

MIGRATION DATA ON CITY HALL TOWER.

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(Read before the Seventeenth Congress American Ornithologist's Union, Philadelphia, November 14th, 1899.)

In the centre of the city of Philadelphia, five hundred feet and more above the pavement, on top of the City Hall Tower, stands the colossal bronze figure of William Penn, encircled with a ring of arc lights which burn the night long. Unintentionally this beautiful circle, crowning the highest point for miles around, has been the destroyer of many birds during their nocturnal migrations between their winter and summer homes. As much as we deplore this unfortunate destruction, we have been able at the same time to obtain some interesting data upon the subject of migration.

In 1897, August 28th, there appeared in the Philadelphia Evening Bulletin an account of a rare bird that was found on the balcony just below the lights of the tower. The discovery of a dead bird at such a great height was a curiosity indeed to the keeper of the tower and his assistants, and its correct identity even puzzled the mind of the learned reporter, who pronounced it a rare specimen; but why it had chosen this lofty spot to breathe its last was a mystery to all who were called into consultation. My attention was attracted to the article, and upon investigation, I found the bird to be a young Sora Rail. This was the first bird that had flown against the tower since the lamps had been lighted, on July 4th of the same year. I immediately took steps to interest Mr. Slaughter, the superintendent of the electrical department, and from that day to this, records have been kept of all birds that have been found, the species being noted and the sex when possible, as well as the conditions of the weather. More than a hundred specimens have been saved, about seventy of which Mr. Slaughter has had mounted and perched in a glass case made for the purpose. Each morning during the migrating periods, the tower, roofs and court below have been scoured and the specimens submitted to me for identification. Fifty-six species have been found, and at least one of each has been mounted or the skin saved. In all, five hundred and twenty-nine specimens have

been picked up, the number on any one night varying from one to one hundred and fifty-four birds, thirty-two species being found in one night's slaughter. A Red-tailed Hawk for a time made his home in the tower and has carried away a number of birds. There were also no doubt many birds lost among the numerous projections and lodging places on the tower and roof below, while others were picked up by strangers, cats, dogs, etc., in the streets and court.

My purpose in keeping these notes was not with any hope of discovering something new, but light-house or rather high-tower collecting was a novelty to me, and I was ready to record anything startling or interesting. Incidentally I have found it a most convenient, as well as fairly accurate, way of observing the fall migration without losing any time in the field, and believe the results have not been unprofitable. The electrician of the tower would merely push the button and the lights would do the rest. The weather data was taken from the newspapers, adding special notes as on the severity of the weather, sudden changes of temperature, moonlight, etc., etc., which struck me at the time as affecting the flights and number of victims.

In 1897, during the fall observations, nearly the whole month of September was clear and few birds were led astray into the light, and only thirty struck between August 23rd and November 8th. In the spring of 1898 Penn's collection only amounted to six birds. In the fall, the first two weeks of September were so warm that there was practically no migration until the 15th, when it was sudden and soon over, netting thirty-one victims.

This present year (1899) the great clock, with an illuminated face over twenty-five feet in diameter, made its appearance, but luckily for the birds, the lights around the tower were turned off from May 2 to 16, and all the birds escaped but ten.

This fall, however, the great parade and the Industrial Exhibition were special occasions for illumination, when four festoons of lamps were swung from the rim of Penn's hat to the balcony, and the gleanings from August 23rd to October 31st amounted to four hundred and fifty-two birds. If, like the light-houses, there was a cylinder of glass around the outside of the light this slaughter would have been enormous. As it is, many of the birds approach the tower without striking, and I have watched them fly between the lights, circle the tower and then disappear into the darkness without in the least endangering their lives.

The theory that the old birds pass south earlier than the young does not seem to compare favorably with the line of specimens obtained from

the tower. From first to last during the fall migration just passed, old birds mingled with the young. The number of Maryland Yellowthroats, for instance, which were killed right along from the beginning to the end of the migrating season, August to November, contained the same proportion of old birds. So it was with many other species, but there are many more young than old birds, of course. I think the reason that so few old birds strike the light in the fall is on account of their experience. They have taken the journey between the north and the south at least twice before, and they have become used to dangerous objects. In fact, they are experienced travelers, while the young are not much more than children, and the new experience is bewildering, especially on a dark, cloudy night, when the birds fly much closer to the earth, and, child-like, they are fascinated by the light and want to get right into it. Then they are possibly not so expert on the wing as their parents, or they might be able to recover themselves at the last moment when they have discovered their mistake. Thousands of birds pass close to the lights, while but few strike, and it is reasonable to suppose that the old birds are much more likely to escape than the young.

Threatening weather does not seem to prevent the birds from starting on their migration, but a hard rain stops them. For example, one night a large number of birds struck the tower when overtaken by a northeast storm, but a hard northeast wind and rain continuing the next day and night, not a bird struck, while from observations at another point on this second night no birds seemed to be moving.

On moonlight nights no birds strike, except toward morning after the moon has disappeared.

Another fact was noticed, that the birds not only migrate in the early evening, but all night until break of day. At five o'clock one morning the birds were going by in hundreds, while but few lost their lives.

Following is a list of the species and the number of each which have flown against the tower. A Sparrow Hawk on the list does not positively indicate that it was migrating at night, for it may have dashed itself against some projecting corner while in pursuit of a wounded bird in the early hours of the day.

LIST OF BIRDS COLLECTED FROM AUGUST 27, 1897, TO OCTOBER 31,
1899.

	Spring.	Fall.	Total.
1. Horned Grebe,		1 ♀ young	1
2. Ruddy Duck,		1 young	1
3. Sora Rail,		1 young	1
4. Mourning Dove,		2 young	2
5. Sparrow Hawk,		1 ♀	1
6. Yellow-billed Cuckoo,		4 (1 young)	4
7. Black-billed Cuckoo,		2 young	2
8. Yellow-bellied Woodpecker,		1	1
9. Flicker,	1	5	6
10. Phoebe,		2 young	1
11. Wood pewee,		1	1
12. Bobolink,		1	1
13. Savannah Sparrow,		2	2
14. Grasshopper Sparrow,		2	2
15. White-throated Sparrow,		1	1
16. Chipping Sparrow,		14 young	14
17. Field Sparrow,	1	5 young	6
18. Slate-colored Junco,		6 (2 old)	6
19. Song Sparrow,		1	1
20. Towhee,		2 (1 old)	2
21. Indigo-bird,		6 young	6
22. Scarlet Tanager,		2 young	2
23. Cedarbird,		4 young	4
24. Red-eyed Vireo,		16	16
25. White-eyed Vireo,	1		1
26. Blue-headed Vireo,		1 young	1
27. Black-and-white Creeper,		12 (4 old)	12
28. Parula Warbler,	3 ♀s	64	67
29. Black-throated-blue Warbler,		12 (3 old)	12
30. Myrtle Warbler,		34	34
31. Magnolia Warbler,		5	5
32. Chestnut-sided Warbler,		2	2
33. Black-poll Warbler,		23	23
34. Blackburnian Warbler,		10	10
35. Black-throated-green Warbler,		24	24
36. Palm Warbler,		1	1
37. Yellow Palm Warbler,		26	26
38. Prairie Warbler,		1 young	1

SUMMER BIRDS OF SULLIVAN AND WYOMING COUNTIES.

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39. Pine Warbler,	1	4	5
40. Bay-breasted Warbler,		1	1
41. Cape May Warbler,		1	1
42. Nashville Warbler,		1	1
43. Connecticut Warbler,		12	12
44. Ovenbird,	2	5	7
45. Maryland Yellow-throat,	5 ♂s, 1 ♀	152 (15 old)	158
46. Yellow-breasted Chat,		3	3
47. Redstart,	1 ♂ young	15	16
48. Catbird,		3	3
49. Brown Thrasher,		1	1
50. House Wren,		1	1
51. Marsh Wren,		3	3
52. Brown Creeper,		1	1
53. Red-bellied Nuthatch,		6	6
54. Golden-crowned Kinglet,		1	1
55. Ruby-crowned Kinglet,		2	2
56. Wood Thrush,		1	1
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Fifty-six species. Totals,	16	511	527

The number of birds killed on the tower from August 23, 1899, to October 31, 1899, was four hundred and fifty-two. Special illumination on tower and several very stormy nights were responsible for the unusual number.