

## WINTER FLIGHT OF 1963-1964\*

Band No.	Sex	Banded	Recovered	At	How
52-195541	M	06-21-62	10-30-63	Cedar Grove, Wis.	Trapped and released
549	M	06-22-62	12-??-63	Luray, Va.	Shot
573	F	06-22-62	03-17-64	Terra Alta, W. Va.	Caught in trap
648	M	06-23-62	12-15-53	Stevens Point, Wis.	Trapped and released

\*We are indebted to Mrs. Robert W. Patterson for one additional record which fits very neatly into this part of our story. This record involves male Evening Grosbeak No. 57-128591. Mrs. Patterson banded this bird at Mt. Desert, Me., on January 14, 1960. We trapped and released him, as a foreign retrap, at 39-Mile Camp, on June 18, 1962. Mrs. Patterson was notified by the Banding Laboratory that he has been trapped and released again, this time at Strasburg, Va., on April 3, 1964.—G. Hapgood Parks, 99 Warrenton Avenue, Hartford, Connecticut.

**Fat Levels and Estimated Flight-ranges of Some Autumn Migratory Birds Killed in Panama During a Nocturnal Rainstorm.**—During the pre-dawn hours on October 13, 1963, individuals of several species of birds collided with telephone poles and other obstructions in the town of Almirante, Republic of Panama. The event occurred during one of the heavy rains which are common in this area in the fall. Upon leaving my living quarters early in the morning, I observed children chasing birds and picking up others which were too weak to attempt any escape. In addition to live birds, there were numerous dead ones lying in the streets and yards. Several live specimens were sacrificed and kept in a freezer together with others which were picked up dead. These frozen specimens were brought back to the United States and put through a fat-extraction process to determine fat reserves as an indication of how far they could have flown had their migratory flights not been interrupted.

As can be seen from Table I, none of the birds had exhausted their fat reserves. It is clear that they were forced down by the rainstorm and either killed outright or injured to the extent that they were unable to fly again.

The existence energy requirement of passerine birds has been estimated to be 0.04 - 0.05 Kcal/gm of fat-free wt/hr. That flight energy may be roughly twice existence energy has been suggested by Odum (*Proc. XlIth Int. Orn. Cong.*, pp. 563-576, 1958) and substantiated by Nisbet, Drury and Baird (*Bird-Banding* **34**: 107-157, 1963). According to the latter authors weight losses during flight between New England and Bermuda indicate an energy expenditure of 0.1 Kcal/hr/gm fat-free weight. Estimated flight-ranges listed in Table I are based on this value and on the following assumptions: (1) the flight speed of passerines is approximately 30 knots (Nisbet *et al.*, 1963) (2) the caloric value of fat is 9 Kcal/gm and (3) approximately one gram of fat in thrush-sized birds and one-half gram in warblers is unavailable as fuel. Extractions of extremely thin birds shows that about this much ether-soluble material is present as part of tissues and, therefore, unavailable as fuel except as a last resort when tissues themselves are burned.

When the specimens were collected, they were slightly damp resulting in a slight overestimate of the fat-free weight (and, therefore, lowering the value of the estimated flight range). However, on the basis of previous extractions of dickcissels, tanagers, vireos and Swainson's thrushes, the fat-free weights of all specimens mentioned here were within two standard deviations of the established means for the particular species.

It is evident that many of the birds killed in the October 13 rainstorm in Panama could have continued their flight well into South America in so far as fuel reserves are concerned. However, mean fat levels of the Panama birds were less than half that of thrushes and tanagers killed at a Gulf Coast Television Tower in early October. For example, 29 Scarlet Tanagers (*Piranga olivacea*), 44 Summer Tanagers (*Piranga rubra*), and 101 Veeries (*Hylocichla fuscescens*) killed on nights of October 5, 1956 and October 5, 1957 averaged about 16.7 gms fat/bird (Odum, Connell and Stoddard, *Auk*, **78**: 515, 1961) as compared with about 7.4 gms/bird for the 14 thrushes and tanagers in Table I. The difference, or 9.3 gms (83.7 Kcals) is sufficient fuel for a 32 hour or 960 mile flight, not enough for a non-

stop flight between west Florida and Panama (1400 miles). It would seem likely that the flight of birds which met disaster in Panama originated to the north in Central America; perhaps these birds were on a second lap in a trip from the southeastern United States to South America.

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TABLE 1. WEIGHTS, EXTRACTED FAT AND ESTIMATED RANGE POTENTIAL OF 17 BIRDS KILLED IN A PRE-DAWN RAINSTORM IN PANAMA, OCTOBER 13, 1963.

Species	Wet wgt. gms	Fat wgt., gms			Estimated flight range miles <sup>2</sup>
		Total <sup>1</sup>	Estimated Available <sup>2</sup>	Fat-free wgt., gms	
<i>Hylocichla ustulata</i>	32.40	6.45	5.45	25.95	646
<i>Hylocichla ustulata</i>	32.86	9.60	8.60	23.26	1135
<i>Hylocichla ustulata</i>	34.20	8.27	7.27	25.93	864
<i>Hylocichla ustulata</i>	27.84	4.17	3.17	23.67	411
<i>Hylocichla ustulata</i>	39.01	11.49	10.49	27.52	1179
<i>Hylocichla ustulata</i>	28.74	6.29	5.29	22.45	724
<i>Hylocichla ustulata</i>	32.76	7.16	6.16	25.60	741
<i>Hylocichla ustulata</i>	31.04	5.84	4.84	25.20	591
<i>Hylocichla ustulata</i>	36.30	8.26	7.26	28.04	796
<i>Hylocichla ustulata</i>	34.11	6.35	5.35	27.76	593
<i>Hylocichla ustulata</i>	35.29	6.18	5.18	29.11	547
<i>Hylocichla ustulata</i>	37.60	7.90	6.90	29.70	715
<i>Vireo olivaceus</i>	16.36	2.37	1.87	13.99	412
<i>Piranga olivacea</i>	35.53	10.15	9.15	25.38	1109
<i>Piranga rubra</i>	31.81	5.73	4.73	26.08	558
<i>Spiza americana</i>	24.36	4.44	3.44	19.95	529
<i>Dendroica fusca</i>	9.41	1.87	1.37	7.54	562

<sup>1</sup>Dry weight of extract fat

<sup>2</sup>See text

**Band Recovered from Owl Pellet.**—In 1947 (*Bird-Banding*, 18: 129), I reported the recovery of two bands used on Black-capped Chickadees (*Parus atricapillus*), from the pellet of a Screech Owl (*Otus asio*) which had been using a nest-box in our yard as a winter roost. There have been several subsequent reports in *Bird-Banding* of bands recovered under similar circumstances (Berger, 24: 19; Nichols, 24: 110; Root, 24: 110), and I am now able to add another.

Early in November 1964, Mrs. George H. Hart, Wayland, Mass., reported to me the discovery of a roost of Long-eared Owls (*Asio otus*) in a pine grove near her home. On 28 December, 1964, she collected a quantity of pellets for examination and found a band (743-86630) still encircling a bird's leg bone. As the number sounded familiar to me, I checked my banding records and discovered that it had been used on 4 July 1964 to band a local young Blue Jay (*Cyanocitta cristata*) at my home station. The recovery location in Wayland is about two and one-half miles, airline, west-southwest of the banding location in Weston.—Charlotte E. Smith, 75 Westland Road, Weston, Mass.

**Mist-Netting Saw-Whet Owls.**—I began mist-netting birds during the summer of 1957. At first I used only one net and took it down before dark. During 1958, I placed it in the front yard of our summer home on Scenic Drive, about one mile north of Muskegon State Park, Laketon Township, Muskegon County, Michigan. I found that when I put up the net or nets in the morning I was often frightening birds from the area. Thus I began putting the nets up before dark. I always examined the nets at night after dark and just prior to daybreak in the morning. For several months they caught nothing at night. Then I caught an occasional