

ANNUAL REPORT

OF THE

Board of Fish and Game Commissioners

FOR THE

974.901

F63

Fiscal Year Commencing July 1, 1918, and
Ending June 30, 1919.

NEW JERSEY REFORMATORY PRINT
RAHWAY, N. J.
1919

List of Fish and Game Commissioners

Holding Office at the Date of This Report

ERNEST NAPIER, <i>President</i>	East Orange, N. J.
WILLIAM A. LOGUE, <i>Treasurer</i> ,	Bridgeton, N. J.
W. A. FAUNCE,	Atlantic City, N. J.
ROBERTSON S. WARD,	East Orange, N. J.
AMOS H. RADCLIFFE,	Paterson, N. J.
JASPER LYNCH,	Lakewood, N. J.
ALEX. PHILLIPS,	Princeton, N. J.

WALTER H. FELL, *Secretary*,

Office of the Board, State House, Trenton, N. J.

List of Fish and Game Wardens Holding Commissions at the Date of This Report.

STRATTON, JAMES M., <i>Protector</i> ,	Long Branch,
MATHIS, HOWARD, <i>Assistant Protector</i> ,	New Gretna,
CUDNEY, HARRY E., <i>Assistant Protector</i>	Hackettstown,

AVIS, JOHN	Woodbury,
BAILEY, JOHN B.	Washington,
CONNER, FRED S.	Bridgeton,
COX, JOHN F.	Washington,
EVERNHAM, JAMES H.	Bayville,
FOLKER, CHARLES W.	Camden
HALL FRED J.	Bloomfield,
HALL, GERVA S I.	Salem,
HOBLITZELL, WILLIAM,	Rahway
KLEIN, WILLIAM C.	Clifton,
LODER, WILLIAM B.,	Egg Harbor City,
LOVELESS, HARRY M.,	Trenton, R. F. D. No. 1,
MORTON, CHARLES C.,	Mt. Holly
PARK, JOHN J.,	White House Station,
PHIFER, GEORGE W.,	Ormond, P. O. Millville,
RIDER, ANSON J.,	Tuckerton
ROE, JACOB D.,	Newton,
SMALL, OTIS C.,	Hammonton,
SMALL, WILLIAM HENRY,	Englewood
STEEL, WILLIAM,	Cape May Court House,
STEUERWALD, CHARLES,	South Amboy,
THOMPSON, DAVID A., JR.,	Salem,
WELSH, CHARLES E.,	East Millstone
YOUNG, WILLIAM E.,	Chester,

Letter of Transmittal

*To His Excellency, William N. Runyon, Acting Governor,
and to the Members of the Senate and General Assembly
of the State of New Jersey:*

As required by law, we submit herewith the annual report of the work of the Board of Fish and Game Commissioners for the fiscal year, covering a period from July 1, 1918 to June 30, 1919.

Very respectfully,
ERNEST NAPIER,
WM. A. LOGUE,
W. A. FAUNCE,
R. S. WARD,
AMOS H. RADCLIFFE,
JASPER LYNCH,
ALEX. H. PHILLIPS,
Commissioners.

ANNUAL REPORT

It is with considerable satisfaction that the Board reviews the work of the year, as we believe that fish and game conditions on the whole are improving and that our efforts are generally supported by the citizens of the State. We have administered to the best of our ability the laws protecting the birds and fishes of the State. We have given earnest effort to the propagation of several varieties of game and food fish for restocking our waters, and also to the propagation of game birds for restocking the fields and covers. We have provided for a survey and investigation of our lakes and streams with a view to development of fish life therein. We have, by means of publications and moving picture films, acquainted the public with the necessity of the protection of birds and fish. We have kept in close touch with all fish and game legislation. We have supervised our wardens' service in detail and are satisfied it is on an effective basis. The position of game warden in New Jersey has become one of importance, and he is no longer a mere political favorite, but an officer of the State under strict accountability, whose

duties require not only personal bravery, but a knowledge of birds and fishes, a training in all legal matters pertaining to the protection of our wild life, and no little knowledge of bird lore and fish culture. With the recent addition of land to the Game Farm we believe that we are now in a position largely to increase the production and distribution of game birds annually. We have planned for the development of our Hatchery with a view of meeting the needs of the State for many years, not only as to fish for streams suitable for the trout family, but for the production of fish for our lakes and ponds.

As usual several defendants convicted of violating the fish and game laws have appealed to the Board for reduction of the penalty, or that no fine should be imposed. In each case the Board has, following precedent, informed the defendants that the Board has no pardoning power and that it has no jurisdiction for the review of judicial decisions.

The Board is desirous of making a record of the efficiency of the Attorney General's office in the prosecution of its cases which came before that official during the year.

In November, President Napier appeared before the Budget Commission, and the requests of the Board were granted by the Legislature for 1919.

Reports show that hunting conditions during the season were good, and that there was a noticeable improvement in the fishing in the ponds and lakes for black bass, pickerel and crappie.

POLLUTIONS.

The problem of the pollution of our waters must be solved by the State without delay. The industrial expansion of our State and the growth of our towns and cities are largely responsible for many of the conditions detrimental to fish life, and if our waters are to continue to produce fish action in the matter of preventing their contamination should be taken at once.

The fishermen on the Delaware river for a number of years have been complaining as to the scarcity of shad, and most of the fishermen attribute such scarcity to pollutions of the stream by various manufacturing plants located along the river or its tributaries.

Last April Congressman Wm. J. Browning laid before the State Board of Health a complaint from one of the shad fishermen on the subject, which letter was referred to Dr. R. FitzRandolph. At the request of Dr. FitzRandolph a ques-

tionnaire was prepared by this Board and sent to the wardens of each county bordering on the Delaware river. The questionnaire required the wardens to give the name and location of plant polluting the stream, what is manufactured at the plant, the name of the president or manager, his post office address, the name of the stream in which refuse from a plant was emptied, the character of the waste, the location of the outlet and the approximate amount of deleterious waste flowing through the outlet. Upon receipt of the information we will lay the same before the State Board of Health.

Not only this State but other states are becoming aroused to the question of pollution, and steps are being taken by such associations as the American Fishery Society, Oyster Growers and Dealers Association of North America, the National Association of Fisheries Commissioners, to hold a conference at Washington, with a view of considering means for the elimination of trade waste in streams and tidal waters in the interest of rehabilitating the fish and shell fish industries. There is no doubt but what the discharge of trade waste and other injurious substances is a menace that threatens seriously to harm, if not actually destroy, an important food supply. The fishing industry of the State is a big asset to our State, and it should receive the same consideration from our legislators as any other industry.

Our Board will be pleased to send representatives to the conference referred to above.

SHAD FISHERIES AND POLLUTION.

Last January, at the request of E. C. Leach, Division of Fish Culture, U. S. Bureau of Fisheries, this Board sent out a questionnaire to shad fishermen with the view of obtaining information as follows: The name and address of the fisherman; the number of years he has been engaged in shad fishing; the water in which he has fished for shad, and the average daily catch each year; the water in which the shad spawn and where such spawning grounds are located; what cause exists to prevent shad from reaching spawning grounds; has there been any noticeable increase in the run of shad up the rivers since the War Department placed restrictions upon setting of nets in Bay and River mouths in 1916; are there factory wastes discharged into the waters; if so, what kind and by whom; do you consider that pollution has prevented shad runs in these waters, and what have you observed in connection therewith? A summary of the large amount of data submitted to the Federal Bureau follows:

The decrease in the shad industry is common knowledge. Where thousands of fish were taken in former years only a few are taken at this time. The water of the Delaware river at times is not fit to drink and bears an odor like coal tar, particularly during freshets which bring refuse from the Lehigh River. In most cases the cause of the decrease is attributed to pollutions of the river by the Lehigh freshets and from industrial concerns along the shores of the river.

Aside from stopping pollutions some of the suggestions to restore the industry were as follows:

Limit the length of nets below Camden so as to allow more shad to reach the spawning grounds. Fishing should stop from Saturday at 2 P. M. until Monday at 6 o'clock A.M. in order to allow more fish to reach spawning grounds. Close the season for three years: Prevent the use of engines, and prevent fishing with 100 to 900 fathoms of net. Only allow shad fishing boats to be propelled with sails and oars. Only permit the daily catch from sunrise to sunset. Close the season not later than May 20th, and stop fishing in the tributaries of the river. Pound nets it is claimed stop shad from coming into the Delaware Bay and river.

In connection with the subject it should be noted that during the Spring of 1919 more shad were caught in gill nets in Sandy Hook and Raritan Bay than have been caught in any one year during the past ten years. An increase in the catch of shad was also shown in the Maurice river, a tributary of the Delaware river. There is but little industrial life along the Maurice river, and the river is singularly free from pollutions.

AIRPLANES A NEW MENACE.

The Board took up with the U. S. Department of Agriculture, having charge of the enforcement of the migratory bird law, complaints regarding aviators chasing and shooting at waterfowl on their feeding grounds. Hon. W. C. Henderson, Acting Chief of the Bureau of Biological Survey, Department of Agriculture, informed our Board that he had taken up similar complaints with the War and Navy Department. We had introduced in the Legislature a bill to prevent hunting with airplanes or hydroplanes, which passed both Houses, but it was vetoed by the Governor

It was reported by Warden Morton, of Burlington County that while ducks came up the rivers and bay early in the season, yet they were so continuously chased by Government airplanes that shooting was interfered with.

Warden Steel, of Cape May county, reported that the chasing of ducks by airplanes from the Cape May base had greatly interfered with their shooting. Warden Avis of Gloucester county said the airplanes drove the birds away.

In Ocean county, Warden Hilliard stated that for several weeks ducks and geese were pursued by airplanes, which drove them from the Bay to the ocean, although the birds would return. Warden Rider, of the same county, reported that airplanes caused the game to go to sea.

MIGRATORY BIRDS.

An important measure introduced in the Legislature by the Board was the bill designed to make the State seasons uniform with the seasons adopted by the U. S. Government as to migratory birds, except for woodcock, our season for which was made shorter than the U. S. season, and which season would be recognized by the Federal authorities. Much confusion has existed among hunters because of the conflict between the State and Federal seasons. When the constitutionality of the Federal Government's first act regulating migratory birds was brought in question, it appears that the United States in 1916 entered into a treaty with Great Britain for the control of migratory game, the terms of which treaty became the law of the land, and by reason of this treaty Congress early in 1918 passed an act to give effect to its terms, and on July 31, 1918 President Wilson proclaimed the terms in effect. Opposition to Federal control is rapidly breaking down in this and in other states, and while the general principle of the bill to make our State laws uniform with the Federal regulations was favored by many legislators, yet there was a feeling that we should not change the State laws until the Federal authorities had shown through the conviction of offenders that their regulations actually superseded the State's statutes. When the migratory act first went into effect it appeared that the Federal authorities had not sufficient money to enforce it, but we are given to understand that they now are prepared to enforce their regulations to the limit.

William F. Taubel and one Walter Martin, of Manahawkin, N. J., acting as guide for Taubel, were apprehended in this State on February 11, 1919, by U. S. Game Wardens Philip S. Farnham, of Owego, N. Y., and P. K. Hilliard, Manahawkin, N. J., in the act of killing wild geese with an 8 guage shotgun. It appears from the facts that Mr. Taubel and Mr. Martin each killed one Canada goose. The

wardens did not arrest either hunter at the time because Mr. Taubel agreed to appear with Mr. Martin the next morning before a U. S. Commissioner at Tom's River, N. J., and plead guilty, and said he would test the constitutionality of the law. Neither Mr. Taubel nor Mr. Martin appeared before the Commissioner as agreed, but Mr. Taubel sent word to the wardens that if they wanted him they would have to come after him. The cases were reported to the Department of Justice for prosecution and both defendants were indicted by the Federal Grand Jury on July 22, 1919, and notified to appear for arraignment on July 30th.

As far back as 1913 the New Jersey Legislature by a concurrent resolution endorsed the idea for Federal control of migratory game. Our Board has announced to the public that it recognizes the Federal regulations, and other states are making their laws uniform with these regulations. It has been demonstrated already that these regulations have increased the supply of migratory game throughout the country.

The Board went on record as favoring a proposition requesting the President of the United States to propose treaties with the Latin American Republics for the protection of migratory birds which pass through or from the United States and temporarily sojourn in such countries. Our representatives in Congress were notified of the position of the Board. Secretary of Agriculture D. F. Houston in a letter to the Board said that his Department is not at this time in possession of sufficient information as to enable it to express an intelligent opinion on the subject, but it would be glad however to give the matter careful consideration.

In June, Warden Phineas K. Hilliard, of Manahawkin, Ocean county, resigned as warden to become a Federal warden for the enforcement of the migratory game laws under the direction of the Federal authorities. The Federal authorities had requested this Board to permit our wardens to act as Federal wardens. In view of the fact that the law respecting our wardens says that "each of said wardens when appointed shall give his entire time to the duties prescribed for wardens and they shall not be engaged in any other business or occupation" the Attorney General held that it would not be proper for our wardens to accept temporary positions as wardens for the United States.

POUND FISHERIES.

Early in the session of the Legislature in 1919 an act was passed restoring to the Board of Fish and Game Commissioners the right to issue licenses to erect and maintain fish pounds, and to enforce the law respecting pounds.

Under the Bureau of Fisheries act, that Board would have issued licenses for pounds for 1919, but in December, 1918, Governor Edge and C. Asa Francis, Chairman of the Bureau of Fisheries, took up with this department the question of our Board issuing pound licenses for 1919, as the agent for the Bureau of Fisheries, with the understanding that a bill would be introduced repealing the act creating the Board of Fisheries, validating all licenses for 1919 issued by that Bureau, and transferring the money received for such licenses to the Board of Fish and Game Commissioners.

As agent for the Bureau of Fisheries, our Board attended to the actual work of issuing pound licenses for 1919, and the act proposed was passed by the Legislature and signed by the Governor.

On April 27th, the Bureau of Fisheries turned over to our Board all moneys received on account of 1919 licenses issued by them, the check amounting to \$5,620.

Following is a summary of the pound fisheries' reports for the year ending December 31st, 1918:

Approximate value of all pounds,.....		\$656,257.22
Proceeds derived from sale of fish,....		\$1,476,993.28
Number of pounds of fish caught and disposed of	27,514,323	
<i>Licenses issued:</i>		
Atlantic Ocean,	105	
Sandy Hook & Raritan Bays,....	35	140
Number of pounds operated.....		132
Number of men employed.....		653

MENHADEN.

For several years past menhaden have been very scarce along the coast and in Sandy Hook Bay and Delaware Bay, and it was thought by many persons that they would soon be depleted, but this year they appeared in immense numbers. Early in the Spring they were so plentiful in the Delaware Bay at Ship John Light as greatly to interfere with persons engaged in shad fishing with drifting gill nets, and the same condition prevailed in Sandy Hook Bay. Assistant Protector Mathis reported that while patrolling the Atlantic Ocean from Cape May to Sandy Hook

with the State launch "New Jersey" in June he saw more schools of menhaden than he had seen in the past 20 years. The visit of the menhaden to our shores resulted in an increased number of licenses to vessels to take the same with purse or shirred nets in the waters within the jurisdiction of this State, and the waters of the Atlantic ocean within three nautical miles of the coast line. During the year we issued licenses to 34 steamers and 27 sailing vessels to take menhaden, whereas last year with the Federal authorities removing all restrictions on fishing in the Atlantic Coast outside waters, thus permitting a person holding a license to take menhaden to take any kind of fish, we only issued licenses for 15 steamers and 21 sailing vessels.

LOBSTERS.

On March 31, 1919, the five-year prohibition expired against the taking of lobsters from any of the salt waters of Cape May County, including the waters of the Atlantic ocean within three nautical miles of the coast line.

In the year 1913 the U. S. Government at that point planted 200 adult lobsters and 200,000 lobster fry and again in 1915, 175 adults were liberated by the Government in the same waters. As to the results obtained from these plants the Federal officials have no information. Our Board has learned from the Warden in Cape May county that large lobsters are not plentiful enough to pay for the fishing for them. The black sea bass caught in the jetties in Cold Spring Inlet are full of small lobsters.

We understand that a large number of lobsters are being caught in the waters of the Atlantic ocean off Monmouth county, the quantity being greatly in excess of any in recent years.

RECEIPTS, LICENSES, FINES, ETC.

The amount received by the State Treasurer during the year on account of the Hunters' and Anglers' License Act of April 9, 1914, was \$120,273.55.

The aggregate of fines collected for violations of the fish and game laws amounted to \$12,065.89.

For licenses to steamers and sailing vessels to take menhaden with purse nets within the three mile limit of our coast there was received during the year \$4,625. At the date of this report there are 34 steamers and 27 sailing vessels holding licenses to take menhaden.

On account of licenses for the operation of fish pounds in the Atlantic Ocean and Sandy Hook bay the receipts during the fiscal year were \$5,910, of which \$5,620. were received for 1919 licenses from the Bureau of Fisheries. For the calendar year ending December 31, 1918, there were 140 licenses granted, 105 for the Atlantic Ocean and 35 for Sandy Hook bay.

Under the law prohibiting aliens to be possessed of fire-arms, 116 guns were confiscated, which were sold, the proceeds being \$287.84.

Under the law, which allows a citizen above the age of 10 years and below the age of 14 to hunt when provided with a special license, and when accompanied by a holder of a regular license above the age of 21 years, there were 33 licenses issued for the fiscal year, the proceeds being \$33.

For the period between the close of the quail season in 1918 and May 31, 1919, 1756 permits to hunt foxes were issued.

FORD CARS, MOTORCYCLES, SMALL BOATS.

New Ford cars were supplied to wardens as follows:

Gervas I. Hall, Salem county; Jacob D. Roe, Sussex county. Warden Roe's old car was sent to the Game Farm, and Warden Morton's own car was renovated and turned over to the State.

Ford cars were operated by the following:

Assistant Protectors: Howard Mathis, New Gretna, Burlington county, and Harry E. Cudney, Hackettstown, Warren county.

Wardens: William H. Small, Englewood, Bergen county; Jacob D. Roe, Newton, Sussex county; William Steel, Cape May Court House, Cape May county; Fred J. Hall, Bloomfield, Essex county; William E. Young, Chester, Morris county; William Hoblitzell, Rahway, Union county; John J. Park, White House Station, Hunterdon county; Phineas K. Hilliard, Manahawkin, Ocean county; (Resigned June 15, 1919), James H. Evernham, Bayville, Ocean county; Charles C. Morton, Mount Holly, Burlington county; Gervas I. Hall, Salem, Salem county.

Superintendents: Charles O. Hayford, two cars, Hatchery, Hackettstown, Warren county; Duncan Dunn, two cars, Game Farm, Forked River, Ocean county.

Motorcycles were operated by the following wardens:

William C. Klein, Clifton, Passaic county, and Charles C. Morton, Mount Holly, Burlington county.

Small power boats were operated by the following wardens:

William B. Loder, Egg Harbor City, Atlantic County; William H. Small, Englewood, Bergen county; William Steel, Cape May Court House, Cape May county; Fred S. Conner, Bridgeton, Cumberland county; William E. Young, Chester, Morris county; Anson J. Rider, Tuckerton, Ocean county; James H. Evernham, Bayville, Ocean county; Phineas K. Hilliard, Manahawkin, Ocean county; Jacob D. Roe, Newton, Sussex county.

Row boats are in use at the following places: One boat, equipped with an Evinrude motor, on Budd's Lake; one on Lake Hopatcong, and two are in service when netting is being done in reservoirs or canals, one being equipped with an Evinrude motor.

Three Garford trucks are stationed at the Fish Hatchery for distribution of fish, etc.

INCREASED FEES.

During the year it was found necessary to increase the wages of a number of the employees in order to retain them. The wage increase in the past few years, together with the high cost of materials and supplies, has done much to swell the expenses of the Board. An effort was made to meet this condition and to provide for an increase in stocking by asking for legislation for an increase in the license fees. It was proposed to fix the fees as follows:

Residents' hunting and fishing licenses, \$1.50, with an issuance fee of 15 cents.

Nonresidents' fishing license, \$3.00, with an issuance fee of 25 cents.

Nonresidents' and Aliens' Hunting and Fishing license, \$10.00, with an issuance fee of 50 cents.

The question of increase was taken up informally with members of the Legislature at a dinner given by Commissioner Ward, when there was a general exchange of opinion. However, the bill providing for the increase, which was introduced in the Assembly, was lost in that body.

We believe there should be more fish and birds to furnish the proper amount of sport, but this can only be accomplished in a manner satisfactory to hunters and fishermen if the Board has proper funds for the work.

Good roads, trolleys and cheap motor cars are placing outdoor life on a new plane and within reach of the masses.

In the future, if not now, our most remote rural points will be easily accessible to all. With the increasing numbers of hunters and fishermen the question before us is an increase in game and fish for them to take. There should be enough birds for the legitimate hunter, despite the game hog and the violator getting his, and plenty of stock left at the close of the season for breeding.

We have very competent wardens who do their best to minimize violations, but it is impossible to prevent all from breaking the law. We must produce large quantities so that the unskilled and honest sportsman, mechanic, farmer and working man will find it worth while to be encouraged to hunt and fish.

We believe that with enough money properly spent, we can produce game and various kinds of fish to make all the people satisfied, and to add notably to our food supply. The increase in the fee is small, but it will permit us to expand rapidly. The farmer will be greatly benefited through an enlargement of our activities by the city residents going into the country, and his land will increase in value and his produce will bring more money. The sale of farm produce to automobilists direct on the roadside has reached an enormous proportion in the last two years. Our interest is that of the farmer, sportsman and working man, and we seek their cooperation because we believe we know what is best for all.

CATS.

The Legislature again failed to pass a bill to reduce the ravages of the house cat. A bill was introduced providing that persons owning or harboring cats would be liable to a penalty for game killed by such cats, and providing that cats found in the fields or woods may be killed by any person. The proposition to regulate the house cat has been before the Legislature for several years, and where at first the matter was treated as a joke it is now commanding considerable serious attention of those who would protect our wild birds. It is common knowledge that on the activities of the insectivorous birds depend in a large measure the success of the crops and the preservation of the forests. It is only common sense to go to the limit to protect our birds. The cat should be kept in control while eggs are being hatched and the birds are helpless, either when in the nest or when first on the ground. It is commonly believed among ornithologists that more game is killed yearly by cats than by

hunters. The Commissioners of Fisheries and Game of Massachusetts estimate that 1,000,000 birds are killed annually by cats in that State, and our Board joins in the appeal of the Massachusetts Commissioners in asking every person to make it his personal matter to see that the family cat is not permitted to roam at large in the day or night when birds are being hatched. Every bird lover and hunter is asked to see that the homeless and wild house cats are humanely killed. It is difficult to convince the owner of a cat that the pet is destructive of insectivorous birds, game birds and young rabbits, but evidence upon evidence is obtainable to show that any cat will prey on birds at the slightest provocation.

In order that full information might be given to residents of the State as to the terms of the bill regulating the cat menace, introduced in the Legislature last year, it is given below in full.

"If any person owns or harbors any cat which shall kill, injure or destroy any insectivorous or game bird, or any game animal, then said persons owning or harboring said cat which shall kill, injure or destroy any insectivorous or game bird or game animal shall be liable to a penalty of five dollars for each insectivorous or game bird or game animal killed, injured or destroyed.

"Any cat that may be found in the woods or fields shall be considered a public nuisance, and may be killed by any officer charged with the enforcement of any of the laws of this State, or by any other person without civil or criminal liability."

HATCHERY.

In August, Superintendent Hayford appeared before the Board and reported that he had lost a number of fish at the Hatchery from disease, but that following the employment of Professor Wm. T. Foster, Professor of Biology, Lafayette College, successful steps were taken to check the trouble. Professor Foster's report will be found in full under report of the Hatchery Superintendent.

The Board leased the pond and ice house of W. L. Thomas, adjoining the Hatchery at Hackettstown, for \$150. a year. The pond will be used for extension of the culture of fish. When the finances of the Board warrant, it is proposed to purchase the pond.

In January, following permission of the State House Commission, the Board set aside \$3,000. for continuation of the work of biologists in making a survey of the streams of the State, which work was commenced last year in an ex-

perimental way. The results to date have justified the Board going ahead in preparing this data. Further reference to this work will be found in the report of the Hatchery Superintendent.

Charles O. Hayford, Superintendent of the State Fish Hatchery at Hackettstown, in his seventh annual report for the fiscal year ending June 30, 1919, says:

	Raised from July 1, 1918 to June 30, Disposed of 1919:	Estimated number on hand.	
Fingerling Brook Trout 1½-2.....	566,300	565,396	904
Yearling Brook Trout 7-10.....	500		500
2 yr. old Brook Trout 10-12.....	25		25
Fingerling Rainbow Trout.....	215,000	15,000	200,000
Yearling Rainbow Trout 2-6.....	90,090	90	90,000
2 yr. old Rainbow Trout 6-14.....	20,013	10,013	10,000
Adult Rainbow Trout 12-14.....	350		350
Fingerling Brown Trout.....	471,000	271,000	200,000
Yearling Brown Trout 3-6.....	25,000		25,000
2 yr. old Brown Trout 8-10.....	20,710	19,510	1,200
Adult Brown Trout 10-24.....	800		800
Pearl Roach,	500		500
Fingerling Chinook° Salmon,	75,000	75,000	
Fry Large-Mouth Bass,	22,000	22,000	
Fingerling Large-Mouth Bass,.....	33,000	23,000	10,000
Adult Large-Mouth Bass,	244	244	
Fry Small-Mouth Bass,	44,850	34,850	10,000
Fingerling Small-Mouth Bass,	1,700	1,700	
Adult Small-Mouth Bass	56	56	
Cat Fish,	225	225	
Perch	14,800,000	14,800,000	
Perch Experimental Purposes,.....	1,000,000	1,000,000	
Sale of Fish,	380	380	
Adult Large-Mouth Bass Breeders,...	80		80
Adult Small-Mouth Bass Breeders,...	100		100
	17,387,923	16,838,464	549,459

"I respectfully recommend that a plan be adopted for an increased production at the Hatchery. I am led to this conclusion by reason of my studies of western hatcheries in 1916 and 1917, the result of conference with experts who visited our Hatchery, and also as the results of conferences with Professor George C. Embury, Professor of Aquiculture, Cornell University, and Professor William T. Foster, Professor of Biology, Lafayette College.

"We have undeveloped resources for producing about 1,000,000 more bass a year and 45,000,000 more perch a year.

"Allowing expenditures of \$35,000 per year for maintenance and construction I believe that within four years we could have an output as follows, the value of the fish being based on rates of commercial hatcheries and other states.

1,000,000 1 inch trout, month of March.....		\$5,000.00	
1,000,000 1½ inch trout month of April		8,000.00	
1,000,000 2 inch trout month of May		15,000.00	
40,000 8-10 inch rainbow and brown trout.....		11,000.00	
			<hr/>
			\$39,000.00
1,000,000 bass fry month of June.....	\$20,000.00		
200,000 bass fingerling months of July, August and September,		12,000.00	
60,000,000 perch \$300. per million,.....			
month of May,	18,000.00		50,000.00
			<hr/>
			\$89,000.00

"Our present fish output in comparison with other states may appear small in point of numbers, but it must be remembered that these other states almost exclusively plant fry while we adopted a system of planting not smaller than fingerlings or larger.

"We did not raise during the year as large a number of small-mouth bass as we expected. Bass are the most difficult of all fish to raise, but in view of the great demand for bass we are conducting a number of experiments which lead me to believe that we are now on the road to the large production of bass annually.

"Following is past three years' annual bass output showing increased production:

	Small mouth Bass Fry	Small mouth Bass Fingerlings	Large mouth Bass Fry	Large mouth Bass Fingerlings
1917		8,250		768
1918		15,000		150
1919	34,850	1,700	22,000	23,000

"In these experiments I had the assistance of Prof. George C. Embury, of Cornell University. We have taken steps to reproduce the various types and amounts of organisms as food for bass and our experiments have shown that we are now producing in great abundance Midge larvae, May fly larvae, Fresh water sow bugs, Damselfly larvae, Mosquito larvae, Daphnia, Cyclops, Diving beetles. We are also introducing the following aquatic plants:—Potamogeton sagittaria, Ceratophyllum, Nitella, Chara and Vallisneria spiralis.

"In March you gave me authority to install the riffle system in a few of our ponds for experimental purposes, and 48 have been completed. The results of the experiment are such that I recommend that the same be extended until at least 50% of our plant shall be equipped with this system.

"It is believed under the riffle system our output can be at least doubled. Riffle construction is to place concrete blocks at intervals of four or five feet in the ponds to break the flow of water, which results in the increase of oxygen. Ponds thus treated are easier to keep in sanitary condition, and the fish then take their food more eagerly and grow faster by reason of the reproduction of natural conditions in the matter of seeking their food.

"I feel safe in stating that we can raise inside of three years 3,000,000 fingerling brook and brown trout from 1 to 2 inches, and 40,000 8 to 10 inch rainbow and brown trout.

I would suggest that we plant in our waters all of the small fingerling 1 to 2 inches from March to July, and plant all of the 8 to 10 inch rainbow and brown in the spring of the year.

"By planting the larger fish in the spring there is more likelihood of larger catches by the angler than if they were planted in the fall. The quality of these spring planted fish, by reason of being kept over the winter in the large pools at the Hatchery recently built would be practically the same as if liberated in the fall. Their food during the winter would consist of chopped butter fish, instead of meats.

"It is also recommended that we plant more small fish in the feeders to our streams to supplement the hatchery work. Our conditions are such that we are enabled to plant fingerlings in April and May, whereas most hatcheries are unable to do this.

"Following is report of William T. Foster, Professor of Biology, Lafayette College.

"On February 15, 1919, I was called to the State Hatchery to make scientific investigations with special reference to pathological conditions. Wednesday and Saturday of each week were devoted to this work. Special attention was given to the more important diseases affecting brook and brown trout for the purpose of discovering some means of preventing the diseases or effecting a cure should they appear. Before such measures could be employed it was necessary to become familiar with the ethological factors.

"During the past four months hundreds of brook trout were examined to ascertain the cause of the diseased condition which appeared from time to time. There were two very important diseases with which we came in contact. The one a blood disease caused by the microscopic plant organism known as the *Bacterium truttae* and the other caused by a protozoan known as the *Ichthyophthirius multifiliis*.

"In the case of the first named disease every fish exhibiting the typical abnormal conditions, showed the presence of these organisms in large numbers in the heart's blood.

"The morphological characteristics of this organism has been fully described by M. C. Marsh formerly of the U. S. Bureau of Fisheries, but so far as we have been able to ascertain no prophylactic or therapeutic measures have been discovered up to this time. In our investigations we have learned that others are working upon this disease at the present time. In this connection I might also state that brook trout in their native habitat are not subject to this disease which emphasizes the importance of planting the fingerlings in the native streams before the disease can gain a foot hold.

"In July 1918, H. E. Schradieck at that time employed in the Biological Survey of streams examined a number of diseased rainbow trout at the Hatchery and isolated the *Ichthyophthirius* which proved to be the cause of the trouble. Information concerning this disease was obtained from Bureau of Fisheries, Washington, D. C., and the prescribed measures were employed and proved to be very efficacious.

"On June 14 last I was directed to examine some rainbow trout showing a disease condition and the *Ichthyophthirius* was again found to be the cause of the trouble. The same measures were employed and the disease was immediately checked. This shows the importance of a knowledge of the disease to which hatchery fish are subject.

"Investigations are being carried on to ascertain relation between the amount of dissolved oxygen and CO₂ in the water and the number of fish a given amount of water will support of the various sizes. It will be necessary to carry these investigations further to get any tangible results.'

"At the February meeting of the Board it was decided to continue stream, pond and lake surveys in the following counties: Bergen, Passaic, Morris, Warren, Hunterdon, Somerset, Union and Essex. Accordingly Dr. Embody, who has had many years of experience in investigations of this kind, was engaged to direct the work with the assistance of Professors W. T. Foster and H. M. Spandau of Lafayette College and Mr. Fred N. Miller, North Western College, Ill. Work was begun on June 26th in the counties of Morris, Hunterdon and Union, and it is expected that these together with the other counties mentioned above will be completed during the summer.

"Last summer a survey was made of the streams and ponds of Atlantic County by Professor Foster, streams in Sussex county by Prof. H. E. Schradieck. A great deal of data and valuable information were obtained as to temperature, volume, stream life, planting points, etc. The information is all being card indexed at the hatchery office. The streams, ponds and lakes in each county are alphabetically filed, so that at all times quick reference can be obtained thereto. In addition to this there will also be maps of each county at hatchery office showing all streams.

"We harvested and threshed 240 bushels wheat; 1000 bushels oats; harvested 15 two horse loads hay; 500 bushels corn; 200 tons ice. We shipped to Game Farm 200 bushels wheat; 294 bushels oats and 180 bushels of corn. Our present grain acreage is 17 acres wheat; 17 acres oats, 5 acres corn.

"New construction and improvements: Built 2 new barracks; built new corn crib, built 2 new trout ponds, enclosed in reinforced concrete, 40 x 171 x 6 and 40 x 182 x 7; erected new concrete bridge; excavated channel 628 feet, 12 feet wide, 4 feet deep; concreted bottoms of 48 pools, 7,350 square feet and put in cross riffles for small fish similar to U. S. Fisheries Bureau's new type; resurfaced, repaired and oiled entrance road; put in flumes and changed bottoms of bass ponds; and I recommend similar treatment of three more ponds, as this treatment produces a greater abundance of insect and plant life.

"I attended the American Fisheries Society meeting held in New York City, September 9th and 12th and obtained much valuable information from the various papers and discussions.

"We made exhibit of the various food and game fishes at the Trenton Fair held September 29th to October 5th. I would advise the continuing of this exhibit as it is educational and is enjoyed by thousands.

"A great deal of trouble is given us by predatory animals and birds. If we were not constantly exterminating them our losses would be very heavy."

FISH PLANTING FROM ALL SOURCES.

Protector James M. Stratton makes the following report of the total number of fish planted in the waters of this State under the direction of the Wardens from July 1st, 1918, to June 30, 1919:

FROM THE HATCHERY.

Yellow Perch Fry,	14,800,000	
Brook Trout Fingerlings,	565,396	
Brown Trout Fingerlings	271,000	
Brown Trout 5 to 14 inches	19,510	
Rainbow Trout Fingerlings,	15,000	
Rainbow Trout 8 to 14 inches	10,103	
Chinook Salmon,	75,000	
Catfish,	225	
Black Bass Fingerlings,	81,850	15,838,084

FROM THE DELAWARE & RARITAN CANAL, OAK RIDGE,
BOONTON, CLINTON, ORANGE AND CAMDEN
RESERVOIRS AND OTHER PRIVATE
WATERS.

Black Bass fry,	50,000	
Black Bass adult,	3,683	
Crappie, adult,	2,419	
Catfish,	109	
Pickrel,	1,473	
Perch, Sunfish and Shiners,	21,209	78,893

FROM NEW YORK AQUARIUM.

White Fish fry,	150,000	
Grand Total.....		16,066,977

GAME FARM.

The Board was greatly disappointed in not having the usual supply of pheasants for the spring distribution. During the summer of 1918 a large number of birds, as will be noted by the Game Farm Superintendent's report, were lost. An extra distribution, however, was made in the early fall of 1918, the Board deciding that owing to war conditions and the high cost of feed it was not practical to carry them over.

There has been some little demand for the Board to distribute pheasant eggs to parties to raise pheasants for stocking purposes, but in the opinion of the Board the results would not justify such a policy. While it is an easy matter for persons to hatch the eggs, yet the raising of the birds when hatched is another matter. The birds are not hardy like chickens, and their feeding and care require expert attention. On the whole it is believed that it would be a waste of time and money to furnish eggs.

The Board made another effort to purchase quail, from without the State for the purpose of securing new blood for

our native quail, but it was found impossible to make a purchase. We received permission for \$2,500.00 from the State House Commission to make the purchase.

Duncan Dunn, Superintendent of the State Game Farm at Forked River, in his seventh annual report for the fiscal year ending June 30, 1919, says:

"The twenty acres of land purchased from Henry Schaffrath needed cultivation, and we carted six carloads of manure from the depot and spread it over the land, plowed land and seeded it in grass with buckwheat for a cover crop. Owing to an extremely dry season it did not grow well. We then plowed it in again and seeded it with grass and oats as a cover crop, and allowing the oats to go down on it to protect the grass during the winter, we have a very good stand of grass this year. I hope to be able to use it for rearing young game next year, and give the ground near the farm buildings a much needed rest. The outbuildings were old and were torn down in the Fall.

"We aim also to have ready for next year the land across the road from the Schaffrath place, from which the stumps were removed, and which we plowed and planted in soy beans. In the fall we expect to plow under the beans and seed in grass, and if this succeeds we will not have to raise any game next year on old ground.

"During the fall 4,000 pheasants were liberated. We had bad luck with the birds which were penned up. In August a disease appeared among the birds and we lost 1350. The matter was reported immediately to the Commissioners. Commissioner Logue had one of the bodies analyzed, and I sent four to the Bureau of Animal Industry at Washington, for the same purpose. The doctor who examined the bird which Commissioner Logue had analyzed said that death was due to the extreme heat, and the report from Washington was that death had been caused by a disease known as intestinal coccidiosis. We treated the birds according to the best directions and carefully examined the food supply, and every possible condition that could have affected them. In my opinion, the old ground on which the birds were penned had considerable to do with the disease, as the ground had been used every year since the pens were built.

I have had very good success with the young game this year. We set 9600 English pheasant eggs, hatched out 7600, have 3,000 ready for liberation now and will have 2500 more. I have had good success with turkeys this year, setting 250, hatching out 200 and have 140 on hand. I would suggest that you liberate some of these in wild sections of the State in order to find out if they will breed in the wild. I have about 30 young fancy pheasants and 600 chickens. We sold nine deer to the Atlantic County Game Preserve and have seen several young fawn this year.

"I wish to report concerning vermin that the hawks have been very troublesome this year. The following is the list of vermin killed: 38 hawks, 31 cats, 4 weasels, 7 opossum, 5 raccoons, 2 foxes, 750 rats, 105 crows, 35 owls. Twelve hens were killed in the last two weeks by foxes.

"We built new quail breeding pens from the lumber of a pen which was on low ground. We were unable to get any fresh stock of quail for breeding, and we raised none.

"The boards around the bottoms of our pens were in such bad shape that I was afraid that some of the birds would get out. We dug a

trench around the pens, about 18 inches deep, and put on wire. We built six large shelters in the pens, each about 50 feet long and ten feet wide to protect the birds in winter. We laid a cement floor in the chicken house. We limed all of the pheasant pens, plowed them and seeded them in grass. We also limed all the fields on the farm.

"We harvested about 20 tons of oats, 300 bushels of corn, and 30 tons of hay. I have planted this year 15 acres of buckwheat, ten acres of oats, twelve acres of soy beans, and four acres of millet.

"A Knox fence, about 7600 feet long and eight feet high, was erected, for which we cut a road through the woods 3500 feet long and 16 feet wide.

"We were busy all winter tearing down the old Gate Lodge and building a new one on the property, which the State recently acquired. We moved the large barn from the Schaffrath place to a new location, a distance of about 750 feet. We turned the dwelling house around and set it on a new foundation, and we are now renovating its interior. We constructed a roadway at the entrance to the new Lodge.

"We repaired all the rearing coops, frames, hatching boxes and bottom boards and dipped them in disinfectant and rebuilt most of the shipping boxes."

ORGANIZATION.

During the session of 1918 Governor Edge appointed Wm. B. Boulton, of Morristown, Morris county, as a member of the Board to succeed Commissioner Wm. A. Faunce, in November, who then will have served two terms of four years each.

Our Board organized on December 10th with the reelection of Ernest Napier, as President; William A. Logue, as Treasurer; and Robertson S. Ward, as Temporary Chairman, to serve during the absence of President Napier.

Professor A. H. Phillips, of Princeton, Mercer county, appointed by Governor Edge to succeed Hon. B. M. Shanley, Jr., was present and announced that he had taken the oath of office.

Later committees were appointed as follows:

Hatchery Committee—Mr. Ward—Mr. Phillips.
 Game Farm Committee—Mr. Radcliffe—Mr. Faunce,
 Boats Committee—Mr. Faunce—Mr. Lynch.
 Automobiles Committee—Mr. Ward—Mr. Faunce.
 Prosecutions Committee—Mr. Logue—Mr. Phillips.
 Legislation Committee—Mr. Radcliffe—Mr. Ward,
 Finance Committee—Mr. Logue—Mr. Lynch.

The President is ex-officio member of all committees.

The counties of the State were allotted among the Commissioners for their direct supervision as follows:

Commissioner Napier—Ocean, Union and Warren.

Commissioner Logue—Cumberland, Gloucester and Salem.

Commissioner Faunce,—Atlantic, Burlington and Cape May.

Commissioner Radcliffe,—Bergen, Hudson and Passaic.

Commissioner Phillips,—Mercer, Somerset and Sussex.

Commissioner Lynch,—Camden, Hunterdon and Monmouth.

Commissioner Ward,—Essex, Middlesex and Morris.

In connection with the above it may be stated that each warden reports to his supervising commissioner in writing twice a month, his report showing work accomplished each day. In addition the wardens report in writing to the Protector once a month.

STURGEON.

Commissioner Wm. A. Logue and Protector James M. Stratton were appointed by the Board to attend a conference held at Philadelphia with Governor Walter E. Edge, Governor W. C. Sproul, of Pennsylvania, and Governor Wm. E. Townsend, of Delaware, respecting a proposition to close the season for sturgeon in the Delaware river for five years. The sturgeon fishermen of our State and Pennsylvania were favorable for the restriction. In Delaware there was quite a sentiment for the closing of the season, but it appears that after the Legislatures of Pennsylvania and our State passed a law closing the season, the bill failed to become a law in Delaware, and therefore the project fell through. The bills presented to the Legislature of each State were uniform, and each provided that the law should only go into effect when all the States concerned passed a similar law.

BREEDERS' LICENSES.

The Legislature passed an act extending the list of game which may be kept outside the legal season. Under the old law only English pheasants, mallard, black and wood duck and deer could be possessed by virtue of a breeders' license. Under the new law Canada geese, ruffed grouse, rabbits, squirrel and quail may also be kept. The fee for the breeders' license is \$5. The law does not require any fee for keeping fancy pheasants. It must be noted that under the Federal regulations Canada geese, black, wood and mallard ducks raised on licensed preserves may be sold at any time if legally tagged, but such migratory waterfowl shall bear a

well defined mark in the form of a "V", which must have been removed from the web of the foot before the birds attain the age of four weeks. In addition to the New Jersey breeders' license, a person desiring to possess, buy, sell and transport migratory waterfowl and their eggs for propagating purposes and to sell and transport their carcasses for food purposes must obtain a permit from the Secretary of Agriculture at Washington, but it must be remembered the permit issued by the Federal authorities does not authorize the taking, possessing or trafficking in migratory birds contrary to our State laws.

As to the granting of permits to buy, sell, take, possess and transport birds, their nests and eggs for scientific purposes, our Board has adopted a policy against issuing such, holding that there are now enough ghastly specimens in existence to answer every scientific need. Still more, every such permit granted breeds a demand for many similar permits. Our experience is that many applications for these permits have come from boys and young men, aged men or idlers, and if the Board were to grant them generally we believe thousands of such permits would have to be issued. It might be urged that sufficient precautions might be taken by granting these permits only on proper endorsements, but the rule is that it does not seem difficult for any person to get the kind of endorsements that would be required. The sportsmen of the State have generally approved the Board's policy.

U. S. FOOD ADMINISTRATION.

In September, following correspondence with John Palmer, Attorney-Enforcement Division, and Frederick L. Mygatt, Head-Enforcement Division, U. S. Food Administration for New Jersey, Mr. Mygatt and W. S. Downs of Great South Bay, New York, appeared before the Board for conference regarding regulations to govern inside salt water fishing in New Jersey during the war to supplement the open door in the Atlantic coast outside waters. After discussion the representatives of the Food Administration were invited to submit regulations to the Board to be the subject of further conference. Propositions in writing were received from the Food Administration as to what they desired and the matter was under consideration when the armistice was declared November 11th, and following the signing of the armistice the United States withdrew their order removing restrictions for the Atlantic coast outside waters.

By reason of the fact that the Federal food regulations practically removed restrictions as to net fishing in the Atlantic coast outside waters, the Board decided to lay up the State launch "New Jersey" commencing July 1st. It was thought at that time that owing to the legislation creating the State Bureau of Fisheries, having charge of the pound licenses, that it would be possible for the Board to dispose of the "New Jersey" entirely, but during the session of 1919 the act giving the Bureau of Fisheries control of the pound nets was abolished and their supervision was placed back in the hands of our Board, and the "New Jersey" was placed in commission this year.

PUBLICATIONS AND PUBLICITY.

This year the Board abolished the printing of the fish and game charts in the Hungarian and Italian languages, in the interest of one language idea for our country, and provided for the printing of a folder on paper instead of cardboard. The chart of seasons for the folder was enlarged this year, which permitted the Board to do away with the large chart which had formerly been issued. The Board also provided for two editions of the fish and game book, one edition of 14,000 containing the general laws, and one edition of 1,000 containing in addition the laws for the enforcement of the fish and game laws, which latter are of no particular interest to the public and are chiefly of value to the wardens and magistrates.

Newspapers are devoting an increasing amount of space to fish and game matters. Not only are a large percentage of the articles from the "News Letter," published under direction of the Board, finding place in the general news columns, but many editors are welcoming suggestions for articles prepared in their own offices on conditions of intimate interest to readers in their respective localities.

Several exhibitions of the Commission's fish and game moving pictures were given during the last six months of 1918 in different parts of the State. More than 100,000 soldiers in training at Camp Dix also saw these reels. The State Board of Education has suggested that it desires to cooperate with the Fish and Game Commission in presenting these "movies" as an educational feature in public schools throughout the State.

Owing to labor and other conditions the fish and game book of laws, which was printed by the State Reformatory, was not issued as promptly as usual. In August the U. S.

Government promulgated the new seasons respecting the control of migratory birds, and the Board issued a large number of bulletins showing the effect of the President's proclamation of July 31, 1918, and also a statement showing seasons, etc., for non-migratory game, fish, etc., which apparently met the situation as to informing hunters and fishermen of the law, etc.

DEER.

During the year the following permits were granted to kill deer where investigation had shown that deer had damaged crops:

NAME	ADDRESS	COUNTY	APPROVED BY
Wm. Speck	Tuckerton,	Ocean	Warden Mathis
Samuel Anderson	"	"	"
H. C. Rowsell, Mgr.	Weymouth,	Atlantic	" Loder
Domenico Gialto	Hammonton,	"	" O. Small
Joseph Errera	"	"	"
George Leek,	Batsto,	"	"
Thomas Romans	Whitings,	Ocean	" Evernham
A. S. Tilton	Bayville,	"	"
Stephen V. Lee	Chatsworth,	Burlington	" Morton
Samuel Kean	Mantua,	"	"
Jos. diFabrizio	Hammonton,	Atlantic	" Small
John J. Green	Egg Harbor City	"	" Loder
Natale Bertino	Hammonton,	"	" Small
Harry J. Rogers	Estelville,	"	" Loder
Charles Bitzer	Egg Harbor City	"	"
Chas. Wm. Beetz	Hammonton,	"	" Small
Harry W. Ellis	Ocean Gate,	Ocean,	" Evernham
Angelo Mazza	Hammonton,	Atlantic,	" Small
Stephen Sabo	Brookville,	Ocean,	" Evernham
Ralph Condo	Waterford,	Camden,	" Folker

Several applications to kill deer damaging crops were received, but on investigation by our wardens it was found not wise to grant the permit, as the damage did not seem sufficient to warrant the same.

On the opening of the deer season on the 16th of October some of the wardens in counties where there were no deer were sent to patrol the State game refuge in Warren county, and other wardens were sent to assist in the deer woods in South Jersey.

During the last three Wednesdays in October and the first Wednesday in November, which were the four days when deer hunting was permitted, there were 365 deer killed in this State; 353 of this number were killed and taken by the hunters during the legal days, and 12 were found dead in the woods between the Wednesdays and after the season was over.

The following is a list showing the number of deer killed in each county:

COUNTY	KILLED	FOUND DEAD IN WOODS
Atlantic,	105.....	0
Bergen,	6.....	1
Burlington,	77.....	0
Camden,	1.....	0
Cape May,	6.....	0
Cumberland,	42.....	8
Gloucester,	3.....	1
Mercer,	5.....	0
Morris,	3.....	1
Ocean,	45.....	0
Passaic,	6.....	0
Salem,	1.....	0
Somerset,	0.....	1
Sussex,	17.....	0
Warren,	36.....	0
	353	12

No reports have been received that any person was killed or injured while hunting deer.

MISCELLANEOUS.

Operating under a permit from the Board and under the supervision of the warden, Frederic C. Biallas, during the year took from Carnegie Lake, Princeton, 2857 carp, weighing 14,699 pounds.

Arthur Davison, R. F. D., Belmar, who stood No. 1 on the Civil Service list of eligibles, was appointed as warden for Monmouth county, and went on duty October 1st.

The Civil Service Commission included our Board on the following personnel committees:

Clerical Service, represented by the Secretary.

Custodian, Engineman, Skilled Labor and Labor Service, represented by Commissioner Lynch.

Agricultural Development, Public Information, Protective and Conservation Service, no representative appointed.

On April 1st the "New Jersey" was put in commission, and patrolled as usual the Atlantic Ocean, Sandy Hook and Raritan Bay and Delaware bay and Delaware river.

The employees of the Board contributed \$120.25 to the Soldiers and Sailors Memorial Fund, which fund was promoted by the State House Commission.

Our Board took up with the Secretary of War the matter of complaint of residents of New Egypt against Camp

Dix emptying sewage into the lake at New Egypt. Thousands of fish were killed in the lake by reason of the sewage. We were informed by the Secretary of War that there had been some delay in the enlargement of the sewer system at Camp Dix, that instructions had been given to expedite the work, on completion of which the situation would be relieved.

The Board renewed its membership in the International Association of Game, Fish and Conservation Commissioners at a cost of \$25. per year.

SUPPLEMENT TO 1917-18 REPORT

(Abridged Fiscal Year, from Nov. 1, 1917, to June 30, 1918)

INCOME.

Balance as per statement in last printed report, June 30, 1918, 1916-17				
Chapter 152, Laws 1914, Hunters' and Anglers' Li- cense Fund,			924.85	
1917-18				
Chapter 152, Laws 1914 Hunters' and Anglers' Li- cense Fund,	\$50,781.19			
Chapter 41, Laws 1908,.....	2,115.44			
Chapter 247, Laws 1911,....				
Fines,	2,058.67	54,955.30		\$55,880.15

EXPENDITURES.

Paid after June 30, 1918, on re- quisitions for 1916-17:				
Chapter 152, Laws 1914 Hunters' and Anglers' Li- cense Fund,			924.85	
Paid after June 30, 1918, on re- quisitions for 1917-18:				
Chapter 152, Laws 1914, Hunters' and Anglers' Li- cense Fund,.....	\$3,900.58			
Chapter 41, Laws 1908,.....	536.28			
Chapter 247, Laws 1911, Fines,	92.07	4,528.93		\$5,453.78
To Balance,.....				50,426.37
				<u>\$55,880.15</u>

FINANCIAL STATEMENT

From July 1, 1918, to June 30, 1919.

INCOME.

Balances July 1, 1918:			
Chapter 152, Laws 1914,			
Hunters' & Anglers' License Fund,	\$46,880.61		
Chapter 41, Laws 1908,.....	1,579.16		
Chapter 247, Laws 1911, Fines,.....	1,966.60	\$50,426.37	
Receipts:			
Chapter 152, Laws 1914,			
Hunters' & Anglers' License Fund,	120,273.55		
Chapter 41, Laws of 1908:			
Menhaden Licenses,	\$4,625.00		
Pound Licenses,	5,910.00		
Breeders' Licenses,.....	520.00		
Sales etc.,	1,206.48		
Sundries,	552.67		
	12,814.15		
Chapter 247, Laws 1911, Fines,.....	12,065.89		
		145,153.59	195,579.96

EXPENDITURES.

Chapter 290, Laws 1918,.....		\$127,846.02	
To Balance,	*	67,733.94	
			\$195,579.96
* Cash balance subject to outstanding requisitions for year ending June 30, 1919,			* 7,665.79

FISH AND GAME LEGISLATION IN 1919.

Chapter 43, Assembly Bill # 22—Makes closed season for 5 years on female English or ring-neck pheasants, expiring April 7, 1924.

Chapter 45, Assembly Bill #32—Makes open season for killing deer 5 successive days from December 16th to 20th inclusive. Unlawful for any person engaged in hunting deer to use or carry a rifle of any kind or description or any firearm of a smaller calibre than twelve gauge, or to load such firearm with a bullet or other missile larger than that commonly known as buckshot or to have in possession in the woods or fields, during the open season for killing deer any missile except buckshot, or to have any missile larger than number two shot in possession in the woods or fields at any time other than the open season for killing deer.

Chapter 71, Senate Bill #7—Requiring the marking of automobiles and vehicles owned by the State, but excepting cars used for enforcement of fish and game laws, etc.

Chapter 85, Senate Bill #35—Permits Board to issue a license to cost \$5. to persons to breed and sell under certain conditions: English and Mongolian pheasants, mallard, black and wood ducks, Canada geese, ruffed grouse, rabbits, squirrels, quail and deer.

Chapter 94, Senate Bill #56—Places with the Fish and Game Commission instead of the State Board of Fisheries the licensing of fish pounds and enforcement of the act.

Chapter 141, Assembly Bill #129—Salary of the Superintendents of the Fish Hatchery and Game Farm to be fixed by the Board of Fish and Game Commissioners according to schedule of Civil Service Commission.

Chapter 153, Committee Substitute for Senate Bills #107, 108, 109, 110—Makes close season on sturgeon in Delaware river and bay and their tributaries until March 1, 1924, provided Pennsylvania and Delaware pass similar acts.

