

BIRD AND INSECT MIGRATION AT THE RED CREEK
OPERATION RECOVERY STATION
by Ralph K. Bell

On Sept. 13, 1968, while at our Operation Recovery Station at Red Creek Campground on top of the Allegheny Front Mts. in West Virginia, Cora Williams and I had quite a memorable day. As for numbers of migrating birds, this turned out to be one of those days that every bander dreams about but after it arrives, he is not quite sure it is what he really wants. It is nice to see and experience, but the work involved is tremendous.

Immediately after removing the thrushes that get in the nets at first light, all but 4 nets were furled as all indications pointed to a big day and we did not expect any additional help. The early captures were processed as fast as possible and then exactly 19 minutes after sunrise, the first warblers were noted coming up the ravine and the deluge was on. Cora tried to keep the birds cleared out of net 1. south, while I worked on the other 3 nets. While the wind was not very strong out of the southwest (never over 15 mph) and most of the birds flew over the nets, we had all cages and many paper bags filled by 10 a.m. and were forced to furl every net.

While Cora said this was the best migration she had ever witnessed, I believe George Hall had experienced a bigger day (along) on the Saturday before (Sept. 7) when he counted 60 birds in net 1. south at one time. By 1 p.m. Cora and I had finished banding, measuring and checking each captured bird for age and fat. We were opening the nets again when Cora said "look at all those flies coming up the ravine". At first I thought they were Yellow-jackets (because of coloration and size), but upon a closer look noted that they were flies. Butterflies and dragonflies had been observed going through this pass for many years but this was the first real indication that perhaps some flies may also migrate along the the same path. A few were captured and later given to Dr. Eugene Hutton of Elkins, W. Va. and Dr. Russell Williams of Waynesburg College. They have both been kind enough to inform me that the fly belongs to the syrphidae family and its scientific name is Syrphus Americanus (Wiedemann). The common name is the "Common Flower Fly" and is listed as abundant from the middle of May to the middle of Sept. by C. L. Metcalf (1913) - The Syrphidae of Ohio, Ohio Biological Survey, Bulletin # 1.

The flies were swarming up that ravine and going through and over the nets - all going the same path as the migrating birds. Since there were so many going by, I decided to try and estimate their number. By lying on my back and looking straight up (and cutting my field of vision down to about 4 feet wide with both hands) I counted 100 going over in 35 seconds. Since the area covered by those flies coming up the ravine was at least 100 times that wide, it would indicate that at least 17,000 were passing through every minute - or over a million per hour. This was probably a conservative estimate, and it lasted until 5 p.m. before there was any noticeable dropping off in numbers. When it started would be pure

speculation as we were too busy banding birds to notice. We did not see any of the flies the day before (although they could have been there), but there were none the following day as we made it a special point to look for them.

It seems inconceivable that the flies would all go through on their southward journey in one day. This is really food for thought. Since both the birds and flies went through in large numbers on the same day perhaps there is a clue here. I have always felt the answer as to why there is an excellent migration of song birds through this dip in the mountains would be quite simple and I believe the migrating flies have given the answer. They have simply flown below the rim of the mountain to keep out of the wind and had come up through our netting area to keep on the southwest course (because the mountain ridge turns south-eastward for some distance south of our nets). The wind was practically calm the day following the migration, therefore the flies could go through on a broad front high in the air (in the direction desired) and were not concentrated below the rim of the mountain.

Tremendous flights of thrushes have been heard going over at first light of day on calm mornings and no doubt these flights are on a very broad front. Usually, on calm mornings we catch only a few Swainson's Thrushes but things can be quite different on mornings with a heavy westerly wind. For example, on the clear and calm morning of Sept. 18, 1966, a great flight of thrushes were heard going over and only 30 were caught in the nets. On Sept. 24, 1966 it was clear but the wind was out of the WNW at 25-30 mph. and we captured and banded 118 Swainson's Thrushes. Again on Sept. 30, 1966, with wind gusting up to 45 mph. we caught 82 more Swainson's Thrushes. Swainson's Thrushes are strong fliers and would even be less vulnerable to strong winds than either warblers or flies. Therefore it would now appear that the answer as to why we get great bird flights (and now flies) on fall days with hard westerly winds is because they are simply kept below the mountain top until they reach the gap and then come up through it to keep on their desired southwest course. On Calm days they simply fly high overhead on a broad front.

The above conclusions have been strengthened by an article sent me by EBBA member Lloyd Kiff. When Lloyd heard that insects had been observed migrating through our Red Creek Campground banding area, he became quite interested and sent me an article taken from the Journal of Animal Ecology (1952) pages 63-67 inclusive. It was written by David and Elizabeth Lack and titled "Migration of Insects and Birds through a Pyrenean Pass." Since this article is pertinent to what we had seen taking place at our Red Creek O R Station, I would like to quote some of their observations which are as follows (in part): "Once in a lifetime perhaps, the ecologist is translated back into a naturalist, through chancing on a spectacle which combines grandeur with novelty. Such was our fortune at the Port de Gavarnie on Oct. 13, 1950.

"The Port de Gavarnie is a narrow rocky pass, perhaps 50 yds. wide, in the mountains which divide France from Spain, at about 7,500 ft. above sea level in the high Pyrenees. October 13, was cloudless and sunny with a chill, fresh west wind. As we reached the divide at 11 a.m., a party of Goldfinches fluttered past and dropped down on the other side into Spain. We soon realized that both birds and insects of various kinds were passing through WSS on a considerable scale.

"Small passerine birds came through in a succession of small parties, mainly 5 to 15 individuals. Butterflies were also traveling steadily through in the same direction as the birds, the numbers gradually increasing 1100 and 1400 hours. At 1100 hr. dragonflies were passing through in numbers about double those of the butterflies, but after the first hour they became much more abundant, and at 1400 hr. they were in very large numbers indeed, at least 10 to every butterfly. Whenever we looked at right angles to the stream we could see at least six, and sometimes twenty, dragonflies in the air. They seemed to be passing at a rate of at least several thousand an hour, but they flew closer to the ground than did the butterflies and were very hard to see, so this may well have been an underestimate.

"Not until we had been at the pass for over an hour did we realize that another insect was migrating, so we do not know if it was passing from the start. This was a hoverfly, the two collected specimens being males of Episyrphus balteatus. All the other individuals looked the same, and we have no reason to think that any other species was present. The syrphid flies, like the dragonflies, flew steadily forward WSW against the wind, keeping extremely close to the ground, where the wind was, of course, weaker. Very occasionally one settled for a moment, but otherwise they traveled steadily onward. An estimate of numbers was impossible, but at a guess they were at least twenty times, and perhaps a hundred times, as numerous as the dragonflies. They were the most remarkable migrant of all".

In conclusion the Lacks' said that "In syrphid flies, there is no previous evidence for directed movements. This does not necessarily mean that they are rare. Most records of butterfly migration have come from inexperienced persons, usually not entomologists at all, and other kinds of insects are much less conspicuous than butterflies. If too, the migrations normally occur on a broad front, it might well need the concentration of a geographical barrier before, it would become at all obvious to the untrained eye. While, therefore, it would not be permissible to argue from one flight that syrphid flies make regular migrations, this possibility should certainly be kept in mind for the future".

Literature Cited:

Lack, David & Elizabeth (1950). Migration of Insects and Birds through a Pyrenean Pass. Journal of Animal Ecology, 1951 or 1952.