

# ANNUAL REPORT

OF THE

## New Jersey

### Board of Fish and Game

### Commissioners

FOR THE

Fiscal Year Commencing July 1, 1919, and Ending  
June 30, 1920.

974.901

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TRENTON, N. J.  
PUBLISHED BY THE STATE  
1920

**List of Fish and Game Commissioners**  
 Holding Office at the Date of This Report.

ERNEST NAPIER, *President*.....East Orange, N. J.  
 WILLIAM A. LOGUE, *Treasurer*.....Bridgeton, N. J.  
 ROBERTSON S. WARD.....East Orange, N. J.  
 AMOS H. RADCLIFFE.....Paterson, N. J.  
 JASPER LYNCH.....Lakewood, N. J.  
 ALEX. H. PHILLIPS.....Princeton, N. J.  
 WM. B. BOULTON.....Morristown, 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., *Protector*.....Long Branch, N. J.  
 MATHIS, HOWARD, *Assistant Protector*.....New Gretna, N. J.  
 CUDNEY, HARRY E., *Assistant Protector*.....Hackettstown, N. J.

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

**Letter of Transmittal**

*To His Excellency, Edward I. Edwards, 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, 1919, to June  
 30, 1920.

Very respectfully,  
 ERNEST NAPIER,  
 WM. A. LOGUE,  
 ROBERTSON S. WARD,  
 AMOS H. RADCLIFFE,  
 JASPER LYNCH,  
 ALEX. H. PHILLIPS,  
 WM. B. BOULTON,  
*Commissioners.*

## ANNUAL REPORT

In looking over the year's work it is extremely gratifying to note that considerable progress has been made in all lines of our activities. We would like to have done much more, but with the means at hand there were limitations. We believe it is safe to say that the administration of fish and game laws and the interest connected therewith reached a high water mark. The continued increase in labor cost and supplies was offset to some extent by an increase in the sale of licenses, but from every part of the State the demand is for more fish and game. It was a banner year in the matter of arrest of offenders of the laws, but our work is something higher than the mere arrest of violators, and through the efficiency of our warden service we are satisfied that thousands of violations were prevented, resulting in the protection of innumerable insectivorous birds, which are worth untold value in the protection of crops. We can point with no little pride to our Game Farm at Forked River and Fish Hatchery at Hackettstown, but it must be remembered that our activities radiate through all the highways and byways of the State, from Cape May to Sussex, and from the Atlantic to the Delaware. It is no longer a question as to whether much of the original game of the State can be saved; the fact is it is being saved, and wild life of all kinds is increasing in our fields, woods and streams. This, together with the fact that the English pheasant has been successfully introduced, results in the Fish and Game Commission being a real asset to the State. The hunting and fishing during the year was greatly improved in every part of the State.

The increasing interest of the general public in matters pertaining to fishing and hunting, conservation of insectivorous birds and other protected wild life, purification of streams and such matters has been indicated during the year by the generous amount of space given to these subjects by newspapers of the State and nearby metropolitan centres. A "News Letter" published by the Commission and circulating to all of these papers and to outdoor magazines has been in extensive demand.

A result of this publicity has developed an increased appreciation of the aims of the Commission and cooperation of the public in law enforcement with a steady tendency toward prevention of violations.

The Board finds extreme pleasure in the passage by the Legislature of a law to conform to the Federal regulations on migratory birds, and in the preparation of the law the opportunity was afforded to make a partial codification of some of our

laws, which makes for clearness and understanding of the general game act and does away with the confusion which existed when the State and Federal laws were inconsistent. From what we can ascertain the act gives general satisfaction. However, as of old, there is still some difference as to the best date for the opening of the woodcock season. There is a class who would favor even summer shooting of woodcock. It is generally recognized that for the protection of this wonderful game bird, even October first, the Federal date, is rather too early, but such a date was fixed by the Legislature so as to make the bill conform strictly to the Federal regulations.

#### CIVILIZATION VS. GAME AND FISH.

The possibility of the menhaden industry employing seaplanes to locate schools of menhaden is not far off, and is another instance of how modern civilization, with its automobiles, improved firearms, trolleys, good roads, and large boats with improved machinery and nets, is reaching out to the most remote areas where fish and game abound. This progress affords additional reasons why not only this State but every State should through its fish and game commissions study most carefully the problem of conservation of its resources. The United States Bureau of Fisheries did some experimental work in arranging for the use of seaplanes for locating schools in the Chesapeake Bay region. An issue of the Fisheries Service bulletin says:

"The fishing areas in the bay and off the Virginia Capes have been blocked off in squares, so as to permit definite designation of the presence of schools of fish; and the commandant of the Fifth Naval District at Norfolk has detailed two planes to spot the schools of fish as an aid to determining the commercial possibilities of the venture. One of the menhaden companies has installed radio apparatus on two of its vessels and at its factory to receive reports from the planes as to the location of the schools of fish; and this company has recently secured another vessel on which it plans to install a radio set. The reports are made available to all fishing companies, and thus far have proved of considerable benefit to the fishery, as the seaplane patrol can cover a much larger area than the fleet of fishing vessels."

#### IN FAVOR OF HIGHER LICENSE FEES.

From the above it is plain to see that our Board must be alive to every new method of pursuing our wild life. Our Board cannot stand still and succeed. With the increase in popula-

tion our work expands and to prevent failure proper means to a proper end must be at hand.

There was introduced in the Legislature a bill to increase hunting and fishing licenses as follows: The Resident Hunting and Fishing license from \$1.15 to \$1.65, the Nonresident Fishing license from \$2.15 to \$3.25, and the Nonresident Hunting and Fishing license from \$10.15 to \$10.50. The bill passed the Assembly with only six votes in the negative, but was defeated in the Senate. Only two speeches were made against the bill in the Assembly, one gentleman saying that the Board had been extravagant and had introduced Southern quail which had migrated to the South. Our Board has not introduced Southern quail and no Southern quail have been brought into the State for several years past. Another Assemblyman said that the bill was not in the interest of the poor man. It is not our desire to present here any argument for the bill at this time, but we can only point to the fact that as a rule the rich men of the State go out of the State for their hunting, and if it were not for the supply of game and fish produced by the Fish and Game Commission there would scarcely be left a bird or animal in the State for the "poor man" to hunt or enjoy. In the last hours of the Senate there seemed to be a feeling that the bill had more merit than it was supposed to have had when it was defeated, but the final adjournment of the Senate prevented further action towards its passage.

Among the sportsmen of the State, who pay the fees, there was practically unanimous support for an increased fee for licenses. The New Jersey Conservation League, an affiliation of many fish and game clubs, was very enthusiastic in the support of the measure. The league is composed of twenty-five leading clubs in fourteen counties, besides individual members in nearly 150 communities, representing, in all, between 9,000 and 10,000 outdoorsmen.

Our Board favors the introduction in the next session of the Legislature of a bill to increase our hunting and fishing license fees. On the resident license fee the increase is about 1c a week and will permit the Board to meet the increasing demands of the growing army of sportsmen. The chief items of expense connected with the administration of the Department are maintenance of the Game Farm and Fish Hatchery; the purchase of food and distribution of the game and fish; salaries of wardens and clerical expense, and the expense of wardens in patrolling our woods, fields, rivers and bays. An increase in production means further increased expenses, and a lack of means is bound to force curtailed production. The increase is in no sense a burdensome tax, and we believe that the views of those who pay the license fees are entitled to the

fullest consideration. In addition to benefiting those who pay the license fee directly, benefits will also accrue to the State's sporting goods industry, hotels, guides, boat owners and farmers.

#### A BIG FISH AND GAME CLUB.

The Board has ascertained very definitely that the proportionate cost of license to the expense of a hunter or fisherman is so little that the licensee does not object at all to the proposed increase. Licensees have realized more than ever that their license is a mere scrap of paper if they do not have the fish to angle for or the game to hunt, and these can only be supplied through the Game Farm and Fish Hatchery which are maintained by their contribution.

It is very interesting for those who have been in touch with the license system since its introduction to note how opposition to the same has died away more and more. Each license holder realizes that his fee entitles him practically to membership in a club which is furnishing him fish and game, which club is administered by seven commissioners from various parts of the State who serve without compensation.

In carrying out the idea that a holder of a \$1 hunting and fishing license is a member of a club, directly administered in his interest, it might be well to pause a moment and think what the dollar gives the sportsman. It gives an interest in all the fish and game in the twenty-one counties of the State; an opportunity to travel over vast areas and obtain therefrom the wild life found on the soil; an invitation to get out into the open to enjoy all the beauties of nature and to forget the town and its troubles. In the pursuit, whether for birds or fish, even if there are disappointments in the way of bag, there is the conscious reward that the chase is beneficial to health and is storing up health resources. When conditions have been favorable the return has been worth many times the amount expended. In the most modest outing of any kind an expense of \$1 for an item gives one but little concern, and we believe that a dollar invested in a hunting and fishing license gives a larger return than the investment of a similar amount in any other form of sport or amusement.

#### GAME FOR FOOD.

Sometimes the uninformed question the advisability of protection of game for the purpose of affording sport and food for the people. It is pointed out in a bulletin of the American Game Protective Association that thousands of persons earn their livelihood in the manufacture of articles used by sportsmen, such as ammunition, special footgear, clothing,

boots, tents, camping outfits and other necessities. In addition large amounts are spent each year for railroad fares, operating automobiles and for hotel and restaurant expenses, to say nothing of the thousands of dollars spent in the country in breeding, protecting and caring for game. The breeding, training and care of shooting dogs is an industry in itself, while in our State there is a large number of men who make a livelihood as guides.

The food value of game killed each season is sufficiently great to demand that it shall have adequate protection. France, rather than receive money from Germany for game and game preserves destroyed, demanded that Germany make a repayment in game for destruction from her vast reserves. The proposed plan is that France shall demand from Germany and Austria live game to the value of 35,000,000 francs. Germany and Austria must each furnish, in four half-yearly instalments, 250 stags, 1,000 hinds, 200 male and 400 female roe deer, 200,000 male hares and 400,000 females and 3,000,000 brace of partridges. In addition, Austria must furnish 1,000,000 pheasants. The greater proportion of the game will be liberated immediately upon arrival, under the supervision of experts. The balance will be held on game farms as breeding stock, these farms to be controlled and operated by the French government.

#### THE CAT MENACE.

The Board had printed and distributed 1,500 posters respecting a warning to keep cats under control during the bird nesting season. All lovers of birds know of the ravages of cats and the keeping of them in restraint is a protective measure of utmost importance. The circular said in part:

"Once more the breeding season of the birds has arrived. Those of our resident birds which have survived one of the severest winters of the past generation need all the protection we can give them. The migratory birds should have equal consideration in order that we may keep faith with Canada under our Migratory Bird Treaty, and with our kinsmen in the South who have protected them in the wintering zone.

"The greatest single living agency in the destruction of the birds is the roaming, unrestrained house cat. We appreciate the practical difficulties connected with keeping cats under close restraint throughout the entire year, but if every owner of a cat will keep it under restraint during the period from May 15 to August 15, great mortality among our birds will be avoided.

"We ask you to make it certain that your cat is so controlled, and that you co-operate with your local officials and societies, organized for the purpose, to see that all homeless and wild hunting cats are humanely killed."

## FIRE PREVENTION.

Our Board was glad to note that the Legislature of 1920 made mandatory the teaching of fire prevention one hour a month in all the schools of the State. The course of study was outlined by the Commissioner of Banking and Insurance and the Commissioner of Education. They adopted as a text book "The Manual Safeguarding the Home Against Fire," which was originally prepared by the National Board of Fire Underwriters for the United States Bureau of Education, with supplementary pages prepared by Mr. Alfred Gaskill, Director of Conservation and Development and State Forester.

The Board for many years has carried on its game chart warnings respecting fires and stating that every forest fire destroys a game cover. Many fires are caused by carelessness, and it should be the aim of every sportsman to take a personal interest in their prevention.

## ORGANIZATION.

At the Board's organization meeting, held Dec. 9th, William B. Boulton of Morristown, appointed by the Governor to succeed Hon. Wm. A. Faunce, was present and entered upon his duties.

The Board organized with the re-election of Ernest Napier as President, Wm. A. Logue as Treasurer, Robertson S. Ward, Temporary Chairman, to serve during the absence of President Napier.

On motion the counties of the State were allotted to the commissioners as follows:

Commissioner Napier—Warren, Union, Ocean.  
 Commissioner Logue—Cumberland, Gloucester, Salem.  
 Commissioner Ward—Middlesex, Cape May, Essex.  
 Commissioner Radcliffe—Hudson, Bergen, Passaic.  
 Commissioner Phillips—Mercer, Burlington, Atlantic.  
 Commissioner Lynch—Camden, Hunterdon, Monmouth.  
 Commissioner Boulton—Morris, Somerset, Sussex.

The President announced the following committees:

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

The President is ex-officio member of all committees.

## BURLINGTON COUNTY BRANCH GAME FARM.

Following a conference with leading members of the Burlington County Game Protective Association, a bill was drawn and introduced in the Legislature providing for branch game farms. The bill, which became a law, provided that our Board was authorized in its discretion to lease at a nominal rental land consisting of not less than 40 acres in one single tract, said land having thereon buildings, fences and pens suitable for raising game birds and game animals. When such lands, etc., are offered to the Board, by an incorporated body, to be operated in connection with the State Game Farm under the supervision of the Board, the Board is authorized to expend not more than \$2,500. for the purpose of raising game on such a tract of land, provided that 75 per centum of the game birds and game animals raised shall be liberated in the county where raised under the direction of the Board.

Under the act a farm of the Burlington County Game Protective Association was taken under the supervision of the Board on May 1st, 1920, through lease which was drawn up and approved by the Attorney General. While the distribution of the birds from the Branch Game Farm does not come within the fiscal year under review, it might be stated that the estimated value of birds put out since July 1st was \$2,748, with breeders on hand worth \$576.

## SAFEGUARDS OF OUR FUNDS.

During the session of the Legislature a bill was introduced along the lines of a bill of 1918, amending the present law whereby the receipts of the Board are appropriated to the Board for the protection and propagation of our fish and game, and providing the Legislature should fix a yearly amount for our Board. It was supposed that this matter had been definitely settled in 1918 to the satisfaction of all; and while the bill of 1919 did not appear to be pressed to passage, yet it may be well at this time to note certain facts in connection with the situation. While the Legislature appropriates to the Board its receipts, yet this does not mean, in any manner, that the usual safeguards surrounding the expenditure of the State's money are eliminated, nor does it mean that the Board can spend the money as it pleases without strict accounting. Every penny must be recorded and spent in accordance with State laws and regulations, exactly the same as if a specified amount of money was appropriated. Every dollar paid out by the Board is paid out the same as other State funds. The greater bulk of the Board's income, the license fees for hunting and angling, are

not received by the Board, but are paid direct into the State Treasury and do not pass through its hands. Receipts from fines and menhaden and pound licenses only pass through the office of the Board at the State House for proper adjustment, etc., and are turned over to the State Treasurer each month with unfailing regularity, as the records will show and as the laws provide. These fines and license moneys are received at the State House office and are accounted for by the Treasurer of the Board, who is under heavy bond.

In the matter of payment of bills, the same are presented to the Board, and before presentation are audited by persons responsible for their correctness. Each bill over \$5. must be verified by affidavit of the person presenting it, to the effect that the same is correct in all particulars, and that the articles have been furnished or services rendered as stated therein and that no bonus has been given or received. In the case of reimbursement of expenses, the form of affidavit provides that the account is correct, that the distances as charged have been actually and necessarily travelled, that the amounts as charged have been actually paid and that no part of the account has been paid by the State, and that the full amount is due. Each bill is fully itemized and made out on the ordinary State form of bills.

All bills are carefully scrutinized at the monthly meeting of the Board, and each bill paid in accordance with State law, and each bill contains the approval signature of at least two members of the Board. A schedule of the entire amount of bills is approved by the Board as a whole. The bills are then submitted to the State Comptroller and Purchasing Agent for audit and approval; thus making a double check, and the State Treasurer only pays bills on the warrant of the State Comptroller. Still further, all salary and wage bills are checked by the Civil Service Commission.

In purchases the Board is restricted by State laws as to the amount which can be expended with or without advertising for bids. No amount in excess of \$1,000. may be expended without proper bids or without permission from the State House Commission, which is composed of the Comptroller, Governor and State Treasurer. As to economy and quality of goods purchased, all supplies are obtained through the State Purchasing Agent.

If the Board existed mainly through direct Legislative appropriations, as it did many years ago, but without a Game Farm or a Fish Hatchery, it would cost the people of the State directly annually about \$75,000, and from this expenditure the hunter and fisherman would receive but little benefit.

With the hunting license system and the appropriation of the Board's receipts for the use of the Board the citizens of New

Jersey who do not hunt or fish are saved from paying \$75,000. each year. With the Board's use of its receipts we have been able to build, expand and operate one of the most successful Fish Hatcheries in the country, and a highly productive Game Farm, thus giving to the hunter and fisherman an adequate value for the cost of his license in the stocking of our streams and woods, in the patrol work of our wardens, and in the operation of boats in our fresh and salt waters.

#### 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 \$147,925.72.

The aggregate of fines collected for violations of the fish and game laws amounted to \$15,926.15.

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 \$6,950. At the date of this report there are 19 steamers and 42 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 \$6,780. For the calendar year ending December 31, 1919, there were 154 licenses granted, 114 for the Atlantic Ocean and 40 for Sandy Hook bay.

Under the law prohibiting aliens to be possessed of firearms, 57 guns were confiscated, the proceeds from the sale of confiscated guns being \$251.

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 42 licenses issued for the fiscal year; the proceeds being \$42.

For the period between the close of the quail season in 1918 and May 31, 1919, 2,666 permits to hunt foxes were issued.

#### FORD CARS, MOTORCYCLES, SMALL BOATS.

New Ford cars were supplied as follows: Duncan Dunn, Superintendent, Game Farm; H. E. Cudney, Assistant Protector, Hackettstown; Howard Mathis, Assistant Protector, New Gretna; Fred S. Conner, Warden, Cumberland county; Otis C. Small, Warden, Atlantic county; and Arthur Davison, Warden, Monmouth county.

Ford cars are operated by the following:

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

Wardens Otis C. Small, Hammonton, Atlantic county; William H. Small, Englewood, Bergen county; Charles C. Morton,

Mount Holly, Burlington county; William Steel, Cape May Court House, Cape May county; Fred S. Conner, Bridgeton, Cumberland county; Fred J. Hall, Bloomfield, Essex county; John J. Park, White House Station, Hunterdon county; Arthur Davison, Belmar, Monmouth county; William E. Young, Chester, Morris county; James H. Evernham, Bayville, Ocean county; Gervas I. Hall, Salem, Salem county; Jacob D. Roe, Newton, Sussex county; William Hoblitzell, Rahway, Union county.

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

Warden Charles C. Morton, Mount Holly, Burlington county, operates a motorcycle.

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; Anson J. Rider, Tuckerton, Ocean county; James H. Evernham, Bayville, 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, one being equipped with an Evinrude motor; one at the Hatchery.

Three Garford trucks and one International truck are stationed at the Fish Hatchery for distribution of fish, etc., and one International truck is used at the Game Farm.

#### KILLING INSECTIVOROUS BIRDS.

It is surprising, in this day, that the killing of insectivorous birds is a temptation to so many in view of the great publicity given to convictions and fines for such offenses through the medium of the newspapers, and the education obtained in the schools regarding the value of birds to crops. It would seem that information as to their necessary protection was at the hand of everyone. However, there were numerous convictions during the year for the killing of song birds. In one case a penalty of \$1,000. was recovered from one person for having in possession 1 rabbit, 1 squirrel and 48 song birds, consisting of juncos or snow birds, blue birds, robins, thrushes, blue jays, woodpeckers, cedar birds or wax wings and field sparrows. These birds were evidently killed by five or six Italians at a junction of the Mercer and Hunterdon county line and the birds given to the defendant. The defendant did not carry a

gun and those engaged with him, in the violation were not apprehended, but there are reasons for the belief that each of the persons engaged in the killing contributed toward the payment of the penalty. We had a vague complaint regarding illegal hunting by this crowd for some time, but they managed to elude arrest. It is quite certain also that they kept track of the wardens, and knew that they were violating the law, as is evidenced by the fact that the birds were passed to a person not carrying a gun.

In Hudson county 12 persons in one month were fined \$100. each for killing song birds and rabbits contrary to law.

#### FEDERAL MIGRATORY LAW.

Several cases for violation of the Federal Migratory Bird act were disposed of in the U. S. District Court in the following manner:

Edward Samuel, Jr., Howard F. Otter, Raymond Otter, Thomas J. Cleasby and W Scott Rice pleaded guilty on September 8th, and were fined \$10 each.

W. F. Taubel, Walter Martin and Harry Martell pleaded guilty on September 22d, and were fined \$5 each. On April 26 Taubel was fined \$100 and Martin \$20 for additional violations.

Jeremiah Sprague pleaded guilty September 30th and was fined \$10.

The Board has under consideration for further prosecution offenders who have been convicted under the United States laws, inasmuch as it appears at the same time some New Jersey laws were violated.

The Supreme Court of the United States rendered an opinion sustaining the constitutionality of the migratory bird treaty and act, in the case of proceedings instituted by the State of Missouri to restrain United States game wardens from enforcing the treaty and act in that State.

George A. Lawyer, Chief U. S. Game Warden, reports that from carefully tabulated information from all parts of the country there has been a tremendous increase in all species of water fowl and in most species of shore birds, due to the migratory bird treaty and act.

#### GAME PRESERVATION.

Commissioner Boulton attended the Sixth National Conference of the American Game Protective Association which was held at New York in March, and was the chairman of the conference. At the conference were 44 representatives from 23 State game departments. A summary of some of the lead-

ing ideas at the conference presented in various papers and during discussion follows, which we believe will be of interest to the residents of our State.

1. Sanctuary furnishes the most hopeful solution of the game preservation problem.
2. Free public shooting grounds must accompany the sanctuary to preserve for all citizens the opportunity for hunting.
3. Breeding and feeding grounds for waterfowl must be preserved and protected in order to reap the benefits of the migratory bird treaty.
4. Control of destructive species is of the greatest importance.
5. Game breeding should supplement natural propagation where possible to employ artificial methods, but greatest hope for future shooting is in preservation of native wild stock.
6. Winter feeding and care of game and other bird life require more attention.
7. Control of trade waste and prevention of the pollution of streams absolutely essential to the preservation of fish life in rivers and some lakes a most vital problem.

#### BONUS TO EMPLOYEES.

Following legislation, the State was empowered to pay a bonus to its employees, made necessary by the increased cost of living as the result of war conditions. The total bonus as fixed by the Civil Service Commission for the employees of our Board amounted to \$12,618.97. Of the total \$3,120.76 came out of State funds and \$9,498.21 came from the Board's funds.

#### WARDENS.

The salaries of the wardens were formerly fixed by statute. At the last session of the Legislature, a bill was passed providing that a schedule of salaries for wardens and other employees of the State should be fixed as to the minimum and maximum by the Civil Service Commission, and the old statute was thereby repealed. In June the Board increased the salaries of our wardens and assistant protectors \$300. a year to take effect July 1, 1920, and an increase of \$400. was given the Protector.

At the request of the Civil Service Commission the Board submitted data for physical specifications and qualifications to be met by persons making application for wardens. The specifications submitted follow: Age, 21 to 45; height, minimum 5 feet 7 inches; weight, from 135 to 200, except where the applicant shows unusual development in grit, nerve and strength.

After two wardens had each broken an arm cranking their Ford cars, the Board adopted a policy of having self starters on its new cars.

Thomas Kelley was appointed temporary warden November 1, 1919, and on March 1, 1920, was appointed regular warden for Hudson county.

Harry M. Loveless, warden for Mercer county, resigned January 31, 1920, and he was succeeded on June 15, 1920, by Michael Bobera. The Board regretted to lose Mr. Loveless' services, inasmuch as he was the highest type of warden, fearless in the enforcement of the law, untiring in running down violators, yet at the same time he maintained in the community the highest respect for himself and the Commission.

The Board gave permission to the Game Wardens' Association to hold a meeting four times a year.

#### FISH PRODUCTION.

The total fish production for the year was as follows:

##### FROM STATE FISH HATCHERY

Yellow Perch Fry.....	26,000,000	
Pike Perch Fry.....	1,500,000	
Brook Trout Fingerlings.....	520,545	
Brown Trout Fingerlings.....	222,900	
Rainbow Trout Fingerlings.....	8,000	
Brown Trout 6 to 10 inches.....	7,582	
Rainbow Trout 6 to 12 inches.....	40,215	
Black Bass Small Mouth Fingerlings.....	17,800	
Black Bass Large Mouth Fingerlings.....	18,500	
Sale of Fish.....	1,350	
		28,336,892

##### FROM RESERVOIRS

Black Bass, adult.....	1,308	
Pickrel, adult.....	463	
Catfish, adult.....	280	
Crappie, adult.....	1,483	
White Perch, adult.....	2,178	
Yellow Perch and Sunfish.....	18,495	
Brook Trout.....	39	
		24,246

##### FROM MAURICE RIVER AND DELAWARE RIVER

Shad Fry.....	1,800,000	
Total.....		30,161,138

#### FISH HATCHERY.

Charles O. Hayford, Superintendent of the Fish Hatchery at Hackettstown, in his eighth annual report, for the fiscal year ending June 30, 1920, says:

	"Raised July 1, 1919, to June 30, 1920	Dis- posed of	Estimat- ed No. on hand
Brook Trout Fingerlings, 1½-2.....	392,100	392,100	.....
Brook Trout Fingerlings, 2-3½.....	140,190	125,190	15,000
Brook Trout Yearlings, 4-7.....	2,255	2,255	.....
Brook Trout Breeders, 8-12.....	1,200	.....	1,200
Brown Trout Fingerlings, 1½-2½..	419,400	219,400	200,000
Brown Trout Fingerlings, 2-3.....	3,000	3,000	.....
Brown Trout Yearlings, 4-6.....	1,675	1,675	.....
Brown Trout Yearlings, 5-7.....	32,000	.....	32,000
Brown Trout Yearlings, 8-10.....	5,970	5,970	.....
Brown Trout Breeders, 10-24.....	2,920	420	2,500
Rainbow Trout Fingerlings, 1-2.....	208,000	8,000	200,000
Rainbow Trout Yearlings, 4-8.....	90,000	.....	90,000
Rainbow Trout Yearlings, 5-7.....	4,500	4,500	.....
Rainbow Trout Yearlings, 10-12....	36,200	36,200	.....
Rainbow Trout Breeders, 12-24.....	1,700	500	1,200
Large Mouth Bass Fingerlings.....	58,500	18,500	40,000
Large Mouth Bass Breeders, 12-18..	120	.....	120
Small Mouth Bass Fingerlings.....	22,800	17,800	5,000
Small Mouth Bass Breeders.....	100	.....	100
Yellow Perch Fry.....	26,000,000	26,000,000	.....
Pike Perch Fry.....	1,500,000	1,500,000	.....
Sale of Fish.....	1,350	1,350	.....
Experimental purposes.....	32	32	.....
	28,924,012	28,336,892	587,120

"Permission was granted at the August meeting of the Board to construct two bass ponds, 3¼ acres, at a cost not to exceed \$8,000, according to plans and specifications drawn up by the State Architect's Department, which included also laying 1,260 feet of 10-inch cast iron water pipe and building 300 lineal feet reinforced concrete wall. Due to the scarcity of labor, extremely cold winter and late spring, we have only been able to complete about one-half of this work. These ponds will be a valuable asset for an increased output of bass.

"The small mouth black bass output was not what had been expected, due to the temperature falling below 50 degrees just as the eggs were hatched or hatching on fifty nests, which killed the fry and eggs outright on forty-three nests. In four lakes where they spawned wild the same condition prevailed. Eggs were dead and fungused in nearly all the nests. The United States small mouth bass stations suffered a similar loss for the same reasons.

"There are now in the ponds two hundred and thirty fine, wild, large bass breeders which we are teaching to take artificial food. We have always been compelled in the past to use smaller breeders than those on hand. The stock of bass breeders should be built up to at least six hundred, to stock properly the eight bass ponds which will be ready for operation next year. It will also be necessary to deepen the wintering pond and pipe in a large flow of cold spring water to hold back the development of breeders until about two weeks later than our bass spawned this spring, when all danger of cold weather should be past.

"The installation of one new perch battery enabled us nearly to double our perch output, and it would have been more than doubled had a freight embargo not held up the hatching jars. I would recommend the building of one or two additional batteries this

winter, the same to be ready for operation next perch season. The perch work will be done during April and the first half of May, using the men who operate pond culture work during summer, thus incurring no additional expense for labor.

"The trout output and number of trout on hand has surpassed any previous season both in size and quality. Next season should be as good as this or better.

"The hatching capacity of the main building we can still increase 16½% by making changes which should not cost over \$1200, and which are recommended.

"The services of Prof. W. T. Foster from time to time were secured to continue bacteriological investigations, which have proved valuable in determining the nature of pathological conditions and which on occasions were followed by the use of known preventive measures and the employing of others which were suggested by conditions observed. I would recommend the continuance of his services as may be required, in view of the fact that he is within a few miles of Hackettstown and can be obtained upon very short notice.

"The laboratory is now equipped to handle a large part of the work, and within another year sufficient additional equipment should be added to make more complete investigations possible.

"The following counties were surveyed during the year, following the survey of Atlantic and Sussex counties last year: Bergen, Passaic, Morris, Somerset, Hunterdon and Union.

"At the February meeting of the Board permission was given to continue the survey work in the following counties: Burlington, Middlesex, Ocean, Monmouth, Mercer, Warren, Essex, Hudson, Camden, Cape May, Cumberland, Gloucester and Salem.

"There were harvested and threshed 290 bushels of wheat, 350 bushels of oats, 500 bushels of corn, and 500 tons of ice were cut and stored; shipped to the Game Farm, 249½ bushels of wheat and 100 bushels of corn. The present crop acreage is 28 acres of hay, 24 acres of wheat and 8 acres of corn.

"New construction and improvements were: One new grain barrack, ladies' and men's toilet, one new bass pond (400 feet long, 200 feet wide, 6 inches to 6 feet deep), nearly completed; one new trout pond (200 feet long by 40 feet wide, 6 to 7 feet deep), two-thirds completed; new steam-heating plant in nursery.

"I attended the American Fisheries Convention at Louisville, Ky., Oct. 8th, 9th and 10th, and obtained much valuable information from the discussions.

"An exhibit was given at the Trenton Fair, as in the past two years.

"I am glad to report that our helpers at the Hatchery who are trained to the work have done excellent service during the year. From the outbreak of the war to date only two men have been lost.

"The proposed purchase of the lake, known as the Centenary Collegiate Institute Lake, which adjoins the State's property and contains four acres and a 600-ton ice house, is recommended. This water could be used for an additional water supply for our system. It would be of particular value in increasing our output of pond fishes."

## GAME FARM.

Duncan Dunn, Superintendent of the Game Farm, at Forked River, in his eighth annual report, for the fiscal year ending June 30, 1920, says:

"The house on the Schaffrath place was completed during the first part of the year, and a heating and water plant was installed in both this house and the Gate Lodge. All of the shrubbery was moved from the site of the old Lodge and planted about the new entrance. The building of the new road, leading from the public road to the farm driveway, was completed. One hundred loads of gravel and top soil were carted to the new buildings and used about the grounds for grading.

"All shipping crates, rearing coops and bottom boards were repaired and forty new rearing coops, one hundred bottom boards, twenty hatching boxes and thirty frames were built, and all these were dipped in disinfectant.

"A wire fence, 1000 feet long, was built along the driveway leading into the farm, also fences were built around the new rearing fields.

"The telephone line was continued to connect with the two new buildings.

"Ground was prepared and twelve acres were planted with corn, two acres with millet and one acre with beets.

"Thirty tons of hay and ten tons of oats were harvested and also fifty tons of ice were cut and put in the ice house.

"The new land, where the stumps were removed, was plowed, limed and seeded in grass, but owing to the dry weather the catch of grass was very poor.

"The dead trees and underbrush were trimmed out of the woods along the main driveway and the wood was carted to the saw mill where it was sawed into firewood.

"Forty-six hundred and nineteen pheasants were liberated during the year and fifty were sold to Maryland, making a total of forty-six hundred and sixty-nine pheasants sent from the Farm. There were also liberated thirty-six wild turkeys and two deer.

"Ten thousand pheasant eggs were set during the year and twelve hundred were sent to the Mount Holly Branch Game Farm. Two hundred and seventy-five wild turkey eggs were set.

"Eight thousand young pheasants hatched out, also one hundred and ninety young turkeys.

"There are on hand now six thousand five hundred young pheasants, five hundred and fifty old pheasants, eighty young turkeys and forty old ones; also nine hundred chickens, that were used for hatching the pheasant eggs; fifty mallard ducks, nine wild geese and twenty-five golden, silver, Amherst and Reeves pheasants.

"A nest of six minks killed sixty-six young turkeys, forty-three young pheasants and one hundred old pheasants before the minks were killed.

"The winged vermin this year have done considerable damage, and there have been killed the following: 42 hawks, 37 owls, 98 crows, 14 opossum, 6 raccoons, 6 mink, 960 rats and 40 cats.

"Two large buildings, formerly used for storage, were converted into chicken houses, as it was necessary to keep over a larger supply of hens so that they will be on hand when needed.

"We made the usual exhibit at the Trenton Fair."

## FRESH WATER FISH.

Unusual care was given to the distribution of fish. As is known the Board has made a partial survey of the streams of the State in respect to their volume of water, its temperature, forestration, natural food for fish, etc. Each warden was furnished with a list showing the name and location of stream and the number, size and species of fish to be planted. The planting was delayed a few weeks in the early spring because of the fact that the extreme amount of cold and snow during the winter rendered many roads impassable for our trucks.

The Board set aside \$3,000. for the continuation of the survey of streams.

The Boonton and Orange Reservoirs were netted for black bass, pickerel, perch and other fish for the purpose of stocking waters and obtaining a supply of large bass for breeders at the Hatchery. Wagraw Pond at Fairlawn was also netted.

By reason of the severe cold winter, which was the coldest experienced in this State for many years past, there was no netting for a supply of game and bait fish in the Delaware and Raritan Canal.

The Board has continued the extension of the bass ponds at the Hatchery. It is the experience of the Commission that there is a great demand from every part of the State for bass. In the past the raising of bass has been an extremely difficult matter, but we believe that with the results already obtained at the Hatchery we can supply annually a large number of bass for stocking. Bass fishing particularly appeals to the fishermen of the State and with the many suitable waters stocked with bass our State will be made attractive in this respect.

The weather was extremely cold at the opening of the trout season, and the fishermen met with little success at that time, but during May there was a great improvement and many good catches of trout were made. A few years ago Saddle River of Bergen county was practically the only stream in the county where trout were caught, and in small numbers, but the continual and systematic stocking of the streams in that county has shown very satisfactory results.

Black River in Hunterdon county is again showing improvement as the result of stocking, as are streams in other sections of the State.

Fishermen reported a great many undersized trout in the brooks, indicating good fishing for the following season.

Fishing reports from all sections of the State show that fresh water fishing has improved. During the first month of the fiscal year one warden had a record of 53 black bass caught in a lake in Cumberland county, many of the fish weighing six

pounds. Black bass, crappie and pickerel were caught in large numbers in the lakes in Burlington county.

Information has come to the Board that due to the stocking by the United States Government authorities, rock bass have thrived in several counties in South Jersey, which fish heretofore have not appeared in our waters, and the matter of fixing a season and size and bag limit on the same is before the Board for attention.

Under the supervision of the Board 2,857 carp, weighing 14,699 pounds, were removed from Carnegie Lake, the removal being made without expense to the Board.

A permit was issued to the Food Research Laboratory, Bureau of Chemistry, U. S. Department of Agriculture, to take shad with a net from the Delaware River and bay for the purpose of making a chemical study of food fishes with especial reference to a seasonal variation and composition.

#### LOBSTERS.

In June, the last month of the fiscal year, the Board commenced a campaign against violators of the law fixing the size of lobsters, and obtained the conviction of two defendants for having in possession baby lobsters. We continued the campaign in the new fiscal year and arrested many offenders. It is apparent that a warden is known in a locality where the violations are going on and in view of that fact detectives were employed.

It is recognized by both the State and Federal authorities that the baby lobster act is a most difficult one to enforce by reason of the fact that the catchers can secrete their retaining cars in the bays or other large bodies of water and may only be found by a small buoy or stake known to the person who anchored them. Under cover of night the lobsters can be removed to New York State or delivered to persons who had given orders for them and who come for them in autos or boats. It appears that many of the purchasers of these are summer residents along the shore who are in league with the fishermen in the illegal traffic. It must be noted that many of these baby lobsters are caught beyond the three mile limit, where the Board has no jurisdiction as to the catch, and the only way it can enforce the law as to size is to prosecute the person having them in possession. These people know the law and will only sell to persons whom they can trust.

During the past summer lobsters have been caught in great numbers off the northern coast of this State, and the few men engaged in the business have reaped a harvest. The lobsters are caught southeast of the Sandy Hook Light Ship and about

seven or eight miles from shore. One bank skiff, operated by two and sometimes three men, having 200 lobster pots, but taking the lobsters from one-half this number of pots each day, has caught on an average during the summer 500 pounds of lobsters, although catches of 800 or 900 pounds a day are not uncommon. Some of the men sell the lobsters to local dealers, while others take them direct to Fulton Market, New York, the price ranging from 20c to 36c a pound, the average price probably being about 26c or 27c.

Lobsters have been very scarce on our coast for a number of years, until a year or two ago, when a notable increase was shown, and the increase this year surpasses that of all other years. This increase might be due to the stocking of the Atlantic Ocean with lobsters by the Federal authorities about five years ago, which lobsters were planted in Cape May county, but as there are no persons engaged in the lobster business in that county there is no way of determining if there is any increase in that section. There are a few lobsters caught near the Delaware breakwater, but there seems to be no increase in that section. In fact, very few lobsters are caught in this State south of Manasquan. One probable cause of increase may be found in the fact that in 1913 the Board had the Legislature pass an act restricting the size of lobsters which might be taken. No lobster less than 4 1-8 inches, or any spawning lobster, can be taken under the present law.

#### STURGEON.

The sturgeon industry showed some improvement. The catch in the Delaware Bay was 100 and the average weight of the fish was 180 pounds each. The average price of the meat was 40c a pound, while the caviar brought \$3. per pound; the amount of roe in a sturgeon was about 70 pounds. The number of boats engaged in the sturgeon business was 35. The same boats were used for taking sturgeon as for catching shad, but the sturgeon net is of larger mesh and the twine is heavier.

#### MENHADEN.

In May thousands of dead menhaden were seen floating in Staten Island Sound or Kill von Kull near Perth Amboy, and also in the Raritan River at the head of Raritan Bay near South Amboy. It is believed by the fishermen that the death of the fish was caused by pollution by factories along the shore in that section. As our laws do not cover the pollution of salt waters the matter was referred to the State Board of Health.

In June quantities of menhaden were seen floating in the

Shrewsbury River in Monmouth county and also in the Delaware Bay. These two bodies of water are not directly polluted by any factories, and as no other fish excepting menhaden were affected it is possible that their death was caused by waste oil from vessels, the menhaden feeding nearer the surface than any other fish.

Some of the seaside municipalities are concerned in the amount of oil which has appeared on the waters of the Atlantic Ocean.

Dr. Royle S. Copeland, Health Commissioner of New York City, has been named chairman of a committee to formulate a plan to bring the situation as related to the municipalities to the attention of the Legislatures in New Jersey and New York, at the same time considering the matter of the dumping of garbage of New York near the coast line.

#### POUNDS.

Protector Stratton received from the U. S. Engineers' Department, Wilmington, Delaware, a verbal interpretation of the meaning of "coast line," which appears in our pound law. The coast line is understood by the Engineers of the U. S. Government as meaning the high water line.

Following is a summary of the pound fisheries' reports for the year ending December 31, 1919:

Approximate value of all pounds.....	\$751,016.20
Proceeds derived from sale of fish.....	1,478,841.62
Number of pounds of fish caught and disposed of.....	26,106,431
Licenses issued:	
Atlantic Ocean.....	114
Sandy Hook and Raritan Bays.....	40
	154
Number of pounds operated.....	149
Number of men employed.....	672

The Board had some trouble with pound net licensees who did not correctly locate their pounds in accordance with their applications and the locations set forth on the license. No legal action was taken at the time, but the pound owners were informed that in case of any future wrong location of the pounds the Commission would see that the law was carried out. Two pounds were so far away from their proper location that they were ordered moved to the licensed location.

There is a general misapprehension among the hand-line fishermen as to the location of the pounds. The Federal authorities control the coast as to navigation, and they designate certain zones where pounds can be located, and these zones give

protection to the inlets. Every pound location granted by this Board is designated on a map furnished by the Secretary of War, showing the prohibited areas.

#### "NEW JERSEY" AND "ADELAIDE."

The boat "New Jersey" went into service in the early spring to patrol the Delaware River and Bay to see that the fishing laws are observed, and to cruise the Atlantic Ocean, Sandy Hook and Raritan Bays, to supervise the fish pound and menhaden industries and to see that no food fish were taken in the menhaden nets.

The boat "Adelaide," together with a motor boat tender, was sent to Mullica River on September 17th with a crew of wardens to patrol Wading River, Bass River and the head of Tuckerton Bay, looking after persons said to be illegally hunting, but no violators were apprehended. The boat remained in that section until October 16th.

#### SHAD.

Protector James M. Stratton collected statistics respecting the shad industry in the Delaware River and Bay, which show a marked decrease. A scarcity of labor and the advance in the cost of nets, together with the gradual falling off in the catches for the past three years, were no doubt the causes of the small number of men engaged in the business.

The decrease of shad since 1915 is further shown by information obtained from the agents at Greenwich Pier, Cumberland county, from which point shad are shipped to the New York market. During 1915 there were shipped 2,648 boxes of shad, whereas during the year 1920 there were only 401 boxes shipped.

The price of shad was from 35c to 40c per pound, and a shad on the average netted a fisherman \$2.

The following is a tabulation of the shad statistics:

	Boats and Nets		Men Engaged		No. of Shad Caught		Value of Shad Caught		Value of Boats and Nets	
	1917	1920	1917	1920	1917	1920	1917	1920	1917	1920
Cumberland	50	55	100	91	60,000	14,141	\$ 51,000.00	\$27,665.00	\$ 35,000.	\$85,780.
Salem	108	74	216	148	84,000	20,150	71,400.00	40,300.00	64,800.	87,000.
Gloucester	26	20	52	40	6,000	2,500	5,400.00	5,000.00	8,450.	6,000.
Mercer	18	15	38	34	3,800	2,993	4,750.00	7,482.50	2,625.	1,500.
Camden	28	6	56	12	400	100	400.00	250.00	3,220.	900.
Hunterdon	5	4	25	22	970	1,200	1,067.00	2,400.00	500.	1,500.
Burlington	46	26	92	52	6,748	2,640	6,073.20	5,280.00	5,175.	2,700.
Totals	281	200	579	399	161,918	43,724	\$140,090.20	\$88,377.50	\$119,770.	\$85,380.
1917	281		579		161,918		\$140,090.20		\$119,770	
1920	200		399		43,724		88,377.50		85,380	
Decrease	81		180		118,194		\$51,712.70		\$34,390	

J. E. Berkhouse, Superintendent of the Pennsylvania Fish Hatchery located at Torresdale, assisted by our wardens, collected from Maurice River in Cumberland county 1,000,000 fertile shad eggs. The Pennsylvania authorities also collected from the Delaware River 800,000 fertile shad eggs. There were 1,000,000 shad fry planted in the upper Delaware River at Belvidere and 800,000 in the mouth of the Rancocas Creek in Burlington county.

#### GAME STOCKING AND HUNTING.

We made strong efforts to purchase game for stocking, but were unable to succeed. As New Jersey has closed the door to the removal of its game birds, so have other States. It was thought that as there was a demand in some sections of the State for cotton tail rabbits that these could at least be secured, but it transpired that there had been extreme droughts in the West at former places of purchase, and the trappers were unable to get any. We sought out new territory in the South, and offered liberal prices, but were unsuccessful.

There being an excess of rabbits at Duke's Park, Somerset county, the Board was given permission to conduct drives for them. On various cloudy days 155 were caught in nets and distributed.

The Burlington County Game Protective Association supplemented the State's stocking of pheasants in the Japanese beetle infested area in Burlington county by putting out at their own expense 20 male pheasants.

Without a doubt the Fall of 1919 was a banner year for hunting in New Jersey, as shown by the number of licenses issued and the bags secured. In South Jersey it was not an uncommon thing for a hunter to obtain his bag limit of rabbits, quail and ringneck pheasants. In North Jersey quail were scarce, but there appeared to be a plenty of rabbits, ringneck pheasants and native grouse. Woodcock were found in North Jersey in unusually large numbers and many a hunter obtained his bag limit. Of course, this condition did not continue throughout the entire hunting season.

It is gratifying to note that numerous tracks of rabbits, quail and pheasants were noticed by our wardens and deer hunters in the snow after the close of the season, which indicate that there were enough left to provide for a goodly supply for the next year.

There was an increase of black ducks in the fresh water streams, particularly Atlantic county, and there is no doubt but that they breed in that section.

## PROTECTING GAME.

Excellent results were obtained in feeding birds during the unusually severe winter, and more than ever did the farmers and sportsmen cooperate. In Salem county from the 17th to the 26th of January 40 coveys of quail, with 6 to 12 in each covey, with a general average of 10, making a total of 400 birds, were fed, and in Monmouth county on the 25th, 26th and 27th, 41 coveys were fed.

Reports from 18 counties show that 758 coveys of quail, consisting of 7,474 birds; 15 coveys of Hungarian partridge, consisting of 104 birds, and 1,384 ringneck pheasants were located and cared for during the winter months. This makes a total of 8,962 birds fed.

A table showing the locations where birds were fed by farmers and other persons follows:

COUNTY	QUAIL		HUNGARIAN PARTRIDGE		RING-NECK PHEASANT	
	Coveys	Birds	Coveys	Birds	Coveys	Birds
Atlantic	98	1,197				
Bergen	6	41				54
Burlington	34	442				
Camden	40	480				42
Cape May			Condition did not require feeding.			
Cumberland	140	1,396				289
Essex	2	18				78
Gloucester	40	200				
Hudson						12
Hunterdon	2	16	4	28		112
Mercer			No warden, no report.			
Middlesex	32	330				54
Monmouth	189	1,512				
Morris	5	44				197
Ocean	84	984				34
Passaic			Farmers generally reported as feeding game.			
Salem	83	789	6	38		187
Somerset			3	16		124
Sussex	2	22	2	22		46
Union	1	3				55
Warren						100
	758	7,474	15	104		1,384

Deer suffered in some sections of the State by being chased and killed by dogs, as the snow at times was in such condition that the deer would break through, while the dog could travel on top of the snow.

## DEER.

During the five days of the open season for killing deer there were 522 bucks killed and reported, some of the deer weighing

90 pounds and others 225, but the whole number would average 150 pounds each, making a total of 78,300 pounds, and deducting one-third for heads, feet, hides and entrails there would be more than 50,000 pounds killed and used for food purposes. It is estimated that the value of the deer killed approached \$50,000.

In addition to the above there were five does and three bucks found dead in the woods in the following counties: 1 buck and 1 doe in Warren, 2 does in Burlington, 1 buck in Mercer, 1 buck in Somerset, 1 doe in Ocean and 1 doe in Cumberland. The killing of the does is being investigated by the wardens with the view of prosecuting the offenders.

The number of bucks killed in each county is as follows:

Atlantic	99
Bergen	20
Burlington	144
Camden	5
Cape May	10
Cumberland	46
Gloucester	2
Mercer	14
Monmouth	1
Morris	20
Ocean	76
Passaic	9
Sussex	23
Warren	53
	522

There were no accidents reported during the deer season, which is no doubt due to the provision of the law which confines the killing only to deer having horns visible above the hair, and also that the season opened much later than usual when the leaves being off the trees and bushes enabled the hunter to see more clearly and to a greater distance in the woods.

Owing to the rapid increase in deer the Legislature extended the deer season an additional five days, thus making the open season from December 16th to December 25th, inclusive.

## DAMAGE BY DEER AND RABBITS.

With the increase of deer and rabbits in the State, reports multiplied as to damage done by them to farms and gardens. In the case of deer the situation was emphasized by damage done in the early spring, before the deep woods supplied them with tender plants. The present laws were amended so as to provide that deer may be killed at any time on lands under cultivation and defining such lands as lands on which cultivated grass was sown or on which growing crops had been

planted, and authorizing the Board to issue permits to persons to shoot or trap rabbits which destroyed fruit, vegetables, etc., upon filing a certificate that rabbits had destroyed property owned or leased by the person applying for a permit.

Before the passage of the law opening the door to prevent damage by rabbits, the Board gave great publicity to the United States Government Bulletin No. 702, on methods to prevent damage to trees and farm crops by rabbits. Investigation of several complaints of damage done by rabbits revealed the fact that the damage had been done by mice.

#### PHEASANTS VS. JAPANESE BEETLE.

The Board issued a permit to collect birds, their nests and eggs for strictly scientific purposes to the U. S. Department of Agriculture, Bureau of Biological Survey, for the purpose of the Bureau of Entomology, which is investigating the relation of birds to the Japanese beetle which has established itself in the vicinity of Riverton.

As is now well known the English pheasant feeds on the Japanese beetle, and with the approval of our Board the Legislature passed an act making it unlawful for a period of five years for any person to capture, kill, injure or destroy any pheasant, commonly known as the ringneck pheasant, within the limits of Delran, Chester and Cinnaminson townships, in the county of Burlington, and the township of Pensauken, in Camden county, and also within the territory lying adjacent to the said townships and extending not more than one mile outward from the borders of the said townships, under a penalty of twenty dollars for each ringneck pheasant captured, killed, injured or destroyed.

In connection with the use of pheasants for the destruction of the Japanese beetle, and the value of the pheasant to destroy destructive insects, we have been informed by John J. Davis, agent in charge of Riverton Entomological Laboratory, Riverton, N. J., that in a certain district of Japan where formerly pheasants were numerous, but have now entirely disappeared, looper caterpillars have occurred in mulberry plantations and have done considerable damage, and there seems to be conclusive information that the pheasants were formerly responsible for holding these caterpillars in check.

#### BANDING BIRDS.

The U. S. Bureau of Biological Survey has taken over the work of banding birds which was heretofore carried on by the American Banding Association. This work included the trap-

ping of birds and the placing of identification bands on their legs, after which the birds are released. Subsequent discovery of these banded birds is reported by the finders to those in charge of the work. The object of banding is to determine the exact routes followed by migratory birds, their speed of travel, and probable causes of unusual movements by such birds, as well as many other questions of interest to naturalists or the public. The Board is cooperating in this work.

#### FOXES.

To meet the menace of the increase in foxes, the Legislature passed a bill allowing possession of foxes only on permit of the Board. The State is raising game for our woods and fields and it is very discouraging to have foxes, which are so prolific, take their daily toll. The bounty law seems to be insufficient to keep down these destroyers. It was considered that the keeping of foxes which may escape was almost a crime under existing conditions, and it was believed that there are now enough foxes running in the State to give sport to fox hunters. As noted elsewhere there were 2,666 permits issued for fox hunting.

#### MISCELLANEOUS.

The Board had an exhibit of fish and game at the Inter-State Fair, Trenton, and it was a great success, being visited by a large number of persons at all times, and much favorable comment was heard.

The Board revised its blanks for applications for fish and game in this State. The fresh waters are all privately owned and the Board seeks only to stock such waters to which the public have access. Necessarily game must be put out on privately owned land, but again it is the endeavor of the Board to place such game on land from which the public are not excluded.

At different times fish hawks preyed extensively at the Fish Hatchery. Such a condition throughout the country was recognized by the Federal authorities and permits have been issued permitting the trapping or killing of certain birds found to be injurious to fish life on grounds and waters of fish hatcheries in the United States and Alaska.

During the year a Garford truck was purchased for fish distribution, and the Board obtained through the State House Commission two International trucks, which were donated by the Federal Government from its war supply.

The Board, with the assistance of the State Board of Health, has done all in its power to prevent pollution of our waters. It

investigated a report that crabs in Barnegat Bay had become attacked by some epidemic, but the investigation failed to substantiate the report.

In February there were severe storms which caused high tides in our salt waters, and thousands of fish, consisting of pickerel, white perch and some striped bass, were destroyed in the Mullica River as the result of being washed out on the flats and meadows. Along the Atlantic Ocean between Sea Bright and Long Branch thousands of pounds of blackfish, many weighing four pounds each, were washed ashore, but they were not destroyed, as they were gathered while alive and sold for food purposes.

## SUPPLEMENT TO 1918-1919 REPORT

To Conform With Requisition System.

### INCOME

Balance as per Statement in last printed Report..... \$67,733.94

### EXPENDITURES

Chapter 290, Laws of 1919, paid after June 30, 1919, on	
Requisitions for 1918-1919.....	\$5,687.86
To Balance.....	62,046.08
	<hr/>
	\$67,733.94

## FINANCIAL STATEMENT

From July 1, 1919, to June 30, 1920

## INCOME.

Balance July 1, 1919 .....			\$62,046.08
Receipts:			
Hunters' and Anglers' License Fund, Chapter 152, Laws 1914. ....	\$147,925.72		
Chapter 41, Laws 1908:			
Menhaden Licenses .....	\$6,950.00		
Pound Licenses .....	6,770.00		
Sundries .....	1,284.63		
Sales, etc. ....	457.82		
Breeders' Licenses .....	515.00	15,977.45	
Chapter 247, Laws 1911, Fines....	15,926.15	\$179,829.32	\$241,875.40

## EXPENDITURES.

Chapter 261, Laws 1919 .....	\$150,545.44		
To Balance .....	* 91,329.96	\$241,875.40	
*Cash balance subject to outstanding requisitions for year ending June 30, 1920:			
Second Installment of Bonus....	\$6,377.45		
Other Requisitions .....	7,733.11	\$14,110.56	

## FISH AND GAME LEGISLATION IN 1920.

Chapter 79, Assembly Bill # 27—Prohibits the use of otter trawls or beam trawls.

Chapter 80, Assembly Bill # 44—Authorizes Civil Service Commission to fix salaries of Fish and Game Wardens and other employees in classified Civil Service.

Chapter 85, Assembly Bill # 132—Authorizes Fish and Game Commission to lease lands on which to raise game birds and animals.

Chapter 196, Assembly Bill # 224—Prohibits any person from having a live fox in possession except by permission of the Fish and Game Commission, and repeals the section of the act which permitted the liberation of foxes caught in this State.

Chapter 217, Assembly Bill # 281—Makes closed season for five years on ringneck pheasants in certain townships in Burlington and Camden counties infested by the Japanese beetle.

Chapter 208, Assembly Bill # 464—Makes open season for killing deer from December 16th to 25th, inclusive, and permits owners or lessees of lands under cultivation to kill deer on said lands at any time and defines land under cultivation as lands on which cultivated grass is sown or where planted crops are growing.

Chapter 204, Assembly Bill # 516—Authorizes Fish and Game Commission to issue permits to persons to shoot or trap rabbits, after receiving affidavit that crops, trees, etc., were destroyed.

Chapter 31, Senate Bill # 31—Amends the general fish and game act to make State laws conform to Federal regulations and makes a general codification.

Chapter 37, Senate Bill # 44—Prohibits the removal of skin or feathers from any bird or animal in the woods or fields for the purpose of concealing identity or sex.

Chapter 275, Senate Bill # 284—Fixes closed season for taking eels in certain townships in Cape May County, August 1st to December 1st.

Chapter 157, Senate Bill # 285—Provides that non-residents holding stock in fish pounds shall sell the same to residents.

