

# An avian fallout and the first Massachusetts records for Black-chinned Hummingbird and Lucy's Warbler

*A consideration of the factors that may have resulted in an unusual cluster of records*

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**D**URING THE LATTER PART OF November 1979, a highly unusual weather pattern resulted in a widespread avian fallout in New England. Shortly thereafter the first Massachusetts occurrences of Black-chinned Hummingbird (*Archilochus alexandri*) and Lucy's Warbler (*Vermivora luciae*) were recorded, as were a host of late dates for many other species. The point of this paper is to project the principle of displacement and reverse migration, in this case generated by the prolonged southwesterly airflow that prevailed at the time.

Many fine papers have appeared in the literature, dealing with weather's effect on avian migration. The application presented here is not new. However, seldom has the evidence supporting the phenomenon of a reverse migration been clearer than it was in New England in November 1979 both in terms of the preceding weather and the decidedly southern and southwestern "flavor" of the species subsequently observed.

According to R.E. Lautzenheiser, Massachusetts State Climatologist, "The period Nov. 23-28 brought a mini-summer averaging 17°F above normal and daily highs averaging 67°. This was the longest stretch so warm so late in the year on record." From Nov. 22-28, the wind blew continuously from the S-SW with rather high average wind speeds. The 26th was particularly windy with an average wind of 17.8 mph, and a peak gust of 52 mph. This weather pattern was abruptly halted locally on November 29, when the winds turned to the NW and the daily high temperatures dropped 20°.

**O**N A CONTINENTAL SCALE, the 500 mb. height contour (Fig. 1) for November 22 clearly shows the upper

**Table 1: Summary of local climatological data November 21-29, 1979, National Weather Service (Logan Airport Station, Boston)**

	Max. Temp (°F)	Ave. Wind Speed (mph)	Wind Peak (mph)	Dir.
Nov. 21	57	9.6	29	N
22	55	8.9	21	SW
23	69	9.0	23	SW
24	70	10.5	22	SW
25	70	7.0	16	SW
26	66	17.8	52	S
27	58	16.2	45	W
28	66	16.1	37	SW
29	46	16.1	36	NW

level low pressure system centered over Nebraska that was responsible for the southwest airflow that warmed the East. This same pattern and windflow, although with some reduction in speed, existed down to the 850 mb. level, which is generally valid for winds at 3-6000 ft. Winds generally flow parallel to the isobars, in clockwise fashion around a high, counterclockwise around a low. The low or trough in the West and high or ridge in the East is a common pattern in the short term, but it was prolonged and this is unusual. This pattern resulted in a rather direct upper level stream of northeastward-flowing warm air.

Table 2 lists twelve species recorded in Massachusetts during and shortly after the warm air flow that prevailed from November 22-28. The Yellow Warbler at Ipswich Dec. 1 was bright yellow. Most late records of Yellow Warbler in Massachusetts have proven to be of either the duller Newfoundland race *annicola*, or the greener Alaskan race *rubiginosa*. The Ipswich bird clearly belonged to neither of these two races. The Yellow Warbler sighting is the latest recorded occurrence for Massachusetts, as is the Bank Swallow Nov. 30, and the Black-poll Warbler Dec. 13.

The fallout was not limited to Massachusetts: two *Myiarchus* flycatchers in Maine, at Hampden Nov. 30-Dec. 1 and at Mt. Desert I., Dec. 8 were perhaps both Ash-throateds. An Olive-sided Flycatcher at Sachuest, R.I. Nov. 23 was the most "unseasonable" blowback of the period. A Barn Swallow was at Brunswick, Me. Dec. 1; and a Painted Redstart present at a Dansville, N.Y. feeder Dec. 19-Jan. 24 was almost certainly associated with the fallout in New England. Western Tanagers numbered 14 (NEM) regionwide, many of which appeared in late November and December in perhaps the largest flight ever. A lack of snowcover and unseasonably mild temperatures allowed for continued late sightings for many species on into early January, particularly on area Christmas Bird Counts.

**O**NE OF THE FIRST questions that should be pondered is where did the reverse movement of birds originate. There is no reason to assume that all, or even most, of the unusual birds that appeared in Massachusetts and New England originated from the same area. Many do not travel the same migration route or emanate from the same region.

**Table 2: Accidental and late sight records from Massachusetts Nov. 25-Dec. 13, 1979.**

Date	Species	Location	Observers
Nov. 25	Black-chinned Hummingbird	Cohasset	W. Peterson, B Sorrie
Nov. 30	Ash-throated Flycatcher	Belmont	L. Taylor +
Nov. 30	Bank Swallow	Manomet	fide K. Anderson
Dec. 1	Black-and-white Warbler	Concord	R. Forster +
Dec. 1	Lucy's Warbler	Ipswich	R. Heil +
Dec. 1	Yellow Warbler	Ipswich	R. Heil +
Dec. 1	Cape May Warbler	Ipswich	R. Heil +
Early Dec.	Ovenbird (2)	Manomet	J. VanOs
Dec. 8	Wilson's Warbler	Concord	R. Walton
Dec. 10	Northern Parula	Concord	F. Bemis
Dec. 10	Prairie Warbler	Nantucket	R. Veit
Dec. 13	Blackpoll Warbler	Eastham	C. Goodrich

(+ —additional observers.)

However, the decided “southwestern flavor” of the list sightings cannot be entirely ignored. In contrast to most members of the North American Wood Warblers, Lucy’s Warbler and Painted Redstart engage in rather short autumn migrations, needing less body fat to sustain their brief overland passage. Therefore it seems reasonable to assume that the reverse migration, at least that performed by these two species, was a one night, non-stop flight that must have fully depleted their fat reserves. The average distance from the proximal edge of the winter range of the Lucy’s Warbler and Painted Redstart to Massachusetts and western New York is about 2300 miles and 1800 miles respectively. On the basis of a 13.5 hr. dusk-to-dawn duration, unrealistic average flight speeds in excess of 170 mph for Lucy’s Warbler and 133 mph for the Painted Redstart would have been required. A closer point of origin would seem more likely.

Baird (1962) had noted that “if weather maps for spring and fall seasons are compared, there quickly emerges a pattern that is common to both seasons—a cold front passing eastward and southward across the country with the reverse flow in the backside of the previous high, usually developing into a tropical airflow, with southwest winds and rising temperatures. It is well documented that in spring these conditions result in massive flights of birds heading north.” It was further reasoned that most of the birds involved are immatures that are apparently deceived by the spring-like conditions occurring in the fall.

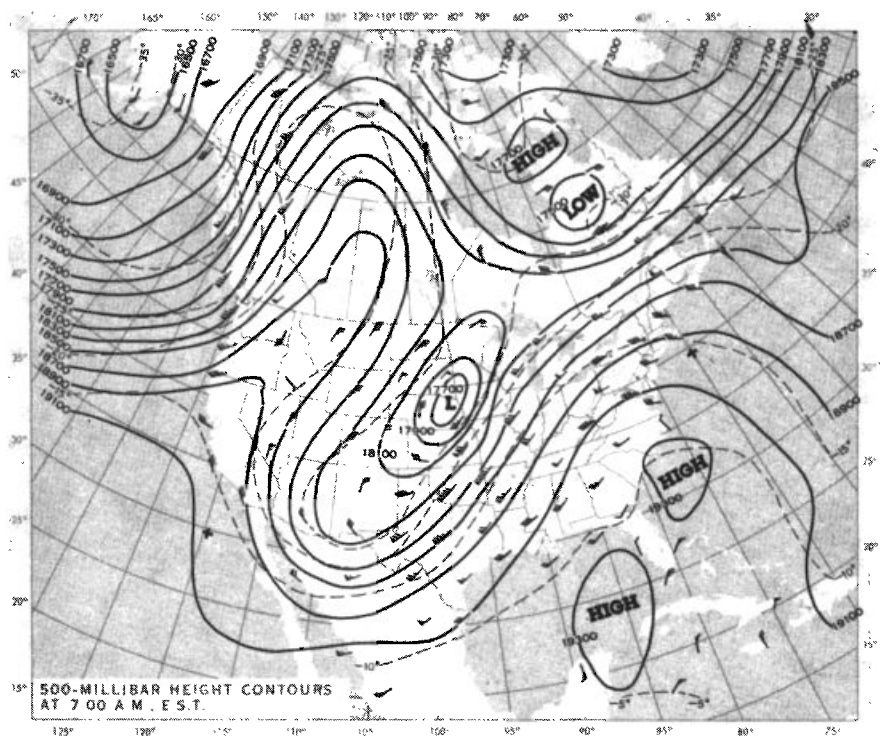
Radar studies (Able 1971) have documented nocturnal reverse migration in advance of cold fronts in the fall: one such cold front passing Athens, Ga.

Sept. 27, 1970 produced a heavy reverse migration there the previous night under southerly winds. Maximum traffic rate: 10,000 birds per mile of front per hour; track direction: N-NE, with most of the birds, on radar, concentrated in a band at about 10,000 ft.

**T**HE SURFACE WEATHER map (1000 ft level) for Nov. 22, 1979 (Fig. 2), reveals the presence of an eastward-sweeping cold front positioned over the Mississippi River Valley. South and southeast winds in advance of the front were most suitable for the departure of reverse migrants from the Gulf Coast states the nights of Nov. 21 and 22.

A one night non-stop flight between the Louisiana coast and Massachusetts (1400 mi.) would require a flight speed of 100-110 mph, or approximately 85 mph to western New York (1150 mi.). Reverse migrants, having taken off just after dusk under 10 knot S-SE winds the nights of Nov. 21 or 22, would, upon achieving higher altitudes, enter a stream of 50-110 knot (57.5-126.5 mph) SW winds (see Fig. 1) under which average downwind (with the flow) flight speeds in excess of 100 mph. could be attained. The Gulf Coast Region then, would seem to be a more logical area of origin for at least a portion of the unusual birds encountered, but particularly for the Black-chinned Hummingbird, Lucy’s Warbler, and Painted Redstart.

The Central Southern Regional Editor (R. Purrington) in the Autumn Migration Report (1979), stated that the “major story of the fall was provided by a spectacular influx of western vagrants, including most of the classic western stragglers to this region, some in unprecedented numbers.” The largest movements of western vagrants into that region apparently followed several frontal passages in late September and early October. The movement of Black-chinned Hummingbirds at New Orleans feeders was said to be “quite strong” Oct. 1-10, with a number present



**Figure 1.** 500 mb. height contour, Nov. 22, 1979 (0700 E.S.T.)

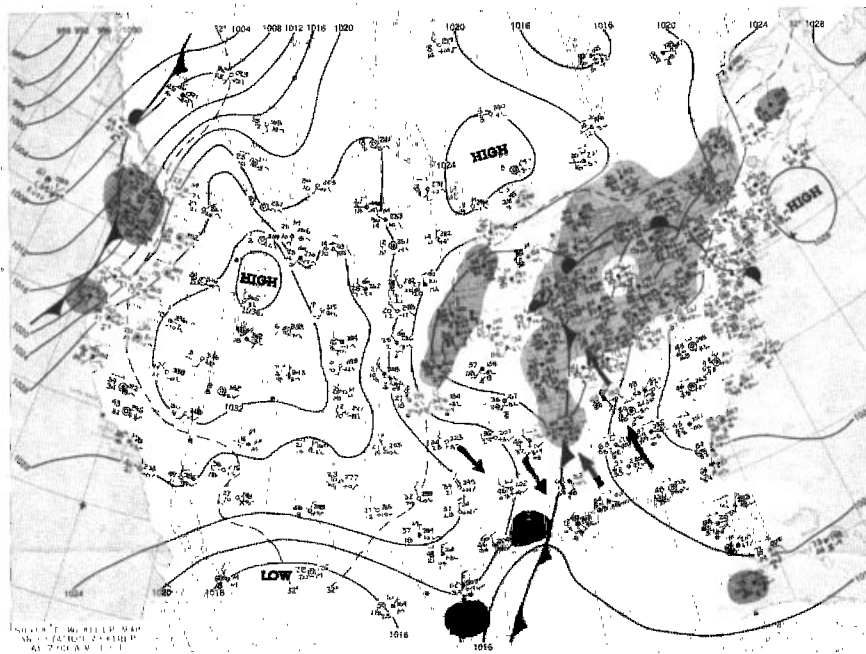


Figure 2. Surface weather map, Nov. 22, 1979 (0700 E.S.T.)

throughout November, apparently wintering. It is also perhaps significant that the only prior record of Lucy's Warbler in the "east" is from Triumph, La., Dec. 30, 1959.

#### The Black-chinned Hummingbird

THE DISCOVERY BY G. Pride Nov. 25 of a female/immature-plumaged hummingbird at a Cohasset greenhouse prompted a later investigation by W. Petersen and B. Sorrie. The very late date and the difficulties in identifying female/immature-plumaged *Archilochus* hummingbirds in the field warranted its capture. Examined and measured in the hand, it was tentatively identified as a Black-chinned Hummingbird, and expert confirmation of the specimen by A. Phillips was subsequently received. The Black-chinned Hummingbird winters from southern California south throughout western Mexico, and east with some regularity along the Gulf Coast from Texas to Florida.

#### The Lucy's Warbler

WHILE COUNTING WATERFOWL at Clark's Pond on Great Neck, Ipswich the morning of Dec. 1, I was surprised to see a Cape May Warbler in

the adjacent thickets. A short time later my squeaking produced a very small blue-gray bird with a prominent eye-ring which I initially thought was a gnat-catcher. The bird's shorter tail, lacking white edges or tail spots, general blue-gray color above, paler gray below, whitish eye-ring, prominent brick-red rump, and a small, much more obscured brick-red crown spot soon identified it as a Lucy's Warbler. Seen off and on throughout the day, the bird was viewed by at least thirty observers. At times it was seen being pursued by the aforementioned Yellow Warbler. Scores of birders were unable to locate the Lucy's on the next and subsequent days. Neither the sex or age of the bird could safely be determined since all ages and sexes are quite alike. Even the crown patch, which is most prominent in adult males, least in immatures, becomes obscured in both adult males and females in winter by gray tips and margins to the crown feathers. Although the majority of fall western vagrants in the East are birds of the year, to label categorically all such records as immatures when this cannot be readily ascertained by plumage, is only conjecture.

There are virtually no extralimital records of Lucy's Warbler east of the breeding range. The only record for the

"East" is that of the adult collected at Triumph, Louisiana. Apparently Lucy's Warblers depart for their winter range immediately after the nesting season and become difficult to find on the breeding areas after the end of August. West of the desert in south-coastal California, it is a rare straggler from September to mid-November. This smallest of the American Wood Warblers nests in mesquite thickets, willows, cottonwoods and along desert streams of the Lower Sonoran deserts, from southeastern Nevada, southwest Utah, southeast California east to central Arizona, southcentral New Mexico, south to northwest Mexico, and has nested as far east as El Paso, Texas. Lucy's Warblers normally winter along the west coast of Mexico from Sinaloa to western Guerrero.

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