

STATE FISHERY GROUNDS.

TWELFTH BIENNIAL REPORT

OF THE

FISH COMMISSION

OF THE

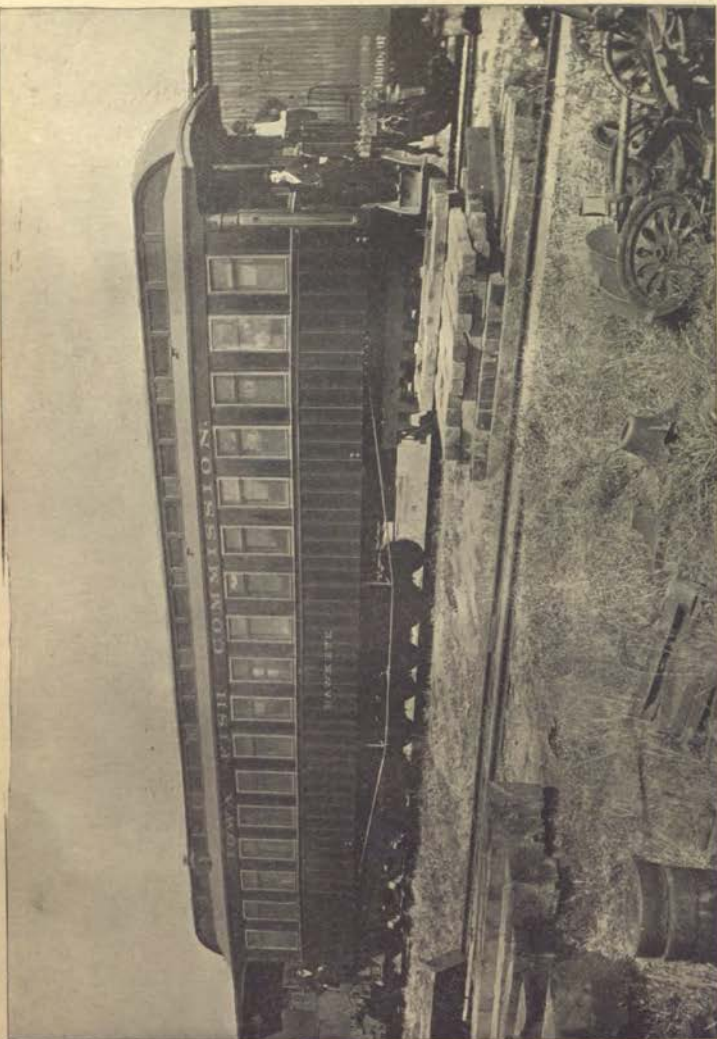
STATE OF IOWA.

1896 - 1897.

GEO. E. DELAVAN, COMMISSIONER.

PRINTED BY ORDER OF THE GENERAL ASSEMBLY.

DES MOINES:
F. H. CONAWAY, STATE PRINTER.
1897.



STATE FISH CAR.

REPORT.

To His Excellency, F. M. Drake, Governor of Iowa:

DEAR SIR—I have the honor to submit herewith the twelfth biennial report of the Iowa Fish Commission for the years 1896-7.

The work of this commission has been attended with signal success in enforcement of law and restocking of the public and private waters of the state. Many ponds, reservoirs and artificial lakes have been constructed and a draught for fish for stocking purposes has been made on this commission that was never before equaled. Especially was this the case last spring when continued rains quite generally filled ponds and lakes that had dried up during the drouth, causing the destruction of thousands of fish that the owners desired to have replaced immediately. Owing to the unusual demands for fish the commission has not been able to fill all the applications made. That fish culture in Iowa is increasing is proven by the many orders for fish received.

SENTIMENT IN FAVOR OF THE LAW.

It is with pleasure that we note an increasing sentiment in favor of our fish and game laws. In a certain community where, a few years ago, an officer's life would have been placed in jeopardy upon making an arrest, I recently arrested and convicted several poachers, and to my surprise the business men of the city approved of the proceedings and remarked that they hoped the good work would be continued until every poacher was driven out of business, that our streams might be filled as they once were with food fish for all. What is true of this locality is also true in many others.

A GOOD LAW.

A very commendable law passed by the Twenty-sixth General Assembly was the one providing for the abolishment of the

winter fish house. This has resulted in much good, as winter fishing, without the spears, snares, and grab hooks usually hidden about these houses, has been reduced to the minimum. The newly revised fish and game law, going into effect the 1st of October, 1897, meets with the approval of all honest sportsmen, while the unscrupulous poacher sees in its wise restrictions less opportunity for despoiling and depleting. While the penalties for infractions are severe, they are no more so than they should be if the state's valuable fish and game interests are to be preserved for any length of time.

ARRESTS AND CONVICTIONS.

Since my last report I have caused the arrest and conviction of between five and six hundred poachers, whose fines amounted to \$6,458. As these fines are converted to the school funds in the localities where the prosecutions occurred, it will be seen at once that the educational interests there have received quite a marked impetus. I beg to call your attention to the fact that the above amount is larger by \$458 than the entire appropriation by the legislature for the fish commission for the biennial period. Under the new law I hope for still better results, as convictions will not be so difficult, and the appointment of deputies authorized by the legislature will be of valuable assistance.

DEPUTIES SHOULD RECEIVE PAY.

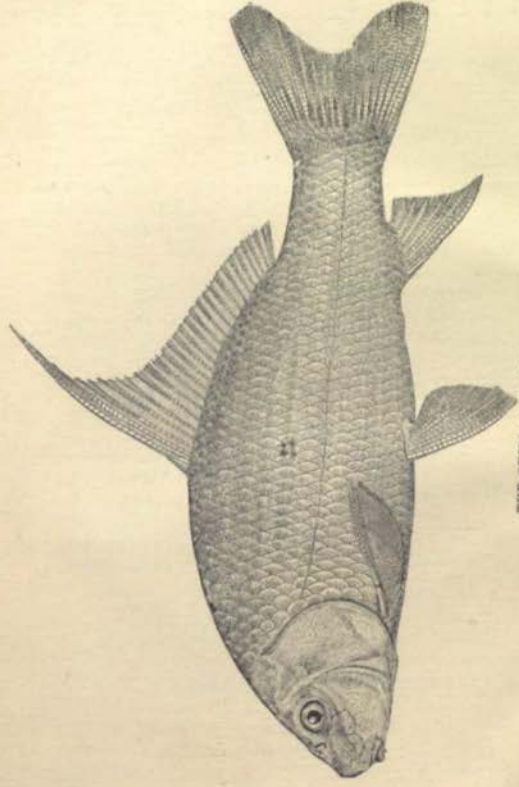
The principal hindrance in securing good men to act as county wardens is the question of pay. While the law authorizes the appointment of these deputies by the fish and game warden, no provision is made for their compensation save the small amounts they can secure as informants. These men should receive reasonable pay for the time and labor given the state.

COMPARATIVE APPROPRIATIONS.

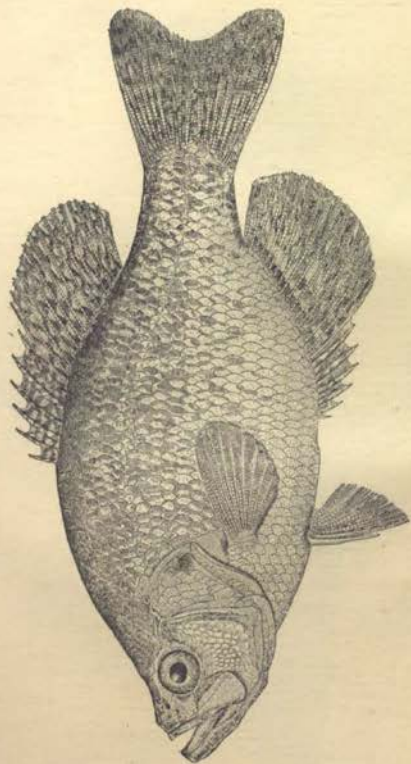
By way of comparison I desire to call your attention to the appropriations made by other states for their fish and game interests, giving the area of square miles in each instance:

Iowa, 55,475 square miles, appropriation \$5,000 for the biennial period.

Michigan, 58,915 square miles, appropriates \$27,483 for fish alone. A salaried game warden with ten deputies is employed and several thousand dollars are paid annually to county wardens.



THE QUILL-BACK (*Icthyos nebulosus*.)

THE CROPPIE (*Percis annularis*).

Maine, with only 33,040 square miles, appropriates \$25,000, and the fish commission says the amount is not enough to meet the increasing demands.

Massachusetts, area 8,315 square miles, appropriates \$14,000 annually.

New Hampshire, area 9,305 square miles. Appropriation unlimited, bills approved by the governor.

Connecticut, with only 4,990 square miles (less than one eleventh the area of Iowa), appropriates \$9,000 for fish culture, and gives her counties power to appoint and pay game wardens.

New York, area 49,170 square miles (6,305 less than Iowa), appropriates \$157,000 for fish and game interests.

Minnesota, area 79,205 square miles, appropriates \$30,000.

Pennsylvania, area 45,212 square miles, gives \$40,000.

Illinois, area 56,000 square miles, gives \$10,000 for the propagation of fish.

Colorado, area 103,645 square miles, appropriates \$21,000 for fish culture.

California, area 155,980 square miles, gives her fish commission \$17,500.

Missouri, area 68,735 square miles, with only six lakes, appropriates \$15,000.

Nebraska, area 76,185 square miles (with only eleven lakes while Iowa has eighty-seven), appropriates \$9,950 for fish culture. Six of Nebraska's lakes are in one county.

Vermont, with an area of only 9,136 square miles and ten lakes, appropriates \$9,500.

Wisconsin, our neighbor on the east with an area of 54,450 square miles (1,025 less than Iowa) appropriates \$24,800.

The other states are making liberal appropriations for the maintenance of their fish and game interests, and it is to be regretted that Iowa, the banner state in a great many other respects, should in this important one occupy a place at the foot of the column. In concluding this topic we desire to add that only a few of the states above referred to, with large appropriations, have more favorable conditions for the propagation of fish than Iowa. The people of these states appreciate the value of these interests as a source of food supply to such a degree that their legislatures are gradually increasing their appropriations. The value of the products is estimated by the amount appropriated. As an evidence how these interests are appreciated in Wisconsin, we quote from a letter in which the commissioner of fisheries of that state says:

We have an annual appropriation of \$12,000; then, if we want funds for any extra work or for permanent improvements, we ask for them. During the session of 1890, we asked for \$5,000 for a new building, and there were only seven votes against it. During the last session, we asked for \$5,000 for a fish car, and the vote was unanimous. Eighteen hundred dollars per year is also voted for the fish and game warden and his expenses. There is also a contingent fund of \$1,500 to pay special deputy wardens. The total expenditures for fish culture and fish and game protection will average about \$21,000 annually. The fish commission will ask for a special appropriation of \$10,000 this winter.

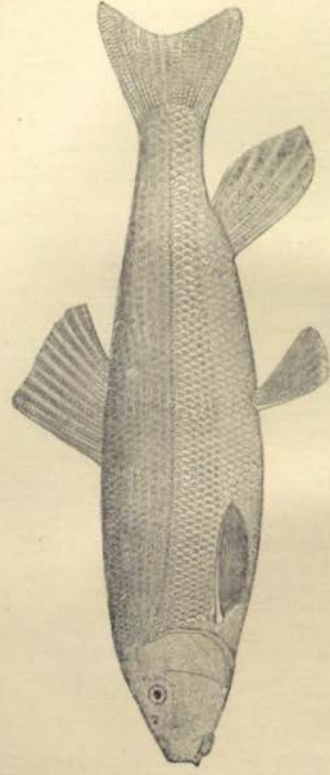
FISHWAY CASE IN THE SUPREME COURT.

Last year a suit was brought against William Beardsley, of Oskaloosa, in the district court of Makaska county, Hon. A. R. Dewey, Judge, to compel Beardsley to provide his dam across the Skunk river with a fishway. The statute under which this case was brought is found in McClain's code, sections 2316 and 2317, which read as follows:

SECTION 2316. That the owner or owners of any dam or obstruction across any river or stream, creek, pond, lake, or water course, in this state, shall, within a reasonable time, erect, construct, and maintain over or across said dam or obstruction, a suitable fishway of suitable capacity and facility to afford a free passage for fish up and down through such water course when the water of said stream is running over the said dam.

SEC. 2317. Any dam or obstruction mentioned in section 1 of this act, not provided with such fishway within a reasonable time after the taking effect of this act, is hereby declared a nuisance and may be abated accordingly.

The court found for the defendant, and as the case is a very important one, embracing, as it does, the entire fishing interests of thousands of miles of valuable water of the state that should be open for the propagation of fish, I appealed the case to the supreme court. This suit is one that not only interests every mill-owner in the state, but every lover of fish as well. We believe that the higher court will decide in this case, as has been done in similar cases in other states, that the thousands of people residing along Iowa's streams should not, by the act of a few individuals, be deprived of this most valuable article of food. As has been said, "the owners of the land along which these streams flow have the burden of the rivers upon them; they run over their soil, overflow their lands, and create a large burden, and all the advantages of the streams for food supply for the inhabitants along their banks is cut off by a few citizens erecting dams near the mouths of the streams." It is plainly an infringement upon the rights of others that should be abated,



COMMON STICKER (*Cottus bairdii*).

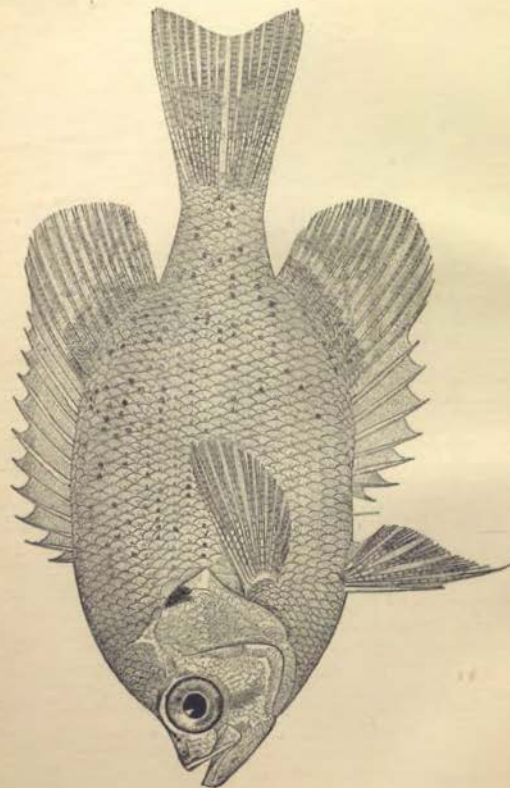
and we think will be as soon as the case comes before the supreme court. This is the first fishway case to be taken to the higher court in Iowa, and its outcome will be eagerly looked for.

OKOBOJI DAM.

By an act of the Twenty-sixth General Assembly, declaring the Okoboji lakes to be public navigable waters, the fish commissioner was authorized to build a dam at the outlet of East Okoboji for the purpose of preventing the escape of water from both lakes. There are two flouring mills located at Milford, below the dam. The proprietors of one of these mills secured a temporary injunction from Judge Lot Thomas, stopping the work when the dam was about half completed. The hearing on the injunction came before Judge Wm. B. Quarton at Algona, where able counsel for the state succeeded in securing a dissolution of the injunction, when the work on the dam was speedily pushed to completion. The dam has retained at least two to two and a half feet more water in the Okobojis this season than there otherwise would have been. It seems, however, that litigation over the dam is not yet at an end. The owner of the second mill at Milford has commenced another suit against the state for the removal of the obstruction. The case comes on for trial at the next term of the district court in Dickinson county. The dam is 279 feet long, about five feet high and five feet wide. Sixty feet in the center is built of stone and cement, and the wing on each end of earth and stone. Above and below the cement wall large stones, in generous quantities, have been placed to break the force of the water. The dam will never go out if malicious hands do not interfere with it.

CANAL BETWEEN SPIRIT AND LITTLE SPIRIT LAKES.

Combined in the act of the legislature, authorizing the erection of the dam, was one directing the fish commissioner to build a passageway between Spirit and Little Spirit lakes that the fish in the larger lake might pass into the smaller one at the spawning season to deposit their product in the moss and weeds in safety. This work has been done, and the result has not only been beneficial in allowing the large fish to use the smaller lake as a spawning-bed, but millions of young game fish have thus been afforded an opportunity to get into the larger lake by way of the canal, which is about 500 feet long, from six to thirteen feet deep, and from six or seven feet wide at the bottom to twenty at the top. The canal having been dug under a



THE RAINBOW SUNFISH (*Centrarchus microsternus*).

public highway it was necessary for the state to build a bridge over the same, which was done in a substantial manner. The expense of building the dam, the canal, and the bridge, was kept within the appropriation of \$1,000.

COURT EXPENSES.

The expenses of the first suit brought against the state for the removal of the dam were paid from the amount appropriated for the fish commission, which were about \$200. At that time there were no other funds available. Arrangements have since been made with the executive council whereby the attorney-general will have charge of the case now pending.

CAR PURCHASED.

Ever since the creation of the Iowa fish commission efforts have been made by each succeeding commissioner to secure a special appropriation of five or six thousand dollars for the purpose of purchasing a car in which, not only to ship the product of the Spirit Lake hatchery, but for the transporting of millions of young fish from the bayous of the Mississippi river to the inland waters of the state. Sufficient pressure could not be brought to bear on the legislature to accomplish the end desired. Deeming such a car very essential to the work of the commission in supplying food fish for the people, your commissioner has labored arduously to procure one, and it is with no small amount of pride that we are able to report that the state of Iowa now owns as good a fish-car as any of her neighbor states, and the payment therefor comes from the amount appropriated for this commission—not one dollar being asked for outside of the regular appropriation. A picture of the car is shown here. The car is sixty feet long, has twelve wheels, is fitted up with twenty tanks, office, berths, kitchen, closets, etc. The purchase was made from D. W. Walker, excursion agent of the Chicago, Milwaukee & St. Paul Railway company. The entire cost of the car, including all equipments since added, was \$1,600. The Chicago, Milwaukee & St. Paul, Burlington, Cedar Rapids & Northern, Illinois Central, and Chicago Great Western Railway companies have very generously consented to move the car over their many lines in the state free of cost to the commission. The commissioner has made fourteen trips with the car so far this fall, and successfully transported 1,635,000 fish from the Mississippi bayous to the interior rivers and lakes of the state.

SUPPLY POND.

It being necessary to have a supply pond at some point on the Mississippi where the young fish taken by the commission from the bayous and sloughs could be kept while awaiting shipment, one was located at Sabula, where the city council went to the expense of purchasing a suitable lot adjacent to the depot and supplying the pond with water, free of cost, from the city water works. The state has generously been given a lease of the lot, free of charge, and can hold the same as long as the lot is used for the purpose designed. The pond is 100 feet by 80.

THE NEW GAME LAW.

The new fish and game law provides for the appointment of deputies by the fish and game warden. It is doubtful whether these deputies will be willing to serve in this capacity free of expense to the state, and incur the enmity of the poachers in their respective localities. Not only does this measure of necessity call for an increased appropriation, but the doubling of the work of the commission by adding to it the greatly enlarged duties laid upon it under the new law will, it is scarcely necessary to suggest, require additional means for the proper and effective carrying out of the intention of the legislature.

THE SLOUGHS AND BAYOUS OF ALL THE STATE'S BOUNDARY RIVERS COME WITHIN THE JURISDICTION OF THE IOWA FISH LAW.

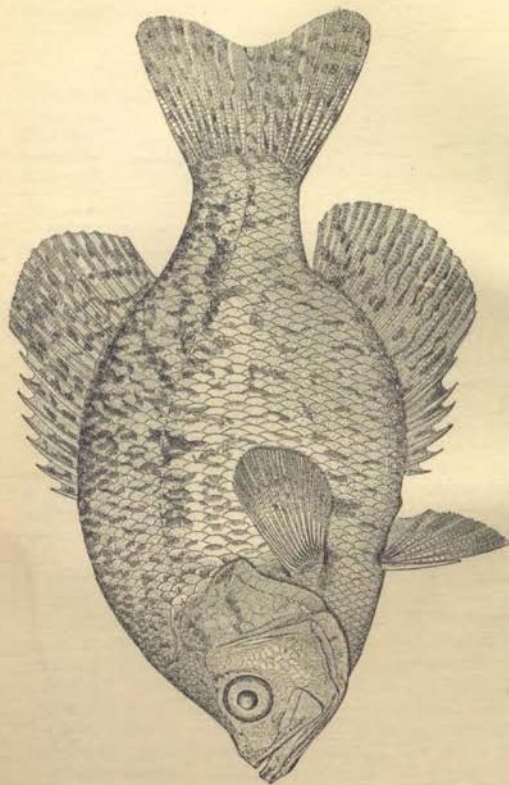
By a decision of the Iowa supreme court, in October, 1895, all the sloughs and bayous on the Iowa shores of the Mississippi, Missouri, Big Sioux and Des Moines rivers, come within the jurisdiction of the Iowa fish laws. This important case being decided at the time the last report of this commission was in the hands of the printer, allusion to it could not be made. It is now published in the interest of all the people, but more especially for the benefit of those residing in the cities and towns located on these rivers, and from such localities the commission has received numerous requests for copies of the same. It reads as follows:

STATE V. HAUG.

(Supreme Court of Iowa. Oct. 3, 1895.)

ILLEGAL FISHING—EXCEPTED WATERS.

In acts Twenty-third General Assembly, chapter 34, prohibiting the taking of fish by certain methods from "any of the waters of the state," provided that "nothing herein contained shall be held to apply to fishing in



STRAWBERRY OR CALICO BASS (*Morone sporodica*).

the Mississippi, the Missouri, or the Big Sioux rivers, nor so much of the Des Moines river as forms the boundary between the states of Missouri and Iowa," the Mississippi river includes only the water popularly so known, constituting the boundary of the state, and does not include a lake wholly within the state, and constituting no part of the Mississippi, for purposes of navigation or boundary, but being merely connected with it, and in every other respect being as distinct a body of water as any in the interior of the state.

Appeal from district court, Allamakee county, W. A. Hoyt, Judge.

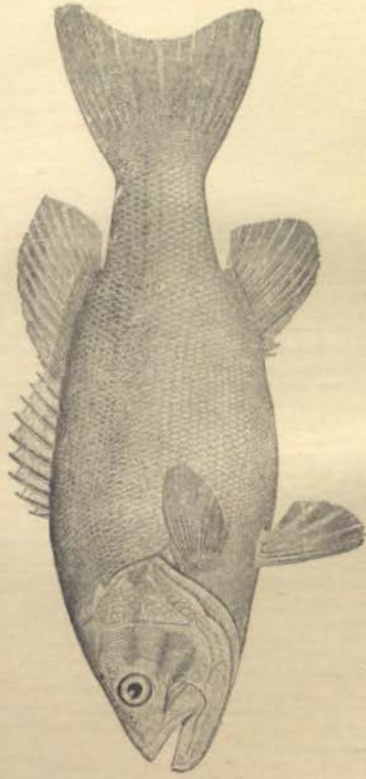
The defendant was charged with unlawfully seining fish. He was tried before the mayor of the city of Lansing and convicted. He appealed to the district court of Allamakee county. In said court he was found not guilty. The state appeals. Reversed.

Milton Remley, Attorney-General, E. M. Woodward, County Attorney, J. H. Trewin, and J. P. Conway, for the State; Park & Odell for Appellee.

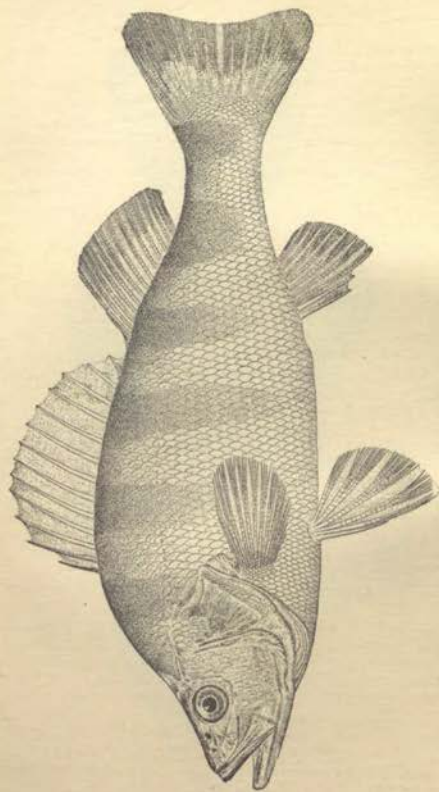
KINNE, J.—I. It is not disputed that the defendant in December, 1893, caught several thousand pounds of fish—sunfish, pike, bass and pickerel—with a seine about 400 feet long, which was drawn under the ice in Big lake, in Allamakee county. For this act he was arrested and brought before the mayor of the city of Lansing, on information filed by the fish commissioner of the state, charging the defendant with illegally seining fish, contrary to the laws of this state. He was convicted and appealed to the district court. There was a jury trial, and at the close of the evidence the court directed a verdict for the defendant, from which this appeal is prosecuted.

II. There are a number of assignments of error in this case growing out of the rulings of the court upon the introduction of testimony, the refusal to give instructions asked by the state, the action of the court in directing a verdict for the defendant, and in other respects. Nearly all of these, however, in one way or another, relate to, and all are dependent on, the solution of the real question in controversy, viz., whether or not Big Lake is a part of the Mississippi river, within the meaning of the statute which exempts the waters of said river from the operation of the laws of this state prohibiting the seining of fish. To this question only shall we direct our attention.

The statute upon which the information against the defendant is based is found in the acts of the Twenty-third General Assembly (chapter 34), and is entitled "An act for the protection and preservation of fish," etc. It is provided by section 2 of the chapter that "It shall be unlawful for any person to take from any of the waters of the state any fish in any manner except by hook and line; except that it shall be lawful for any person to take minnows for bait with a seine that does not exceed five yards in length. Also that it shall be lawful to take buffalo and suckers by spearing between the first day of November and the first day of March following. * * * Section 5, under which the information was drawn, reads: "No person shall place, erect, or cause to be placed or erected, in or across any of the rivers, creeks, lakes, or ponds or any outlets or inlets thereto any trot line, seine, net, weir, trap, dam or other obstruction in such manner as to hinder or obstruct the free passage of fish up, down, or through such water course for the purpose of taking or catching fish unless the same be done under



THE SMALL-MOUTH BLACK BASS (*Micropterus dolomieu*).

YELLOW PERCH (*Perca flavescens*).

the supervision of the fish commissioner, except minnows as provided in section 2 of this act." Section 7 of the act prohibits the placing of drugs, dynamite, powder, etc. "In any of the waters of the state," for the purpose of destroying or catching fish. In section 8 it is provided that any person found guilty of violating sections 6 or 7 of the act shall, upon conviction, be fined not less than \$25 nor more than \$100, and stand committed until such fine is paid. Section 11 of the act provides that "nothing herein contained shall be held to apply to fishing in the Mississippi, the Missouri, or the Big Sioux rivers, nor so much of the Des Moines river as forms the boundary between the states of Missouri and Iowa." Defendant relies upon the provision of the section last quoted, and claims that Big Lake constitutes a part of the Mississippi river which is exempted from the operation of the act. It is not questioned that, if Big Lake is not a part of the Mississippi river within the meaning of the act, then the defendant is guilty of having violated the law.

The plat above will aid in understanding the situation of Big Lake and its connection with the main channel of the Mississippi river. Big Lake is about a mile and a half long, and three-quarters of a mile wide. It rests in a shallow basin or depression, and has sloping banks. While there is a conflict in the testimony as to whether or not there is a current in this lake, we think the weight of the evidence is to the effect that at an ordinary stage of water there is no current. It appears that the water is clearer than that in the Mississippi river. The lake is from four to six feet deep. At an ordinary stage of water in the lake, the water in the outlet is about two feet deep and from ten to twenty feet wide. The testimony tends to show that for two years prior to the trial of this case in the courts below, viz., in 1892 and 1893, there had been no water running into this lake, though when the water is high there is a water connection at the north end of the lake. There are several sloughs between the lake and the main shore on the Iowa side, west of the lake. From the hills on the Iowa side of the river to the lake it is a mile and a half. The land lying east of Big Lake, and between it and the main channel of the river, is used for grazing and hay land, and on it are trees ranging in size from an inch or two in diameter up to three or four feet. It is admitted that Big Lake and the slough lying west of it have not been used for purposes of navigation. Big Lake, then, is a body of water having well defined shores and no current. It is from a quarter to a half a mile west of the main channel of the Mississippi river at the nearest point. It appears that there are times when the high water overflows all, or nearly all, of the land between the mainland on each side of the river. From the evidence it is clear that Big Lake is not a part of the Mississippi river, so far as navigation is concerned. It is not disputed that it lies wholly within the state of Iowa. It follows, then, that Big Lake, lying as it does wholly within the state of Iowa, does not constitute a part of the Mississippi river for boundary purposes. *Dunleith & D. Bridge Co. v. County of Dubuque*, 55 Iowa, 558, 8 N. W., 443; *Buttensuth v. Bridge Co.*, 123 Ill. 535, 17 N. E. 439; *State of Iowa v. State of Illinois*, 147 U. S. 1, 13 Sup. Ct. 239. We think it is quite clear that the intention of the law was to prohibit seining within water wholly within this state. Section 2 of the act referred to uses the words, "from any of the waters of the state." In section 3 the words used are, "from any of the waters of the

state." In section 7 the same words are used. These words very definitely cover all waters lying wholly within this state, and there can be no doubt they include Big Lake, unless it is exempted from their operation by virtue of the provision of section 11 of the act. Now, it is apparent that section 11 excepts from the operation of the act only the boundary waters of the state, over which the state has not exclusive jurisdiction. There is nothing in the section which suggests that it was the intent of the legislature to exempt from the operation of the act waters which lie entirely within our own state. Big Lake being wholly within the state, we can discover no reason for saying that it was not the intention of the legislature that the provision of the act prohibiting seining in "any of the waters of the state" should not apply to it, the same as to any other body of water entirely within the state. We think that the Mississippi river, which is excluded from the provision of the act, includes only that body or stream of water which is popularly known as such river; that the wording of section 11 of the act indicates that it was the Mississippi river which constitutes the boundary line of the state, which the legislature had in mind.

Again, we may look to the evil sought to be remedied by this legislation. The purpose was to prevent the wanton and unnecessary destruction of fish in the waters over which the state has exclusive jurisdiction; to preserve the fish in said waters for the use of the people of the state. If it be true that these lakes and streams, which, though connected with the main body of water known as the Mississippi river, yet form no part of the river proper, are not waters in which seining is prohibited, then the legislation falls far short of remedying the evil which existed, and these waters of the state which, we are justified from the evidence in this case in saying, constitute the most valuable fishing grounds in the state, may be despoiled in this wholesale way of their wealth of fish without let or hindrance. To be justified in reaching such a conclusion, it should appear clearly that such waters were intended to be exempted from the operation of the law. We find nothing in the law to warrant defendant's contention. We do not deem it necessary to discuss what constitutes the middle of the main channel of the river. The "Mississippi river" spoken of in the statute is the river as usually referred to. It means that body of water which forms the eastern boundary of the state, and, from the wording of certain sections of the act, it is manifest that it was not intended to embrace within the words "Mississippi river" waters entirely within the state, though having connection with said boundary stream. Appellee relies upon the case of Dunleith & D. Bridge Co. v. County of Dubuque, supra. It is claimed that that case is decisive of this controversy. We do not think so. The question in that case was as to what part of plaintiff's bridge was properly assessable in Iowa. It was held that the word "channel," as used in the act of congress admitting Iowa into the union, and in our state constitution in defining our eastern boundary as the middle of the main channel of the river, referred to the bed in which the main stream of the river flowed, and not to the deep water of the stream, as followed in navigation. Big Lake is in no sense a channel of the Mississippi river, and no question is made that it is wholly within the state of Iowa. It is a part of the river in the sense only that it is connected with it, and in every other respect it is as distinct a body of water as any which may be found in the interior of the state. On



ARTESIAN WELL AT SABULA THAT FURNISHES WATER FOR STATE
SUPPLY PONDS



POND AT SABULA.

the one hand, the legislature prohibits seining in any of the waters of the state. On the other hand, it says, in effect, that this prohibition shall not extend to boundary waters over which the state has not exclusive jurisdiction. Such, we think, is the fair and proper construction of the law. The court below, therefore, erred in holding that Big Lake was a part of the Mississippi river and exempted from the operation of the law. The defendant having been acquitted, the only effect of this opinion will be to settle the law of the case. Reversed.

DISTRIBUTION.

SPIRIT LAKE.

Wall-eyed pike.....	50,000
Rock bass.....	10,000
Black bass.....	175,000
Silver bass.....	25,000
Perch.....	200,000
Trout.....	50,000
Crappies.....	100,000
Mixed varieties.....	300,000

OKOBOJI.

Black bass.....	175,000
Silver bass.....	30,000
Rock bass.....	5,000
Perch.....	200,000
Wall-eyed pike.....	50,000
Trout.....	50,000
Mixed varieties.....	200,000
Crappies.....	100,000

CLEAR LAKE.

Crappies.....	50,000
Perch.....	15,000
Silver bass.....	25,000
Trout.....	50,000
Pickercel.....	500
Sunfish.....	15,000
Black bass.....	50,000

BEED LAKE.

Crappies.....	5,000
Silver bass.....	5,000
Perch.....	5,000

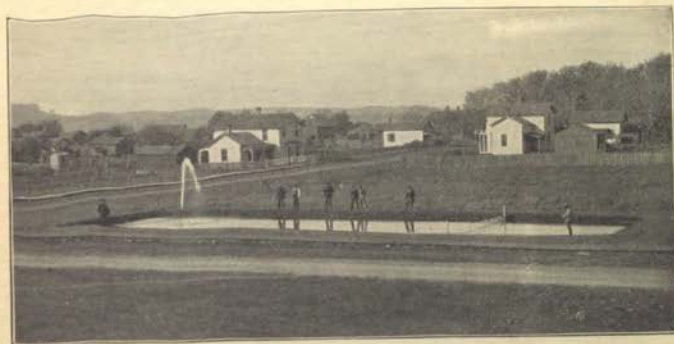
SILVER LAKE.

Wall-eyed pike.....	5,000
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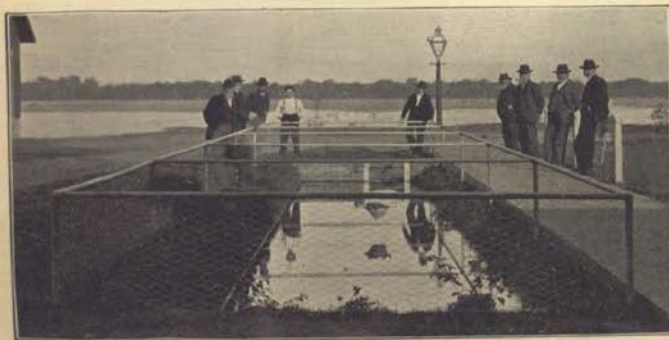
STORM LAKE.

Trout.....	50,000
Black bass, crappies, sunfish and pickercel.....	125,000

MAQUOKETA RIVER.	
Black bass, crappies, sunfish and pickerel.....	125,000
DES MOINES RIVER.	
Mixed varieties.....	250,000
CEDAR RIVER.	
Wall-eyed pike.....	20,000
Black bass, crappies, sunfish and pickerel.....	425,000
SHELL ROCK RIVER.	
Silver bass.....	10,000
Black bass.....	1,000
Crappies.....	5,000
Perch.....	10,000
IOWA RIVER.	
Perch.....	10,000
Crappies.....	5,000
Silver bass.....	5,000
TURKEY RIVER.	
Black bass (U. S. Commission).....	25,000
WAPSIPINICON RIVER.	
Black bass, crappies, sunfish and pickerel.....	187,000
BUFFALO RIVER.	
Black bass, crappies, sunfish and pickerel.....	63,000
CARP DISTRIBUTION.	
French Whitmore.....	Chariton
W. Hasey.....	Wellman
P. D. Hoff.....	Grimes
Wm. Weyrauch.....	Ankeny
B. F. Roberts.....	Dunlap
L. B. Griffin.....	Clarion
Chas. Winnings.....	Ida Grove
C. C. Kell.....	Ladora
J. B. Beta.....	Ladora
Geo. E. Morse.....	Genoa Bluff
F. M. Belknap.....	Anamosa
L. S. Huntley.....	Chariton
D. Knotts.....	Lucas
Hon. R. T. St. John.....	Riceville
H. Fischer.....	Pomeroy
M. McDonald.....	Bayard
Geo. S. Beach.....	Lenox
W. L. Van Eaton.....	Riverton
Frank Van Eaton.....	Riverton
S. A. Eychaner.....	Newton
H. M. Helgen.....	Ruthven
N. R. Clift.....	Zearing
Peter Anderson.....	Harlan



STATE SUPPLY POND AT SABULA.



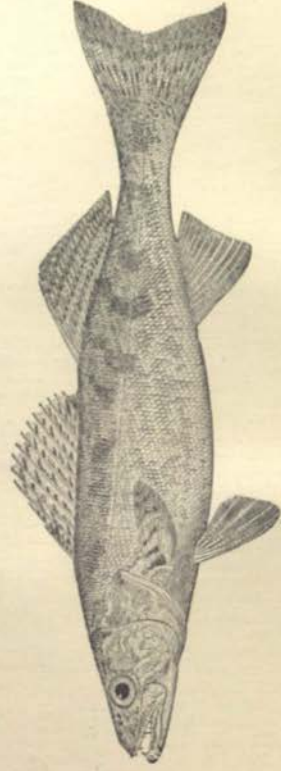
POND AT SABULA.

J. W. Adams.....	Riceville
William Harvey.....	Wellman
William Morshell.....	Homestead
W. H. Spurrier.....	Lamoni
J. L. Brooks.....	Hedrick
Thomas Van Winkle.....	Hedrick
William Weyranch (second delivery).....	Ankeny
O. H. Schlapkohl.....	Dysart
D. Kohl.....	Radcliffe
M. D. Crow.....	College Springs
A. Rains.....	Silver City
W. F. Noble.....	Vinton
J. A. Caster.....	Leon
E. J. Caldwell.....	Coln
John Kelly.....	Creston
J. B. Parmelee.....	Iowa Falls
J. A. Neill.....	Hawarden
Ben Van Stoenburg.....	Preston
D. A. Waterhouse.....	Farley
John Shephard.....	Caledonia
Peter H. Madsen.....	Harlan
George H. Miller.....	Harlan
B. W. Gregory.....	Kirkman
William Bligrove.....	Clarion
J. W. Farmer.....	Montezuma
J. D. Dohrman.....	Mt. Vernon
August Rarde.....	Charter Oak
H. Schultz.....	Charter Oak
Ernest Nehmet.....	Charter Oak
Z. N. Bay.....	Albia
John Smith.....	Albia
J. G. Stafford.....	Charlton
J. J. Slutz.....	Sharon Center
C. Pugslev.....	Armstrong
J. G. Fisch.....	Estherville
W. F. Zachary.....	Prairie City
Henry Hogenkamp.....	Cromwell
E. H. Boddy.....	Belle Plaine
F. M. Stephenson.....	Packwood
I. White.....	Shenandoah
John Graf.....	Lockridge
H. A. Burkholder.....	Woodbine
A. J. Hart.....	Charter Oak
James A. Noble.....	Vinton
I. H. Kuhl.....	Earling
A. J. Amundson.....	Roland
G. F. Maysent.....	Panama
S. D. Williams.....	Vinton
J. M. Hale.....	Mt. Etna
J. W. Ross.....	Ladora

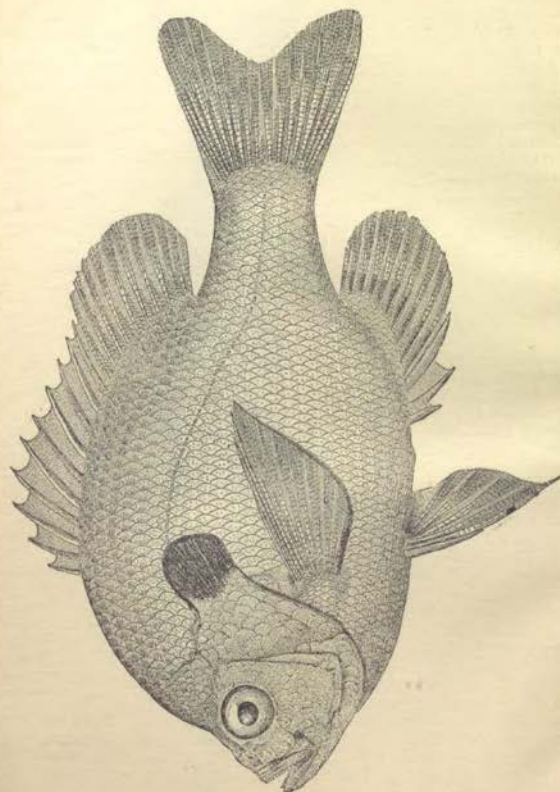
W. S. Wright	Mt. Pleasant
C. F. Sullivan	Creston
A. A. Mason	Albia
J. S. Hulbert	Greenfield
Charles Boutlier	Britt
J. S. Hurst	Zeoring
H. F. Fischer	Pomeroy
Thomas Caswell	Cherokee
M. Thielman	Holstein

GOLDFISH DISTRIBUTION.

Mrs. Ole Ammundson	Estherville
A. H. Fulton	Knoxville
W. J. Fogarty	Rock Rapids
Mrs. B. P. Birdsall	Clarion
Mrs. W. W. Reynolds	Sheldon
Olaf Olson	Rock Rapids
J. G. Crozier	Cedar Rapids
H. C. Haberland	Manchester
Mrs. J. C. Perry	Onawa
James Goddard	Livermore
Rev. T. J. McGrath	Charles City
F. R. Conaway (second application)	Des Moines
Lon Templeton	Maquoketa
J. S. Green	Maquoketa
C. Durant Jones	Stanhope
John G. Legal	Charles City
Mrs. Lewis Fairchilds	Webster City
E. V. Baldwin	Hampton
Rev. Ginter	Spirit Lake
Ed. Raymond	Spirit Lake
A. W. McFarland	Dakota City
Mrs. Herman Graaf	Estherville
Thomas Early	Emmetsburg
O. Neville	Estherville
Charles R. Kirk	Chariton
G. H. Smyth	Stuart
F. H. Stoddard	Humboldt
C. C. Galloway	Marshalltown
Mrs. R. G. Tyler	Greene
J. D. Perry	Floyd
Frank Walker	Clarion
Hon. G. C. Heberling	Sabula
G. H. Norton	Gladbrook
A. Lart	Mason City Junction
Thomas Pullen	Estherville
F. W. Gregory	Iowa Falls
Bradley & Wagner	Rock Rapids
George E. Richardson	Le Mars
C. G. Houx	Cedar Rapids
B. E. Fraley	Albia

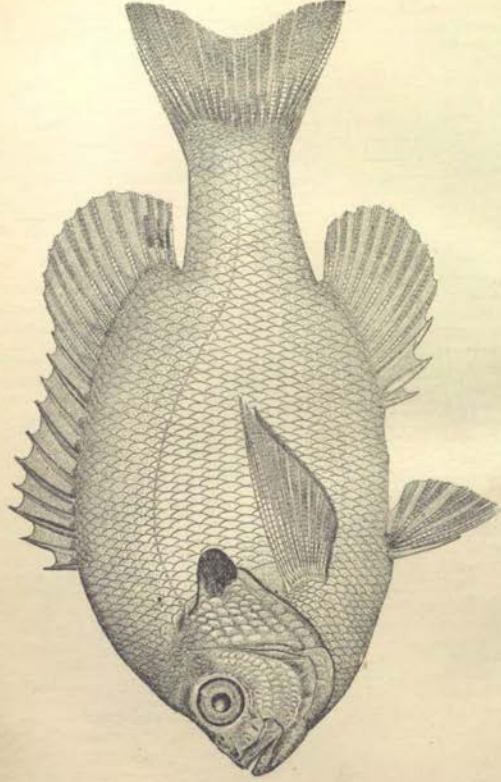


THE WALL-EYED PIKE (*Stizostedion vitreum*).

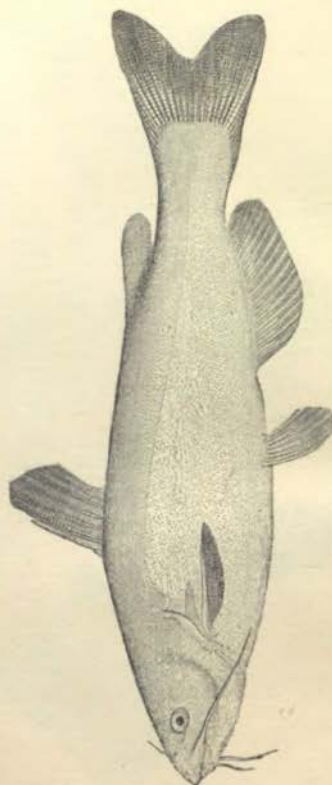
THE BROAD-EARED SUNFISH (*Lepomis pallidus*).

Belknap Brothers.....	Harris
A. W. Van Houten.....	Des Moines
F. King.....	Rolfe
L. M. Foote.....	Inwood
Olaf Johnson.....	Estherville
Grace Hodges.....	Geneva
D. Mundell.....	Independence
O. T. Lush.....	Spencer
Dr. Frisbie.....	Dows
H. C. Middlebrook.....	Rock Rapids
Royal Oaks.....	Sabula
Benjamin Bedford.....	Sabula
L. L. Esmay.....	Sabula
Royal Oaks.....	Sabula
Benjamin Bedford.....	Sabula
O. E. Woods.....	Mason City
Miss Emmerson.....	Columbus Junction
E. L. Henderson.....	West Liberty
C. B. McClun.....	West Liberty
Mrs. W. E. Smith.....	Richland
Louis E. Smith.....	Des Moines
J. White.....	Cedar Rapids
Mrs. C. K. Howe.....	Des Moines
McCarty & Linderman.....	Emmetsburg
T. M. Zink.....	Le Mars
Miss Jones.....	Fort Madison
Miss Ada Whitmore.....	Oceola
C. F. Gullison.....	Bode
Mrs. J. S. Sinclair.....	Dows
Frank Tessar.....	Hopkinton
Charles Copley.....	Spirit Lake
E. H. Bryant.....	Mondamin
Mr. Griffen.....	Spirit Lake
Robert Miller.....	Spirit Lake
A. B. Huntly.....	Buffalo Center
W. R. Johnson.....	Cherokee
E. M. Burns.....	Mason City
Mrs. Andrew Seaverson.....	Decorah
Wm. Bisgrove.....	Clarion
Joe Joyce.....	Emmetsburg
Irolae W. Farmer.....	Montezuma
Thomas Gray.....	Wesley
L. H. Farnham.....	Akron
F. W. Bicknell.....	Des Moines
Mrs. F. H. Hinen.....	Iowa Falls
Miss Mamie Prichard.....	Harlan
Mrs. Jesse Smith.....	Laurens
John W. Farmer.....	Montezuma
A. L. Bush.....	Emmetsburg
O. L. Wilson.....	Estherville

Horace Bennett.....	Des Moines
Miss Evalyn Plummer.....	Viola
W. E. Albert.....	Lansing
R. C. Dungan.....	Valley Junction
Mrs. Frack Brownell.....	Garner
James Espesett.....	Estherville
Mrs. M. Wilson.....	Estherville
George W. Adams.....	Estherville
S. H. Welden.....	Iowa Falls
Mrs. C. F. Beard.....	Mt. Ayr
Mrs. P. Rose.....	Estherville
Conductor Mattison.....	Cedar Rapids
Florence White.....	Spencer
Alice Smith (for Soldiers' Orphans' Home).....	Davenport
C. Alt.....	Estherville
C. P. Wallace.....	Spirit Lake
D. W. Sternes.....	Mason City
Fred Phillips.....	Spirit Lake
Mrs. I. G. Gallagher.....	West Bend
Miss Abele Pratt.....	Des Moines
Senator Ellison.....	Anamosa
Belle Hallston.....	Shellsburg
Mrs. B. S. Cuplin.....	West Bend
Zola Wheeler.....	Orleans
Mary Clark.....	Orleans
Mrs. S. Weed.....	Orleans
C. A. Smith.....	Emmetsburg
E. H. Smith.....	Estherville
Orange Jones.....	Spirit Lake
Mrs. Plummer.....	Forest City
J. I. Gilman.....	Iowa Falls
Webster Grocer company.....	Webster City
G. W. Metcalf.....	Lansing
George Letchford.....	Estherville
W. W. Fonda.....	Monona
L. H. Farnham.....	Spirit Lake
Mrs. Will Lyon.....	Estherville
H. M. Wilson.....	Atlantic
A. A. Smith.....	Dows
Miss Goodwin.....	Burt
Joe D. Cotton.....	Sabula
J. E. Scott.....	Emmetsburg
J. F. Rowe.....	Emmetsburg
Hon. Thomas Lambert.....	Sabula
Mrs. B. P. Birdsall.....	Clarion
G. M. West.....	Superior
Mrs. A. A. Wicks.....	Webster City
D. E. Packard.....	Belmond
Howard Walters.....	Larchwood
A. H. Moll.....	Mason City



THE BLUE SUNFISH OR COPPER NOSE (*Lepomis microlophus*).



THE CHANNEL CATFISH (*Amiurus albiatus*).

C. F. Jackson.....	Estherville
Parr Goodall.....	Osage
C. A. Lange.....	Decorah
A. H. Treat.....	Charles City
Chas. F. De Smith.....	Charles City
Charles R. Kirk.....	Chariton
Dr. S. K. Rice.....	Northwood
J. T. Snyder.....	Northwood
Mrs. C. B. Taylor.....	Iowa Falls
J. B. Kissell.....	Dubuque
S. Pillsbury.....	Spirit Lake
Ira Carlton.....	Spirit Lake
G. B. Pray.....	Webster City
W. S. Richards.....	Des Moines
W. Patrick.....	Des Moines
Insane Hospital.....	Independence
Mrs. C. A. Austin.....	Sumner
Hon. J. H. Trewin.....	Lansing
W. H. McKean.....	Reinbeck
C. Currie & Son.....	Mason City
T. M. Soley.....	West Liberty
Jos. Smith.....	Spirit Lake
Mrs. T. J. Greggs.....	Orleans
W. F. Barr.....	Parkersburg
W. J. Fogarty.....	Rock Rapids
E. A. Bundy.....	Larrabee
Mrs. J. S. Mead.....	Newell
H. J. Green.....	Decorah
Junger & Myers.....	Reinbeck
W. W. Coles.....	McGregor
Hon. D. H. Palmer.....	Washington
Harry Schermer.....	Emmetsburg
H. E. Fuller.....	Millford
W. H. Rooney.....	Pringhar
Geo. Shipley.....	Sheldon
H. W. Rothert.....	Council Bluffs
Phil. Sa-gent.....	Iowa Falls
F. C. Nafus.....	Spirit Lake
J. H. Carmichael.....	Emmetsburg
Wm. Scott.....	Emmetsburg
Carl Jruiller.....	Ft. Madison
Mrs. E. T. Hobeln.....	Estherville
O. T. Lush.....	Superior
Mr. Reed.....	Spirit Lake
Mr. Bickle.....	Spirit Lake
F. R. Conaway.....	Des Moines
A. B. Shaw.....	Corning
Mrs. U. B. Tracy.....	Clarion
Alice M. Means.....	Hartley
C. L. Dixon.....	Sheldon

J. H. Milhollam.....	Cedar Rapids
Mrs. E. P. Hall.....	Sheldon
Cornie Olson.....	Spirit Lake
Mary Guehler.....	Le Mars
Fred Roberts.....	Estherville
Joe D. Cotton.....	Sabula
Charley Day.....	Sabula

ESTIMATE OF FUNDS NECESSARY FOR 1897-8.

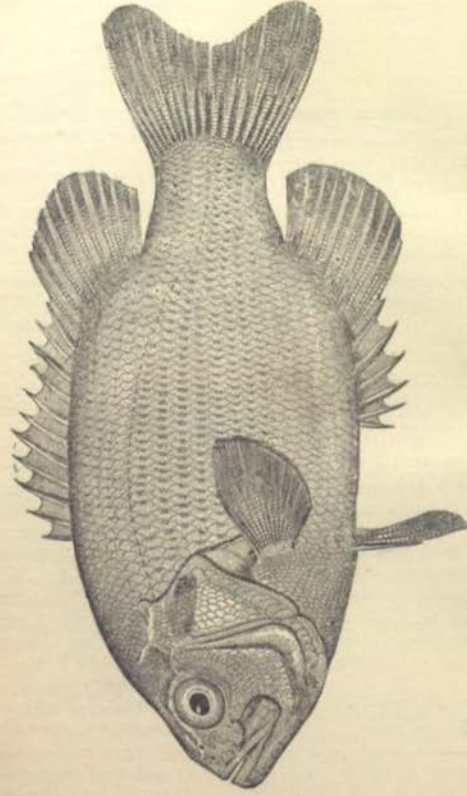
For gathering fish at Sabula for restocking the lakes and rivers of the state.....	\$ 5,000
For improvement and building necessary ponds at Sabula.....	500
Assistants' salary.....	600
For protection, distribution and reproducing fish for the next two years.....	10,000
Protection of game and payment of deputies.....	5,000

This would give the commission \$10,500 per annum, which is little enough since the game interests have been added to the fish commissioner's duties.

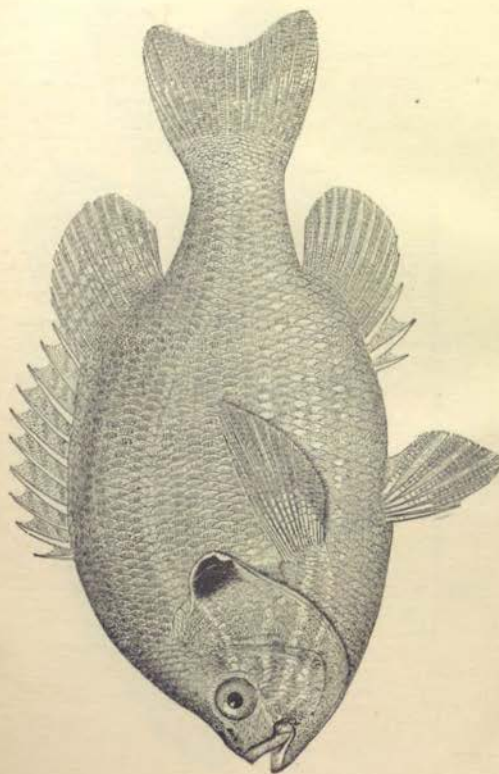
ACKNOWLEDGMENTS.

To the Burlington, Cedar Rapids & Northern and the Chicago, Milwaukee & St. Paul Railway companies are we under especial obligations for valuable courtesies rendered the commission whereby the efficiency of the work has been greatly increased. To other lines of railway, the Illinois Central, Iowa Central and C. G. W., are we also under obligations for favors granted, and also to the press of the state that has been outspoken in favor of the law and the work of the commission, thus creating a sentiment for the right and aiding in increasing the efficiency of the work accomplished.

We desire to thank members of both branches of the legislature for valuable suggestions and timely assistance and also for making wise changes in the law whereby the rights of honest sportsmen and the people generally may be better protected and the crimes of the poacher more easily punished.



THE ROCK BASS OR RED EYE (*Ambloplites rupestris*).

PUMPKIN-SEED OR SUNFISH (*Lepomis gibbosus*).

STATEMENT OF RECEIPTS AND EXPENDITURES.

The last biennial report gave an exhibit of receipts and expenditures from April 1, 1894, to October 31, 1895. At that time (October 31, 1895,) there was an unexpended balance, of the \$6,000 appropriated, of \$2,058.16. During the months of November and December, 1895, and January, February and March, 1896, there was expended of this amount \$839.51, leaving \$1,218.65, which was turned back into the treasury.

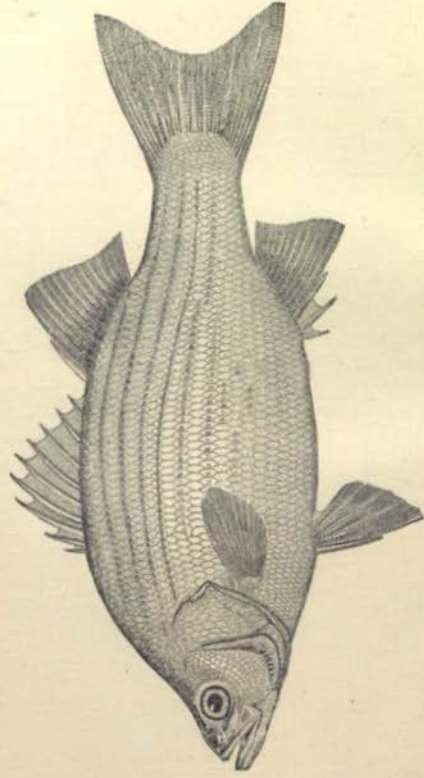
	Expenditures.	Receipts.
Amount appropriated by the Twenty-sixth General Assembly		\$ 6,000.00
April, 1896	\$ 365.30	
May, 1896	202.18	
June, 1896	430.00	
July, 1896	200.24	
August, 1896	269.91	
September, 1896	109.30	
October, 1896	236.32	
November, 1896	300.40	
December, 1896	309.56	
January, 1897	169.23	
February, 1897	143.68	
March, 1897	1,193.54	
April, 1897	165.01	
May, 1897	180.52	
June, 1897	200.87	
July, 1897	247.95	
August, 1897	173.25	
September, 1897	182.39	
October, 1897	366.30	\$ 5,573.52
Amount on hand November 1, 1897		\$ 726.48

This unexpended balance of \$726.48 is the only available resource the commission has for carrying the work forward for five months, until April, 1898.

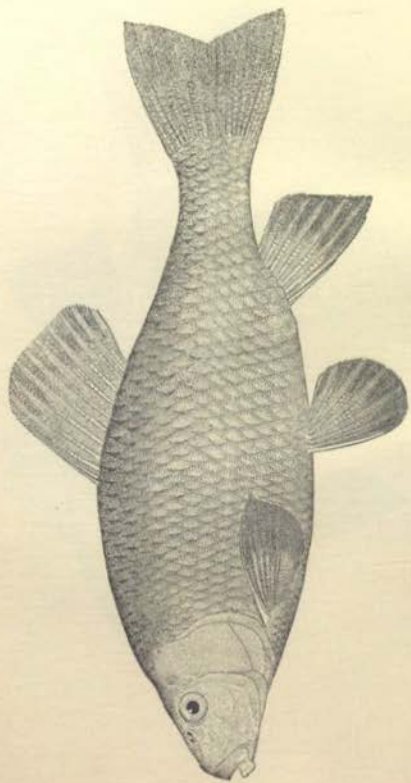
An itemized report is filed with the auditor of state.

Respectfully submitted,

G. E. DELAVAN,
Commissioner.

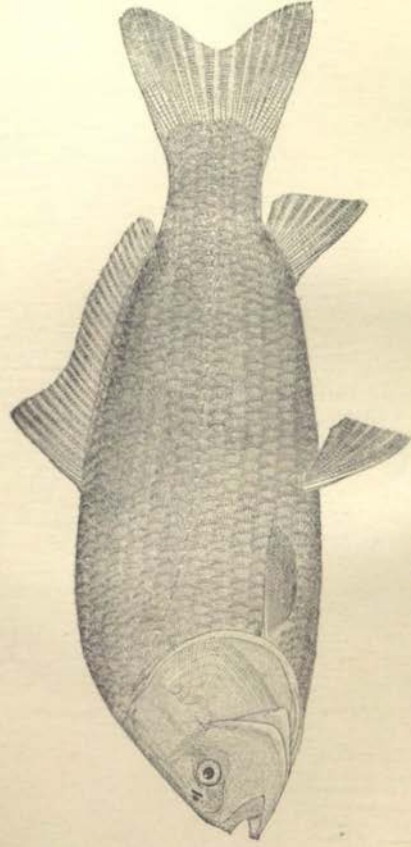


SILVER BASSE (*Pomadasys commersonnii*).

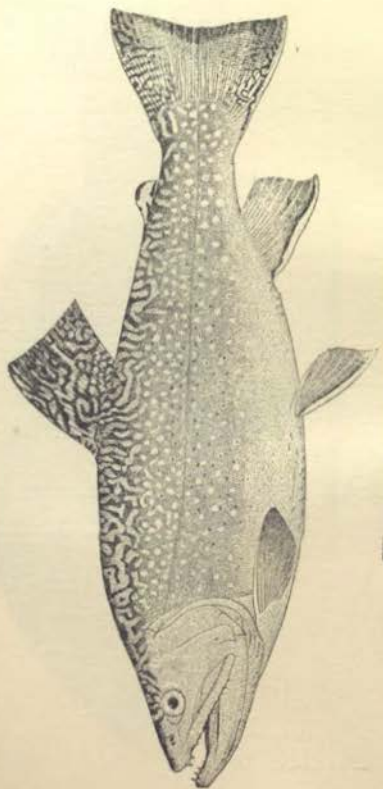


THE CHUB SUCKER (*Erimyzonetta*).

APPENDIX.



THE RED MOUTH BUFFALOFISH (*Ictalurus caryocottus*).



THE SPECKLED TROUT (*Salvelinus fontinalis*).

REPORT OF PROF. L. S. ROSS, OF DRAKE UNIVERSITY, UPON
THE INSECT LIFE IN OKOBOJI AND SPIRIT LAKES.

DES MOINES, Iowa, September 10, 1897.

Hon. George E. Delavan:

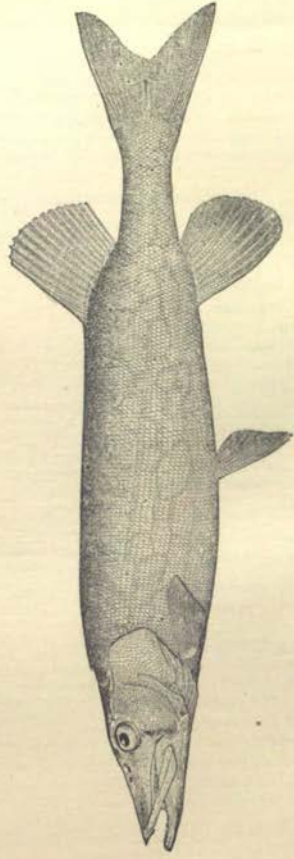
SIR—The practical as well as the theoretical value of a knowledge of the fauna and the flora of the streams and fresh water lakes is being recognized more and more by the scientist and by those interested in fish culture. Everyone recognizes that the fish must live upon what may be found in the water, unless they are fed artificially; but many people suppose they live upon something without stopping to think what that something may be. It has been only within recent years that any special attention has been given to the study of the food supply of the fresh water fishes. The researches of a few investigators show that many of the species depend upon the minute forms of animal life for their very existence. Dr. S. A. Forbes, of the University of Illinois, made a study of the food of the fresh water fishes of Illinois through a period of several years by examining the contents of the stomachs of some hundreds of specimens of various species taken from the lakes, rivers, creeks and ponds of the state. As the result of his exhaustive work, Professor Forbes found that insect larvae and the minute crustacea (water fleas) form a very large percentage of the food of most of the fresh water fishes examined. The importance of a thorough knowledge of the water fleas, or *Entomostraca*, is at once apparent. It is known that certain species occur more abundantly at certain periods of the year than at others; that some live in shallow, weedy pools, others in the muddy way-side ditch, and yet others in the clear waters of the lakes at varying depths. But there are many problems in connection with their occurrence and distribution, their relation to other minute forms of life, and their life history which are yet unsolved. These problems are being attacked by a few zoologists in Europe and America.

There can be no question concerning the value of a careful study of the *Entomostraca* of the state from the standpoint of the scientist or from that of the fish culturist, for the more that is known of the food of the young fish the more intelligently can their propagation and culture be carried on. The means have not been placed at the disposal of the fish commissioner so that any work of this character could be done by him. In this respect Iowa has not kept in line with some of her sister states. Illinois has its state laboratory of natural history; Minnesota, its natural history survey; Wisconsin has begun upon a natural history survey, and in the summer of 1893 the Michigan fish commission began some valuable work upon a biological investigation of Lake St. Clair.

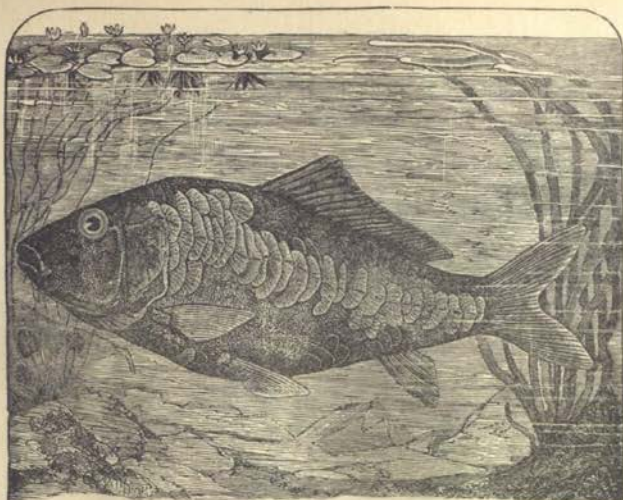
A little preliminary work has been done by me upon the *Entomostraca* of the state as reported in the Proceedings of the Iowa Academy of Sciences for 1895 and also for 1896. In the summer of 1895 some collections were made by Mr. McCormack, a student of Drake university, and myself from Spirit Lake and from East and West Okoboji lakes. In June, 1896, I made a brief visit to the same lakes to obtain material for further study. Some collections have been taken also from the Des Moines river and from other streams and pools in the vicinity of Des Moines. The only work I have had opportunity to do is merely the identification of species of the order *Cladocera*. Collections from various parts of the state and a more thorough examination of the lakes already visited will add to the number of species reported.

The list of the species obtained is given below:

Family <i>Sididae</i>	{ <i>Sida crystallina</i> O. F. Muller. <i>Daphnella brachyura</i> Liew.
	{ <i>Simocephalus vetulus</i> O. F. M. <i>Simocephalus serrulatus</i> Koch. <i>Ceriodaphnia reticulata</i> Jur. <i>Ceriodaphnia consors</i> Birge. <i>Ceriodaphnia lacustris</i> Birge.
Family <i>Daphniidae</i>	{ <i>Scapholeberis mucronata</i> O. F. M. <i>Daphnia hyalina</i> Leydig. <i>Daphnia kalbergiensis</i> Schoedl. <i>Daphnia retrocurva</i> Forbes. <i>Daphnia hybus</i> n. sp. <i>Daphnia</i> sp? <i>Daphnia pulex</i> DeGeer.
Family <i>Bosminidae</i>	<i>Bosmina longirostris</i> O. F. M.
Family <i>Macrothricidae</i>	{ <i>Macrothrix laticornis</i> Jur. <i>Iliocryptus sordidus</i> Liewen.
	{ <i>Eurycerus lamellatus</i> O. F. M. <i>Alona guttata</i> Sars. <i>Alona</i> sp? <i>Dunhevedia setiger</i> Birge. <i>Pleuroxus denticulatus</i> Birge. <i>Pleuroxus procuevatus</i> Birge.
Family <i>Lynceidae</i>	{ <i>Pleuroxus exiguus</i> Lillj. <i>Chydorus sphericus</i> O. F. M. <i>Chydorus globosus</i> Balrd. <i>Leydigia quadrangularis</i> Leydig. <i>Camptocercus rectirostris</i> Schoedl. <i>Graptoleberis testudinaria</i> var. <i>Inermis</i> Birge.
Family <i>Leptodoridae</i>	<i>Leptodora hyalina</i> Lillj.



THE PICKEREL (*Esox tetradactylus* Le Sueur).



MIRROR CARP.

IOWA'S MEANDERED LAKES.

A statement of the meandered lakes of Iowa, their locality, area, and shore line, as shown by the meander notes of the government survey of same.

LAKE.	LOCALITY OF LAKE.			Estimated area in acres.	ESTIMATED SHORE LINE.		
	Township.	Range.	COUNTY.		Miles.	Chains.	Links.
*Goose lake, in sections 28, 29, 32 and 33.....	N 33	W 5	Clinton.....	301.55	12	65	48
Muscataine slough in sections 7, 17, 18, 30, 31, 28 and 29.....	N 33	W 5	Louisa.....	270.00	19	31	40
Olum lake.....	N 33	W 5	Louisa.....	132.00	3	15	11 1/4
Green bayou, in sections 24, 27, 28, 29, 31, 32 and 33.....	N 33	W 5	Lee.....	271.00	3	45	37
Reokuk lake, in sections 13, 22, 23, 24, 26 and 27.....	N 33	W 5	Muscataine.....	454.00	28	33	31
Lake in sections 1 and 2.....	N 33	W 5	Allamakee.....	163.86	59	68	68
Lake in sections 16, 20 and 21.....	N 33	W 5	Allamakee.....	44.25	1	52	27
Two lakes in sections 13, 21 and 25.....	N 33	W 5	Allamakee.....	300.00	3	33	33
Swan lake.....	N 33	W 5	Johnson.....	45.00	1	10	55
Lake in sections 4, 5, 8, 9, 10 and 17.....	N 33	W 5	Allamakee.....	679.00	16	39	39
Lake in sections 30 and 31.....	N 33	W 5	Johnson.....	65.73	5	8	8
Clear lake.....	N 33	W 5	Cerro Gordo.....	3,643.37	13	35	42
*Lake Rice.....	N 33	W 5	Worth and Winnebago.....	600.00	7	56	75
Silver lake, in sections 14 and 15.....	N 33	W 5	Worth.....	318.00	3	3	95
Bright's lake, in sections 7, 8 and 17.....	N 33	W 5	Worth.....	125.00	3	18	50
Iowa lake, in sections 14, 15, 23, 24, 25 and 26.....	N 33	W 5	Hamilton.....	898.34	34	13	13
Wall lake, in sections 2, 10, 15 and 16.....	N 33	W 5	Hamilton.....	264.36	1	67	67
Lake in section 27.....	N 33	W 5	Hamilton.....	147.00	3	3	3
Osire lake.....	N 33	W 5	Hamilton.....	1,283.00	5	63	43
Walled lake, in sections 2, 10, 11, 14 and 15.....	N 33	W 5	Wright.....	868.35	1	73	91
Cornelia lake, in sections 9 and 16.....	N 33	W 5	Wright.....	333.42	7	71	97
Elin lake, in sections 21, 22, 27 and 28.....	N 33	W 5	Wright.....	450.38	1	67	38
Twin lake, in sections 25 and 29.....	N 33	W 5	Wright.....	197.07	1	4	20
Lake, in sections 19, 20, 29 and 30.....	N 33	W 5	Hancock.....	195.00	3	4	20
Lake.....	N 33	W 5	Hancock.....	195.00	3	4	20
Lake.....	N 33	W 5	Hancock.....	195.00	3	4	20
Duck lake, in sections 20 and 21.....	N 33	W 5	Winnebago.....	71.30	1	7	47
Lake, in section 24.....	N 33	W 5	Hancock.....	29.00	1	65	13
Lake, in sections 2, 10, 15 and 16.....	N 33	W 5	Humboldt.....	278.08	2	22	15
*Impassable marsh.....	N 33	W 5	Humboldt.....	1,743.30	9	65	65
Owl lake, in sections 21, 22, 27 and 28.....	N 33	W 5	Humboldt.....	772.14	4	65	65

MEANDERED LAKES—CONTINUED.

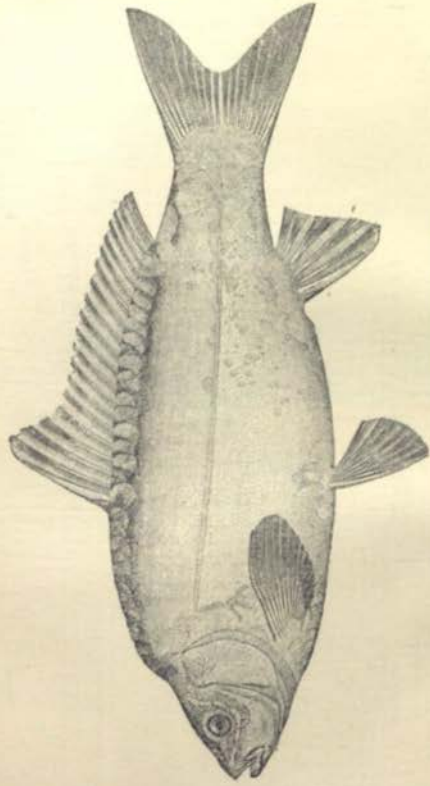
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REPORT OF THE FISH COMMISSION.

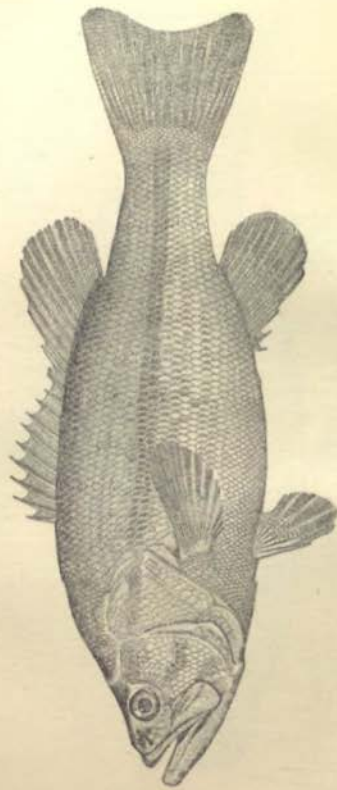
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LAKE.	LOCALITY OF LAKE.			Estimated area in acres.	ESTIMATED SHORE LINE.		
	Township.	Range.	COUNTY.		Miles.	Chains.	Links.
Lake.....	90 and 91	29	Webster and Humboldt.....	211.00	3	40	.....
Bass lake.....	91	29 and 30	Humboldt.....	208.00	3	60	87
Bancroft lake, in sections 10, 14 and 15.....	100	29	Kossuth.....	125.00	3	60	79
Lake.....	84	30 and 31	Greene.....	715.00	3	68	73
Lake, in section 17.....	100	30	Kossuth.....	76.43	1	35	.....
Lake, in section 28.....	100	30	Kossuth.....	147.40	2	40	.....
Lake, in sections 9 and 10.....	100	30	Kossuth.....	48.00	.....	75	.....
Lizard lake, in sections 22 and 27.....	91	31	Pocahontas.....	222.88	2	75	75
Iowa lake, in sections 11, 12 and 14.....	100	31	Emmet.....	285.00	3	42	75
Walled lake.....	88 and 89	32 and 33	Calhoun.....	571.00	6	32	51
Lake (medium).....	96 and 97	32 and 33	Palo Alto.....	980.00	12	57	21
Swan lake (seven or eight miles long).....	99	32 and 33	Emmet.....	2,300.00	32	30	70
Lake Okamanpadu, in sections 10, 11 and 12.....	100	32	Emmet.....	945.00	3	58	.....
Tremont lake.....	100	32 and 33	Emmet.....	147.00	2	16	86
Lake, in section 10.....	86	33	Calhoun.....	160.84	3	3	79
Lake, in sections 1, 2, 11 and 12.....	88	33	Calhoun.....	480.00	4	41	59
High lake, in sections 11, 12 and 13.....	98	33	Emmet.....	481.00	3	43	.....
Lake, in sections 14, 15 and 23.....	98	33	Emmet.....	337.00	4	70	29
Swan lake, in sections 27, 28, 33 and 34.....	99	33	Emmet.....	442.28	5	40	.....
Lake, in sections 16 and 17.....	100	33	Emmet.....	177.29	2	68	.....
Tow Head lake, in sections 23 and 24.....	89	34	Calhoun.....	195.05	2	16	6
Clear lake.....	91 and 92	34	Pocahontas.....	170.00	3	2	62
Two lakes, in sections 9, 15, 16 and 17.....	93	34	Pocahontas.....	616.00	7	15	28
Rush lake, in sections 20 and 21.....	94	34	Palo Alto.....	501.15	4	1	20
Sliver lake, in sections 18, 19, 21, 28 and 29.....	95	34	Palo Alto.....	656.00	5	71	23
Lake, in sections 29 and 30.....	96	34	Palo Alto.....	192.67	7	29	35
Lake, in sections 16, 17, 19, 20 and 21.....	96	34	Palo Alto.....	458.42	.....	.....	.....
Eagle lake, in sections 11, 14 and 23.....	100	34	Emmet.....	.....	.....	.....	.....
Lost Island and Pelican lakes.....	96 and 97	35 and 36	Palo Alto and Clay.....	3,425.00	28	3	15
Trumbull lake.....	93 and 97	35	Clay.....	1,773.00	.....	.....	.....
Twelve Mile lake, in sections 20, 21 and 29.....	98	34	Emmet.....	300.95	3	27	23
Cheever lake, in sections 20, 21 and 29.....	99	34	Emmet.....	316.43	4	74	16
Lake.....	99	34 and 35	Emmet and Dickinson.....	219.00	1	69	32
Lard lake, in sections 4, 5, 8 and 9.....	89	35	Sac.....	246.19	2	48	31
Rush lake, in sections 8 and 17.....	89	35	Sac.....	63.60	1	26	5
Lake.....	93 and 94	35	Buena Vista and Clay.....	172.97	2	13	60
Lake, in sections 25 and 26.....	94	35	Clay.....	235.23	2	22	62

325777

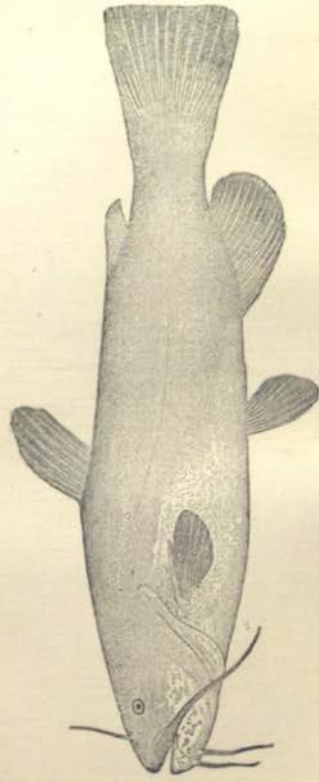


THE LEATHER CARP (*Cyprinus carpio* (was *Corticeus*)).

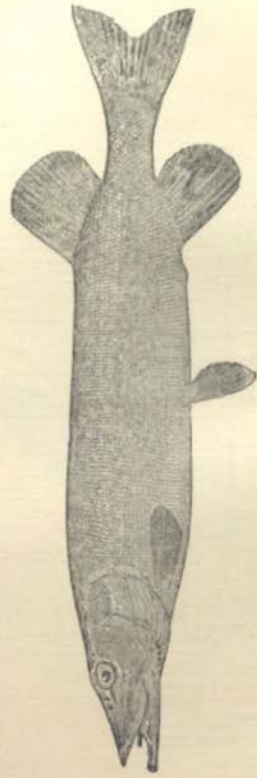
LARGE-MOUTHED BLACK BASS (*Micropterus salmoides*).

	30 and 31	32	33 and 34	35 and 36	37	38 and 39	40 and 41	42	43 and 44	45 and 46	47	48 and 49	50 and 51	52 and 53	54 and 55	56 and 57	58 and 59	60 and 61	62 and 63	64 and 65	66 and 67	68 and 69	70 and 71	72 and 73	74 and 75	76 and 77	78 and 79	80 and 81	82 and 83	84 and 85	86 and 87	88 and 89	90 and 91	92 and 93	94 and 95	96 and 97	98 and 99	100 and 101	102 and 103	104 and 105	106 and 107	108 and 109	110 and 111	112 and 113	114 and 115	116 and 117	118 and 119	120 and 121	122 and 123	124 and 125	126 and 127	128 and 129	130 and 131	132 and 133	134 and 135	136 and 137	138 and 139	140 and 141	142 and 143	144 and 145	146 and 147	148 and 149	150 and 151	152 and 153	154 and 155	156 and 157	158 and 159	160 and 161	162 and 163	164 and 165	166 and 167	168 and 169	170 and 171	172 and 173	174 and 175	176 and 177	178 and 179	180 and 181	182 and 183	184 and 185	186 and 187	188 and 189	190 and 191	192 and 193	194 and 195	196 and 197	198 and 199	200 and 201	202 and 203	204 and 205	206 and 207	208 and 209	210 and 211	212 and 213	214 and 215	216 and 217	218 and 219	220 and 221	222 and 223	224 and 225	226 and 227	228 and 229	230 and 231	232 and 233	234 and 235	236 and 237	238 and 239	240 and 241	242 and 243	244 and 245	246 and 247	248 and 249	250 and 251	252 and 253	254 and 255	256 and 257	258 and 259	260 and 261	262 and 263	264 and 265	266 and 267	268 and 269	270 and 271	272 and 273	274 and 275	276 and 277	278 and 279	280 and 281	282 and 283	284 and 285	286 and 287	288 and 289	290 and 291	292 and 293	294 and 295	296 and 297	298 and 299	300 and 301	302 and 303	304 and 305	306 and 307	308 and 309	310 and 311	312 and 313	314 and 315	316 and 317	318 and 319	320 and 321	322 and 323	324 and 325	326 and 327	328 and 329	330 and 331	332 and 333	334 and 335	336 and 337	338 and 339	340 and 341	342 and 343	344 and 345	346 and 347	348 and 349	350 and 351	352 and 353	354 and 355	356 and 357	358 and 359	360 and 361	362 and 363	364 and 365	366 and 367	368 and 369	370 and 371	372 and 373	374 and 375	376 and 377	378 and 379	380 and 381	382 and 383	384 and 385	386 and 387	388 and 389	390 and 391	392 and 393	394 and 395	396 and 397	398 and 399	400 and 401	402 and 403	404 and 405	406 and 407	408 and 409	410 and 411	412 and 413	414 and 415	416 and 417	418 and 419	420 and 421	422 and 423	424 and 425	426 and 427	428 and 429	430 and 431	432 and 433	434 and 435	436 and 437	438 and 439	440 and 441	442 and 443	444 and 445	446 and 447	448 and 449	450 and 451	452 and 453	454 and 455	456 and 457	458 and 459	460 and 461	462 and 463	464 and 465	466 and 467	468 and 469	470 and 471	472 and 473	474 and 475	476 and 477	478 and 479	480 and 481	482 and 483	484 and 485	486 and 487	488 and 489	490 and 491	492 and 493	494 and 495	496 and 497	498 and 499	500 and 501	502 and 503	504 and 505	506 and 507	508 and 509	510 and 511	512 and 513	514 and 515	516 and 517	518 and 519	520 and 521	522 and 523	524 and 525	526 and 527	528 and 529	530 and 531	532 and 533	534 and 535	536 and 537	538 and 539	540 and 541	542 and 543	544 and 545	546 and 547	548 and 549	550 and 551	552 and 553	554 and 555	556 and 557	558 and 559	560 and 561	562 and 563	564 and 565	566 and 567	568 and 569	570 and 571	572 and 573	574 and 575	576 and 577	578 and 579	580 and 581	582 and 583	584 and 585	586 and 587	588 and 589	590 and 591	592 and 593	594 and 595	596 and 597	598 and 599	600 and 601	602 and 603	604 and 605	606 and 607	608 and 609	610 and 611	612 and 613	614 and 615	616 and 617	618 and 619	620 and 621	622 and 623	624 and 625	626 and 627	628 and 629	630 and 631	632 and 633	634 and 635	636 and 637	638 and 639	640 and 641	642 and 643	644 and 645	646 and 647	648 and 649	650 and 651	652 and 653	654 and 655	656 and 657	658 and 659	660 and 661	662 and 663	664 and 665	666 and 667	668 and 669	670 and 671	672 and 673	674 and 675	676 and 677	678 and 679	680 and 681	682 and 683	684 and 685	686 and 687	688 and 689	690 and 691	692 and 693	694 and 695	696 and 697	698 and 699	700 and 701	702 and 703	704 and 705	706 and 707	708 and 709	710 and 711	712 and 713	714 and 715	716 and 717	718 and 719	720 and 721	722 and 723	724 and 725	726 and 727	728 and 729	730 and 731	732 and 733	734 and 735	736 and 737	738 and 739	740 and 741	742 and 743	744 and 745	746 and 747	748 and 749	750 and 751	752 and 753	754 and 755	756 and 757	758 and 759	760 and 761	762 and 763	764 and 765	766 and 767	768 and 769	770 and 771	772 and 773	774 and 775	776 and 777	778 and 779	780 and 781	782 and 783	784 and 785	786 and 787	788 and 789	790 and 791	792 and 793	794 and 795	796 and 797	798 and 799	800 and 801	802 and 803	804 and 805	806 and 807	808 and 809	810 and 811	812 and 813	814 and 815	816 and 817	818 and 819	820 and 821	822 and 823	824 and 825	826 and 827	828 and 829	830 and 831	832 and 833	834 and 835	836 and 837	838 and 839	840 and 841	842 and 843	844 and 845	846 and 847	848 and 849	850 and 851	852 and 853	854 and 855	856 and 857	858 and 859	860 and 861	862 and 863	864 and 865	866 and 867	868 and 869	870 and 871	872 and 873	874 and 875	876 and 877	878 and 879	880 and 881	882 and 883	884 and 885	886 and 887	888 and 889	890 and 891	892 and 893	894 and 895	896 and 897	898 and 899	900 and 901	902 and 903	904 and 905	906 and 907	908 and 909	910 and 911	912 and 913	914 and 915	916 and 917	918 and 919	920 and 921	922 and 923	924 and 925	926 and 927	928 and 929	930 and 931	932 and 933	934 and 935	936 and 937	938 and 939	940 and 941	942 and 943	944 and 945	946 and 947	948 and 949	950 and 951	952 and 953	954 and 955	956 and 957	958 and 959	960 and 961	962 and 963	964 and 965	966 and 967	968 and 969	970 and 971	972 and 973	974 and 975	976 and 977	978 and 979	980 and 981	982 and 983	984 and 985	986 and 987	988 and 989	990 and 991	992 and 993	994 and 995	996 and 997	998 and 999	1000 and 1001	1002 and 1003	1004 and 1005	1006 and 1007	1008 and 1009	1010 and 1011	1012 and 1013	1014 and 1015	1016 and 1017	1018 and 1019	1020 and 1021	1022 and 1023	1024 and 1025	1026 and 1027	1028 and 1029	1030 and 1031	1032 and 1033	1034 and 1035	1036 and 1037	1038 and 1039	1040 and 1041	1042 and 1043	1044 and 1045	1046 and 1047	1048 and 1049	1050 and 1051	1052 and 1053	1054 and 1055	1056 and 1057	1058 and 1059	1060 and 1061	1062 and 1063	1064 and 1065	1066 and 1067	1068 and 1069	1070 and 1071	1072 and 1073	1074 and 1075	1076 and 1077	1078 and 1079	1080 and 1081	1082 and 1083	1084 and 1085	1086 and 1087	1088 and 1089	1090 and 1091	1092 and 1093	1094 and 1095	1096 and 1097	1098 and 1099	1100 and 1101	1102 and 1103	1104 and 1105	1106 and 1107	1108 and 1109	1110 and 1111	1112 and 1113	1114 and 1115	1116 and 1117	1118 and 1119	1120 and 1121	1122 and 1123	1124 and 1125	1126 and 1127	1128 and 1129	1130 and 1131	1132 and 1133	1134 and 1135	1136 and 1137	1138 and 1139	1140 and 1141	1142 and 1143	1144 and 1145	1146 and 1147	1148 and 1149	1150 and 1151	1152 and 1153	1154 and 1155	1156 and 1157	1158 and 1159	1160 and 1161	1162 and 1163	1164 and 1165	1166 and 1167	1168 and 1169	1170 and 1171	1172 and 1173	1174 and 1175	1176 and 1177	1178 and 1179	1180 and 1181	1182 and 1183	1184 and 1185	1186 and 1187	1188 and 1189	1190 and 1191	1192 and 1193	1194 and 1195	1196 and 1197	1198 and 1199	1200 and 1201	1202 and 1203	1204 and 1205	1206 and 1207	1208 and 1209	1210 and 1211	1212 and 1213	1214 and 1215	1216 and 1217	1218 and 1219	1220 and 1221	1222 and 1223	1224 and 1225	1226 and 1227	1228 and 1229	1230 and 1231	1232 and 1233	1234 and 1235	1236 and 1237	1238 and 1239	1240 and 1241	1242 and 1243	1244 and 1245	1246 and 1247	1248 and 1249	1250 and 1251	1252 and 1253	1254 and 1255	1256 and 1257	1258 and 1259	1260 and 1261	1262 and 1263	1264 and 1265	1266 and 1267	1268 and 1269	1270 and 1271	1272 and 1273	1274 and 1275	1276 and 1277	1278 and 1279	1280 and 1281	1282 and 1283	1284 and 1285	1286 and 1287	1288 and 1289	1290 and 1291	1292 and 1293	1294 and 1295	1296 and 1297	1298 and 1299	1299 and 1300	1300 and 1301	1301 and 1302	1302 and 1303	1303 and 1304	1304 and 1305	1305 and 1306	1306 and 1307	1307 and 1308	1308 and 1309	1309 and 1310	1310 and 1311	1311 and 1312	1312 and 1313	1313 and 1314	1314 and 1315	1315 and 1316	1316 and 1317	1317 and 1318	1318 and 1319	1319 and 1320	1320 and 1321	1321 and 1322	1322 and 1323	1323 and 1324	1324 and 1325	1325 and 1326	1326 and 1327	1327 and 1328	1328 and 1329	1329 and 1330	1330 and 1331	1331 and 1332	1332 and 1333	1333 and 1334	1334 and 1335	1335 and 1336	1336 and 1337	1337 and 1338	1338 and 1339	1339 and 1340	1340 and 1341	1341 and 1342	1342 and 1343	1343 and 1344	1344 and 1345	1345 and 1346	1346 and 1347	1347 and 1348	1348 and 1349	1349 and 1350	1350 and 1351	1351 and 1352	1352 and 1353	1353 and 1354	1354 and 1355	1355 and 1356	1356 and 1357	1357 and 1358	1358 and 1359	1359 and 1360	1360 and 1361	1361 and 1362	1362 and 1363	1363 and 1364	1364 and 1365	1365 and 1366	1366 and 1367	1367 and 1368	1368 and 1369	1369 and 1370	1370 and 1371	1371 and 1372	1372 and 1373	1373 and 1374	1374 and 1375	1375 and 1376	1376 and 1377	1377 and 1378	1378 and 1379	1379 and 1380	1380 and 1381	1381 and 1382	1382 and 1383	1383 and 1384	1384 and 1385	1385 and 1386	1386 and 1387	1387 and 1388	1388 and 1389	1389 and 1390	1390 and 1391	1391 and 1392	1392 and 1393	1393 and 1394	1394 and 1395	1395 and 1396	1396 and 1397	1397 and 1398	1398 and 1399	1399 and 1400	1400 and 1401	1401 and 1402	1402 and 1403	1403 and 1404	1404 and 1405	1405 and 1406	1406 and 1407	1407 and 1408	1408 and 1409	1409 and 1410	1410 and 1411	1411 and 1412	1412 and 1413	1413 and 1414	1414 and 1415	1415 and 1416	1416 and 1417	1417 and 1418	1418 and 1419	1419 and 1420	1420 and 1421	1421 and 1422	1422 and 1423	1423 and 1424	1424 and 1425	1425 and 1426	1426 and 1427	1427 and 1428	1428 and 1429	1429 and 1430	1430 and 1431	1431 and 1432	1432 and 1433	1433 and 1434	1434 and 1435	1435 and 1436	1436 and 1437	1437 and 1438	1438 and 1439	1439 and 1440	1440 and 1441	1441 and 1442	1442 and 1443	1443 and 1444	1444 and 1445	1445 and 1446	1446 and 1447	1447 and 1448	1448 and 1449	1449 and 1450	1450 and 1451	1451 and 1452	1452 and 1453	1453 and 1454	1454 and 1455	1455 and 1456	1456 and 1457	1457 and 1458	1458 and 1459	1459 and 1460	1460 and 1461	1461 and 1462	1462 and 1463	1463 and 1464	1464 and 1465	1465 and 1466	1466 and 1467	1467 and 1468	1468 and 1469	1469 and 1470	1470 and 1471	1471 and 1472	1472 and 1473	1473 and 1474	1474 and 1475	1475 and 1476	1476 and 1477	1477 and 1478	1478 and 1479	1479 and 1480	1480 and 1481	1481 and 1482	1482 and 1483	1483 and 1484	1484 and 1485	1485 and 1486	1486 and 1487	1487 and 1488	1488 and 1489	1489 and 1490	1490 and 1491	1491 and 1492	1492 and 1493	1493 and 1494	1494 and 1495	1495 and 1496	1496 and 1497	1497 and 1498	1498 and 1499	1499 and 1500	1500 and 1501	1501 and 1502	1502 and 1503	1503 and 1504	1504 and 1505	1505 and 1506	1506 and 1507	1507 and 1508	1508 and 1509	1509 and 1510	1510 and 1511	1511 and 1512	1512 and 1513	1513 and 1514	1514 and 1515	1515 and 1516	1516 and 1517	1517 and 1518	1518 and 1519	1519 and 1520	1520 and 1521	1521 and 1522	1522 and 1523	1523 and 1524	1524 and 1525	1525 and 1526	1526 and 1527	1527 and 1528	1528 and 1529	1529 and 1530	1530 and 1531	1531 and 1532	1532 and 1533	1533 and 1534	1534 and 1535	1535 and 1536	1536 and 1537	1537 and 1538	1538 and 1539	1539 and 1540	1540 and 1541	1541 and 1542	1542 and 1543	1543 and 1544	1544 and 1545	1545 and 1546	1546 and 1547	1547 and 1548	1548 and 1549	1549 and 1550	1550 and 1551	1551 and 1552	1552 and 1553	1553 and 1554	1554 and 1555	1555 and 1556	1556 and 1557	1557 and
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* Goose Lake, in Clinton county, was drained, surveyed, and patented to the county as swamp land, October 1, 1854.



THE BULL HEAD (*Ameiurus vulgaris*).



THE PIKE (*Esochus*).