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# Notes on Waxy Appendages on Cedar Waxwings At an Ohio and a Florida Banding Station

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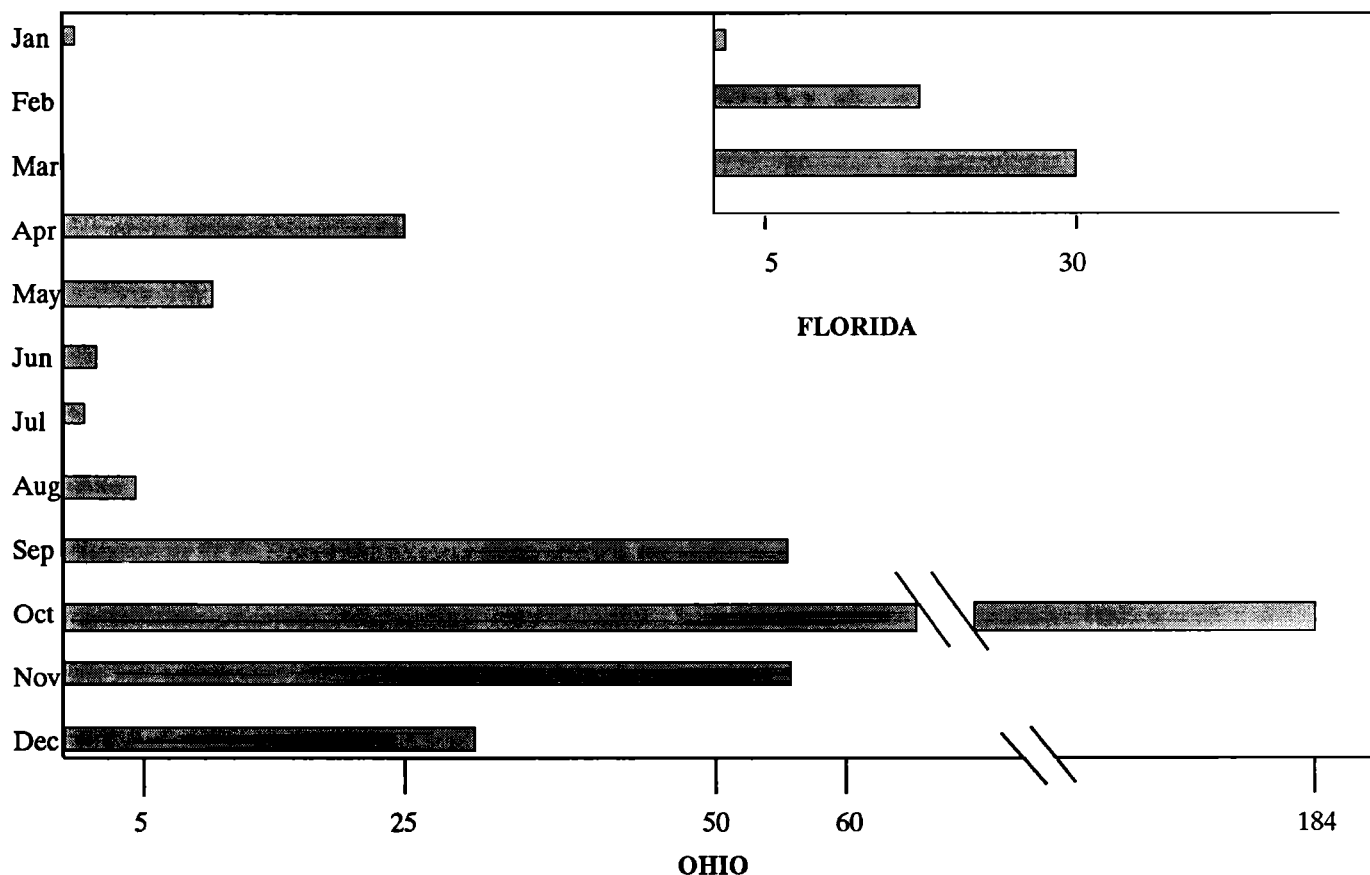
Cedar Waxwings (*Bombycilla cedrorum*) frequently have waxy appendages on their secondaries. We kept records of their number on birds handled at our banding station at Waite Hill in Lake County, Ohio, from 1971 through 1976 and at our banding station at Casey Key in Sarasota County, Florida, from 1978 through 1988.

The Ohio station was located at Lat.-Long. 413-0812 on a five-acre residential property about 15 miles from Cleveland and three miles from Lake Erie. It was operated almost daily, weather permitting, excepting January-March and June-July.

The Florida station is located at Lat.-Long. 270-0822 on a barrier island bounded on one side by the Gulf of Mexico and on the other by the Intracoastal Waterway, separating it from the mainland. This station is operated almost daily, weather permitting, excepting June-July.

All captures were made by using mist nets. All hatching-year (HY) birds were aged by the presence of striping on the breast; all second-year (SY) birds were aged by muddy-brown to reddish-brown eye color, in contrast to rich ruby-red eye color of after-hatching-year (AHY) birds; and AHY by their unstreaked plumage and chin-throat coloration (Wood, 1969; North American Bird Banding Manual, 1980).

Figure 1. Totals Of Captures By Month Of Capture



We were unable to collect data on the flocks of waxwings that appeared erratically during January, February, and March in Ohio, as the weather did not permit us to operate the mist nets. Flocks that ranged as high as 300/350, although the usual flock numbered from 25 to 60 birds, fed on the abun-

dant fruits which were available during the winter. Their favorite food was American Cranberry (*Viburnum opulus*) and they favored Barberry (*Berberis sp.*) as tender forage (flower-budding stage) in addition to the fruiting stage.

Table 1. Occurrence of Waxy Appendages on Both Wings.

<u>OHIO</u>																				
AGE	<u>Number of Birds Having the Following Count of Waxy Tips</u>																			
	None	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	18	Ttl.	
HY*	221	6	3	4	7	1	1			3		1	2		1				250	
%	88.4	2.4	1.2	1.6	2.8	0.4	0.4			1.2		0.4	0.8		0.4				100	
AHY	50	2	2	2	1		1	1	2	1	2		3		14	2	5	1	89	
%	56.2	2.2	2.2	2.2	1.1		1.1	1.1	2.2	1.1	2.2		3.4		15.7	2.2	5.6	1.1	**	
U	18											1							19	
%	94.7											5.3							100	
Tot.	289	8	5	6	8	1	2	1	2	4	2	2	5		15	2	5	1	358	
<u>FLORIDA</u>																				
SY	5														3	1		1	10	
%	50.0														30.0	10.0		10.0	100	
AHY	27	1	1				1							1	2	1	1	1	36	
%	75.0	2.8	2.8				2.8							2.8	5.6	2.8	2.8	2.8	**	
Tot.	32	1	1				1							1	5	2	1	2	46	

\*Count of waxy tips was not made on 6 HY birds in 1971.

\*\*Percentage does not total 100% because computations were not carried beyond the first decimal point.

Plumage variations were found in a small number of waxwings; five birds had orange tail bands in place of the normal yellow tail band (2 HY, 1 SY, 2 AHY); three birds carried red tips on their greater coverts (1 HY, 1 AHY, 1 U); two AHY birds carried red tips on one rectrix and one AHY bird had red tips on the two center rectrices. Yunick (1970) found one bird with waxy appendages on the tail in a series of 358 banded birds, and three birds with waxy tail appendages were found in 327 museum skins examined by him. We found one AHY waxwing that was arrayed with 17 waxy tips and, in addition, had small yellow spots on the outer edge of several primaries on both wings. One bird with yellow spots on the primaries near the tip was found in the museum specimens examined (327) and none was found in the 358 banded birds in the same study by Yunick (1970).

Loss of an appendage between captures was noted in two instances. One bird was banded on 28 September 1975 with one waxy appendage on a right and left secondary. When recaptured on 21 October 1975, only the left waxy tip re-

mained. The second bird was banded 2 October 1975 with two red tips on the right wing and when recaptured on 22 October 1975, only one tip remained. "This loss through the season was suggested in my 1970 data, but I never experienced direct evidence of it on an individual bird...." (Yunick, pers. corr.).

Only eight birds ever repeated at the nets throughout this entire time period, including the Florida coverage, and we did not have any returns beyond the 90-day period.

Studies made to determine the function of waxy appendages in the plumage of waxwings have been unable to arrive at a conclusive finding. As early as 1832, Alexander Wilson (cited by Bent, 1950) stated, "tips with small red oblong appendages...intended for preserving the ends, and consequently the vanes, of the quills, from being broken and worn away...feathers of those birds which are without these appendages are uniformly found ragged on the edges, but smooth and perfect in those on whom the marks are full and

numerous." However, this theory is not supported by present data. Examination of numerous live birds and museum skins showed no obvious relationship between tips and feather wear (Mountjoy and Robertson, 1988). Their studies also covered distribution of tips among sex and age classes. They found 65-77% of immature birds examined lacked waxy tips versus our finding of 86.9% lacking tips. Data gathered by Yunick (1970) on occurrences of waxy appendages in HY birds indicate that approximately 95% lack these tips.

We found 50% of the birds having waxy tips had an equal number of tips on each wing, while Mountjoy and Robertson (1988) "counted the number of tips on the secondaries of both wings for each individual and found most waxwings had an equal number on each wing, but there frequently were small asymmetries."

On review of our data (1971-1988), no function for the red waxy appendages is apparent to us.

We are greatly indebted to Robert P. Yunick for his comments and suggestions.

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