THESIS.

OUR BIRD POPULATION.

L. D. Sees. 1896.

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THESIS

OUR BIRD POPULATION.

There is one branch of the natural sciences whose economic value in relation to agriculture is often sadly overlooked; viz: ornithology. It is strange that even today there is a syrprising lack of knowledge as to the extreme value of our birds to agriculture and horticulture and that one must enter upon a long course of arguments to convince many that the birds have any economic importance whatever. And what is more surprising is that at a college like ours, devoted to agriculture and kindred sciences there has previously been so little time devoted to this important subject. A movement in the right direction wasmade this year by devoting a considerable portion of the terms work in zoology to the study of birds, instead of spending so much time as formerly upon the lower forms of animal life; but still, this is just a beginning. Farmers should know more about their feathered friends, should become better acquainted with these indespensible denizens of the field and forest. A term's work could profitably be spent in the study of our more common species of birds in becoming familiar with their many peculiarities, forms of food, habits of nesting, how to preserve them from their enemies, etc. Not only would such a course with plenty of field work be of great value, but it would prove an unending source of pleasure to the student and serve

as another powerful tie to bind the boy to the country. Few there are, indeed, of our ordinary farmer boys who can name at sight more than fifteen or twenty species of our common wild birds, while there may be at almost any season from seventy-five to one hundred species almost within earshot, if he but knew where and how to find them.

Birds are without question the agriculturists and horticulturests best friends. Magnify as much as we will the value of spraying as a means of overcoming our insect pests, the fact still remains that the birds are our chief instruments for the destruction of insects. It is confidently thought by some that were all the species of birds destroyed man could not exist on the earth for any great length of time because of the meriads of insects which would at once infest the land if their eneimies should all disapear . It has been cited as an illustration of this fact, that the locust pests which disvasted certain portions of our western states a few years ago followed closely upon theruthless wholesale distructio n in those states of the quail, grouse, and other birds which are the natural eneimes of the locust and kindred insects. Anyone who will take the trouble to watch the almost ceaseless activity of our birds during feeding hours will not long question the foregoing prediction. Our atmosphere would soon become unfit for respiration from the presence of clouds of gnats and such

small insects were the swallow family distroyed; caterpillars, curculias, and other orchard pests would drive the horticulturist mad, if the sparrow family was annihilated; and so on through the list of injurious insects each has its peculiar enemy in some particular family of birds.

One thing that makes the birds of greater value as insect distroyers is that their labors are not confined to any one place but they move back and forth over the country goverend to a great extent in their movements by the abundance or scarcity of their favorite food.

Were man not so short sighted our birds would probably increase rapidly enough to hold perfectly in check all forms of insect life; but constructed as the majority of our farmers are as someone has said, with no foresight at all and with a remarkable poor hind sight; considering also their present meager knowledge of birds, if they chance to see a bird alight in their corn or wheat field, or perch upon a fruit tree they at once conclude that the before mentioned bird is engaged in a ruthless destruction of their crops and nothing will satisfy their misdirected thrift other than the destruction of their benefactor. The following anecdote will illustrate the point in question.

Mr Roberts, a farmer of Coleville, Ohio, was invited by a neighbor to assist him in killing some yellow-birds which as he thought were destroying his wheat. Mr Roberts not

inclined to believe the birds guilty of any such mischief was inclined to protect them. To satisfy his curiosity, however, he killed one of the yellow-birds and found upon examination of its crop, that instead of wheat, ~~that~~ the bird had devoured the weevil, our greatest destroyer of wheat. He found in the birds crop as many as 200 weevils, and but four grains of wheat; and each of these contained a weevil. The jealousy of the Ohio farmer had prompted him in this case to destroy a family of birds at the very time when they were performing an incalcuable amount of benefit to agriculture.

It is to the credit of the managers of our college that our bird friends are to a great extent unmolested. Even the Purple Grackle with his harsh discordant notes is allowed to rear its young in peace. We are doubtless indebted for the presence of these birds to the large number of evergreens on our campus and to their non-disturbance by the air-gun of the small boy and the farmer's shot gun. No less than thirty pairs have been counted on the campus all of which doubtless nested; though only thirteen nests were discovered, as many of them nest high up in the tops of our tallest evergreens. I say, indebted for their presence, and, indeed, we may say so, for Mittall affirms that up to the time of harvest he has invariably found upon dissection, thatthe food of the Crow Blackbird consists of larvae, caterpillars, moths, and beetles in large quantities. I wonder how many farmers

have any such idea of the food habits of this noisy friend.

The abundance and bodlness of the Blue Jays on our campus is a feature that at once attracts the attention of an observer. As we are accustomed to the Blue Jay in the country he is a shy, wary bird, mischevious in the extreme, whose sole occupation according to popular idea is the consumption of cherries and distruction of fruit generally. Here, however, we come to lok upon the Jay as one of our friends. His great variety of notes, not always unmusical; his confident air which seems to prove his right to freedom from molestation, acquired doubtless through many generations of illustrious ancestors; his seeming omnipresence; all these combine in producing one of the minor yet pleasing recollections of our college life.

About twenty-five pairs of Blue Jays have been observed on the campus and about one-half of these werefonnd nesting, though there is little doubt that the most of them nested on the campus in various obscure places.

It has been conjectured upon careful observation that a young Jay consumes daily about fifteen full sized grubs of the May-beetle besides as many more of a smaller kind, or an average of about twenty, counting large and small. For a family of five, which is their usual size , atleast one hundred grubs would be needed; fifty grubs each for the adult

parents would raise the average daily consumption to about two hundred grubs of various kinds. A little mathematics shows at once the economic importance of our Blue Jays. Suppose as a modest estimate we have twenty families of Jays each consuming upwards of two hundred grubs daily; in three months time they will have consumed at the least calculation 360000 grubs of insects that are more or less injurious. Even though they do carry off a cherry now and again the protection of our noisy blue-coated friends is a paying investment.

Farmers have come pretty generally to recognize the economic value of the Robin, though it has taken many years of agitation by ornithologists and even legislative enactments to educate the people up to the present general knowledge. The Robin as the other birds previously mentioned, is a wholesale destroyer of grubs and worms, and his form and piping note is familiar to everyone. The college is particularly fortunate in the fact that the campus and surroundings seem a favorite feeding ground and nesting place. Thirty-six distinct nests were found, and probably ten pairs more mated on the campus; and as each pair brings out from two to three broods in a season it means that our campus furnished, at the least calculation, a home for upwards of three hundred Robins during the summer season. Consider for a moment what havoc

such an army creates among the grubs and worms of M. A. C. and vicinity.

With the Robin our evergreens again come into use, and doubtless have much to do with attracting our large population as nearly all the early nests were found in the evergreens, which were probably selected for their greater protection and seclusion and were abandoned for the deciduous trees only as the warm weather came on.

Excellent as are the nesting facilities offered the Purple Grackle, Blue Jay, Robin and such large birds by our campus there are one or two classes which have been sadly neglected; namely, those which nest principally in miscellaneous undergrowth and border shrubbery, such as the Cat-bird, Wren, and smaller Thrushes, and those that nestle upon the ground, as the Song Sparrow and other birds. This neglect, comes at once apparent to one who is searching for the bird's homes. In about two monts of daily tramping over our nearly 80 acres of campus I discovered only seven nests of the Song Sparrow and all these were in the most out-of-the-way places. Our smooth shaven lawns are always beautiful and a source of joy; but they are a luxury preserved at the expense of many of our beautiful singing friends. So also with the other class mentioned, only four Cat-birds nests were found and not a Wren or Thrush nest, or in fact, any of our smaller valuable birds; doubtless, as has been stated, from the deficency of

shrubbery, especially such as bear fruit.

Clipped hedges have been looked upon by many as famous nurseries for birds, but in all our hedges I found only four or five nests and these apparently two or three years old. This but goes to confirm the statement made by one observer, "that it is only a neglected hedge-row or a spontaneous growth of bushes and briers that is useful to them."

Our elms furnish a favorite nesting place for the Baltimore Oriole. What lends a greater charm to a lawn than the presence of two or three pairs of these beautiful warblers in their typical dress of orange and black? Nor is their simple presence and companionship their only value, for they are undefatigable feeders; the young birds are noted for their hearty appetites, only ceasing their monotonous and persistant coaxing for food as their mouths are temporarily stopped by their parents as they carry on their continuous process of stuffing; disposing thus in a day of some hundreds of noxious insects. A farmer could not do better than plant several elms near his orchard and about his lawn and thus throw out some inducement for their highly valuable friends to make their homes in his vicinity, lending their protection to his crops and at the same time brightening and enlivening all the day with their cheerful song and charming appearance.

Among other interesting birds that make their homes with us are the Chimney Swifts, those tireless guardians of the upper air, estimated at about twenty pairs; five or six pairs of gaudy scarlet Tanagers; two pairs of Kingfishers; eight or ten pairs of Rose-breasted Grosbeaks, whose note is so easily mistaken for that of the Robin; besides scattering pairs of a few other species. We have also our full quota of that well-known pest, the English or House Sparrow, probably close on to fifty nests on the different buildings. In all up to June 19th, twenty-eight distinct species have been discovered nesting on our campus; certainly a record which speaks well for the protection of our birds. Although the smaller birds especially the Song Sparrow have indirectly a natural enemy in the shape of the Caw-bird, which being too lazy to construct a nest for itself and rear its own young, goes sneaking around, and during the absence of the owner slips its egg into the nest of some other unsuspecting bird.

In every Song Sparrow's nest, except one, discovered this year, there was found from three to four eggs of the Cow-bird. From one nest in which the mother bird was attempting to cover seven eggs, only three of which were her own, the Cow-bird's eggs were removed; but the change was too much for the Sparrow mother and she abandoned her nest. It is very questionable whether in those nests in which the Cow-bird's eggs were laid if any of the Song Sparrow's own

young would reach maturity, as it has often been observed that almost invariably the Cow-birds push the weaker nestlings out of the nest long before they are able to care for themselves.

In the beginning of this investigation it was planned to make an attempt to determine how many young birds reached maturity or were turned out in the cold world from the various nests discovered, but for two or three reasons this was found impracticable. Most of the early broods reached a sufficient size to shift for themselves during the spring vacation when it was not possible to watch them; a large number that did not were blown out of the nests by the violent wind storm which occurred at that time; some eighteen or twenty young Robins and Blue Jays alone being picked up after the storm, and doubtless this was only a very small porportion of those that perished.

It was also thought that possibly the period of incubation of some of the different species might be determined, but for various reasons this was not carried out; chief of which was that an attempt was made to watch too many nests at once and the birds invariably got the start of the investigator. This would be a very interesting ~~study~~ subject for future study.

In fact, there are a number of subjects in connection with the habits of birds which would be both pleasant and

profitable to investigate.

It is high time, indeed that the study of economic ornithology received its proper share of attention. It has been well said that "Civilized man is natures greatest enemy." He is constantly throwing life out of balance when he should be laboring to sustain the conditions which make a true equilebrium. This has been emminently true in his relations with bird life, as is well exampled in the case of the English Sparrow pest where the lack of proper knowledge has worked almost incalcuable injury, and by the Pennsylvania "Scalp Act" offering a bounty on hawks, owls, et which it was estimated indirectly cost that state nearly $4,000,000, in one and one-half years. A few such costly experiments lend a decided emphasis to the need before mentioned.

Both from our regard for their utility to agriculture and for their pleasant companionship, our birds should be protected. A few laws have been made but these are seldom lived up to, though as before stated, we are coming gradually to recognize their importance. I firmly believe with Flagg that "the farmer would promote his own thrift by extending a watchful care over all families of our birds," especially over the smaller species which are the most useful and delightful. Our birds may be preserved in two ways;

we may avoid destroying them and help create a sentiment which will not tolerate their useless distruction; we may promote the growth of certain trees, shrubs and plants that afford them shelter and subsistance.

The birds of our campus are, as has been stated, fairly well taken care of but still much more might and should be done to preserve and protect these most interesting and valuable members of our population.

LIST OF SUMMER BIRDS SEEN

on M. A C. Campus, April - July - 1896.

Not Known to have Nested.

1. Ardea viriscens.
   Green Heron.

2. Philohel[illegible] minor.
   Woodcock.

3. Iotanus solitarious.
   Solitary Sandpiper.

4. Actitis macularia.
   Spotted macularia.

5. Aegialitis vocifera.
   Kildeed.

6. Colinus virginianus.
   Bob-white.

7. Zenaidura macroura.
   Mourning Dove.

8. Accipiter cooleri.
   Cooper's Hawk.

9. Batco lineatus.
   Red Shouldered Hawk.

10. Falco sparverins.
    Sparrow Hawk.

11. Megascops asio
    Screech Owl.

Bubo virginianus.

12. Great Horned Owl.

Dryobates pubescens.

13. Downy Woodpecker.

Sphyrapicus varius.

14. Yellow Billed Sapsucker.

Autrostomus vociferous.

15. Whip-poor-will.

Chordeiles virginianus.

16. Nighthawk.

Carvus americanus.

17. Crow.

Dolichonyx oryzivarus.

18. Bobolink.

Agelaius phoenicus.

19. Red-winged Blackbird.

Stumella magna.

20. Meadowlark.

Scolecophagus carolinus.

21. Rusty Blackbird.

Carpadacus purpureus.

22. Purple Finch.

Spinus tristus.

23. Gold Finch.

Poocaetes Gramineus.

24. Vesper Sparrow.

25. Zonotrichia leucophrys.
White-crown

26. Clivicala riparia.
Bank Swallow.

27. Amphelis cedrorum.
Cedar Bird.

28. Geothlypis trickas.
Maryland Yellowthroat.

29. Harporhynchus rufus.
Brown Thrasher.

II

SUMMER BIRDS NESTING

on

M. A. C. Campus.

April - July - 1896.

Num.	Name	In Evergreens.	In Deciduous trees.	Extra pairs seen nests not found.	Nests on gound, buildings, etc.
1.	Molathus ater Cowbird.				11 eggs found in other nests
2.	Baltimore Oriole			7	
3.	Quiscalus quiscala Bronzed Grackle.	13		20	
4.	Spizella socialis. Chipping Sparrow.	2	4	3	
5.	Melospiza fascita. Song Sparrow.			5	7 on ground.
6.	Papilo erythrophythalmus. Chinnink.			1.	

List II Continued.

6.	Habia Indoviciana Rose breasted Grosbeak.		3	5-6	
8.	Passering cyanea Indigo Bird			2	
9	Piranga erythromelas. Scarlet Taniger.		1	5	
10.	Visco gilvus. Warbling Visco.			5-6	
11.	Dendroica Aestriva. Yellow Warbler.			2	
12	Galeoscoptis carolinensis. Cat bird.	1	3	3	
13	Sitta carolinensis. White billed Nuthatch.			2	1 on Library.
14	Parno atricapillus. Chickadee.				1 in Stub.
15	Surdus mustelinus. Wood Thrush.			3	
16	Mirula migration Robin.	17	18	10	
17	Passer domesticus. English Sparrow.			30-35	20-25 nests.

List II Continued.

18	Coccyzus erythrophthalmus. Black-billed Cuckoo.	1		
19	Ceryle alcyon Kingfisher.			1 in bank.
20	Melanerpes erythrocephalmus. Red-headed Woodpecker.	1		
21	Colaptes auratus. Flicker.	2		
22	Chaetura pelagica. Chimney Swift.			20 in Chimney.
23	Drochilus colubris. Humming bird.	2		
24	Qyrannus tyrannus. Kingbird.	1		
25	Myrachus crinitus. Great crested Flycatcher.	1		
26	Sayornis phoebe. Phoebe.	2		2 nests
27	Contopus virens. Wood Pewee.	5		Prob.3-4 more.
28	Cyanocuta cristata. Blue Jay	4		Prob 10-12 more.
		7 40	44 107x7	

Envelope has: 1 map