

# THE AUK:

A QUARTERLY JOURNAL OF

ORNITHOLOGY.

---

VOL. XLIV.

OCTOBER, 1927.

No. 4.

---

## THE SNOWY OWL MIGRATION OF 1926-27.

BY ALFRED O. GROSS.

*Plates XXII-XXVII*

THE Snowy Owl regularly migrates from its breeding range in the "Barrens" of North America to the southern provinces, especially of middle west Canada, but at more or less regular intervals the migration extends much farther southward including an area well into the United States. The most notable of these exceptional flights which have occurred during the past fifty years took place in 1876-77,<sup>1</sup> 1882-83, 1889-90, 1892-93, 1896-97, 1901-02, 1905-06, 1917-18 and the present one 1926-27. A few Snowy Owls have found their way into the United States nearly every year but they were not accompanied by a general migration except in the years indicated above.

The cause of these great invasions from the north is not clearly understood and constitutes a problem which deserves the serious attention of ornithologists. Food, apparently, is one factor involved in causing these movements, whereas weather conditions in the north are probably of minor importance. The amount of snow may have an indirect bearing since it involves the accessibility of the food supply of the Owls. With the accumulation of more data concerning the life of the far north we may be able to correlate the periodic migrations of Snowy Owls with cycles of

---

<sup>1</sup> Deane, R. 1872. Bull. Nutt. Ornith. Club, vol. 2, p. 9.  
1902. Auk, vol. 19, p. 271.  
1906. Auk, vol. 23, p. 101.  
1907. Auk, vol. 24, p. 217.

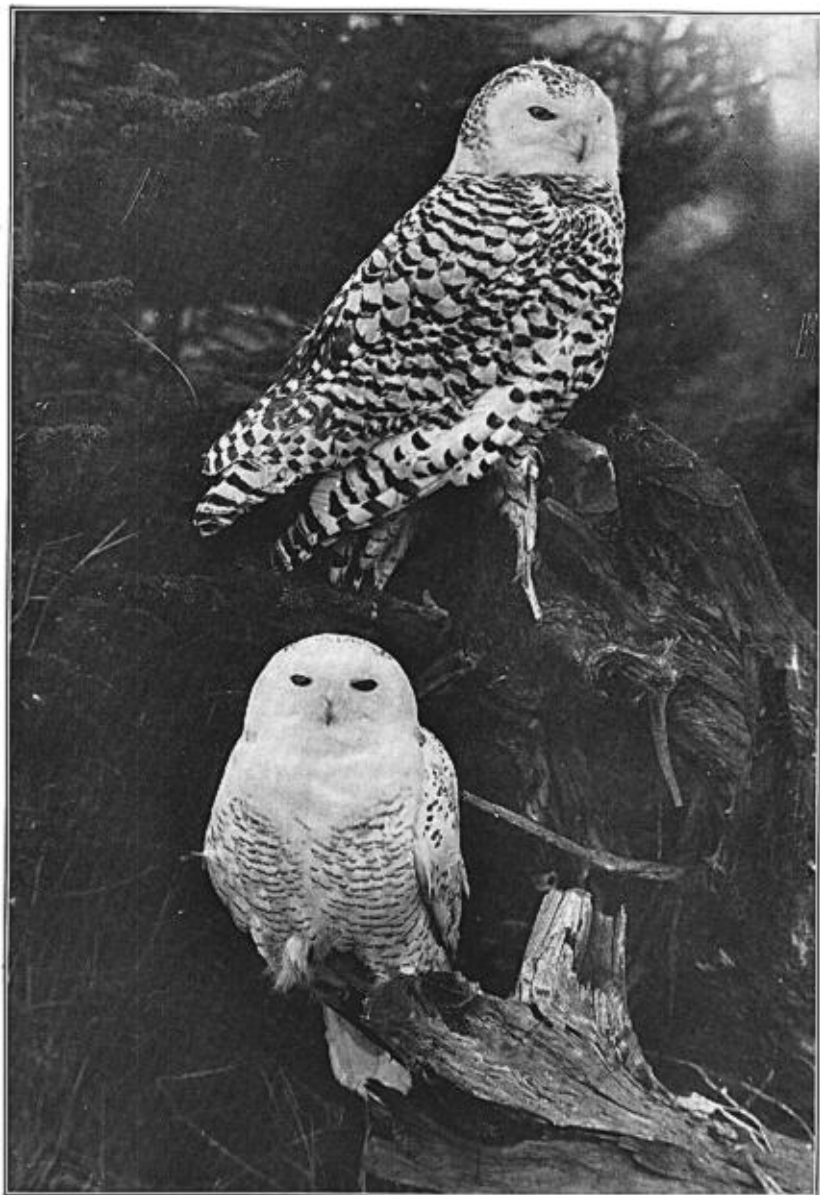


Photo by A. O. Gross

CAPTIVE SNOWY OWLS—NOVEMBER 21, 1926.

abundance of certain animals such as hares, rabbits and lemmings, the chief food of these birds. According to reports received from the Hudson Bay Company there was an unusual number of rabbits in the north in 1925 whereas they were exceedingly scarce during the latter part of 1926. In Baffinland there was an abundance of lemmings in 1925 but as yet we have no reports concerning the abundance of these rodents in that region in 1926. Reports from Alaska and northwestern Canada state the rabbits were common there in 1925 but were almost exterminated in certain regions by disease in 1926. It would be interesting to know just what part disease played in curtailing the food supply of the Owls as a whole, An abundance of food in 1925 would serve to bring about a successful breeding season for the Owls which in all probability would lead to an overproduction. When the food became scarce or difficult to obtain because of excessive snows in 1926 the surplus Owls were forced to range far and wide to secure a living. Disease by further reducing the numbers of rabbits and possibly other rodents would thus serve to aid in causing this great migration into northeastern United States.

When the Snowy Owls and Goshawks first appeared in New England in the fall of 1926 the New England Ruffed Grouse Investigation under the auspices of the Massachusetts Fish and Game Protective Association, turned its attention to the flight in an effort to determine the effect of this migration on the game birds especially the Ruffed Grouse. The committee enlisted the aid of sportsmen who were interested in the problem and the various New England State Departments of Conservation volunteered to send in all information which they received concerning these visitors from the north. Mr. Thornton Burgess broadcasting our wants from radio station WBZ Springfield, Mass. received numerous reports and newspaper clippings from all parts of the range of migration especially New England. Dr. Witmer Stone through 'The Auk' called the attention of the members of the A. O. U. to the importance of obtaining records of the occurrence of the Snowy Owls and other species from the north. He also, very obligingly agreed to combine his records with those received by the Ruffed Grouse Investigation for a general report. We wish to acknowledge the assistance given to

us by numerous contributors. We are especially indebted to Mr. Ruthven Deane of Chicago who gave us all of his records and correspondence received in answer to numerous requests for information sent to light house stations, taxidermists and ornithologists. Mr. Edward H. Forbush, State Ornithologist of Massachusetts, permitted us to make use of the records and reports of Snowy Owls and Goshawks contained in his voluminous correspondence. Dr. Arthur A. Allen of Cornell University sent us his personal records and a copy of all the reports of these birds, received through a questionnaire sent out by the general Ruffed Grouse Investigation Committee. Mr. Josselyn VanTyne and other members of the staff of the University of Michigan Museum were chiefly responsible for the accumulation of the numerous Michigan records. Mr. H. F. Witherby, editor 'British Birds', contributed many of the records of Snowy Owls observed on ships at sea. Of the many taxidermists who contributed records, Angell and Cash of Providence, Rhode Island deserve special mention for their excellent report which contained not only dates and localities of the 135 Owls received but also detailed determinations of the stomach contents. It is impracticable to mention all the individual reports and records in this paper and we shall attempt to give merely a general summary of the 1926-27 Snowy Owl migration. We hope this report will assist the reader in visualizing the extent and distribution of the flight and trust that it will be helpful in making comparisons with similar migrations which occurred in the past and with others which may take place in the future.

The one regrettable thing concerning this migration is the reception the birds received. The number of these beautiful and interesting birds which were killed is appalling. They came at a time when there was a maximum number of gunners in the field and every Owl that appeared seemed to be an invitation to shoot. There are few hunters in the far north and hence the Owls especially the young birds which were in the majority, had but little fear of man. Their habit of feeding in the open also made them conspicuous and easy targets. Many hunters killed them thinking it their duty to protect the game birds but too often the Owls were killed merely to satisfy a desire to kill or a

curiosity to examine the strange bird at close range. A large number of the Owls were thrown aside and wasted and of course were never reported. From estimates made of conditions in Maine and from reports received from elsewhere I feel that 5,000 is a conservative estimate of the number of Snowy Owls killed in the United States and Canada during the 1926-27 flight. It would be most interesting to know how many Snowy Owls succeeded in returning to the northland to breed after having passed this gauntlet of fire arms on their visit to civilized America.

#### THE EXTENT OF THE MIGRATION.

##### *Canada.*

Most of the correspondence received from Canadian observers was of a very general nature and comparatively few reports included records of dates and localities of the birds killed and observed. Therefore tabulations of the numbers for the different provinces would be of little value for comparative purposes. The general reports from Canada, however, are excellent and have enabled us to trace very well the extent and volume of the migration in that part of the continent.

No Snowy Owls were reported from British Columbia although Goshawks were much above their normal numbers throughout that province. In Alberta the Snowy Owls, according to Frank L. Farley, are generally present in constant numbers each winter and the past year (1926-27) has not been an exception. He states the Goshawks were unusually common. As we go eastward we have a report from Mr. C. L. Broley of Winnipeg who states that there were many Snowy Owls in Manitoba. Mr. C. G. Harrold also of Winnipeg writing January 9, 1927 states that there was a marked Snowy Owl migration in the fall but later the birds seemed to have moved elsewhere. Continuing on to the east in our cross section of the migration in southern Canada we have numerous general reports indicating a very unusual flight throughout Ontario and Quebec. Harrison F. Lewis of Ottawa, states that twenty-six taxidermists in the Province of Ontario received 517 Snowy Owls and twelve taxidermists in the Province of Quebec received 271 specimens. Mr. Lewis estimates that 1500 Snowy Owls



SHADED AREA SHOWS THE EXTENT AND DENSITY OF THE SNOWY OWL MIGRATION OF 1926-27. CROSS-HATCHED AREA THE APPROXIMATE BREEDING RANGE.

were killed in these two provinces alone which gives us a vivid impression of the magnitude of the migration in that region which is in the direct line of flight from the breeding grounds to the Great Lakes and southeastward to the New England coast line, the center of the present migration. The migration was general in the eastern sections of Canada through New Brunswick and Nova Scotia to Newfoundland. In New Brunswick the Owls were abundant on the islands lying off the southern coast. They were especially abundant on the island of Grand Manan and at Machias Seal Island the keeper of the light house station saw sixty of the Owls and killed twenty-four of them. Mr. Harry Piers of the Provincial Museum, Nova Scotia, reports a large number about Halifax and states there was an abnormally large flight. Mr. J. L. DeVany of Annapolis Royal, and R. W. Tufts of Wolfville, also state that there was a very large migration of Snowy Owls throughout the province. Mr. DeVany incidently mentions a Crow rookery which was completely devastated when the Owls first arrived in that region. We have no reports from stations in Labrador but birds were known to have come aboard ships when off that coast.

Mr. Arthur English of Doyles Station, located near the Great Codroy river in southwestern Newfoundland, writes that the Owls were plentiful particularly near the sea on the east and west coasts of the Island. The Owls, according to Mr. English, had passed on by December 25 the last having been seen a week before at Cape Ray the extreme southwestern point of Newfoundland.

From these reports we can roughly picture the movement of the Owls through Canada. There were no Owls beyond the Canadian Rockies in southern British Columbia. Owls were reported throughout the region between the mountains and the lakes in Manitoba but in this region the migration was not above normal. In Manitoba there is an indication of a greatly increased migration which reaches its maximum as we pass into the provinces of Ontario and Quebec. The migration was marked in New Brunswick and Nova Scotia but diminished somewhat in volume as we go to the coast of Labrador and Newfoundland.

*United States.*

We have received 2,363 records of Snowy Owls within the borders of the United States which are distributed by states as follows:

Michigan	592	Virginia	9
Maine	589	New Hampshire	8
New York	495	Vermont	5
Massachusetts	294	Iowa	3
Minnesota	103	Wisconsin	3
Rhode Island	96	North Carolina	3
Ohio <sup>1</sup>	60	Indiana	2
Connecticut	58	North Dakota	1
New Jersey	15	Illinois	1
Pennsylvania <sup>1</sup>	13	West Virginia	1
Maryland <sup>2</sup>	12		

The above records though large in number probably represent but a very small fraction of all of the Snowy Owls which visited the United States during the migration of 1926-27, but it is reasonable to suppose that our records are fairly representative of the distribution.

From Canada the birds followed the Canadian Lakes through Manitoba and Ontario to Minnesota (103 records) thence along the Great Lakes through Michigan (592 records) to northern Ohio (60<sup>1</sup> records) and thence eastward following along Lake Erie and Lake Ontario through New York (495 records) to New England where we have reports of more than 1,000 Snowy Owls. We do not have sufficient evidence to state that the birds actually followed the route indicated above but it is at least one possibility. The birds have a decided preference for large bodies of water and river courses and the concentration of the Owls in Michigan, southern Ontario, and New York as well as the scarcity of records in northern New England, lend weight to that view. On the other hand the hosts of Owls on the Maine coast may have

<sup>1</sup> After this paper was compiled we have received from Mr. Edward S. Thomas a list of 102 Snowy Owls captured in the state of Ohio and 32 additional sight records. Mr. George Miksch Sutton has also published an account of the invasion of these birds in Pennsylvania (Cardinal, for July, 1927) with a total of 204 captures and 39 additional sight records. It is impossible to compare these with Dr. Gross's detailed lists to ascertain how much duplication there may be but they indicate a much larger number of Snowy Owls in these two States than is given in his list. (Ed.)

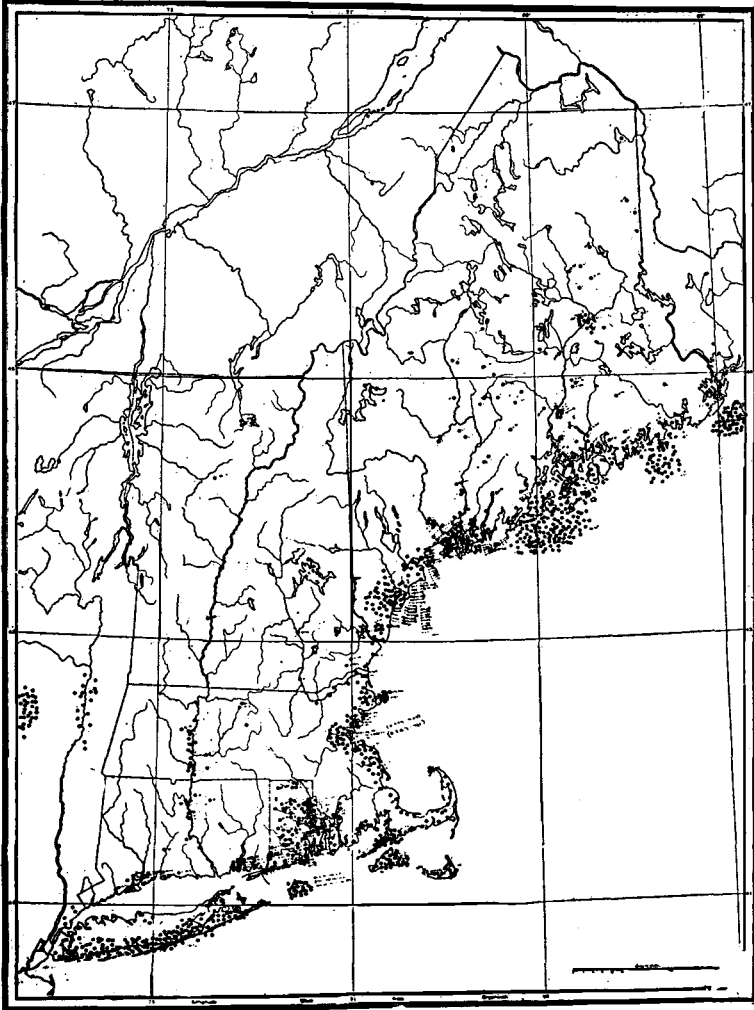
<sup>2</sup> Dr. Alexander Wetmore lists 9 to which I have added 3. (Ed.)





EIGHTY-ONE MOUNTED SNOWY OWLS IN THE TAXIDERMY SHOP OF FRED C. N. PARKE, BANGOR, MAINE, WHICH ARE ONLY A PART OF THOSE RECEIVED DURING THE FLIGHT OF 1926-27.

flown overland from the northwest. This route is possible when

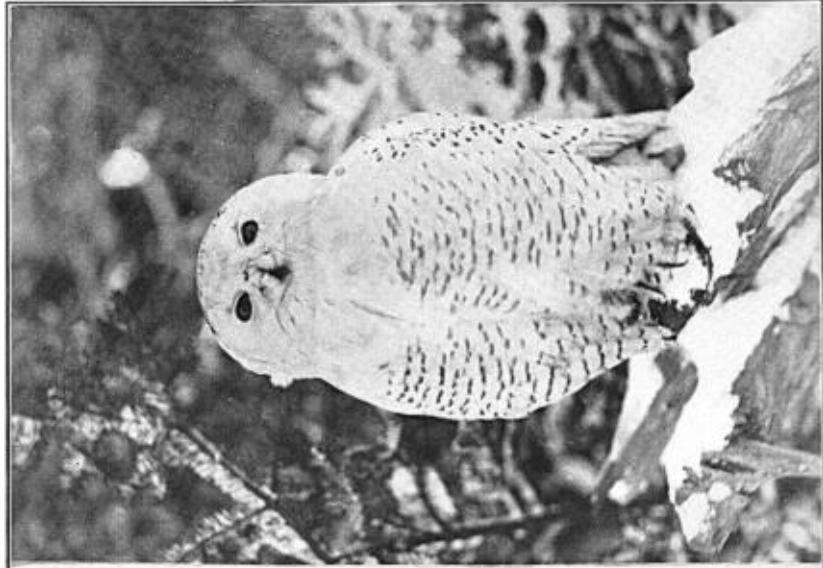
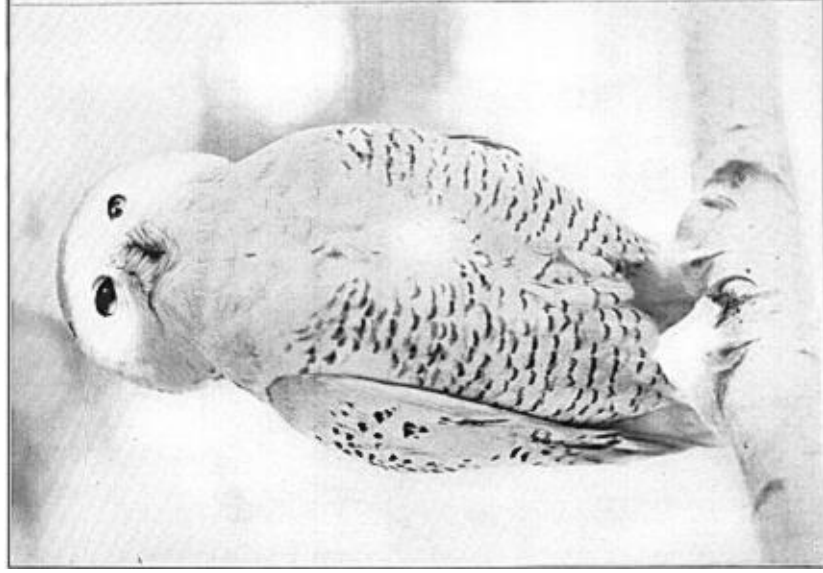


Map to show the distribution of Snowy Owls in New England and Long Island, New York. Each dot represents one Snowy Owl record.

we consider the reports from the St. Lawrence Valley of observers who noted great numbers of the Owls flying at a high

altitude to the southward during early November. The appearance of the Owls in Newfoundland and their subsequent disappearance at an early date would indicate that New England may have received contributions from the northeast via the coastal route. It is probable that the great concentration along the New England coast and Long Island was derived from all three sources.

The accompanying map of the records of Snowy Owls in New England and Long Island is particularly interesting as it indicates the strong tendency of the Owls, also noted on former migrations, to congregate along the sea coast and to a lesser degree the chief river courses. The concentration of human population along the coast may have a bearing on the number of reports from that part of Maine but it cannot entirely account for this marked distribution. The tendency of the Owls to follow the rivers is plainly indicated along the Connecticut river in Massachusetts and Connecticut, the Merrimac in Massachusetts, and the Androscoggin, Kennebec, and Penobscot rivers in Maine. It is also noticeable that there are concentrations along the coast and islands at the mouths of the rivers. This condition is especially noticeable in the case of the Penobscot and other rivers in Maine. There are but few birds recorded at the mouths of the Connecticut and the Hudson but in this connection it is interesting to note the great numbers of records on Long Island across the Sound. This distribution suggests that the Owls may have followed the river courses for considerable distances in coming to the sea-coast. The question arises, "Why do the Owls follow the chains of lakes and rivers and congregate on the sea-coast?" Since many of the Owls came to us in a semi-starved condition food was probably the most dominant factor which determined their subsequent distribution. Some of our correspondents tell of the Owls feeding on dead fish along the shores of the Great Lakes and many others relate the ravages by the Owls on the bird life especially along the Atlantic coast. One correspondent on the northern coast of the Gulf of St. Lawrence writes that the Owls lived on the Murres, which at the time of the flight were present in unprecedented numbers along that coast. At Machias Seal Island the keeper was forced to kill the Owls to protect the Ducks and Gulls



Photos by A. O. Gross.

CAPTIVE SNOWY OWLS—JANUARY 12 AND 16, 1927.

inhabiting the island and according to Allen Moses of Grand Manan Island the Owls followed the flocks of Gulls and Ducks producing great havoc among them. Mr. C. L. Hawthaway of Boston reports the killing of seven Snowy Owls which had killed live decoy ducks and states that he saw the Owls carry away many wild ducks. The Owls played havoc with the Black Ducks and killed many Pheasants on No Mans Land, Mass. The keeper, Mr. R. W. Wood shot 38 and captured nine alive during the first week after the Owls appeared. Numerous reports of this nature indicate that the Owls, especially when they first arrived, were a real menace to the bird life along our coasts. There are other reports which indicate that many Snowy Owls collected along the shore at sewer outlets, garbage dumps and similar situations where the chief interest of the birds was the numerous rats which usually infest such places. Detailed examinations of the stomachs of 94 Snowy Owls examined by Angell and Cash, taxidermists of Providence, Rhode Island, resulted in finding 55 of them empty, 24 contained rats, 3 contained squirrels, 7 contained wild native birds, 1 poultry and 4 miscellaneous food. The results of the examination of several hundred specimens of Snowy Owls at Bowdoin College in connection with the Ruffed Grouse Investigation, to be published later, also indicate that the Snowy Owl fed very largely on rats and other rodents. It is apparent that the Owls concentrated on our large lakes and on the sea coasts because of the abundant supply of dead fish, birds, rats and other food which they found there.

#### LIMITS OF THE MIGRATION.

Although the bulk of the Snowy Owl records came from the region roughly outlined above there were stragglers reported much farther to the west and south. The following records constitute the outposts of the migration according to the reports we have received to date. Beginning at the northern boundary of the United States our farthest west record is of an Owl taken February 7, 1927 at Thorne, Rolette County near the Turtle Mountains of North Dakota. Going along the boundary line to Minnesota we have records of fifty specimens for Rosseau County reported to us by P. O. Fryklund. Specimens taken in Dieter, Spruce Valley

and Norland Townships and four at the village of Warroad situated on "Lake of the Woods," constitute the most northern records of Snowy Owls for the United States excluding Alaska. Our only records for Iowa are one from Elkader, October 27, 1926, one from Beulah, February 1, 1927 and another taken at Frohlich all towns situated in Clayton County along the Mississippi River. From Iowa our frontier line crosses to Pana, Illinois where a specimen was taken December 16, 1926; thence to Indianapolis, Indiana where an Owl was killed on January 11, 1927. Our only other record for Indiana is of a bird shot December 6, 1926 at Fulton, Fulton County, towards the northern section of the state. From Indianapolis our line crosses to Wooster, Wayne County, Ohio where several of the Owls were reported, thence down to Wheeling, West Virginia, where one was killed on November 24, 1926. From Wheeling our line of the limit of distribution turns abruptly southward along the coast to North Carolina. In this state a male was taken on March 18, 1926 at Magnolia, Duplin County, in the southeastern part of the state. This bird according to our records is the farthest south for the 1926-27 migration. A female was taken November 29, 1926 at Middlebury, Vance County, and another at Barber, Rowan County, in the western part of North Carolina. Although the Owls went as far south as North Carolina we have comparatively few records south of Long Island, New York, indicating that the great mass of the migration halted at that point. We received records of 15 Owls from New Jersey; 12 of the latter were scattered along the coast from Elizabeth south to Atlantic City. Dr. Alexander Wetmore, of the United States National Museum, who made an effort to secure all of the records for Maryland and Virginia sent us nine records for Maryland and nine from Virginia indicating a general distribution through the Atlantic states southward to North Carolina.

The region invaded by the Snowy Owls on this migration apparently is similar to that of the larger migrations which have taken place in the past. Unfortunately the limits of the birds in former migrations were not clearly defined making detailed comparisons impossible.



Photos by A. O. Gross



CAPTIVE SNOWY OWLS—NOVEMBER 17, 1926.

## DATES OF THE SNOWY OWL MIGRATION.

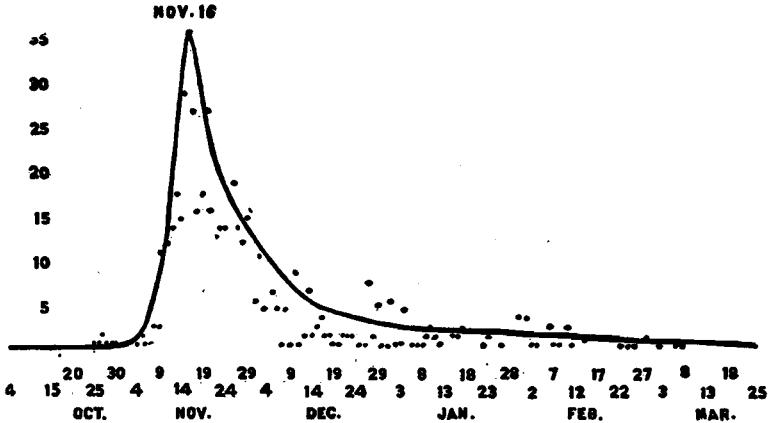
The earliest record of a Snowy Owl taken in Canada is one received by a taxidermist on October 26, 1926 in northern Ontario. The first Owls of the migration arrived at Duluth, Minnesota, according to Thomas J. Storey, on the fourth of October, 1926. Our earliest date for Iowa was an Owl killed October 27, 1926, at Elkader, Miss Lulu M. Lunn writes of seeing a Snowy Owl at Racine, Wisconsin, on October 26 and 27 but in Michigan no birds were reported until November 8 when two were killed near Detroit. In New York the first Snowy Owl was one reported by Major Lee Hapgood from Long Beach, Long Island, on November 4. The next earliest record we have received from New York was a specimen taken at South Bethlehem near Albany on November 5, 1926. My earliest record for the state of Maine is a bird taken at Bangor on October 14, 1926, and the first Owls arrived at Petit Manan light station on October 15. Mr. Carl Garris, taxidermist of Portland, received the first of 116 Snowy Owls brought to his shop on November 9, and the last on March 29, 1927. The first Snowy Owl reported for Massachusetts was one which appeared at Hawthorne during the last week of October. This bird according to Seaver L. McDonald remained in the vicinity until January 1927. In Rhode Island our first records are of three birds brought to Angell and Cash, taxidermists of Providence, to be mounted on November 9.<sup>1</sup>

The records of the Snowy Owl for October are early and merely represent the forerunners of the migration. In order to ascertain when the flight as a whole was at its maximum we have tabulated 582 individual records of specimens taken or seen in the United States, the dates of which are known to be authentic. These records represent but a small part of the whole but they are nevertheless representative. The records group according to months as follows: October, 9 records; November, 386 records; December, 111 records; January, 38 records; February, 34 records; March, 4 records; and April, 1 record. The accompanying graph will assist the reader in interpreting the migration with respect to time. According to this graph the great influx of birds began

<sup>1</sup> The first record for Pennsylvania was at Phillipsburg, Centre Co., October 20, a bird taken by A. F. Erichson (Sutton).



on November 10 and on November 16 the peak of the migration was reached. By this time the flight had reached such a volume that it attracted much attention from the general public and the few days following the newspapers throughout the country heralded

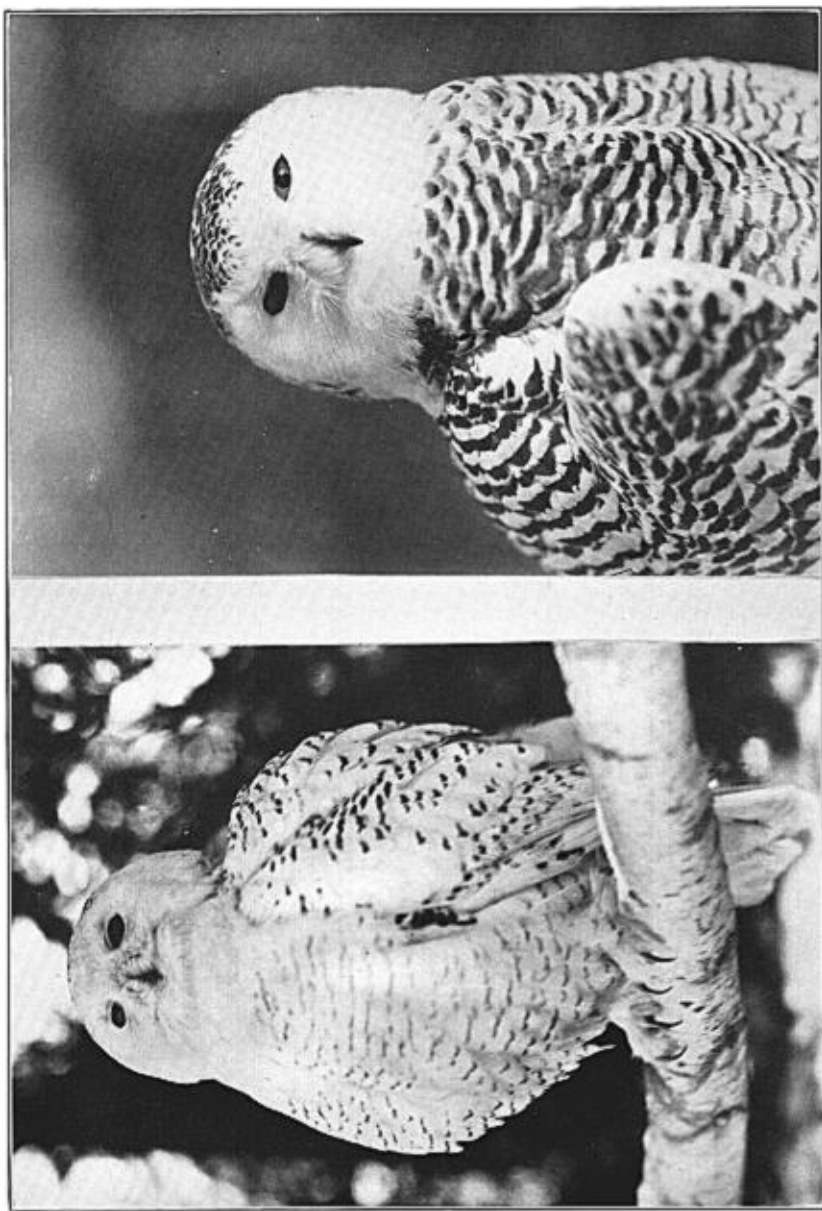


Distribution of 582 records of Snowy Owls with respect to time. The main migration in the United States began November 10 and the peak was reached on November 16 on which date there were 36 records.

accounts of this great migration. The numbers were well maintained through November but gradually waned through the month of December to January and February. A few lingered into March and one bird was seen on a farm near Brunswick during the first two weeks of April. This last record is of course abnormally late and may have been a bird escaped from confinement.

Taxidermists who received 25 or more Snowy Owls and contributed their records for this report are as follows:

Name	Place	Number of Owls received
M. Abbott Frazar	Boston, Mass.	143
Carl A. Garris	Portland, Maine	116
Angell and Cash	Providence, R. I.	106
Fred C. N. Parke	Bangor, Maine.	103
L. J. Eppinger,	Detroit, Michigan	100
Crosby Frisian Fur Co.,	Rochester, New York	97



Photos by A. O. Gross

CAPTIVE SNOWY OWLS—JANUARY 17, 1927 AND NOVEMBER 17, 1926.

Name	Place	Number of Owls received
John H. Hill,	Rochester, N. Y.	73
Thos. J. Storey,	Duluth, Minn.	70
P. O. Fryklund	Roseau, Minn.	68
John H. Hill,	Rochester, New York	65
P. O. Fryklund,	Roseau, Minn.	61
Wilnot W. Wood,	Birmingham, Mich.	60
William Grant,	Vassar, Mich.	54
C. E. Wood,	No Mans Land, Id., Mass.	42
F. L. Wight Fur Co. Inc.,	Bangor, Maine	39
Barr Wight Fur Co.,	Bangor, Maine	35
E. P. Holaling	Gloversville, N. Y.	35
F. B. Webster,	Hyde Park, Mass.	30
J. Cleveland,	Vineyard Haven, Mass.	25

#### SNOWY OWLS AT SEA.

When the Snowy Owl migration wave reached the southern Canadian and New England coast some of the Owls became lost and bewildered in the storms and fogs which prevailed at that time, and flew far out to sea. After long periods of fruitless wandering many undoubtedly succumbed and were drowned but others took refuge on passing ships. A few individuals which may have relayed from other boats flew aboard liners hundreds of miles from the nearest land. The records we have received are of considerable interest and hence are given here in detail.

The first report of a Snowy Owl at sea was of one which flew aboard the S. S. *Cairton* off the coast of Labrador on October 28. Another individual was captured later on this steamship when it was off the northern coast of Scotland. On November 12, at 10 P.M. officers on board the S. S. *Republic* caught a specimen at Lat. 41.33 north and Long. 56.40 west. Monday, November 15 the liner *Celtic* landed at Boston with two of the Owls caught at sea and the S. S. *Leviathan* reported an Owl which came aboard at noon on November 16 at Lat. 46.10 north and Long. 38.42 west a distance of more than 600 miles from the nearest land. On November 19, 1926 the S. S. *Winifredian* brought two Owls to Boston which were said to have alighted on the ship when it was 400 miles from land. One of the birds went aboard the S. S. *Zimorodok* and was captured when the ship was on the "Banks"

about 200 miles east of Newfoundland. This bird was in a very exhausted condition and according to Robert Richardson, master of the *Zimorodok* there had been very heavy fogs and apparently the bird had lost its idea of position. One of the Snowy Owls settled on the S. S. *Cairnvalona* at a point 600 miles off the Scottish coast. It is probable that birds arriving on ships on the eastern side of the Atlantic were carried by other vessels for at least a part of the way. It is hardly possible that the Owls would fly the long distance necessary to come directly from America or their breeding grounds in Greenland to the northward.

In the 'Evening News' for November 29, 1926 there is a picture and an interesting account of a Snowy Owl which flew aboard the S. S. *American Trader* at a point 150 miles off the Atlantic coast. Incidentally this Owl was a victor in a desperate fight with the ship's cat. The photograph shows the cat well bandaged and with a very dejected appearance, whereas the Owl sits erect on his perch above his victim in a triumphant haughty attitude. The Anglo-American Company's boat *Winnabago* captured a Snowy Owl at sea at lat. 42. 45 N. longit. 51. 12 W., south of Greenland, on February 19, which was released on March 1, 1927, at a point midway between Dover and Deal, England. Snowy Owls observed in England were individuals probably escaped or released from ships.

Mr. H. E. Rogers, an animal dealer in Liverpool, received four specimens two of which were captured on board a ship about 50 miles from Labrador and he states the other two which came on ships directly from America presumably were caught in a similar manner. Mr. Gillespie, Director-Secretary of the Edinburgh Zoological Society, received two specimens, the first picked up 800 miles east of Labrador while the other came aboard a Glasgow bound boat just outside of New York City.

According to a report by Mr. D. Seth-Smith two specimens were received by the London Zoological Gardens on November 26, 1926, which had flown aboard the S. S. *City of Flint* when off the coast of Newfoundland. About the same time one of the Owls was brought to Southampton on an American ship. On December 2 a specimen was presented to the Gardens which was captured on the S. S. *American Trader* off the Newfoundland

coast and another was said to have been caught when this boat was on a former westward journey to New York. Mr. Seth-Smith, who has received six of the Owls from ships arriving from America, states: "From my own experience at the Zoological Gardens during nearly 20 years, I can only remember two or three instances of Snowy Owls being captured in the Atlantic, and sent to the Gardens, the last occasion being in November 1922, when one was captured 300 miles east of New York."

The records we have received probably represent only a small part of the many instances of Snowy Owls taking refuge on ships and of hosts of others which were lost at sea, but the instances cited serve to emphasize further the great magnitude of the Snowy Owl migration of 1926-27.

*Bowdoin College, Brunswick, Me.*