

THE 1941-42 SNOWY OWL INCURSION IN  
NEW YORK STATE

BY DAYTON STONER

WITHOUT doubt the invasion of the Snowy Owl (*Nyctea nyctea* (Linn.)) into New York State in the autumn and winter of 1941 and the immediately succeeding winter months of 1942 was one of the most extensive on record. My first notice of the probable impending movement of the species came through a newspaper cut and accompanying legend relating to a bird seen at Albany, New York, on October 30, 1941. Two days later a correspondent in eastern Massachusetts indicated that the species had appeared in that area. It then occurred to me that some detailed inquiry into the scope and distribution of the movement in New York State would be appropriate and profitable.

Accordingly, I first transmitted a considerable number of letters to both amateur and professional ornithologists in various parts of the state announcing the then current movement and asking for definite records of the bird's occurrence in their respective localities. Accompanying each letter was a typewritten sheet carrying a few simple questions relating to the prospective cooperator's records and observations of the Snowy Owl in his area. All this information was to be submitted by a specified "dead-line" date. Every one solicited made some response to the inquiry and all save one or two supplied one or more records.

On the occasion of past invasions of the Snowy Owl, particularly the heavy incursion which occurred in the winter of 1926-27, and the lesser one of 1930-31, considerable numbers of the birds were shot and submitted to taxidermists for mounting. In 1941 there were 166 taxidermists licensed by the New York State Conservation Department. Of these, 146 were solicited for records in this investigation. Despite the fact that 42 taxidermists did not reply to my inquiry and 32 others reported that they had received no specimens of Snowy Owl from this State for mounting, a large proportion of the 419 records announced in this article were obtained through the helpful cooperation of the 72 preparators who submitted information that was deemed sufficiently definite, accurate and convincing for consideration. The greatest number of Snowy Owls received by any taxidermist was reported by M. C. Huppuch of Buffalo, New York, who submitted 12 records for Erie county and 3 additional records for Niagara county.

Probably a much larger number of birds were shot than were

reported. Several correspondents indicated that gunners, after having shot an owl and more or less alleviated the urge to kill something, suddenly became fearful that their victim might be included in the list of protected species and forthwith left the body to decay without reporting it to any one. The owls often permitted close approach and made conspicuous targets for gunners when perched on a fence post, a haystack or a tree close to a dwelling.

Circumstantial evidence, as reported by W. C. Tilden, indicated that the death of one Snowy Owl in Ontario County was caused "by striking a high tension wire." (November).

Early in my inquiry the matter of possible duplication of records from certain localities presented itself. This was particularly true in the case of sight records. For example, one observer in the Long Island area reported 40 sight records in one day. A number of other observers in this area also reported single individuals or small numbers of Snowy Owls in the same section at about the same date. It seems reasonable to assume, therefore, that a considerable number of these reports must have involved the same birds. So, for this area and period, I have included only the 40 individuals noted by the single observer.

In this and every other instance where such duplication was suspected, a rigid check of dates, detailed localities, hour of day and other factors that might have a bearing upon the circumstances were taken into account and carefully evaluated. Moreover, in cases where the date, either exact or approximate, locality and name of observer or collector were not available the record was considered not suitable for this report. On these accounts, therefore, a considerable number of sight records, as well as some specimens reported to have been collected, have been eliminated from consideration. If error has been committed it is definitely on the side of conservatism.

All of the records which I obtained were transmitted to a representative of the "Snowy Owl Committee," a group of ten ornithologists which conducted a survey of the invasion for Eastern United States and Canada. In due time the report of this Committee, of which I was a member, was published. (Wilson Bull., 55 (1): 8-10, 1943.)

#### EXTENT OF THE INVASION IN NEW YORK STATE

The southward movement of Snowy Owls in the invasion of 1941-42 evidently followed the major water courses and coast line of the State. As the movement came to a climax the birds continued to congregate along streams and bodies of fresh and salt water. On the basis of the 419 records available for this report, the points of greatest concentration appeared to be along the Hudson, Mohawk

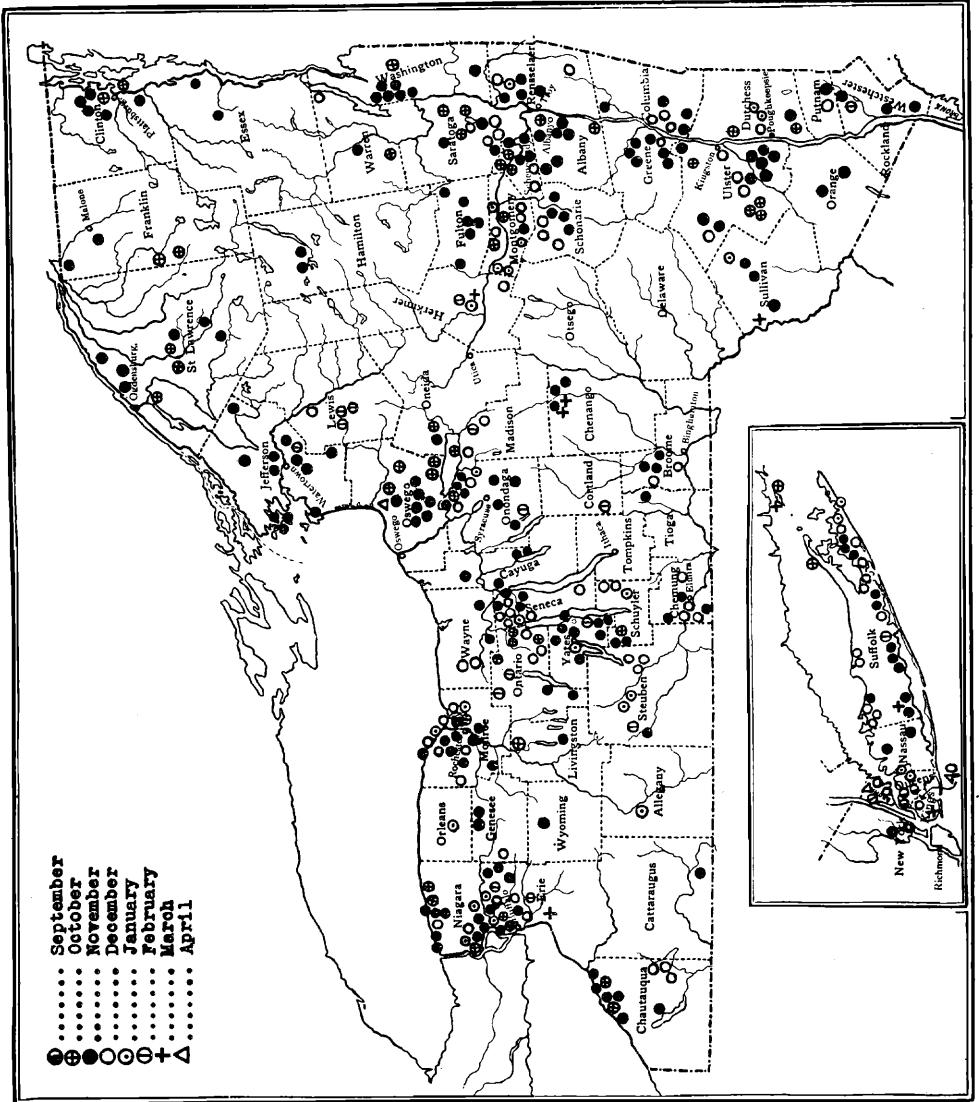


FIG. 1. Outline map of New York State showing approximate locality for each of the 419 Snowy Owl records announced in this report. No distinction is made between the 128 sight records and the 291 records of birds killed or captured. Invasion of 1941-42.

and Niagara rivers, Long Island Sound, in the Oneida Lake and Finger Lakes area, the Rochester and Watertown areas on Lake Ontario and the Buffalo and Dunkirk areas on Lake Erie. Probably this concentration occurred at these points principally on account of the food supply available there in the way of dead fish, ducks, rats and other animal forms both dead and alive. Lesser converging points were to be found along water courses and about the smaller lakes in non-mountainous territory.

The Adirondack, Catskill and Allegany sections of the State were poorly or not at all represented by records. Since the Snowy Owl obviously prefers flat, open situations, it is not surprising to find that the bird was seldom reported for the rougher, more wooded portions of the State.

#### SEASONAL DISTRIBUTION

Records of the presence of the Snowy Owl in New York State were received for every month from September, 1941 to April, 1942. Strangely enough the three September records are for Queens County, near the southernmost part of the State. These Long Island records, and the next earliest seasonal record—October 14, at Oneida Lake, one bird killed—provide at least circumstantial evidence for the belief that the first birds arrived in the State *via* the coastal route while the invaders which followed the Great Lakes and Hudson River fly-ways arrived a little later. Most of my records for the period October 15 to 31 are from up-state New York.

As in the 1926-27 and 1930-31 movements reported by Gross (*Auk*, 44, No. 4: 479-493, 1927 and *ibid.*, 48, No. 3: 501-511, 1931) the maximum abundance of Snowy Owls in 1941-42 occurred in November.

Apparently a gradual increase in numbers occurred until late November or early December. The actual southerly movement seemed to cease then. Following this, in most places, the numbers of the bird declined through shooting or fluctuated through local incursions or excursions. By January 1, 1942, this reduction in numbers had become obvious. This was brought out strikingly in the responses which were elicited from twenty of the taxidermists whom I had solicited earlier in the season when each had furnished two or more records. Very few specimens were brought to them for mounting after mid-January. The January reduction in numbers became accelerated in February and March so that by early April the birds were seldom recorded.

The following tabular summary will illustrate this point and other matters to be discussed later regarding the seasonal occurrence and abundance of the Snowy Owl in the State. By way of comparison

it will be noted that the records of the occurrence of birds by months follows fairly closely the situation which prevailed in the 1930-31 invasions as outlined by Gross (*loc. cit.*). One slight departure is seen in the evidently earlier mass seasonal movement in October, 1941.

TABLE I

DETAILED SUMMARY SHOWING SEASONAL DISTRIBUTION OF SNOWY OWL RECORDS FOR NEW YORK STATE: INVASION OF 1941-42	
Number of records included in this report . . . . .	419
Number of collecting records (birds killed or captured) . . . . .	291
Number of sight records . . . . .	128
Earliest record (sight) . . . . .	September 28, 1941
Height of movement . . . . .	November, 1941
Latest record of bird collected . . . . .	April 3, 1942
Latest record of bird seen . . . . .	April 5, 1942
Status of records by months—	
September (sight records only) . . . . .	3
October (39 collected; 8 sight records) . . . . .	47
November (169 collected; 24 sight records) . . . . .	193
December (60 collected; 62 sight records) . . . . .	122
January (15 collected; 12 sight records) . . . . .	27
February (5 collected; 12 sight records) . . . . .	17
March (2 collected; 6 sight records) . . . . .	8
April (1 collected; 1 sight record) . . . . .	2

It will be noted from the preceding table that, during the first four months of 1942, the only spring months for which Snowy Owl records were reported, both sight and collecting records together amounted to only 54, considerably less than one-half the number of records available for the single preceding month of December, 1941. Probably their marked falling off was due in part to destruction of the birds by gunners in November and December as well as to the reduced number of hunters during the first three months of 1942 and, in March and April, to the withdrawal to the north of surviving owls. It is interesting to observe in this connection that the two latest spring records were for birds, one well to the northern part of the State the other well toward the southern part, with a straight-line diagonal distance between them of approximately 250 miles. One of the owls may have been following the inland lake route north, while the other, had it survived, might well have returned by the coastal route.

My latest spring record for a Snowy Owl collected in the State is that of a male captured on April 3, 1942 on a farm about two miles from Mexico in Oswego county. Although the stomach was empty the bird was fat and in good flesh as well as in excellent plumage. It measured  $22\frac{3}{8}$  inches in length and weighed 3 pounds, 12 ounces. Contrary to the condition which prevailed in so many of the freshly killed specimens of Snowy Owls which I examined, this bird har-

bored no bird lice (Mallophaga). The owl was mounted by Arthur Paladin, Sr., recently retired Technical Assistant in Taxidermy in the New York State Museum, and is now in his collection.

The Snowy Owl reported by David Kemp as seen by him at Clason Point, Bronx County, Long Island, on April 5, 1942 is the latest spring sight record received.

The record for the greatest number of Snowy Owls noted by any one observer easily goes to Mr. George Compton, a taxidermist in Brooklyn, New York. In his response to my questionnaire he submitted a number of records for birds shot and viewed alive in the field, writing in part:

"I am a member of the Brookline Bird Club and have counted forty, yes forty, snowy owls in Canarsie marsh land [Jamaica Bay, Long Island]. This is the most I had seen in 15 years as an observer. This count was made on the afternoon of December 31, 1941."

In an effort to further substantiate this unusual observation and to obtain more details concerning it as well as to question the possibility that some of the owls seen may have been duplicates, I wrote to Mr. Compton asking certain very specific questions.

In reply Mr. Compton enclosed a marked map showing the scene of his observations concerning which he wrote further as follows:

"No, I could not have counted them twice as I could look over the beach for miles from where I was standing on the Belt Parkway bridge. I counted these forty owls in twenty minutes' time and recounted them several times. . . . The owls were from 300 to 600 feet apart. . . . Some of the owls were 50 to 100 feet from the beach while others were actually on the beach."

The above details, together with other matter scattered through Mr. Compton's correspondence, leave little room to doubt the authenticity and accuracy of his statements regarding this remarkable assemblage of Snowy Owls.

#### TYPES OF TERRITORY AND HABITAT OCCUPIED

As previously indicated, the principal lines of southerly movement of the Snowy Owl appeared to follow lake and ocean beaches as well as major inland lakes and streams. And, while numbers of the owls continued to inhabit such situations, some of the birds moved into rural districts usually not too far removed from the vicinity of water.

One of the factors contributing to the high mortality of Snowy Owls from gunners was their habit of frequenting the main highways or open fields adjacent to them. A considerable number were shot in such situations. In several reported instances owls were captured alive. Concerning their lack of fear, Dr. Harry C. York of Elmira, Chemung County, writes that one man "got within about 30 feet" of one of the [two] owls before it took flight. Another observer reports that after getting out of his car he walked toward

the bird which permitted him to approach "within a few yards" of it before taking flight.

Further detailed data which throw some light upon the favorite haunts of Snowy Owls and the type of territory frequented by them in their 1941-42 invasion of New York State are available from various sources. Excerpts from letters of correspondents and annotations made by observers on the inquiry blanks provide numerous original remarks dealing with this subject. A number of these records have been assembled in the following table wherein the matter is arranged chronologically with respect to the period covered.

TABLE II  
TYPES OF HABITAT OCCUPIED BY SNOWY OWLS IN NEW YORK:  
INVASION OF 1941-42

<i>Date</i>	<i>Locality</i>	<i>Reported by</i>	<i>Type of Habitat</i>
1941 October			
25	Essex Co.	Geo. Cantin	"Swamp land along Lake Champlain."
	Albany Co.	J. Diesseroth	"One bird seen sitting on a woodpile in a back yard" at the north end of the village of Ravena.
30	Albany Co.	D. Stoner	The first individual reported from Albany was photographed on the top of the chimney of a dwelling in flat, open territory at the outskirts of the city.
November			
1	Clinton Co.	G. R. LaPlante	[One shot on] "rail fence in open field." . . . "A number" of excited crows attacking the owl.
7	Albany Co.	D. Stoner	Taken in grain elevator at Port of Albany.
14	Chautauqua Co.	O. M. Culver	"Killed in apple orchard near house within 3 miles of Lake Erie."
16	Yates Co.	V. Burtch	"Saw my first Snowy Owl. It sat on a Muskrat house on the shore of Keuka Lake for more than three hours."
17	Genesee Co.	A. Keller	"Shot in man's chicken pen."
18	Saratoga Co.	C. Brackett	Owl killed in "open hardwoods with patches of evergreens."
	Chenango Co.	C. Brownell	♂ shot; "taken at chicken ranch."
	Genesee Co.	A. Keller	"Shot in open field."
19	Tioga Co.	B. J. Livermore	"Bird [shot from] haystack."
27	Franklin Co.	Mrs. V. Haskins	The bird was "shot for killing chickens in the farmyard"; tried several times before getting him.

<i>Date</i>	<i>Locality</i>	<i>Reported by</i>	<i>Type of Habitat</i>
29	Albany Co.	E. Geiser	Bird sitting "on rock on small bushy island in Hudson River"; 3:00 p. m.
	Albany Co.	Mrs. I. Snyder	Evening: "Large white bird perched for a few minutes on an elm tree in an open field near the farmhouse."
<b>December</b>			
3	Genesee Co.	A. Keller	"Shot in Tonawanda Swamp."
14	Chautauqua Co.	V. Sawkins	Submits five records of birds killed between November 27 and December 14. "In this locality these birds seem to stay around the lake [Erie] front."
21	Ontario and Seneca Cos.	C. Vance	Submits eight records of birds killed between October 30 and December 21. All "taken in open country pasture lots, etc."
31	Schuyler Co.	J. K. Terres	"In all localities where I have seen Snowy Owls, they occurred in flat upland valleys in which broad fields were divided by hedgerows . . ."
	Suffolk Co.	E. Wilenski	"Shot in a tree on the beach."
	Warren Co.	Mrs. R. Carpenter	"The owl was sitting on the top of a pile of waste from the abandoned Lake Shore Graphite Mine."
<b>1942</b>			
<b>January</b>			
18	Ontario Co.	H. Duncan	"Shot in open, hilly pasture."
20	Oneida Lake	P. J. Nickerson	Submits 11 records of birds killed. "The shores of Oneida Lake seem to have been the best locale for these specimens."
31	Seneca Lake	T. T. Odell	Submits four records from Seneca Lake and one from Keuka Lake.
<b>February</b>			
2	Lewis Co.	J. B. Belknap	"The birds stay in the narrow wooded valleys which are numerous in the Tug Hill section."
<b>March</b>			
10	Montgomery Co.	G. H. Lesser	Records for 14 owls killed. "Most were shot in close proximity to homes and barns."
23	Long Island	G. Gill	Bird shot on open beach; "pestered by Crows when first seen."



## SEX RATIO

Among the 291 Snowy Owls indicated in this report as having been collected, the sex of only 87 individuals was reported or is definitely known. Of these, 48 are males, 39 are females. These figures suggest a slight preponderance of males over females in the ranks of the invaders, but the records are too meager to permit complete acceptance of these proportions between the sexes for the movement as a whole or even as it was exhibited in New York State.

## WEIGHTS OF SNOWY OWLS

During the course of this investigation a considerable number of weights of collected birds were received. Some of these obviously were little more than guesses or estimates. Others were not satisfactory for one reason or another. However, twenty of these weight records are or appear to be sufficiently trustworthy to warrant publication and are set forth in the following table. It will be noted that considerable variation in weight exists between the lightest male, weight 1 pound, 9 ounces and the heaviest female with a reported weight of 5 pounds, 4 ounces. In the table the birds are arranged chronologically in the order of their taking.

## DISEASES AND PARASITES

Of the seven specimens of Snowy Owl which I examined in the flesh, all save one appeared to be in a healthy condition. While varying degrees of emaciation or well-being were exhibited, in no case was the empty stomach or ill-fed condition of such long standing as to have caused death.

The single diseased specimen, a male, captured alive on a farm near South Cambridge, Washington County, November 15, 1941 was kept in captivity until its death on December 5. During this period the owl accepted no food.

Gross examination of the interior of the body of this owl revealed that the lungs, heart, liver, peritoneum and other organs were closely and heavily marked with round, whitish areas or nodules varying in diameter from 1 to 5 mm. Microscopic study of this material indicated that the bird was suffering from an aspergillotic infection, a fungus disease which may have been at least partly responsible for its demise. A detailed account of this case prepared by Dr. Gordon M. Meade of the Strong Memorial Hospital staff, Rochester, New York, and the writer, appeared in the October, 1942 number of *The Auk* (pages 577-578; 1 plate).

Abram Smith, a taxidermist in Kerhonkson, Ulster County, New York reports that on December 5, 1941, a Snowy Owl was brought to him by a resident of the nearby village of Accord. This bird was

TABLE III  
SUMMARY OF WEIGHTS OF TWENTY SNOWY OWLS COLLECTED IN NEW YORK STATE  
BETWEEN OCTOBER 21, 1941 AND APRIL 3, 1942

Date	Sex	Weight lbs. oz.	County	Reported by	Remarks
1942 October					
21	♂	1 9	Saratoga	J. Bruehac	"Very thin." Chasing ducks when shot.
22	♂	3 8	Ontario	W. C. Tilden	Stomach "contained remains of common field mice."
27	♀	1 12	Saratoga	J. Bruehac	"Very thin."
...	♀ (?)	2 8	Monroe	P. Kondolf	"Stomach empty."
November					
14	♀	1 14	Saratoga	J. Bruehac	"Very thin."
14	♂	2 8	Madison (?)	W. A. Dence	Shot at Oneida Lake.
15	♂	2 3	Washington	D. Stoner	Died in captivity; aspergillotic.
16	..	3 6	Yates	T. T. Odell	Reported weight 155.3 grams.
17	♂	4 0	Albany	D. Stoner	Fine plumage and physical condition.
19	♂	2 10	Schoharie	D. Stoner	Good condition.
20	♂ (?)	3 4	Monroe	P. Kondolf	"Stomach contained a half grown Rhode Island chicken weighing 7 oz."
24	..	4 6	Stueben	B. Riopelle	In good flesh.
25	♀	3 5	Albany	D. Stoner	
28	♂	3 8	Suffolk	G. Compton	
28	♀	5 4	Suffolk	G. Compton	
...	..	2 8	Monroe	P. Kondolf	"Stomach empty."
December					
5	♀	3 7½	Essex	D. Stoner	Not in good flesh; Stomach empty.
5	♂	2 9	Saratoga	J. Bruehac	"Very fat."
10	♂	3 12	Rensselaer	D. Stoner	Stomach full; feathers, flesh and bones of scaup duck.
1942 April					
3	♂	3 12	Oswego	D. Stoner	Fat; in good condition; Stomach empty.

apparently hurt or sick and eventually died. The available information regarding the owl's condition and lethargic behavior suggest that it, too, may have been suffering from aspergillotic infection similar to that of the individual from Washington County.

Although I received only one report of the presence of external parasites on the Snowy Owls examined by others, six of the seven birds which I was privileged to inspect in the flesh carried greater or less numbers of biting lice or bird lice (Mallophaga: Philopteridae). Samples of these parasites collected from different owls were submitted for determination to Dr. J. Bequaert of the Schools of Medicine and Public Health at Harvard University and to Dr. H. E. Ewing of the U. S. Bureau of Entomology and Plant Quarantine. In both instances the lice were determined as *Eustrigiphilus ceblebrachys* (Nitzsch). Dr. Ewing reports that "it is a very common species on the Snowy Owl."

One of the owls in particular was very heavily infested with these Mallophaga in various stages of development. This bird was taken November 17, 1941 in West Albany. In the young condition the lice are minute and white or whitish in color. The adults average about 2.5 mm. in length and are dark horn color or blackish. It is interesting to note that the aspergillotic owl mentioned above also was very heavily infested with these Mallophagans. However, I doubt whether either their presence or abundance was in any way responsible for the bird's weakened condition.

The only Snowy Owl which I examined and which was not infested with Mallophaga was collected near Mexico, Oswego County on April 3, 1942. While the stomach of the bird was empty, the body carried much fat and the plumage was in excellent condition. I am at a loss to explain the complete absence of the parasites on this individual as compared with the high degree of infestation of the other six birds, five of which were taken in Albany, or within thirty-five miles of that city. One of the six was collected near Ticonderoga, Essex County.

Concerning a male Snowy Owl shot near Orient, Suffolk County, Long Island on October 31, 1941, Roy Latham reports that the "bird carried many Mallophaga."

#### CONCLUSIONS

The Snowy Owl invasion of 1941-42 was the largest since 1930-31. Its occurrence coincides with expectation based on some investigators' theories of such phenomena with respect to the eleven-year sunspot cycle in relation to rainfall, annual tree growth and abundance of certain animal species.

Unfortunately, it appears from the information gathered, that the

Snowy Owls which participated in this invasion fared no better at the hands of gunners than did those of earlier invasions such as those of 1926-27 and 1930-31. In fact so large a number of the birds were shot that from the standpoint of survival it were better that they had taken their chances on a reduced food supply in their normal home than to have faced the barrage of shot from hunters' guns to which they were subjected in the invaded territory.

Of necessity, in an inquiry of this type, cooperation must be had from numerous individuals and agencies. In addition to the persons definitely mentioned in this report, my thanks and obligation are acknowledged to a large number of correspondents and collaborators without whose response the investigation would have been impossible of accomplishment.

New York State Museum, Albany, New York.

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## A FUNGUS INFECTION OF THE LUNGS AND AIR SACS OF A COMMON MALLARD

BY C. COURSON ZELIFF

INFECTION of the lungs, air sacs and even other organs of domesticated birds by the fungus or mold *Aspergillus* is not uncommon. "Brooder pneumonia" is the name applied to the disease by poultrymen when the air passages are involved. The scientific name for the disease is aspergillosis. The endings "iasis" or "osis" are frequently affixed to the scientific or generic name of an organism to designate the disease caused by it. There are numerous species or kinds of this fungus, some do not produce disease, for example one may be found on moldy bread, along with other molds. *Aspergillus fumigatus* is the complete scientific name for the species causing "brooder pneumonia" or aspergillosis in many kinds of birds. The common name indicates that young birds frequently have the disease but it may occur in mature birds as well.

This fungus or mold is said to exist in straw, dusty grain and other organic matter, from which it may invade weakened or undernourished birds. A scientific name applied in a broad way to infections by fungi or molds, as they are commonly known, is mycoses (singular mycosis). Many fungi (singular fungus) attack animals, both wild and domesticated, and also man. Some cause athlete's foot and ringworm, which are well known. The latter name is misleading since there is nothing worm-like connected with the disease. It is because of the inaccuracy and confusion in use of