ocean. But I will say no more on this subject at present.

I hope this letter will give you all the information you wish, and so I will close. Accept my best compliments and the expression of my kindest regards.

Ever yours, very truly,

O. FINSCH.

Bull. U. S. F. C., 81—15

March 24, 1882.