

the map, has a superabundance of lakes and rivers, greater results than hitherto could be obtained. Even if the fish did not fetch a very high price at home, they could be exported, if not fresh, at least smoked salted, or frozen.

If France, with whose circumstances I am but imperfectly acquainted, cannot show any great results of fish-culture, although it has been carried on here for a longer period than in any other country, this certainly must be owing to the methods which are followed. If anything is to be accomplished in fish-culture, practice must go hand in hand with science. As far as my superficial knowledge goes, the professors wanted to manage everything in France; but this will not do. What are needed are men of practical experience, who devote themselves to fish-culture intelligently and with some degree of enthusiasm.

I would recommend that if somewhere in Finland you have an intelligent landed proprietor, in some suitable locality, a private piscicultural establishment be started on his estates, and that you aid such a man, whenever he needs aid, with the light of your knowledge. Even if the immediate profit should be but small, it may increase in time. At any rate it will pay to go to all this trouble; whilst this cannot be said of a Government establishment.

64.—AN OPINION REGARDING THE ANSWER OF R. ECKARDT TO PROFESSOR MALMGREN.*

By CHAMBERLAIN von POLENZ.

Mr. Eckardt proves, by striking figures, that Dr. Malmgren is wrong, when, in his pamphlet, he says: "Germany's efforts in fish-culture, and more especially those made by the German Fishery Association, have led to no results whatever, and the reports of the committee of that association are highly colored and unreliable." In the course of his remarks Mr. Eckardt condemns all Government piscicultural establishment, in general, and that of Hünigen in particular, saying, among other things: "The Imperial piscicultural establishment at Hünigen is of no practical use whatever."

When Mr. Eckardt, a leader in matters pertaining to fish-culture, publicly pronounces such an anathema, it appears desirable for many people who take an interest in fish-culture that Mr. Eckardt should give the reasons for his view more in detail than he has done in the article referred to, in No. 15 of the *Fischerei-Zeitung*.

Stimulated by the example of the Hünigen establishment I have, since 1853, given close personal attention to fish-culture, and have with great interest followed the development of the Hünigen establishment from year to year, and have thereby gained the conviction that that

* "Eine Ansicht über die Antwort R. Eckardt's an Professor Dr. Malmgren," in the *Deutsche Fischerei-Zeitung*, Vol. VI, No. 17, Stettin, April 24, 1883. Translated from the German by HERMAN JACOBSON.

establishment, by stimulating and furthering the science of fish-culture, which formerly had been but little known, and by guiding the business of fish-culture, which had not been carried on in a rational manner, has been of exceedingly great use, and might, under changed circumstances, be of still greater practical use in the future.

The usefulness of this establishment is certainly only in an indirect manner an economic one, whilst a well-conducted private establishment may be of more direct economic use. This is owing to the difference of character existing between Government and private establishments. Whilst private enterprise endeavors, with all the means at its command, to obtain direct profit in the shape of the highest possible interest on the money and labor expended, the Government has other and more general objects in view than annual interest, and may nevertheless benefit greatly the country and its citizens.

To return to the Imperial German piscicultural establishment, it is my opinion that in future it would be of much greater practical use to us if, instead of being located at the extreme southwest end of our country, it was placed in a more central position, nearer to the Weser, Elbe, Oder, and the numerous lakes of the North German plain. In that case the many valuable products of this establishment would be of greater use to us than now; as at present foreign countries actually derive greater advantages from the Hünigen establishment than our country. Owing to local conditions most of the young fish from the Hünigen establishment go into the Rhine, the Danube, and the Rhone, thus being practically of very little benefit to Germany, the Netherlands, France, Switzerland, and the Danube countries enjoying the fruits of German money and German labor.

If our Government piscicultural establishment were located more in the center of Germany its scientific investigations and experiments would exercise a more direct influence and on wider circles in Germany, by stimulating and educating our fish-culturists, than is now possible while the establishment is located near the boundaries of France and Switzerland. By a change of location the piscicultural establishment might be brought in closer and more beneficial contact with the Government and the German Fishery Association than is possible now, the distance between Berlin and Hünigen being so great.

After having given my opinion on our Government piscicultural establishment, I will only briefly remark that what I have said is by no means intended as an objection against the establishment of a scientific station at Lübbinchen. By frequent personal observations I have become well acquainted with the exceedingly practical management of Mr. Eckardt's establishment, and with its great productiveness and its capability of extension, and I am fully convinced that a scientific station at Lübbinchen and a Government piscicultural establishment located somewhere in the center of Germany can very well exist side by side, and would both render highly valuable service to scientific and practical fish culture.