

Mortality among Birds at Philadelphia, May 21-22, 1915

BY DELOS E. CULVER

ABOUT 10 a. m., May 22d, 1915, there was received, at the Academy of Natural Sciences, Philadelphia, a call from the "Evening Bulletin" of that city for aid in the identification of a small "yellow and green" bird which had been picked up in the court yard of the City Hall.

From this it was learned that hundreds of birds were lying about on the ledges surrounding the Public Buildings and City Hall Tower. Immediately upon receiving this information, I, accompanied by a "Bulletin" photographer, hurried to the scene, and the mortality, when ascertained, was really appalling.

Upon reaching the court-yard the areaways were first examined. Looking down into them, we found that although very few dead specimens were visible (most having been gathered by employees), there were many living birds continually flying up and down the full length of the areaways, apparently having lost all sense of direction. Maryland Yellow-throats were in evidence everywhere. Every areaway was full of fluttering birds of this species, and it was among them that the greatest mortality occurred.

Upon entering the areaways from below, the following species were identified: Maryland Yellow-throat, Parula Warbler, Redstart, Red-eyed Vireo, Chewink, Long-billed Marsh-Wren, Water-Thrush, Black-throated Blue, and Black-poll Warblers. Of the Vireo, Chewink and Wren but single specimens were observed. The former was caught alive and later liberated in the country, making little or no effort to escape when approached. The Wren was the most active of the three, while the Chewink, apparently hungry, was continually picking

at dirt particles and other minute objects in search of something to eat.

After making the above notes, we proceeded to the roofs for further examinations, and here the conditions proved even more pitiful than those below. Dead birds lay everywhere, while others, seemingly bewildered, flitted about on the ledges of the building, apparently too weak to resume their weary journey, or, as before stated, had lost all sense of direction. If such was not the case, the birds were certainly on the point of exhaustion, otherwise one cannot conceive anything to prevent them from resuming their northward journey from these upper ledges, high above the city, its noise and confusion.

The birds in the areaways acted in the same way. When we entered from below they immediately flew to the top and alighted on the surrounding railings; but when we withdrew, the birds, instead of flying up to the roof and continuing their journey, immediately flew back down into the pits, which were sooner or later to be their tombs, apparently frightened by the crowds and continuous bustle. Most of these birds seemed very much exhausted, but were quite able to fly continually back and forth the full length of the areaways.

After about an hour and a half, spent in gathering up specimens, and in identifying them, I was able to prepare the following list :—

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| 1. Chewink, 1 ♀. (Alive). | 11. Magnolia Warbler, 4. |
| 2. Indigo Bunting, 1 ♀. | 12. Black-poll Warbler, 28. |
| 3. Maryland Yellow-throat.
130, (three-fourths ♀'s). | 13. Black - and - white War-
bler, 6. |
| 4. Parula Warbler, 60. | 14. Chestnut-sided Warbler, 2. |
| 5. Canada Warbler, 2. | 15. Oven-bird, 21. |
| 6. Water-Thrush, 7, | 16. Red-eyed Vireo, 2. |
| 7. Bay-breasted Warbler, 6. | 17. English Sparrow, 1. |
| 8. Black-throated Blue War-
bler, 15. (13 ♀'s.) | Ad. ♂ |
| 9. Yellow Warbler, 1 ♀. | 18. Scarlet Tanager, 1. Ad. ♂ |
| 10. Redstart, 35 (32 ♀'s.) | 19. Long-billed Marsh Wren,
1. (Alive). |

And now let us consider some of the most interesting points in the case; i. e. the cause of such an appalling destruction. Following an unusual cool period of weather for the month of May, on the 21st considerable moderation took place, and about 10 p. m. rain began falling. Prior to the rain quite a heavy mist hung about the city, but was later cleared away by the falling rain. By midnight and in the early morning hours the rain had turned to a thunderstorm with a terrific downpour, which continued well into the morning. Various data were collected regarding weather conditions and the facts seem to indicate, that in the vicinity of Philadelphia prior to the storm quite a heavy mist or even fog prevailed; but as above stated, was later cleared away by the falling rain. Employees at the City Hall, between 11 p. m. and midnight, report having heard great quantities of birds passing over, continually chirping. "A heavy rain", they said, "was falling all the time, but neither wind nor fog was in evidence."

Although many of the birds became exhausted from continuous fluttering about the lights and later succumbed to exposure, the greater number of the hundreds of lives lost were caused by coming in contact with hard structures, as the fractured limbs, bruised bodies, indented and blood-clotted skulls proved, when examinations were made after skinning the specimens.

As shown by the above list, Maryland Yellow-throats suffered the greatest mortality. The one hundred and thirty specimens of this species gathered does not in the slightest represent the probable hundreds of individuals that lost their lives. Dead Yellow-throats lay on every roof and ledge visible, while this species occurred in the greatest numbers flying up and down the areaways. Some ten days later individuals (females) of this species were still seen flitting about the courtyard.

Next to the Yellow-throat the Parula Warbler was found in the greatest abundance, and this beautiful species doubtless also suffered appalling destruction. Of the Myrtle Warblers not a single specimen was found, although the species was at the time quite common throughout the country. This seems of rather special interest.

Turning now from the number of individuals and species to the sex, we find that practically three-fourths, if not more, of the birds found were females. Of the sixty Parula Warblers examined, I cannot recall a single adult male specimen. In explanation of the above facts we can only refer to the late date of the occurrence. As in practically all species the males arrive some time in advance of the females, and this, being in all probability one of the last migratory "waves" of the season, was composed almost entirely of the latter sex.

We must however bear in mind that this was but one immediate locality, and when we consider the number of towers, and equally as tall buildings through the city, we realize that the loss of life must have been tremendous, and can certainly not help but have a noticeable effect upon bird-life at one locality or another.

Although a few birds are picked up every year about the City Hall, from information gained from employees, August 28, 1905 marked the last slaughter in anyway comparable to the one cited above, and this like most others, occurred in the late summer or early autumn.

As before stated the greater number of birds were killed by striking hard structures, and it is the writer's opinion that the birds, being forced to migrate low on account of the storm, were attracted by the bright lights, and apparently misconceiving them to be suspended in midair, attempted to fly past just above or below the center of illumination, and therefore struck the darker portions of the tower, which were unilluminated.

Since the above occurrence many others birds have lost their lives by striking the City Hall Tower, and under conditions that appear puzzling, when we consider the theories that were formerly advanced. On the morning of September 28th, 1915 an adult Flicker was picked up in the courtyard after an absolutely clear night, during which a bright moon was shining. Although not indented, the skull showed heavy blood clots, indicating a severe blow against some hard structure.

Again on October 17th-18th 1915 another migratory "wave" passed over the city and many more birds struck the towers, as a result of apparently unknown reasons. The night was abso-

lutely clear, with a bright moon shining until daybreak. A very light fog became evident towards morning, but was hardly responsible for the loss of life that occurred. Personal examination of the roofs and ledges in this case was not made by the writer. Twenty-nine specimens however were kindly presented to him by an employee at the City Hall, and the data connected with them are as follows :-

Twenty-nine Specimens. Twelve Species ; arranged in the order of their greatest abundance.

Myrtle Warbler.	Black-throated Green Warbler, 1.
Maryland Yellow-throat.	Water-Thrush, 1.
Parula Warbler.	Chipping Sparrow, 1.
Yellow Palm Warbler, 2.	Solitary Vireo, 1.
Oven-bird, 2.	Ruby-crowned Kinglet, 1.
Palm Warbler, 1.	
Pine Warbler, 1.	