SEVENTH ANNUAL

REPORT

OF THE

Commissioners of Fisheries,

OF THE

STATE OF NEW JERSEY,

FOR THE YEAR

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JOHN L. MURPHY, STATE GAZETTE PRINTING HOUSE.
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REPORT.

To His Excellency, Joseph D. Bedle, Governor of the State of New Jersey:

SIR: We have the honor of presenting to you the seventh annual report of the Commissioners of Fisheries of the State of New Jersey. In doing so, we beg leave to reproduce the act under which Commissioners of Fisheries of the State were first appointed. (See Appendix A.) Subsequently, by legislative enactment, provision was made for the appointment of a third Commissioner, and that the term of office for the three should continue five years.

Your Commissioners have, in the performance of their duties under the said act, from time to time inspected the bay and river fisheries of the State, and have suggested such legislation as to their minds—based upon the observation and knowledge derived from those most conversant with the important interests under consideration—seemed most conducive to private and public good.

These suggestions, in many instances, have been accepted and carried into effect by legal enactments. In others, they have failed from local and conflicting interests. We find legislation in regard to the same interest at variance in adjoining counties. This stricture applies particularly to that over the bays, or, rather, sounds along our coast, and is the subject of just complaint with those who obtain a livelihood from, or are dependent upon, the supply of fish and oysters from those sounds. We therefore respectfully suggest that laws of a more general character be enacted, to give the necessary protection to, and fostering care over, the fishing interests in those and other waters.

We beg leave, also, to call the attention of your Excellency to the unsatisfactory character of the laws regulating fishing in the river Delaware. This large river once abounded in the choicest varieties of permanent as well as anadromous fishes, but has been greatly depleted of them of late years, by causes repeatedly presented in the reports of your Commissioners. Riparian to the States of Pennsyl-

vania, Delaware and New Jersey, each of these States is to a greater or less degree interested in the fishing of this great river and bay.

As between Pennsylvania and New Jersey, the laws regulating its fisheries have always been concurrent, and indispensably so, because each of these States, under the compact of seventeen hundred and eighty-three, exercises jurisdiction over the entire surface of the river, from shore to shore, and from the northwest corner of New Jersey to where the northern or circular boundary of the State of Delaware touches the same.

Delaware, also, in 1871, enacted laws regulating her fisheries in the river Delaware, in entire harmony with those of Pennsylvania and New Jersey; but, unfortunately, owing to her claim of exclusive jurisdiction over the entire surface of the river within the famous "Twelve Mile Circle," the laws of the two States over that area remain, at present, in abeyance. Consequently, illegal fishing has been carried on without let or hindrance, greatly to the injury of the fishing interests of these three States. It is greatly to be desired that this mooted question be speedily and definitely settled.

The concurrent laws of Pennsylvania and New Jersey, of 1808 and 1809, have been so frequently supplemented by acts supplied to meet arising contingencies, that they have become exceedingly complicated and obscure.

To remedy this evil, your Commissioners met the Commissioners of Fisheries of Pennsylvania, at Philadelphia, last winter, and, after careful consideration, prepared a draft of a proposed law, intended to take the place of the conflicting statutes now cumbering our books. This law, with some verbal corrections, and a copy of the address to the Legislatures of the two States, as signed by the Commissioners, are appended to this report (see Appendix B), and we respectfully urge that speedy action should be taken thereon. The different sections, except the twenty-fourth, are all re-enactments of existing laws, with slight verbal changes. We have only left out obsolete and useless law. No new restrictions have been placed on any class of fishermen. We were at great pains to explain this matter to the Joint Fishery Committee of the last Legislature, and are ready at any time to give such further information as to the operation of existing laws as the Legislature may require. It is important that the law should be passed substantially as presented, for the reason that it requires the joint action of the States, and, as prepared, has the concurrence of all the Fish Commissioners. We do not believe that any new regulations are required. It will suffice if these old ones can be made plain, so that all may understand.

In reference to the shore fisheries, so-called, it is proper to report a strong feeling in favor of general restrictive legislation, as above stated. Pounds, weirs, and other stationary apparatus for the capture of fish, should be prohibited in all such waters, except so far as

the same may from time to time be licensed by the Commissioners of Fisheries, and, when thus licensed, should be used subject to the directions prescribed by the Commissioners. It is unwise and impracticable to attempt to do away with these structures altogether, and we have accordingly prepared a draft of a proposed law, modeled after one drawn by the experienced Commissioners of Massachusetts, providing for the use of such apparatus when duly licensed. We append a copy of said law to this report (see Appendix C), and respectfully ask for it the consideration of the Legislature.

At a meeting of the Commissioners of all the States, at Philadelphia, in October last, Dr. Edmunds, of Vermont, and Dr. Hudson, of Connecticut, with one of your Commissioners, were appointed to prepare a report as to legislation required for the protection of shore fisheries on the whole coast. The Committee will procure statistics, and it is hoped that the collation of facts and the comparison of views will be of advantage to all the States interested.

From the following reports of the Fish Wardens, it will be found that the shad fishing in the Delaware was less remunerative the past season than the preceding one. The season, as has been the case for a number of years, was very cold and backward. The shad entered the bay in considerable numbers, but were there intercepted by an unusual number of drift nets. This large accession to the number of nets was due to two causes: the vast number of unemployed men, and the expectation that there would be an extraordinary demand, and at very high prices, for the fishes of our river to supply food for the multitudes drawn to Philadelphia by the Centennial Exposition. Notwithstanding the largely increased number of nets, and the fact that their lengths were extended to their utmost capacity, the aggregate catch for the season is admitted to be far less than usual.

For convenience, the State is divided into two departments, viz: the Southern or Tidal department, and the Northern or Non-Tidal department.

I. THE SOUTHERN DEPARTMENT.

CUMBERLAND COUNTY.

James Logue Esq., Warden for Cumberland County, reports the number of drift nets the past season to be thirty-four, against fifteen for the season of 1875. The fishermen add to the length of their nets each year, the average length this year being over five hundred fathoms. He ascribes the greater number of nets, and their increased length, to the extraordinary catch of the year before. No such success attended the efforts of the fishermen this season. The early run was very good both in quantity and quality, but the latter part of the season proved an almost total failure. The average catch was

about sixteen hundred per net, against two thousand five hundred for 1875. The price was about twenty-five dollars per hundred.

In the Cohansey, the number of nets was fourteen, and the total catch four thousand five hundred, against twenty-one nets and a total catch of six thousand the year before, which is a small catch for the Cohansey.

During the season three schooners were engaged in sturgeon fishing at the headwaters at Bay Side. They took between fifteen hundred and two thousand sturgeons, but we could not ascertain where they came from.

The Warden had some difficulty with the fishermen in the Cohansey. He discovered several fishing within the weekly or Sunday close time, one of whom was arrested and fined under the Vice and Immorality act, as an example for the benefit of other violators of the law. This step effectfully checked the unlawful practice for the season.

He has neither seen nor heard of the black bass placed in the waters of the county the previous Fall, although he has made diligent inquiry concerning them.

SALEM COUNTY.

James S. Hannah, the Warden for Salem County, reports the same number of shore nets (three), as last year. The one at Carney's Point operates a seine of six hundred fathoms, and employs thirty men, using, in addition, a horse. Expenses, sixty-six dollars per diem. The catch, during the past season, has been but 3,000 shad and 200,000 herring, and did not meet expenses by four hundred dollars.

The party who, last year (1875), fished at Helm's Cove, the last season fished at Ridgway's fishery. He used a net of three hundred fathoms, and employed a crew of thirteen men. Having fished twenty-six days, at an expense of thirty dollars per day, he caught but 2,000 shad and 130,000 herring, failing to meet expenses.

There went out from Salem county about one hundred and twenty-five shad drift-nets, owned and fished by residents, and about one hundred of the same kind, owned and fished by non-residents, making a total of two hundred and twenty-five, against one hundred and seventy of the previous season. The Warden ascribes this increase of drift-nets to the obnoxious "license" law of the State of Delaware, which discriminates between her citizens and non-residents, by imposing a tax of five dollars on the former, and twenty dollars on the latter, thus driving her citizens, and also non-residents, to our side of the river to avoid the payment of the said tax. These drift-nets range from 325 to 600 fathoms in length, and are sunk twenty feet below the float line. (This not only saves expense in the web or net, but also places the net out of harm by vessels of considerable

draft passing over them, and the result also proves that the shad swim near the bottom in the deep waters of the river and the bay). The size of the meshes is from 4⅞ to 5⅛ inches in length. The nets of the latter size have proven the most successful, inasmuch as the shad for the past two seasons, having been larger than usual, were not able to thrust their heads far enough through the smaller meshes to be gilled. This fact is worthy of note, and augurs well for the close times in which the shad have free access to the spawning grounds and back to the sea, to return again the following season of increased size.

The catch for the season by the drift-nets of both classes, above referred to, was about 246,233, to which must be added 5,000 taken by shore nets. Thus we have a total catch for the season of 251,233, against 345,000 last year—a decrease of 93,767 shad, with, at least, fifty nets more than usual from this county alone. The price averaged about eighteen dollars per hundred.

The size of the shad has been uniformly large, and the quality most excellent. Especially was this the case with those caught in the lower bay, and in the early part of the season.

The herring catch was largely in excess of that of the previous year. Of the exact numbers taken, or the amount received, the Warden had no means of ascertaining, as they were disposed of wherever a market could be found, and at various prices.

The catch of sturgeon was also greater than that of the previous year. This particular kind of fishing is becoming more and more divided up every year, and in consequence of this fact the Warden was not able to ascertain the number taken, nor the amount received.

The unsettled question of boundary within the "Twelve Mile Circle," between the States of Delaware and New Jersey, continues to be a just cause of complaint with the fishermen. The Warden says that while there was scarcely a violation of the law relating to the Sunday close time, by citizens or non-residents of his county below or outside of that "inevitable circle," within it the law is violated continually by lawless men from Philadelphia, Chester, and, indeed, from places all along the shore of the Delaware, and from the counties above in our own State, who are well posted in the unsettled condition of affairs and in the want of power on the part of the officers to enforce the law. He has counted twenty nets fishing within the "circle" of a Sunday, and yet powerless to prevent them. These violations, he says, are both injurious to the fishing interests of the river Delaware, and demoralizing in their effects upon the communities along the shores. There can be no valid reason why one class of men should override all law, both human and divine, while other classes are held to a strict accountability, both by public opinion and legislative enactments. The Warden further says of the injurious effects of violating the Sunday close time, what has been constantly held up and insisted upon in the reports of your

Commissioners, that the fishermen, in past years, when the law was respected, looked forward to Monday as being the best day in the week to catch shad; but, during the past season, that day was but little better than any other, on account of the Sunday nets breaking up the schools of shad.

These few lines speak volumes in behalf of the importance of the observance of the close times established by law. At the shore fisheries it has been observed, ever since the drift nets were introduced, that when the Sunday close time was even partially respected, the catch, not only on Monday, but also on Tuesday and Wednesday, was much larger, all things being equal, than on the remaining three days of the week, for the simple reason that during those thirty hours large schools of shad had uninterruptedly made their way into the upper reaches of the river. And we hail it as a most auspicious sign of a better time coming, when the fishermen themselves begin to see that what too many of them have hitherto considered an unwarrantable restriction on the "poor man's rights," is really, as it was intended to be, to his ultimate real benefit.

On the 15th of November, 1875, the Warden assisted in planting fifty black bass in Salem creek, below the dam, at Sharptown, and forty-nine in Alloway creek, below the dam, at Allowaytown, since which time he has neither seen nor heard from them. They will undoubtedly show themselves by another year. Wherever placed, without an exception, we believe they have multiplied rapidly.

GLOUCESTER COUNTY.

Helms V. Heritage, the Warden of Gloucester county, reports five shore fisheries in operation during the last season, all fished by Philadelphians. The catch was not nearly so great as was that of last year though the shad were larger, some weighing seven pounds. The average weight was from four to five pounds. So scarce were the shad that at some shore fisheries the crews were discharged, and the nets taken out and put away before the close time of the legal fishing season, viz., the tenth of June.

Of drift-nets there were about two hundred and fifty, varying in length from two to six hundred fathoms. These nets did pretty well while fishing in the bay, in the early part of the season.

The observance of the weekly close time, from sunset Saturday to twelve o'clock Sunday night, was better than was the case the previous season, except by some Philadelphians. No violations of law after the season closed came to his knowledge. Neither was he able to get an account of the aggregate catch of shad by the two classes of fishermen.

CAMDEN COUNTY.

No report was received from the Warden of Camden county.

BURLINGTON COUNTY.

Langhorn Thorn, the Warden of Burlington county, reports one hundred and four drift-nets in operation during the past season in his county, against seventy-five in use the year before. From Bordentown, Fieldsborough and Florence, he reports thirty-six nets, with an average length of sixty-five fathoms, and an average catch of three hundred and seventy-five shad. The price was forty dollars per hundred. Size of mesh, 5⅝ inches.

From Burlington, Shedekers, Edgewater and Beverly, thirty-one nets, with an average length of one hundred fathoms, and a catch of 1,000. Price, thirty-five dollars per hundred. Size of mesh, 5¼ inches.

From Delano, Riverside, Bridgeborough and Riverton, thirty-seven nets, with an average length of one hundred and forty fathoms and eight feet in depth. The catch was 1,800, which were sold at thirty-five dollars per hundred. Pennsylvania also sent out from her shores a corresponding number of nets.

The shore fisheries of this county were as follows:

At Ellis' Cove there was a seine of one hundred and six fathoms in length and thirty feet in depth, operated by a crew of twelve men. It was in use from April 10th to June 6th, and yielded receipts to the amount of $1,300.

At Kidney's Cove there was a seine of one hundred and seventy-five fathoms in length and twenty-four feet in depth, operated by a crew of twelve men. The daily hauls were ten, and was fished from April 13th to June 6th. Gross receipts, $1,600.

At Cash Point there was a seine of one hundred and eighty fathoms in length and thirty feet in depth, operated by a crew of twelve men. Daily hauls, eleven; fished from April 12th to June 6th; gross receipts, $1,500.

Hayes' Point—Seine two hundred and fifty fathoms long and twenty-four feet deep. Crew, thirty men; daily hauls, nine; fished from April 18th to June 6th; gross receipts, $5,000.

Badger's Island—Seine one hundred and eighty-two fathoms; depth of seine, forty feet. Crew, thirty-four; daily hauls, ten; fished from April 18th to June 6th; gross receipts, $8,000; profits, $1,800.

Hawk Island—Seine one hundred and sixty fathoms; depth, thirty feet. Crew, sixteen; daily hauls, ten; fished from April 18th to June 7th; gross receipts, $3,500; profits, $900.

Haines' Point—Seine one hundred and six fathoms; depth, twenty-eight feet. Crew, thirteen; daily hauls, eleven; fished from April 18th to June 4th; gross receipts, $1,200.

Taylor's Point—Seine one hundred and sixty fathoms; depth, thirty feet. Crew, twenty; daily hauls, ten; fished from April 18th to June 6th; gross receipts, $3,000.

Cinnaminson Cove—Seine one hundred and thirty fathoms; depth, twenty-five feet. Crew, eight; daily hauls, nine; catch, 5,000; average price, $28; gross receipts, $1,125.

The total catch in Rancocas creek was about 5,000 shad, 4,000 more than that of the previous year. The season's fishing was better than for years before. The best fishing was on Mondays, for the reason that the weekly close time was better observed by the owners of gill nets below.

The herring fishery was unusually good, 1,196 barrels being caught at the two fisheries at Badger's Island and at Hayes, and shipped to Baltimore. In some instances the numbers were too great for the demand, and the fishermen would raise the lead line of their nets and allow the fish to escape.

The black bass are increasing in tide waters, and numbers have been taken with the hook by those who were fishing for perch.

The Warden has caused some 150 fyke nets to be removed from Crosswicks creek and the channel between Biddle's Island and the main land.

Though in the aggregate, as shown by the Warden's report, there were some 24,000 more shad taken the past year than in that before, yet the average per net was not so large. But as the shad were finer, and the prices higher, the Warden thinks the fishermen did quite as well as usual. One shad came under his observation that weighed eight pounds, and another, when dressed, weighed seven and one-quarter pounds. So superior in size have the shad become, that the fishermen are knitting their nets for the next season's operations on a five and three-eighth inch gauge, as they found the smaller sized meshes failed to gill the shad.

Shad were seen in schools about the 15th of April, working along at Taylor's Point, above Bordentown, inshore from the muddy water of a freshet. Great numbers of young shad were also seen descending the river about the 1st of June.

Besides the regular gill net fishermen, many other persons, being out of employment, were induced to engage in the business. The Warden had occasion to make some fourteen arrests for Sunday fishing, under the Vice and Immorality Act, which imposes a fine of $14 and costs. Being poor men, Justice Bennett entered judgment against them and made them pay the costs, and gave them to understand that upon a repetition of the offence, he would demand the fine or commit them to Mount Holly Jail. Afterwards the Warden had no more trouble from offenders of the law. Doubtless, owing to the extent of the river front of the county, violations of the fishing law do occur unknown to the Warden, be he ever so vigilant; and it is a source of regret to him, as well as to all others who desire the strict observance of these laws, that the Commissioners of fisheries of Pennsylvania do not, under the authority given them by the act of 1873, appoint a river police for the Delaware. The joint efforts of such police forces, he is convinced, would soon put a stop to all infractions of the law, and add greatly to the interests of both States.

From the foregoing facts, collated from the reports of the Wardens, it will be seen that while the fishing for fifty miles below Phil-

adelphia was unusually unremunerative, that above, as far as Trenton, was quite the reverse, from the apparent fact that shad, when running in comparatively small schools, move with greater celerity. It is asserted by the fishermen generally, that the aggregate catch was less than that of the previous season. Mr. Logue assigns the extraordinary success of the last year as a reason for the great increase of nets during the present year, while Mr. Hannah attributes it to the desire to avoid the tax put upon fishermen for fishing within the jurisdiction of the State of Delaware. Both of these causes, without doubt, produced the effect. But there were, also, two other potential reasons for it, before mentioned, viz.: the great number of unemployed men, who were driven to this occupation, and the expectation that the great Centennial Exposition, by drawing multitudes of strangers to Philadelphia, would create an extraordinary demand for provisions of all kinds, and that the products of the river would command exorbitant prices. With the increase of population, it is but reasonable to suppose that, without proper protection, and its due enforcement, the fishes of the waters, like the game of the forests, will suffer diminution. This natural and obvious result has been greatly hastened by the destructive and wasteful modes of taking fishes. Nor has this result been confined to the Delaware and the rivers north of it, but alike to all the southern rivers, as is shown on page 376 of the report of "A Reconnoisance of the Shad Rivers South of the Potomac, for 1872 and 1873," by H. C. Yarrow, M. D., of the U. S. Commissioners of Fish and Fisheries. We quote from this interesting paper: "From the testimony of individuals I have mentioned, all more or less directly interested in shad fishing, it is very evident that the supply of this fish has been steadily decreasing, and continues to decrease, year by year, throughout our southern waters; and further, it is my sincere belief that, unless some means are employed to correct the state of affairs now existing in the sections visited, in a short time our tables will no longer be supplied with this delicate and highly valued fish, whose advent in the Spring is so eagerly anticipated."

The same decrease of the food fishes in those inland seas—our northern lakes—is progressing with like rapidity. As a single illustration, we quote from the report of the Commissioners of Fisheries of Wisconsin for 1875, pp. 2 and 3: "In former days, the fishermen used nets of a larger mesh, and took white-fish that weighed from eight to fourteen pounds each, the latter being the largest known to have been caught. Now, they have to use smaller meshed nets, and take smaller fish, the larger ones being at present almost unknown. * * In these places, Kenosha, Racine and Milwaukee, there is a total of *one hundred and twenty-five miles of gill-nets used.* There is a total of nets used in the waters of Lake Michigan which would extend from one end of the lake to the other. * * During the year 1875, there have been great complaints of the

scarcity of fish, and there has been a falling off of at least one-fourth; so that it is evident that the waters of Lake Michigan are being gradually depleted of fish."

This is precisely the experience upon the river Delaware. Yet the fishermen, many of whom are intelligent and observing men, who are perfectly cognizant of this state of affairs, and are more than any others immediately interested in the matter, instead of uniting with those who are striving to arrest this wholesale destruction of fish, will not only oppose such efforts, but act as if they were bent upon catching the last shad, and in the shortest time possible, by both increasing the number and length of nets regularly, year by year, and by excessive fishing in violation of the close times.

The catch of shad at the shore fisheries afford a fair index of the deterioration gradually going on in the river generally. Before the introduction of the drift-nets in the rivers of the Atlantic slope, there seemed to be no diminution of shad caught at the shore fisheries.

With the increase in numbers and in the length of these drift-nets, the catch has decreased, and to such an extent that more than one-half of the original shore fisheries have been abandoned, while the remaining half have become almost valueless. This falling off has been the more apparent since the adoption of float-lines, by means of which, with a comparatively small depth of web, the net is suffered to fish near the bottom of the river, where most of the shad are found, and thus more effectually preventing the shad from passing to their spawning beds in the upper Delaware. Thus another cogent reason is presented for the strict observance of the close times.

II. THE NORTHERN OR NON-TIDAL DEPARTMENT.

In the non-tidal department of the Delaware we have reports from the Wardens of Sussex, Warren, Hunterdon and Mercer. We have also reports from Wardens appointed by your Excellency in pursuance of the provisions of the act of 1876, as follows:

Bergen county—George C. Richards, Hackensack.
Essex county—Lambert Speer, Caldwell.
Morris county—Charles Arrowsmith, Morristown.
Middlesex county—John Miller, Bound Brook.
Ocean county—William Seymour, Toms River.
Passaic county—John C. Roe, Paterson.
Atlantic county—Andrew J. Rider, Atsion.
Cape May county—Edwin F. Westcott, South Seaville.

Most of these appointments were made in the Summer, the act not taking effect until late in the Spring. In Essex, Morris and Passaic, your Excellency re-appointed the Wardens who had been in office under the old law of the year before, and had proved themselves efficient officers. Their term of office had not expired, accord-

ing to the provisions of the old law, but it was deemed best to make a re-appointment, to comply with the terms of the law of 1876.

SUSSEX COUNTY.

In the county of Sussex we have to report that progress has been made in procuring the assistance of the Pike county officials. For the first time the Pennsylvania authorities have taken advantage of the provisions of their laws, and appointed a Warden for Pike county. In view of the inaction of their sheriff, such a step was absolutely necessary. The appointment, however, was made so late in the season that the Warden was unable to do more than arrange with Mr. Smith, the Warden of Sussex, for preventing and clearing out illegal structures during the next year. The numerous rifts in the upper part of the river furnish facilities for erecting fish baskets and weirs, and the residents along the banks have for years availed themselves of these advantages. It is a difficult task to prevent all the obstructions along a river front of fifty miles, but we believe it can be done in Sussex as well as in the lower counties, especially as we now have the aid of the Pike county officials. It is highly important that the upper part of the river be clear, in view of the fact that the migratory fishes all strive to go to headwaters to spawn. And this is especially true of the salmon which have been placed in the river during the past three years.

WARREN COUNTY.

In Warren, Mr. Warden Weller has shown his accustomed zeal and energy. He removed all weirs found in the Delaware, and many of those found in the tributaries of the Delaware. In one instance he was persuaded to stop his work of tearing out a weir by a body of men who came upon him with guns loaded, and threatened violence unless he desisted. He has employed counsel, and will prosecute the offenders to the full extent of the law. The suit for trespass brought against him last year for tearing out a fish basket, is still pending in the Warren county Court of Common Pleas. As he was strictly within the limit of his duty, there is no doubt that the case will terminate in his favor. He reports that large numbers of the young salmon were seen late in the summer in the Pequest. That stream is especially adapted to that class of fishes. In October last, we heard that a three and one-half pound salmon had been taken in the Pequest. If true, this proves that some of the fishes first put in have returned from the sea.

HUNTERDON COUNTY.

Warden Scarborough, of Hunterdon county, reports as follows:

"The number of fisheries are the same as last year. It is with pleasure that I report no violation of the laws by the fishermen of Hunterdon county, who appear to appreciate the strict enforcement of the laws relating to the fishing interests. Such violations as have occurred have been by parties not in anywise connected with the fisheries. Information was brought to me that pike nets were set in Wells' Falls, and I visited that locality, for the purpose of detecting the guilty parties, but failing to do so, I went in search of the pike pound and destroyed it.

"The first attempt to violate the law in regard to fish baskets in the river, since my appointment as Warden, was made at Tumble Falls. A fish basket was put in the race-way of the old mill at that place, the owner claiming that it was on his own property; but as it had been planted above the low water mark, I notified him that if he did not remove it at once, I should tear it out and enter prosecution against him. In compliance with this notice he removed it without having caught any fish in it. These are the only infringements upon the law that I have been able to ascertain.

"The first shad, in this county, were caught on April 1st, by Mr. Ashton, at his fishery. There were none caught from that time until April 8th, when the same person caught eight at the same fishery. On April 11th, twenty were caught above the Delaware bridge at Lambertville. At that time the prospects for a good season's catch were very favorable, but the low water soon blasted these prospects. There was a fair run of shad from the last date above mentioned until about the fifteenth day of May, after which time the river was so low that the shad caught did not pay expenses. This has been the poorest fishing season since my appointment; some of the fishermen, also, tell me that they have never known so few shad to be taken in any one season. Those caught, however, were very fine, the best ranging in weight from six to eight pounds.

"It is with regret that I look forward to the destruction of this delicious fish in this the best river in the country for them; but unless additional protection is given to their propagation they will soon be destroyed. One agent of destruction I have called attention to in previous reports—I allude to the Delaware and Raritan Feeder and the Trenton Water Power. Owing to the low water in the river in the fall of the year, nearly all the young shad coming down the river are turned into the feeder and destroyed by going through the turbine wheels at the different mills on the banks of the feeder.

As the greater portion of the water in the main canal is fed to it by the mills at this place, arrangements should be made to remove the temporary dam put into the river at Bull's Island in the Summer, or to put in a screen to prevent the young shad from going

into the feeder. By some such plan as this there would be an annual saving of millions of young shad, which are now lost. This year, nearly all the young shad that came down the river were turned into the feeder, in consequence of the very low river during the Summer and Fall, it having been lower than I ever before knew it to be. The dam in the river caused a current into the feeder, thus drawing in multitudes of these young fish, before which was certain destruction by the turbine wheels before referred to.

"Another cause of destruction to the young shad is the recent introduction of black bass into the river. The increase of the black bass has indeed been wonderful. Although but few were put into the river at Phillipsburg, some five years ago, now they are caught by thousands, and by many appear to be appreciated more as an article of food than any other fish. But as the principal food of the bass is young fish, I regard them as a destructive foe to the young shad, and I believe that unless something be done for the more successful propagation of shad, the bass will, in a few years, utterly destroy them.

"A change in the close time, say from sunset on Friday to sunrise on Monday, strictly enforced, would be of great benefit to all the fishermen, and also be the means of keeping up a supply for a number of years.

"If, in addition to the changes spoken of, some competent person, well skilled in the art of propagation, could be employed by the Commissioners to give instruction to the fishermen at the night fisheries in this art, we could soon have an abundant supply of this delicious fish, and at very small expense. If this plan could be carried out by the Commissioners for one or two years, instructing the fishermen in the art of hatching, and giving them the right to use fish boxes, I think they would soon understand its importance, and themselves give it all the attention it would require. With such knowledge, in this way imparted to the fishermen, millions of eggs might be hatched which are now every year lost.

"I bring these observations to your notice, hoping that they will meet with favorable consideration, and that such measures will be adopted as will secure to the people of our State an abundant supply of food fish."

Complaints have been made of violations of law in the interior of the county, and application was made for the appointment of a Warden to look after the inland streams. It is impossible for the Warden charged with the care of the fishing interest in the Delaware to take the time necessary to look after the waters in the interior of the county. It is believed that the existing law authorizes your Excellency to appoint the additional Warden asked for, and we respectfully recommend such an appointment.

MERCER COUNTY.

In Mercer county we had, early in the season, complaints of several violations of the law. Instructions were given to Mr. Ashmore, the efficient Warden of that county, to prosecute every person against whom complaint was made. Nearly all the complaints were for violating the Sunday close time, a regulation which all respectable fishermen admit is very much to their advantage. To avoid trouble, the offenders were charged under the Vice and Immorality act, for fishing on Sunday. Twelve cases were prosecuted, and in all the proofs were clear and convictions followed. In reference to the condition of the fishing interests in his county, and as to the cases above referred to, the Warden reports as follows:

"The catch of shad in this county, during the past season, has not been as great as it was last season. This was attributed to various causes by the fishermen, but to two causes all agree, viz.: the high stage of the river, and the coldness of the waters at the beginning of the lawful season. Every experienced fisherman well knows that snow-water will discourage the shad from proceeding to their breeding grounds, and that as soon as they meet the cold current of the river they turn back. This coldness of the water continued so long that fewer fish than usual came within the catch of the fisheries.

"It is the opinion of some fishermen that the scarcity of shad arises from the fact that the young fish, in passing down to their natural feeding place, are forced by dams and other obstructions in this county, into the water power, in the proportion of three to one passing down the river, and that they are thus in the same proportion destroyed. They also believe this evil might to some extent be remedied by the placing of screens of proper size across the water power at its entrance, which, while not impeding the flow of water therein, would cause the fish to turn to the channel of the river. The Water Power Company have also built a wall across, or nearly across, the river, which very much interferes with the movements of the fish up and down the same.

"After about the 20th of May, there were few fish caught. What were caught during the season were of good size, some reaching seven pounds in weight. These were caught at Emley's Island. There was no trouble in getting a six pound shad.

"The catch of sturgeon was light.

"The black bass are quite numerous, and many of good size are caught with hook and line, the bait being minnows. As the bass is a fish of prey, and destroy the weaker fish, they are, in the opinion of many fishermen, better for ponds and lakes than for rivers frequented by shad.

"I have found no set-nets, but have made some arrests for other violations of the law. In the month of April I found that persons were fishing with gill, or drift-nets, on Sunday, and, accordingly, I

made complaint before Justice Mills, and had the following persons arrested, viz.: Edward Jobs, Clet Whildey, Joseph Britton, W. Moon, Henry Hill, Samuel White, C. D. Ashmore, Charles Wilson, Thomas D. Cornish and William Hill. Upon being brought before the justice they acknowledged their guilt, but in consideration of their being poor men, and having families dependent upon them, and their inability to pay a fine, and also upon their promise to respect the laws in the future, it was thought best not to impose a penalty. They were, however, severally required to pay the costs of arrest, and to enter into recognizance for their future good behavior concerning the fishing laws. Since these arrests were made, it is believed, the fishing laws have been respected, and that no violations have occurred.

"The number of shore fisheries, and of gill or drift-nets fished during the season, their catch, by whom fished, and receipts, will be found in my tabulated statement."

It is believed the prosecutions above referred to have already insured a prompt obedience to law, so far as the law is known by the fishermen. If the Legislature shall see fit to enact the revision of the law referred to in the previous part of this report, we will cause it to be generally circulated, and will thus do away with the excuse of "ignorance of the law." We are aware that this is not a good plea, but when laws, which are intended to regulate the conduct of ordinary mortals, are so obscure that no two lawyers can agree as to their interpretation, it is perhaps admissible for a fisherman to plead his ignorance.

PASSAIC COUNTY.

Mr. John C. Roe, Warden of this county, reports:

"I have not done as much for the fishing interests as I expected to do, owing to the fact that I was subpœnaed as a petit juror last Spring just at the time when my services were most needed as Warden. (By the way, Wardens should be exempt from jury duty). I have visited most of the streams and lakes in Passaic county since my last report, and have taken a great number of fish known as game fish—trout, black and Oswego bass, pickerel and perch. The fishing for perch and pickerel during the season has been excellent throughout the county. Black and Oswego bass have been taken in Greenwood lake in extraordinary numbers, and I think the fishing there has been as good this season as in most of the lakes of western New York, with this exception—that the fish taken are not as large; still, many were caught of four pounds weight. In my opinion, these fish should be introduced into all the waters of the State.

"The trout fishing has been very poor, owing to the scarcity of water; in fact, most of the trout streams disappeared altogether from sight, causing these fish to perish in large numbers. I would recom-

mend the restocking of the trout streams in this county, especially the largest, as West brook, Singac brook, and Haledon brook.

"I would also recommend the stocking of Echo lake, Green lake, and Pompton lake, with a good supply of salmon. I regard these lakes peculiarly adapted to this species of fish. My reasons for thus stocking these lakes, in addition to the adaptation of their waters to these fish, are: first, that the weirs in Passaic county have either been peaceably removed by the owners or destroyed by the officers; and, second, that parties owning nets have become convinced that it is dangerous business ts trifle with the law.

"Some difficulty has been had with owners of fykes wh o claimed the right to set them on their own lands, but wherever they have been destroyed.

"Set lines have also given me some trouble. This style of fishing is disastrous, especially where the lines number hundreds of feet and the hooks are as numerous, and baited with crawfish, shrimps and minnows. In all cases where found, they have been destroyed.

"Since my last report, I have destroyed the following:

"Three fykes in Passaic river, above the falls.

"One fyke in Passaic river, below the falls.

"One fyke in Dundee lake, (Passaic river).

"One fyke in Peckman river.

"Five fykes in Pompton feeder.

"One gill net (135 feet long), in Echo lake.

"Seven gill nets (about 60 feet each), in Greenwood lake.

"Two eel weirs in Passaic river.

"Two eel weirs in Greenwood lake stream.

"2,200 feet set lines in Greenwood lake.

"The newly appointed Warden for Greenwood lake, (appointed by the Sportsmen's Club of that place), has returned to me as follows; 'August 1st, 1876— I have destroyed, during the season, eight gill nets, total length about three hundred and sixty feet; about four thousand feet of set lines, and four baits.' This Warden (Samuel Ganetson), has also recently caught an old offender who has given me much trouble.

"I desire to draw attention to the fact, that large quantities of black bass were taken from the spawning grounds in the lake, in June, by the use of a trolling line with a number of flies attached. An expert would average one hundred and fifty per day. Legislation is much needed to prevent the destruction of these fish during this period.

"A few salmon made their way up the Haledon brook last spring.

"During the month of March, in each year, the water is drawn from the Pompton feeder for the purpose of cleaning the same, causing the fish to settle in the basins. I took from these basins last spring about twelve thousand perch and pickerel, and placed them in Passaic river and Pompton lake according to directions.

"In conclusion, I would also suggest that fish ways be erected in the Passaic river at Dundee dam, Passaic falls, and Beattie's dam."

ESSEX COUNTY.

Mr. Lambert Speer, Warden of this county, submits his report as follows:

"I was re-commissioned by his Excellency Governor Bedle, as Warden for Essex county, under the 'Act for the Preservation of Fish,' approved April 13th, 1876, which repealed that of April 8th, 1875, and have to report the successful prosecution of eight cases of violation of the law. Five of these were in Essex, and three in Morris county. Three of those in Essex were tried before Judge McChesney of Caldwell, and two before Judge Harrison of Roseland, and the three cases in Morris before Justice Breese of Morristown.

"The law of 1876 has proved much more effectual than that of 1875, and a rigid enforcement has made it more popular, though it can, and it is hoped will, be further improved. A very general interest has been shown in its enforcement, and I have received much voluntary assistance in obtaining evidence.

"About six hundred fine young bass were forwarded to me through Mr. A. A. Anderson, on the 14th of September; most of them were placed in the Passaic river, at its 'forks' with the Rockaway, and the balance in a pond a short distance above. We have gratifying evidence that the black bass are now rapidly increasing in the Passaic river and its tributaries, and if they continue to thrive in these streams (of which there seems to be little doubt), the careful enforcement and improvement of our protective laws cannot fail to secure a large supply of this valuable variety of food fishes.

"The importance and the success of stocking our streams having been now practically demonstrated, it seems very desirable that the State appropriation for this purpose should be judiciously increased."

MIDDLESEX COUNTY.

Mr. John Miller, Warden of Middlesex county, reports:

"In Raritan river I have destroyed one set-line of one hundred yards, and two medium-sized fykes. In Green brook, a branch of the Raritan river, I destroyed one medium-sized fyke. In the north branch of the Raritan river I destroyed one very large eel rack, which entirely blocked the river from shore to shore.

"The shad caught in the Raritan river, between the dam at or near Bound Brook and New Brunswick, during the last season, although not much more than one-third the number usually caught annually, have been of a very superior size. This decrease, however, may be accounted for by the fact that there were thirteen separate fisheries, or rather nets, in constant use between the said dam

and the limit of territorial jurisdiction above the railroad bridge at New Brunswick—a distance of only five miles. This number of nets in use last season between the said points, exceeds the number of any previous year by about five.

"The dissatisfaction in reference to that notorious dam at or near Bound Brook continues to increase. No active steps have been taken, either to remove the same or to cause to be built in said dam a sluice-way of such proportions as would allow the fish to work their way through it, and thus gain access to the many branches and tributaries of said Raritan river above this dam.

"The six days' experimental fishing with Mr. Schwartz, from Delaware, proved unsuccessful, on account of the shallowness of the water, and of the said dam. The water was unusually low last season, the result of the severe drought in this section of the country. The Raritan river below the dam has been fairly alive with fish, among which were a goodly number of black bass. The increase in numbers of this species of fish has given great pleasure to sporting fishermen.

"Sixty-one shad were caught and placed above the dam during the season.

"I desire also to call attention to the mill at Raritan, known as 'The Raritan Woolen Mill,' and the effect of the waters and dyes that flow from the mill and are allowed to mix with the water of the Raritan river. The poisonous properties of these materials prove fatal to great numbers of fish every year. I receive daily complaints from persons who have noticed this damaging effect. I allude to this matter in particular, that such action may be taken in reference to it as may be thought proper."

BERGEN COUNTY.

The Warden of Bergen county submits the following as his first report:

"Since my appointment, on May 23d, 1876, I beg leave to report as follows:

"There has been but one violation of the law in this county, so far as I have been able to ascertain, and that was by parties from Passaic county. I have received a number of complaints, and in each case asked the complainants for witnesses, which they failed to produce. On investigation, however, I found the complaints to be groundless.

"I also received one complaint from Passaic county, in reference to a net at Greenwood lake, and not knowing the address of Mr. Roe (Warden of that county), I gave the matter my personal attention, and on visiting the place, June 3d, I found the net complained of and destroyed it, not being able to find the owner.

"The black bass furnished me some two years ago, by the late Dr.

Slack, were placed in the Hackensack river at Hackensack. I find they have left that locality and gone up the river about seven miles, to Kinderkamack, where they have done finely. My nephew, Mr. Garrett Hopper, has caught eight during the season, all smaller than the stock fish which were planted, and in each case he unhooked them carefully and let them go. The stocking of the Hackensack river with black bass may be considered a success.

"The circulars received have been distributed through all parts of the county, and also posted in every depot of the New Jersey and New York Railroad. As soon as I can make arrangements with the Midland Railroad Company to post the same in their depots I will do so.

"I anticipate considerable trouble next Spring, with parties in the upper Hackensack region, as I understand they say they will fish with their fykes in spite of me and all the New Jersey Fish Com-Commissioners, but I shall enforce the law and prosecute all offenders.

"I would recommend that the attention of the Legislature be directed to the necessity of prohibiting the fishing with gill, drift, or pound nets in the Hackensack river in tide-water; also, of regulating the size of meshes for seine fishing, only allowing them to fish with small mesh fykes during the smelt and tomcod season, which, in our river, is from Deeember 15th to May 1st; and, also, of having a closed season against the use of nets of all kinds, from June 1st to November 20th."

In the upper part of the State the Wardens have done good service. Your Commissioners visited some of the waters in that section in August, and found a very general interest in the subject of fish culture. The new law has worked very well. The people generally are beginning to realize the necessity of protecting the fishing interest. Several cases of violations of the law have been successfully prosecuted. The great complaint at first was, that the people did not know the law. At the suggestion of your Excellency, we caused posters to be printed, giving the text of the recent enactments, and the names of the Wardens of the several counties, with their post office addresses. These were forwarded to the Wardens, and by them set up in public places in the several counties. Owing to the limited circulation of the public laws of the State, this seems to be the only way speedily to inform the general public of their rights and duties.

In addition to the illegal structures and apparatus destroyed by the Wardens, we claim that many persons have been *prevented* from improperly using fykes and baskets through fear of the penalties.

Prior to the appointment of Wardens, the laws, no matter how well considered, were practically useless, for the reason that no person was specially charged with their enforcement. The general knowledge of the people of our State, everywhere, that a special officer in each county is appointed to prosecute all violations of the fishing laws, leads all classes to consider and discuss the laws. We have found that this very discussion is, in general, all that is needed, as the masses of the people are in favor of proper protective legislation, and will actively sustain it.

The Wardens of Ocean, Atlantic and Cape May severally report that they have not yet had time since their appointment to become entirely familiar with their duties and the needs of their several counties. We expect suggestions from them from time to time during the year.

It appears from the reports that in all sections the people demand fishes for the purpose of stocking the streams. Now that the work of protecting the streams is fairly inaugurated, it is proper to satisfy this demand as far as possible. Your Commissioners have placed during the past year more than seven thousand bass in the waters of the State, having distributed them among all the counties. All sent out were large enough to take care of themselves, and will spawn next year. If they are properly protected we shall soon have a good supply of them in all parts of the State.

The salmon which were in the hatching-house at the date of our last report, were all placed in the tributaries of the Delaware and the Raritan, in Warren and Hunterdon counties. It is possible that the almost unprecedented drouth of last summer, which caused lower water in the Delaware river than has been known for half a century, and also a corresponding increase in the temperature, may have injuriously affected this class of fishes. It is known, however, that those which remained in the tributaries (as the Pequest) near the headwaters of the Delaware were not injured. Further down the river, near Lambertville, quantities of the hardiest varieties of fishes perished from diseases produced by the high temperature of the water. The Warden of Hunterdon, who is an old fisherman, reports that he has never before seen so many fishes destroyed by this cause.

The attention of your Commissioners has been called to the propriety of making efforts to introduce the European carp. In the interesting report of the U. S. Commissioners of Fish and Fisheries, issued this year, the good qualities of this class of fishes is set forth. There are many varieties, and the efforts of Prof. Baird have been devoted to discovering which particular kind is of most value to us. Says the report: "This fish has been domesticated for thousands of years, and is one of the species which furnish the principal food of the Chinese. Living on vegetable matter, instead of animal, it

can be multiplied at very little expense in restricted waters. * * Among its valuable characteristics, and which are not known to be possessed by any American species, are its fecundity and adaptability to the most varied waters, from deep cool lakes and rapid streams to the merest puddles and ditches, and to latitude from St. Petersburg to Italy. * * The special advantage to be gained by the possession of the carp is in its general adaptability to all waters, and that it thrives under conditions unfavorable to many species. According to Heckel and Kner, it prefers water not too rapid, and a boggy bottom. As a fish for propagation both south and north, it is believed the carp will excel all others. In Northern Silesia, according to Mr. Von dem Borne, on the estate of Baron Von Rothschild, puddles two or three feet deep in the villages are used for raising two-year-old carps for stocking distant waters. From this resource a single estate realized what would amount to about fifty-five dollars per acre of pond surface.

"The following is a recapitulation of the good qualities of the carp:

"1. Fecundity and adaptability to the processes of artificial propagation.

"2. Living largely on a vegetable diet.

"3. Hardiness in all stages of growth.

"4. Adaptability to conditions unfavorable to any equally palatable American fish, and to very varied climates.

"5. Rapid growth.

"6. Harmlessness in its relations to other fishes.

"7. Ability to populate waters to their greatest extent.

"8. Good table qualities."

It is especially desirable that we should have a fish which will increase without preying upon others of its own kind. Such a fish is the only one that can populate waters to their greatest extent. At the meeting of the Commissioners of Fisheries of the several States, held at Philadelphia in October last, Prof. Baird assured your Commissioners that he would aid them in introducing this valuable species. We have a large extent of water surface that can be profitably used for their culture.

No efforts were made this year in the artificial propagation of shad. The difficulties in the way of getting a sufficient number of spawners are very considerable. In New York, and in the Connecticut, the fish congregate in large numbers at the foot of some obstruction, like the dam at South Hadley, and are easily taken. But in the Delaware there are no dams to obstruct the passage of the fish, and we are compelled to depend on the catch at some ordinary fishery. The work done has been successful, so far as it has gone, for one pair of fishes artificially treated will produce more young fish than two hundred pairs of natural spawners. It would be desirable, therefore, to carry on the work on a larger scale. If a

fishery should be cleared out and arranged so as to collect the fishes from time to time, the end desired could be obtained.

Your Commissioners still receive complaints in reference to the obstruction of many streams by dams, built without sufficient fish ways. We pointed out to the Fishery Committee last year the fact that we could do nothing under existing legislation, for the want of means. In our last report we called attention to the fact, that while the law of 1874 (pamphlet, page 116), directed us to go on and build fish ways, it did not provide a fund for the accomplishment of the work, but left us to look to the dam owners for repayment of the cost. It is suggested that the law be so amended as to impose upon the person or persons bound by law to build a fish way in any dam, a sufficient penalty for failing to do the work, after due notice from the Commissioners of Fisheries. If such penalty were cumulative, say twenty dollars a day for each day's neglect, there would probably be no difficulty in enforcing the duty these persons owe to the public.

The necessity for adequate legislation to prevent the wholesale destruction of young fishes on their way to the sea, by the Water Power and the Feeder, has, in consequence of the unusually low water in the river during the last season, been made more apparent than ever. A proper guard or screen at these places, through the months of August and September, would remedy the mischief. The evil is fully set forth in the reports of the Hunterdon and Mercer County Wardens. We have directed attention to it in several of our previous reports, and we again allude to the matter, believing that no artificial propagation, however successful, could completely repair the waste from this cause.

A list of Commissioners thus far appointed in the several States and the Dominion of Canada, is appended to this report. (Appendix D).

All of which is respectfully submitted.

B. P. HOWELL,
J. R. SHOTWELL, } *Commissioners.*
G. A. ANDERSON,

FINANCIAL STATEMENT.

Balance on hand November 14, 1875		$511 20
Appropriation, session of 1876		2,500 00
		$3,011 20
Paid for hatching salmon	$600 00	
" cans for transporting fish	45 00	
" transporting salmon	21 00	
" black bass and transportation	1,522 74	
		$2,188 74
Balance on hand November 14, 1876		$822 46

APPENDICES.

APPENDIX A.

AN ACT for the appointment of commissioners for the better protection of the fishing interests of the State of New Jersey.

WHEREAS, both the marine and inland fisheries of this State are known to have deteriorated, and thus a vast amount of food supply for the people has been greatly reduced by causes which seem to be under the control of the Legislature, and that the present yield of fish, both from the salt and fresh waters, might be largely increased by proper measures of protection; therefore,

SECTION 1. BE IT ENACTED *by the Senate and General Assembly of the State of New Jersey*, That the Governor of this State be authorized, within fifteen days after the passage of this act, to appoint two competent persons, whose duty it shall be to inspect the bay and river fisheries of this State and report upon the same, suggesting such legislation as may be most conducive to their protection and improvement.

Sec. 2. *And be it enacted*, That they shall continue in commission from the passage of this act until otherwise ordered.

Sec. 3. *And be it enacted*, That this act shall take effect immediately.

Approved March 17, 1870.

APPENDIX B.

To the Members of the Legislative Assemblies of Pennsylvania and New Jersey:

The undersigned, Commissioners of Fisheries of the States of Pennsylvania and New Jersey, respectfully represent:

That by the compact of 1783, between the States of Pennsylvania and New Jersey, the whole surface of the Delaware River, from shore to shore, is made the dividing line between the said States, so far as relates to the arrest and prosecution of offenders against the laws of either Commonwealth.

That this arrangement has full force as to regulations affecting the Common of Fishery on said river.

That for many years all legislation in regard to the said Common of Fishery in the Delaware was concurrent.

That it is possible to avoid injurious conflicts between the States only by continuing the system of concurrent legislation.

That of late years independent action has been taken by the Legislatures of both States, leading to confusion and consequent difficulty in enforcing salutary laws.

That your respective Commissioners, in view of the premises, have examined the laws in force in both States, and have prepared a draft of a proposed law repealing those laws not concurrent, re-enacting almost all of the concurrent legislation heretofore in force, and embodying the useful regulations taken from the non-current laws, and at a meeting held in Philadelphia, on Wednesday, January 26th, 1876, we resolved to present the said proposed law to the Legislatures of our respective States, and to earnestly ask that it be enacted.

Your Commissioners further represent that action at this time is necessary, since the increase in the number of fishermen, and the new and destructive devices for taking fish, make it imperative that every facility should be afforded by the Legislature, to enable the officers charged with that duty to enforce such salutary regulations

as your predecessors have heretofore enacted, or your honorable bodies may hereafter deem it necessary to enact.

We present herewith a draft of the proposed law, and respectfully ask for it your favorable consideration.

H. J. REEDER,
JAMES DUFFY,
BENJ. L. HEWITT,
Commissioners of Penna.

B. P. HOWELL,
J. R. SHOTWELL,
G. A. ANDERSON,
Commissioners of N. J.

AN ACT to regulate Fishing in the River Delaware and its Tributaries.

SECTION 1. BE IT ENACTED *by the Senate and General Assembly of the State of New Jersey*, That the owner or possessor of every fishery upon the River Delaware, within the jurisdiction of this State, his tenant or agent, shall, before he occupies the same as a fishery, give to the Clerk of the Court of Common Pleas, of the county wherein such fishery or the greatest part thereof may be, a description, in writing, of his, her or their pool or fishing place, designating the beginning and ending point, and the extent thereof on the river shore, together with the name of the township and county in which it is situated, and the number of men generally employed in fishing the same, and shall also enter into bond, with one or more sufficient sureties, to the clerk of the said county, and his successors in office, in the penal sum of five hundred dollars, conditioned for the payment of all fines and penalties created by any act or acts that shall or may be incurred, and recovered for any infraction of or offence against act or acts relating to or governing the time, manner or way of catching fish committed at such fishery, by his, her or their command or permission, during his, her or their occupying the said fishery, personally or by tenant; which said description and bond it shall be the duty of said clerk to file in his office, and give a certificate thereof to the person producing the same, on being paid two dollars; which said bond shall be a security for all such penalties as may be recovered against the said owner or possessor, tenant or agent, during the time he, she or they may occupy the same; and in case of a recovery against such owner or possessor, tenant or agents, for any penalty given by the said act or acts, and the non-payment

thereof, it shall be the duty of the said clerk to cause the said bond to be prosecuted to judgment, and apply the proceeds thereof to the payment or discharge of the said recovery; and if any person or persons shall fish in any fisheries so entered as aforesaid, or draw, cast or otherwise make use of any seine or net within the same, or in the said river, opposite the river shore, included within the bounds thereof, without permission in writing from him, her or them so owning, possessing and entering the same, first had and obtained, he or they so offending shall forfeit and pay the sum of two hundred and fifty dollars, together with the costs of suit for each and every offense, to be sued for and recovered by the person or persons so owning, possessing and entering the said fishery in any court of competent jurisdiction.

Sec. 2. If any person or persons shall cast, draw, fish with, or otherwise make use of any seine or net in the river Delaware, within the jurisdiction of this State, between the first day of March and the tenth day of July, in each and every year, without having first entered his, her or their fishery as aforesaid, or at any place in the said river Delaware within the jurisdiction of this State, at, in, or opposite the shore boundaries of a pool or fishing place, described and entered in the manner prescribed in the preceding section, he or they so offending shall forfeit and pay the sum of two hundred and fifty dollars, together with the costs of suit, for each and every such offence.

Sec. 3. That from the place or places where seines or nets are usually thrown into place or places where they have been usually taken out, or from the place or places where they may hereafter be thrown into the water to the place or places where they may be taken out, shall be deemed and held to be a pool or fishing place, within the meaning of this act.

Sec. 4. No person shall be subject to the pains and penalties inflicted by the first and second section of this act for fishing with a drift-net, unless he shall fish in some pool or fishing place entered as such according to law.

Sec. 5. That if any person or persons whosoever, shall cast or lay out, or cause to be laid out, any seine or net into the river Delaware, within the jurisdiction of this State, beyond the right angle of the shore and where his line strikes the river at low water mark a going out, or suffer it to swing beyond the right angle of the shore of the river and where his line strikes it at low water mark a coming in (except by unavoidable accident), every person or persons so offending, and being thereof legally convicted, shall forfeit and pay the sum of twenty-five dollars for each and every such offence, with costs and damage, to be paid to the person against whose land such trespass shall be committed, if he shall sue for the same within six months after such trespass has been committed.

Sec. 6. That if any ship, vessel or raft shall, during the season of

catching shad in the Delaware, come to anchor in the same, on any fishery regularly entered as such, as required by the first section of this act, and shall not immediately be removed from the said fishing pool, if such removal can be done with safety, on application for that purpose by the owner or occupier of such fishery, to the captain, pilot or person having command of the said ship, vessel or raft, or if any ship, vessel or raft be wilfully run on shore on any such fishing ground, then such captain, pilot or person having the command as aforesaid, shall forfeit and pay sixty dollars, to be recovered by an action of debt, with costs, by the said owner or occupier.

Sec. 7. From and after the passing of this act, if any person or persons whosoever, shall cast or lay out any seine or net in the river Delaware, or any of its tributaries, within the jurisdiction of this State, from sunset on Saturday until twelve o'clock on Sunday night, of each and every week, he, she or they so offending shall be deemed guilty of a misdemeanor, and on conviction thereof shall be punished by fine not exceeding fifty dollars, or imprisonment for any time not exceeding six months, or both, at the discretion of the court before whom such conviction shall be had.

Sec. 8. It shall not be lawful for any person or persons, for the purpose of catching fish in the river Delaware, within the jurisdiction of this State, to anchor, stake down, or otherwise fasten, any drift-net or gilling seine in or across said river; and that, if any person or persons shall so anchor, stake down, or otherwise fasten any drift-net or gilling seine in or across said river, within the jurisdiction of this State, for the purpose of catching fish, he, she or they so offending shall be guilty of a misdemeanor, and on conviction thereof shall be punished by fine not exceeding one hundred dollars, or by imprisonment in the county jail not exceeding three months, or both, at the discretion of the court before whom such offender or offenders shall be convicted; and every such net or seine so anchored, staked down, or otherwise fastened in or across said river, shall be deemed and considered a public nuisance, and liable to be abated or removed by any person or persons who may deem proper to abate or remove the same.

Sec. 9. If any person or persons shall, by threat, menace, or otherwise, attempt to deter or prevent any sheriff, constable, collector, fish warden, or any other person, from enforcing or carrying into effect this act, or any part thereof, he or they so offending shall be guilty of a misdemeanor, and on conviction thereof shall be punished with a fine not exceeding one hundred dollars, or by imprisonment not exceeding six months, or both, at the discretion of the court before which such offender or offenders shall be convicted.

Sec. 10. If any person or persons shall be found making use of any boat, seine, net or other tackling in the river Delaware, within the jurisdiction of this State, contrary to the true intent and meaning of this act, he or they so offending shall, in addition to the fines

and penalties aforesaid, forfeit the boat or boats, seine or seines, net or nets, or other tackling so made use of; and that it shall be the duty of all the sheriffs, fish wardens and constables, and may be lawful for any person or persons, to seize and secure any such boat, seine, net or other tackling, as aforesaid, and immediately thereafter give information to two justices of the peace of the county where such seizure shall have been made, who are hereby required and empowered to meet at such time and place as they shall appoint for the trial thereof, and hear and determine the same in a summary manner, and in case the same shall be condemned, it shall be sold by the order and under the direction of the said justices, who, after deducting all legal costs and charges, shall pay one-half of the proceeds of said sale to the clerk of the county in which such offence shall have been committed, and the other half to the person who shall have seized and prosecuted the same.

Sec. 11. If any person or persons on board any such boat, or in possession of such seine, net, or tackling, shall resist any officer, or any other person or persons, in the lawful seizure of the same, then, every person so offending shall be deemed guilty of a misdemeanor, and on conviction thereof shall be punished with a fine not exceeding one hundred dollars, or imprisonment not exceeding six months, or both, at the discretion of the court before which such offender or offenders shall be convicted.

Sec. 12. If any person or persons whosoever, shall cast, draw, or otherwise use, for the purpose of catching fish, more than one seine or net in any pool or fishing place in the river Delaware, within the jurisdiction of this State, at any place opposite to or above the lower mouth of Rancocas creek, in the county of Burlington, in the State of New Jersey, and more than two seines or nets in any one pool or fishing place from thence as far down as the jurisdiction of this State extends, within any one term of twenty-four hours, beginning at sunrise and ending at sunrise the day following, or shall be aiding or assisting therein, contrary to the true intent and meaning of this act, he, she or they so offending shall forfeit and pay the sum of two hundred and fifty dollars, together with costs of suit, for each and every such offence; *provided, always*, that it shall and may be lawful for any person or persons who, by accident or otherwise, may be deprived of the seine or net first used in any pool or fishing place, in any term of twenty-four hours, to withdraw the same, and substitute another seine or net in the place of the one so withdrawn.

Sec. 13. From and after the passing of this act, the right of fishery on all islands and bars in the river Delaware, within the jurisdiction of this State, shall be bounded by lines drawn from the extreme upper and lower points of said islands and bars, at right angles with their general course of bearing, which shall and may be determined by a base line drawn through the extreme points of said islands and bars at low water mark, and if any person or persons

shall cast or lay out, or suffer to drift or swing, any seine or net beyond the right angle range of either extreme point at low water mark of any island or bar in the river Delaware, within the jurisdiction of this State, as aforesaid, or beyond the right angle range of his or their front on said island or bar, without the permission or consent of him or them owning beyond said limits, except by unavoidable accident; any person or persons so offending, and being thereof legally convicted, shall forfeit and pay for each and every such offence the sum of fifty dollars, to be sued for and recovered in any court having competent jurisdiction thereof, with costs of suit, to be recovered by the person against whose fishery or right of fishery such trespass shall have been committed; *provided, always*, that nothing in this act contained shall be so construed as to prevent any owner or any occupier of any fishery, on any island or bar in the river Delaware, casting or laying out any seine or net, or suffering the same to drift or swing in landing or drawing in, beyond said limits, in all cases where no other fishery is or may be immediately adjoining thereto.

Sec. 14. That hereafter no person shall, within this State, have in his or her possession, or expose to sale, any shad caught in the river Delaware, or any of its tributaries, within the jurisdiction of this State, below the head of Trenton Falls, between the eleventh day of June and the tenth day of August, in any year, or above the head of Trenton Falls, between the sixteenth day of June and the tenth day of August, in any year, under a penalty of five dollars for each and every shad so had in possession or exposed for sale, to be recovered in an action of debt, with costs of suit, by any person or persons in his or their name or names, before any justice of the peace in the county where the offence was committed, or where the defendant resides or is found; and in all prosecutions or proceedings under this act, it shall not be necessary to file any state of demand, or to comply with the formalities required in penal actions, and in all such actions both parties may be sworn; and on the failure of the person or persons prosecuted to pay forthwith the fine or fines imposed, then such person or persons shall be at once committed to the county jail by order under the hand of the justice before whom the action was tried, there to remain for a period of twenty days and until said fine or fines be paid.

Sec. 15. That hereafter it shall not be lawful to catch any black bass in the river Delaware and its tributaries, between the first day of March and the fifteenth day of July, in each and every year, and at no time shall it be lawful to catch black bass except with hook and line, under a penalty of five dollars for every black bass so caught; *provided*, that nothing in this section of this act shall be so construed as to permit the catching of black bass with set-lines or out-lines.

Sec. 16. Nothing in this act shall make it unlawful by order of

either of the Commissioners of Fisheries of the State of Pennsylvania or New Jersey, to take fish in the said river Delaware and its tributaries, at any time, to be used for the purpose of the natural or artificial propagation of the same, or the stocking of other waters.

Sec. 17. That if any person or persons shall cast, draw, fasten, or otherwise make use of any seine, net, fyke-net, or net of any other description, of a less mesh than ten inches, or any other appliance except the hook and line, for the purpose of catching fish in the river Delaware and its tributaries, within the jurisdiction of this State, above the head of Trenton Falls, between the fifteenth day of June and the tenth day of August, in any year, he, she or they so offending shall be deemed guilty of a misdemeanor, and on conviction thereof shall be punished by fine not exceeding fifty dollars, or imprisonment for any time not exceeding six months, or both, at the discretion of the court before which such conviction shall be had.

Sec. 18. If any person or persons shall cast, draw, or otherwise make use of any seine or net of a larger mesh than three inches, for the purpose of catching fish in the river Delaware and its tributaries, within the jurisdiction of this State, below the head of Trenton Falls, between the tenth day of June and the tenth day of July, in any one year, he, she or they so offending shall be deemed guilty of a misdemeanor, and on conviction thereof shall be punished by fine not exceeding fifty dollars, or imprisonment for any time not exceeding six months, or both, at the discretion of the court before which such conviction shall be had.

Sec. 19. It shall be the duty of any sheriff of any county of this State, upon receiving information of the existence of any weir, rack, fish basket, fishing dam, or pound, or any seine, brush dam, or other device, anchored or staked to the bottom of the river Delaware or its tributaries, for the purpose of taking fish in the said river and its tributaries, to proceed immediately to destroy any such weirs, rack, fish basket, fish dam, or pound, or seine, brush dam or other device, anchored or staked to the bottom, and is hereby empowered to call a *posse comitatus* for that purpose, if necessary; and the expenses incurred by the sheriff in pursuance of the requirements of this act, shall be paid by the county, in the usual manner of paying indebtedness incurred by the regularly constituted authorities of the county; and if the sheriff of any county shall neglect or refuse to destroy any weirs, racks, fish baskets, fish dams, or seines, brush dam or other device fastened to the bottom, after receiving information of their existence within his jurisdiction, he, on conviction thereof, shall pay a penalty of not more than five hundred nor less than one hundred dollars.

Sec. 20. Any person or persons directing, aiding or assisting in the erection or maintenance of any rack, weir, fish basket, or fish dam, shall be deemed guilty of a misdemeanor, and on conviction thereof shall pay a penalty of not less than one hundred dollars, or

undergo an imprisonment of not more than six months, or both, at the discretion of the court before which such conviction shall be had; and every such rack, weir, fish basket or fish dam shall be deemed a public nuisance, and liable to be abated or removed by any person or persons who may deem proper to abate or remove the same.

Sec. 21. In all and every action or suit for any fine or penalty, given or created by this act, the person prosecuting shall or may sue by warrant or summons, in case the same is commenced in the court for the trial of small causes, and by *capias ad respondendum* or summons, in case the action is commenced in any other court, any law, usage or custom to the contrary notwithstanding; *provided*, that all violations of this act, which are made misdemeanors, shall be prosecuted in accordance with the rules of criminal procedure.

Sec. 22. That the Governor shall appoint one person in each county adjoining the river Delaware, as special officers, who shall be a resident of said county, to be Fish Wardens, whose duty it shall be, on view or information, to enforce the fishing laws within their respective counties, by arresting and prosecuting the offender or offenders; and said officers shall be entitled to their pay as witnesses in said cases, although they be complainants, and said officers shall have a right at all times, and they are hereby authorized to visit any dam, weir, fish basket, brush net, or other apparatus for taking fish, for the purpose of removing the same, as hereinbefore provided; the said officers may, in the discharge of their duties, call in the aid of any constable or sheriff, or other peace officer, when deemed necessary; and any such officer neglecting or refusing to aid when thus required, shall forfeit ten dollars, to be recovered by action of debt; the said special officers thus appointed shall hold office for three years, unless sooner removed, and shall be duly sworn before any justice of the peace or judge of the Court of Common Pleas, to the performance of their duties; they shall make an annual report to the Commissioners of Fisheries, on or about the first day of November in each year; they shall be furnished with such appliances as, in the judgment of the Commissioners having charge of that department of the river, shall be deemed necessary, at the expense of the State, and receive three dollars for each day they are occupied in their special duties; and that said per diem shall be paid by the Treasurer of the State, upon an authenticated statement of the Commissioners of Fisheries; *provided*, that in no case shall any special officer receive more than one hundred dollars for his services in any one year; and all expenses incurred by the said Commissioners of Fisheries shall be paid to them by the Treasurer of the State, as the same may be audited by the Comptroller of the State.

Sec. 23. That it shall be the duty of said special officers or Fish Wardens, so to be appointed, and it shall and may be lawful for any other person or persons who may discover the same, to remove from the river Delaware and its tributaries, wheresoever the same may be

found, all weirs, racks, fish baskets, fishing dams or pounds, or any seine, brush dam, or other device, anchored, staked or fastened, for the purpose of taking fish in the said river or its tributaries, and all boats, lines, implements and materials used in violation of this act, shall be forfeited to the State, and all weirs, racks, baskets, dams or pounds, may be destroyed and rendered incapable of taking fish.

Sec. 24. That if any captain, pilot, or person in charge of any vessel, boat, or other craft, shall cause or permit the same to be anchored or made fast at any time within the bounds of any lawful pool or fishing place as defined by this act, for the purpose of digging, excavating, or carrying away any sand, gravel, or soil from the bed of such pool or fishing place, or with intent so to do, without the written permission of the owner of such pool or fishing place first had and obtained, or if any person shall, without like permission first had, take and carry away from such pool or fishing place any sand, gravel, or soil, to the injury of such pool or fishing place, or shall aid or assist in the same, or if any person or persons shall deposit, or cause to be deposited, or aid in depositing within the bounds of such pool or fishing place any sand, gravel, soil, or rubbish of any kind, without like permission, to the injury of such pool or fishing place, then, in any such case, such person or persons so offending shall be deemed guilty of a misdemeanor, and on conviction of either of the offences in this section specified, shall be punished by a fine not exceeding five hundred dollars, or by imprisonment for a time not exceeding one year, or both, at the discretion of the court before which such conviction shall be had.

Sec. 25. All acts, or parts of acts, inconsistent with this act, are hereby repealed.

Sec. 26. This act, and each and every section of this act, shall take effect when concurred in by the State of Pennsylvania.

APPENDIX C.

AN ACT to Regulate the Use of Stationary Apparatus in the Capture of Fish.

SECTION 1. The Commissioners of Fisheries are hereby empowered to license individuals and corporations to erect, establish and use, in the waters of this State, whether navigable or unnavigable, fixed nets, traps, pounds, pots, fykes, weirs, or other stationary apparatus, for the purpose of capturing fish, upon application for such license duly made as hereinafter conditioned and provided.

Sec. 2. All persons seeking such licenses shall make written application to said Commissioners, specifying the locality in which they desire to use stationary apparatus, as aforesaid, the exact character of the said apparatus, together with all details and particulars necessary for an exact understanding of said apparatus; and upon examination of such applications, and after public hearing, if they deem necessary, the said Commissioners shall grant the license desired, provided the application be made on or before the first day of March in each year, subject to the conditions hereinafter mentioned, it being understood that parties last in lawful possession of any fishing station shall have preference in its assignment, unless barred by a violation of this act.

Sec. 3. The license shall be in writing, signed by a majority of said Commissioners, and shall state clearly the locality within which the same shall have effect; and no license shall have effect in any locality other than that mentioned and described therein, and shall prescribe the nature of such stationary apparatus, and such other limitations and directions as said Commissioners shall deem proper; and no license shall take effect until the same shall be left for record with the clerk of the town or city within which the same is to have effect, nor until the recording fee of said clerk, being the same as that established by law for recording mortgages of personal property of equal length, shall be fully paid.

Sec. 4. The said licenses may embrace any period not exceeding

one year; but, whenever given, they shall expire on the first day of January next following their date; and the clerk of each city or town in which said licenses have been recorded shall, on the first day of April in each year, make return to said Commissioners of the said licenses then in force, and the localities to which the same relate.

Sec. 5. Every person who shall have received a license in the manner herein provided shall, before the first day of January following the date of said license, make accurate return to said Commissioners of the numbers and the kinds of fish captured by him, during each day of the season, by virtue of said license, and shall furnish accurate information of all other facts relating to said license which said Commissioners may require; and no license shall be renewed until said report shall have been made to the satisfaction of said Commissioners.

Sec. 6. No person enjoying such license shall take, or allow to be taken, any fish by means of stationary apparatus by him used, from the twentieth day of April until the fifteenth day of June in each year, in the interval of time between the hours of six o'clock on Friday evening and six o'clock on the following Monday morning; and every person enjoying such license shall comply with any and all regulations made by the Commissioners for the purpose of allowing and securing an unobstructed passage of the fish through or by the apparatus in question during the time specified.

Sec. 7. No license granted under the provisions of this act shall be construed as authorizing the grantee of the same to enter upon the land of individuals without their permission, nor to interfere, in any way, with private property.

Sec. 8. Whoever sets or uses, or causes to be set or used, in the waters of this State, whether the same are navigable or unnavigable, any weir, pot, pound, yard, trap, or other stationery apparatus whatsoever, for the purpose of capturing fish, except by virtue of a license duly issued, and for that particular locality, under the provisions of this act, shall forfeit and pay for each day during any part of which said apparatus is so set or used, a sum not less than fifty dollars nor more than one hundred dollars, and shall forfeit all apparatus so used, including nets, stakes, boats, and so forth, which shall be sold, and the proceeds of such sale placed in the Treasury of the State.

Sec. 9. Whoever, having received a license under the provisions of this act, shall neglect or refuse to comply with the provisions of the same, or of his license, shall forfeit and pay for each offence a sum not less than fifty dollars nor more than one hundred dollars, except that in case of his violation of section six of this act he shall forfeit and pay for each day during any part of which his offence is committed, a sum not less than fifty dollars nor more than one hundred dollars, and shall forfeit all apparatus used in violation of said section, which shall be sold, and the proceeds of such sale be placed in the Treasury of the State.

Sec. 10. All actions and prosecutions under this act shall be commenced within six months after the offence is committed, and one-half of the fine or penalty recovered in any action or prosecution aforesaid shall be paid to the person who shall first bring an action of tort therefor, in his own name, or shall make complaint in any criminal case, and the remaining half in either case shall be paid into the Treasury of the State.

Sec. 11. No apparatus for capturing fish shall be set in such manner or in such place as to obstruct reasonable navigation with boats or vessels; but no one shall be permitted wantonly to destroy fishing apparatus lawfully set and managed, and for which the required license has been given, under penalty of not less than fifty nor more than five hundred dollars, to be recovered as aforesaid.

Sec. 12. This act shall take effect immediately.

APPENDIX D.

Commissioners of Fisheries thus far Appointed.

UNITED STATES.

Prof. Spencer F. Baird, Smithsonian Institute, Washington, D. C.

MAINE.

E. M. Stillwell ..... Bangor.
Henry O. Stanley ..... Dixfield.

NEW HAMPSHIRE.

O. H. Noyes ..... Henniken.
J. S. Wadleigh ..... Laconia.
A. C. Fifield ..... Endfield.

VERMONT.

M. C. Edmunds ..... Weston.
M. Goldsmith ..... Rutland.

MASSACHUSETTS.

Theodore Lyman ..... Brookline.
E. A. Brackett ..... Winchester.
Thomas Talbot ..... North Billerica.

RHODE ISLAND.

Newton Dexter ..... Providence.
Alfred A. Reed, Jr ..... Providence.
John H. Barden ..... Rockland.

CONNECTICUT.

Wm. M. Hudson.....Hartford.
Robert G. Pike.....Middletown.
James A. Bill.....Lyme.

NEW YORK.

Horatio Seymour.....Utica.
Robert B. Roosevelt.....New York City.
Edward M. Smith.....Rochester.

NEW JERSEY.

B. P. Howell.....Woodbury.
J. R. Shotwell.....Rahway.
G. A. Anderson.....Trenton.

PENNSYLVANIA.

B. L. Hewitt.....Holidaysburg.
Howard J. Reeder .....Easton.
James Duffy.....Marietta.

MARYLAND.

T. B. Ferguson.....Baltimore.
B. W. Downes.....Denton.

VIRGINIA.

Asa Wall.....Winchester.

ALABAMA.

Charles S. G. Doster.....Montgomery.
Robert Tyler.....Montgomery.
D. R. Hundley.....Courtland.

IOWA.

Samuel B. Evans.....Ottumwa.
B. F. Shaw.....Anamosa.
Charles A. Haynes.....Waterloo.

MINNESOTA.

David Day.....St. Paul.
A. W. Latham.....Excelsior.
Horace Austin.....St. Paul.

MICHIGAN.

Gov. J. J. Bagley.....Detroit.
Andrew J. Kellogg.....Allegan.
George Clark.....Ecorse.

OHIO.

John Hussey.....Lockland.
John H. Klippart.....Columbus.
E. T. Sterling.....Cleveland.

CALIFORNIA.

R. B. Redding.....Sacramento.
S. R. Throckmorton.....San Francisco.
J. D. Farwell.....San Francisco.

WISCONSIN.

A. Palmer.....Boscobel.
William Welsh.....Madison.
P. R. Hoy.....Racine.

DOMINION OF CANADA.

W. F. Whitchen.....Ottawa.