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GENERAL NOTES

**Preliminary Notes on a Six-Year Study of Rose-breasted Grosbeak Plumages.**—For the past six summers (1960 through 1965) I have color-banded the rose-breasted grosbeaks (*Pheucticus ludovicianus*) coming to my feeder in Weston, Massachusetts, and to another about one-half mile away. Following is a summary of the birds banded:

	<i>Males</i>	<i>Females</i>	<i>Total</i>
1960	2	1	3
1961	10	9	19
1962	4	0	4
1963	7	4	11
1964	4	6	10
1965	7	6	13
	34	26	60

These were all adult birds. I have made no attempt to band birds of the year, wishing to concentrate my available time on banding every adult visiting my station—so far with 100 percent success.

Of the 27 males banded through 1964, 33 1/3 percent returned in 1965 (1 from 1960, 3 from 1961, 0 from 1962, 2 from 1963, and 3 from 1964); of the 20 females banded through 1964, only 10 percent returned in 1965 (1 from 1963, and 1 from 1964). This is the smallest number of return females so far in this study. In 1964 six returned from previous years (4 from 1961 and 2 from 1963). I have had but one foreign recovery—a female banded in 1959 by C. J. Paine, Weston, Mass., which has appeared from 1963 through 1965.

I have used Parker Reed single-cell traps almost exclusively, hung about seven feet above the ground from high tree limbs. The traps are used as feeders when no banding is being done—the door held open by a snap clothespin. I have used plastic bands (12 colors), putting a single color on each bird in different combina-

tions with the regulation aluminum band to identify individuals. The use of only one color band on each bird has made it easy for my neighbors to report accurately their sightings.

From 1960 through 1963, I made rough sketches of individual male plumages, noting size, shape, and depth of color of the rose bib; if in subadult plumage, whether brown rectrices and remiges had been partially replaced with black at time of banding; notes on other details such as color of rump, flecking or buffy wash on breast and flanks, brown-edged feathers in body plumage, etc. In 1963 I acquired a Kodak Startech camera for taking close-up photographs (4 inches), and in the past three years have taken Kodacolor pictures of each bird banded—both male and female. All birds banded in 1964 and 1965 were weighed on a spring balance, and wing lengths recorded.

A careful search of the literature has disclosed only one report of color bands being used on rose-breasted grosbeaks. I do know of two banders in particular—the late Ada C. Govan of Lexington, Mass., and Elizabeth H. Downs of South Londonderry, Vt.—who have banded large numbers of grosbeaks, but as far as I know they have done no color banding. The color banding referred to above was done by Charles L. and Helen G. Whittles in the 1920's and 1930's, and I find six General Notes in *Bird-Banding* regarding their studies.

It is well known (Dwight, 1900; Forbush, 1929, Roberts, 1955) that there is great individual variation in the plumage of male rose-breasted grosbeaks, but very little in the female plumage. Until one studies individual males closely, it is hard to realize just how great is this variation. With attention to every detail, I have found it possible to identify, without noting the color band, almost every male which comes to my feeder and, surprisingly, a fair number of the females as well. Whittles (1940) mentions particularly the variation in the males' white wing patches, although I did not find this as useful as the depth of color and size and shape of the bib. One male banded as a full adult in 1960 (and still returning in 1965 at the age of at least seven years), I can recognize instantly by the deep ruby color and large size of the bib.

Whittles (1929) says: "Jonathan Dwight refers to the extraordinary individual variation in the plumage of the male of this species. The variation in a number of individuals, if studied in the light of a knowledge of the bird's age, might be found to be based on a law of sequence. Banders who are fortunate enough to take this species in juvenal plumage, with a good succession of returns, have an unusual opportunity to note plumage changes in great detail—an opportunity not possessed by ornithologists studying collections."

I have been fortunate enough to follow for several years a few males which were banded as subadults, and to note their plumages in each successive year. From my experience so far, I can only say that there is just as much individual variation in the *time* required to attain full adult plumage as there is in the individual variations themselves.

Forbush (1929) says: "It seems possible that some birds may not acquire highest plumage until the third year or even later." To bear this out, perhaps the following observations of a male banded as a subadult on 2 July 1961 and returning every year since (through 1965) may be of interest:

- 1961 First seen 27 June; banded 2 July. In first nuptial (subadult) plumage. Pale pink bib; bright pink axillars; much brown flecking on sides and breast; white striping on head noticeable; brown remiges, and brown rectrices except two central tail feathers black.
- 1962 First seen 20 June. Black wings and tail; pale pink bib with brown flecks; much flecking on breast and sides; buffy wash on flanks; traces of brown and white on head; rump brownish.
- 1963 First seen 11 May. Bib still pale pink, flecked with black; black flecks on sides very noticeable; body plumage mostly black. (I did not make as detailed notes as usual because bird was photographed on 26 June. Unfortunately, this picture was not successful).
- 1964 First seen 10 May. Still not in high plumage; pale pink bib flecked with black; black flecks on breast and sides; buffy wash on sides; some back feathers edged with brown, white head stripes very noticeable and much brown on head. Three photos taken on 7 June.

- 1965 First seen 15 May. All body feathers black; bib much brighter than in previous years; very little flecking on breast, but heavy black flecks on sides and flanks, with some buffy wash; rump gray. Photographed 30 May. This bird is now five years old.  
The bib has retained the same general shape and size throughout the period—quite narrow below the black throat, with a long, thin “tail”.

I can find nothing in the literature regarding age differences in female plumages (i.e., subadult and adult), although birds of the year are, of course, identifiable. I have not observed female plumages as closely as male plumages, but I have noted differences in shades of brown, marked differences in amount and intensity of breast streaks, variations in amount of buff or yellow on upper breast (some are almost pure white), and the color of the axillars which varies from yellow through salmon, with a mixture of both in some cases. I have no indication as yet that age of females can be determined by any of these plumage variations. Returns on females have been much lower than on males, so it has been impossible to get a good succession of plumages for the same bird. I might mention here that in 1964 I banded a partial albino female which appeared only once at my feeder, when it was trapped and photographed. I have three color photographs of this strikingly handsome bird.

I have also been able to take pictures of several males in various stages of postnuptial molt, and one in full winter plumage.

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**Reaction of the Starling (*Sturnus vulgaris*) to hard, fatty foods.**—Swarming to feeding stations during severe winter weather, Starlings often consume in minutes supplies that would last other birds many hours. This is particularly true if favored Starling foods are supplied. Fats, bakery products, and fruits are, as a rule, better received than seeds and grain. Sunflower seed are scarcely touched at all. A relatively weak-billed bird, the Starling is poorly equipped for pounding open objects. Its habit, therefore, seems to be mainly that of seeking out large supplies of easily obtainable food, and when these are exhausted, it moves on. With the exception of sunflower seed, most feeding station foods are well within the Starling's capacity to down quickly. No food is probably eaten with more relish or quicker than the various combinations of peanut butter, cornmeal, and suet so popular at feeders as an all-around bird food. However, with proper proportioning of each ingredient, the suet-cornmeal mix can be made so hard under cold weather conditions that it is almost impervious to Starling attack. Adding cornmeal and suet, or even finely cracked corn, at the expense of peanut butter, seems to make a harder combination that is resistant to Starlings but well within the capacity of other feeding station visitors. I found that a mixture composed of 1 part peanut butter, 2 parts melted beef suet, 4 parts finely cracked corn, and 4 parts white cornmeal greatly slowed Starling consumption in cold weather (Dennis, 1963a, 1963b). In a continuation of experiments with hard fatty foods, seven mixtures were tested between 16-22 January, 1965, a period of cold snowy weather