

PROGRESS REPORT ON GOLDEN CHANNEL CATFISH

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ABSTRACT

In June, 1956, albino channel catfish (*Ictalurus Lacustris*) were observed to occur in possibly two spawns from wild colored parents. These albino channel catfish have been named "Golden Channel Catfish." By stocking the golden channel catfish fingerlings in large water areas, sufficient growth was obtained so that several of the fish became sexually mature at the age of two years and a weight of about two pounds. Three spawns were obtained from these two-year-old golden channel catfish in the spring of 1958, and all the young were golden (albino) in color.

The golden channel catfish seems to be equal in ruggedness to the wild colored individuals and possesses superior eye appeal both alive and dressed. The strain of fish evolved has a domesticated history exceeding ten years.

INTRODUCTION

During the Southeastern Fisheries meeting in Little Rock, Arkansas, October, 1956, we presented a paper on the history of the propagation of channel catfish in Arkansas.* It was mentioned in the paper, that we had a spawn of white or albino channel catfish: and that we were holding the mutants for further development with the possibility of propagating a new variety. The brood stock fish were from a strain that have a domesticated history exceeding ten years.

REPORT

On June eighth, 1956, we placed two spawns of channel catfish fry in a rearing pond immediately after their hatching. As we had moved several spawns already that season, no special attention was given these two spawns as to any particular difference in appearance. The method of handling was routine as the spawns were placed in a No. 3 galvanized tub which was in turn submerged in the water within a retainer or guard made of one-fourth inch hardware cloth. As is the custom, the retainer was removed the tenth day. Due to a shortage of tubs for other spawns, the tub was also removed which was several days earlier than this is usually done. Due to this circumstance, we took special note to learn if the fish were returning to this location for their feed. When they were feeding at this location, it was quite easy to see several white fish crossing the feeding station. In an effort to learn more about them, we placed feed on a dip net which was placed on the pond bottom and picked up a few. Under close observation, it was learned that we had a number of albino channel catfish.

During the latter part of August, after observing their growth to equal that of the regular channel catfish, several of the mutants were seined out and placed in other ponds. This was done to avoid complete loss should unfavorable conditions develop in one particular pond. By this time, these fish had developed a golden tinge in color which has remained with them; thus being the basis of our naming them the "Golden Channel Catfish."

During the fall and winter months, when we were disposing of the regular channel catfish fingerlings, the golden ones were placed into other ponds. We hoped to speed up their growth in order to obtain brood stock as quickly as possible. At this time, we were located in the Northwestern part of Arkansas on a small hatchery with limited pond area. Due to these conditions, we were not able to develop them in the manner we desired. And for this reason we decided to make a change in location.

We are now in partnership with Anderson's Minnow Farm, Lonoke, Arkansas, which has approximately seventeen hundred acres of water; thus affording sufficient water area for the type of development desired. Our idea is to check

* 1235 Nelson, Ben, 1957, *Propagation of Channel Catfish in Arkansas*. Proc. of the Tenth Annl. Con. Southeastern Assoc. of Game and Fish Comm., Oct., pp. 165-168.

these fish under all conditions; as we do not believe that small research ponds can afford a true picture of the various possibilities and combinations that can be used in the large commercial reservoirs.

On June tenth, 1957, we placed three hundred golden channel catfish fingerlings weighing thirty pounds per thousand (approximately $\frac{1}{2}$ ounce each) and ten regular channel catfish of equal size in a pond which had seventy acres in surface area and an average water depth of three feet. This pond was completely drained the fifteenth of September and a harvest of approximately three million Golden Shiners, two thousand Carp (which came in when the drain pipe was down), a few Green Sunfish and two hundred eighty-five channel catfish was obtained. Out of this number of channel catfish, two hundred seventy-seven were golden and eight wild in color.

The growth of the catfish was astounding and as a result we called in others to check them. As a few of them had been used at the State Fish Hatchery, Lonoke, for display purposes, prior to the time they were released in the reservoir, we asked Mr. Joe Hogan and Mr. Andrew Hulseley to view their growth. In the three month growing period, they had gained from an average of one-half ounce to one and three-fourths pounds, and a few of them weighed slightly over two pounds. Due to these fish having developed so well, we retained them for brood stock, even though they were only two years old. The remaining catfish which had been placed in other ponds had a gain in weight from the one-half ounce size to one and one-fourth to one and one-half pounds.

Six weeks previous to spawning, the brood fish were fed a commercial feed which we have used for several years, to condition them properly. Pens were built in a separate pond, and a few choice pair of these two-year-old golden channel catfish placed therein. Routine hatching methods were used during the spawning period. We had two natural spawns in the pens. These were placed in a tub within a retainer in a separate pond and handled in the same manner as the regular catfish.

We also placed a pair of the golden catfish in an aquarium located in the Lonoke City Hall. Five hormone shots were given the female without success. We replaced this first female with another and had a spawn from her after the third hormone shot. We used Buffalo fish pituitaries which we had collected and prepared ourselves. We thought the conditions in the aquarium would be adverse to hatching, as the water was city water which contained chlorine and could only be circulated. Running water was not available nor was there any fresh water added during the spawning and hatching period. Due to these conditions, we were in doubt as to whether or not the eggs would hatch. Mr. Lee Brady and Mr. Joe Hogan of the State Fish Hatchery were interested in trying to hatch a few of the eggs in a hatching jar. We agreed to this experiment, and most of the eggs were removed. Neither the eggs nor fry were actually counted but we believe the result in the hatchery jars to be that of approximately fifty percent hatch. The eggs remaining in the aquarium also seemed to hatch on a fifty percent basis.

In order to learn if the fry of the golden channel catfish was different from the regular, a comparison was made of two spawns during the time of moving. As Mr. Brady was also interested in the comparison, he was called. After observation, we learned there was a distinct difference in the color of the fry; the regular being amber and the golden being pink. Further examination proved that the eyes of the golden fish were pink.

As our spawn was light, we did not wish to dispose of any of them but rather place them in large reservoirs for growth. On August sixth the nursery pond was drained and this was done. The fish at that time were two months old and measured three and one-half inches in length. (Fig. 1.) They all carried the true albino characteristics, which leads us to believe we may be able to develop a new variety of channel catfish.

SUMMARY AND CONCLUSIONS

Our work thus far has proven to be quite satisfactory. We have not found the golden channel catfish to be any less rugged than the regular colored ones as is often the case in albinism. It may be that due to the poor light penetration



Fig. 1. Golden Channel Catfish, Two Months Old, 3½ Inches Long

into pond water, albinism in channel catfish will not prove in any way harmful to the growth and survival of the fishes. In fact one instance might lead us to believe that they are hardier in some respects, *i. e.*, two ponds containing both kinds of catfish were treated by mistake with "lexone." As you doubtless know, lexone is quite toxic to catfish. As a result of this application, we did lose several regular catfish but none of the golden. However, we could not say that this one observation would be conclusive. Due to the fact we did not want to lose any of the fish we had, we made no further tests. We hope to check further along these lines next year.

Though the skin of the golden channel catfish is transparent, it is much thicker than the normal colored individuals; does not adhere as closely thus making the fish more easily dressed. After being dressed, the golden specimen is not hard to spot as their meat is white; while the regular colored catfish meat carries a gray tinge. Last but not least is the eye appeal of this fish. From a commercial standpoint this is an asset. We have had numerous persons, who upon seeing the fish, remark on how attractive and clean they appear. Since our brood stock will be three years old this coming season, we feel our 1959 hatch should be sufficient that we can make the fingerlings available for stocking and breeding purposes.

WALLEYE HATCHING, REARING AND TRANSPORTING TECHNIQUES AS PRACTICED IN KENTUCKY

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ABSTRACT

This study revealed that walleye, *Stizostedion vitreum vitreum* (Mitchell), can be jar-hatched, stocked, and a portion raised to fingerling size, for an annual outlay of \$1,000.00 or less.

Early returns indicate that walleye can be inexpensively established by stocking fry in either old or new lakes. The method used was to stock the fish in intermittent rows from a boat. Both openwater stocking and shoreline stocking were practiced successfully.

Two ponds were utilized for experimental walleye production in 1958. Walleye were produced at the rate of 21,255 fingerling walleye 1½ to 2 inches in length per acre in one experimental pond and 10,333 in another pond, without re-sorting to feeding with minnows. This seemed to indicate that walleye lend themselves to pond culture as far south as Kentucky. The experimental evidence concurred with the findings of Dobie (1956) in Minnesota and indicated that production was augmented by the use of organic fertilizers. The writer used hay and soybean meal. It was felt that hay was especially beneficial by helping to prevent phytoplankton blooms.

Both fry and fingerlings were hauled in station wagons in plastic bags placed in cardboard beer cases, a variation of the Ohio method.

The fry were hauled at an average of 36,000 per bag, 12 to 20 bags per station wagon. Various containers were used to carry the bags, and beer cases were found to be particularly tough and re-usable. They could be stacked 2 or 3 high and provided excellent insulation.

O-Tabs, made by Pemble Laboratories, were more successful than bottled oxygen for hauling fry. Buffers, such as dibasic sodium phosphate and sodium bicarbonate, were tried experimentally but were found to be unnecessary. Icing was also used experimentally and was successful but unnecessary.

Preliminary evidence indicated that fingerling walleye 1½ to 2 inches in length and weighing 728 per pound could probably be hauled at the rate of 7,000 to 9,000 per station wagon load. Buffers were needed for hauling fingerlings in plastic bags. Best results were obtained by using dibasic sodium phosphate, activated charcoal, and icing the bag.