

# LAND BIRD MIGRATIONS OVER WEST PHILADELPHIA

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Nocturnal migration, particularly autumnal night flight, has long been of special interest to this observer, and voluminous records of such phenomena have been compiled during the past three years for the West Philadelphia section. For the sake of brevity, this paper will deal only with the southbound migration of 1952. The fall migrations of 1950 and 1951 were similar in pattern.

The writer is fortunate in that he is able to make at least two trips daily, one in the early morning and another at noon, into the Botany Garden on the campus of the University of Pennsylvania, which is the chief observation area. The garden is no larger than an average city block, but it is well covered with trees and shrubs. It contains a pond shored with peltandra, iris, and cat-tails. Trees are both evergreen and deciduous. Warblers and kinglets find the insect infested crabapples, birches and hackberries much to their liking, while timid species, like the thrushes, seek the seclusion of the low, dense yews and azaleas. The garden is like a huge trap which nightly takes a sample from the sky. The city around forms a fence, and since there is food and cover within, the birds usually stay for the day and often longer. Counting is not too difficult, as diurnal migration is uncommon, except late in the season. It is well-known that, in the woodlands, birds that are normally night migrants do a certain amount of day traveling through the tree tops.

In many respects the garden is a miniature of the celebrated natural bird trap at Cape May Point, N. J., for often on mornings following nights of a northwest wind the bird count is quite unbelievable, and, acre for acre, compares favorably with the dramatic flights witnessed at the Cape after such winds.

Down the Delaware Valley and along the New Jersey coast the autumnal migration is a long procession beginning with the arrival of the Northern Water-thrush, Redstart, Black-and-white Warbler, and the Magnolia Warbler, and by mid-September the bulk of the warblers, vireos, flycatchers, catbirds, thrashers, and most of the nightflying thrushes are passing through in great abundance. Near the end of September and during early October the sparrows, towhees, creepers, and kinglets are the conspicuous migrants.

Toward the end of October and on into November the migration gradually tapers off, but it must be remembered that the migration does not pursue an altogether even course; on the contrary, it is punctuated by nights when great waves of birds are on the wing.

It has often been suggested that during the fall migrational period there is a steady southbound flight, and that during northwest winds the birds are forced to fly toward the southeast. At daybreak many find themselves blown off the Atlantic coast, whereupon they gather in great flocks and turn toward the shore to deluge Cape May Point and Cape Charles. There can be little doubt that the birds which come in from the sea in the morning have been blown off course, but they occur in such great numbers that it is reasonable to suspect that there was an unusual abundance of migrants in the sky on the previous night, and this brings up the old controversy as to whether or not night travelers deliberately fly with the wind.

During September, October, and November of this year, Floyd Cranmer and I spent many night hours on the roof of the Hotel Walnut Park Plaza at 63rd and Walnut Streets, Philadelphia, taking "chip counts" of passing birds and recording telescopic observations of the lunar disc. We found that chip counts were highest and that more birds were seen crossing the face of the moon when the winds were northerly and temperatures favorable. We are convinced that not only do night migrants fly with the wind, but they prefer to fly with it.

On mornings after a good bird count on the hotel roof, the Botany Garden often swarmed with birds. It is supposed that at daybreak birds, finding themselves over the city, come down to the most attractive spot, in this case the Botany Garden. It is a thrilling experience to watch them come in at dawn. On particularly good mornings they also flock into the trees along the city streets, but seldom linger after the heavy morning traffic begins.

During the course of this study the writer has made weekly trips to Cobbs Creek Park and to the Tinicum meadows. In these places the results of a bumper flight may or may not be noticeable. There are, of course, days when one sees many birds, but one is not apt to correlate the occurrence with weather conditions.

With the aid of weather maps and other meteorological information it is possible to predict major migrations throughout September and most of October. Birds are certainly overhead on nights of good visibility, moderate northerly winds, and a fall in temperature. Such conditions prevail just after a cold front passes toward the east over this region. The kinds of migrants depend on the extent of the temperature drop. It seems that

warblers will move on the slightest provocation, while sparrows in general prefer lower temperatures. Birds will not fly on nights when the north winds are exceedingly strong accompanied by a very sharp fall in temperature; furthermore, they may not be quick to fly again after such an undesirable spell even after conditions have returned to favorable. Near the close of the migration the flow becomes more steady, and the small waves are not very predictable.

This has been but a preliminary report on bird migration. The writer has spoken in generalities and is fully aware of the complexity of the subject. A night sky may be full of mixed birds with different behavior characteristics. Individuals of a single species often respond differently to the same environmental conditions, and there is always the case of the late straggler which apparently refuses to abide by the rules.

For those who may wish to read further on the subject, standard works are written by Lincoln, Rowan, Stone, and Wetmore. In addition I have found the following periodical references useful: McMillan, *Birds and the Wind*. *Bird Lore* 1938, pp 397-406; Newman, *Studying Nocturnal Bird Migration by Means of the Moon*. Issued 1952 by Mus. Zool., La. State Univ., Baton Rouge, La.; Woodbury, *Animal Migration-Periodic-Response Theory*. *Auk* 1941, 58: 463-505.

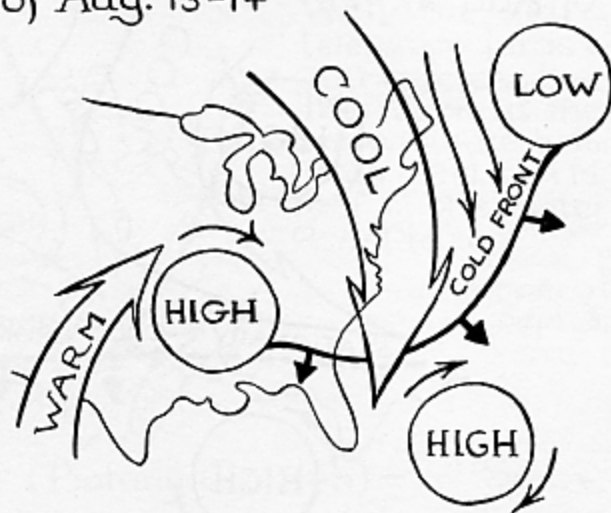
An illustrated chronicle of the highlights of the 1952 fall migration, as seen from West Philadelphia, is presented on the following pages.

218 SOUTH 43RD ST., PHILADELPHIA, PA.

Aug. 13, 1952 (Botany Garden) -

Brown Thrasher (1. The only night migrant seen.)

Night of Aug. 13-14



Aug. 14 (Botany Garden) -

Flicker (1.)

Catbird (1.)

Brown Thrasher (Several.)

Wood Thrush (1.)

Black and White Warbler (1.)

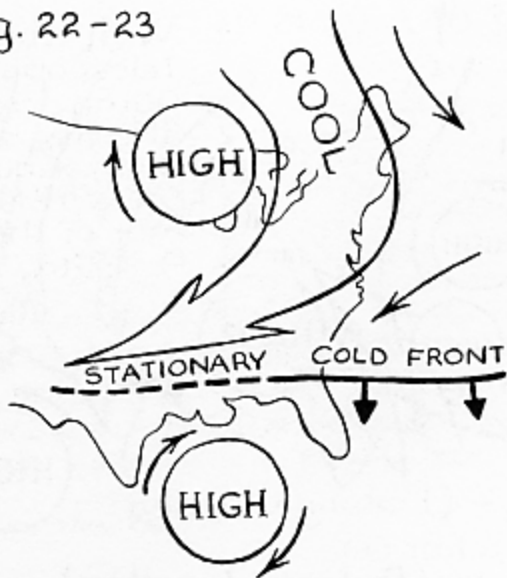
Black-throated Green Warbler (4.)

Canada Warbler (2.)

Redstart (2.)

Aug. 22 (Botany Garden) -  
Catbird (1.)  
Brown Thrasher (2.)  
Redstart (1.)

Night of Aug. 22-23

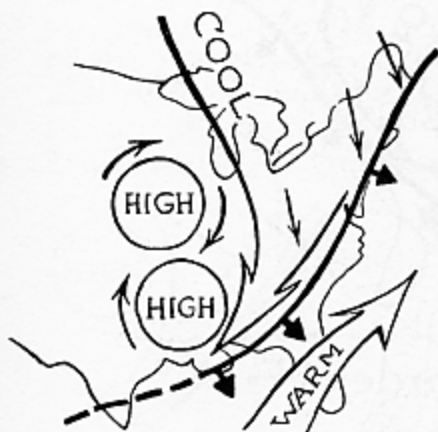


Aug. 23 (Botany Garden) -  
Barn Swallow (1.)  
Catbird (1.)  
Brown Thrasher (Several.)  
Black-throated Blue Warbler (1.)  
Redstart (1.)  
Baltimore Oriole (3.)

Sept. 3 (Botany Garden) -

- Catbird (2.)
- Brown Thrasher (2.)
- Canada Warbler (1.)

Night of Sept. 3-4



With the aid of a 20X telescope birds were seen flying across the face of the moon at the rate of one a minute between the hours 11 P.M. - 3 A.M. on the roof of the Hotel Walnut Park Plaza.

Temperatures:

Sept. 3, 8 P.M. - 73

9 — 71

10 — 70

11 — 69

12 — 68

Sept. 4, 1 A.M. - 67

2 — 66

3 — 65

4 — 64

5 — 62

6 — 60

7 — 61

8 — 62

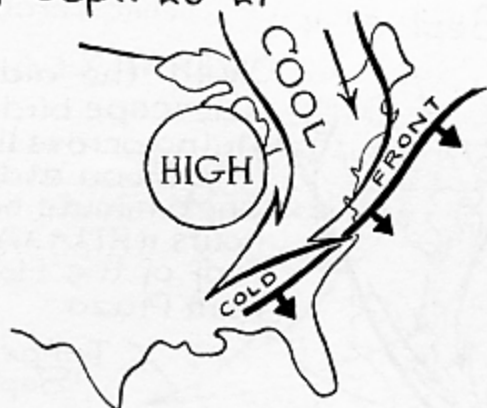
Sept. 4 (Botany Garden) -

- Flicker (1.)
- Downy Woodpecker (2.)
- Wood Pewee (6.)
- Catbird (2.)
- Brown Thrasher (10.)
- Wood Thrush (2.)
- Red-eyed Vireo (2.)
- Black and White Warbler (1.)
- Magnolia Warbler (Several.)
- Black-throated Blue Warbler (1.)
- Black-throated Green Warbler (Sev.)
- Blackburnian Warbler (Reported.)
- Oven-bird (1.)
- Canada Warbler (2.)
- Baltimore Oriole (2.)

Sept. 26 (Botany Garden) -

Brown Thrasher (3.)  
Red-eyed Vireo (2.)  
Redstart (1.)

Night of Sept. 26-27



Sept. 27 (Botany Garden) -

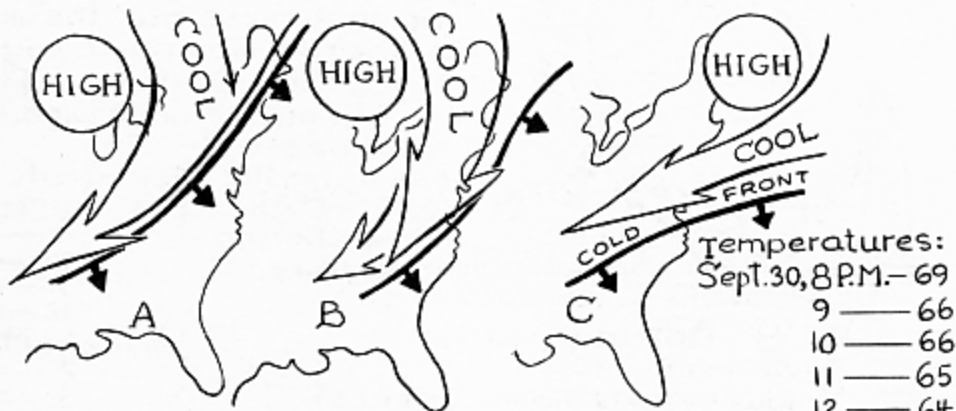
Flicker (15.)  
Yellow-bellied Sapsucker (1.)  
Downy Woodpecker (2.)  
Wood Pewee (1.)  
Brown Creeper (1.)  
Brown Thrasher (4.)  
Olive-backed Thrush (2.)  
Gray-cheeked Thrush (1.)  
Veery (1.)  
Ruby-crowned Kinglet (2.)  
Black and White Warbler (1.)  
Black-throated Blue Warbler (1.)  
Oven-bird (2.)  
Yellow-throat (1.)  
Redstart (1.)  
Towhee (2.)  
Junco (About 25.)  
White-throated Sparrow (About 50.)  
Song Sparrow (About 50.)

## Sept. 30 (Botany Garden) -

Flicker (1.)	Red-eyed Vireo (2.)
Yellow-bel. Sapsucker (1.)	Black-poll Warbler (Sev.)
Downy Woodpecker (1.)	Goldfinch (1.)
Brown Creeper (1.)	Towhee (1.)
Catbird (1.)	Junco (Several.)
Brown Thrasher (6.)	White-throated Sparrow (1.)

## Night of Sept. 30 - Oct. 1

Migrants were flying in abundance over the roof of the Hotel Walnut Park Plaza. Between 12 M. and 2:30 A.M. birds were flying across the face of the moon at the rate of more than one a minute. The chip count for that period totaled 483.



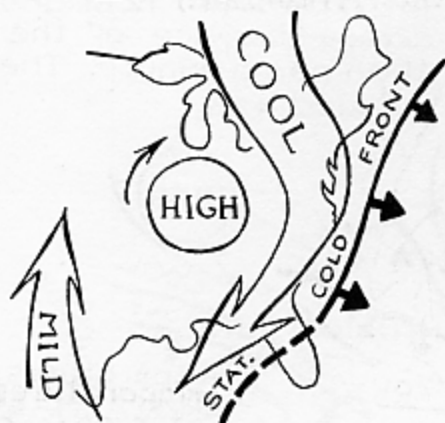
## Oct. 1 (Botany Garden) -

Flicker (1.)	Bay-breasted Warbler (1.)
Yellow-bel. Sapsucker (2.)	Black-poll Warbler
Downy Woodpecker (2.)	Oven-bird (1.)
Phoebe (2.)	Yellow-throat (2.)
Brown Creeper (More than 1.)	Goldfinch (2.)
House Wren (1.)	Junco (More than a score.)
Catbird (1.)	White-throated Sparrow (3.)
Brown Thrasher (6.)	Song Sparrow (1.)
Gray-cheeked Thrush (1.)	
Veery (1.)	
Golden-cwn. Kinglet (5.)	
Ruby-cwn. Kinglet (8.)	
Magnolia Warbler (1.)	

Oct. 7 (Botany Garden) -

- Downy Woodpecker (1.)
- Brown Creeper (1.)
- Golden-crowned Kinglet (6.)
- Ruby-crowned Kinglet (Several.)
- Olive-backed Thrush (1.)
- Black-throated Green Warbler (1.)
- Black-poll Warbler (6.)
- White-throated Sparrow (2.)

Night of Oct. 7-8



Hotel roof - Chips were heard so abundantly that it was impossible to make a count. The high clouds were blowing from the southwest, but the wind on the roof was northerly.

Apparently, birds were flying low on the north wind. They could be seen easily on the face of the moon with 7X50 binoculars.

Temperatures:

Oct. 7, 8 P.M.	-53
9	— 52
10	— 50
11	— 49
12	— 48

Oct. 8, 1 A.M. - 49

2 — 48

3 — 46

4 — 45

5 — 45

6 — 44

7 — 43

Oct. 8 (Botany Garden) -

- Flicker (1.)
- Yellow-bellied Sapsucker (3.)
- Downy Woodpecker (Several.)
- Phoebe (1.)
- White-breasted Nuthatch (1.)
- Winter Wren (1.)
- Catbird (Several.)
- Hermit Thrush (1.)
- Olive-backed Thrush (1.)
- Golden-crowned Kinglet (100.)
- Ruby-crowned Kinglet (About 50.)
- Red-eyed Vireo (1.)
- Magnolia Warbler (2.)
- Bl.-th. Green Warbler (6.)
- Black-poll Warbler (Sev.)
- Yellow-throat (3.)

Towhee (About 20.)

Junco (More than 75.)

Chipping Sparrow (1.)

Wh.-th. Sparrow (200+.)

Song Sparrow (6+.)

Oct. 16 (Botany Garden) -  
 Yellow-bellied Sapsucker (1.)  
 Downy Woodpecker (2.)  
 Brown Creeper (Several.)  
 Hermit Thrush (1.)  
 Ruby-crowned Kinglet (Several.)  
 Golden-crowned Kinglet (Several.)  
 Blue-headed Vireo (1.)  
 Black-poll Warbler (3.)  
 Towhee (1.)  
 Junco (About 100.)  
 White-throated Sparrow (A number.)

Night of Oct. 16-17



Temperatures:

Oct. 16, 8 P.M. - 60

9 — 60

10 — 59

11 — 59

12 — 59

Oct. 17, 1 A.M. - 56

2 — 55

3 — 53

4 — 51

5 — 50

6 — 49

7 — 48

8 — 51

Oct. 17 (Botany Garden) -  
 Yellow-bellied Sapsucker (1.)  
 Downy Woodpecker (Several.)  
 Phoebe (1.)  
 Brown Creeper (At least 5.)  
 Hermit Thrush (2.)  
 → Golden-crowned Kinglet (About 100.)  
 → Ruby-crowned Kinglet (About 15.)  
 Black-poll Warbler (1.)  
 Towhee (5.)  
 → Junco (About 200.)      → White-th. Sparrow (About 60.)  
 Chipping Sparrow (1.)      Song Sparrow (1.)

Night of Oct. 19-20

Weather pattern good, but wind too strong for migration.

Night of Oct. 20-21

Weather pattern good, but too cold.

Night of Oct. 21-22

Weather pattern good, but too cold.

Night of Oct. 22-23

Weather good. Milder, but birds refuse to fly.

Night of Oct. 23-24

Weather good. Mild. Birds begin to fly.

Oct. 24 (Botany Garden) -

Downy Woodpecker (Sev.)

Junco (Sev.)

Golden-cwn. Kinglet (About 50.)

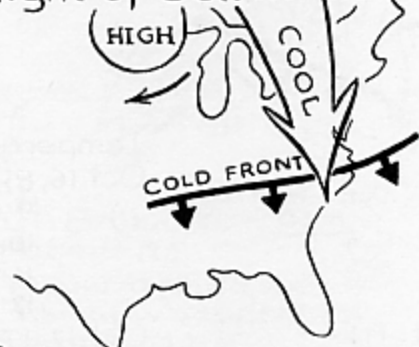
Wh.-th. Sparrow (Sev.)

Ruby-crowned Kinglet (Sev.)

Song Sparrow (1.)

Goldfinch (Sev.)

Night of Oct. 24-25



PERFECT NIGHT FOR MIGRATION

Temperatures:

Oct. 24, 8 P.M. - 66

9 — 65

10 — 64

11 — 63

12 — 62

Oct. 25 (Botany Garden) -

Downy Woodpecker (2.)

Brown Creeper (Several.)

Hermit Thrush (1.)

Golden-cwn. Kinglet (At least 100.)

Ruby-cwn. Kinglet (About 50.)

Myrtle Warbler (1.)

Goldfinch (10.)

Towhee (1.)

Junco (At least 300.)

Wh.-th. Sparrow (15.)

Oct. 25, 1 A.M. - 60

2 — 60

3 — 59

4 — 57

5 — 55

6 — 52

7 — 50

8 — 51

Many Kinglets (both sps.) were seen and heard in the trees along the streets throughout West Phila.