A Bird Bander's Diary

MIGRATION ALONG THE ALLEGHENY FRONT

By Ralph K. Bell

In the January-February issue of EBBA News, I listed the seven species of warblers that "seem" to prefer using the Appallachian Mountains as a leading line during fall migrations and seven other warbler species that were caught in greater numbers along the Atlantic Coast. It is possible, however, that the warblers were migrating south westward on a broad front and were forced down by hard westerly winds and it just "appears" that they are using the mountains as a leading line.

In this issue I will give some of our observations at the mountain top station and add some comments of my own - some of which may be disputed but they are my views at present.

During the fall of 1961 we were not banding on the "rim" of the mountain as we are now doing, but at the Red Creek Campground itself, which is about 300 yards away to the west-southwest and back on the plateau and this could be classed as a typical feeding ground that includes a small stream running through it. (For those who are not familiar with the area being described here- Red Creek Campground is approx. 10 miles southeast of Davis, West Virginia. See "A Month at Red Creek O.R. Station, Sept. 1966" by Cora D. Williams in EBBA News 30(1): 30 - 34, ill., 1967. Editor).

The following table compares catches (of the seven species) at the "rim" (1970) and at the Campground (1961). Perhaps I should also say that numbers were not the primary concern in 1970 as they were in 1961.

	1970	1961
Tennessee Warbler	254	7
Cape May Warbler	207	5
Black-thr. Blue W.	319	17
Black-thr. Grn. W.	143	16
Blackburnian Warbler	147	5
Bay-breasted Warbler	206	3
Blackpoll Warbler	321	3

	1970	1961
Days of Operation	31	30
Maximum Nets	12	12
Net Hours	1521	2390

TABLE A - COMPARING CATCHES ONLY 300 YARDS APART.

This clearly shows that at the "rim" we are getting migrant warblers and not migrants that have stopped to feed or rest(as was the case in 1961). Also, it is rare indeed to get a warbler repeat at the "rim" station.

To have a good flight day there must be a westerly wind - the stronger the better - and even then very few warblers are ever caught until approximately 20 minutes after sunrise. The thrushes come in at daybreak but not warblers. Usually, on good migration days, the deluge is on within 30 minutes after sunrise and the air seems filled with birds - mostly warblers but on some days there are lots of other species also - especially Rose-breasted Grosbeaks and Scarlet Tanagers. Most of these big flights are essentially over around 10 a.m. There are exceptions however, and George Hall experienced one of these this fall on 5 September and his interesting comments (by letter) are as follows...."It rained hard all Friday night, and was still raining lightly when I arose. By the time it was light however, it had quit raining and was obviously going to clear. Clear it did by about 7:30. Now the interesting thing was that the warbler flight started as abruptly as it usually does, but instead of starting at 7:20 - 7:30, it started about 8:05 and the peak of the flight came from 10:30 to noon. There was a strong 10-15 m.p.h. wind all day."

Afternoon and evening warbler flights are rare at our station but Cora Williams experienced one after 6 p.m. on September 19, 1967. Late in the afternoon on that day there was a local shower in the valley to the northeast but there was no rain at the banding site itself. After the rain cleared out a fair flight of warblers came out of the valley and up through the netting area.

Getting back to this 20 minutes after sunrise migration, we may have a parallel (although at night instead of morning). The article by Nisbet, Drury and Baird (Bird-Banding, July 1963, p. 130) states: "that radar observations indicate that nearly all the birds involved in the southward movements take off at the same time, between 35 and 45 minutes after sunset with the maximum density....being reached within 10 minutes". The same article states that "among the echoes higher than 600 feet, 69% were in the range 2,000 to 4,000 feet above sea level". One cannot help but wonder about the height of migration in the Appallachians - especially since our banding location is close to 4,000 feet above sea level. Good radar studies here would probably tell us a lot of things.

It appears (to me) that most of the warblers that we catch are not a continuation of a night's flight but the birds are grounded migrants in the valleys to the northeast of us. Whether they have been grounded for more than a few hours is still a moot question.

If I am correct in the assumption that they are grounded migrants - what stimulates them to move southwestward on a flight that is probably not over 2 to 4 hours duration? And it may not be that long as most of the warblers are fat classed as 0. One reason for this movement could be because many of the migrants are used to feeding in the deciduous woodlands of the valleys and are seeking familiar habitat (and the resulting insects) in the spruces on the mountain top. This could be the case with some birds but evidence does not seem to support this. Many continue southwestward over the tops of the spruces for at least a considerable distance - probably several miles - if not forced to land by strong head winds.

Since some of our best flights have come after strong all night westerly winds, perhaps this tiring effect forced the migrants down prematurely. Their current migration stimuli not having been used up, many would try and continue on after daylight. Also, the chip of a few migrating warblers flying overhead could stimulate others and this chain reaction could result in the deluge of migrants coming up through our banding area. No doubt this movement takes place along the ridge both north and south of us at favorable locations - not only on this ridge but on other ridges as well.

Tennessee Warblers go through our netting area in very large numbers and we catch only a fraction of them. The most ever banded in one day was 42 on September 14, 1965. An interesting thing about the Tennessee Warbler migration in 1968 was that the peak day (for captures) at Block Island, Island Beach, Ocean City and our "rim" station occured on exactly the same day - September 13th.

The low numbers of Cape May Warblers banded in the fall of 1968 is not realistic of the large numbers that use this mountain flyway. Personal observation indicates this species has a tendency to fly over the nets. Also, probably more Cape Mays than any other warbler alight in the wind pruned Red Spruce next to our banding cave and then fly through the open wind swept area just north of net #1 south. The best day we have ever had for Cape Mays was on September 6, 1970 when 53 were banded.

The Black-throated Blue Warbler nests in deciduous undergrowth in the Appalachians but is common in evergreens farther north. Many of this species are captured in net #4 south. This net is the only net with a complete background of Red Spruce. They seem to head for the spruce trees as if that was "home". In fact, the spruce trees can be seen from far down in the valley and might be one of the factors in heading some birds through our netting area.

The top banding day for Black-throated Blue Warblers was September 13, 1968 when 45 were banded.

The Blackburnian Warbler probably uses the mountains as a flyway (rather than the coastal plain) more than any of the seven species. On some days it is unbelievingly common - like September 7, 1968 when 58 were banded. This species, along with the Cape May, are exceptionally early migrants through the mountain flyway.

The Blackpoll Warbler migration routes are at present probably the most controversial of the seven warbler species. We see fantastic numbers migrating and since this species is a very strong flier, most fly over our nets even in strong winds. We do have our good days for banding them and 111 were banded in 75 net hours on September 30, 1966. Another good day was on October 9, 1965 when I was there alone and banded 81 Blackpolls.

There was a very good article on the "Autumn Migration of the Blackpoll Warbler" in the July 1970 issue of Bird-Banding by Ian C. T. Nisbet. (Exact title: "Autumn Migration of the Blackpoll Warbler: Evidence for Long Flight Provided by Regional Survey" - Bird-Banding 41(3): 207-240. Ed.) In this article, Nisbet has collected an enormous amount of data and given a fine analysis of where he thinks the Blackpoll goes during its fall migration. I feel, however, that Nisbet has not taken into full account what we see at our mountain top banding station. Nisbet mentioned several times about the apparent scarcity of Blackpolls in the southeastern states. This may actually be the case down there as he used data from many sources, including banding and sight records, tower kills, etc. If banding data were used as the criteria at the Red Creek Campground in 1961, the Blackpoll would be considered anything but common (only 3 banded), when actually, literarily thousands were going over - all going in a southwesterly direction.

Nisbet indicates that Blackpolls should be going east-southeast across northeastern United States but what we see in West Virginia suggests that at least a sizeable population is migrating southwest through the Appalachian Mountains. How far they travel southwestward before turning southeast is still a big question (if this theory is correct). It is possible they follow the Appalachians until the terminus in northern Georgia is reached and then take off in one final big jump to their wintering grounds in northern South America.

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