A POTENTIALLY HARMFUL EFFECT OF SUET ON WOODPECKERS

By Jerome A. Jackson and Ernest E. Hoover

Many birdwatchers put out beef suet to attract woodpeckers and other birds to backyard feeders. Usually such feeders are kept stocked only in the winter, but occasionally an enthusiast will make suet available to the birds all year. Suet is kept in feeders at our banding stations in Burlington, Des Moines County, Iowa (Jackson) and Englewright Lake, Newago County, Michigan (Hoover) to facilitate trapping woodpeckers throughout the year. All woodpeckers trapped at these stations have been captured because they came to suet feeders. In the course of our studies we have encountered several Downy and Hairy woodpeckers (*Dendrocopos pubescens* and *D. villosus*) with bare facial areas (Fig. 1, Table 1). We believe this loss of feathers is related to the birds' feeding on suet extensively during warm weather because their remaining head and breast feathers were matted with suet.

The restriction of bare facial areas to Downy Woodpeckers in Iowa and Downy and Hairy woodpeckers in Michigan (Table 1) is likely an artifact of our trapping success. Jackson encountered (captured or recaptured) 155 (68♂, 87♀) Downies between September 1968 and June 1974 and fewer than 15 of any one other woodpecker species. Hoover encountered 153 Downies (65♂, 88♀) and 62 Hairies (29♂, 33♀) between July 1968 and June 1974 and fewer than 30 of any one other woodpecker species.

With one exception the bare-faced woodpeckers were captured in May, June, or July and all but two were female birds. All were adults. The time of occurrence of bare facial areas may be related to the coincidence of warm weather and nesting. Active nests of Downy and Hairy woodpeckers can be found during May-July in Iowa and Michigan. Jackson (1970b) found that the greatest use of suet feeders by Downy Woodpeckers in Iowa occurred during May. This may be due to the increased energy demands of nesting birds and the ready availability of a food resource. Increased use of suet also occurs during the winter (Jackson, 1970b) when food supplies are presumably more limited. The important difference between these times of peak suet use is the difference in seasonal temperatures. Beef suet begins to melt above 21°C (Rombauer and Becker, 1964) and thus during late spring and summer the birds' feathers are more likely to become saturated with the melted fat.

This loss of feathers in the facial area could be an unusual manifestation of the postnuptial molt that begins in late July in these species in Iowa and Michigan. If this were the case, however, the condition should also be found in populations that do not have continual access to suet. During the months of May, June, and July, Jackson has captured 34 Downies and numerous other woodpeckers in areas where the birds do not have access to suet. None of these birds had bare faces. In addition, Jackson examined over 5,000 specimens of each species from throughout their ranges and recorded no specimen in this condition.

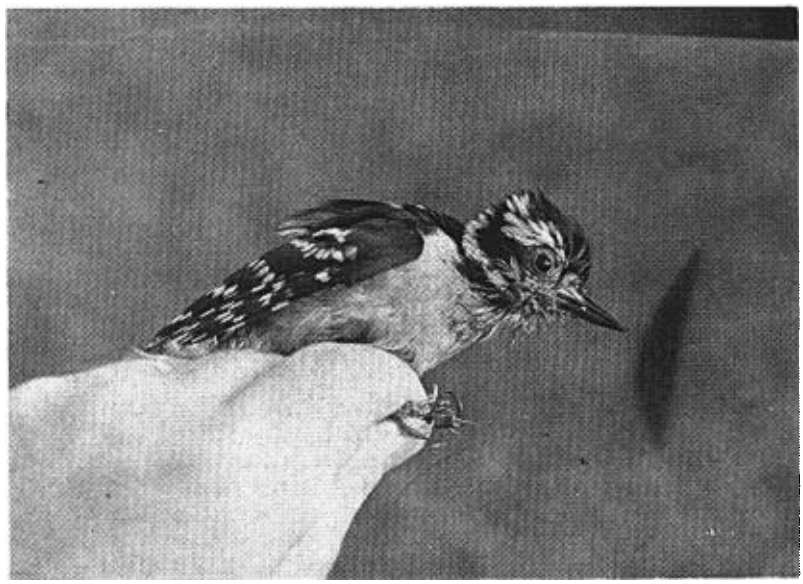

FIGURE 1. A female Downy Woodpecker captured at a suet feeder in Iowa. Her ocular and loral feathers are missing and the remaining feathers on her face and upper breast are saturated with melted suet.

The greater incidence of this bare-faced condition among females may reflect a tighter energy budget (thus a greater need for depending on the suet) resulting from (1) their assumption of a greater share of the duties of caring for the young, and/or (2) from differences in the relative availability of natural food for the sexes. The first hypothesis apparently is not true for Downies because males feed young more frequently than do females (Thoms, 1927; Staebler, 1949; Dommasch, 1964). Staebler (1949) and Kilham (1968) report that female Hairies, on the other hand, do assume a greater share of the duties of raising young. The second hypothesis is plausible because sexual differences in foraging behavior are known for both species (Kilham, 1965; Jackson, 1970a; Kisiel, 1972). Regardless of the reason, in Iowa and Michigan, female Downies make significantly more use of the suet during the year than do male Downies (Jackson 1970b; Hoover, personal observation).

Except for the loss of feathers, most birds showed no ill effect from the suet. Those bare-faced birds that were weighed did not differ significantly in weight from normal birds. We must ask the question, however, why suet might cause the loss of feathers. Did the suet somehow merely hasten the onset and disrupt the sequence of the postnuptial molt in the facial area? On the contrary, our observation of one bird with visibly inflamed feather follicles suggests that the loss of feathers may be due to infection. Such an infection likely makes the bird "less fit" and it is easy to visualize

TABLE 1.

Capture dates and plumage condition of Downy and Hairy woodpeckers with bare facial areas.

Band number	Sex	Location	Capture date	Plumage condition
Downy Woodpeckers				
107 021041	♀	Ia.	13 June 1968	bare around eyes and on lower cheeks
			28 Nov. 1969	normal
107 021086	♀	Ia.	8 Aug. 1970	normal, molting
			21 Dec. 1970	normal
			22 July 1971	bare around eyes and lores, breast feathers matted with suet
			21 Aug. 1972	normal
113 104850	♀	Ia.	30 July 1973	normal
			30, 31 May; 4 June 1974	bare around eyes and lores
108 171129	♂	Mich.	5 July 1971	bare around eyes
113 101211	♀	Mich.	16 June 1973	bare around eyes
108 171131	♀	Mich.	15 May 1971	normal
			6 June 1973	bare around eyes
113 101210	♀	Mich.	10 June 1973	normal
			16 June 1974	bare around eyes
Hairy Woodpeckers				
742 20306	♀	Mich.	15 Aug. 1968	normal
			6, 13 June 1970	lores, forehead and throat bare
			23 Aug. 1970	normal
			23 Nov. 1970	normal
			31 May 1971	normal
			19 June 1971	lores, forehead, and throat bare
742 20306	♀	Mich.	5 July 1971	lores, forehead, and throat bare
			23 Aug. 1971	normal
			29 Apr. 1973	normal
			14 July 1973	lores, forehead, and throat bare
			23 Dec. 1973	normal
			2 June 1974	lores, forehead, and throat bare
742 20322	♀	Mich.	21 June 1969	bare around eyes, lower forehead, and throat
742 20339	♀	Mich.	4 July 1970	normal
			16 June 1973	bare around eyes
742 20386	♂	Mich.	22 June 1972	normal
			24 June 1973	bare around eyes and throat

in a species that continues to use a food source like suet, selection for individuals with genetically bare faces and no feather follicles to become infected. Thus, we may have before us a latter day parallel to the sequence of events that led to the evolution of baldness in vultures and bare faces in some parrots.

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LITERATURE CITED

DOMMASCH, H. S. 1964. Photographing the Downy Woodpecker. *Blue Jay,* **22:** 101-105.

JACKSON, J. A. 1970a. A quantitative study of the foraging ecology of Downy Woodpeckers. *Ecology,* **51:** 318-323.

———1970b. Some aspects of the population ecology of Downy Woodpeckers in relation to a feeding station. *Iowa Bird Life,* **40:** 27-34.

KILHAM, L. 1965. Differences in feeding behavior of male and female Hairy Woodpeckers. *Wilson Bull.,* **77:** 134-145.

———1968. Reproductive behavior of Hairy Woodpeckers. II. Nesting and habitat. *Wilson Bull.,* **80:** 286-305.

KISIEL, D. S. 1972. Foraging behavior of *Dendrocopos villosus* and *D. pubescens* in eastern New York state. *Condor,* **74:** 393-398.

ROMBAUER, I. S., AND M. R. BECKER. 1964. Joy of cooking. Indianapolis, Bobbs-Merrill Co., Inc.

STAEBLER, A. E. 1949. A comparative life history study of the Downy and Hairy woodpeckers (*Dendrocopos pubescens* and *Dendrocopos villosus*). Ph.D. dissertation, U. Mich., Ann Arbor.

THOMS, C. S. 1927. A close-up of downy. *Bird-Lore,* **29:** 417-419.

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