

# THE SURVEY

ISSUED MONTHLY FOR THE PERSONNEL OF THE BUREAU OF BIOLOGICAL SURVEY, U. S. DEPARTMENT OF AGRICULTURE  
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No. 1

## GENERAL NOTES

The Function of a Bureau House Organ.—THE SURVEY is one of 27 house organs issued by the several bureaus and offices of this Department in Washington. Director of Information, M. S. Eisenhower has recently made a study of these and as a result has reminded the bureaus of certain rules to be observed in their preparation. Some, he finds, have used considerable space for nonofficial material, and though these have been somewhat more readable than others he points out that the use of nonofficial material is an infraction of the regulations.

In THE SURVEY'S history of 12 years (it is now entering upon its 13th year), the policy has been to acquaint our field forces with activities of the Washington offices and to keep all our people informed regarding undertakings and accomplishments in our various field services. An official house organ, issued at public expense, we have recognized, is not the place for purely personal items, such as vacation trips of staff members, notes of officials participating in sports, notices of births, and the inclusion of jokes and other material not of an official character; and though we have occasionally included items of interest to the personnel but not strictly "necessary for the transaction of the public business," such deviations from the rule have been rare.

THE SURVEY is keeping the personnel informed of official actions, is promoting an understanding of Survey objectives, and is a clearing house for bureau information. That an official house organ can be successful along such lines is attested by the fact that THE SURVEY is appreciated by the members of the bureau. This is learned when field men visit the Washington office or when some take the trouble to write the Chief definitely stating in what particulars THE SURVEY has appealed to them, or offering constructive suggestions for increasing its effectiveness. Criticism and suggestions for the improvement of THE SURVEY are always welcome. That our house organ is of interest even to individuals outside our official family is frequently demonstrated when we are obliged to write cooperators and others that we can not increase the size of our mailing lists to comply with their requests.

We have thus extended our remarks to make it clear to the few who possibly would like to have THE SURVEY more popular, that "making a publication more interesting is not sufficient reason for using material that the law and regulations clearly forbid." We are confident that THE SURVEY has been filling a definite need. We are encouraged to continue it along the same lines so long as this need is manifest, realizing that we have the cooperation of the whole personnel—both in Washington and in the varied field services.

It is the interest of these men and women in the work of the Biological Survey that makes the house organ interesting to them. And this very interest, we believe, also creates a more gratifying esprit de corps than could be engendered by any official house organ specially issued for the purpose.

Addresses Livestock Association.—Mr. Henderson left Washington on January 25 for San Antonio, Tex., where he attended the annual meeting of the American National

Livestock Association on January 27 and 28 and delivered an address on "The Co-operative Predatory-Animal and Rodent Control Work of the Biological Survey." Before returning to Washington he will visit a number of field offices of the bureau in the West.

Bureau's Budget for 1933 Cut.—The agricultural appropriation bill for the fiscal year 1933 was passed by the House of Representatives on January 28, and so far as the Biological Survey is concerned it is exactly as reported on January 18. It embodies substantial reductions in the appropriations for this bureau as well as for other branches of the department. The total cut from the Survey's appropriations for the fiscal year 1932 is \$472,993, leaving \$1,756,177 carried in the bill for 1933. The appropriation items as passed by the House are shown in the following table, which shows also the appropriations for 1932 and the increase or decrease in the 1933 items as compared with those for 1932:

Appropriation	For 1932	For 1933	Increase (+) or Decrease (-)
Administration.....	\$83,280	\$82,935	-\$345
Maintenance of mammal and bird reservations.....	101,830	82,313	-19,517
Food habits of birds and animals.....	107,660	104,810	-2,850
Control of predatory animals and injurious rodents.....	590,480	573,780	-16,700
Production of fur-bearing animals.....	64,360	62,455	-1,905
Biological investigations.....	*128,315	102,500	-25,815
Protection of migratory birds.....	220,120	214,240	-5,880
Enforcement of Alaska game law.....	**110,445	103,566	-6,879
Upper Mississippi River Wild Life Refuge.....	197,780	79,478	-118,302
Bear River Migratory Bird Refuge.....	19,900	32,100	+12,200
Migratory bird conservation refuges.....	405,000	318,000	-87,000
Cheyenne Bottoms Migratory Bird Refuge.....	200,000	-----	-200,000
Total.....	\$2,229,170	\$1,756,177	-\$472,993

The items that have been cut the most are those having to do with the land-acquisition program, which will have to be largely curtailed until subsequent years. These cuts include the nonrecurring appropriation of \$200,000 for the Cheyenne Bottoms Migratory Bird Refuge and account for \$398,967 of the \$472,993 reduction, leaving \$74,026 as the reduction in all other items. Since there are nonrecurring items of

\*Includes \$45,205 for reindeer, musk ox, and mountain sheep investigations in Alaska, as funds for these activities are combined with "Biological Investigations" for 1933.

\*\*Includes only funds for the enforcement of the Alaska game law, other items formerly combined with this item being cared for as explained in the previous footnote.

\$16,500 under the subappropriation "Maintenance of Mammal and Bird Reservations," the net decrease aside from the items involved in the acquisition of land, amounts to \$57,526. The bill is now subject to modification in the Senate.

"Florida Bird Life," by Arthur H. Howell, of the Division of Biological Investigations, was published on January 11 by the Florida Department of Game and Fresh Water Fish in cooperation with the Biological Survey, through the financial assistance of Mrs. Marcia Brady Tucker, of New York City. The book, a royal octavo volume of 579 pages with a preface by Paul G. Redington, Chief of the Survey, contains a fully annotated list of the 423 species and subspecies of birds reported from the State (with color illustrations of 167 of the 362 species), a history of Florida ornithology, chapters on the physiographic regions and the life zones of the State, and a history of bird protection in Florida contributed by R. W. Williams, of the Division of Game and Bird Conservation. It includes a bibliography of over a thousand titles, a list of biographical references to contributors to Florida ornithology, and an index. There are 130 illustrations in the book, 37 of which are color plates reproduced from original paintings by Francis L. Jaques, of the American Museum of Natural History. The other illustrations are a map in colors of the life zones of the State, 72 outline maps of the ranges of breeding birds of Florida, 18 plates with halftone reproductions of photographs, and 2 showing flight silhouettes. The volume is handsomely and durably bound in a dark green special fabrikoid. It is being sold at a non-profit price, \$6.00, by the Florida Department of Game and Fresh Water Fish, and to the book trade by the publishers' agents, Coward-McCann (Inc.), of New York. The work was printed by J. J. Little & Ives Co., of New York, with the exception of the color plates, which were printed by Judd and Detweiler, of Washington, D. C., from cuts made by the National Engraving Co., also of Washington.

Mr. Howell has been on the staff of the Biological Survey for more than 35 years. It was in connection with his official work on life zone investigations in Florida and the distribution of the birds and other forms of Florida wild life that he gathered the original data on which "Florida Bird Life" is based. In conducting these investigations Mr. Howell spent parts of seven years from 1918 to 1929 in Florida. The author also makes use of the records of other investigators, notes of voluntary collaborators, and the incomparable series of records in the Biological Survey files. As evidenced in the bibliography, the extensive literature on Florida birds has been thoroughly searched for additional information.

Conservation Act First to Pass Senate.--S. 263, an act to promote the conservation of wild life, fish, and game, was the first measure passed by the Senate after the convening of the Seventy-third Congress. The bill was passed on December 17, 1931, and has been referred to the House of Representatives, where it is now pending before the committee on agriculture.

Attend Meeting of Science Association.--The meeting of the American Association for the Advancement of Science held at New Orleans December 28, 1931, to January 2, 1932, was attended by Mr. Redington and Dr. W. P. Taylor. Mr. Redington delivered the presidential address at the meeting of the Society of American Foresters, an organization affiliated with the Association. After having served for three years

as president of the Foresters, Mr. Redington was succeeded at this meeting by C. M. Granger, of the Forest Service. Mr. Redington, in accordance with the Society's constitution, will remain a member of the council for two years. At the session of the Ecological Society held on December 31 in connection with the Association's meeting, the following papers by members of the Biological Survey were presented: A Test to Determine the Effects of Rodents and Birds on Yellow Pine Seeds and Seedlings at Fort Valley, near Flagstaff, Ariz., by Walter P. Taylor and D. M. Gorsuch; The Rodent Population of a Three-acre Area at the Climatic Station, Santa Rita Experimental Range, near Tucson, Ariz., by Walter P. Taylor and Charles T. Vorhies; and Breeding of Jack Rabbits in Relation to Seasonal Precipitation in Southern Arizona, by Charles T. Vorhies and Walter P. Taylor. By request of the president of the society, Doctor Taylor conducted a symposium on Ecological Aspects of Wild Life Management, the first discussion of its kind, so far as known, to be given at any meeting of the Society. Mr. Redington and Doctor Taylor took part in the meetings of the society's committee on preservation of natural areas. They pointed out the bird and game refuges of the Biological Survey as means of preserving a wide variety of biotic communities in their natural condition, and Mr. Redington assured the committee of the Survey's fullest cooperation.

Report Community Chest Subscriptions.--Biological Survey employees in Washington have subscribed \$2,300 to the 1932 Community Chest fund, according to the records of Mrs. B. E. Muth, who obtained the pledges in this bureau. The sum represents approximately 88 per cent of the bureau's allotment based on three days' pay for each employee. Assistant Secretary R. W. Dunlap, who is in charge of the department drive, has advised Mrs. Muth that employees throughout the department had subscribed \$72,776.19 before January 2, or 85 per cent of the allotment. In commenting on the department's contribution, Mr. Dunlap said that it was very good, and he commended Mrs. Muth for her cooperation in raising the fund in this bureau.

Official publications of the bureau received in December are:

- "Peafowl and Their Care," by W. L. McAtee. Miscellaneous Publication 127, 4 pp., illus. Issued November, 1931; received December 19.
- "Usefulness of Birds on the Farm," by W. L. McAtee. Farmers' Bulletin 1682, 13 pp., illus. Issued December, 1931; received December 31.

Cooperative Publication.--The following publication of the Florida Department of Game and Fresh Water Fish in cooperation with the Biological Survey, reviewed on page 3, was issued in January:

- "Florida Bird Life," by Arthur H. Howell, with a chapter on "History of Bird Protection in Florida," by R. W. Williams. xxiv + 579 pp., 58 plates (38 in color; 37 by Francis L. Jaques, of American Museum of Natural History) and 72 text figures (maps,. Price \$6.00.

A radio talk on the beaver was released by the department in the "Uncle Sam's Naturalists" series on January 29.

## BIOLOGICAL INVESTIGATIONS

"Birds of New Mexico" Continues Popular.--Information was received early in December, from the New Mexico Department of Game and Fish, through Mrs. Florence Merriam Bailey, author of the "Birds of New Mexico," which was published by the New Mexico Department in cooperation with the Biological Survey in 1928, that sales of the book had already made it possible to reimburse Mr. and Mrs. George D. McCreary, the guarantors of publication, to the extent of \$10,000 and that \$500 more would be sent them shortly. The New Mexico officials put on a special sales campaign just before Christmas with a view to increasing the distribution of the book, of which about 1,600 copies are still available, selling at \$5 for the buckram edition and at \$10 for the deluxe autographed edition. It is gratifying that the guarantors are thus being repaid the fund they so generously advanced, and it is hoped that before long they may be reimbursed in full.

Addresses Boston Meeting.--F. C. Lincoln attended the joint meeting of the Northeastern Bird Banding Association and the Federation of Bird Clubs of New England, held in the Statler Hotel, Boston, Mass., on January 15. He delivered an address on "The Present Waterfowl Crisis" and reviewed the work of the bureau in its efforts to obtain as much reliable information as possible concerning these birds. Following the meeting Mr. Lincoln spent two days at the O. L. Austin Ornithological Research Station, at North Eastham, Cape Cod, Mass., where important studies are in progress.

Aids in Beaver Introduction.--On the last day of December Vernon Bailey made a trip into central Pennsylvania to capture a male beaver for the colony of three females recently planted in western North Carolina. It is difficult to determine the sex of these animals, and after two supposed males had proved to be females it was considered important to make sure of the sex of the next prospective mate before the beginning of the breeding season. A healthy 2-year-old male was selected and shipped to Thomas D. Burleigh, in charge of the bureau's forest wild life studies at Ashville, N. C., where it arrived safely on the first of the year and was released in the pond with the three females. Beavers are polygamous. The region can be restocked from this little colony, if the animals can be protected on the game refuges and national forests, where they were once common. These four beavers are the descendants of stock imported from Ontario, Canada, to Pennsylvania. Fine dark-colored animals, they are of a strain that should be much more valuable for fur than was the race that once inhabited the Carolinas, and is now apparently extinct. If they do well during the next ten years, they should add a valuable fur supply to that region, especially to the rough and mountainous country the characteristics of which demand that it be devoted mainly to forests and game.

Report on Experimental Plots.--A report on an experimental test of the effects of birds and mammals on reproduction of western yellow pine under certain conditions in northern Arizona has been made by Dr. Walter P. Taylor and D. M. Gorsuch in a paper to be submitted for outside publication.

Visits Washington Office.--Doctor Taylor, after the close of the sessions of the American Association for the Advancement of Science, held in New Orleans,

La., late in December, spent two weeks in Washington, and was able to advance his work along several lines by consulting the bureau's files. During his stay at headquarters he reviewed and amended his manuscript on the habits and economic relations of the porcupine in the Southwest, and brought up to date the manuscript on the birds of Washington, prepared several years ago in collaboration with Dr. W. T. Shaw.

Elected Vice-President of Washington Academy.--At the annual meeting of the Washington Academy of Sciences held on January 12, Dr. H. H. T. Jackson, senior biologist of this division, was elected a vice president to represent the Biological Society of Washington. Doctor Jackson also becomes ex officio a member of the Academy's board of managers.

#### FOOD HABITS RESEARCH

Studies Wild-Fowl Conditions.--F. M. Uhler, who has been detailed to assist in the general survey of wild-fowl conditions, spent the period from December 26 to January 6 studying the birds on the coast of New Jersey and of Long Island, N. Y.

Inspects Proposed Sites for Quail Management Demonstrations.--Wallace B. Grange left Washington on January 8 for Memphis, Tenn., to accompany an official of the American Game Protective Association in inspecting sites proposed for quail management demonstrations in Tennessee, Arkansas, and other southern States.

Detailed to Washington Office.--J. Paul Miller came to Washington on January 6 for laboratory work on material that he had collected during the past year.

#### FUR RESOURCES

Addresses Meeting of Jewish Agricultural Society.--At the request of the Jewish Agricultural Society (Inc.), of New York City, an organization stimulating agricultural enterprises among Jews and encouraging them to return to the soil, Mr. Ashbrook addressed a gathering of about 300 attending the society's meeting at the Labor Temple, New York City, on December 28. He spoke on fur farming and showed the department's motion picture "The Fur Industry of the United States."

Talks to Query Club on Furs and Fur Farming.--At the invitation of Arthur H. Howell, Mr. Ashbrook spoke at the January 7 meeting of the Query Club of Washington on fur farming and the uses made of the more common North American furs. He illustrated his talk with pelts of various species.

Temporarily Detailed to the University of Minnesota.--Dr. Karl B. Hanson, director of the Fur-Animal Experiment Station, at Saratoga Springs, N. Y., left on January 8 for about a month's stay at the University of Minnesota, at Minneapolis, where he will conduct histological studies of specimens he has collected on fox ranches during the past year.

Acquire More Fur Animals at Experiment Station.--One male and two female stone martens from the Carpathian Mountains in Czechoslovakia were recently purchased from the Zoological Gardens, of Philadelphia, Pa., for use at the Fur-Animal Experiment Station, in conducting experiments to determine breeding and gestation

periods. One male fisher has also been obtained from a ranch in New York State. These animals all arrived at the station in excellent condition. A pair of interior Alaska red foxes captured in the wild in the Territory, and three Alaska silver fox pups from a ranch in the United States, have been purchased for the experimental work being carried on at the station in the cross-breeding of silver and red foxes.

Pelting Season Closes.--The last of the foxes at the Fur-Animal Experiment Station were pelted during the latter part of January. During the season a total of 23 fox, 6 mink, and 4 marten pelts were taken at the experiment station.

Provide for Sunday Visitors at Rabbit Station.--At the Rabbit Experiment Station, Fontana, Calif., an additional employee is now on duty on Sundays for the sole purpose of taking care of visitors. The arrangement was necessitated by the large increase in the number taking advantage of the fact that the station is open from 1 to 4 p.m. on Sundays. Employees of the station voluntarily offered their time to provide the extra service. The employee on duty keeps a list of the pertinent questions asked by visitors, for use in preparing publications.

Placards Furnish Data on Work in Progress.--To acquaint the public more thoroughly with the work that the rabbit station is doing, appropriate signs and placards describing the equipment and the type of experimental work in progress have been placed in the various buildings and units.

Public Much Interested in Rabbit Experiments.--The experiments now in progress at the Rabbit Experiment Station, especially those carried on with Dr. S. W. Bellamy, in cooperation with the University of California, in the cross-breeding of utility and Castor-rex rabbits have attracted much attention. A survey of the first year's work on several of the experiments, recently made, indicates gratifying progress in increasing production and in eliminating to some extent the heavy mortality that has been experienced in the past. These experiments have demonstrated the need for more detailed consideration of certain management problems, especially those relating to the prevention of mortality among the young.

Attends Conference.--John W. Meyer, director of the Rabbit Experiment Station, and Allen Suitor attended the Southern California Rabbit Conference, at Santa Ana, on November 30. An expression of the conference indicated that there is a greater interest in the work of the station than has been shown at any previous time.

#### DISEASE INVESTIGATIONS

Addresses Veterinarians.--On January 6 and 7 Doctor Shillinger attended the Pennsylvania State Conference of Veterinarians held at the Veterinary College of the University of Pennsylvania in Philadelphia, and on the 6th he spoke to the conference. A keen interest was manifested in the studies being made by the bureau on diseases of wild life. During the present season four prominent veterinary associations have requested as a feature on their programs a discussion by employees of the bureau on wild-life diseases.

Lead Poisoning in Waterfowl.--An unusual number of reports of lead poisoning in waterfowl have been received by the bureau recently, from places in the lake region of the Central States and from the eastern coastal waters. Swans from three different points, in Virginia and North Carolina, have been brought to this office for investigation. Forty-seven lead shots ranging from No. 8 to BB in size were taken from the gizzard of one swan.

Minnesota Disease Investigations.--By an arrangement with the State Conservation Department and the University of Minnesota through Dr. R. G. Green, a co-operator of this bureau, an enlarged and extensive program for the study of wild-life diseases in Minnesota has been organized to continue investigations that have been conducted there during the past several years. It is planned to devote special study to those diseases that may occur in cycles.

#### PREDATORY-ANIMAL AND RODENT CONTROL

Recent Bulletin Describes California Ground-Squirrel Campaigns.--A recent publication of the Department of Agriculture, of the State of California, entitled, "The California Ground Squirrel Control Program," written by Eugene S. Kellogg, describes the rodent-control program in that State. A summary of the conclusions presented in this bulletin indicates that ground-squirrel control in California is necessary, that it is carefully supervised by legally constituted officers, and that these officials are quick to adopt improved methods and to set up all necessary safeguards. Thallium baits are not exposed promiscuously, the article says, and the handling of the material has been restricted and supervised to far greater extent than has that of any other pest-control poison. Mr. Kellogg states in his "Conclusions," that: "Wild life is admittedly destroyed by such factors as hunting, trapping, disease, automobiles on highways, unfavorable climatic and food conditions, predatory enemies and various other elements. It is a primary tenet of civilization that it is man's right to protect his life and health against disease and to protect his property against loss or pest damage. It sometimes happens that in his endeavor to do this an occasional unavoidable loss to wild life occurs. There is, however, nothing to indicate that this accidental element encountered in necessary pest control operations approaches in extent any of the above factors."

Former Leader Indicted.--As the result of an investigation initiated by the bureau, Dr. Glenn R. Bach, former leader of predatory-animal control in the State of Washington, was arrested in Seattle, early in January, on an indictment returned by the Federal grand jury. Doctor Bach, whose resignation from the Biological Survey was accepted with prejudice on March 15, 1931, is charged with defalcations in his accounts of approximately \$6,000. His trial was set for January 23.

Appointment.--Miss Velma V. Kins, a stenographer in the Solicitor's Office, Upper Mississippi River Wild Life and Fish Refuge, Winona, Minn., was transferred to the Washington office of this division, effective, January 6.



Conduct Antirat Campaigns in New England.--Leader E. M. Mills of the New England district has been actively engaged in conducting antirat campaigns. On October 30, 1931, there was held in Massachusetts a state-wide rat campaign that was probably the largest ever conducted in the United States in which red squill baits were used. Approximately 10,000 people cooperated, and more than 11,000 packages of ready-prepared canned baits were exposed. During the second quarter of the present fiscal year, Mr. Mills also assisted in conducting county-wide rat campaigns in other States in the New England district. These have afforded an excellent opportunity to study the merits of red-squill canned baits. During 10 county-wide rat campaigns more than 1,500 cooperators reported that the canned baits were fully as satisfactory as the fresh baits formerly prepared during each campaign. During the quarter, the canning factory at Barnstable, Mass., prepared more than 93,000 cans of ready-mixed rat baits, which were distributed to the cooperators conducting the county-wide campaigns.

Arizona Hunter Kills Large Mountain Lion.--Near Prescott, Ariz., Hunter Frank Colcord in December killed a mountain lion that measured 10 feet from tip of nose to tip of tail, and was estimated to weigh 200 pounds. This mountain lion was reported to have killed many two-year old steers and grown horses within a circuit of approximately 100 miles of Prescott. The killer was easily identified by the clawmarks, as a toe was missing from the left front foot. This animal was very old and had been chased so often that it refused to tree, but it was shot while running ahead of the dogs.

Hawks Follow Prairie-Dog Control Crew.--For about two months a flock of sixteen young and adult ferruginous rough-legged hawks followed a crew that was poisoning prairie dogs in the Fly Creek Basin, Montana, according to a report submitted by Leader O. E. Stepl. At times the hawks were widely scattered over the baited area, and again they congregated in a flock. Although the birds lived largely on prairie dogs killed with strychnine-coated grains, no evidences of ill effects were detected by the control men.

Missourians Want Help Against Predators.--In "Missouri Game and Fish News" of January 29, Commissioner John H. Ross states that many requests have been received for the services of hunters since it has become generally known throughout the State that cooperative hunters are now available. The following letter was received by Mr. Ross: "Please send your trappers into this wild land in the south central part of Maries County and northwestern part of Phelps County where the gray timber wolves are thick. I've had good luck trapping everything but these wolves and they're too big and wild. I'll show the trapper where the wolves run. A wolf attacked a man near my house the other day and, as I haven't got but eight children, you see why I am interested, so send a trapper as soon as you can."

Trap Thief Sentenced to Jail.--Trap thieves have been active in Michigan, according to information received from Leader H. P. Williams. During a single month 62 traps, 7 coyotes, 2 bobcats, and 1 fox were stolen. One violator apprehended recently was sentenced to 90 days at hard labor in the county jail.

Radio.--Frank N. Jarvis, of the office of Region No. 1, broadcast a talk on rats and methods for controlling them, at 12:15, January 14, over station WJSV, Mt. Vernon Hills, Va.

## LAND ACQUISITION

Inspects New Refuge Sites.--Mr. Dieffenbach left Washington on January 12 to inspect Fort Eustis, Va., which has been abandoned by the War Department and is being proposed as suitable for a migratory-bird refuge. He also visited the Blackwater Migratory Bird Refuge in Maryland.

Personnel Notes.--Doren E. Woodward, who was engaged on land-acquisition work on the Upper Mississippi River Wild Life and Fish Refuge during most of the past year, was detailed to Washington from December 17 to January 16 to assist in the office.

Oswald E. Recroft has been detailed to complete the survey of the St. Marks Refuge, Fla.

David D. Pugh, who was working on the survey of St. Marks Refuge, has returned to Washington to assist in computations.

Carey H. Bennett and Bert J. G. Tousey have completed field engineering investigations of methods for increasing the water supply on the Benton Lake Refuge, Mont., and have returned to Burns, Oreg., to prepare a report on their findings.

Peter J. Van Huizen returned to the Washington office on December 3, after making surveys in Wisconsin.

William T. Krummes and Howard J. Sargeant have completed the examinations and appraisal of lands in Louisiana on which they were engaged, and are now working in Alabama.

## GAME AND BIRD CONSERVATION

Confers with Field Men.--W. R. Dillon was in Chicago several days during the second week in January and conferred with Ray C. Steele, superintendent of the Upper Mississippi River Wild Life and Fish Refuge, and U. S. Game Protector Stephen Creech.

Transferred.--Miss Pauline J. Otto was transferred, on January 16, from the position of junior typist in this division to a position as junior stenographer in the Weather Bureau.

Sell Surplus Game Animals.--Sixteen surplus buffalo and sixteen elk from the herds at Niobrara Reservation, Nebr., and one bull elk from the herd at Sullys Hill Game Preserve, N. Dak., have been sold for meat.

Visitors at Sullys Hill Preserve.--During the calendar year 1931, 20,459 persons, in 3,960 cars, visited Sullys Hill Game Preserve, N. Dak.

Appointments.--J. Y. Gresham, lighthouse keeper at St. Marks Light, St. Marks, Fla., has been appointed U. S. deputy reservation protector to cooperate with this bureau in protecting wild life at St. Marks Migratory Bird Refuge at that point. Homer C. Fort, of Illinois, has been appointed U. S. reservation ranger and U. S. deputy game warden at the Upper Mississippi River Wild Life Refuge.

Notes on the Elk Refuge.--An average depth of 16 inches of snow was reported at the Elk Refuge, Wyo., on January 4. The protector in charge, Almer P. Nelson,

established three feeding grounds on January 3. Five men employed by the Refuge and three employed by the State Game Department are engaged in the work. Mr. Nelson estimated that 5,600 elk were on the three feeding grounds on January 9.

Superintendent Steele Addresses Sportsmen's Meetings.—Superintendent Steele, of the Upper Mississippi River Refuge, attended the biennial meeting of the Minnesota Division of the Izaak Walton League, at Minneapolis, on December 10. At this meeting a resolution was adopted commending the action of the department in reducing to one month the open season for hunting waterfowl. On December 18 and 19 Superintendent Steele attended the annual meeting of the Montana Sportsmen's Association, at Helena, and gave an address on the waterfowl situation.

Injunction Granted Against Alma Dam.—In United States District Court at Madison, Wis., on December 5, Federal Judge Geiger made permanent a temporary injunction restraining the War Department from conducting any further work, either in acquiring lands or constructing locks and dam, in connection with the proposed dam across the Mississippi River at Alma, Wis. The proposed Alma Dam was to be the first of a series to be constructed in the Upper Mississippi River for the improvement of navigation. This dam, as well as others proposed for construction along the river, would create slack water pools inundating at a more or less shallow depth considerable parts of the Upper Mississippi Refuge. The petition for the injunction was instituted by a number of property owners, under the leadership of a railroad company, whose rights would have been affected by the project. It is understood that the injunction was granted on the showing made by the petitioners that changes in plans of the War Department with respect to the type of construction and height of dam—changes made at the earnest solicitation of conservationists with a view to causing the least damage to the refuge—were not in accordance with the plan submitted to and approved by Congress.

Upper Mississippi Refuge Violations.—For hunting without a license in the Mississippi Bottoms opposite Winona, Minn., a man was arraigned in State Court on November 27, and upon plea of guilty was fined \$50 and costs amounting to \$3.25. Evidence in the case was obtained by Ranger Lundberg.

On December 7, Deputy Ranger Knopp, in cooperation with Wisconsin Wardens Lange and Giesen, apprehended two men for the illegal taking of game fish in the Mississippi River. Upon pleas of guilty being entered in State Court at LaCrosse on December 9, and in default of payment of fines imposed, each was sentenced to serve 60 days in the county jail. The court, however, suspended sentence upon payment of the costs, and the defendants were parolled to the custody of State Game Warden Lange for a period of 60 days.

Deputy Ranger Frerichs recently apprehended a man for illegally cutting timber in a refuge area in Houston County, Minn.

Permit Issued for Toll Bridge on Upper Mississippi.—A permit was recently issued by the Secretaries of Agriculture and Commerce allowing use of certain lands of the Upper Mississippi Refuge in the construction of a highway to be used in connection with a toll bridge between Savanna, Ill., and Sabula, Iowa. A condition of this permit provides that all employees of the United States Government when on official duty shall be exempted from payment of tolls when using the proposed bridge and highway.

New Ranger Appointed for Upper Mississippi.--Homer C. Fort, of Lexington, Ill., was appointed to the position of reservation ranger on the Upper Mississippi Refuge, effective January 4. Mr. Fort will be assigned to a district which includes the Winneshiek Bottoms and the adjacent Harpers Ferry Bottoms.

Buckwheat Fields Attract Upland Game.--Ranger Lundberg reports that tracts of buckwheat in the refuge area opposite Wabasha, Minn., planted last year and allowed to stand with the ripened grain, have provided a valuable source of food for pheasants, ruffed grouse, and other upland game birds. Mr. Lundberg states that there is a notable increase over last year in the number of these species in his district.

Mississippi River Sets New Record.--All known records, which date back to the year 1856, of the freezing of the Mississippi River at Winona, Minn., were broken when January 12 had passed and the main channel of the river was still open. A few ducks were occasionally seen in the northern portion of the Upper Mississippi Refuge, while in the southern part, especially in the vicinity of Savanna, Ill., and Sabula, Iowa, where favorable weather and feeding conditions prevailed, several thousand mallards remained on the lakes and ponds.

Feed Upland Birds during Heavy Snowfall.--Beginning December 31 the northern part of the Upper Mississippi Refuge was visited by a heavy snowfall and the considerable numbers of pheasants, quail, and other upland birds on the refuge faced a serious plight. To meet the situation, part of the warehouse at the Winona station was converted into a workshop and several refuge employees constructed wooden feed boxes of the hopper type, which were distributed at advantageous points. These boxes, having a capacity of about one-half bushel, were supplied with a mixture of corn, oats, wheat, and grit. In establishing the feeding stations, crude shelters of 25 to 30 feet in width were constructed of poles, branches, and marsh grass, under which the boxes were placed, thus obviating the danger of being covered by drifting snow. The birds almost immediately availed themselves of the feed; on a second day's visit, Ranger Lundberg observed 86 pheasants at a feeding station in the Weaver (Minn.) Bottoms. The movement found sympathy in the local press, with the result that favorable publicity was given to the project and considerable public interest aroused. A sample feeding box placed on exhibition in the Winona offices has been used as a pattern for the construction of similar boxes by local conservationists who are carrying on private feeding operations.

Trempealeau Bottoms Case to Test Constitutionality of Law.--The Trempealeau Bottoms, situated at the confluence of the Trempealeau and Mississippi Rivers and subject to acquisition for the Upper Mississippi Refuge, for the past several years have been the subject of considerable litigation. A fish and fur farm company is devoting the land to the propagation of muskrats, while some conservationists of western Wisconsin are working for the establishment of the area as a game refuge. At the last session of the Wisconsin legislature a tract of land, about a fourth of which embraces approximately half the so-called Trempealeau Bottoms, was established as a State game refuge in which the taking of all game animals and birds, except muskrats by the fur-farm company, was at all times prohibited. Upon the passage of this measure the company indicated that it would question the constitutionality

of the law. Recently two persons apprehended by local State game wardens for trapping for mink in this area were arraigned in a local justice court. They admitted that they were trapping as alleged by the wardens but contended that the legislature had exceeded its constitutional authority in establishing this game refuge. The land, they contended, is not owned by the State, all of the owners were not agreeable to its establishment, and private rights were accordingly infringed upon. The State, on the other hand, contended that the legislature has ample authority to fix closed seasons on any or all game animals and birds and over such portions of the State as it may see fit, that it has repeatedly exercised this authority, and that the fur farm company, operating under a license from the State to breed and dispose of muskrats only, can have no valid objection to the establishment of a game refuge on its property so long as the fur-farm license privileges are not interfered with. The defendants were found guilty and have taken an appeal to the circuit court.

Exceed Bag Limit; Fined \$40.--In Federal Court at San Francisco, Calif., on November 28, three persons charged with killing ducks in excess of the daily bag limit at Berkeley on November 16 entered pleas of guilty and were fined \$40 each. Protector Tonkin and Deputy Holman apprehended the offenders.

Fined \$100 for Hunting after Sunset.--Two residents of Ohio apprehended on October 25 in Ottawa County, for hunting wild ducks after sunset entered pleas of guilty in Federal Court on December 11 and were fined \$100 each. Protector Charlton obtained the witness affidavits in connection with these cases.

Correction.--The statement in the December issue of THE SURVEY in the second line of the item, "Power-boat Hunter Sentenced to 30 Days," on page 151, should have read "Union County, Ky.," not "Union County, Tenn."

December Importations.--The Christmas rush on importations continued steadily during December; more than 80,000 birds were brought in after the 10th. The largest number for which permits were issued in one day was 20,800, on December 17. Among the more interesting birds imported during the month were 8 red-shouldered wydahs (Urobrachya axillaris) from Cape Town, South Africa, on December 12.

Returns to Inspection Work in New York.--Lee S. Crandall, of the New York Zoological Park, resumed the work of inspections of foreign birds at New York on January 2, relieving B. S. Bowdish, who has been performing the work since July 1, last.

Death from Psittacosis Reported in San Pedro, Calif.--Parrot fever, according to the Associated Press of January 11, is reported from San Pedro, Calif., where a United States Customs inspector died on January 10 as the result of an illness diagnosed as psittacosis, or parrot fever.



# THE SURVEY

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No. 2

## GENERAL NOTES

Associate Chief in the West.—After addressing the annual meeting of the American National Livestock Association at San Antonio, Tex., Mr. Henderson left for other western States to confer with bureau field officials and cooperators. In Arizona he investigated the possibilities of a refuge area on the Colorado River. He inspected the work being conducted at the Rabbit Experiment Station, at Fontana, Calif., and conferred with cooperators in San Francisco in regard to the waterfowl situation. He planned to stop at Reno, Nev., to obtain information concerning the proposed migratory-bird refuge in the Fallon territory, and at Ogden, Utah, to confer with Utah State officials on plans recommended for administering the Bear River Migratory Bird Refuge. Mr. Henderson will return to Washington soon after the first of March.

Division of Administration Established.—On February 24 Mr. Redington announced that the Secretary had approved his recommendation for the establishment within the bureau of a Division of Administration. The functions of the new division will cover work on personnel, property, budget and accounts, mail and files, and other business-administrative matters. Mr. Redington stated that all members of the bureau will be interested to know that this unit is now placed on a parity with the other divisions, and that he has selected to direct the work Emory J. Thompson, who has been a member of the bureau since November 16, 1905, and since 1914 has served as financial clerk, chief clerk, and assistant in operations.

Department's War Memorial Dedicated.—The Department of Agriculture war memorial to its sixty-nine employees who died in the World War, the plaque upon which the sculptor, John Flanagan, has been working for several years, and which was completed and placed in the court of the Administration Building last August, was dedicated at 3 p.m. on February 29 and turned over to Secretary Hyde, who accepted it on behalf of the Government. Arrangements were made for accommodating at the ceremonies near relatives of the honored sixty-nine, war veterans in the department, employees who contributed funds for the memorial, and visitors. The program included short addresses, music by the Marine Band, vocal music, and a brief ceremony by veterans.

The memorial is 10 feet high and 6 feet wide and shows, in high relief, the figures of an American soldier and sailor facing each other at "present arms" in salute to the roll of the dead carved on the plaque between them. The seal of the department and the insignia of the various divisions of the Army, the Navy, the Marine Corps, and the Coast Guard in which the Agriculture Department men served, complete the main tablet, which is topped by a carved marble arch and flanked on either side by a smaller ornamental tablet. It was carved from Carrara marble quarried in Italy and executed by Mr. Flanagan in Paris, where it was awarded a medal when exhibited at The Salon.

Mr. Henderson and E. J. Thompson of this bureau were members of the war memor-

ial committee, Mr. Henderson serving as chairman of the committee and Mr. Thompson as treasurer. Maj. George A. Wold, of the bureau's Division of Administration, was in charge of the military features of the ceremonies.

Appropriation Bill Before Senate.—The agricultural appropriations bill for the fiscal year 1933 was reported by the Senate committee on appropriations on February 18, and is now before the Senate. The appropriations for the Biological Survey given in THE SURVEY for January as they passed the House of Representatives, remain unchanged. There is not likely to be any further change in these appropriations for the bureau, as there are no items in dispute to be considered by the conferees between the Senate and the House.

Transferred to Property Section.—George A. Wold was transferred on January 1, 1932, from the Office of the Secretary to the position of assistant property clerk in the bureau's Division of Business Administration. He has had extended experience in the department, chiefly in property matters, having been engaged on several lines of work in the Secretary's Office since his first appointment on August 27, 1914. With military experience dating back to 1909, he enlisted as a private in the United States Army on May 31, 1917, served 27 months in the World War, 18 months overseas, and rose to the rank of major. He was on special duty as a staff officer with the Italian troops in Italy, and after the armistice was in charge of more than 13,000 prisoners in the advanced section. Notable among the military honors conferred on him was the Ribbon of Distinction from the Government of Italy. Major Wold received honorable discharge on June 29, 1919.

Rabbit Film Released.—"Rabbit Farming," a motion picture sponsored by the Bureau of Biological Survey, was given its final showing on February 11, prior to release by the Extension Service. It was reviewed by officials of the Biological Survey and other bureaus, and of the Office of Motion Pictures.

Official publications received in February are:

- "Sanctuaries Established under the Migratory Bird Conservation Act." Pamphlet Bi-1179, 6 pp., illus. Issued December 31, 1931; received, February 1.
- "The Coot as an Edible Game Bird." Pamphlet Bi-1180, 2 pp., illus. Issued, January, 1932; received, February 1.
- "Hints on the Care of Opossums." Pamphlet Bi-180 (revised), 2 pp. Issued February; received, February 17.
- "Rabbit Meat as a Source of Protein." Pamphlet Bi-1188, 1 p. Issued February; received February 17.

#### BIOLOGICAL INVESTIGATIONS

In Washington Office for Research on Elk.—O. J. Murie, field naturalist stationed at Jackson, Wyo., arrived in Washington on February 5 for a few weeks of work in connection with his study of the life history of the elk. He has been examining published material and the data in the bureau files on this animal, and has been assisting in the assembling of the motion picture film that is being made on the elk by the bureau in cooperation with the Extension Service. Photography in the field for this project has virtually been completed. Snowfall has been heavy in the



Jackson Hole country of Wyoming this winter, Mr. Murie reports, and the feeding of elk began early in January. The supply of hay on hand is sufficient for the elk this season, he says, but he believes that if next winter also is severe, there is likely to be a shortage, for the Elk Refuge can not grow enough hay in a single season to feed the animals the following winter. The elk inclosures at the refuge, built for carrying on experiments of various kinds, are now in working order, and a series of tests on elk feeding are in progress.

Visits Waterfowl Areas in North Carolina.--On February 7 F. C. Lincoln joined a party at Washington Airport and, proceeding by air to the village of Hatteras, N. C., flew over the waterfowl marshes of Currituck and Pamlico Sounds. Mr. Lincoln spent two days in further observation of waterfowl on the waters and marshes of Pamlico Sound, and made the flight back to Washington on February 10. Canada geese were abundant, Mr. Lincoln reports, but most of the brant had left. Black ducks and pintails were plentiful in the vicinity, and two or three small "rafts" of red-heads were seen. The party made its headquarters at a gun club, where the members have two rest ponds of fresh water, maintain a guard, and are feeding the birds daily.

Photograph Ducks on Potomac River.--On January 25, through the courtesy of the commanding officer at Bolling Field, F. C. Lincoln, with two staff officers from the airport, made an experimental flight over the Potomac River to take photographs of the ducks concentrated there. The purpose of the experiment was to determine the practicability of using such photographs in counting the birds that make up the flocks, or "rafts." The pictures, made with an aerial mapping camera, have been fitted together in a "mosaic" that shows every duck in the flock, thus making possible an exact count. It is yet to be learned whether this method will be practical on flocks so large that they would require several strips, as in such cases the constant movement of the birds would make it difficult to match the prints.

Observe Waterfowl in Chesapeake Bay.--Doctor Bell, F. C. Lincoln, and Dr. O. L. Austin, jr., went to Havre de Grace, Md., on February 14, and on the following day, in company with the State game warden of Maryland, made a tour of the Susquehanna Flats and other waterfowl areas between that point and Baltimore on the State patrol boat Canvasback. The outstanding event of the trip was the observation of a large number of Canada geese that had gathered and were being fed daily on private property. Food and protection had caused the birds to become so tame that the party was able to approach them closely in a car. Swans and canvasbacks were still plentiful on the Susquehanna Flats.

Rearrange Mammal Storage Cases.--The bureau's specimen-storage cases, numbering nearly 600, have all been moved and placed in the new mammal range in the National Museum. The work of arranging specimens in the cases will occupy several months, and some of it will be delayed until additional new cases are obtained for expansion. The walls of the range have been freshly painted, and the floors and all cases will be painted this spring.

Describe 33 New Mammals in 1931.--During the last calendar year 33 new forms, types of which are in the Biological Survey mammal collection, were described.

Most of these descriptions resulted from the activities of E. A. Goldman, and in most cases they were published jointly by Mr. Goldman and Dr. E. W. Nelson.

Reports Number of Specimens in Mammal Collection.---Excluding alcoholic specimens and those collected outside of North and Middle America and the West Indies, which have been transferred to the National Museum, the total of mammal specimens in the bureau's collection on December 31 was 132,113, Dr. H. H. T. Jackson has reported. Of these 825 were type specimens. Rodents are the most numerous group in the collection, with 94,262, of which 70,318 have been collected in the United States. The following are the totals reported by Doctor Jackson for all the orders (figures in parentheses showing the number collected in the United States): Marsupialia, 573 (312); Insectivora, 7,268 (4,725); Chiroptera, 2,939 (1,954); Carnivora, 19,362 (12,384); Pinnipedia, 2 (0); Rodentia, 94,262 (70,318); Lagomorpha, 5,679 (3,864); Xenarthra (Edentata), 69 (21); Primates, 122 (0); Artiodactyla, 1,701 (798); and Perissodactyla, 3 (2).

Bureau Visitors at the Museum.---On February 3 J. P. Lippincott, of Philadelphia, conferred with officials at the bureau's mammal laboratories, in regard to mountain sheep.

For several days early in February Dr. Robert K. Enders, of the Carnegie Laboratory of Embryology, Baltimore, Md., used the mammal collection in connection with his studies. During his stay here he also conferred with members of the staff.

Dr. Adolph Murie, assistant curator of mammals of the Museum of Zoology, University of Michigan, Ann Arbor, arrived in Washington on February 5 to spend several weeks in comparing his collection of mammals from Guatemala with those in the Biological Survey collection and others at the National Museum and to carry on other research work for the University of Michigan museum.

Ernest G. Holt, a former employee of the bureau, now director of sanctuaries of the National Association of Audubon Societies, with headquarters in New York, visited the museum offices on February 5 and 6.

E. L. Poole, director of the public museum in Reading, Pa., studied in the mammal laboratories on January 21 and 22 and identified specimens for the Reading museum.

#### FOOD HABITS RESEARCH

Attends Hearing on Hawk and Owl Bounties.---Mr. McAtee was in Richmond, Va., on February 16, attending a legislative hearing on the proposed removal of bounties on hawks and owls.

Returns to Field Station.---J. Paul Miller left Washington on February 3, after spending about a month in the laboratory examining the stomachs of birds and mammals collected in connection with his field work on forest wild life. He returned to Amherst, Mass., where he is in charge of the bureau's field station engaged in food habits research in forest wild life.

Investigates Reports of Wild-Fowl Starvation.---Clarence Cottam visited Pamlico Sound, N. C., from January 28 to February 6, assisting in the investigation of reports concerning the starvation of wild fowl in that region. The reports, it was found, had greatly exaggerated the plight of the birds.

Continues Studies of Rodents.--Theo. H. Scheffer is in Imperial Valley, Calif., where he plans to spend several weeks in studying the life histories and economic relations of certain rodents.

#### FUR RESOURCES

Talks on Fur Farming.--Mr. Ashbrook attended a meeting of the Salesmen and Buyers' Club at the Fur Merchants' Club in New York City, on January 18, and talked on fur farming and its relation to the fur trade. To a group of Boy Scouts at the Sherwood Presbyterian Church in Washington, on February 5, he presented a lantern-slide lecture on fur and fur animals and showed pelts of various species.

Returns from University of Minnesota.--Dr. Karl B. Hanson, director of the U. S. Fur-Animal Experiment Station, who has been working in the laboratory at the University of Minnesota since January 9, examining post-mortem material collected during the year on fur farms in the East, returned to Saratoga Springs, on February 15. While in Minneapolis, he attended a meeting of the Minnesota Fox and Fur Breeders Association, on January 29, and showed the department film entitled "How to Handle Foxes."

Patent Granted for Veterinary Mouth Speculum.--Doctor Hanson and Joseph Miha-lek, of the Fur-Animal Experiment Station, have recently been granted a patent on a mouth speculum. This instrument is designed to hold open the mouth of a fox or other fur animal while treatment is being administered. It is expected to prove useful to veterinarians in treating dogs and foxes and other fur animals.

#### DISEASE INVESTIGATIONS

Investigates Losses of Quail.--Doctor Shillinger made several short trips during the past month to study the upland-game-bird disease situation on near-by game farms. The losses in adult birds kept over the winter for brood stock have been exceedingly light, except among the birds on one farm, where a disastrous loss occurred. These birds showed a variety of symptoms. Indications are, however, that the most serious complication was that of ulcerative enteritis. Doctor Shillinger considered it significant that on this farm an unusually large number of birds were kept on a restricted area. Reducing the concentration of birds in the wintering pens has apparently checked the losses, he reports.

States Studying Wild-Life Diseases.--The growing interest in diseases of game is evidenced by the fact that several of the State experiment stations have recently taken up this study and are carrying on investigations in cooperation with the bureau and with game farms. These investigations indicate that several new diseases recently found prevalent among upland game birds raised in captivity may be responsible for extensive losses under certain conditions.

#### PREDATORY-ANIMAL AND RODENT CONTROL

Treats Thallium-Poisoned Victims.--At the urgent request of agricultural officials in California, Dr. James C. Munch, consulting pharmacologist of the bureau,

was detailed to assist in the treatment of victims of an unfortunate thallium-poisoning incident at Fresno, Calif. A Mexican laborer had illegally procured a quantity of hulled barley previously treated with thallium for poisoning California ground squirrels, which he and others ground and used in the preparation of tortillas. These were consumed by other Mexicans, some reports stating that as many as 45 people partook of the mixture. The case was unusual and attracted wide publicity, as little was known about treating human beings for thallium poisoning. When Doctor Munch arrived in California, 19 persons showed some evidence of thallium poisoning. Twelve had been taken to the hospital for treatment about a week after they had eaten the food containing thallium. In every instance the patients refused to state the cause of their illness, probably fearing arrest because of the questionable method of obtaining the grain, and it was not until two weeks had elapsed that it was ascertained that thallium was responsible. Six of the unfortunate victims died within 15 days after eating the tortillas, and for the other six in the hospital the attending physicians held out no hope of recovery. Doctor Munch prescribed a treatment that he had developed in connection with bureau studies on the action of thallium, which treatment had previously been found effective in the case of animals. Improvement was noticed in the six patients as soon as the treatment was started, and when Doctor Munch left they were all on the road to recovery. Much credit is due Doctor Munch for developing the treatment for thallium poisoning, while engaged on work for the bureau, and to State officials and physicians in California, who cooperated and did everything possible for the victims. Had the people who were poisoned revealed the cause of their sickness as soon as symptoms developed, it is probable that all could have been saved.

Reports on the medical, pharmacological, and pathological aspects of this outbreak are being prepared for more detailed publication in medical journals. In making the investigation, W. C. Jacobsen, of the California State Department of Agriculture, Doctor Munch, E. E. Horn, and Joseph Keyes have taken a leading part, and assistance has been given them by various Federal, State, county, and local officials.

Broadcasts on Thallium Poisoning.—On February 8, Doctor Munch, in California assisting in the treatment of those who were poisoned by thallium-treated barley, spoke over the radio on "The Recent Outbreak of Thallium Poisoning." His talk was broadcast during the Western Farm and Home Hour through Station KGO at Oakland and eight affiliated western stations. During the 7-year period that thallium has been used as a rodent poison the number of instances of the poisoning of human beings, said Doctor Munch, can be counted on the fingers, and in every instance it was due to carelessness in handling. The recent outbreak, he said, is the first that has occurred in the United States. "In conclusion," said Doctor Munch, "I would state: (1) Thallium and strychnine are equally toxic; (2) there is an antidote for thallium; (3) rigid recommendations to safeguard the use of thallium have existed from the beginning of its use as a rodenticide."

Radio Talk Features Washington's Interest in Wild Life.—Leo L. Laythe, supervisor of region No. 2, spoke on "Wild Life" in connection with an Extension Service program broadcast on February 22 from KOA in Denver, Colo. Mr. Laythe in his talk featured George Washington's interest in waterfowl and deer.

Carry on Anti-Rat Campaigns as Health Measures.--L. C. Whitehead, leader of rodent-control work in Texas, reports that since the initial rat-control work was launched in Dimmit County, late in September, as a means of controlling typhus fever, 14,377 pounds of poisoned bait have been put out in cooperation with State, county, and city health departments, military authorities, county commissioners' courts, city councils, chambers of commerce, and county agricultural agents, under the supervision of C. D. Schwartz, F. W. Dawson, J. E. Boog-Scott, jr., and Dan M. Foster. Rat-control work as a health measure has been conducted in 14 communities, and arrangements have been made for similar work in 5 others. Follow-up poisoning operations in practically all the towns are planned, and attention will be given to rat-proofing and to more adequate garbage protection and removal. It has been found that these rodents act as hosts for fleas carrying typhus germs.

Discontinue Predatory-Animal Work in Wisconsin. --The predatory-animal control work in Wisconsin, carried on in cooperation with the Wisconsin State Conservation Department, was discontinued on January 31. The high State bounty caused interference with the salary-paid trappers, and was responsible for so much antagonism by local residents who were interested in obtaining bounty money that continuation of the work at a reasonable cost was considered impossible. O. L. Coleman, who had been in charge of the cooperative trapping operations since the work was begun on December 1, 1929, has been transferred to Texas, where he will assist L. C. Whitehead in rodent-control work.

Pocket Gophers Damage Electric Light Cables.--Leader Ben E. Foster, of the Arizona rodent-control district, relates an unusual case of damage by pocket gophers during December. Officials of a local airport reported that these rodents had cut the cables carrying electric current to the lights bordering the landing field and had caused so many short circuits that it was necessary to dig up and repair 3 1/2 miles of the line at a cost of \$1,700. Assistant Mack Taylor was assigned to clear the area of these troublesome pests, and succeeded in taking 167 pocket gophers with traps. He placed poison in the remaining runways. The company plans to employ a patrol to avoid similar expense in the future.

Transfers to Colorado District.--Wm. E. Riter, who has acted as assistant in rodent-control work in Idaho since February, 1929, was transferred to the Colorado district, effective January 16, where he will assist Mr. Green in the predatory-animal and rodent-control operations.

Rabies in Western Texas.--C. R. Landon, leader of predatory-animal control work in Texas, reports a recent outbreak of rabies in five counties adjacent to the southeast corner of New Mexico, all of which are heavily infested with coyotes. Six hunters are now working in Pecos County, which borders this area on the south, and an attempt is being made to employ enough additional hunters to prevent further spread of the disease by infected coyotes.

#### LAND ACQUISITION

Complete Survey of St. Marks Refuge.--Oswald E. Recroft and James W. Whitehead have completed the survey of the St. Marks Migratory Bird Refuge in Florida and have returned to Washington, where they will be engaged on computations in connection with field work.

Survey Backwater Refuge.--Kenneth C. Kern, J. Ralph Campbell, and Jack Y. Upham left Washington on February 15 for Cambridge and other points in Dorchester County, Maryland, to complete the survey of the Blackwater Migratory Bird Refuge.

Resumes Work on Cheyenne Bottoms Refuge.--Daniel H. Janzen, who had been detailed to Washington for some time, left on February 10 for Kansas City, Mo., and Great Bend, Kans., to continue work in connection with the Cheyenne Bottoms Migratory Bird Refuge.

#### GAME AND BIRD CONSERVATION

Visits Field in Administration Work.--W. R. Dillon, assistant U. S. game conservation officer, visited various points in the Southeastern States during the week of February 14 in connection with the administration of the migratory bird treaty act.

Death of Deputy Game Warden Stemmons.--It was with sincere regret that we learned of the death of U. S. Deputy Game Warden Sidney A. Stemmons, of Dallas, Tex. Mr. Stemmons, who was 52 years of age, died on January 19 as the result of burns received when a gas stove in his hotel room exploded.

Transferred to Bureau from War Department.--Miss Lida A. Johnson has been transferred from the War Department to fill the vacancy in the position of junior typist in this division caused by the transfer of Miss Pauline Otto to the Weather Bureau.

Two Protectors Working in Illinois.--U. S. Game Protector John Q. Holmes, of Omaha, Nebr., has been assigned to assist Protector Stephen Creech for a few weeks in connection with the enforcement of the Federal game laws in Illinois.

Elk on Refuge Congregate as Feeding Continues.--Since the feeding of the elk on the Elk Refuge, Wyo., began on January 3, it is estimated that 7,200 of the animals have congregated on the three feeding grounds within the refuge boundaries. Approximately 30 tons of hay a day, in addition to cottonseed cakes, are being fed to the elk. Nine men are engaged in the feeding operations on the three feeding grounds; five employed by this department and four by the State of Wyoming. Plans have been made to count the elk in the Jackson Hole region this month, as conditions are now unusually favorable for such work. Many of the elk that were staying back in the higher mountains and in the timbered regions are coming out onto the open ridges and to the lower valleys, and many have been reported wintering in the outlying districts. State employees have been engaged in driving elk from private ranches to the feeding grounds in order to prevent depredations on haystacks. During January, the temperature fell to 38 degrees below zero at the refuge, and the greater part of the month was stormy, with strong winds that packed the snow so hard that, according to Protector Almer P. Nelson, in many places it would carry a team of horses.

Earthquake in Jackson Hole.--The most severe earth tremors felt in Jackson Hole, Wyo., in years occurred about 3.15 a. m., January 26, and were followed by lighter shocks, about 20 in number, during the ensuing 24 hours. The plaster on

the walls of several houses in Jackson was broken, and the foundations of several buildings and the floors of one were cracked. The center of the disturbance seemed to be at Sheep Mountain. The shocks were probably local, as none were reported outside the valley. Three more shocks were felt early in the morning of January 28.

Surplus Animals Sold to Breeders.--Fifteen young buffalo of the crop of 1930 were sold from the herd at Wind Cave Game Preserve, S. Dak., and delivered on January 29 to a resident of Hastings, Nebr., who obtained the animals for breeding purposes.

Notes on Sullys Hill Game Preserve.--Many grouse and a number of pheasants have been feeding on or near Sullys Hill Game Preserve, S. Dak. Feed is being put out for them as required. Cottontail rabbits and varying hares are more plentiful than usual in the timbered region. During January 110 persons visited the preserve.

Birds on the Refuges.--The value of bird refuges is being increasingly demonstrated. Increased numbers of birds have used these areas during this season. Particular mention may be made of Big Lake, Ark.; Belle Fourche, S. Dak.; Dungeness Spit, Wash.; and the Deer Flat, Idaho, region. At Brevard Reservation, Fla., an unusually large number of young pelicans were raised.

Feeds Birds in Vicinity of the Bison Range.--A consignment of wheat and barley was sent to Moiese, Mont., early in February by the State of Montana to be used in feeding the wild ducks in the vicinity of the Bison Range. Some birds had died from starvation, but it is believed that a large number of ducks are being saved by the grain, which was placed at various points in the vicinity. Dr. Robt. S. Norton, protector of the Bison Range, estimates that about 10,000 ducks are wintering in the locality, mallards being the predominating species.

Protector Worcester Rescues Crippled Waterfowl.--Crippled by hunters, 1,855 waterfowl that had flown into Tule Lake Bird Refuge, California, were rescued by refuge employees and volunteers during and immediately following the 1931 open season. Protector H. M. Worcester reported that in addition, 1,359 mortally wounded birds had been given to local charity organizations for food. Hunters had been permitted to recover birds falling within the sanctuary, but not to carry their guns inside. Many birds, however, sailed some distance into the refuge before they fell--some as far as half a mile. These were not recovered by the hunters, and had it not been for the rescue work nearly all of them would probably have starved, frozen to death, or become victims of predators. Protector Worcester with deputies and volunteer co-operators gathered the birds daily from November 25 to January 5. The crippled waterfowl were retrieved gently by a well-trained Springer spaniel dog. They were then placed in a box on sled runners and taken by the men to near-by special open-top pens. Finding that a considerable number of the wounded birds left these pens before they were able to find food for themselves, the refuge officials decided to restrain them until they had completely recovered. Mr. Worcester reported thus caring for 1,173 ducks (mostly pintails, with a few mallards, widgeons, and gadwalls), 685 geese (386 Hutchins's and cackling, 209 lesser snow, and 90 white-fronted), and 7 swans. About 30 per cent of the ducks later died, but there was only a 10 per cent loss of the geese. Eighty-five per cent of the geese recovered alive had broken wings, although less than 17 per cent of the recovered ducks were so injured.

Ducks, it was thought, fell much sooner after being winged. The wings of 37 geese were shattered so badly that amputations were necessary. Of these birds 22 were still alive and doing well at the time of Mr. Worcester's report. Many of the winged birds, Mr. Worcester believes, were injured by long-range shooting from hunters' blinds as the birds passed high in the air.

Birds that were killed the refuge officials donated to charity institutions of Tule Lake Townsite, Calif., and Merrill and Klamath Falls, Oreg. Permanently disabled birds they distributed to parks and zoos for exhibition and breeding purposes. Those liberated they first marked with Biological Survey bands. The rescue work was highly successful because of the birds saved. In addition, Mr. Worcester believed that the publicity received through the local papers caused "enough comment to make the hunter more conservative in his long range shooting."

Takes Charge of Blackwater Refuge.--Peter J. Van Huizen, junior forester, formerly of the Land Acquisition Division, has been placed in charge of the Blackwater Migratory Bird Refuge, Dorchester County, Maryland.

Deputy Reservation Protectors Appointed.--Garry E. Brown has been appointed deputy reservation protector at Minidoka Bird Reservation, Idaho, and F. B. Tindall has been appointed deputy reservation protector at Conconully Bird Reservation, Wash. Mr. Brown is superintendent of power at the Minidoka reclamation project under the Bureau of Reclamation, at Burley, Idaho, and Mr. Tindall is gate tender for the Okanogan irrigation district at Conconully dam. The reservations on which they will cooperate with this bureau in protecting wild life are within these reclamation projects.

Duck Shooter Ducks in Icy Water to Escape Warden.--Federal deputies Miller and Davis operating in St. Charles County, Mo., on February 10 found three persons hunting ducks. As there was water of considerable depth between the deputies and the hunters, Miller obtained a horse and went after the shooters. They took to the cold waters. One of the gunners, in an effort to hide from the officers, submerged himself so that only his head was visible among the weeds. All three of the shooters were apprehended and arraigned before a United States Commissioner, who required them to furnish bond in the amount of \$1,000 each.

Addresses Meetings.--On January 22 R. C. Steele, superintendent of the Upper Mississippi River Wild Life and Fish Refuge, attended and addressed the annual convention of the Minnesota Game Protective League at St. Paul. Representatives of the game and fish departments of Minnesota and neighboring States were present. At Minneapolis on February 13 Mr. Steele attended and addressed a joint meeting of representatives of the War Department, the National and State organizations of the Izaak Walton League, and the Upper Mississippi Barge Line, called to consider the relation and probable effects of the proposed 9-foot channel on the Upper Mississippi Refuge.

Feeding Stations on the Upper Mississippi continue to afford sustenance for hundreds of upland game birds. Severe weather conditions prevailed during February, especially in the northern portion of the refuge, and without the feeding stations



many of the birds would have perished. In replenishing the supply of grain at his feeding stations between Wabasha and Winona, Minn., Ranger Lundberg saw several hundred pheasants and quail nearly every day.

Report New Cases on Refuge.--Seven violations of law on the Upper Mississippi River Wild Life and Fish Refuge were reported during January. Two arrests were made by Reservation Deputy Ranger Frerichs for killing ducks, one by Reservation Ranger Hall for destroying timber on the refuge, one by Hall and Frerichs together for destroying and attempting to remove timber. The remaining three cases involved the trapping of fur-bearing animals. Rangers Hall and Knopp, Rangers Hall and Lawrence and Deputies Barthell and Knopp, and Ranger Lawrence, made the arrests.

Appointed Protector.--Eugene M. Boring of Miami, Fla., was appointed United States game protector, effective February 23, to fill the vacancy created by the resignation of W. H. Hoffman. Mr. Boring's headquarters will be 959 Old Shell Road, Mobile, Ala., and his district will consist of southern Alabama, southern Mississippi, northwestern Florida, and Louisiana east of the Mississippi River.

All Parrots Subject to Quarantine.--Owing to the recent outbreak of parrot fever in the southern part of California, not only the larger parrots, but all kinds of parrots and parrakeets are now subject to quarantine by the Public Health Service. A recent shipment of about 200 shell parrakeets from Japan, which was refused entry at San Francisco, arrived at New York on January 27 and was immediately removed to quarantine on Hoffman Island.

Ceylon Barbet Comes In.--Among the more interesting birds imported this month was a Ceylon barbet (*Cyanops asiatica*), which arrived at New York on February 5.

Season for Quail Imports from Mexico Opens.--The season for the importation of quail from Mexico opened on February 15. The Mexican authorities this year have granted permission to six concessionaires for the exportation of 130,000 birds, 80,000 of which are authorized to be shipped through Nuevo Laredo, 25,000 through Matamoros, and 25,000 through Piedras Negras. Arrangements have been made for representatives of the Bureau of Animal Industry to examine the birds at the border and to issue permits as in past years.



# THE SURVEY

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## GENERAL NOTES

Confers in New York on Conservation.—During the latter part of March Mr. Redington spent several days in New York conferring with cooperators and various organization members in connection with conservation matters.

Waterfowl Poisoned by Phosphorus from Rifle Range. -- On March 18 reports reached the Survey that wild ducks were dying in great numbers on the tidewater area of Pohick Creek, a tributary of the Potomac River below Alexandria, Va. Autopsies of specimens collected were made by Dr. J. E. Shillinger, in charge of Wild-Life Disease Investigations, and by E. R. Kalmbach, of the division of Food Habits Research. The birds were found to be in good flesh and apparently had been in normal health, no disease condition was observed, and parasites were especially scarce. The digestive organs, however, revealed the presence of phosphorus, which was found to be the cause of death. The odor of this element was distinct, typical phosphorus-poisoning lesions were found, and small, pale amber masses of the substance were identified. Further investigation disclosed the fact that during the past several months rifle grenades containing phosphorus had been fired from the Fort Humphreys rifle range over the shallow waters of Pohick Creek. On this area wild rice grows abundantly, and a large raft of wild ducks had fed there the day before the extensive losses were discovered, apparently having picked up small quantities of unburned phosphorus in feeding on last year's submerged crop of wild rice. Exceptionally high tides had flooded the marsh area and led the birds to feed farther up the creek than usual. Phosphorus, unfortunately in this case, keeps well under water, and deposits such as those on the Pohick Creek area may remain over a long period of years a constant menace to any wildfowl feeding there. Somewhat similar circumstances occurred on marshes at the Spesutie Narrows adjacent to the Aberdeen (Md.) Proving Grounds in 1923. In this instance the War Department cooperated in preventing further losses by patrolling the area and frightening the ducks with a flash gun and other mechanical devices. These measures may not be required on the Pohick Creek area, but the officers there have expressed their willingness to cooperate in preventing further losses of like nature. These two instances of phosphorus poisoning have led the Biological Survey to suggest that cooperative measures be taken with the War Department for the prevention of future occurrences at other ranges also. General advice on how to protect the waterfowl in feeding areas near ranges is being formulated.

Announces Members of New Advisory Board.—Secretary Hyde announced on March 26 the members selected for the reorganized Advisory Board, Migratory Bird Treaty Act. One member was chosen from each of ten geographical and political sections of the country, and five members are "at large." The members at large are Seth Gordon, President of the American Game Association; Dr. T. Gilbert Pearson, President of the National Association of Audubon Societies; H. L. Stoddard, of Thomasville,

Ga., naturalist; Joseph P. Knapp, of New York, N. Y., sportsman and businessman; and Earl C. Smith, of Chicago, Ill., representing agricultural interests. The other ten members are as follows, numbered in accordance with the districts they represent: (1) George J. Stobie, Commissioner of Inland Fisheries and Game of Maine; (2) William C. Adams, Chief of the Division of Fish and Game, Conservation Commission of the State of New York; (3) E. Lee LeCompte, State Game Warden of Maryland; (4) A. Willis Robertson, Chairman of the Virginia Commission of Game and Fish; (5) Wm. B. Mershon, of Saginaw, Mich., sportsman and naturalist; (6) Lee Miles, Chairman of the State Game and Fish Commission, Arkansas; (7) Edwin H. Steedman, of St. Louis, Mo., sportsman and manufacturer; (8) Haskell Noyes, Chairman of the State Conservation Commission of Wisconsin, formerly member of the National Executive Committee of the Izaak Walton League of America; (9) W. J. Tucker, Secretary of the Texas Game, Fish, and Oyster Commission; and (10) J. H. Bowles, of Tacoma, Wash., sportsman and ornithologist.

Bureau Waterfowl Exhibits Shown.--On invitation of officials of the New England Sportsmen's, Motor Boat, and Golf Show, held in Boston, Mass., from February 6 to 13, the Biological Survey maintained there an exhibit featuring the bureau's accomplishments in establishing refuges for the protection of migratory game birds. At the conclusion of the show at Boston the entire exhibit was moved to Philadelphia, Pa., where it was displayed from February 20 to 27 in connection with the Philadelphia Sportsmen's and Motor Boat Show. The main exhibit, reports Lisle Morrison, who was in charge, consisted of a foreground showing the topographic characteristics of the lands being acquired for refuges. A stream rising near the top of a hillside spread out at the base of the hill into a marsh area and flowed into a lake. The backdrop to this foreground suggested pictorially a large expanse of marshland with waterfowl. Waterfowl specimens were placed throughout the marsh area, and live ducks were kept in the lake. Another exhibit showed in the backdrop a flight of Canada geese leaving for their feeding grounds, the foreground being electrically lighted to give the effect of a sunrise on the backdrop. Mounted specimens were also included here, and informational data with regard to the migration flights of the Canada goose were shown on display panels. Selected illustrations showed Canada geese using the refuges in their northern flights. A duck exhibit showed mounted specimens of all the varieties that may be hunted during open seasons, a painting that brought out the necessity for having well-trained dogs for retrieving wounded ducks, and two paintings of breeding grounds where the ducks may congregate and breed unmolested. There was a paid attendance of approximately 200,000 at Boston and about half that number at Philadelphia. A lively interest was shown by the visitors at both shows, Mr. Morrison reports, and many questions were asked with reference to the progress being made in the acquisition of lands for refuges. To meet such requests for information, a mimeographed circular--Bi-1179, Sanctuaries Established under the Migratory Bird Conservation Act, including a map showing the location of acquired areas--had been prepared and was distributed.

Biological Survey Work Shown in Department Exhibit.--In the department's exhibit now on display in the court of the Administration Building for the benefit especially of visitors during the bicentennial celebration, the Biological Survey is represented by two panels, two mounted sets, and a series of balopticon slides.

One panel outlines the bureau's projects, and one shows views of big game on the Federal refuges. A mounted specimen of a bobcat killing a grouse indicates the necessity of protecting weaker species. Another set shows mounted hawks and owls and points out that most of these birds are beneficial. The balopticon slides illustrate various phases of the bureau's work.

Field Men and Former Employees Attend Bureau Party.—The third annual Biological Survey party, held in the ballroom of the Kennedy-Warren Hotel on March 29, was attended by 165 members and guests of the bureau. A large number of field men, at headquarters in connection with conferences, were able to attend and meet the Washington members of the various divisions. A number of former employees of the bureau who are now associated with other branches of the Government also were present, renewing acquaintances. The members of the committee in charge were Albert M. Day, of the Division of Predatory-Animal and Rodent Control, chairman; Miss Margaret Roberts, Game and Bird Conservation; Miss Elsie Galloway, Fur Resources; Miss Alice Hall, Business Administration; R. M. Rutherford, Land Acquisition; F. C. Lincoln, Biological Investigations; and A. C. Martin, Food Habits Research.

Henry Wetherbee Henshaw (Mar. 3, 1850--Aug. 1, 1930), chief of the Biological Survey from 1910 to 1916, is the subject of a biographical sketch written by E. A. Goldman, of the Division of Biological Investigations, appearing on page 564 of the recently issued volume 8 of the Dictionary of American Biography, published under the auspices of the American Council of Learned Societies. Mr. Goldman's article includes bibliographical references and a citation of sources used.

Committee Will Preview Bureau Movies.—On March 2, Mr. Redington appointed the following committee to preview proposed Biological Survey motion pictures: Frank G. Ashbrook (chairman), Lisle Morrison, W. H. Cheesman, S. P. Young, Dr. W. B. Bell, Dr. T. S. Palmer, W. R. Dillon, and E. R. Kalmbach.

Official Publications.—North American Fauna No. 53, Mammals of New Mexico, by Vernon Bailey, Senior Biologist, Division of Biological Investigations, has recently been published. This book completes the publication of results of the bureau's field work carried on in the State; parts of the results were previously published in Fauna No. 35, Life Zones and Crop Zones of New Mexico, by Mr. Bailey, and in Birds of New Mexico, by Mrs. Florence Merriam Bailey. The citation of Fauna No. 53 is as follows:

"Mammals of New Mexico," by Vernon Bailey. North American Fauna No. 53, 412 pp., 22 halftone pls., 58 text figs. (maps), December, 1931 Received March 22, 1932 (advance copies March 1).

The following bureau leaflet, text of which was reprinted from "New Ideas and Discoveries Column," The Official Record, vol. 11, no. 5, p. 30, January 30, 1932, was also received in March:

"The Possibility of Secondary Poisoning from Thallium Used in the Control of Rodents," by F. E. Carlough. Leaflet Bi-1192, 2 pp., February, 1932. Received March 14.

## BIOLOGICAL INVESTIGATIONS

Study Waterfowl on Susquehanna Flats.--On March 5, Doctor Bell and F. C. Lincoln again visited the Susquehanna Flats to ascertain the status of the waterfowl in this important area, through arrangements made with State Game Warden E. Lee LeCompte. A shallow draft power boat was made available at the Spesutie Island Club, and the "flats" were given a thorough examination. It was estimated that between 55,000 and 60,000 ducks (chiefly canvasbacks, redheads, lesser scaups, baldpates, and black ducks), about 4,500 whistling swans, and about 600 Canada geese were observed. There were fewer canvasbacks present than in the latter part of January.

"Ear-tags" Snowshoe Rabbits.--C. M. Aldous, field naturalist, stationed at St. Paul, Minn., reports progress being made in trapping and ear-tagging snowshoe rabbits in connection with studies being made of their abundance, movements, and forest relationships.

Burned Area Studied.--Thos. D. Burleigh, engaged in forest wild-life investigations, reports interesting results being obtained in his study of a western North Carolina area damaged by forest fires, the purpose being to learn the effect of such fires on the animal population of forested areas and to ascertain the essential facts regarding the repopulation of "burns."

Works on Santa Rita Reserve.--In cooperation with Forest Service officials, Dr. W. P. Taylor spent several days during the first of March on the Santa Rita Grazing Reserve, studying the soils there in relation to the distribution of vegetation and animal life.

Flies to Nome on Inspection Trip.--L. J. Palmer, in charge of the Reindeer Experiment Station, at College, Alaska, recently went by airplane to Nome, Alaska, where he inspected the work at the substation, now in charge of Charles Rouse. Mr. Palmer also reports that the 30 musk oxen now comprising the herd at the experiment station, at College, are thriving and are more easily handled than are reindeer.

Kaibab Deer Herd Reduced.--The "Forest Worker," published by the Forest Service, in January, 1932, gives the following results of the 30-day deer-hunting season on the Kaibab National Forest, Ariz., which began on October 16, 1931, and during which hunters carried away 879 deer: "State licenses permitting the holders to shoot one deer each were issued to 980 hunters, of whom 771 were residents of Arizona and 157 were from California. The plan agreed upon by the United States Forest Service and the Arizona Game and Fish Commission required that every hunter report at a central checking station and be assigned to a hunting camp, and that he return to this camp each night. Hunting of does as well as of bucks was permitted. When a deer that was very poor, badly shot up, or apparently diseased was brought to camp it was condemned and the hunter was given permission to shoot another. Deer condemned in this way numbered 41, and 45 dead deer were found on the range that were believed to have been killed by hunters. No hunting accidents were reported."

Visitors to the Mammal Laboratories.--Among recent visitors to the mammal laboratories of the Survey at the National Museum were John H. Wilterding, of Green Bay, Wis.; Dr. Chas. C. Adams, director of the State Museum, Albany, N. Y.; R. J. Longstreet, of Daytona Beach, Fla.; and Mr. and Mrs. William J. Morden, of New York City. William P. Harris, jr., of Detroit, Mich., used the bureau's collection in connection with his mammal studies during the last week of February. Chas. E. Mohr, of the Reading (Pa.) Public Museum, spent March 7 in the laboratories investigating North American bats.

#### FOOD HABITS RESEARCH

Helps in Iowa Game-Management Program.--Wallace B. Grange has been collaborating with officials in Iowa on plans for the comprehensive game survey and game-management program that has been begun in that State. Mr. Grange plans to visit briefly some of the holders of game-institute fellowships that are now being terminated. This work will carry him to Michigan, Wisconsin, and Minnesota.

To Collect Specimens in Florida.--F. M. Uhler and Arnold L. Nelson left Washington, D. C., on March 16 for a collecting trip to Florida. Although the venture is personal, one of the objectives is to obtain material that will improve the reference collections of the division.

Virginia Bounty Laws Would Affect Birds and Mammals.--On Mr. McAtee's return from Richmond, Va., where he had been attending hearings before a special committee of the Virginia Senate, he reported that the proposed renewal of bounties (not "removal," as erroneously stated on page 18 of the February issue of THE SURVEY) would affect not only the ordinarily outlawed hawks and owls but also the fox, the opossum, the skunk, and the weasel. Objections to bounties on foxes, says Mr. McAtee, are strong in Virginia, where fox hunting is popular, and it appears that no bill including fox bounties can be passed. Whether this item will be sacrificed or the entire bill voted on as it now is can not be stated at this time.

#### FUR RESOURCES

Inspect Muskrat Experiments in Maryland.--Mr. Ashbrook and A. A. Riemer, of the Division of Land Acquisition, during the latter part of the week of March 1 inspected the muskrat experimental work being carried on at Church Creek, Md. It was learned that the muskrats in Dorchester County have been breeding earlier this season than usual and that the catch this year is far below normal.

Study Embryology of Fur Animals.--Mr. Ashbrook was in Baltimore, Md., on March 11, conferring with Dr. Carl G. Hartman, of the Department of Embryology, at Johns Hopkins University, on the cooperative work being conducted there on the embryology of fur animals. Dr. G. W. D. Hamlett, assistant professor of zoology, Indiana University, Bloomington, Ind., is also cooperating in this work, and at present is studying material furnished by the bureau to determine the delayed period of development in the embryology of the badger.

Investigates Disease Outbreak Among Foxes in Massachusetts.--On March 3, Dr. Karl B. Hanson, of the Fur-Animal Experiment Station, Saratoga Springs, N. Y., was

called to Ashby, Mass., to investigate an outbreak of disease on a fox ranch there. One thing brought out by the investigation was the importance of properly quarantining and isolating foxes received from other ranches, even though the ranch from which they were obtained is apparently free from disease.

Breeding Season on at Fur-Animal Station.--Doctor Hanson reports that the fur-animal breeding season at the experiment station has progressed favorably so far, although matings seem to be somewhat later than in previous years. The whelping season will begin soon and will continue until the latter part of April.

Address Rabbit Breeders' Meetings.--During the past several weeks many requests have been received by the officials of the Rabbit Experiment Station to attend breeders' meetings and explain the work of the station. At several such meetings held in February the officials gave short talks on this subject and exhibited film strips or lantern slides.

Delegation Visits Rabbit Station.--On February 28, a delegation of 25 rabbit growers from Orange County, Calif., visited the Rabbit Experiment Station. After hearing a brief explanation of the work of the station the visitors enjoyed a picnic lunch on the lawn of the patio. During the afternoon they were conducted through the station and shown actual work in progress.

Appointment.--Charles E. Kellogg, professor of animal husbandry of the Georgia State College of Agriculture, has been appointed biologist, effective April 1, to assist Mr. Ashbrook in the Washington office. From 1917 to 1920 Mr. Kellogg was employed in the Bureau of Animal Industry, and from 1921 to the present time he has been engaged in teaching and in research work in connection with the feeding, breeding, and handling of domestic animals and livestock.

Radio Talks.--John W. Meyer recently prepared two radio talks given during the Western Farm and Home Hour, San Francisco, Calif. These were "Suggestions for the Establishment and Management of a Rabbitry," on February 26; and "Suggestions on General Care and Handling of Rabbits," on March 26.

Poster on Rabbit Recipes Available.--The Bureau of Home Economics and the Office of Cooperative Extension Work have made available a poster on Rabbit Recipes, 3452-D. These may be obtained from the Office of Cooperative Extension Work, of this Department, Washington, D. C., in either of two styles: 8-by-10-inch photographic prints, at 12 cents each; or 16-by-20-inch bromide enlargements mounted on cloth, at \$2 each.

District Rabbit Breeders See Department Film.--"Rabbit Farming," a motion picture sponsored by the Biological Survey and the Extension Service, was shown to 100 members of the District of Columbia Rabbit Breeders' Association at a meeting held in the projection room of the Motion Picture Laboratory on March 22. Mr. Ashbrook explained to the group the department's work in the various phases of rabbit production and expressed the bureau's desire to cooperate with the association by furnishing information and aiding in solving some of its problems. The film "The Cougar Hunt" was also shown at the meeting. This association, only recently organized, is composed of rabbit breeders of the District of Columbia, Maryland, and Virginia.



## DISEASE INVESTIGATIONS

Studies Disease Conditions in Central States.--Doctor Shillinger returned on March 17 from the Central States, where he had been studying reports of disease conditions in migratory waterfowl, upland game birds, and game animals. At the Illinois State Veterinary Association meeting, held in Peoria on March 9, he spoke on "The Veterinary Profession as Related to Conservation." During his trip he also gave talks at the veterinary colleges in Manhattan, Kans.; Ames, Iowa; and East Lansing, Mich.; and addressed the graduate student body in the School of Forestry and Conservation at the University of Michigan in Ann Arbor. These groups, Doctor Shillinger reports, evidenced their interest in the wild-life disease investigations being conducted by the bureau, by asking many pertinent questions.

Investigate New Fox Diseases in Minnesota.--The Wild-Life Disease Field Station, continuing its studies on diseases of fur animals in cooperation with the University of Minnesota, recently had occasion to investigate outbreaks of diseases responsible for extensive losses on several fox farms. The reports received and the specimens of dead and sick animals procured for laboratory study and transmission experiments indicate that the diseases are of a nature not previously encountered. As yet no method of treating the animals or preventing losses has been developed.

To Study Cyclic Disappearance of Game in Minnesota.--In cooperation with Dr. R. G. Green, of the bacteriology department, University of Minnesota, the bureau is making plans for a systematic study of some of the wild-life diseases that may be responsible for the cyclic disappearance of game. In this project the State Conservation Commission, under the direction of W. T. Ccx, has offered substantial assistance. Doctor Green is placing at the disposal of the cooperative project a tract of his personally owned property, an island in Lake Alexander, on which are a well-furnished cottage for temporary living quarters and pens for holding animals for observation. On the adjacent mainland is a field laboratory equipped for disease studies.

Reemployed for Upland Game Bird Studies.--Dr. L. C. Morley, who worked with the bureau in its quail-disease studies last summer, has again been employed as an agent, effective June 1, for much-needed investigations on diseases of upland game birds.

Advises on "Quail Disease" Outbreak.--During the early part of December Doctor Shillinger was called to the Maryland State Game Farm at Gwynbrook, Md., to diagnose a disease that had resulted in the death of a number of quail there. In all the birds examined he found pneumonia well developed. Further developments in the course of this outbreak suggested the presence of "quail disease." This indication was verified later during the winter, when additional specimens, procured by Doctor Shillinger and scientists of the University of Maryland, were examined at the University laboratories. Measures suggested by the specialists, particularly a spreading out of the birds, were carried out, and the disease has now been checked, though a severe loss of quail was suffered during the winter months.

## PREDATORY-ANIMAL AND RODENT CONTROL

Confer in Washington.--The regional supervisors of predatory-animal and rodent control and F. E. Garlough, director of the Control Methods Research Laboratory at Denver, Colo., arrived in Washington on March 18 for conferences on various matters pertaining to the bureau's control work.

Rice Growers Interested in Rat Control.--Roy Moore, leader of the Mississippi-Louisiana-Alabama district, recently organized a permanent rat-control project among rice-warehouse and mill owners in Louisiana. Every mill and warehouse owner in the Crowley district, where 40 per cent of the rice grown in the United States is produced, has joined the project. Each of the owners was assessed \$2 for the establishment of a fund to be used for the purchase of bait materials. Baits prepared by the leader or the county agent will be put out by an employee of each company on its own premises four to six times a year, according to the need.

"The Modern Pied Piper" Retired.--The motion picture, "The Modern Pied Piper", has been recently withdrawn from circulation because of the adoption of some improved methods not shown in the picture. This film, which was released on January 15, 1924, illustrated several methods of controlling rats. The Office of Motion Pictures did not keep a record of the attendance at showings prior to July 1, 1927, but since then 151,797 persons are recorded as viewing the rat-control picture. It is estimated that half a million in the aggregate have seen it. Copies of the film also were sold to five educational institutions in the United States, and one copy was purchased by the Minister of Industry, Montevideo, Uruguay.

Mexican Officials Interested in Cotton-Rat Control.--Dr. Francisco M. Moguel, attache to the Mexican Embassy, recently called at the bureau to obtain detailed information on methods of controlling cotton rats, which he says are doing damage to crops in the vicinity of Lake Chapala. These rodents are reported to be especially destructive throughout the States of Michoacan and Jalisco.

Bach Trial Postponed.--The trial of Dr. Glenn R. Bach, former leader of predatory-animal control in Washington State, reference to which was made in the January issue of THE SURVEY, has been postponed to the July term of the Federal Court. The trial was originally set for January 23.

Appointment.--Hammond Hanson, who has worked as an assistant in the Idaho district since April, 1931, was been appointed agent in that district.

John M. Grow. a cooperative hunter in the Utah district, died on March 8, following an operation. He had served with the bureau since 1918. Those who attended the Ogden conference will remember Mr. Grow as having guided the group to one of his poison stations on the Ogden River.

Broadcast.--Six radio talks were broadcast by members of this division during the last part of February and early March. Dr. J. C. Munch spoke on "The Recent

Thallium Outbreak in California," over Station WIP-WFAM, Philadelphia, Pa., under the auspices of Temple University; Leo K. Couch, leader, Washington district, on "Our Government Hunters"; D. D. Green, leader, Colorado district, on "Control of Injurious Rodents," over Station KOA, Denver, Colo.; R. Scott Zimmerman, leader of rodent control in the Utah district, on "Rats, a Disease and Economic Menace," over Station KSL, Salt Lake City, Utah; F. E. Garlough, director of Control Methods Research, on "Predatory-Animal and Rodent Control by the Federal Government," over Station KOA, Denver; and A. M. Hupe, rodent foreman in California, on "The Porcupine," over Station KYA, San Francisco.

Hold Regional Fur Sales.--Regional fur sales were held at Denver, Colo., on February 16, by Regional Supervisor Leo L. Laythe, and at Albuquerque, N. Mex., on February 12 by Regional Supervisor Don A. Gilchrist. At these sales 8,092 coyote skins, 779 bobcat skins, 21 wolf skins, and 204 miscellaneous skins were sold. During December Regional Supervisor Ira N. Gabrielson held a regional fur sale at Seattle at which 816 coyote skins, 56 bobcat skins, and 5 miscellaneous skins were sold. The number of skins disposed of at a later sale, held in March by Mr. Gabrielson, has not yet been reported.

#### LAND ACQUISITION

Additions Made to Refuge Areas.--Following is a summary of recent additions to existing refuges made by Executive orders reserving areas of public land: A small area was added to the Crescent Lake Migratory Bird Refuge, Nebr., by Executive order of March 16, 1931. An area of public land aggregating 18,000 acres, embraced within the exterior limits of the Fallon Refuge, Nev., was withdrawn by Executive order of April 22, 1931. On September 29, 1931, approximately 1,000 acres of public lands intermingled with State-owned lands receiving protection were reserved by Executive order setting up the Locomotive Springs Migratory Bird Refuge, Utah. By Executive order of October 31, 1931, the St. Marks Lighthouse Reservation was included in the St. Marks Migratory Bird Refuge, Fla., a refuge consisting of 19,268 acres of lands acquired and in process of acquisition, together with an estimated area of 13,600 acres of water surface of the Gulf and inland waters; the present 33,219-acre area, including a small private holding, was closed to public shooting by Presidential proclamation on December 24, 1931, under the migratory bird treaty act. The Big Lake Reservation in Arkansas was modified by additions and eliminations advantageous to the United States by Executive order dated November 11, 1931. Additions were made to the Hutton Lake and Bamforth Lake Migratory Bird Refuges, in Wyoming, by Executive orders dated January 28 and 29, 1932. Approximately 1,100 acres of public land in North Dakota were reserved by Executive order dated February 25, 1932, as an important addition to the Long Lake Migratory Bird Refuge. In view of the marked activity in filings on the unappropriated public domain, reported by the General Land Office as probably due to present economic conditions, it is especially fortunate that the Biological Survey has obtained these areas for refuge purposes.

Completes Field Work on Blackwater Refuge.--Kenneth C. Kern, transitman, returned to Washington on March 9, having completed the field work on the Blackwater Migratory Bird Refuge in Maryland.

Camp Lee and Fort Eustis Areas Examined.--R. O. Gustafson and Howard J. Sargeant have completed the field examination of the Camp Lee and Fort Eustis areas in Virginia, which have been listed for abandonment by the War Department. These two areas contain approximately 15,000 acres. Their transfer from the War Department is subject to Congressional legislation.

Working on Proposed Cheyenne Bottoms Refuge.--Daniel H. Janzen has concluded preliminary investigative work in the Cheyenne Bottoms, Kans., and has returned to Kansas City, Mo., which will be his headquarters while on work connected with the establishment of the proposed Cheyenne Bottoms Refuge and while conducting refuge examinations in the Mississippi Valley region.

Compiling Map of Malheur Reservation.--Carey H. Bennett, who has been engaged in survey work on the Benton Lake, Mont., and Malheur Lake, Oreg., refuges, has been assigned to assemble information and compile a type map of the Lake Malheur reservation.

#### GAME AND BIRD CONSERVATION

Confers with Game Protectors in Florida.--W. R. Dillon, assistant United States game conservation officer, conferred with Game Protectors Kelsey, Merovka, and Boring, at Jacksonville, Fla., on March 2, in connection with plans for special work in Florida, to which these protectors were assigned. As a result, the protectors, in cooperation with one of the Florida State game wardens, were shortly afterwards successful in obtaining important evidence against a reputed violator of the State and Federal game laws in southern Florida.

Called to Washington for Conference.--Ray C. Steele, superintendent of the Upper Mississippi River Wild Life and Fish Refuge, Winona, Minn., and United States Game Protectors Harry Barmeier, of St. Louis, Mo., and L. J. Merovka, of Memphis, Tenn., were called to the Washington office the last week in March for a conference in connection with bureau matters.

Confers with Washington Officials.--John Q. Holmes, United States game protector, following completion of the work to which he was assigned in Illinois, was in the Washington office early in March conferring with officials. Effective March 15, Mr. Holmes's headquarters were changed from Omaha to Orleans, Nebr.,

Michael Conoannon. United States deputy game warden, of Lansing, Kans., died on March 4, at St. John Hospital, Leavenworth, Kans. Mr. Conoannon had been a cooperator of the bureau in game-conservation matters almost continuously since the enactment of the migratory bird law of 1913, and for 28 years he had been actively engaged in game-law enforcement in Kansas.

Bela T. Wass. United States deputy game warden, of Cherryfield, Me., passed away on February 26. Mr. Wass had held a commission as a Federal deputy continuously since November 1, 1918.

Deputy Game Wardens Commended.--Letters of commendation have been sent by the bureau to United States Deputy Game Wardens John W. Creighton and Cornelius W. Wallace, of Fishing Creek, Md., for their valiant work in saving from probable

destruction the motor boat Curlew during a blizzard on Sunday, March 6. These deputies, at great personal risk, put off in a small boat, succeeded in reaching the threatened motor boat, and put out additional mooring lines, then remained on deck throughout the storm, warding off other boats that had been driven loose from their moorings. It was with much difficulty that they regained the shore after securing the Curlew. The storm is reported to have inflicted heavy damage on small craft all along the bay; it was due solely to the courage and skill of the deputies that the Curlew, also, was not wrecked.

Fined for Killing Ducks.--Two residents of Westmoreland, Calif., charged with killing and possessing ducks on January 10, 1932, in close season, were arraigned in Federal court at San Diego on February 29. Pleas of guilty having been entered, one defendant was fined \$70, and the other, \$40. The evidence was obtained by Federal Deputies Robert J. Little and Ted R. Jolley, and information concerning the prosecution was submitted by Deputy Glidden.

Hunting Ducks after Sunset Costs Offender \$100.--Charged with hunting wild ducks after sunset, a defendant who entered a plea of not guilty, when arraigned in Federal court at Houston, Tex., on March 1, was adjudged guilty by the court and fined \$100. This hunter was apprehended by Protector Frank Clarkson.

Catch 3 Men with 517 Ducks.--With a view to breaking up illegal traffic in migratory waterfowl, near Browning, Ill., Protector Stephen Creech discussed plans with State game wardens and highway police, and obtained assurance of their active aid. On March 11 State-highway police officers and State game wardens found Faril Lane and Perry Lane, of Browning, and Frank Nulk, of Fox Lake, transporting 517 wild ducks and 1 wild goose by automobile. The evidence thus obtained was turned over to Protector Creech, who had the accused arraigned before a United States commissioner. They were held on \$5,000 bail each for the action of the Federal court. Both Faril and Perry Lane have in previous years been arraigned and fined in Federal court for infractions of the migratory bird treaty act.

Winter at the Elk Refuge.--Two severe blizzards occurred in the Jackson Hole region, Wyoming, in February, during which much snow fell. The Hoback Road, which had been kept open by plows for car travel, was closed for two weeks by snow slides, and drifts around the haystacks and buildings on the refuge were as high as they have been at any time in the past 10 years. On the eastern and northern sides of some haystacks the snow had drifted to the top of the 7 1/2-foot panels that surround the stacks, and it was packed so solidly that elk could go over to the hay. This made it necessary to employ three additional men for a period of six days to shovel wide trenches outside the fence panels, to prevent damage by the elk. State employees, assisted by two forest rangers and by Protector Almer P. Nelson, were engaged during February in driving elk that were damaging haystacks on private ranches in the locality onto the feeding grounds. Most of the elk drives were made on snowshoes, as the snow was too deep for horses to be used. According to the record kept by men engaged on this work, more than 1,000 elk were rounded up between January 27 and the end of February. By February 23, most of the elk scattered over the lower valley had been gathered to the feeding grounds on the refuge. During February the State established two feeding grounds south of the town of Jackson, and began feeding about 900 elk at these points. According to a count made on March 4 by Protector Nelson, assisted

by Forest Supervisor A. C. McCain, the State fish and game commissioner, and four deputy State game wardens, approximately 8,000 elk were on the three feeding grounds at the refuge. These animals are being fed 22 loads of hay and 2 1/2 tons of cottonseed cake a day. The greater number of the elk on the refuge are reported to be in good condition, especially the younger animals. By the end of February, 93 elk had died on the refuge this winter. On March 4, Orange A. Olson, of the Ogden office of the Forest Service, flew over practically the entire Gros Ventre winter range, and counted 4,590 elk in slightly more than three hours. Counting from the airplane under the direction of Supervisor McCain was later continued over the outlying districts of the region, with the result that the southern elk herd was found to number 19,855, an increase of 617 over the number reported in a count made five years ago.

Takes Charge of Crescent Lake Refuge.--William T. Krummes, junior forester, formerly of the Division of Land Acquisition, has been assigned as acting supervisor of the Crescent Lake Migratory Bird Refuge, Garden County, Nebr.

Appointment.--Clifford L. Tice, reservoir superintendent at the McKay Dam under the Bureau of Reclamation, has been appointed deputy reservation protector at the McKay Creek Bird Reservation, which is within the Umatilla Reclamation Project, in order that more effective protection may be given wild life.

Addresses Students.--Superintendent George E. Mushbach, of the Bear River Migratory Bird Refuge, in response to an invitation from high school officials, went to Garland, Utah, on February 11, and addressed the combined classes in agriculture and biology of the high schools of Tremonton and Garland (160 students), on the subject of the Bear River Migratory Bird Refuge. He later gave a talk on the birds of the refuge, using slides. On March 2, before the Forestry Club of the Utah Agricultural College, Logan, Utah, Mr. Mushbach spoke on the refuge and illustrated his talk with slides showing birds of the region.

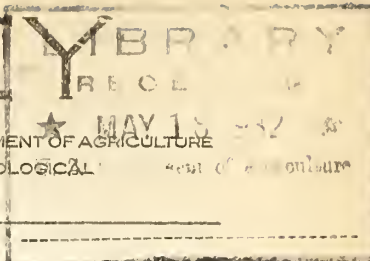
Coyotes Kill Deer on National Bison Range.--Four deer were recently reported killed by coyotes on the Bison Range, in Montana. The carcasses of these animals were found by an employee, while riding the range. It is becoming apparent that close trapping of coyotes at all times is essential to sound game management on the National Bison Range.

Parrakeets Destroyed by Public Health Service.--A shipment of 200 shell parrakeets from Japan, placed in quarantine on Hoffman Island, N. Y., on January 27, was destroyed by the Public Health officials on February 19. The quarantine officers were unwilling to release the birds because of some deaths among them, and neither the consignee nor the shippers were willing to bear the expense of further quarantine. This shipment had been refused entry at San Francisco.

Sand Grouse and Francolins Imported.--Among the more interesting birds imported during the month were 34 sand grouse and 42 francolins, which arrived at San Francisco from Calcutta on February 17.

Quail Shipments Less Than Last Year.--Only 6,380 quail were entered from Mexico during the first four weeks of 1932, according to reports received thus far this season. More than three times that number were imported in the same period last year. Most of the birds this season were entered at Laredo, only 829 having been reported at Brownsville, and none at Eagle Pass.

# THE SURVEY



ISSUED MONTHLY FOR THE PERSONNEL OF THE BUREAU OF BIOLOGICAL SURVEY, U. S. DEPARTMENT OF AGRICULTURE  
CREDIT FOR MATTER REPRINTED FROM THESE PAGES SHOULD BE GIVEN TO THE BIOLOGICAL SURVEY AS A BUREAU, NOT TO "THE SURVEY" AS A PUBLICATION

Vol. 13

Washington, D. C., April 30, 1932

## GENERAL NOTES

Chief Addresses Waltonians.--All programs of waterfowl restoration are long-time affairs and the immediate necessity is for self-restraint on the part of sportsmen, Mr. Redington emphasized in an address on "Developments in Federal Game Conservation," delivered April 22 at the Chicago Convention of the Izaak Walton League of America. "If we fail," he said, "to conserve and maintain an adequate stock of birds during the period while progressive measures of restoration are being perfected, we shall find ourselves with all necessary equipment for the benefit of the birds, but with no birds." He pointed to the need for a national program of wild-fowl conservation. Success will not come, he said, without labor, expense, patience, and sacrifice. "Perhaps more essential than any other requirements are unanimity of effort and emphasis on the importance of harmony among the various groups interested." In concluding his address, Mr. Redington reasserted the importance of carrying forward the 3-point program of research, refuge establishment, and enforcement of restrictions on hunting, and made a plea for conservation on esthetic grounds. The Biological Survey's concern for the conservation of wild life was emphasized by the chief in the early part of his address. About 72 per cent of the bureau's appropriations for this year, he showed, were for conservation and related lines of work and only 28 per cent for the control of injurious species. Mr. Redington pointed out that the conservation interests of the Biological Survey include not only game, but all forms of wild life. In addition to safeguarding the fur bearers in its control operations, he said, the bureau aids the States in enforcing their fur laws by making it difficult to ship in interstate commerce bodies of fur animals or their pelts when taken illegally. He also made reference to the cooperation of the Izaak Walton League to protect the Jackson Hole elk herd and stressed the need for developing interest in the antelope herds and building up their numbers.

Mr. Redington and H. P. Sheldon, who attended the convention with the chief, sat in on the sessions, and conferred with delegates, the visiting game commissioners, research men, and others.

At the Sherman Hotel, where the convention was held, the bureau conducted two exhibit booths, in charge of Lisle Morrison. One booth represented a hunter's cabin with coyote, bobcat, and bear skins on the wall and specimens of game birds mounted on the mantle above a stone fireplace. In the other booth, depicting a flight of Canada geese, two mounted specimens of these birds were shown in the foreground and colored lights were thrown on the backdrop to give the effect of a rising sun. A panel of four photographs of two bull elk fighting and, beside it, the interlocked horns of both elk attracted considerable attention, Mr. Morrison reports.

Confer with Canadian Officials.--From April 13 to 16 Mr. Redington and H. P. Sheldon were in Ottawa, Canada, conferring with Dominion and Provincial game officials. The discussions revolved around the status of migratory waterfowl, many interesting papers being presented by the various officials. "The relationship between the United States and the Canadian officials charged with the carrying out of the Mi-

gratory Bird Treaty Act," says Mr. Redington, "is a very happy one. The officials in Canada are trying to do the best they can for the conservation of the waterfowl, just as is the Biological Survey in the United States. The close contact established with these officials will make easier the problems of the Survey within the continental United States and Alaska."

Alaska Regulations Amended.--New Alaska game and fur regulations to become effective July 1, 1932, were issued on April 2 by the department as Alaska Game Commission Circular No. 9, entitled, "Laws and Regulations Relating to Game, Land Fur-Bearing Animals, and Birds in Alaska." The new regulations, submitted through the Biological Survey, were approved by Secretary Hyde on March 19. The outstanding changes announced are as follows: To prevent undue depletion of mountain sheep on the Kenai Peninsula, the nonresident bag limit on these animals is reduced from two rams per hunter to one. For the conservation of moose, an area closed to the taking of these animals has been established on the northeastern part of the Kenai Peninsula. An area 1 mile wide on the east side of Richardson Highway and most of the land between the highway and the Delta River on the west side has been closed to all hunting, in response to a petition from residents of McCarty calling attention to the wounding of several buffalo in that vicinity late last fall. As a result of some unwarranted killing of large brown and grizzly bears a limit of two of these bears has been established for residents in southeastern Alaska. Under the provisions of an Executive Proclamation of 1892, a closed season for large brown bears on Afognak Island has been established. By amendment to a regulation of the Alaska Game Commission a nonresident must be accompanied by a guide when photographing large brown or grizzly bears, a measure adopted to prevent serious accidents to persons afield, as well as the unwarranted killing of the animals. In addition to several minor changes in open seasons for the taking of fur-bearing animals and the provision of a slightly longer open season on fox, lynx, mink, land otter, and weasel in fur district 2, an open beaver season was announced for 1933 in all fur districts except districts 1, 3, and 8. An open season on marten is provided in fur district 7. Bag limits and tagging and sealing provisions, similar to those heretofore announced in supplemental circulars, are continued by amendments to regulations appearing in the new circular. Taking protected game animals and birds from motor vehicles and using machine guns in hunting are prohibited. The Alaska open season for migratory game birds in 1932 will be the same as that to be established for the Territory by regulation under the migratory bird treaty act.

Regarding the protection of large brown bears, H. W. Terhune, Executive Officer of the Commission and representative of the Biological Survey, issued a statement from which the following paragraphs are quoted:

"The Alaska Game Commission considers that the Alaskan brown bears have had sufficient protection during recent seasons and are not in any danger of extermination, but in view of the fact that so much attention has been focused on these unique animals during the past year, and to give them the benefit of any possible doubt, the Commission recommended the added protection afforded these bears by the new regulation.

"Various estimates have been published as to the number of brown bears in Alaska, the majority of these having been made by persons who have spent a comparatively short time in the Territory and who have undoubtedly based their findings on observations over a small portion of the animals' total range. Considering both



the recorded legal kill and a liberal estimate of the unrecorded legal and illegal kill, the Commission finds that the annual kill of these bears is well within the average normal annual increase to be expected from the most conservative estimates of their numbers in the Territory. Unbiased observers familiar with conditions throughout the total range state that the bear population is, with minor exceptions, well distributed."

Bird Board Organizes.--The Advisory Board, Migratory Bird Treaty Act, recently reorganized by Secretary Hyde, held its first meeting on April 7 at the Cosmos Club, Washington, D. C. Lee Miles, Chairman of the Arkansas State Game and Fish Commission, Little Rock, was elected chairman of the board and Seth Gordon, President of the American Game Association, Washington, D. C., a member at large, was elected secretary. Mr. Miles represents district No. 6--Kentucky, Tennessee, Alabama, Mississippi, and Arkansas.

Copies of March SURVEY Wanted.--Because of a special need for the March issue of THE SURVEY, it will be appreciated if those in Washington having copies they no longer desire will send them to the Editorial Office.

4-H Club Champions Visit Survey.--On April 7, Miss Mary Todd, of Georgia, and Andrew Colebank, of Tennessee, the national champions of the boys' and girls' 4-H clubs for 1931, visited the Editorial Office of the Survey, where they were given detailed information regarding the various functions of the bureau by the editor, W. H. Cheesman. They were also taken to some of the other offices in the Bieber Building, and later visited offices in other buildings. Under their award of the Payne Fellowship Fund for outstanding work in 4-H clubs and in colleges (both are graduates of their State Universities) they are enabled to spend the school year 1931-32 on research work in the Department of Agriculture, acquainting themselves with its organization and functions prior to entering on later duties as extension workers.

Elected President of Bird Club.--At the tenth annual meeting of the Baird Ornithological Club, held in Chevy Chase, D. C., on March 23, Dr. T. S. Palmer was elected president to succeed E. R. Kalmbach. F. C. Lincoln was elected secretary, and A. H. Howell a member of the Council.

Official publications of the bureau received in April are:

- "Raising Chinchillas in Captivity." Bi-1190, 2 pp., March, 1932. Received April 1.
- "Laws and Regulations Relating to Game, Land Fur-Bearing Animals, and Birds in Alaska, 1932-33." Alaska Game Commission Circular No. 9, 36 pp., illus., April 2, 1932. Received April 2.
- "Directions for Poisoning and Trapping Pocket Gophers." Bi-1200, 4 pp., illus., April, 1932. Received April 11.

#### BIOLOGICAL INVESTIGATIONS

Reports from Jackson Hole.--O. J. Murie reports that winter conditions in the Jackson Hole were about normal as regards the effect on the elk, and that apparently there was little loss among these animals in the hills; in the valley

there were some losses, in many cases clearly attributable to necrotic stomatitis, caused mainly by eating foxtail hay. In the recent airplane count made of the elk, Mr. Murie states, moose also were easily seen but mountain sheep were difficult to locate, since they occupied more broken ground where bare patches helped to conceal them. During the winter Mr. Murie completed the report on his studies of the food of the coyote.

Complete Improvements in Mammal Laboratory.--The storage cases in the bureau's mammal laboratories, located in the National Museum, have recently been enameled white, and the floors have been painted. All of the construction work and painting on the new galleries has now been completed.

Uses Bureau's Collections.--Joseph Dixon of Berkeley, Calif., field naturalist of the National Park Service, used the bureau's mammal and bird collections during the week of April 18 in connection with his studies on the fauna of the Mount McKinley National Park.

#### FOOD HABITS RESEARCH

Inspects Quail-Management Projects.--Following another tour of inspection of experimental quail-management projects in States from Oklahoma eastward and southward, Wallace B. Grange arrived in Washington on April 25 to confer with officials in connection with reports and other matters. He left on April 28 for an inspection of quail projects in Indiana, after which he will go on an indefinite furlough to engage in private business.

#### FUR RESOURCES

Attends Meeting in Canada.--Mr. Ashbrook attended the First International Convention of Retail Furriers, held in Toronto, Canada, on April 12 and 13. On the second day, he gave a short talk on the bureau's work in experimental fur farming, illustrating it with the department's motion picture on the subject.

Foxes Born at Experiment Station.--Dr. Karl B. Hanson reports that the whelping season at the Fur-Animal Experiment Station, Saratoga Springs, N. Y., began on March 11, with the birth of a litter of 3 fox pups. At the time of Doctor Hanson's report, 8 litters, aggregating 36 pups, had been born.

Meeting of Rabbit Breeders in California.--On March 7, John W. Meyer and A. E. Sutor, of the Rabbit Experiment Station at Fontana, Calif., attended the quarterly meeting of the Southern California Rabbit Breeders Conference, held at Riverside. The Conference was organized on December 23, 1929, at the rabbit station, for the purpose of bringing California rabbit breeders together periodically and of providing an opportunity for general discussion of problems. At a meeting of the Orange County Rabbit Growers Association held in Santa Ana, Calif., on March 16, Mr. Meyer gave a talk, illustrated with motion pictures, on rabbit raising and the work of the experiment station; on March 18, he spoke before the Fontana Rotary Club on the "Outlook of Rabbit Raising at the Present Time," and in the evening addressed the San Bernardino County Rabbit Department of the Farm Bureau on the subject of rabbit feeding. Dr. F. D. McKenney, of the bureau's disease investigation unit, and Mr. Meyer spent March 23 and 24 studying disease problems in rabbitries in and around Fontana.

Visits Rabbit Station.--Approximately 50 rabbit growers from Riverside and San Bernardino Counties inspected the rabbit station on March 24 as part of the program of their annual tour. Doctor McKenney addressed the gathering and discussed the rabbit-disease situation, after which the breeders were conducted through the station and the work in progress was explained in detail.

#### DISEASE INVESTIGATIONS

To Collaborate with Bureau.--To help meet the great need for extended studies of wild-life diseases, three scientists--Dr. Earl C. O'Roke, Dr. H. J. Stafseth, and Dr. E. J. Frick--have been appointed collaborators of the bureau. Doctor O'Roke, whose extensive work on protozoan parasites of wild life is well known to many members of the bureau, has been connected during the past three years with the School of Forestry and Conservation of the University of Michigan, where he has made notable contributions to knowledge of the leucocytozoon parasite of wild ducks. Doctor Stafseth, professor of Pathogenic Bacteriology in the Veterinary School of Michigan State College, has during the past fifteen years devoted much time to research on the pathological conditions of all forms of animal life. Doctor Frick is professor of surgery in the Veterinary School of the Kansas State College; for some years he has been actively interested in diseases of fur animals and of other wild life.

Called to Fox Ranch in Massachusetts.--At the request of the proprietor, Dr. Karl B. Hanson, director of the Fur-Animal Experiment Station at Saratoga Springs, N. Y., visited a fox ranch on April 11 and assisted in controlling an outbreak of disease among the foxes.

Visits Washington.--Doctor O'Roke was in Washington on April 13, 14, and 15 conferring with several members of the bureau and other scientific workers in the city. He stopped here on his return trip to Ann Arbor, Mich., from Princeton, N. J., where he had delivered an address at the Rockefeller Institute for Animal Pathology on his work on certain blood parasites of wild ducks.

#### PREDATORY-ANIMAL AND RODENT CONTROL

Captures Notorious Arkansas Wolf.--Leader A. E. Gray of the Arkansas-Oklahoma district, reports that "Big Foot," a notorious gray wolf of the Ozark National Forest, was caught on April 1, by Hunter "Uncle Bud" Woodward. This animal, said to have destroyed more than \$5,000 worth of livestock, weighed 75 pounds, was 5 feet long, and 31 inches high.

Michigan Predatory-Animal Headquarters Changed.--On April 15, the headquarters of H. P. Williams, predatory-animal control leader, were moved from Munising to Escanaba, Mich., where space is available in the Federal building.

Conference of Field Officials Successful.--The conference of the four regional supervisors and F. E. Garlough, director of the Control Methods Research Laboratory, with headquarters officials in Washington, D. C., was very successful. Various problems connected with field operations were discussed, and the budget for the coming fiscal year was tentatively planned. Mr. Garlough spent several days in interviewing strychnine manufacturers and other manufacturing chemists.

Rat-Control Campaign Stops Damage to Crops.--Leader Roy Moore reports remarkable success attained in a campaign against the brown rat, which was damaging hundreds of acres of newly planted corn in La Fourche Parish, La. Eleven hundred pounds of bait distributed among about 50 farmers proved on check-up three days later practically to have stopped the depredations. One farmer remarked that the \$10 he spent for 70 pounds of bait was worth \$500 to him.

#### LAND ACQUISITION

Land Withdrawn for Proposed Refuge Area.--By Executive Order No. 5818, dated March 10, 1932, an area of 4,688 acres of public land in Grant County, Wash., was withdrawn for classification as to suitability for a proposed migratory-bird refuge. A considerable portion of the land borders the water surface of three lakes within the proposed refuge, and the entire area constitutes approximately 50 per cent of the lands necessary for setting up an effective unit.

To Survey Bear River Refuge.--Charles S. Cook left Washington on April 2 for Ogden, Utah, where he will confer with Superintendent Mushbach preparatory to the survey and posting of the Bear River Migratory Bird Refuge. Oswald E. Recroft, Jack Upham, and James Whitehead, who are to assist Mr. Cook with the field work, left Washington on April 4.

Detailed to Ogden.--Carey H. Bennett, who has been working on the Malheur project, has been detailed to Ogden, Utah, where he will make his headquarters while conducting land examinations and investigative work in the West.

To Examine Proposed Refuge Areas in Oklahoma.--Howard J. Sargent left on April 9 for Kansas City, Mo., to assist D. H. Janzen in examining recommended refuge areas. They are at present engaged in making detailed field examinations in Oklahoma.

#### GAME AND BIRD CONSERVATION

Visits Washington Office.--Ray C. Steele, superintendent of the Upper Mississippi River Wild Life and Fish Refuge, and United States Game Protectors Harry Barmeier and L. J. Merovka were in Washington during the latter part of March and the first of April conferring with bureau officials.

Assignment.--Game Protector Floyd A. Johnson of Watertown, S. Dak., has been assigned for a few weeks to work with Protector John E. Perry, of Kansas City, Mo., in the latter's district.

Waterfowl Law Violators Sentenced.--For killing and possessing migratory waterfowl on February 21, 1931, a resident of Illinois, apprehended by Protector Barmeier and United States Deputy Game Warden Adams, was fined \$200 and costs and in default served 33 days in jail, according to the report of terminated cases received by the bureau last March. A resident of Texas apprehended by Protector Clarkson for killing ducks after sunset, on January 31, 1931, was fined \$100 on March 1. A resident of Ohio on August 16, 1931, who was apprehended by Protector Charlton for trapping ducks, was fined \$100 and costs of \$28.30 on March 21; in addition he was sentenced to 90 days in jail, but the jail sentence was suspended, the defendant being placed on probation for three years.

Mule Deer Appear at the Elk Refuge.--On March 3, twelve mule deer appeared on a hill east of headquarters at the Elk Refuge, Wyo., and a few days later came onto a butte within the refuge. Protector Almer P. Nelson says that years ago mule deer wintered on this butte and the adjacent hills, but he has been informed that the recent appearance is the first observed there since about 1910.

Birds at Big Lake Reservation.--Protector Steven B. Crossley reports that coots are far less plentiful at Big Lake Bird Reservation, Ark., than at this time in past years. A good number of ducks were still at the refuge on April 5, owing, the protector believes, to the mild season and favorable water conditions.

Animals Shipped from Sullys Hill.--On March 30, a buffalo bull 4 years old, a buffalo heifer of the crop of 1931, and a mature bull elk were transferred from Sullys Hill Game Preserve, N. Dak., to the Zoological Gardens at Duluth, Minn.

Appointment.--Nels Nelson was appointed a United States deputy reservation ranger and United States deputy game warden at the Upper Mississippi River Wild Life and Fish Refuge, effective April 1. Mr. Nelson will serve as caretaker of the Pikes Peak area near McGregor, a public recreational area that attracts considerable numbers of visitors during summer months.

Feeding at the Elk Refuge.--About 6,000 elk were still being fed at the Elk Refuge, Wyo., when the latest reports were received, although the animals were finding considerable forage on the meadow and pasture lands and about 1,500 had gone to adjacent areas. Protector Almer P. Nelson stated that most of the animals were in good condition. Approximately 200 elk died during the winter on the feeding grounds and in the vicinity. Mr. Nelson estimated that 550 tons of hay and 27 tons of cottonseed cake, belonging to the State, remained on hand, and accordingly that about 3,436 tons of hay had been fed to the elk up to the close of March.

Eight Refuge Violators Apprehended.---Upon failure to furnish bonds in the amounts of \$1,000 and \$500 as fixed by United States commissioners before whom arraigned, three offenders arrested recently by Rangers Hall and Fort and Deputy Ranger Frerichs for trapping in closed areas of the Upper Mississippi River Wild Life and Fish Refuge were committed to jail to await the next term of Federal court. Two of the violations occurred in Houston County, Minn., the third in La Crosse County, Wis. Another offender, a resident of Vernon County, Wis., was apprehended by the same officers on April 2 for trapping in a closed area of the refuge and without a permit from the superintendent. On April 10, Ranger Lundberg in company with State Warden Jacobs apprehended two residents of Alma, Wis., for fishing contrary to Minnesota State law. Upon arraignment at Wabasha, Minn., on April 11, both entered pleas of guilty; one was fined \$20 plus costs of \$5 and the other released because of his youth. Two residents of Bellevue, Iowa, apprehended by Ranger Cheney on April 10 for illegal possession of wild ducks, were arraigned in State court at Maquoketa, Iowa, on the following day, when one upon a plea of guilty was fined \$25 plus costs amounting to \$10.25, in addition to having his shotgun confiscated; and the second, upon plea of not guilty, was placed under bond in the sum of \$200 for subsequent appearance.

Trapping Season Ends at Upper Mississippi Refuge.—The Superintendent of the Upper Mississippi Refuge issued 343 permits to individuals allowing them to trap muskrats on open areas of the Upper Mississippi Refuge in Minnesota and Wisconsin during the open seasons for those States. The Wisconsin season as fixed by the legislature was March 1 to April 10; the Minnesota season, determined by the State Game and Fish Commissioner, was at first established as March 22 to 31, and later extended to April 10. Permittees trapping on the refuge were required to observe certain restrictions in addition to those imposed by State law. Each permittee was limited to trapping in one county. A restriction was placed upon the size and type of trap which might be used. The possession or use of a muskrat spear, running trap lines between sunset and half an hour before sunrise, and cutting natural growth, except willows for trap stakes or drags, were prohibited. It was further required that each trap be visited at least once each day and that at the close of the season all traps be removed from the refuge; that all birds and mammals, except muskrats, found alive in traps be immediately liberated; and that all such birds found dead or mortally injured be turned over to a refuge official. Each permittee was required at the close of the trapping season to submit to the superintendent a report of his total catch, together with the names and addresses of persons or firms who received the animals or pelts. These requirements enabled refuge officials to keep a check on the operations of permittees, while failure to comply with any of the provisions would not only render a permittee subject to prosecution but would also be sufficient ground for refusal of a permit for the next trapping season. Final reports submitted by holders of Federal trapping permits have not yet been tabulated. A preliminary examination, however, has indicated that, in spite of the unfavorable weather and ice conditions that prevailed up to the last few days of the trapping seasons, at least a fair catch was obtained. Prices paid for pelts were in line with low commodity prices in general; nevertheless, a temporary source of activity and revenue was afforded a number of unemployed. At the same time a liberal breeding stock of animals was preserved. State seasons in Iowa and Illinois had closed before the opening of the contemplated spring season on the refuge so that no trapping was permitted on portions in those States.

Upper Mississippi in Path of Migrating Waterfowl.—More ducks used the area of the Upper Mississippi Refuge as a route of migration this spring than have been recorded at any time in recent years, E. C. Hotchkiss, acting superintendent of the refuge, reported on April 21. The unusual concentration of ducks (scaup and mallards predominating) during the greater part of April was a matter of much public comment throughout the length of the refuge zone. The principal factor believed responsible for this situation was the unusually favorable stage of water prevailing in the river, sloughs, and adjacent marshes. With every effort exerted to effect the most intensive patrol throughout the length of the refuge, in order to afford the large numbers of birds present all possible protection, violations were kept to a minimum.

Food-Producing Trees Planted.—Sites are being selected on upland portions of the Upper Mississippi Refuge on which to plant trees and shrubs that will produce food for birds. On the Pikes Peak area, about 600 such trees indigenous to the region, including mulberry, wild plum, wild crab, American mountain ash, and high-bush cranberry, were recently planted under the direction of Junior Forester H. A. Miller, of the refuge. The shrubs are planted in thicket formation to provide both cover and food for game.

Meets with Audubon Directors.--Dr. T. S. Palmer returned on April 27 from New York City, where he had been attending a meeting of the board of directors of the National Association of Audubon Societies. While in New York, he also conferred with bird dealers and with L. S. Crandall, inspector of importations of foreign birds.

Quail Shipments.--Shipments of quail from Mexico continued during March and April in comparatively small numbers, at the ports of Laredo, Brownsville, and Eagle Pass, and up to April 23 the total number was only 36,836, as compared with 39,398 for the same period last year. The bulk of these birds were entered at Laredo, and only three shipments have been brought in at Eagle Pass this season.

Sails for the Galapagos Islands.--H. S. Swarth, senior inspector at San Francisco, left early in March on a three months' trip to the Galapagos Islands, Ecuador. Mrs. M. E. Davidson, also of San Francisco, resumed the work of inspections at that time, having returned from Panama where since last November she had been collecting material for the California Academy of Sciences.

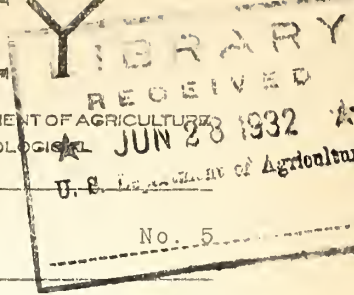
California Suspends Importation of Parrots.--The importation of parrots and parrakeets into California has been suspended until next September under order of the State Board of Health, according to "Science."





# THE SURVEY

ISSUED MONTHLY FOR THE PERSONNEL OF THE BUREAU OF BIOLOGICAL SURVEY, U. S. DEPARTMENT OF AGRICULTURE  
CREDIT FOR MATTER REPRINTED FROM THESE PAGES SHOULD BE GIVEN TO THE BIOLOGICAL SURVEY AS A BUREAU, NOT TO "THE SURVEY" AS A PUBLICATION



Vol. 13

Washington, D. C., May 31, 1932

## GENERAL NOTES

Addresses Foresters on Game Conservation.---On May 27, at Baltimore, Md., Mr. Redington addressed a joint meeting of the American Forestry Association and the Maryland Forestry Association, taking as his subject "Water in Relation to Bird Life."

Present Papers at Mammalogist Meeting.---Five papers by members of the Biological Survey were presented at the fourteenth annual stated meeting of the American Society of Mammalogists, held May 3 to 7 at the United States National Museum in Washington, D. C. One of the papers, "Classification of the North American Sciuridae," by Arthur H. Howell, was illustrated with slides. E. A. Goldman addressed the society on May 4 on "Geographic Variation in the Puma" and on the following day on "A Remarkably Colored Pocket Gopher from Costa Rica." On May 6 Vernon Bailey spoke on "Trapping Animals Alive." He explained various traps he has devised, and demonstrated the action of several of them. Charles C. Sperry on the same day presented a "Preliminary Report on Investigations of Coyote Food Habits."

At the business meeting of the society, held on May 6, Dr. T. S. Palmer was re-elected a vice president, Mrs. Viola S. Snyder treasurer, and Dr. H. H. T. Jackson a director, in the class of 1932-34. The editorial board, of which E. A. Preble is chairman and Arthur H. Howell a member, was also reelected.

Dr. Charles W. Richmond, associate curator of birds, of the United States National Museum, died suddenly at Georgetown Hospital on May 19. Although Doctor Richmond had suffered more or less from illness for several years, he was at his desk on May 17. That night he was removed to the hospital for an operation from which he failed to recover. Doctor Richmond was a clerk in the Biological Survey from August, 1890, until the close of 1891, when he left to spend a year collecting birds and mammals in Nicaragua. Soon after his return he received an appointment in the Division of Birds in the National Museum. The later years of his life were devoted chiefly to research and bibliographical work, in which he gained an international reputation. It was during his short term in the Biological Survey that he began work on the index of generic and specific names of birds that became his magnum opus.--T.S.P.

Members of the Biological Survey joined with others at a memorial meeting held in the National Museum on May 20 to pay honor to Doctor Richmond. Mr. Henderson, Dr. T. S. Palmer, Dr. H. C. Oberholser, and E. A. Goldman were among those who paid tribute to his memory and to his accomplishments in ornithology.

## ADMINISTRATION

Messenger Transferred to Commerce.---Ned Vanderau, junior messenger in the Biological Survey since September 11, 1931, was transferred to the Bureau of Lighthouses, Department of Commerce, on May 26, to fill a vacancy as assistant messenger in that office.

## BIOLOGICAL INVESTIGATIONS

Investigates Adirondack Deer.--Vernon Bailey was in the Adirondack region of New York from April 15 to 30, making studies of the deer, at the request of and in cooperation with the New York Conservation Department. He found that the winter had been mild, with relatively little snowfall, that the animals had wintered well, and that, in general, little serious damage had been done to the food plants.

Studies Tricolored Blackbird.--Dr. W. P. Taylor is in California engaged in an investigation of the breeding range of the tricolored blackbird.

Removed to Fort Bayard.--W. B. Miller, associate range examiner in reindeer work at Nome, Alaska, who had been under treatment at the Veterans Bureau hospital at Walla Walla, Wash., for sometime, was transferred to the hospital at Fort Bayard, N. Mex., early in May.

Can We Bring Back the Sierra Bighorn?--In an article in the Sierra Club Bulletin for April, 1932, Vernon Bailey suggests the possibility of restoring the Sierra bighorn sheep, whose numbers seem to be decreasing, to much of its former range, especially to the part lying within Yosemite National Park. Records of the finding of fragments of heads and horns of these sheep indicate that these animals originally ranged over the entire eastern part of the park, and that they were once abundant there. Mr. Bailey says that in order to bring them back to the region they once occupied, a thorough study of the sheep in their present habitat would be necessary. Their enemies should be better known, he says, and measures should be instituted for protecting the bighorn both in the area now occupied and in the park. The presence of these animals would add greatly to the interest of the parks and to the high mountains generally.

## FOOD HABITS RESEARCH

Denver Official Visits Washington.--Chas. C. Sperry of the food habits research laboratory in Denver, was in Washington most of the first week of May. In addition to attending and addressing the annual meeting of the American Society of Mammalogists, an account of which appears in the general notes of this issue, he spent much time in conference with members of the bureau, in connection with the work at the Denver laboratory and other matters. En route back to Denver, he stopped at New Brunswick, N. J., and Chicago, Ill., to confer with specialists on methods of identifying mammal hairs.

Returns to Field Station after Pocket-Gopher Study.--Theo. H. Scheffer returned on May 1 to his headquarters at Puyallup, Wash., after spending 3 months studying the pocket gophers in the San Gabriel Valley in the Coast district of California, and in the Imperial Valley in the interior of that State. He also devoted some time during April to a reconnaissance of nesting colonies of the tricolored blackbird in the State.

## FUR RESOURCES

Visit Fur-Animal Station.--On April 29, Mr. Ashbrook and C. E. Kellogg, recently appointed biologist to assist in this division, left Washington to inspect work at the Fur-Animal Experiment Station, at Saratoga Springs, N. Y. En route

they visited a rabbitry at Emaus, Pa., studying the management and the methods employed there in slaughtering and dressing rabbits for market; and in Philadelphia they discussed with an official of the Better Business Bureau the various rabbit-promotion schemes that have developed in Pennsylvania and neighboring States. Returning to Washington, they stopped in New York City to confer with members of the fur trade.

Report New Litters at Fur Station.--Dr. Karl B. Hanson, in charge of the Fur-Animal Station, reports that during the whelping season just ended there 11 litters, comprising 43 silver, cross, and red fox pups, were born. Also, there were recently born there 2 litters of 3 martens each, and 4 litters of minks. The increase in the numbers of the martens this year is the largest since the marten-breeding experiments were started. The young fox pups and martens are in splendid condition.

Elected.--C. E. Kellogg was elected secretary-treasurer of the Washington Alumni Chapter of Alpha Zeta, an honorary agricultural fraternity, at the chapter's meeting held in Washington on May 19.

Rabbits from Fontana Station Shipped to Beltsville.--John W. Meyer, in charge of the Rabbit Experiment Station, Fontana, Calif., reports that during the early part of April two shipments of rabbits, containing 23 and 20 animals respectively, were sent to Beltsville, Md., where they will form foundation stock for a rabbit colony being established by the Division of Animal Husbandry, Bureau of Animal Industry. It is planned to use the rabbits as check animals in conducting experiments.

Rabbit Film Shown in California.--The recently released motion picture "Rabbit Farming," after being shown privately to the employees and friends of the Rabbit Experiment Station, at Fontana, was shown publicly at La Habra, Calif., on April 26, before the Orange County 4-H Club Leaders' Council, and at Pomona, Calif., on the same evening before the Pomona Valley Rabbit Breeders' Association.

#### DISEASE INVESTIGATIONS

Investigate Disease Outbreak in Wild Rabbits.--Extensive losses among cottontail rabbits in a section of Virginia about 100 miles south of Washington during the past winter and spring have recently been reported to the bureau. Several specimens sent to the laboratory of the Disease Investigations Project during April and May and examined by Doctor Shillinger, showed lesions characteristic of tularemia. Tissues sent to Dr. R. G. Green, at the University of Minnesota, who is cooperating with the bureau on wild-life disease investigations and who has made a special study of tularemia, were examined in the laboratory and inoculated into test animals there. These results also strongly indicated that the dead rabbits had been infected with tularemia. The Virginia losses Doctor Shillinger considers an instance of the cyclic disappearance of game as a result of disease. Last fall the animals were abundant there, but at present they are comparatively scarce, and the remains of rabbit carcasses are to be found in great numbers scattered over the area. Observations in the region are being continued for the purpose of learning what factors may be involved in the development of such epizootics, the vectors responsible for the spread, the final extent of the loss, and the causes leading to an end of the infection.

Resumes Bird-Disease Studies.--Dr. L. C. Morley, who was last summer en-

gaged at Richmond, Va., on investigations of diseases of upland game birds, has reported for active duty there again. Through the cooperation of State and private game farms these investigations have been made a permanent project.

Fox Disease in Massachusetts Subsides.--The outbreaks of disease on two fox ranches in Massachusetts, to which Dr. Karl B. Hansen of the Division of Fur Resources was called in April, have subsided. Doctor Hanson reports that his observations on these outbreaks indicate that the disease was similar to a certain form of canine distemper. Further investigations are being conducted to learn whether this type of infection was responsible for the deaths.

#### PREDATORY-ANIMAL AND RODENT CONTROL

Leaders of Eastern Region Meet in Washington.--The third annual conference of the leaders of Region No. 1--Eastern Region--was held in Washington, May 10 to 14. Many problems were discussed, and plans were made for more uniform and concerted effort in the control of rodents common in the East.

Predators Taken on Niobrara Reservation.--Leader Louis Knowles reports that 8 coyotes and 1 bobcat were trapped on Niobrara Reservation, near Valentine, Nebr., by Hunter Lewis M. Stone during April. In the past 18 months 69 coyotes have been taken there. Approximately 6,000 acres of the reservation are inclosed by a woven-wire fence more than 6 feet high, constructed to keep the game animals within the inclosure and to prevent predators from entering. Results obtained with this fence, however, have been much the same as those on other areas where this type of coyote control has been tried. In spite of expensive fencing, these animals appear to gain easy access, and apparently the only feasible means of control are trapping and hunting.

Canned Red-Squill Rat Baits Popular.--The ready-prepared red-squill rat baits used in many cooperative rat-control campaigns in the Eastern States have been growing in popularity in the West. Leaders E. R. Sans and Adolph S. Hamm have conducted successful rat-control campaigns in Reno, Nev., and in Goshen County, Wyo., with this material. The bait is prepared at a cooperative canning plant at Barnstable, Mass.

Thallium Effective in Controlling Ground Squirrels.--Leader Joseph Keyes reports that through the use of thallium-treated grain, the ground squirrels in California have been so reduced in numbers that the quantity of poison necessary to control these pests is decreasing rapidly. In Santa Barbara County approximately 80 per cent of the ground-squirrel infestation has been reduced to the point where gas can be employed to complete the clean-up, and little thallium is now being used in that county. In Merced County only about 25 per cent, and in Stanislaus County less than 20 per cent, of the thallium-treated grain exposed during the past season will be required this year. In the last-named county carbon disulphide is being substituted for thallium baits. On a 30,000-acre area in San Joaquin County on which several tons of thallium-treated grain have been exposed, gas can now be used in clean-up campaigns.

Typhus-Fever Outbreak Controlled Through Rat Campaigns.--Leader L. C. Whitehead of the Texas district advises that emergency rat-control operations have proved successful in controlling typhus-fever outbreaks in the eastern Texas oil-

field area. Five antirrat campaigns have been conducted. The officer in charge of the medical corps of the military forces stationed in the area reports that during the last two weeks of February and in March there was not a single outbreak of typhus in the area where the work was conducted. Mr. Whitehead says that from January to March 23, 731 pounds of solid poisoned baits, 371 quarts of liquid baits, and 13,000 traps were used by cooperators in conducting rat-control work in Texas.

Bait-Mixing Machine Installed in Colorado.--Leader D. D. Green reports that a mixing machine was recently installed at the Monte Vista (Colo.) bait-mixing station to facilitate the preparation of poisoned baits. The machine, which will treat 500 pounds of poisoned grain at each mixing, will be of distinct service in the preparation of the necessary baits. More than 150,000 pounds of poisoned grain were treated at this point last year.

Married.--Announcement has recently been made of the marriage of Mrs. Gertrude M. Hinrichsen and R. K. Stewart, both of the Cheyenne office.

Predatory-Animal Work in Alaska Terminated.--Because of the need to reduce expenditures, the cooperative predatory-animal control work in Alaska was recently discontinued. H. H. Gubser, who has had charge of the project since September, 1929, returned to the States on May 5, and was assigned to the Washington district, to act as assistant in the predatory-animal control work in that State. Mr. Gubser's work in Alaska was quite successful, and he was of great assistance in improving the methods of the native trappers.

Delivers Radio Talk.--On May 17 James Silver, supervisor of Region No. 1, spoke over the radio on "Fighting the Gray Robbers in 1932." The talk, on rat control, was part of a National Farm and Home Hour program broadcast by Station WRC and 48 associated stations of the National Broadcasting Co.

Talks on Hawks: on Rats.--On March 10, Leader P. Scott Zimmerman read a paper on hawks, entitled "Know Your Friends," before the Biological Society of the University of Utah, and on March 29, he gave a radio talk over KSL on "Rats, a Disease and Economic Menace."

#### LAND ACQUISITION

Examining Proposed Refuge Units.--Daniel H. Janzen and Howard J. Sargent are at present examining recommended refuge units in southern Oklahoma. Carey H. Bennett recently left Ogden, Utah, and is now examining a recommended area in Nevada.

Detailed to Washington Office.--Jack Chipps, engineering draftsman, arrived on April 17 from Burns, Oreg., for a detail in the Washington office.

#### GAME AND BIRD CONSERVATION

Inspect Enforcement Work.--W. R. Dillon visited points in Maryland and New Jersey during the second week in May in connection with the enforcement of the migratory-bird treaty act. During the first week of May, F. P. Callaghan was in New York City and at near-by points, where he and Game Protector P. S. Farnham conducted investigations relative to the enforcement of the Lacey Act.

Visit Washington Office.--United States Deputy Game Warden Theodore Weilly, of Salem, N. J., on April 20, and Game Protector O. D. Steele, of Cambridge, Md., and Federal Deputy John Creighton, of Fishing Creek, Md., on May 3, conferred with bureau officials in Washington.

Wild Life Suffers from Destructive Fires.--Under date of April 30 Game Protector J. V. Kelsey reported that large areas in the State of Florida had been burned over during the recent destructive fires there, and that the loss of wild life must have been enormous. Heavy rains finally stopped the spread of the fires, but by April 30 it was again very dry. It is the opinion of Mr. Kelsey, however, that the rains occurred too late to induce the birds to return to the interior of the State for nesting, and that all heavy nesting this year would be along salt water, 90 per cent at least taking place along the southern coast.

Subsistence Expenses Low on "Curlew".--According to information received from Game Protector O. D. Steele, 592 meals, costing slightly more than 22 cents each, were served on the motor boat Curlew between November 1 and March 31 last. The total cost of the subsistence supplies consumed on the boat, which is used to patrol Chesapeake Bay in the enforcement of the migratory-bird treaty act, during this five-month period was \$131.55. To some extent this low cost was made possible by the use of sea foods, which the men were able to procure cheaply.

Wharf Established at McGregor.--A barge obtained by transfer from the U. S. Army Engineers has been established at McGregor, Iowa, as a wharf for motor boats used in making inspections and patrols of the Upper Mississippi River Wild Life and Fish Refuge. Situated near the center of the refuge, McGregor provides an advantageous point for taking on fuel and supplies, and through the cooperation of town officials, a most desirable site on the McGregor water front has been obtained for the wharf.

To Plant Grain for Food for Game.--Available areas are being selected on the Upper Mississippi Refuge on which to plant corn, buckwheat, and other grains for use as food for birds and game. A portion of the crop will be harvested to supply waterfowl-feeding stations, and the remainder of the ripened grain will be left standing or in the shock. At present the comparatively high stage of water prevailing in the river bottoms handicaps the planting operations. Furthermore, numerous plots that in previous dry years were available for growing crops are now inundated, thus reducing areas available for the purpose.

Refuge-Act Cases Terminated.--Upon arraignment in Federal court, on April 26, two residents of Allamakee County, Iowa, entered pleas of guilty to the charge of illegal trapping on the Upper Mississippi Refuge, and were sentenced to serve 10 days in jail. A third defendant upon entering a plea of guilty to a similar charge was fined \$10 and costs amounting to \$20.64.

Feeding of Elk Discontinued for Season.--Feeding of the elk at the Elk Refuge, Wyo., was discontinued on April 5, but on April 30 there was still a large number of the animals on the area and on adjoining ranches. There has been a normal spring at the refuge, but in the northern portion of Jackson Valley the season was late, and on May 1 there was an average of 20 inches of snow at near-by points, including the headquarters of the Tetcw National Park. Because of the late disappearance of the snow from the upper portion of the valley, a large number of elk lingered on the

refuge and adjacent areas. On May 7, it became necessary to drive 2,500 elk from these lands into the Flat Creek foothills in order to protect growing crops.

Birds Observed at Sullys Hill.--At Sullys Hill Game Preserve, N. Dak., many geese were noted flying northward during April, but few ducks were seen. During the last week in April, however, more ducks were observed on the shore waters of Devils Lake and the small lake within the preserve.

Buffalo Calves at the Big-Game Preserves.--Twenty buffalo calves have been reported in the herd at Niobrara Reservation, Nebr.; 14 at the National Bison Range, Mont.; and 10 at Wind Cave Game Preserve, S. Dak.

Appointment.--Charles I. Park, of Key West, Fla., has been appointed a United States deputy reservation protector to care for the birds at Tortugas Keys Bird Refuge, Fla., during the nesting season.

Visiting Washington Office.--Peter J. Van Huizen, acting in charge of Blackwater River Migratory Bird Refuge, Md., arrived in Washington on May 14 for conferences with officials regarding administrative matters relating to the refuge. He returned on May 25.

New Subspecies of Bison Found in Oregon.--When, in 1930, owing to the prolonged drought, the water in Lake Malheur, Oreg., had evaporated leaving much of the lake bed dry, hundreds of buffalo bones were exposed. No living buffalo have ever been recorded from Oregon by white men, although evidence indicated that these animals once occupied the Malheur, Owyhee, and Warner Valleys in that State. George M. Benson, United States reservation protector at Lake Malheur Bird Refuge, collected and forwarded to the bureau two almost complete skeletons with good skulls. These, together with several skulls collected by other persons, were examined by Vernon Bailey and other members of the Division of Biological Investigations, who compared them with specimens of buffalo from other localities, and found them to represent a new subspecies. This has been named Bison bison oregonus. The type specimen--the skull and skeleton of an adult male--which was collected by Mr. Benson, is now in the Biological Survey collection at the U. S. National Museum.

Quail-Importation Season Closed.--The season for the importation of quail from Mexico closed on April 30. The total number brought in during the season was 39,131, of which 33,706 were entered at Laredo, 4,025 at Brownsville, and 1,400 at Eagle Pass. In the 1931 season 39,712 were entered.

Rare Species Imported.--Among the rare and interesting birds entered during the month were 4 tanagers (Calospiza cyanoptera and C. atricapilla), from La Guaira, Venezuela; and 4 trumpeters (Psophia viridis), from Para, Brazil. A rare Peruvian rat (Dinomys branickii) was also brought in with a shipment of miscellaneous birds and mammals from South America on May 2.

Permits Issued for Entry of Egg Shipments.--Permits were issued during the month for the entry of approximately 1,500 pheasant eggs from England and 40 duck eggs from Canada.





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No. 6

## GENERAL NOTES

Chief Works on Timber Conservation Board.--During June Mr. Redington has been summarizing the reports and recommendations received by the President's Timber Conservation Board, of which he is a member. The report will be placed shortly in the hands of the President, who appointed the board two years ago for the purpose of ascertaining what might be done to aid the lumber industry and reforestation.

Inspect Refuge Site.--On June 9 and 10, Mr. Redington, John P. Wenchel, of the Solicitor's Office, and Rudolph Dieffenbach, in charge of the Division of Land Acquisition, inspected the Blackwater Migratory Bird Refuge site, on the eastern shore of Maryland, negotiations for the acquisition of which are now in progress. This area promises to be one of the most satisfactory for waterfowl on the eastern coast, and it is planned to have it under full administration by fall.

Speaks at Dedication of Restored Canal Locks.--On June 16, Mr. Redington went with representatives of the District of Columbia Chapter of the Izaak Walton League of America to Norfolk, Va., where other members of the local chapter of the Izaak Walton League, Major Young of the Army Engineers, and many prominent sportsmen of this section had gathered to dedicate the restored locks on the Chesapeake and Albemarle Canal. They proceeded to the locks by Army launch from Norfolk. To aid transportation and to better waterfowl conditions, appropriations were made two years ago to restore these locks, which were taken out several years ago, thus permitting the influx of salt water and sewage into the noted waterfowl areas of Back Bay and Currituck Sound. At the dedication ceremonies Mr. Redington briefly outlined the history of the area and paid his respects to those who had been instrumental in restoring the locks. After going back to Norfolk and then proceeding to Virginia Beach, Mr. Redington attended the annual meeting of the Norfolk Chapter of the Izaak Walton League, where he spoke briefly on the work of the Biological Survey. In the evening he addressed the Virginia Trap Shooters Association, which was holding its annual trap shoot in that locality.

Delivers Four Addresses and Dedicates Sanctuary.--During June Mr. Henderson delivered four addresses on various aspects of the bureau's work. At Crookston, Minn., on June 2, he addressed the Minnesota Council of the Izaak Walton League of America on the subject "Greetings and Workings of the Bureau of Biological Survey." The following day, he was on the program held under the auspices of the same organization, dedicating the Thief Lake (Minn.) Waterfowl Sanctuary. On June 10 he spoke on the "Present Status of Our Waterfowl" before the annual meeting of the Western Association of State Game and Fish Commissioners, at Salt Lake City, Utah. "Wild Life Research and Conservation Work of the Biological Survey," was the subject of his talk before the annual convention of the Minnesota Game Protective League, held at Worthington, Minn., on June 17. On June 28 he addressed the annual

convention of the South Dakota Division of the Izaak Walton League of America at Lake Kampeska, near Watertown, on "Cooperation in the Conservation of Wild Life." Ray C. Steele, superintendent of the Upper Mississippi River Wild Life and Fish Refuge, also attended and addressed the meeting at Worthington.

Bureau's Headquarters Moved to New Offices.--On June 11 and 13, the offices of the Biological Survey that since 1914 have been on the second floor of Bieber Building (1358 B Street SW) and those that since 1930 have been in the Bank Building (B Street at Linworth Place) were moved to the fourth floor (Thirteenth and C Streets fronts) of the new extensible South Building, two pavilions of which have been completed. Those moved included the offices of the Chief and Associate Chief, the Editorial Office, the Office of Exhibits, Photographs, and Publications, and the Divisions of Administration, Biological Investigations, Predatory Animal and Rodent Control, and Game and Bird Conservation. For the first time all sections of the Division of Administration are brought together. The contrast between the light, airy rooms now available in the new building and the space occupied in the old Bieber Building, about half of which was on courts where little daylight was afforded, is certainly a pleasant one. The new quarters, however, are temporary, as there is not yet sufficient space available in the new building to bring the whole bureau together as a unit. Consolidation on one floor can not be accomplished until the building is completed--probably in two years. A contract for erecting the five remaining pavilions of the South Building has recently been let.

The latest removal of the offices of the Biological Survey recalls several previous moves in the past 47 years. The main office has now occupied quarters in five buildings, three of which have already been demolished, and the Bieber Building is to be wrecked in the near future. Dr. T. S. Palmer, who has been with the Survey since 1889, recalls that originally, in 1885, the office was located in the Division of Entomology in the west end of the old Main Building on the second or third floor; that from there it was moved to the north balcony in the Library on the second floor; and that later the Survey was located on the first floor, the main office being the one afterwards occupied as the private office of the Solicitor.

From the Main Building the offices were moved to the old wooden Museum, which formerly stood on part of the ground now occupied by the East Wing. The next move was to the brick building later known as the Entomological Building, where space was occupied on the first floor after the removal of the shipping rooms for free seed distribution. Shortly after, the taxidermist's shop and some work-rooms were located on the second floor of a wooden building immediately west of the Entomological Building on ground subsequently occupied by the temporary office building. About 20 years ago the offices were moved to the second floor of the Entomological Building, with the photographer's and taxidermist's quarters on the third floor. In December, 1914, the recent quarters on the second floor of the Bieber Building were occupied.

In 1914 the second floor of the Bieber Building, quarters for the photographer on the top floor of the old Chemistry Building at the corner of Fourteenth and B Streets, and the second floor of a building adjoining the Bureau of Chemistry between Twelfth and Thirteenth Streets for the taxidermist, supplied accommodations for the whole bureau. With the development of new and expanded functions, however, it became necessary to obtain additional quarters for new divisions and for older divisions as they were moved from the Bieber Building to lessen the increasing congestion there.

At present, to mention first the quarters already referred to, the photographer has laboratory space in the offices of the photographic section of the department in a brick building at Fourteenth and C Streets (to be demolished along with the Bieber Building to make room for the two western pavilions of the new South Building); and the taxidermist has his laboratory in the rear of the old Bureau of Fisheries building at Sixth and B Streets, SW; other divisions are housed in temporary buildings erected during the War period, as follows: Division of Food Habits Research, Division of Fur Resources, Division of Land Acquisition, and the headquarters of the Eastern Region of the Division of Predatory Animal and Rodent Control, in Building F, which is in the Mall between the Smithsonian Institution and the site of old Center Market; and the Wild Life Disease Investigation Section in Building C, which is in the Mall east of Seventh Street. The Biological Survey's collections of birds and mammals, together with the offices of biologists in charge, are housed in the United States National Museum, where they have been since their beginnings early in the bureau's history. All other offices are now on the Fourth Floor (Thirteenth and C Streets fronts) of the new South Building.

Official Publication received in June:

"Policies of the Bureau of Biological Survey Relative to the Control of Injurious Birds," prepared under the direction of Paul G. Redington, in the Division of Food Habits Research. Miscellaneous Publication No. 145, 8 pp., May, 1932. Received June 14.

#### ADMINISTRATION

Messenger Appointed.--On June 16, Roland Morrisette, of Washington, D. C., entered upon the duties of junior messenger, filling the vacancy caused by the transfer of Ned Vanderau to the Department of Commerce on May 26. Mr. Morrisette was employed in the Bureau of Plant Industry during the summers of 1930 and 1931.

#### BIOLOGICAL INVESTIGATIONS

Study Wild Life in Minnesota.--Vernon Bailey and C. M. Aldous, bureau naturalist of the Lake States Forest Experiment Station, St. Paul, Minn., have been engaged during the past few weeks on field work in northern Minnesota. They report interesting findings regarding the distribution of big-game animals, and their observation of the other wild life of the region has netted many items of importance. Their work includes a check-up of the experimental plots established in reforestation areas by Mr. Aldous, study of the present status of the beaver in the State, and a general investigation of wild-life conditions on the Superior National Forest.

Completes Waterfowl Studies in North Dakota: Goes to Canada.--Luther J. Goldman has completed a field study of waterfowl conditions in North Dakota, and now in cooperation with Canadian officials is investigating conditions in Saskatchewan and Alberta. In addition to traveling by automobile to important waterfowl-breeding areas in these two Provinces, which during recent years have been so seriously affected by drought, the investigators plan a trip by airplane to cover important breeding areas in the northern parts of Saskatchewan.

Collect Birds on the Carolina Coast.--A. H. Howell and T. D. Burleigh, field naturalist stationed at Asheville, N. C., with Allen Duvall, of the Washington office, as assistant, made a faunal survey of coast regions of North and South Carolina from May 17 to June 8. Traveling by automobile, they followed the immediate coast as closely as possible from Back Bay southward, in order to study the distribution of bird life on the marshes and sea beaches. They collected about 200 specimens of birds, including series of the resident marsh wrens, seaside sparrows, and other coastal varieties, and some forms new to the bureau's collection. They also obtained important information relative to the distribution of the various species and subspecies. The work was facilitated by accommodations furnished by the Pine Island Club, near Poplar Branch, N. C.; the Bureau of Fisheries, at Beaufort, N. C.; and the Charleston Museum, Charleston, S. C.

Mallard Nests in Same Box for Sixth Consecutive Year.--The female mallard that carries Biological Survey band No. 555414 has nested six consecutive years in the same box. This duck was banded November 29, 1927, after she had nested in a box on the roof of a barn on the ranch of F. J. Keller, near Antioch, Nebr. Since that time she has returned every year and hatched her eggs in this unusual nest site. The dates of her returns are: March 12, 1928; March 10, 1929; March 11, 1930; April 9, 1931; and February 21, 1932. Her last set of eggs numbered 14, all of which hatched. Mr. Keller has contributed an interesting account of the way in which the mother bird got the ducklings off the barn roof: Leading them to the edge she flew lightly to the ground, quacking softly. The downy young followed one after another, and they were so light that despite their lack of wing feathers they were in no way injured by the drop.

#### FOOD HABITS RESEARCH

Appointed Cooperative Agent.--Ross O. Stevens, a graduate of the University of Michigan, reported for duty on June 1, to take up the work of cooperative agent formerly conducted by Wallace B. Grange. Having finished a period of training in the Washington office, Mr. Stevens is now in Florida, with Herbert L. Stoddard, studying quail management in the field.

Investigates Damage by Starlings.--Clarence Cottam is in western New York making an investigation of damage by starlings.

Salt-Water Eel-grass Scarce on New Jersey Coast.--A. C. Martin recently investigated the shortage of salt-water eel-grass on the coast of New Jersey. This shortage, reported as prevalent from New Brunswick to North Carolina, is causing some anxiety to those interested in the food supply of waterfowl.

Moves Office to National Museum.--Dr. A. K. Fisher, retired, has moved his desk and other equipment from his former quarters in Building F to the Division of Reptiles, of the United States National Museum.

Speaks on Waterfowl and Shellfish.--At a meeting of the American Malacological Union held in Washington, D. C., on May 27, Clarence Cottam talked on the relationship of waterfowl to shellfish. Mr. Cottam summarized the food habits of those species of ducks that feed more exclusively on mollusks and called attention to a few of their peculiarities.

## FUR RESOURCES

On Western Inspection.--Mr. Ashbrook and C. E. Kellogg left Washington on May 29 to inspect the United States Rabbit Experiment Station at Fontana, Calif., and to consult with John W. Meyer, director of the station, on plans for the coming year. They spent the week of June 5 to 12 reviewing and planning experimental work. Mr. Kellogg left the station on June 12, visiting fur and storage houses in Los Angeles, San Francisco, and Portland, and arrived in Washington on June 24. Mr. Ashbrook attended a meeting of the Southern California Rabbit Conference, held at the station on June 13, and a community dinner in Fontana on June 17, California Farms Products Day. On both occasions he talked on developments in the rabbit industry. He left for Los Angeles and San Francisco on June 25. From San Francisco he planned to go to Grants Pass, Oreg., to meet officials of the Rocky Mountain Fur Growers Association, with whom he will visit by automobile a number of fur farms in the Western States.

Confers in Washington.--Dr. Karl B. Hanson, director of the Fur-Animal Experiment Station, Saratoga Springs, N. Y., and Mrs. Hanson were in Washington May 16 to 21. Doctor Hanson consulted bureau officials regarding the work at the station and helped to plan an exhibit on the cross breeding of foxes to be shown at the Sixth International Congress of Genetics, to be held in Ithaca, N. Y., in August. On his way back to Saratoga Springs, he visited a fox farm at Downingtown, Pa., to study an outbreak of disease.

Appointment.--Dr. Albert W. Bellamy, of the University of California at Los Angeles, has been appointed collaborator, effective July 1, to cooperate in the study of fur characters in rabbits.

## DISEASE INVESTIGATIONS

Visit Game Farms.--On June 14 Doctor Shillinger and Dr. L. C. Morley visited the Maryland State Game Farm at Owings Mills, Md., and the Montgomery County (Md.) Game Refuge to investigate losses among the breeding stock at the game farm, and among the young pheasants at the refuge.

Silver Fox Losses.--On June 17 and 18 Doctor Shillinger studied disease conditions at a fox farm in southeastern Pennsylvania, where deaths have been extensive among the adult foxes, and practically the entire crop of pups have been lost. The symptoms are similar to those recently reported in foxes in other parts of the country, and it seems possible that a new disease is prevalent in these places.

Rabbit Diseases To Be Studied at Experiment Station.--After approximately three years of study on rabbit diseases in cooperation with the University of Southern California, the bureau has discontinued its work at that institution and the project is being established at the United States Rabbit Experiment Station, Fontana, Calif. By conducting certain research activities there, the investigators will be able to keep in closer contact with the rabbitries. A room in the station's administration building is being fitted up as a laboratory, and other facilities for advancing studies of rabbit diseases are being provided.

## PREDATORY ANIMAL AND RODENT CONTROL

To Visit Field Offices.--W. E. Crouch left Washington on June 18 to visit field offices in Colorado, Wyoming, and Idaho, and possibly in California and Nevada. While in the West Mr. Crouch will assist in an effort to find a suitable building to house the cooperative bait-mixing station now located in a temporary structure at McCammon, Idaho. The business handled by the McCammon station during the past few years has grown to such an extent that more suitable permanent headquarters are necessary.

Investigate Reported Wolf Infestation in Gulf States.--Because many recent livestock losses in Mississippi have been attributed to wolves, an investigation is being conducted by Clyde F. Briggs, assistant leader of the Oklahoma-Arkansas-Missouri district, to determine whether these animals are doing the damage. According to Rodent Control Leader Roy Moore, the complaints, received periodically, indicate a possible infestation of wolves in the region southeasterly from Caldwell Parish, La., through Jefferson and Franklin Counties to George County, Miss., and into Florida.

Awarded Honor Medal.--On June 1 Dr. James C. Munch, consulting pharmacologist of the bureau, located at Philadelphia, Pa., was awarded an honor medal by the Chester Pike Kiwanis Club International, of Chester County, Pa., "for outstanding service to the community." This award was in recognition of his work in developing a treatment for thallium poisoning in human beings, a treatment applied by Doctor Munch and others in connection with the thallium-poisoning outbreak in California.

Suspended.--Because of serious misconduct while on official business, an assistant leader in the Pacific Region (No. 3), has been suspended for the period June 16 through August 1.

Transferred to Cheyenne Office.--Miss Velma V. Kins, formerly of the Washington, D. C., office, was transferred to the Cheyenne, Wyo., office effective June 16. She will succeed Mrs. Dorothy Buckingham, who has been promoted to fill the vacancy caused by the resignation of Mrs. Gertrude Hinrichson Stewart, effective June 30. Miss Kins had been in the Washington office for six months, and prior to that in the Solicitor's Office, Upper Mississippi River Wild Life and Fish Refuge, Winona, Minn.

## LAND ACQUISITION

Examines Fort Mott Refuge Site.--During the early part of June, Mr. Dieffenbach made a reconnaissance of the site of the refuge about to be established at Fort Mott, N. J. The Fort Mott area embraces lands adjacent to the military reservation and the Fort Mott National Cemetery, being chiefly lands acquired by the War Department incident to channel development on the Delaware River. The tract is ideally suited for migratory-bird refuge purposes, and the bureau is fortunate in being able to obtain it, not only on account of the location, but because its acquisition involves no expenditure of funds.

Mr. Dieffenbach also conducted acquisition negotiations with owners of lands in Cheyenne Bottoms, Kans., who are resident in New Jersey, and conferred with persons interested in the refuge at Hempstead, L. I., N. Y.

Cape Romain Refuge Area Increased.--On June 6 President Hoover issued a proclamation covering the open-water areas and State-owned lands contiguous to lands acquired and in process of acquisition for the Cape Romain Migratory Bird Refuge, on the coast of South Carolina, a short distance north of Charleston. Under the provisions of the migratory-bird conservation act, 24,644 acres are being acquired by purchase. The State by special act of the legislature ceded jurisdiction to contiguous State-owned lands, aggregating 6,343 acres. Intermingled with these lands are extensive bodies of navigable water, estuaries of the Atlantic Ocean, sloughs, and streams. The tract involved in the President's proclamation contains some 25,000 acres of water area, so that this refuge, through the purchases made, the jurisdiction granted by South Carolina, and the inclusion of the water area, comprises approximately 55,987 acres, or about 86 square miles.

To Inspect Proposed Refuge Additions.--Robert M. Rutherford left Washington, June 4, to inspect contemplated refuge lands contiguous to others already examined in Iowa, Minnesota, and North Dakota, and to investigate complicated ownership problems concerned with some of these.

Floods Interrupt Appraisal Work.--Carey H. Bennett's work of examining and appraising a proposed refuge site near Yuma, Ariz., has been interrupted by heavy floods in the Colorado River.

Engineer Work at Malheur Refuge Nearly Complete.--Chester W. Pecore has completed much of the engineering work to which he was assigned on the Malheur Reservation in Oregon. As a result of the surveys conducted at the refuge the bureau now has an excellent topographic map covering some 85,000 acres. The contour intervals are one foot apart. This work has also aided in substantiating the Government's claim to the bed of Lake Malheur, on which a decision has not yet been handed down by the court.

Completes Boundary Survey of Bear River Refuge.--Charles S. Cook, assisted by field parties under O. E. Recroft and Bert J. G. Tousey, has completed the boundary survey of the Bear River Migratory Bird Refuge. This undertaking contemplated the accurate survey of 62 miles of exterior boundary, approximately half of which is across the extensive mud flats that define the southern reaches of the refuge. The boundary lines were marked with appropriate metal signs, and thus the public will be fully advised as to the limits. The party under Mr. Cook's direction proceeded to western Montana, where the same kind of work will be done on the Nine Pipe, Pablo, Willow Creek, and Pishkun Bird Refuges, the boundaries of which have never been accurately located and marked. The boundary-marking program started this year on the western refuges is a continuation of the work initiated about a year ago, and will be prosecuted on other refuges as funds permit.

Work on Small-Refuge Program.--As a result of the interest shown recently in the establishment of refuges through local efforts, an outgrowth of Mr. Redington's suggestion through the press statement, "Plans for Bird Refuges in Spite of Low Funds," this division, with other divisions of the bureau, has been coordinating the efforts of the various agencies interested in the small-refuge program. This division will gather information regarding already-established refuges of the character considered by this plan, and will cooperate in coordinating information on new projects.

It is the purpose of the Biological Survey to be a clearing house for the numerous interests that will be engaged on this project, and with that end in view records are now being set up. It is contemplated, when this project is in hand, that the essential facts regarding all locally controlled migratory-bird refuges throughout the United States will be on record in the bureau.

#### GAME AND BIRD CONSERVATION

Confer with Game Protectors.--W. R. Dillon, assistant United States game conservation officer, spent a few days the fore part of June in New Bern, N. C., where he conferred with U. S. Game Protector William L. Birsch on matters pertaining to the enforcement of the migratory-bird treaty act. At the conclusion of the conference, Mr. Birsch proceeded first to Mobile, Ala., where he spent a couple of days with Game Protector Eugene M. Boring, conferring with him particularly with regard to game-law enforcement in the latter's district, and then to St. Marks, Fla., where he conferred with Paul T. Kreager, reservation protector for the St. Marks Migratory Bird Refuge.

Confers with Conservationists.--R. W. Williams, assistant United States game conservation officer, went to Charlotte, N. C., on June 14, to confer with State game officials and others regarding proposed changes in the regulations under the migratory-bird treaty act.

Inspects Upper Mississippi Refuge.--Thos. E. Jacoby spent the week of June 5 at Winona, Minn., and various points on the Upper Mississippi River Wild Life and Fish Refuge inspecting large portions of the area, in connection with his duties as administrative assistant in the Washington office.

Violators of the Migratory-Bird Treaty Act Penalized.--An offender apprehended in Chatham County, Ga., on November 25, 1931, for possessing 14 wood ducks killed in violation of Federal law was arraigned in the United States district court at Savannah, Ga., on May 25. On plea of guilty he was sentenced to 60 days in jail. A 6-months jail sentence and a fine of \$300 were the penalties imposed against a violator of the migratory-bird treaty act sentenced in Federal court at Peoria, Ill., on June 14. The defendant, apprehended last March in Fulton County, Ill., had entered a plea of guilty of possessing, jointly with two others, wild ducks during close season. More than 500 birds had been seized. Previous to arraignment the defendant had been in jail for 3 months because of inability to furnish bond. The others apprehended at the same time have not yet been arraigned, but it is hoped that their cases may be presented at an early date. Every effort is being made by the Biological Survey to stamp out the bootlegging and illegal killing of migratory game birds through out the United States. The disposition of these cases should indicate to gunners that it is not profitable to violate Federal game laws.

Prehistoric Mounds to be Preserved.--In the Upper Mississippi River Wild Life and Fish Refuge just below the confluence of the Mississippi and Wisconsin Rivers is an area of about 9 acres containing more than 100 prehistoric mounds. Many of these are effigies, some representing the eagle and others the bear, which in Indian lore were symbolical of supremacy and strength. Work has recently been done at these mounds to thin out underbrush and small scrubby trees, so as to render the



area more attractive and the mounds more distinct. In addition, it is planned to graze several sheep on the area to keep the grass cut short and thus add to the prominence of the mounds.

Conditions at Lake Malheur Reservation.—Reports received from Protector George M. Benson, of Lake Malheur Reservation, Oreg., indicate that there is plenty of water and grass in that region, and that the prospects are good for a large hay crop.

Bass in Big Lake.—Protector Steven B. Crossley, of Big Lake Reservation, Ark., states that there are great numbers of large-mouthed bass fry in the lake this year. No bass were seen in the lake last year. Mr. Crossley says, also, that the ditch constructed last year at Big Lake is proving satisfactory in maintaining water on the area.

Visit Bear River Migratory Bird Refuge.—George E. Mushbach, superintendent of the Bear River Migratory Bird Refuge, Utah, reports that the many visitors to the refuge during May included members of the faculty of the Utah Agricultural College and of Brigham Young University; officials connected with the educational department of Yellowstone National Park; W. W. McLaughlin and L. M. Winsor, of the United States Bureau of Agricultural Engineering; the Utah State Fish and Game Commissioner; D. H. Madsen, formerly superintendent of the refuge and now connected with the National Park Service; and Dr. Alexander Wetmore, assistant secretary of the Smithsonian Institution. During a 10-day survey of the refuge, Doctor Wetmore assisted Mr. Mushbach in conducting the visitors over the area and in giving them information concerning the bird life found there. While a member of the bureau staff, he had made extensive investigations of the duck disease in the area and published several reports on the birds of the region.

May Flies Abundant.—Superintendent Mushbach says that May flies have been extremely abundant along the dikes at the Bear River Refuge, and that the gulls and shorebirds are apparently feeding on them. So dense were the swarms of the insects that on a single trip over the dikes the automobile radiators were completely clogged with them. Mr. Mushbach discovered that sago pondweed was beginning to come in abundantly on Unit 4, which he considered surprising, as it had been thought that it would not make its appearance for several years.

Talks on Birds of Bear River Refuge.—On June 1, Superintendent Mushbach attended the weekly luncheon of the Lions Club at Tremonton, Utah, and spoke on the refuge and its bird life. The officials of the club offered their hearty cooperation in connection with the administration of the Bear River project.

Notes on Sullys Hill Game Preserve.—During May, four antelope died at Sullys Hill National Game Preserve, N. Dak., and the death of another was recently reported making a total of seven deaths in the band since the middle of April. The cause of these losses is being investigated. They are much regretted, as they reduce the Sullys Hill antelope to seven, including only two females. During May, 1,524 persons with 232 cars visited the preserve. United States Game Protector Floyd Johnson was a visitor on May 25, at which time he and Protector Wesley D. Parker called on the superintendent of the Fort Totten Indian Agency with a view to pre-

venting Indians taking the eggs of nesting ducks. Dr. G. W. Field, formerly in charge of reservations under this bureau, and his son visited the preserve on May 31 and June 1. Doctor Field was much interested in the progress made in the development of Sullys Hill since he was last there, in 1919. He also visited the Wind Cave National Game Preserve, S. Dak., on May 29. On May 26, more than a foot of snow fell at the Sullys Hill preserve, and the weight broke down many trees and branches. A buffalo bull, a year and a half old, was recently shipped from the Wind Cave preserve to Sullys Hill and placed in an exhibition pasture with two buffalo of the same age.

Inspects Stump Lake Reservation.---Protector Parker, after a visit to Stump Lake Reservation, N. Dak., on May 22, reports that a fair number of gulls were getting ready to nest there, but Deputy Protector H. Schindele informed him that no ducks had been seen on or around the reservation this spring, possibly because the water is too strong with alkali for them. Mr. Parker noticed more water in low places along the route to the reservation than was seen in the same places last spring. Few ducks, however, were observed as compared with the numbers noted in this region three years ago.

Conditions at Upper Klamath and Clear Lake Reservations.---Protector Hugh M. Worcester inspected Upper Klamath Reservation, Oreg., and Clear Lake Reservation, Calif., in May. At Upper Klamath the water was high, making conditions ideal for bird life, and thousands of pintails and mallards were seen. At Clear Lake Reservation thousands of young pelicans and their eggs and the eggs and young of bitterns, cormorants, gulls, and blue herons were observed. Mr. Worcester said that coyotes were causing some damage to the gull colony, these predators swimming over to the islands of the bird refuge from the mainland. He was accompanied to Clear Lake Reservation by United States Game Protector George Tonkin.

Visits Refuges in the West.---During May, Superintendent Ray C. Steele, of the Upper Mississippi Refuge, visited several refuges in the West, including the Bear River Refuge, Utah; the Niobrara Reservation and Crescent Lake Bird Refuge, Nebr.; and those near Tule Lake, Calif., and Upper Klamath, Oreg.

Sell Three Buffalo from Wind Cave Game Preserve.---Three young buffalo (one male and two females) of the 1930 calf crop at Wind Cave Game Preserve, S. Dak., were sold to a purchaser in Ute, Iowa, and were removed by truck on June 4. Protector H. Harrison Hoyt reports that the grass on the range is excellent, and that the animals are in the best of condition.

Bitten by Rattlesnake.---On June 3, Charles C. Robinson, an employee at the National Bison Range, Moiese, Mont., was bitten by a rattlesnake. He was given anti-venin and rushed to the hospital at St. Ignatius, where the wound was dressed. Reports are that he is recovering.

Violators of Alaska Game Law Successfully Prosecuted.---The following outstanding Alaska game-law cases have been successfully terminated since the first of January: Warden Frank Dufresne, upon evidence obtained at Chichagof and information from

the United States marshal's office at Sitka, successfully prosecuted three persons in the United States commissioner's court at Sitka, on February 11, for taking deer during close season. One offender was fined \$500 and sentenced to six months imprisonment, and the other two were fined \$300 and sentenced to four months imprisonment each. Thirteen quarters of deer meat were ordered forfeited by the court. Aided by information furnished him by cooperators, Warden Dufresne, on March 11, obtained the conviction of two persons, members of the crew of the gas boat "EJN," charged with taking deer in the Icy Straits district during close season. When taken before the United States commissioner at Sitka, one was fined \$300, and the other \$200; in addition, two carcasses of deer and two high-powered rifles were ordered forfeited. At Kenai, on February 8, Warden W. B. Healy successfully prosecuted four persons for possessing 140 pounds of moose meat taken during close season. These men plead guilty in the United States Commissioner's court at Kenai, and were each sentenced to 30 days imprisonment. The moose meat was ordered forfeited by the court.

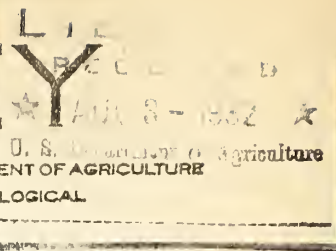
37 Importations of Black Bears Authorized in June.--An increasing demand for black bears is shown by the fact that during June 37 separate shipments of these animals have been authorized for entrance. The shipments include 73 cubs from Canada. Most of the entries were made at Noyes, Minn., and Niagara Falls, N. Y., and came from points in Alberta and Ontario.

Rarer Birds Imported.--Among the rarer birds imported during the month were 85 Bartlett's bleeding-heart doves (Gallicolumba criniger) from the Philippines, and 9 babblers (Thamnolaea albiscapulata).

Penguin Eggs Barred from Chicago under Tariff Act.--A recent shipment of penguin eggs from South Africa, intended for a hotel in Chicago, was refused entry by the Customs officers at Chicago on the ground that the importation of eggs of wild birds, except eggs of game birds for propagation, is prohibited under the Tariff Act.



# THE SURVEY



ISSUED MONTHLY FOR THE PERSONNEL OF THE BUREAU OF BIOLOGICAL SURVEY, U. S. DEPARTMENT OF AGRICULTURE  
CREDIT FOR MATTER REPRINTED FROM THESE PAGES SHOULD BE GIVEN TO THE BIOLOGICAL  
SURVEY AS A BUREAU, NOT TO "THE SURVEY" AS A PUBLICATION

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No. 7

## GENERAL NOTES

Need for Economy Affects THE SURVEY.---By reason of a provision in the Economy Act reducing the quantity of paper that may be purchased by the various departments of the Government for use in Washington, it will be necessary to curtail the use of paper in all "house-organs," in order not to interfere with other administrative requirements. THE SURVEY has throughout its history conformed to so many of the new policies stated by the Director of Information in memorandum of June 25, 1931, that all that can now be done is to cut down where possible the number of pages of each edition and the number of names on mailing lists. We have been omitting purely inspirational matter and personal items not of necessary information to the personnel; we do not use cover pages; we have rarely used illustrations; and we always use both sides of the paper. To effect a reduction in paper use we will keep the number of pages of each edition at a minimum and will reduce the size of the mailing lists by restricting distribution for the most part to regular, cooperative, and retired employees. The cooperation of field offices will be appreciated in notifying us of individual copies that may be discontinued where a smaller number will meet the requirements. The chief purpose of THE SURVEY is to give the members of the several divisions, both in Washington and in the field, timely information with regard to the functioning of the whole bureau through its varied projects. Only as each member of the bureau can visualize his own work and that of his own division in its relation to the functions and purposes of the whole organization, is he in position to meet difficult problems promptly and to discuss effectively with cooperators the work of the Biological Survey. Because this function now being performed by our house-organ is so important, it is desired to continue as long as possible issuing THE SURVEY each month.

Associate Chief Returns from West.---Mr. Henderson returned to Washington on July 7 after spending several weeks in the West. He visited the Wyoming Elk Refuge and conferred with Reservation Protector A. P. Nelson and O. J. Murie in regard to the elk and other wild animals of the region; the Bear River (Utah) Migratory Bird Refuge, where he found that about 30,000 acres are now flooded; Sullys Hill National Game Preserve, N. Dak.; and the Upper Mississippi River Wild Life and Fish Refuge; and at St. Paul, Minn., he discussed with Dr. R. G. Green and others studies being made of wild life there. In the West he attended and addressed meetings of several sportsmen's organizations, reference to which was made in THE SURVEY for June. At these meetings the shortage of wild fowl was discussed, the importance of cooperating with all interested in the protection of these birds was stressed, and resolutions were passed recommending a short season on waterfowl as well as other restrictions designed to increase the numbers of these birds.

Nelson H. Kent Retired.--After nearly 30 years of service as photographer of the Biological Survey, Nelson Head Kent was retired by the provisions of the economy act, effective June 30, the only member of the bureau thus affected by the legislation. On July 5, his friends in the bureau made him a parting gift in gold, and at the same time Mr. Redington wrote him a letter expressing appreciation of his past work and good wishes for the future. "You have been a devoted servant of the Government," said the Chief, "and the work that you have done has been genuinely appreciated by everyone with whom you have come in contact. We consider that we have lost heavily in your going. . . . I venture to prophesy that your years of retirement will be made happy by the knowledge of the loyal and faithful endeavor you have rendered in the public service."

The members of the bureau's Office of Exhibits, Photographs, and Publication Distribution, with whom Mr. Kent was most closely associated, presented him with a de luxe bill fold and a card expressing their sentiments. Members of the Illustrations Section in the Office of Information also on July 5 gathered about Mr. Kent as he was looking through some of his work and surprised him with a luxurious leather photograph album and a hand-lettered parchment signed by the members.

Mr. Kent was born in Halifax County, Va., on August 28, 1861, and was educated in the Leesburg (Va.) Grammar School and the Leesburg Academy. On November 14, 1888, he was married to Nannie E. Stansbury. For several years he was employed in a Leesburg store and later by a Washington firm as watchmaker. His first employment in the Federal service was as photographer in the U. S. Geological Survey, from 1897 to 1903. On January 5, 1903, Mr. Kent was transferred to the Biological Survey and has served as photographer under every one of the four chiefs of the bureau. In 1931, when he was eligible for retirement, his time of service was extended for a two-year period, which the recent economy legislation precluded his completing.

During his service with this bureau Mr. Kent earned the reputation of a skilful and careful photographer, and he became expert in photographing biological specimens, particularly skulls of birds and mammals. His frequent calls in the various offices have been missed, and all regret the termination of his services with the bureau. "We hope," said Mr. Redington in his farewell letter, and in this he voiced the sentiments of the bureau, "that we may see you from time to time as you find opportunity to visit the Survey."

Address Northwest Bird and Mammal Society.--Five field officers of the bureau were on the program of the Pacific Northwest Bird and Mammal Society's meeting held at the State College of Washington in Pullman, June 16 to 17. On June 16, Game Protector Webster H. Ransom, of Spokane, spoke on "Recent Observations on Migratory Waterfowl of the Interior," and a paper on "New Developments in Oregon Bird Studies," by Stanley G. Jewett, leader of predatory-animal and rodent control in Oregon, was presented. On the following day Theo. H. Scheffer, of the Division of Food Habits Research, stationed at Puyallup, addressed the society on "Rate of Replacement in Species," and Leo K. Couch, leader of predatory-animal and rodent control in Washington State, presented "Chronological Data on Elk Introductions into

Oregon and Washington." The concluding number on the program was an "Analysis of Factors Affecting Bird and Mammal Surpluses," by Ira N. Gabrielson, regional supervisor of the Pacific Region, Division of Predatory Animal and Rodent Control.

#### ADMINISTRATION

Provisions of New Appropriation Law.--The Agricultural Appropriations Act for the fiscal year 1933, including \$1,756,177 for the Biological Survey, was approved by the President on July 7. This bureau's appropriations are the same as those shown in the January issue of THE SURVEY.

The following provision, says Mr. Thompson, should be noted by leaders and others operating Government-owned passenger-carrying automobiles: ". . . no part of any money appropriated by this Act shall be used for purchasing any motor-propelled passenger-carrying vehicle (except busses and station wagons) at a cost, completely equipped for operation, in excess of \$750, except where, in the judgment of the department, special requirements can not thus be efficiently met, such exceptions, however, to be limited to not to exceed 10 per centum of the total expenditures for such motor vehicles purchased during the fiscal year; including the value of a vehicle exchanged where exchange is involved; nor shall any money appropriated herein be used for maintaining, driving, or operating any Government-owned motor-propelled passenger-carrying vehicle not used exclusively for official purposes; and 'official purposes' shall not include the transportation of officers and employees between their domiciles and places of employment except in cases of officers and employees engaged in field work the character of whose duties makes such transportation necessary and then only when the same is approved by the head of the department." The Economy Act also included a provision regarding automobiles, reading as follows: "Hereafter, no law or regulation authorizing or permitting the transportation at Government expense of the effects of officers, employees, or other persons, shall be construed or applied as including or authorizing the transportation of an automobile."

With regard to filling vacancies, the department's appropriation law says: "No appropriation under the Department of Agriculture available during the fiscal years 1932 and/or 1933 shall be used after the date of the approval of this Act to pay the compensation of an incumbent appointed to any position under the Federal Government which is vacant on the date of the approval of this Act or to any such position which may become vacant after such date: Provided, That this inhibition shall not apply (a) to absolutely essential positions the filling of which may be authorized or approved in writing by the President of the United States, either individually or in groups, or (b) to temporary, emergency, seasonal, and cooperative positions. The appropriations or portions of appropriations unexpended by the operation of this section shall not be used for any other purposes but shall be impounded and returned to the Treasury, and a report of all such vacancies, the number thereof filled, and the amounts unexpended, for the period between the date of the approval of this Act and October 31, 1932, shall be submitted to Congress on the first day of the next regular session: Provided, That such impounding of funds may be waived in writing by the President of the United States in connection with any appropriation or portion of appropriation, when, in his judgment, such action is necessary and in the public interest."

## BIOLOGICAL INVESTIGATIONS

Awarded Prize for Humane Trap.--Vernon Bailey, chief field naturalist, who for some years has been experimenting to devise traps that will capture and hold animals without injury, again has received a prize in an animal humane-trap contest sponsored by the American Humane Association. Last year, for his "Biological Survey beaver trap," Mr. Bailey won second prize in the "alive and unhurt" class of the association's contest. This year at the fifth annual contest held in Albany, N. Y., on May 28, he was awarded the first prize of \$100 in the "leg-gripping" class of traps holding without injury. Mr. Bailey's trap, the "foothold trap," in different sizes for various mammals and such birds as hawks and owls, captures by a looped chain thrown upward and around the leg. It holds securely but without injury, a U-shaped spring relieving the tension on the foot as the animal pulls away from the anchored trap. Mr. Bailey has been granted a patent on this trap. E. A. Preble was again one of the three experts selected by the association to judge its contests.

Observe Wild Life in Minnesota.--Vernon Bailey returned on June 27 from an inspection of wild-life conditions in northern Minnesota in company with C. M. Aldous, in charge of the Lake States forest wild-life studies. At St. Paul they made helpful contacts with Dr. Raphael Zon, of the Forest Service; Dr. R. G. Green, of the State University; Dr. T. S. Roberts, of the University Museum; W. T. Cox, of the State Conservation Department; and Thaddeus Surber, of the Game and Fish Department. In the field also Federal and State forest officials, game protectors, and others interested in conservation and in wild-life studies and management gave cordial assistance. The men first visited Doctor Green's biological laboratory on Lake Alexander, where rabbit and other animal diseases are being studied. They then studied beaver, deer, and moose problems at Itasca Lake. In the Red Lake region, where it is thought, eight or ten caribou are left, they saw only two. Wolves are present in this great swamp, and there appears to be small chance for the perpetuation of the herd of caribou under present conditions. Mr. Bailey and Mr. Aldous found moose and deer fairly numerous but not overabundant in the northern part of Minnesota. They found that some moose had died this spring, apparently from heavy infestation of elk ticks. Snowshoe rabbits are abundant this year and are being closely observed to determine the cycles of abundance and scarcity and the causes, as well as their influence on reforestation, both natural and artificial. Waterfowl were extremely scarce in the lake region in the northern part of the State, although this year there is plenty of water and wild rice and other food. Only two broods of young mallards were seen, in ditches far back in the big swamp north of Red Lake; also one pair of blue-winged teal and a few scaups, goldeneyes, and mergansers. Loons, black terns, and great blue herons were more in evidence than the breeding ducks they expected to see in this northern lake region.

## FOOD HABITS RESEARCH

Transferred to Colorado.--E. R. Kalmbach left Washington, July 11, for Denver, Colo., to assume his duties in charge of the Food Habits Research Laboratory there.



In Field for Denver Laboratory.--Chas. C. Sperry, who has been acting in charge of the Denver laboratory, during June visited points in Nebraska, South Dakota, Montana, and Wyoming, chiefly in regard to collecting and shipping predatory-animal stomachs.

Studies White-necked Raven and Armadillo.--Shaler E. Aldous, of the Denver laboratory, was in Texas during June, studying the white-necked raven. He collected more than 150 stomachs, examined 139 nests, and banded 138 nestlings. In South-western Texas Mr. Aldous investigated reports that armadillos destroy eggs of quail, wild turkeys, and poultry. He collected 22 stomachs.

Investigates Reports of Damage by Cormorants.--Cecil S. Williams, of the Denver laboratory, recently investigated alleged damage to game fishes by cormorants in the Elephant Butte Lake region in New Mexico.

Inspect Proposed Refuge Areas.--A. C. Martin left Washington for Louisiana, on July 13, to inspect areas recommended for Federal migratory-bird refuges. On July 14 Neil Hotchkiss in company with Rudolph Dieffenbach, in charge of the Division of Land Acquisition, left Washington for Ohio to survey an area proposed for the same purpose. He will later inspect a county wild-fowl refuge in New York and then proceed to Wisconsin where he and Mr. Martin will survey food resources for wild fowl in that State.

Examine Area for Quail Experiment.--Ross O. Stevens, accompanied by Herbert L. Stoddard, on July 11, examined an area near Centerville, Md., to determine its desirability for an experimental quail-management demonstration.

#### FUR RESOURCES

Meets Fur Farmers in Western States.--At well-attended fox breeders' meetings in Grants Pass, Coquille, and Corvallis, Oreg., Mr. Ashbrook discussed current fur-farming problems and the fur-market situation. En route to these places he visited several fox farms and a fitch ranch, and plans to attend several meetings in Idaho, Montana, and Utah during the latter part of July, arranged by officials of the Rocky Mountain National Fox and Fur Breeders Association. Mr. Ashbrook reports that the fox business seems to be much brighter on the West Coast than in the Middle West or East.

#### DISEASE INVESTIGATIONS

Visits Middle West.--Doctor Shillinger left Washington on July 3 for points in the Central States. He attended meetings of the Wisconsin State Veterinary Medical Association, Fond du Lac, on July 5 and 6; and at the Veterinary Short Course, at University Farm, St. Paul, Minn., on July 11 and 12, he gave talks on "Disease Factors in Wild Life Administration." While in Minnesota, he visited the station where Dr. R. G. Green, in cooperation with the bureau, has considerable experimental disease work in progress. Doctor Shillinger will visit other points on his return trip to obtain information on wild-life diseases. At Ann Arbor, Mich., he will confer with Dr. E. C. O'Roke, of the University of Michigan, who is working on diseases of waterfowl in collaboration with the Survey.

## PREDATORY-ANIMAL AND RODENT CONTROL

To Confer on Rat Control Methods.--Regional Supervisor James Silver left Washington on July 10 for the Florida district to confer with Carlyle Carr, leader, regarding methods of black-rat control.

Control Porcupines on Coconino Forest.--Porcupine-control work conducted during the past 8 months by Norman F. Gillham, under the direction of B. E. Foster, leader, on the Coconino National Forest in Arizona, has been highly successful. Cooperating Forest Service officials are pleased with the results obtained.

Conduct Rodent Exhibit at State Fair.--At the Arizona State Fair at Prescott, from July 1 to 4, the bureau conducted a comprehensive rodent-control booth carefully arranged by division officials in connection with the department's exhibit.

Antelope Aids in Capture of Coyote.--Adolph S. Hamm, leader in the Wyoming district, reports the following unusual observation: A hunter driving along a road saw a large male coyote standing near by, facing a doe antelope. As the coyote noticed the automobile approaching, it undertook to leave, but at that instant the antelope went bounding in pursuit and forced the coyote to protect itself, until the hunter could shoot.

Sage-hen Nests Destroyed.--Practically every hunter in his district, says Mr. Hamm, reported the destruction of sage-hen nests by coyotes during May, and dead muskrats as well as eggshells of the sage hen were observed at the mouths of coyote dens.

## LAND ACQUISITION

Inspect Proposed Refuge Sites in Ohio.--After completing, with Neil Hotchkiss, of the Food Habits Research Division, inspection of one proposed refuge site in Ohio, Mr. Dieffenbach will also examine other prospective refuge units in that State.

Conducting Land-Acquisition Work.--R. M. Rutherford is at present engaged in work in connection with Long Lake (N. Dak.) Migratory Bird Refuge, for which an extensive land and water area has been taken under contract and approved for purchase by the Migratory Bird Conservation Commission. On the completion of this work he will proceed to the proposed Keokuk (Iowa) Migratory Bird Refuge to complete investigations already begun there.

Semidi Island Wild Life Refuge Established.--On June 17 President Hoover issued an Executive order setting aside as a wild-life refuge the Semidi Island group lying in the North Pacific Ocean southeast of the Alaska Peninsula. Included in the group are Aghiyuk, Chowiet, Kateekuk, Anowik, Kiliktagik, Suklik, Aghik, Aliksemit, and South Islands, used as rookeries by murrens, winter wrens, and other birds.

To Survey Upper Mississippi Boundaries.--Albert Smith, jr., associate cadastral engineer, left Washington recently for the Upper Mississippi River Wild Life

and Fish Refuge, where with field parties under K. C. Kern and Chalmer Jackson he will make boundary surveys. The greater part of the boundaries of lands acquired to date have not been surveyed since the original surveys by the General Land Office, and in order to administer the refuge properly it is now necessary to demarcate those boundaries that follow legal subdivision lines or irregular boundaries other than those formed by natural features. The work will include monumenting the corners and marking and posting the lines.

Complete Boundary Surveys of Refuges in Montana.--Charles S. Cook, assistant cadastral engineer, assisted by field parties under O. E. Recroft and Bert J. G. Tousey, has completed the boundary surveys of the Nine Pipe, Pablo, Pishkun, and Willow Creek Refuges in Montana. The work included accurate surveying and monumenting of 45 miles of boundary line and posting with metal signs.

#### GAME AND BIRD CONSERVATION

Visitors at Sullys Hill Preserve.--During the fiscal year 1932, 17,408 persons visited Sullys Hill National Game Preserve, N. Dak., a decrease of 4,391 from the number recorded the previous year.

Bird Population Increasing at Niobrara Reservation.--The bird population of Niobrara Reservation, Nebr., is increasing. A number of sharp-tailed grouse, prairie chickens, and upland plover nested there this spring. Pheasants and quail also are found on the area. Wild turkeys planted on the reservation about 7 years ago are reported to be doing well, some of them nesting each year, but some of the birds roam outside the boundaries and are shot.

Appointment.--Byron H. Tuttle, superintendent of the Strawberry Valley Reservoir, has been appointed U. S. deputy reservation protector to cooperate with this bureau in protecting wild life on the Strawberry Valley Bird Refuge, which includes the reservoir of the reclamation project.

Transferred.--Harold F. West, has been transferred from senior transitman in the Division of Land Acquisition, to this division to become acting supervisor of the Cape Romain Migratory Bird Refuge, McClellanville, S. C.

Birds Observed at Deer Flat.--Game Protector W. H. Ransom, accompanied by Deputy Reservation Protector R. E. Towle, patrolled Deer Flat Reservation, Idaho, on May 29, and observed 38 species of birds, including a pair of the uncommon white-faced glossy ibis, some honker geese, coots, grebes, and 4 kinds of wild ducks, including one brood of mallards, a species, Mr. Ransom reports, he has never before known to nest on this refuge. On the following day 12 additional species were noted.

Square Mile Burned at National Bison Range.--On June 27, a fire reported to have been caused by sparks from a railway engine was discovered in the southwestern part of the National Bison Range, Mont. Before it could be extinguished it had burned over an area of six or seven hundred acres, and it was only by heroic efforts on the part of the fire fighters that the range was saved. About 100 men were working on the fire line at one time, and a fire crew remained on duty until the night of July 9, when it was believed that all danger of a new outbreak had passed.

District of Columbia Becomes Bird Refuge.--By act of Congress approved by the President July 14 the District of Columbia is in effect made a bird sanctuary by repealing the provisions of the District game law of 1906 that allowed shooting on parts of the Potomac and the Eastern Branch. The new law protects wild fowl in all waters of the District. The residents and visitors to the District, thus living in the midst of a bird sanctuary, will become more intimately familiar with the birds and with the desirability of protecting them.

President Approves New Waterfowl Regulations.--Amendments to the regulations under the migratory-bird treaty act, recently drafted by the Biological Survey and adopted by Secretary Hyde on July 19, were approved by the President on July 20. Under their provisions the next waterfowl season will open in the various zones on dates between October 1 and November 20, except that in Alaska it will open on September 1. The length of the season in all zones has been set at two months, a general improvement in waterfowl conditions having been observed over 1931, when the culmination of years of drought necessitated cutting the season to one month. Preliminary to adoption of the new amendments, the draft was considered by the Advisory Board, Migratory Bird Treaty Act, at its meeting at the Cosmos Club, Washington, on July 8, with 18 of the 19 members present.

Game Protector Visits Washington Office.--U. S. Game Protector W. L. Birsch, of New Bern, N. C., during June visited points in Alabama, Florida, and South Carolina in connection with the enforcement of the migratory-bird treaty act and regulations, and before returning to his headquarters he conferred with officials in the Washington office.

The bureau extends sympathy to the family of Capt. W. A. Roberts, of Miami, Fla., a U. S. deputy game warden, whose body was found floating near his anchored boat in the Everglades, on June 10. Captain Roberts was employed by the National Association of Audubon Societies under the direction of U. S. Game Protector Kelsey, as a warden to protect the birds in the Everglades.

Permits to Import Flamingos.--Considerable interest has developed recently in the importation of birds from Cuba, including flamingos, which are stringently protected under Cuban law. Several requests have been received during the past month for permits for miscellaneous Cuban birds, and notwithstanding the fact that the requirements of the Tariff Act must be met before an importation permit is issued, the birds are still attractive to many importers, especially in Florida.

Bowdish Relieves Crandall at New York Port.--B. S. Bowdish took over the work of inspections at New York on July 1, relieving Lee S. Crandall, who has been on duty at that port since January 1.

Shipment of Birds and Animals from Sumatra Received.--An unusually interesting shipment of birds and animals from Sumatra was recently received by the National Zoological Park. The first news of this shipment was contained in a radio message received on the morning of June 29 from a vessel at sea off the coast of Massachusetts requesting a Biological Survey permit for the entry of a list of species in the hands of the director of the park. Before noon a conference was held with the director, a permit issued, and all arrangements made for inspection of the shipment on its arrival at New York.

# THE SURVEY

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Vol. 13

Washington, D. C., August 31, 1932

No. 8

## GENERAL NOTES

To Supervise Admiralty Island Bear Census.--Mr. Redington sailed for Alaska from Seattle, Wash., on August 20, to inspect the bureau's work in the Territory and to supervise a census of big-brown and grizzly bears on Admiralty Island. En route from Washington, D. C., which he left on July 27, he inspected the bureau's work in Colorado and spent a few days on the Bear River (Utah) Migratory Bird Refuge.

Address Fur Farmers.--On August 2 Mr. Redington and Frank G. Ashbrook spoke at the annual meeting of the Rocky Mountain National Fox and Fur Breeders Association held at a fox ranch near Denver, Colo. About 130 fox farmers were present. Mr. Redington spoke chiefly on the work of the bureau, referring particularly to the results achieved at the Fur-Animal Experiment Station, near Saratoga Springs, N. Y. Mr. Ashbrook explained in more detail the functions of the Division of Fur Resources and important phases of the fur-animal station's work.

Associate Chief to Broadcast Hunting Regulations.--Mr. Henderson is scheduled to speak in the National Farm and Home Hour broadcast on Wednesday, September 28, at 1 p.m., E.S.T. He will summarize the important features of the 1932-33 Migratory Bird Treaty Act regulations governing the hunting of waterfowl.

### Official Publications received in August:

- "Suggestions for Beginners in Rabbit Raising," by Frank G. Ashbrook, in charge Division of Fur Resources; and John W. Meyer, director of the U. S. Rabbit Experiment Station of the Division of Fur Resources, Fontana, Calif. Leaflet Bi-1066 (revised), 8 pp., August, 1932. Received August 18.
- "Migratory-Bird Treaty-Act Regulations and Text of Federal Laws Relating to Game and Birds." Service and Regulatory Announcements--Biological Survey, No. 77, 8 pp., August, 1932. Received August 23.
- "Open Seasons for Migratory Game Birds, 1932-33," compiled by Frank G. Grimes, Junior Administrative Assistant, Division of Game and Bird Conservation. Poster No. 51 (Bi), August 26, 1932. Received August 30.

## BIOLOGICAL INVESTIGATIONS

Captures Wild Caribou.--L. J. Palmer, in charge of the bureau's reindeer experiment station, at College, Alaska, reports the capture of 10 wild caribou, to be used with reindeer in further cross-breeding experiments. Arrangements have been made for Charles H. Rouse, of the Biological Survey, stationed at Nome, to study and report current results from the reindeer-caribou cross-breeding experiments on Nunivak Island.

Studies Waterfowl Conditions.--Studying waterfowl-breeding conditions in the Prairie Provinces of Canada, L. J. Goldman recently traveled by automobile through important concentration areas of the birds in Saskatchewan and Alberta, including parts of the Peace River region and the Lake La Biche country, and made an airplane trip from North Battleford, Saskatchewan, northward into the Churchill River drainage area.

Carries on Research at Pasadena.--Working on his report on the birds of Washington, Dr. Walter P. Taylor recently spent some weeks in research in the library and laboratory of the California Institute of Technology, at Pasadena. While in the region he also made some field studies, particularly of wood rats.

Discusses Conservation Work in Minnesota.--At a meeting of the Gopher Campfire Club at Hutchinson, Minn., C. M. Aldous recently discussed the importance of saving the small herd of caribou still found in the vicinity of Red Lake. The State Conservation Commission is taking steps toward establishing a refuge in that locality for the protection of caribou, moose, deer, beaver, sharp-tailed and pinnated grouse, breeding ducks, and other wild life.

Confers in Washington.--Thos. D. Burleigh spent a few days during July in Washington conferring with members of the bureau staff and studying specimens that he had collected along the Atlantic coast and in the vicinity of his station at Ashville, N. C.

#### FOOD HABITS RESEARCH

Survey Wild-Fowl Food Resources.--Neil Hotchkiss and A. C. Martin are carrying on surveys of the food resources of wild fowl in Wisconsin.

Studies Effect of Drainage on Wild Fowl.--F. M. Uhler, studying the effect of anti-mosquito drainage operations on wild-fowl conditions in Connecticut, has also examined areas there and in Maine with a view to making suggestions for their improvement as wild-fowl feeding places.

Examines Areas for Quail Projects.--Cooperative Agent Ross O. Stevens recently examined several areas in Virginia to determine their suitability for use in quail-management and quail-propagation projects.

To Arrange for Collecting Laboratory Material.--C. C. Sperry left Denver, Colo., on July 23, to confer with leaders and hunters engaged in predatory-animal control in California, Oregon, Washington, Idaho, and Utah concerning plans for expediting the collection and shipment of stomachs of predators to the Denver laboratory. Besides demonstrating procedure in stomach collecting, Mr. Sperry will himself collect material and study conditions affecting the economic importance of coyotes and other predators.

#### FUR RESOURCES

Returns from the West.--Mr. Ashbrook returned on August 8 after an absence of about two months, during which he visited fur farms and attended meetings of fur farmers in Oregon, Washington, Idaho, Montana, Utah, and Colorado. Only a few fur farmers in that part of the United States, he reports, have discontinued business, and many more foxes were produced this year than last. The main concerns of fox farmers now are economy in feeding and in other factors affecting production costs, and an improved marketing system.

Fox Exhibit Shown at Genetics Congress.--Mr. Ashbrook and Dr. Karl B. Hanson attended the International Congress of Genetics, at Ithaca, N. Y., August 24 to 31, at which a special exhibit demonstrating the breeding work with red, cross, and silver foxes at the Fur-Animal Station was shown. This exhibit, prepared in co-operation with the Office of Exhibits, of the department, portrayed the fact that two factors, or genes, determine the various color phases in foxes. Matings and progeny were shown by film strips, and the various types of red, cross, and silver foxes by a display of pelts. The exhibit illustrated the principles of Mendel's Law and their application in breeding foxes to obtain pelts of high commercial value.

Fox Pups Doing Well.--Doctor Hanson reports that this year's fox pups are developing exceptionally well, and that the young cross foxes are superior to any heretofore produced at the Fur-Animal Experiment Station.

Martens Breed at Fur Station.--Several martens at the experiment station mated in July, and the indications are that a number of litters will be born next spring.

Newspapermen Visit Rabbit Station.--About 300 newspapermen from nearly every State in the Union, at the close of their annual convention in Los Angeles, on July 29 visited the Rabbit Experiment Station at Fontana. Station Director John W. Meyer explained to them the work being conducted there in determining the best methods of raising rabbits for meat and fur.

Japanese Official Visits Rabbit Station.--On July 25, Mr. Isamu Ohno visited the Rabbit Experiment Station in connection with his work at the Governmental Livestock Experiment Station, Chiba, Japan. Mr. Ohno was particularly interested in the methods of recording data.

#### DISEASE INVESTIGATIONS

Investigate Game Losses in Maryland.--On August 16 Doctor Shillinger left Washington with Dr. L. C. Morley to visit points on the Eastern Shore of Maryland to investigate reported losses on upland-game-bird farms in that region.

Attends National Veterinary Meeting.--At the sixty-ninth annual meeting of the American Veterinary Medical Association, held at Atlanta, Ga., August 22 to 26, Doctor Shillinger spoke on "Disease Aspects of Wild Life Administration," illustrating his talk with lantern slides showing various abnormalities of wild life. In the absence of Dr. Karl B. Hanson, of the Division of Fur Resources, who was unable to attend, Doctor Shillinger also read a paper prepared for the occasion by Doctor Hanson on "Tests of the Efficacy of Single Treatments with Tracheal Brushes in the Mechanical Removal of Lungworms from Foxes," and demonstrated the use of instruments needed in the treatment. Doctor Hanson based his paper on experimental work conducted at the Fur-Animal Experiment Station.

## PREDATORY ANIMAL AND RODENT CONTROL

Leaves for the Field.--Mr. Young left Washington on July 27 for an extended tour of inspection in the Western States.

Returns to Washington.--W. E. Crouch returned to Washington on August 6, after completing arrangements for moving the bait-mixing station from McCammon, Idaho, to Pocatello. The new building will be in condition for occupancy about September 16, when the mixing-station will be ready to receive the fall crop of oats to be used in preparing rodent baits. After leaving Pocatello, Mr. Crouch made field inspections in Utah and Colorado before returning to headquarters.

To Study in Denver.--Dr. James C. Munch, consulting pharmacologist, recently arrived at the Control Methods Research Laboratory in Denver, Colo., to work with F. E. Garlough and J. C. Ward in conducting further tests on antidotes for strychnine and thallium and in completing other technical studies.

Report Increased Numbers of Predators Taken.--Reports submitted by field leaders show that more predatory animals were taken by Federal and cooperative hunters during the past fiscal year than in the previous one. This was due largely to the fact that the low price of furs caused a decrease in the activities of private trappers, who normally take large numbers of predatory animals for fur, and also to increased efficiency brought about by better organization and improved methods. In Texas alone, 17,475 bobcats, coyotes, mountain lions, wolves, and ocelots were taken by Federal and cooperative hunters, 6,710 being taken in Webb County. One trapper in this county captured 184 coyotes and bobcats during October.

Coyotes Reported in South Carolina.--A. E. Oman is investigating reports that coyotes have been introduced into the region near Chester, S. C. According to the reports, the coyotes were imported by a fox hunter.

Report 158,000 Cans of Rat Bait in Year.--Leader E. M. Mills, of the New England States, reports that during the fiscal year 1931-32 more than 158,000 cans of ready-mixed red-squill rat baits were prepared at the cooperative canning plant at Barnstable, Mass., for use in State, county, and city antirat campaigns.

Resigns.--R. K. Stewart, formerly leader of the bureau's predatory-animal control work in Alaska, and recently acting assistant in the Wyoming district resigned effective July 1.

Marries; Resigns.--Miss Velma V. Kins, clerk-stenographer in the office at Cheyenne, Wyo., resigned effective August 24. On August 23 she was married to Elton C. Hotchkiss, administrative assistant, Upper Mississippi River Wild Life and Fish Refuge, Winona, Minn.



## LAND ACQUISITION

Survey Refuge Boundaries.--Charles S. Cook, assisted by field parties under O. E. Recroft and Bert J. G. Tousey, is surveying boundaries and posting the Charles Sheldon Wild Life Refuge in Washoe County, Nev. Albert Smith, jr., with field parties under Kenneth C. Kern and Chalmer Jackson, is engaged on similar work at the Upper Mississippi River Refuge.

Inspects Work at Upper Mississippi.---Arthur A. Riemer was at the Upper Mississippi River Wild Life and Fish Refuge during the first half of the month inspecting surveys in progress there.

Gets Contracts for Lands in Long Lake Refuge.---On July 22 R. M. Rutherford returned to Washington from North Dakota after conducting investigations and negotiations for lands within Long Lake Migratory Bird Refuge. He returned with a number of contracts.

To Resume Work at Cheyenne Bottoms.---Daniel H. Janzen, after conducting appraisal examinations of several proposed refuge areas, has returned to Kansas City, Mo., to continue work on the Cheyenne Bottoms Migratory Bird Refuge. Howard J. Sargent, who has just completed the examination of a proposed refuge unit in Iowa, has also returned to his official station at Kansas City, where he will assist Mr. Janzen.

Examines Proposed Refuge Area in Georgia.---Albert J. Rissman returned to Washington on August 14 after making an examination and appraisal of a proposed refuge area near Savannah, Ga., and looking up the title status of the land.

Lands Acquired for Refuge Purposes.---Progress continued during the latter part of June and in July in the consummation of purchases of lands on which title work had been proceeding for some time. During the fiscal year 1932, title to lands as shown for the following refuges passed to the United States: St. Marks Refuge, Fla., 6,493 acres; Crescent Lake Refuge, Nebr., 33,129; Cape Romain Refuge, S. C., 22,034; and Swanquarter Refuge, N. C., 5,318 acres. A number of tracts have been taken under agreement within the Long Lake Refuge in Burleigh and Kidder Counties, N. Dak. The first purchase made there was a 163-acre tract in Kidder County, for which payment was made on July 25. A second tract of about 25 acres was purchased on August 9. Acquisitions, principally by condemnation, are proceeding on the Upper Mississippi River Refuge. In addition to the numerous extensive units already consolidated, others are being rounded out by purchase and by condemnation.

## GAME AND BIRD CONSERVATION

In New England.---Colonel Sheldon spent about 10 days in New England early in August in connection with administration of the Migratory Bird Treaty Act.

Plume Birds Increase in Florida.--On July 20 Game Protector J. V. Kelsey reported that on Duck Rock in the Everglades he had recently seen approximately 250 roseate spoonbills leave for their feeding grounds. These are only a remnant of former large numbers, but Mr. Kelsey believes that the birds are increasing rapidly under the protection now afforded them. On Buzzards Key he observed the evening incoming flight of thousands of American egrets and white ibises, as well as several hundred great white herons.

Bear River Refuge Headquarters Changed.--The offices of George E. Mushbach, superintendent of Bear River Migratory Bird Refuge, have been moved from Ogden, Utah, to the Knudson Building, Brigham, Utah, now the refuge headquarters.

Cabins Built on Refuges.--A 3-room cabin for use as office and living quarters has been constructed at Crescent Lake Wild Life Refuge, Nebr., and one has been built at St. Marks Migratory Bird Refuge, Fla.

Ducks Released at Blackwater Refuge.--On the Blackwater Migratory Bird Refuge, Md., Acting Supervisor P. J. Van Huizen has recently released 108 banded mallard ducks sent from the Montgomery County (Md.) Game Refuge by the State game warden.

Appointments.--Archie V. Hull has been appointed agent and United States deputy game warden at the Bear River Migratory Bird Refuge, Utah; and Benj. M. Hazeltine has been appointed United States deputy reservation protector at Benton Lake Bird Refuge, Mont.

Reports Unlawful Hunting.--Reservation Protector Hugh M. Worcester recently reported for prosecution six cases involving unlawful hunting on Tule Lake Migratory Bird Refuge, Calif.

Refuge-Act Cases Terminated.--Four cases involving violations of the Upper Mississippi River Wild Life and Fish Refuge act were terminated in Federal court at Winona, Minn., on June 21 and 22. For carrying firearms in a closed area, two defendants upon entering pleas of guilty were each sentenced to serve 5 days in jail. The other two cases involved the unauthorized cutting of timber. One defendant was sentenced to 3 months in jail and fined \$50, the jail sentence being suspended for one year. The other was fined \$50 (suspended) and placed on probation for one year.

Alma Dam Injunction Dissolved.--The United States Circuit Court at Chicago recently reversed the decision of the Federal District Court that on December 5, 1931, granted a permanent injunction restraining the War Department from conducting further work in connection with a proposed dam across the Mississippi River at Alma, Wis., the first of a series of low dams for the improvement of navigation. It is understood that the War Department is now proceeding with condemnation of lands, to be followed by construction work. This dam, as well as others proposed for construction, will create slack-water pools inundating at more or less shallow depths considerable portions of the Upper Mississippi refuge.

Fight Fires.--About noon on July 22 a serious fire broke out in an area of the Upper Mississippi refuge north of La Crosse, Wis., and a strong wind made the drought-dried grass burn briskly. Ranger Hall and a force of fire-fighters were promptly on the scene, but it was nearly evening before the fire was under control. A guard was kept for several hours afterward, and it was believed that the fire was entirely out. The following morning, however, it again broke out but by vigorous efforts was brought under control and extinguished before noon. In all, about 250 acres were burned over. This marks the earliest date in the history of the refuge on which an "autumn" fire has occurred. On July 12 use of portable fire pumps cached near the La Crosse summer colony prevented the farther spread of a fire that destroyed one cottage.

Fire-Tool Houses Purchased.--An order is being placed for an additional quantity of all-metal fire-tool houses for distribution at advantageous points throughout the Upper Mississippi refuge. These buildings are about 5 feet high and 2 feet square, and are constructed of heavy-gauge metal with an angle roof to shed water. A hinged door in the upper half of one side permits easy withdrawing of the hand fire-fighting equipment--2 hand pumps, 2 shovels, and 2 buckets. The door is not locked, but is fastened with a box-car seal. The buildings are painted bright red, with the name of the Biological Survey and the legend "Tools For Fire Use Only" conspicuously stenciled on the door.

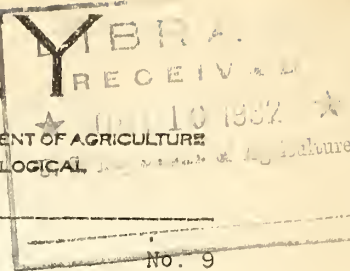
Procure Larger Warehouse.--To relieve a serious congestion at the Winona supply depot, a larger building has recently been taken under lease to house all supplies and equipment, including motor trucks, and to serve as a garage and workshop. The new building, a two-story structure, although obtained at but slight additional cost, more than doubles the floor space available.

Returns from the Galapagos.--H. S. Swarth, senior inspector at San Francisco, returned about the middle of July from the Galapagos Islands, Ecuador, where he spent about three months on an expedition for the California Academy of Sciences.

Recent Shipments Go to National Zoo.--Shipments of animals arriving recently included 2 white-headed babbling thrushes from Sumatra; 2 flamingoes, 12 hummingbirds, and several species of finches from Cuba; and 5 hooded seals from Norway--all acquired by the National Zoological Park and now on exhibition there.



# THE SURVEY



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Vol. 13

Washington, D. C., September 30, 1932

No. 9

## GENERAL NOTES

Returns from Alaska.--After leaving Admiralty Island, Alaska, Mr. Redington inspected a proposed bear refuge near Glacier Bay, and then returned to Seattle, Wash., arriving there September 15. He then continued on his tour of inspection, and plans to visit field offices through Oregon and California.

Associate Chief Addresses Game Commissioners.--In an address delivered before the twenty-sixth annual meeting of the International Association of Game, Fish, and Conservation Commissioners, in Baltimore, Md., on September 20, Mr. Henderson spoke on "Some Governmental Functions in Wild-Life Conservation." He discussed wild-life depletion, its causes and remedies; research for increasing fur resources; the migratory-bird refuge program; studies of concentration areas; the new open seasons and bag limits; and the plans for watching the effects of the lengthened seasons of 1932.

Address Park Executives.--Mr. Henderson and Dr. T. S. Palmer were among the speakers on September 19 at the annual convention of the American Institute of Park Executives, held at Washington, D. C., in conjunction with the Bicentennial Conference on Planning, Parks, and Local Government. Mr. Henderson's subject was "Reserving Areas of Land and Water for Wild Life," and Doctor Palmer spoke on "The Responsibility of the Federal Government in Respect to the Public Domain."

Official Publications--mimeographed leaflets for use in supplementing correspondence--received in August:

"Food Habits of Fish-Eating Birds." Leaflet Bi-1228. Issued September, 1932; received September 9.

"National Wild Life Reservations (Supplement to Miscellaneous Publication No. 51)." Leaflet Bi-1226. Issued September, 1932; received September 9.

## ADMINISTRATION

Budget Bureau Hearings Begun.--Hearings have been held before the Bureau of the Budget on estimates for departmental appropriations for the fiscal year 1934. The estimated expenditures of this bureau were considered by the Bureau of the Budget on September 22. No increases in appropriation items for the Biological Survey were submitted by the department, but it was necessary to defend and justify current appropriations, as the Government's policy of reducing expenditures is being continued.

## BIOLOGICAL INVESTIGATIONS

Observes Effect of Total Eclipse on Animals.--Vernon Bailey made an unofficial trip to central New Hampshire, where he observed animals on the Harold Coolidge

farm, just north of Squam Lake, during the total eclipse of the sun on August 31. With the assistance of Mrs. Bailey and her niece, Miss Betty Hone, he kept a considerable number of birds and mammals under observation during the period of the eclipse, which was clearly visible. The beavers did not come out of their house, says Mr. Bailey, and in their dark bedroom probably never knew that there was an eclipse. Several well-used woodchuck burrows were watched, but the inmates did not come out and probably did not see the eclipse. A gray squirrel went to bed in its nest tree before the eclipse became total, however, and several noisy chipmunks became silent as the darkness reached its early stage. The horses in the pasture went to the barn at the first dim light, and the cows came stringing home during the height of the eclipse. The roosters crowed just before and just after the darkness. Many birds were calling and singing as the dim light came on, but all became silent before the eclipse was total, and gradually resumed their calling as the light returned. Only the loud chorus of the crickets was heard during the time of maximum darkness.

Notes Wild-Life Conditions during Western Trip.---Leaving Washington on August 4, F. C. Lincoln, accompanied by Mrs. Lincoln, made an unofficial trip by automobile to their old home in Denver, Colo. They took the northern route across South Dakota to the Black Hills and Wind Cave National Park, and returned through Oklahoma, Missouri, and Kentucky. Mr. Lincoln found drought conditions still acute over large areas in the Plains States and many lakes and marshes either dry or so low as to be of no use to waterfowl on the southward migration. A famous duck area at Barr, east of Denver, has been destroyed through the construction of a drainage ditch. Large numbers of animals that had been killed by automobiles were noted. Red-headed woodpeckers suffered most on roads in the Mississippi Valley, and spermophiles and jack rabbits were the principal victims farther west. Several skunks and opossums, and many house cats, also were highway victims.

Reports Alaska Field Trip.---On August 19, L. J. Palmer returned to the Reindeer Experiment Station, at College, Alaska, after a field trip that took him up the Yukon River as far as Rampart to collect certain lichens used in reindeer feeding experiments. Between 3 and 4 tons of these lichens were obtained, he reports, and in addition a collection of botanical specimens was made. Mr. Palmer reports an unusual abundance of bears, several having been seen during the trip. Assistants Jack Warwick, Joe Flakue, and Tom Ek accompanied him.

Kill Bear at Reindeer Station.---While patrolling the musk-ox herd in Alaska during the summer, Herders Skarland and Estelle killed 6 bears that had entered the inclosure of the Reindeer Experiment Station, according to a report from L. J. Palmer.

#### FOOD HABITS RESEARCH

Leaves for Field Work in the West.---Mr. McAtee left Washington on August 30 for an inspection trip of several weeks' duration. While his principal objective is to study bird-control operations in California, his itinerary calls for a few days at the Denver Food Habits Laboratory and a short stay at Puyallup, Wash.

Assists in Controlling Duck Sickness.--E. R. Kalmbach left the Denver laboratory, August 24, to assist in controlling an outbreak of duck sickness on the Long Lake migratory bird refuge in North Dakota. The outbreak, which was of moderate intensity, subsided in a few days. The bureau's motion picture on duck sickness was shown in Bismarck, N. Dak., on August 29.

Testifies on Effect of Dam-Construction Work.--F. M. Uhler left Washington, D. C., on August 16 for the Upper Mississippi River Wild Life and Fish Refuge at Winona, Minn., where hearings were held with army engineers regarding the probable effect on wild life of the construction of Chimney Rock Pool. Mr. Uhler also presented testimony for the Government in litigation arising from the creation of the Hastings Pool, at sessions held August 21 to 26. On September 11 he examined experimental erosion-control work on Timber Run, west of Zanesville, Ohio.

Survey Wild-Fowl Food Resources.--After jointly carrying on surveys of food resources of wild fowl in Wisconsin and Minnesota, Neil Hotchkiss and A. C. Martin have taken separate fields, Mr. Hotchkiss going into the Dakotas and Mr. Martin into Nebraska, Illinois, and Louisiana.

Investigate Upland Game Bird Projects.--Ross O. Stevens left Washington, September 15, to join Wallace B. Grange in Indianapolis, Ind. The two will depart on an extended tour of investigation of upland game bird management projects, visiting areas in Indiana, Tennessee, Arkansas, Oklahoma, Georgia, and North and South Carolina. Herbert L. Stoddard will accompany them in inspecting projects in the three States last named.

Completes Report on Chinese Crested Mynah.--Theo. H. Scheffer, stationed at Puyallup, Wash., recently completed the report on his studies of the Chinese crested mynah, introduced at Vancouver, B. C., some years ago and now numbering perhaps several thousand birds. The report summarizes the reasons for the opinion that there is little likelihood that this species will gain a foothold in the United States by crossing the Washington State line.

#### FUR RESOURCES

Visits Fur Farms in Eastern States.--Mr. Ashbrook left Washington, D. C., on August 19, to visit fur farms, including rabbitries, in Pennsylvania, New York, Maine, Vermont, and Massachusetts. En route he attended the International Congress of Genetics, at Ithaca, N. Y., and inspected the work of the U. S. Fur Animal Experiment Station, at Saratoga Springs, N. Y. In the vicinity of Lincoln, Me., he found the largest concentration of fur farms handling chiefly silver foxes in the East.

Rabbit Exhibit Shown at Two Fairs.--The rabbit exhibit prepared by the Office of Exhibits was shown at the Rochester Exposition, at Rochester, N. Y., September 5 to 10. From there it was forwarded to Memphis, Tenn., to be shown at the Mid-South Fair, September 25 to October 1.

Visits Fur-Animal Station.--A representative of the Texas Agricultural Experiment Station spent a few hours at the Fur Animal Experiment Station, at Saratoga Springs, N. Y., the latter part of August, conferring with Dr. Karl B. Hanson on the crossbreeding experiments with foxes.

Talks at Rabbit Breeders' Meeting.--Chas. E. Kellogg attended the meeting of the Rabbit Breeders' Association, at Jessup, Md., on September 3, and gave a short talk on rabbit farming, illustrating it with motion pictures.

Visits Fur Farms.--Dr. Karl B. Hanson, of the Fur Animal Station, left Saratoga Springs, N. Y., on September 11, by automobile, to visit fur farms in the New England States and on Prince Edward Island, Canada.

#### DISEASE INVESTIGATIONS

Investigate Botulism Outbreak on Refuges.--During the past few weeks wild ducks have been reported dying at Long Lake Migratory Bird Refuge, N. Dak.; Malheur Lake Bird Reservation, Oreg; Tule Lake and Salton Sea Refuges, Calif.; and Crescent Lake Refuge, Nebr. Because of the peculiar conditions at Malheur Lake and Tule Lake the bureau has furnished emergency funds at these refuges for the rescue of birds unable to fly. E. R. Kalmbach, in charge of the Food Habits Research Laboratory at Denver, was detailed to investigate conditions at Long Lake. Although he reported the physical conditions there somewhat unfavorable, the losses observed were not excessive.

Pheasants Die in Maryland.--During the past month Doctors Shillinger and L. C. Morley investigated a serious loss that occurred among half-grown pheasants on a private game farm in Maryland. Practically the entire flock of 600 birds had been wiped out in a few days. Studies of the case also were made by members of the staff of the Department of Animal Pathology of the University of Maryland. It is the opinion of both the Federal and the State investigators that the deaths were not due to an infectious disease but to some poisonous substance, to ascertain the source of which further search is being made.

#### PREDATORY ANIMAL AND RODENT CONTROL

Inspect Field Control Work.--On August 31 Albert M. Day left Washington for a month's work in the field, during which he will visit points in Illinois, Indiana, Wisconsin, and Michigan. In Indiana he will inspect rodent-control operations being carried on by Leader G. C. Oderkirk, and in Michigan the predatory-animal work being conducted under the supervision of Leader H. P. Williams. He will also make field trials of a trap attachment designed by him to prevent small animals from getting into traps. He will also assist in the control of wolves on the Savanna Proving Grounds in Illinois, where a hunter is being employed by the War Department to stop the depredations of wolves on the livestock of adjacent farms.

Hunter Dies.--Hunter Charles Bernard Sarrett died on August 10 from gangrene poisoning resulting from infection of a small wound on his foot received on August 8. Hunter Sarrett was one of the older hunters of the bureau, having entered the service on July 1, 1916, in the Oregon district. He was a faithful employee and an



expert hunter, and his personality won many friends for the bureau among the stockmen on ranges where he carried on predatory-animal control work.

Transferred.--H. H. Gubser was transferred from the Washington district, with headquarters at Spokane, to Weiser, Idaho, effective September 20, to assist Leader T. B. Murray in predatory-animal control work.

#### LAND ACQUISITION

Posting of Charles Sheldon Refuge Completed.--The surveying and posting work being conducted on the Charles Sheldon Wild Life Refuge, in Washoe County, Nevada, by Charles S. Cook and assistants has been completed. Mr. Cook, Bert J. G. Tousey, and James W. Whitehead are now engaged on the surveying and posting of the Tule Lake Refuge in California. O. E. Recroft and Jack Y. Upham have joined Albert Smith, jr., on the Upper Mississippi River Refuge to assist in the surveying and posting work there.

Railroad Valley (Nev.) Refuge Lands Reserved.--On August 18 the President issued an Executive Order setting aside about 135,000 acres in Railroad Valley, Nev., for possible use as a migratory-bird refuge. This is a temporary withdrawal to retain the lands under Federal control until the Biological Survey has opportunity to make a study of the artesian water supply and the practicability of utilizing it in creating ponds for the migratory birds that pass over this region, which is so sparsely supplied with resting and feeding areas.

Other Refuge Acquisition Activities.--On September 12 Daniel H. Janzen went to the proposed Stillwater refuge area in Nebraska to make a check examination of the unit. During the latter part of August Albert J. Rissman made an examination and appraisal of a proposed refuge area in Delaware.

#### GAME AND BIRD CONSERVATION

Patrol-Boat Repairs Completed.--Repairs have been finished to the cabin launch that was badly damaged by fire while lying at its dock in Washington on November 16 last. The launch is now in use as a patrol boat on the Potomac River.

Duck Sickness Breaks Out on Bird Refuges.--At various points on the Lake Malheur Bird Reservation, Oreg., Protector George M. Benson and his assistant have picked up a number of sick ducks and placed them in pens where fresh water is available. Others have been found dead. Protector Benson reports that most of the birds in the pens are recovering rapidly and that the percentage of loss is small. No sick or dead geese or waders have been seen. Compared with the thousands of ducks on the refuge, 80 per cent of which are pintails, only a comparatively small number have thus far been affected. It is hoped that the cool weather that has since prevailed at the refuge may serve to check the spread of the disease.

An outbreak of duck sickness occurred on the Bear River Migratory Bird Refuge early in August. Owing to a heavy migration of male pintails and green-winged teal

approximately 150,000 ducks were concentrated at the mouth of Bear River, but when this area was inspected Superintendent Geo. E. Mushbach found only one dead duck and three that were seriously affected. Small numbers of coots, gulls, pelicans, and shore birds were also found to be suffering from the malady. Prior to the establishment of the refuge this area was the center of heavy losses. Superintendent Mushbach and United States Deputy Game Warden Archie V. Hull have kept a close watch on the situation and now report the conditions improved. The cause of the present outbreak is difficult to determine, but a heavy south wind that prevailed for a couple of days, blowing the water from the eastern unit of the refuge back a considerable distance and leaving the mud flats exposed to the sun, may have created a condition temporarily favorable to the incubation of bacteria. Mr. Mushbach reports that the several units of the refuge contained a large concentration of birds, particularly ducks, which, he estimated, numbered between 200,000 and 300,000.

Protectors Confer.--A conference of United States game protectors and reservation protectors for the Atlantic Coast States and Alabama, was held in Baltimore, Md., on September 19 and 20. During the following two days the protectors were in the Washington office for individual conferences and instructions.

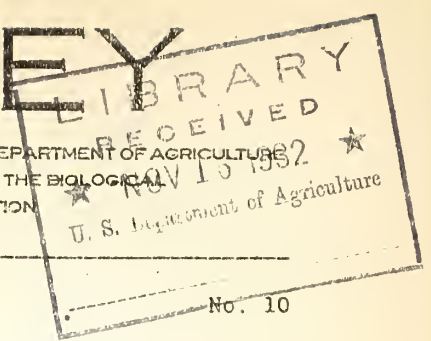
Headquarters Changed.--The headquarters of United States Game Protector W. L. Birsch have been transferred from New Bern, N. C., to Elizabeth City, N. C. Mr. Birsch's post office address is now Box 247, Elizabeth City, and his telegraphic address, care of Virginia Dare Hotel.

Appointments.--William E. Hubbard has been appointed United States deputy reservation protector and United States deputy game warden to serve at Dungeness Spit Bird Reservation, Wash., during the coming season. W. F. Ward, an agent of the Bureau of Animal Industry, and his assistant, R. T. Long, have been appointed United States deputy reservation protectors, without compensation, to cooperate in enforcing the refuge law at Chinsegut Hill Migratory Bird Refuge, Fla.

Importations.--Among the interesting birds and animals imported during the month were four elegant parrakeets (Neophema elegans) from Australia; a gorilla from Africa; and two elephant seals from Guadalupe Island.

# THE SURVEY

ISSUED MONTHLY FOR THE PERSONNEL OF THE BUREAU OF BIOLOGICAL SURVEY, U. S. DEPARTMENT OF AGRICULTURE  
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No. 10

## GENERAL NOTES

Help Red Cross, Secretary Urges.--In response to a special plea from the American Red Cross, Secretary Hyde has issued the following statement:

"The annual membership roll call of the American Red Cross will take place during the period from November 11 to 26. The facilities of this splendid organization are being utilized to relieve distress throughout the country on a scale never previously attempted.

"To continue this work and to provide for the regular activities of disaster relief, assistance to service men and veterans, public health nursing, etc., requires the support of all our people. The employees of the Department of Agriculture have always responded generously to such appeals and I urge them to give increased support to this most urgent plea."

Chief Returns.--Mr. Redington returned to Washington on October 29 from a 3-months inspection tour that took him as far as Alaska. Since the last SURVEY was issued, the Chief has observed conditions of the bureau's work and conferred with Federal and State officials and cooperators in California, Arizona, and New Mexico. In California he visited the Bay cities and Los Angeles and the Rabbit Experiment Station at Fontana. He stopped in Flagstaff, Phoenix, and Tuscon, Ariz., and in Albuquerque, N. Mex. En route to Washington, he spent some time in Chicago.

Participate in A. O. U. Meeting.--Five papers were presented by members of the Biological Survey at the fiftieth stated meeting of the American Ornithologists' Union, held at Laval University, Quebec, Canada, October 18 to 21. Dr. O. L. Austin, jr., read two papers, one on "Consistency in Distribution" and one on "The Source of Supply of New England Waterfowl;" Arthur H. Howell presented "Notes on the Birds of the Coast Region of North and South Carolina;" and F. C. Lincoln, in a paper illustrated by lantern slides, dealt with "State Distribution of Banded Ducks." At a special session held in honor of deceased fellows, Dr. H. C. Oberholser delivered a memorial address in appreciation of Robert Ridgway (1850-1929). In addition to those on the program, the following members of the bureau were present: Mr. Henderson, Dr. T. S. Palmer, W. L. McAtee, E. A. Preble, May T. Cooke, and C. H. M. Barrett. Doctor Palmer and Mr. McAtee were reelected secretary and treasurer, respectively, of the Union, and Doctor Oberholser was renamed a member of the Council.

Minnesota Provides Sanctuary for Caribou.--An area embracing about 12 townships north of Red Lake, Minn., becomes an inviolate sanctuary for caribou and other wild life on November 1, in accordance with regulations prescribed on October 1 by Wm. T. Cox, Minnesota Commissioner of Conservation. "It is proposed," says the commissioner, "to give the refuge thorough protection not only because of the presence of the rare caribou but also in order to build up the moose and deer populations and to make of the area a great breeding ground for both waterfowl and upland game birds, for which it is well suited." Reports of caribou in the Red Lake region were

confirmed last June by Vernon Bailey and his field party including C. M. Aldous and a State warden (THE SURVEY, July, 1932). Mr. Bailey reported, however, that of the eight or ten caribou thought to be there he saw only two. Under the conditions prevailing then he expressed the opinion that prospects for perpetuating the herd were poor. Making the area a sanctuary, it is hoped, will prevent the threatened extinction.

Broadcasts on Hunting Regulations.--During the National Farm and Home Hour Program on September 28, Mr. Henderson spoke on "The 1932 Waterfowl Hunting Regulations." He outlined the regulations, described the conditions making hunting limitations necessary, and called on the sportsman "to realize that game laws and regulations are not made to annoy him or to interfere with his sport, but rather to prevent the extermination of our ducks and geese."

Exhibits Shown at Fairs.--At the Virginia State Fair held at Richmond, October 3 to 8, Lisle Morrison supervised an exhibit on waterfowl, game and song birds, and big game, conducted by the bureau in cooperation with the Virginia Department of Game and Inland Fisheries. Mounted specimens and live birds made up the waterfowl display. Another showed a fall scene with mounted specimens of song and game birds, together with a number of live pheasants. The big-game exhibit included 3 white-tailed deer in a natural habitat; 3 mule deer of the West similarly presented; a mounted specimen of the Rocky Mountain sheep; and the head of a Rocky Mountain goat.

From September 15 to 17, in cooperation with the Hagerstown (Md.) Chapter of the Izaak Walton League of America, the bureau conducted at the Washington County Fair an exhibit, which also was in charge of Mr. Morrison. One part showed the type of land being acquired for the protection of migratory waterfowl and included also both live birds and mounted specimens. Another, illustrating the necessity of game-bird conservation and restoration, included informational material and cages with live birds.

Official Publications of the bureau have been received as follows:

- "Game Laws for the Season 1932-1933, a Summary of Federal, State, and Provincial Statutes," by H. P. Sheldon, United States Game Conservation Officer, in Charge, and Frank G. Grimes, Junior Administrative Assistant, Division of Game and Bird Conservation. Miscellaneous Publication No. 151, 34 pp. Issued September, 1932; received September 30.
- "Rodent-Control Studies Develop Specific Methods for the Different Species," by Ira N. Gabrielson, Regional Supervisor, Region No. 3 (Pacific Region), Division of Predatory Animal and Rodent Control. Separate No. 1342 from Yearbook of Agriculture, 1932 (reprint of pp. 325-328). 4 pp. Received October 10.
- "Hunters' licenses issued by States, with total money returns, for the seasons 1928-29 and 1929-30." (Compiled by F. P. Callaghan, Administrative Assistant, Division of Game and Bird Conservation.) Separate No. 1344 from Yearbook of Agriculture, 1932 (reprint of Table 498, p. 929). 1 p. Received October 13.

New Movie Shows Beavers.--A new 1-reel motion picture entitled "Beaver Farming" was released by the Department's Office of Motion Pictures on September 23. The picture illustrates methods of handling beavers in pens and on fenced preserves.

## ADMINISTRATION

New Procedure Established.--Some confusion and uncertainty prevailed during the early part of the current fiscal year, when radical changes were made, under the Economy Act, in accounting and in handling leave and personnel matters. Changes were also made in the methods of issuing supplies. More normal and orderly procedure has been outlined in instructions issued in various memoranda for the guidance of all concerned with these changes, and compliance therewith will materially assist in the expeditious handling of pay rolls and other accounts, personnel recommendations, leave applications, and requests for supplies. Attention of all field leaders who operate Department-owned motor vehicles is called to the second section of paragraph 725 (a new paragraph) of the Administrative Regulations. This is quoted in P. E. A. Circular No. 211, copies of which are being distributed to field leaders. Attention is also called to section (b) of that circular.

Announce Insurance Rates.--The underwriter of group insurance for Department employees operating Department motor vehicles has announced the following rates for the year beginning November 1, 1932:

"\$8 for personal injury damage up to \$5,000 for one and \$10,000 for two or more persons, and for property damage up to \$5,000. For personal injury up to \$20,000 for one person and \$20,000 for two or more persons and property damage up to \$5,000 the charge is \$9.20. The latter represents an increase in the protection for personal injury for one person from \$10,000 to \$20,000 without a change in the premium."

The protection runs with operation of Government-owned cars or those assigned to Government use and does not extend to privately owned vehicles operated on a mileage basis. No particular car is covered. The group insurance is personal, and the policy terminates November 1, 1933, in all cases. There is no reduction in premium to those who buy insurance after November 1, 1932.

Presumably all employees now subscribing to this group insurance will receive announcements from the underwriters. Information is furnished here primarily for those employees who are operating Government-owned motor vehicles but may not have availed themselves of the reduced rates provided by this group insurance.

## BIOLOGICAL INVESTIGATIONS

To Study Wild Life of Northwestern Mexico.--Vernon Bailey left Washington on October 18 for a 3-months biological expedition in northwestern Mexico, with Fred-eric Winthrop, jr., collector for the Museum of Comparative Zoology at Cambridge, Mass., who is financing the expedition. They will travel by pack horse through the canyons and mountains of northwestern Chihuahua and northeastern Sonora and by automobile through the deserts of northwestern Sonora and along the coast of the Gulf of California. More than 40 years ago, Mr. Bailey was in Sonora on a brief collecting trip. The region to be covered, however, has never been fully explored biologically. The valuable specimens of mammals and birds the naturalists expect to obtain will be divided between the Museum of Comparative Zoology and the Biological Survey. Mr. Bailey is particularly interested in defining the southern ranges of mammals found in Arizona and New Mexico and in observing the migratory birds that winter in Sonora. He will study the life zones of the region, which for lack of sufficient data have not yet been mapped in detail. He will also gather information on the status of

bears, mountain lions, wolves, coyotes, and other predators. Many of these animals cross the Mexican border and reinfest stock ranges in the Southwest, thus complicating control operations.

Completes Waterfowl Investigation.---Luther J. Goldman has returned to his headquarters in Berkley, Calif., after completing a 4-months' investigation of waterfowl conditions in the Northwestern States and in the Prairie Provinces of Canada. This study, carried on through the breeding season and up to the time the birds were migrating, has provided valuable information regarding conditions prevailing on the breeding grounds, the stocks of breeding birds, and their success in rearing broods.

Visiting Scientists Use Mammal Laboratories.---The bureau's laboratories of systematic mammalogy at the U. S. National Museum have recently been used for information or study purposes by: Dr. Aute Richards, of Norman, Okla., head of the zoology department, University of Oklahoma, and director of the Oklahoma Biological Survey; F. Carrington Weems, big-game hunter and naturalist, of New York City; E. Ross Allen, taxidermist, of Silver Spring, Fla.; Dr. Clifford Burdick, geologist, Milton, Wis.; O. C. Van Hyning, of the Florida State Museum, Gainesville, Fla.; Dr. F. Gregory Hall, associate professor of zoology at Duke University, Durham, N. C.; and A. Brazier Howell, lecturer in comparative anatomy at Johns Hopkins University, Baltimore, Md.

Doctor Nelson Returns.---Dr. E. W. Nelson, former chief of the bureau, has returned to Washington after an absence in California and is spending part of his time in research at the bureau's laboratories in the National Museum. At present he is particularly interested in quail of the genus *Colinus*.

Mountain Sheep Skulls Renovated.---All the skulls in the Biological Survey mountain-sheep collection, one of the invaluable and irreplaceable possessions of the bureau, are now being carefully cleaned and arranged in quarter-unit storage cases. The teeth are being treated with diluted ambroid cement, a means of preservation devised by Dr. H. H. T. Jackson.

#### FOOD HABITS RESEARCH

Returns from West.---Mr. McAtee returned to Washington on October 6 after inspecting the division's field stations in the West and studying the injurious-bird situation in California, in connection with which, on September 24, he attended a hearing on bird control held at the University of California. On his return trip Mr. McAtee stopped at Ames, Iowa, on work connected with the game survey being carried on in that State.

Inspect Quail Projects.---Ross O. Stevens, in company with Wallace B. Grange, the latter serving the bureau temporarily, returned October 8 from an inspection of experimental quail-management projects in a number of States. Most of the projects, they report, are in a thriving condition, and those that are not probably will be dropped. Mr. Grange left October 13 for his home at Fish Creek, Wis., where his temporary service ended.

Investigates Night-Heron Roost.---J. Paul Miller recently investigated an objectionable roost of black-crowned night herons at Winthrop, Mass. It is unusual

for these birds, which are protected by Federal law, to roost in town, but there they were. As the roost constituted a nuisance, recommendation was made that a permit be issued for taking steps to dislodge it.

Stomach Collecting Demonstrations Effective.--C. C. Sperry returned to Denver on September 30 after spending 10 weeks in the Rocky Mountain and Pacific Coast States demonstrating to predatory-animal control leaders and hunters methods for collecting mammal stomachs. Results of the trip, he reports, are apparent in the increased number of stomachs received at the laboratory.

Doctor Fisher Visits Denver Offices.--Dr. A. K. Fisher was a visitor in the Denver offices on September 25 and 26, meeting those who formerly served under him and making the acquaintance of new members of the bureau's personnel.

#### FUR RESOURCES

Visit Muskrat Station.--Mr. Ashbrook and C. E. Kellogg visited the field station at Church Creek, Md., on September 30, to inspect the muskrat investigations and to confer with Frank Smith, who is in charge. So far this season 34 muskrats have been born. Experiments will be continued to determine definitely the breeding cycle and prime-fur periods of muskrats. The number of pens is being increased.

Show Rabbits at County Fair.--During the latter part of September the Rabbit Experiment Station staged an exhibit at the Los Angeles County Fair, the main feature being a group of live rabbits used to demonstrate the method of "rex" inheritance. Four generations of animals were shown. Dr. A. W. Bellamy, of the University of California, cooperated in the preparation of the exhibit. He also prepared a paper, entitled "The Inheritance of Rex in Rabbits," which was mimeographed and distributed to those present.

Confers on Muskrats.--On September 29 C. E. Kellogg conferred with Dr. Carl G. Hartman, at Johns Hopkins University, Baltimore, Md., on the muskrat embryological investigations being carried on there in cooperation with the Biological Survey. He also visited a Baltimore packing house that recently began supplying dressed rabbits to the meat trade.

Studies Conditions on New England and Canadian Fur Farms.--Dr. Karl B. Hanson recently returned to the Fur Animal Experiment Station, at Saratoga Springs, N. Y., from the New England States and the Provinces of New Brunswick, Quebec, and Prince Edward Island, where he inspected fur farms to obtain first-hand information on conditions in the industry. He also visited the Canadian Fur Animal Experiment Station, at Summerside, P. E. I., to get information on research problems being studied there. He later visited the Conservation Department at Quebec City, where he examined anatomical drawings and paintings of the fox.

#### DISEASE INVESTIGATIONS

Investigate Bird Diseases.--During the week of October 10 Doctor Shillinger and Dr. L. C. Morley visited various places in New York State where work is being done on diseases of upland game birds. Studies in progress at Cornell University

and at the State Grouse Experiment Station, near Hancock, N. Y., show results similar to those being developed by the Biological Survey. Plans were formulated for closer cooperation of the bureau and State agencies engaged in research on diseases of upland game birds. Doctor Shillinger and Doctor Morley also visited the U. S. Fur Animal Experiment Station at Saratoga Springs, N. Y., and conferred with Director Hanson on his wild-life disease observations.

Waterfowl Losses Subside.--Abundant rainfall and the advent of cool weather have checked a number of outbreaks of botulism occurring among migratory waterfowl and shorebirds about western lakes. Losses, however, were reported exceptionally severe on some comparatively limited areas. In some instances game protectors frightened the birds away from seriously affected waters by firing guns--a reasonably practicable method on small areas. At Lake Malheur Bird Reservation, Ariz., it is believed, the epizootic has subsided, and at Bear River Migratory Bird Refuge, Utah, conditions have greatly improved, and the malady is thought to be now under control there.

#### PREDATORY ANIMAL AND RODENT CONTROL

Shows Bureau Movies.--To audiences throughout the Southwest Don A. Gilchrist, regional supervisor, has recently shown motion pictures depicting various activities of the Biological Survey. His 35-minute program, arranged for Rotary and other similar luncheon groups, includes motion pictures of antelope, turkey, deer, and buffalo, the duck-sickness film, two mountain lion films, and that entitled "Rodent Robbers." According to all reports, these pictures are being enthusiastically received by the business men, who thus learn much about the work of the bureau.

Makes Remarkable Coyote Catch.--Leader A. E. Gray reports that an unusual catch of coyotes was made on September 7 by Hunter L. J. McIntosh near Tarkio, in Atchinson County, Mo. Serious depredations had been reported for some time from that vicinity, and accordingly Mr. McIntosh was sent there. After making a survey of the county and examining the area where depredations had been committed, he made 12 two-trap sets within an area 2 miles long and 1/2 mile wide on one farm. The next morning he found 3 sets sprung by stock and 6 sets holding coyotes. Within the next week he trapped an adult coyote and 2 pups, apparently thus ridding this section of the predators.

Delivers Radio Talk on Rats.--On October 18 James Silver broadcast from Station WTIC, Hartford, Conn., on "The Rat as an Economic Hazard." The talk, made on the invitation of the Hartford County agricultural agent, who is in charge of publicity for the state-wide antirat campaign, was part of the Biological Survey's cooperation in this campaign.

Canning Plant in Full Swing.--Leader E. M. Mills reports that the cooperative rat-bait canning plant at Barnstable, Mass., which started operations on September 3, had completed the preparation of 1 carload of cans by the end of the month and had started on the second. It is expected that about 180,000 cans will be prepared for supplying to cooperators in the fall campaigns in the Eastern States.

Wolves Caught in Bear Sets.--Hunter Marion Collins, of the Michigan District, recently trapped 3 old wolves in bear-trap sets in bear pens. According to a report received from Leader H. P. Williams, one of the wolves had ranged throughout



this territory for the past 7 years and had caused considerable loss of livestock, on one ranch in particular. After the control work, however, the manager of the ranch wrote as follows: "Now that our ranging season is just about over we are glad to report to you that we did not have a single loss by predators this year. The removal of some 18 wolves, 42 coyotes, 50 bobcats, and about 15 bears by your hunters during the past three years surely has solved our problem. Our Mr. Sommers, the cattle foreman who rides the range constantly, tells me that he has not seen a sign of a wolf since the hunter caught the big male wolf and that there are fewer predators here now than there have been at any time during the seven years he has ridden this range. It is also the first year that the ranch company has not suffered losses caused by predatory animals."

Transferred.--Miss Irene James, transferred from the Bureau of Home Economics to the office of the leader of predatory-animal and rodent control at Cheyenne, Wyo., reported for duty as clerk-stenographer on September 28.

Married.--The recent marriage of Miss Cecelia Mae Ustrud, stenographer in the Denver office, to Mr. Robert J. Lavoie has been announced.

#### LAND ACQUISITION

Negotiate for Lands.--Mr. Dieffenbach left Washington on September 23 for San Francisco, Calif., to negotiate for the purchase of a refuge unit in that State. His itinerary, however, included stops at the Bear River Refuge, in Utah; the Crescent Lake Refuge, in Nebraska; and the Cheyenne Bottoms Refuge, in Kansas. On October 13 Robert Rutherford left Washington to join Mr. Dieffenbach in Kansas City, Mo. From Kansas City, Mr. Rutherford proceeded to North Dakota to negotiate for lands there.

Surveying Refuges.--Charles S. Cook, assisted by Bert J. G. Tousey and James W. Whitehead, has completed the survey of the Charles Sheldon Refuge, in Nevada, and the Tule Lake Refuge, in California, and is now surveying and marking boundaries of Banforth and Hutton Lake Refuges, in Wyoming.

Albert Smith, jr., Kenneth C. Kern, Oswald Recroft, Jack Y. Upham, and J. Ralph Campbell are continuing work on the Upper Mississippi River Wild Life and Fish Refuge, making surveys and marking boundaries.

Daniel H. Janzen has completed the check examination of a unit in Nebraska and has returned to Kansas City, Mo., to resume work on the Cheyenne Bottoms Refuge.

Married.--Albert J. Rissman and Miss Lois Jean Rowse, both of the Washington office of this division, were married in Washington on October 5.

#### GAME AND BIRD CONSERVATION

Headquarters Changed.--The headquarters of United States Game Protector John Q. Holmes have been transferred from Orleans, Nebr., to Garden City, Kans. Mr. Holmes's post-office address is now Box 864, Garden City.

Confer on Enforcement.--United States Game Protector Orin D. Steele was in the Washington office on October 12 conferring with bureau officials. The follow-

ing day W. R. Dillon and Mr. Steele conferred with State game officials in Baltimore, Md., with reference to game-law enforcement during the current season.

Fined \$100 for Hunting Before Noon on Opening Day.—Charged with hunting mourning doves in Stanislaus County, Calif., prior to 12 o'clock noon on the opening day of last year's shooting season, a defendant arraigned in Federal court at San Francisco on October 26, 1932, was fined \$100.

Patrol Boats Named "Gadwall" and "Redhead".—The motor boat used to patrol the Potomac River and adjacent waters in Maryland, Virginia, and the District of Columbia has been named Gadwall, and the boat used in Mobile Bay and adjacent waters in Alabama has been named Redhead.

William E. Dickerson, United States Deputy Game Warden, of Memphis, Tenn., died on September 1. Mr. Dickerson had been under appointment as a Federal deputy since September 25, 1923, and had aided the bureau extensively in the enforcement of the Federal game laws in his section. He was well informed concerning matters pertaining to conditions on the Mississippi River and knew the dangers incident to navigation on that stream.

Inspects Refuge.—Frank L. Earnshaw, assistant in reservations administration, left Washington on October 19 to inspect conditions at Wind Cave National Game Preserve, S. Dak.; Crescent Lake Migratory Bird Refuge, Nebr.; and Niobrara Reservation, Nebr. He plans to return to the Washington office about November 7.

To Dispose of Surplus Big-Game Animals.—The Biological Survey has called for bids in connection with the disposal of surplus big-game animals to prevent overgrazing of ranges on four of the preserves. The surplus includes 141 buffalo, 162 elk, and 45 mule deer in the herds at the National Bison Range, Mont.; Wind Cave National Game Preserve, S. Dak.; Niobrara Reservation, Nebr.; and Sullys Hill National Game Preserve, N. Dak.

Appointed.—Leonard A. Johnson, of Tolna, N. Dak., has been appointed United States deputy reservation protector at Stump Lake Bird Reservation, N. Dak.

Temporary Appointments have been made as follows: Wayland E. Shannon, United States deputy reservation protector, at Brevard Bird Reservation, Fla.; Clifford O. Kreider, United States deputy reservation protector and deputy game warden, Nine Pipe and Pablo Reservations, Mont.; Clifford R. Fretwell and W. R. Montgomery, United States deputy reservation protectors and deputy game wardens, Bear River Migratory Bird Refuge, Utah.

Hay Harvest Completed at Elk Refuge.—Hay harvesting at the Elk Refuge ended on September 12, with a yield of 1,350 tons, of which about 1,300 will be available for winter feeding. Of the hay harvested on the Izaak Walton League addition, 46 tons were destroyed by fire caused by lightning.

R. J. Schmalhausen, United States deputy reservation protector, of the Rio Grande Bird Reservation, N. Mex., and a United States deputy game warden, was killed in an automobile accident on October 8.

Bear River Refuge Formally Established.—The boundaries of the 64,255-acre Bear River Migratory Bird Refuge, Utah, were established by proclamation of the

President on September 26, and administrative regulations, effective October 1, were issued by the Acting Secretary of Agriculture on September 28. An order opening approximately 40 per cent of the diked area to public shooting, as provided for in the Act of April 23, 1928, authorizing establishment of the refuge, was issued by the Acting Secretary at the same time. The Governor of Utah, the State Fish and Game Commission, and a committee of sportsmen were consulted in the drafting of the regulations and in the designation of hunting grounds.

Addresses Meeting.--Ray C. Steele, Superintendent of the Upper Mississippi River Wild Life and Fish Refuge, addressed a meeting of the Witoka (St. Paul) chapter of the Izaak Walton League of America at St. Paul, Minn., on October 10.

Church Bell Announces Opening of Shooting Season.--Ranger Homer F. Hall, of the Upper Mississippi River Refuge, reports that the church bell at New Albin, Iowa, announced to sportsmen in that vicinity the opening of the hunting season at noon on October 1. Ranger Hall, who was patrolling in that section at the time, states that not a shot was fired before noon, but that at the first sound of the bell, at 12:01 p. m., shooting started simultaneously on the private areas in the vicinity.

Low Stage of Water on Upper Mississippi.--During the week of October 2 the Mississippi River at Winona, Minn., reached its lowest recorded stage since 1862. As would be expected, this scarcity of water in the river and adjacent sloughs, lakes, and marshes was reflected in a corresponding decrease in the numbers of migratory waterfowl frequenting the area at the beginning of the hunting season. On the other hand, upland game birds, particularly pheasants and quail, enjoyed favorable conditions. As a consequence, the numbers of these species have increased. Ranger John L. Lundberg estimates that in the large refuge area opposite Wabasha, Minn., there were at least three times as many pheasants as in the same area a year ago. He also reports that the beavers introduced into that area continue to do well; in the middle of October one colony was actively engaged in constructing a large house.

After making an inspection trip throughout the length of the refuge, Superintendent Steele reported that about the usual number of hunters were afield at the opening of the waterfowl season; in spite of the low water the refuge thus continued to serve its double purpose of safeguarding the birds resident in it and of affording sanctuary to those driven there by hunters' guns.

Game-Law Violations Recorded.--Of 36 cases of game-law violations recently reported on the Upper Mississippi River Refuge, 19 involving illegal fishing were recently terminated in State courts with the following results: 3 jail sentences of 60 days each, 6 of 30 days each, 2 of 20 days each, and 1 of 3 days; and 1 fine of \$100 plus costs of \$18, and 3 fines of \$50 each; in 3 cases verdicts of not guilty were returned. Seventeen other recent cases have not yet been terminated; some of these are to be prosecuted in Federal Courts. Three involve hunting in a closed area; 3, possession of wood ducks; 2, hunting of yellowlegs; 2, hunting from a motor boat; 2, hunting in close season and use of an excessive number of decoys; and 5, illegal fishing. The evidence in most of these cases was obtained by Rangers Lundberg and Hall. Superintendent Steele, Rangers Harley C. Lawrence and Homer C. Fort, and Deputy Rangers J. G. H. Frerichs and Edward C. Knopp also reported facts in connection with many of the cases.



# THE SURVEY

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Washington, D. C., November-December, 1932

No. 11-12

SO CLOSELY INTERWOVEN are the official and personal interests in a bureau of the size and nature of the Biological Survey, that as we come to the holiday season it becomes a personal pleasure as well as an official act of appreciation for me to extend greetings and best wishes to our men and women in Washington and throughout the United States, Alaska, and Hawaii. At this season I wish to express my sincere appreciation of your loyalty and interest in the varied lines of our work as related to the wild life of our country. I wish all of you success and pleasure in your personal, family, and official lives as you face the beginnings of a new year. May it be one of happiness--both in feelings of accomplishment in daily tasks well done, and in personal health and prosperity. Many new problems will confront us during the course of the year upon which we are about to enter. That we may have such an enjoyment of the holiday season of good will among men that it will be a real spiritual benefit to us all, and prepare us for important tasks for the public welfare in the coming year, is the sincere personal wish of your chief and of all officials in the Washington offices.

Washington, D. C.  
December 15, 1932.

*Paul G. Redington*

## GENERAL NOTES

Increase in Department Expenditures Due to Emergency.--The size of the department's expenditures in the fiscal year ended last June, as in the preceding year, is a direct reflection of the efforts of Congress and the administration to bolster employment in a period of extreme economic distress, the Secretary explains in his annual report to the President. The normal total during 8 of the past 10 years has ranged between \$125,000,000 and \$180,000,000, but last year the total was \$306,400,098.

The Secretary calls attention to three important facts in connection with the expenditures: (1) Over four-fifths (81 per cent) of the 1932 expenditures went to the general public--nearly 12 per cent for work of general public interest

and the rest for road construction. (2) Of every dollar expended by the department, only 10 cents was spent or could be spent on the ordinary agricultural activities, or a total of \$30,758,947. (3) More than two-thirds (67 per cent) of the total was allocated to the States, for road construction and for experiment stations and extension and other cooperative activities.

The entire Biological Survey expenditures and obligations of \$1,903,591, including \$324,711 for purchase of land, the report puts with the general activities (about 22 per cent of the total). The Secretary comments: "The work of the Biological Survey, in acquiring and maintaining game preserves, in research designed to help protect beneficial wild life and to eradicate or control injurious wild life, . . . serves the general public, rather than any one segment of the public."

Conducts Extension Conference Program.--At the monthly conference of the Extension Service held in the Administration Building on December 14, Mr. Redington conducted a program dealing with the Biological Survey's work as related to extension activities. After a preliminary general statement by the Chief, Stanley P. Young, W. L. McAtee, Frank G. Ashbrook, Dr. J. E. Shillinger, Dr. W. B. Bell, Rudolph Dieffenbach, and R. W. Williams discussed the various projects of the Bureau.

Game Conference Held in New York.--The Nineteenth American Game Conference, under the auspices of the American Game Association, was held in New York City November 28-30. Nine members of the Biological Survey attended. On the opening day Dr. J. E. Shillinger participated in the discussion of the "Relation of Disease to Wild-Life Cycles." He also presented a paper on "Disease Prevention and Control," and Dr. L. C. Morley was one of two who led the discussion on this topic. E. A. Goldman, on the second day of the conference, spoke on "Management of Our Deer Herds." At the morning session of the last day, Mr. Redington, with officials of the Forest Service and the National Park Service, opened the discussion of "The Game Situation in the West." At the closing session, a waterfowl symposium, Dr. W. B. Bell was one of the leaders in the discussion of a paper on "The Waterfowl Trend" presented by Hoyes Lloyd, Supervisor of Wild Life Protection, of the Canadian Interior Department.

Members of the bureau also attended several related meetings held during the conference. These meetings included those of the American Game Policy Committee, of which Mr. Redington is a member; the Elk Commission, of which Dr. T. S. Palmer and E. A. Goldman are members; the National Committee on Wild-Life Legislation; and other associations interested in game and game breeding.

Members of the Biological Survey who attended the conference or related meetings, in addition to those previously named, were Mr. Henderson and W. R. Dillon.

Reviews High Points from Annual Report.--Mr. Redington on December 13 spoke over the radio on "New Knowledge on Wild-Life Control and Conservation," a resume of his annual report to the Secretary of Agriculture. The talk was broadcast in the National Farm and Home Hour Program of the department over the network of the National Broadcasting Co. Arrangements have also been made to have the address delivered by a local speaker on the Western Farm and Home Hour Program on December 30.

Tells Radio Audience of Waterfowl Season.--On November 17 Mr. Redington delivered a radio talk on the "Opening of the Waterfowl Season for 1932-33," broadcast from Station WMAL, Washington, D. C. The address was part of a program sponsored by the Rod and Stream Department of The Evening Star.

Official Publications of the bureau have been received as follows:

- "Report of the Chief of the Bureau of Biological Survey." By Paul G. Redington. 30 pp. Issued November 19; advance copies received November 19.
- "The American Chameleon and Its Care." Leaflet Bi-565 (revised). 3 pp. Issued August, 1932; received July 22.
- "Poisonous Snakes of the United States." Leaflet Bi-571 (revised). 14 pp. Issued July, 1932; received August 13.
- "Directory of Field Activities of the Bureau of Biological Survey." Miscellaneous Publication No. 49 (revised). 53 pp. Issued October, 1932; received November 30.

#### BIOLOGICAL INVESTIGATIONS

To Broadcast on Reindeer.--On December 23 at 12:45 p.m. Doctor Bell will speak over the radio on reindeer in Alaska. Under the auspices of Science Service, the talk will be broadcast from Station WJSV and 56 associated stations of the Columbia Broadcasting System.

Ruddy Ducks Plentiful on the Patuxent.--On November 16, Frederick C. Lincoln visited an important shooting area on the Patuxent River, Md., where a misunderstanding existed as to what duck was locally named "butterball." He found that the name was given in this region to ruddy ducks and that they were plentiful, a surprising situation considering their reported scarcity in other sections. He saw about 5,000 ducks, and estimated that at least 2,000 of these were ruddy ducks. Local sportsmen asserted that these birds were even more numerous than the "black-heads," or scaups. A specimen was taken for the bureau collection.

Reports Progress in Mexico Expedition.--Information received from Vernon Bailey indicates that his biological expedition into northwestern Mexico is making satisfactory progress and that the party is now well equipped for work in the rough mountain areas during the next few months. Writing from Oputyo, Sonora, on November 13, he reported: "Our trip has been very successful and interesting without any troubles or mishaps. The chest is nearly full of good specimens. . . .The weather has been perfect and the country most interesting."

Fall Migration in Massachusetts Heavy.--Dr. O. L. Austin, Jr., stationed at North Eastham, Cape Cod, Mass., reports that the September and October flight of small birds was unprecedented as to abundance. He was able to band 1,200 birds in September and 3,100 in October, including more than 400 black ducks.

Dovekies Blown Ashore by Gale.--Doctor Austin reports that early in November in the vicinity of the station he banded 23 dovekies--a deep-sea bird that breeds on the northern coasts of Greenland, Iceland, Spitzbergen, and Novaya Zemlya and winters from southern Greenland to Long Island. With the exception of two birds banded

last January by bureau cooperator, these are the first of this species ever to be marked with Biological Survey bands. A violent gale that lasted from November 7 to 10 blew landward several hundred of the birds--the largest number Doctor Austin has ever encountered in that area. The dovekie is, an expert diver, and it flies well, its small wings moving almost as rapidly as a hummingbird's; but it is awkward on land. The birds blown ashore were thus unable to move fast enough to take off, and others were so weak and thin that they could not fly. Most of those that were in good condition flew out to sea again when thrown into the air to give them the start they needed.

James Silver, of the Division of Predatory Animal and Rodent Control, has reported that he and Carlyle Carr observed dovekies late in November and early in December along the east coast of Florida. "On December 4," Mr. Silver writes, "a few dead ones were noted floating around on Biscayne Bay but no live ones were seen. During the week all of the dovekies seen on the wing were flying south and it seems certain that none of them survived. Apparently they have not been able to obtain suitable food in southern waters and have starved to death. All birds examined were very thin. Their heavy winter plumage in this warm climate must also have contributed to their plight. During the week one of the highest tides on record, with exceptionally heavy seas and strong north and northwest winds, has prevailed. Judging from the birds seen, and the evidence that large numbers (not large percentage) perished inland where they could not be found, I would estimate that a minimum of 10,000 dovekies perished along the 200 miles of shore between Palm Beach and Key Largo." A bureau cooperator also has reported seeing 50 of the birds at Daytona Beach, Fla.

Studies Waterfowl in California.--L. J. Goldman, since his return to his headquarters at Berkeley, Calif., from Canada and the Northwestern States, where he was studying waterfowl conditions, has been actively engaged on work of the same nature in central and northern California.

Take Waterfowl Censuses on Potomac.--Dr. H. H. T. Jackson took a census of the waterfowl on the Potomac River between Washington, D. C., and Widewater, Va., on October 28. He estimates that he observed 10,808 birds, distributed by species as follows: Lesser scaup, 5,230; black duck, 4,864; canvasback, 92; pintail, 70; baldpate, 56; mallard, 41; redhead, 36; ruddy duck, 21; blue-winged teal, 12; gadwall, 2; Canada goose, 3; coot, 381. On November 9, Dr. H. C. Oberholser, surveying the same section of the river, estimated that he saw 45,794 waterfowl of the following species: Lesser scaup, 18,955; black duck, 4,784; canvasback, 20,550; greater scaup, 10; pintail, 15; mallard, 252; ruddy duck, 369; gadwall, 500; bufflehead, 13; American merganser, 3; Canada goose, 8; coot, 335.

To Study Waterfowl Conditions.--Doctor Oberholser left Washington on November 11 for an extended trip to study waterfowl conditions in the vicinity of Lake Erie, in the lower Mississippi Valley, and along the coast of Texas.

Visit Museum Annex.--A. J. Strcat, of Fresnillo, Zacatecas, Mexico, visited the bureau's mammal laboratories in the National Museum on October 28. About the middle of November Percy W. Shufeldt, of British Honduras, who has furnished many valuable specimens to the collection, called several times at the offices.



## FOOD HABITS RESEARCH

Inspects White-Pine Weevil Investigation.--After the meeting of the American Ornithologists' Union in Quebec, October 17 to 21, Mr. McAtee spent a few days with J. Paul Miller, at Amherst, Mass., inspecting the work being carried on there on the relation of wild life to the white-pine weevil. En route to Washington he visited the Northeast Forest Experiment Station, at New Haven, Conn., and the headquarters of the National Association of Audubon Societies in New York City.

Girls' School Interested in Wild Life.--Ross O. Stevens visited the St. Paul's School for Girls in Baltimore, Md., on December 2 to inspect the grounds and make recommendations for improvements that would increase the number of birds and other wild animals.

To Survey Chinsegut Hill Refuge.--On December 8, Mr. Stevens left for Brooksville, Fla., where with Herbert L. Stoddard he will make a survey of the Chinsegut Hill Migratory Bird Refuge. They will be joined by representatives of the Bureau of Animal Industry, who plan to carry on a grazing demonstration, and it is hoped that methods can be worked out that will harmonize the demands of grazing and of wild life, a thing very desirable over vast areas in the Southeastern States.

To Investigate Eelgrass Shortage.--Clarence Cottam left Washington on December 9 for the coast of Long Island and New Jersey to investigate further the shortage of eelgrass and its effect upon brant and other waterfowl.

Continues Study of White-Necked Raven.--S. E. Aldous was in Texas during October continuing a field study of the white-necked raven. The area covered on this trip included the region from Pecos east to San Antonio, and was thus for the most part farther south than any Texas area previously surveyed in this study. Mr. Aldous reports the collection of a series of stomachs for use in laboratory studies.

Investigates Reported Damage to Grain by Ducks.--E. R. Kalmbach during October investigated two cases of reported damage by ducks to grain. He found that ducks had damaged "hershey," or hog millet, in Washington County, Colo., a region where a dry, summer-growing period had delayed the maturing of the crop, and early fall rains had produced numerous small ponds that attracted the ducks. Mr. Kalmbach also investigated conditions in Sheridan County, Nebr., where ducks in past years have made inroads on fields of corn being "hogged off." The flight of ducks from the north had not yet begun in great numbers, however, and it was thought that the matter would require further attention if later reports should indicate a large flight of birds threatening the corn.

## DISEASE INVESTIGATIONS

Inspects Disease Work in Central States.--Between October 19 and November 8 Doctor Shillinger was in the North Central States studying conditions causing losses in wild life. Much of his time he spent with cooperators of the bureau at

the University of Minnesota. He made several field trips to observe wild-life populations, and he visited experimental fur farms to obtain information on disease outbreaks occurring in the past few months. Tularemia has been isolated in 21 instances from various species of wild life in the northern Minnesota district. En route through Wisconsin Doctor Shillinger stopped at several large silver-fox ranches whose owners are cooperating with the bureau in a study of fox diseases. He also visited several game farms from which reports of disease among pheasants had been received. While in Michigan he conferred with Dr. E. C. O'Roke, of the State University, a collaborator of the bureau in disease investigations. Formal talks on the work of the bureau's disease-investigations project were given by Doctor Shillinger before students at the Agricultural School of the University of Minnesota and at the School of Forestry and Conservation, of the University of Michigan.

Studies Rabbit Diseases.--Dr. F. D. McKenney, who is engaged in a study of diseases in domestic rabbits, has organized several systematic tests to identify the causative organism of destructive diseases in commercial rabbitries. He is studying not only the infectious nature of the diseases but also the influence of feed and other factors on the animals' susceptibility to disease.

Bureau Employee Victim of Tularemia.--Miss Minnie Sherva, an agent of the bureau doing technical work in the laboratory in the Bacteriology Department of the University of Minnesota, became infected with tularemia in the middle of November. Her condition was not reported serious, and on December 10 Dr. R. G. Green wrote that Miss Sherva was doing well and was expected to leave the hospital in a few days. Doctor Green, the bureau's cooperator in these investigations at that institution, suffered an attack of this disease two years ago. Bacteriologists recognize that the more virulent strains of tularemia are among the most highly infectious of bacterial organisms, and though exceedingly rigid precautions have been taken to protect employees carrying on such investigations, many have become infected.

Confer with Specialists.--Returning to Washington from the game conference held in New York November 28-30, Doctor Shillinger and Dr. L. C. Morley visited the Rockefeller Institute at Princeton, N. J., and the Veterinary College of the University of Pennsylvania, at Philadelphia, to confer with specialists on animal diseases at those institutions.

Investigate Duck Poisoning.--Late in October the Bureau received reports of a number of ducks found dead on northern Chesapeake Bay near the Aberdeen (Md.) Proving Grounds. As Doctor Shillinger was then absent from Washington, Clarence Cottam, of the Division of Food Habits Research, investigated the conditions and reported that the birds died as a result of phosphorus poisoning. The matter was called to the attention of the commandant of the proving grounds, who agreed to maintain a 24-hour guard to keep ducks away from the area where the phosphorus was deposited.

Several reports were also received during November of wild ducks dying from phosphorus poisoning in the upper Chesapeake Bay. These losses have continued despite the apparently well-organized patrol of the known polluted area. It seems possible that other areas may have received deposits of phosphorus from the dis-

charge of explosives not hitherto recorded and are serving as the source of poison to the birds.

#### FUR RESOURCES

Confer on Experimental Fox-Breeding Work.--Mr. Ashbrook and C. E. Kellogg left Washington on November 10, for Saratoga Springs, N. Y., to discuss with Dr. Karl B. Hanson, director of the Fur-Animal Experiment Station, various phases of the work there, particularly that relating to the fox-breeding experiments being carried on to obtain more data on the genetic basis of color phases in foxes. One fox was pelted to demonstrate the process, and Doctor Hanson plans to pelt about 40 foxes this year. Mr. Ashbrook and Mr. Kellogg later visited several wholesale and retail raw-fur dealers in New York City. They obtained valuable information concerning recent developments in the cooperative marketing of pelts, especially concerning trends in marketing rabbit skins. En route back to Washington, Mr. Kellogg stopped in Philadelphia, Pa., to consult with the Better Business Bureau there and to visit a firm producing commercial rabbit feed.

Studies Outbreak of Disease Among Minks.--Doctor Hanson left Saratoga Springs on October 30 to investigate an outbreak of disease on a mink ranch at Passumpsic, Vt., and to collect specimens of the animals. He returned to the fur-animal station on November 2.

Inspect Muskrat Field Station: Confer with State Game Warden.--Mr. Ashbrook and Mr. Kellogg, on December 5, inspected the research work being conducted with muskrats at Church Creek, Md. F. E. Smith, who has charge of the operations, has constructed new pens to provide additional space for young muskrats that will be weaned in about a month. A definite program was arranged for obtaining muskrat pelts and specimens during the open season. Thirty photographs were taken of the litters of muskrats of various ages. Mr. Ashbrook and Mr. Kellogg later conferred with E. Lee LeCompte, State Game Warden, Baltimore, Md., concerning muskrat trapping for scientific purposes during the close season. Mr. LeCompte prepared an amendment to the law which, if accepted by the Legislature of Maryland, will provide for the taking of muskrats for scientific purposes during the close season. This will facilitate obtaining further information regarding the breeding cycle of muskrats and the prime-fur period. This study is being cooperatively conducted by the bureau, the University of Maryland, and the Conservation Department of Maryland.

Attends Convention.--C. E. Kellogg returned to Washington, D. C., on November 28 from Pittsburgh, Pa., where he attended the annual convention and show of the American Rabbit and Cavy Breeders Association and spoke on "Some Fundamentals in Rabbit Breeding." He reports that 1,300 rabbits were entered in the show by exhibitors from 20 States, the largest number ever entered in a national show. Upon special request the department's recently-finished rabbit exhibit was displayed at the convention, under the supervision of Mr. Kellogg.

Research Program for Rabbit Station Outlined.--There are two rabbit experiments now in progress at the Rabbit Experiment Station, Fontana, Calif., and five more will be started within a short time. These will utilize 275 rabbits in 28 groups. The extent of the program can be realized better when it is known

that every animal is to be weighed once a week, and weights of all litters born during the year will also be taken once a week. This will entail the handling of some 800 animals weekly. The lines of investigation include determining the proper nutritive ratio for rabbit feeding, comparing various protein supplemental feeds, obtaining feed costs for rabbits from the time they are weaned until they reach a weight of 6 pounds, and comparing the various cereal grains as to economy and efficiency as rabbit feeds.

Pelting Season at Fur Animal Experiment Station.--Early in December Dr. Karl B. Hanson reported that the pelting season at the Fur Animal Experiment Station was at its height, and that about 40 foxes will be pelted this year. Some fine silver and cross fox pelts have already been taken. Doctor Hanson says also that he is checking carefully his work with parasites by making a thorough examination of all carcasses.

Gives Talk on Fur Animals.--At a meeting of the Grange, in Fierce Hall, Washington, D. C., on November 10, Mr. Ashbrock spoke on fur animals, illustrating his talk with pelts of several species and with the motion picture "Rabbit Farming."

#### FREDATORY ANIMAL AND RODENT CONTROL

Returns from Field Trip.--Mr. Young returned to Washington on October 28, after an extended field trip through Colorado, Wyoming, Utah, Idaho, Washington, Oregon, California, Arizona, and New Mexico, during which he inspected field operations and conferred with regional supervisors, district leaders and their assistants, other officials and cooperators of the bureau. During the greater part of the trip he was accompanied by Mr. Redington. Mr. Young inspected the porcupine-control work being conducted under the supervision of Norman Gillham, and in cooperation with the Forest Service, on the Coconino National Forest in northern Arizona. He reports that porcupine damage to second-growth pine timber is assuming alarming proportions in large areas on that forest. Mr. Young advises that, in spite of the economic conditions confronting the country cooperative funds for both rodent and predatory-animal control work are not being cut to any appreciable extent.

"Western American Alpines" is the title of a book by Ira N. Gabrielson, supervisor of predatory-animal and rodent control in the Pacific Region (No. 3), recently published by The Macmillan Company. "This little book," says Mr. Gabrielson, in his preface, "is an attempt to fill the gap in our garden knowledge of the alpine plants (in the great mountain territory to the northwest). . . . Only true alpines, rock and desert species, and woodlanders dwarf enough to be valuable in rock-gardens, are discussed . . . . This book is limited to a discussion of such plants as are known to me through personal experience, and certain others which seem outstanding enough in possibilities to warrant comment." In the 271-page volume there are more than a hundred half-tone illustrations and a map of "The Land of the Alpines." The book also includes a foreword by E. H. M. Cox, of London, England, editor of "New Flora and Fauna," in which some of Mr. Gabrielson's material and several of his illustrations were previously published.

Convicted of Embezzlement.--On October 25 Dr. Glenn R. Bach, former leader of predatory-animal control in the State of Washington, was found "guilty on two counts of embezzlement" by a jury in the Federal District Court at Tacoma, Wash. On December 12, he was sentenced to a year and a day in prison on each of the two counts, the sentences to run concurrently. A 30-day stay of sentence was permitted to allow the defense opportunity to perfect an appeal. If the appeal is not granted, the sentences will begin on January 9. Doctor Bach was charged with the embezzlement of moneys fraudulently obtained from the sale of furs while he was in charge of the predatory-animal control project in Washington State.

Hunter Earl May, of Arkansas, died on November 3, while en route from Dill, Ark., to Toledo, Ohio. Mr. May rendered the bureau efficient service while employed as a predatory-animal hunter in Nevada, New Mexico, Tennessee, and Arkansas.

More Antirat Campaigns Scheduled.--According to word received from Leader G. C. Oderkirk, 62 county-wide antirat campaigns were scheduled for October and November in the Indiana-Illinois-Wisconsin District, and 8 additional ones were also being planned for this year. Canned red-squill baits, prepared at the cooperative mixing station at Barnstable, Mass., are used in these campaigns. For financing future rodent-control campaigns in his district Mr. Oderkirk has proposed a method common in many of the western districts but not as yet adopted in the East. County agents, according to this plan, will endeavor to have county moneys set aside as revolving funds for purchasing poison baits and other necessary supplies, the sums expended to be replaced when the baits are sold to cooperators.

International Organization Interested in Rat Control.--On behalf of the Lions Club of Middlebury, Ind., the Lions International recently requested bureau literature on antirat campaigns. When the bureau complied with this request and also referred the Lions Club to G. C. Oderkirk, leader of rodent control in the Indiana-Illinois-Wisconsin district, the international organization expressed its gratitude and wrote: "Inasmuch as a majority of our 2,650 clubs are located in communities interested in agriculture we will be pleased to cooperate with your department at any time in promoting activities for the farmer."

Bait-Mixing Station Moved to Pocatello.--The cooperative bait-mixing station, which for the past several years has been located at McCammon, Idaho, was moved in September to Pocatello, Idaho. The new building, a brick structure containing ample storage and elevator space, will permit the installation of the modern equipment needed to meet present demands.

Radio Release on Control Work in Washington.--"Farm Flashes" released on November 8 by the cooperative radio service of the Department and of the State College of Washington, at Pullman, Wash., included a report by Leo K. Couch on predatory-animal and rodent control in that State.

Broadcasts on Importance of Research.--On October 12 Dr. James C. Munch, consulting pharmacologist of the bureau and professor of research in the school of pharmacy of Temple University, Philadelphia, Pa., spoke over the radio on "The Place of Research in Pharmacy." The address was broadcast by Station WIP, of Philadelphia, in connection with National Pharmacy Week.

## LAND ACQUISITION

New Refuge for Birds Approved by Commission.--For establishment of a new migratory-bird refuge in the Sacramento Valley of California and for consolidations of lands on four refuges now under administration, the Migratory Bird Conservation Commission on December 8 authorized the Biological Survey to acquire 11,406 acres, by purchase or by lease.

The Sacramento Migratory Bird Refuge, including 5,609 acres in the heart of the Sacramento Valley, will be an important addition to the chain of refuges in the West. It is 175 miles south of the Tule Lake Refuge, 200 miles west of the Fallon Refuge, and 650 miles northwest of the Salton Sea Refuge. At one time the Sacramento Valley included an extensive marsh area that served as one of the most important nesting grounds on the Pacific Coast and also as a resting and feeding area for countless numbers of waterfowl during their migrations. Later, intensive agricultural development destroyed the area's attractiveness to wild fowl except in certain places where water is impounded during the hunting season. The principal waterfowl found on the proposed refuge are geese, including Canada, Ross's, lesser snow, Hutchins's, white-fronted, and cackling geese. Ducks also congregate there in large flocks during their migrations--principally pintails, green-winged and cinnamon teals, mallards, widgeons, and shovellers, though some redheads and canvasbacks also frequent the place. Shorebirds are represented on the tract by killdeers, black-necked stilts, Wilson's snipe (jacksnipe), avocets, and Wilson's phalaropes.

The commission's authorizations for additions to migratory-bird refuges already established were made to round out, and to facilitate the administration of, areas now owned by the Federal Government. About 2,000 acres on the Crescent Lake Refuge, Nebr., were thus approved for lease and for purchase, and a series of relatively small tracts aggregating about 2,500 acres on the Long Lake Refuge, N. Dak., were approved for purchase. Agreements were also approved for the lease of 1,300 acres of State-owned lands that are intermingled with tracts previously acquired for the Bamforth Lake and Hutton Lake Refuges in Wyoming.

Boundary Posts Destroyed by Cattle.--Mr. Dieffenbach returned to Washington on October 21, after a month spent in the field. Among the points visited was the Crescent Lake Migratory Bird Refuge, where Acting Supervisor Krummes called to his attention the difficulty encountered in keeping boundary posts in good condition because of the destructiveness of range cattle. The ordinary boundary posts lasts only a short time. Metal posts such as are commonly used elsewhere for holding the signs are also quickly destroyed, and the metal signs are bent and twisted. Even some of the concrete corner markers, which extend only a few inches above the ground, have been broken off. Mr. Krummes believes that he has found a solution for this problem. His marking system provides for the planting of a long post, to the top of which, and well above the reach of the cattle, the boundary-marking shield is fastened.

Returns from Field Trip.--Mr. Rutherford returned to Washington on October 30 from a field trip, in the course of which he visited points in North Dakota, South Dakota, Iowa, Illinois, Minnesota, and Wisconsin, making a reconnaissance of areas recommended for refuges, checking examinations, and negotiating for the purchase of lands. He was assisted in negotiative work by Daniel H. Janzen.

Detailed to Washington Office.--Junior Forester Carey H. Bennett has been detailed for about a month to the Washington headquarters, in order that he may become familiar with the office work here.

Completes Surveys of Wyoming Refuges.--After completing the survey and marking of boundaries of Bamforth and Hutton Lake Migratory Bird Refuges, in Wyoming, Charles S. Cook, Bert J. G. Tousey, and James W. Whitehead surveyed and posted the Crescent Lake Refuge, in Nebraska. They have returned to their headquarters at Kansas City, Mo.

Acquisition of Bear River Lands Completed.--The acquisition of lands by purchase within the Bear River Migratory Bird Refuge is now practically complete, as the result of the conveyance of 640 acres previously held under lease by a hunting club. This tract is situated in a part of the refuge preeminently attractive to waterfowl and is surrounded by a closed area. Its acquisition not only makes an inviolate sanctuary of an exceptionally attractive feeding ground for migratory birds but also will prevent what otherwise would have been legal hunting in the heart of a closed area.

Return to Washington.--Oswald E. Recroft and Jack Y. Upham recently completed their detail for surveying on the Upper Mississippi River Wild Life and Fish Refuge and have returned to Washington, D. C.

#### GAME AND BIRD CONSERVATION

In the Field Conferring on Enforcement.--Mr. Sheldon left Washington, November 14, for various points in Ohio, Illinois, South Dakota, Washington, Oregon, California, Utah, Texas, Louisiana, Alabama, Tennessee, and Missouri, to confer with employees of the bureau, State game commissioners, and others, on the administration and enforcement of the Migratory Bird Treaty Act and regulations. W. R. Dillon, from November 9 to 19 visited points in Ohio, Missouri, Tennessee, Arkansas, and Illinois, also in connection with enforcement work.

Many Water Birds on Combahee River.--Early in October United States Game Protector E. B. Whitehead reported that many wood ducks, herons, wood ibises, and other water birds were frequenting the Combahee River in South Carolina, coming into the section at night by thousands to roost after feeding all day in the rivers and swamps.

Secretary Vetoes Extension of Illinois Duck Season.--On the basis that such action would be discriminatory, Secretary Hyde disapproved a request from Chicago that the waterfowl season be extended one day in Illinois to permit hunters to kill wild ducks for distribution to the poor. Mr. Hyde heartily commended the purpose, however, and suggested that December 15, the last day of the season, be utilized by the hunters to kill ducks for distribution to the needy.

Elk Arrive at Refuge.--Elk began to arrive at the Elk Refuge, Wyo., early in October, and by the fifth of November 500 were reported on the Izaak Walton League Addition. At that time there was snow on the near-by foothills but none on the refuge.

Surplus Elk Transferred.--Surplus elk in the herd at Niobrara Reservation, Nebr., have been transferred to the City Park of Omaha, the City Park at Lincoln, and the Scottsbluff Game Preserve, in Nebraska, for breeding and exhibition purposes.

Birds Concentrate at Big Lake Reservation.--A cold wave in the region around Big Lake, Ark., about the middle of October, and a heavy rain that raised the level of the water, attracted hundreds of ducks to the lake. Protector Steven B. Crossley estimated that on October 14, approximately 6,500 birds were feeding on the area, and at the beginning of November about 25,000 ducks were on the refuge. Last year birds were not there in any considerable numbers until November 20. The flight of migratory birds this year is the greatest Mr. Crossley has observed in this locality for three years. Mallards and pintails predominate, but green-winged teals were in abundance. Coots, cormorants, herons, and white pelicans also have been noted on the refuge. There is plenty of food for the birds. A number of brant and wild geese have passed over the reservation, but these birds do not stop at this point.

Appointed.--Robert F. Smith has been appointed deputy reservation ranger on the Upper Mississippi River Wild Life and Fish Refuge; temporary appointments as deputy reservation protectors have been made as follows: Herbert M. Stilley, Swanquarter Migratory Bird Refuge, N. C.; W. G. Brown, Nine Pipe and Pablo Bird Reservations, Mont.; Eugene W. Roberts, St. Marks Migratory Bird Refuge, Fla.; Chas. H. Handley, Blackwater Migratory Bird Refuge, Md.; and G. A. Stokes and H. Fay Sholty, Bear River Migratory Bird Refuge, Utah.

To Undergo Operation.--United States Game Protector J. V. Kelsey entered a hospital at Sayre, Pa., on December 11 for the purpose of undergoing an operation.

Fewer Hunters Licensed in 1931.--A half-million fewer hunting licenses were issued in the United States, including Alaska, last year than in the previous year, though some States issued more licenses. Statistics furnished by the States and tabulated by F. P. Callaghan for the calendar year 1931 (in some cases for the State fiscal year or season ending in 1931) show the number of hunting licenses as 6,342,626, a drop of 561,308 from the 1930 total of 6,903,934 and a slight decrease from the 6,428,761 reported for 1929. For 23 States the reports include combined hunting and fishing licenses, but none of the reports includes separately issued fishing licenses. Hunting-license revenues received by the States also declined last year, dropping from \$10,017,564.43 to \$9,867,352.63. Owing to increases in the fees in some States, however, the revenue was nearly \$500,000 greater than the receipts of \$9,391,412.33 for 1929.

Heads New Federal Business Association.--At Winona, Minn., on October 20, a Federal Business Association, representing Federal activities in six counties of southeastern Minnesota, was organized, and R. C. Steele, superintendent of the Upper Mississippi River Wild Life and Fish Refuge, was elected president.

Unusual Migration of Geese Observed.--A notable migration of wild geese throughout the Upper Mississippi River Refuge was observed the last few days of October, Superintendent Steele reports. During the nights of October 30 and 31 residents of towns and cities along the river were kept awake by the unusual concentration of



migrating geese. A low ceiling caused the birds to lose their bearings. Becoming confused by the lights of the towns, they continued to circle low where they were plainly visible from the streets. This continued until daybreak on each of the nights and occasioned considerable comment.

Trapping of Minks Permitted on Upper Mississippi.---As the result of protection afforded on the Upper Mississippi River Refuge during the past several years, minks have increased to such numbers as to become destructive to muskrats and other forms of wild life. It was therefore deemed advisable to allow trapping of these animals this year on certain parts of the refuge, under permits issued by the Superintendent in accordance with the open seasons prescribed by the several States in which the refuge is situated, and subject to certain restrictions. At the close of the trapping season each permittee must submit to the superintendent a report of his total catch, together with the names and addresses of persons or firms who received the animals or pelts. Large areas of the refuge preserved as inviolate sanctuaries on which no trapping is permitted, will insure the preservation of a liberal breeding stock of minks.

Needy are Allowed to Gather Down Wood.---Permits are being issued by the superintendent of the Upper Mississippi River Refuge to needy families, allowing them to gather down wood and drift wood from areas of the refuge. The permits provide that only such wood may be gathered, and under no circumstances may any standing tree or stump be cut, whether alive or dead, as many of these provide homes as well as food for various species of birds and animals, and thus are considered of great value to the refuge. During the stage of high water last spring a quantity of drift wood accumulated on the refuge, and this forms the bulk of the wood that may be gathered under these permits.

Moorage Site Leased.---As a permanent moorage site for boats and boat equipment at the Winona, Minn., headquarters, a 125-foot river frontage was recently taken under a 10-year lease. Through the cooperation of the owners of this property, the lease of this comparatively valuable site is being obtained for the very nominal consideration of \$1 a year.

Game Violations on Upper Mississippi River Refuge.---Twenty-six cases of game-law violations were reported on the Upper Mississippi River Refuge during the month. Seven, involving hunting after sunset, taking wood ducks, hunting without a license, and illegal fishing, were disposed of in State courts. Fines aggregating \$250 were imposed. In addition one shotgun was confiscated, and to repossess it the defendant was obliged to purchase it from the State for \$35. Eleven cases concerned with hunting in closed areas and eight with violations of the Migratory Bird Treaty Act are pending disposition. Evidence in these cases was obtained by Rangers Hall, Lawrence, Lundberg, Cheney, Fort, and Miller, and Deputy Rangers Frerichs, Razatz, Smith, and Knopp.

Importations.---A shipment of birds arriving in November included 4 warblers (Dendroica erithachorides) from Colombia and 14 Sclater's orioles (Icterus sclateri) and 2 Dow's tanagers (Calospiza dowii) from Punta Arena, Costa Rica.

Visits Bureau.---Senora Soledad Morales de Learn, of Laredo, Tex., one of the largest importers of Mexican quail, accompanied by her sister, Senorita Alicia Morales, visited the bureau on November 14.

New Regulations Restrict Importation of Parrots.--The Public Health Service on September 28, 1932, modified the regulations under the Interstate Quarantine Act of February 15, 1893, by prohibiting interstate shipments of parrots and parrakeets unless accompanied by a certificate from a State health official showing that the birds are free from disease. The Public Health Service, under date of October 6, also revised the regulations governing the importation of parrots. The new regulations require that a health certificate from the sanitary authorities at the place of origin accompany shipments of more than 5 birds each and limit shipments to not more than 100 parrots, 200 parrakeets, and 20 macaws, all of which must be transported in approved sanitary crates, each containing not more than 10 parrots, 25 parrakeets, or 1 macaw. As a result of these restrictions the traffic in parrots and parrakeets has practically ceased, and very few birds have been imported during the past month.

Appointed Inspector.--A. J. van Rossem, of the California Institute of Technology, at Pasadena, Calif., was appointed Inspector of Foreign Birds and Mammals at the port of Los Angeles, effective December 1.

Christmas-Importation Rush Falling Off This Year.--As in previous years, demands for the Christmas trade have resulted in a noticeable increase, since the middle of November, in the number of foreign species of birds imported. The total number for which permits have been issued this year as compared with the number for the corresponding period last year, however, shows a decrease of about 17,000 birds, including an 8,000 decrease in the number of canaries, which form the bulk of the importations. Last year, between November 15 and December 10, permits were issued for approximately 70,363 birds, including 59,758 canaries.



