A METHOD FOR AGING FEMALE AMERICAN GOLDFINCHES

By JANE C. OLYPHANT

In twelve years, I have banded 2,054 American Goldfinches (*Spinus tristis*) at my station in St. Paul, Minnesota. Serious study of age related plumage characteristics was begun in January 1967; since then I have examined over 1,500 goldfinches. During most of the year it is possible to age correctly the male goldfinch by wing pattern, thanks to the works of Roberts (1949), Bent (1968), Bergstrom (1964), Wood (1969), Parks and Parks (1968), and Mrs. Eleanor Dater (unpublished data).

The purpose of my paper is to present evidence that it is also possible to age female American Goldfinches by wing pattern. Using my system, banders can separate females in first winter and first nuptial plumages from females in adult winter and adult nuptial plumages (terms from Dwight; comparable plumages from Humphrey-Parkes (1959) are first basic, first alternate, basic, and alternate).

Since January 1967, I have noted wing patterns and foot color of all male and female goldfinches banded. Because of the distinct differences in wing pattern and color between young and adult male goldfinches, I have attempted to correlate male and female wing patterns in order to allow aging of females. Although my notes were started in January 1967, it was in December 1967 when I noticed that all first-winter males and some females had white "spots" at the base of the outer vane of some of the primaries. This characteristic has not, to my knowledge, been previously recorded in the literature. First-winter males are known to differ distinctively from older males in color of the lesser coverts and in having generally duller wing color; additionally I have observed that they possess these white wing "spots" which seemed to be totally lacking on all adult winter-plumaged males and some females that I handled during the winter of 1967-1968.

The conspicuous sexual and seasonal differences in body plumage of goldfinches are well known, adequately described in the literature, and ignored in this paper. They are not especially helpful in determining age.

Since the white wing "spots" were observed only on male goldfinches which could otherwise be identified as first-winter birds, it appeared possible that those females that possessed these "spots" might also be in their first winter plumage. As a confirmation, all females which were captured from early November to the middle of February in the winters of 1969-1970 and 1970-1971 were "skulled"; those without white wing "spots" proved to be adult winter birds; those with white "spots" showed incomplete ossification and therefore were first winter females.

Because white wing "spots" have not been previously noted in males and because this observation prompted the study of aging female goldfinches, the wing pattern and color of male goldfinches will be reviewed first.

WING PATTERN AND COLOR IN MALE GOLDFINCHES

The age classes of male goldfinches differ as follows:

1. Males in adult winter plumage and adult nuptial plumage (Fig. 1).

(a) Wing color: velvety black, with some gloss.

(b) Color of lesser coverts: bright yellow.

(c) Color of greater covert wing-bar: broad white with buff wash in winter (November-early March). Buff wash fades or wears off in spring (late March-mid-May) and wing bar becomes broad white. White becomes narrow with wear in summer, so that by late August and early September, the white has nearly or completely disappeared.

(d) There are no white "spots" on outer vane of *base of* primaries. On a very few individuals sometimes a trace of white appears on one or two primaries.

(e) Alula and tips of primary coverts are black.

(f) Feet are pink or pinkish the entire year.

2. Males in first winter plumage and first nuptial plumage (Fig. 2).

(a) Wing color: dull black with no gloss.

(b) Color of lesser coverts: pale lemon yellow, pale greenish yellow, buff, maize (almost burnished gold). Usually all color combinations have scaled appearance due to tiny blackish tips on lesser coverts.

(c) Color of greater and middle covert wing-bars: broad rich buff in late fall and early winter, buff wearing or fading slowly from January through May to produce broad white wing-bars. White wing-bars become narrower through wear as summer progresses so that by the end of August they are ragged and on many individuals pencil-thin or lacking.

(d) White "spots" occur on outer vane at base of primaries: on as many as seven primaries, rarely eight, but more commonly four or five (some individuals, as few as two). When the wing is closed, all "spots" show up as one large white "spot" behind the primary coverts and below the greater covert wing bar. Some of the white "spots" may extend half way down the primary (nos. 5, 6, or 7), but generally they are much smaller. The first eight primaries are also edged on the outer vane with white or buffy white. The ninth primary is plain except for the narrow buffy white tip.

(e) Alula and primary coverts are usually tipped distinctly with buffy white or gray. Sometimes only the primary coverts are tipped and sometimes, only the alula.

(f) Feet are dark dusky in late fall, winter, and spring, and turn pink in late spring remaining that color through the summer.

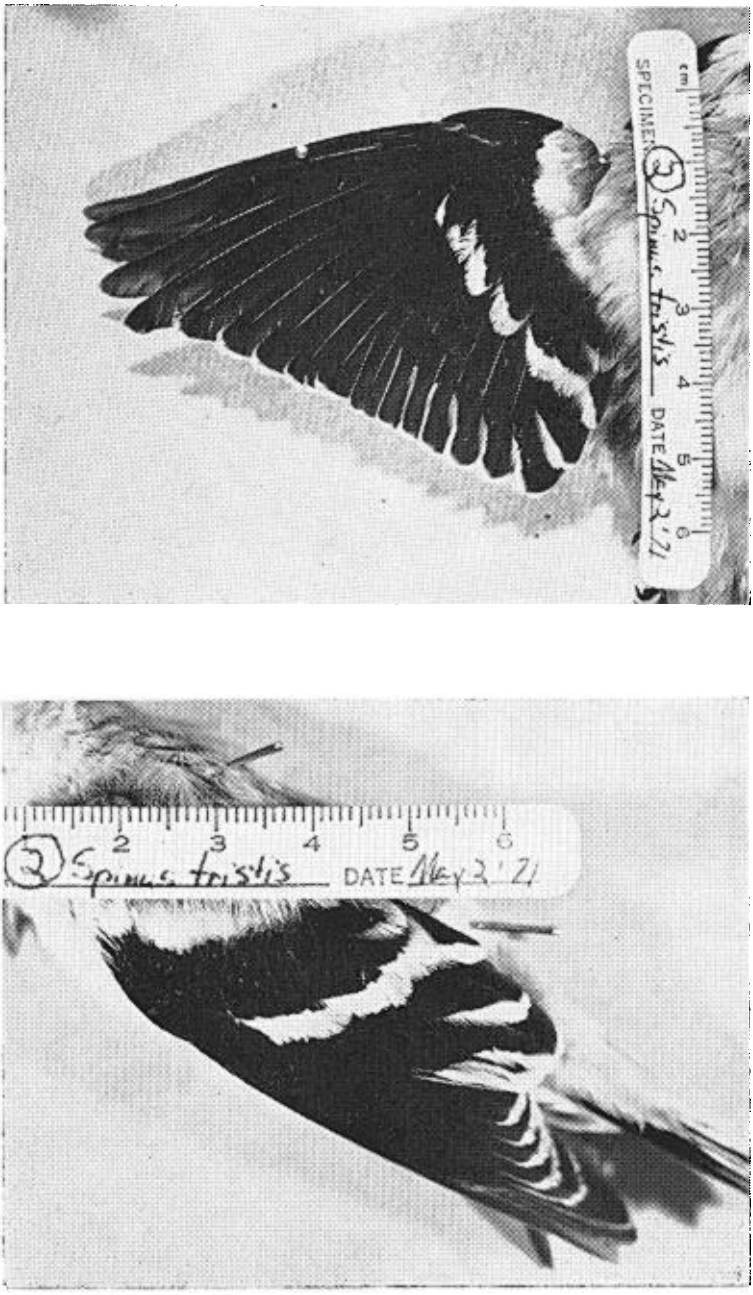

FIGURE 1. Wings of males in adult nuptial plumage in spring.

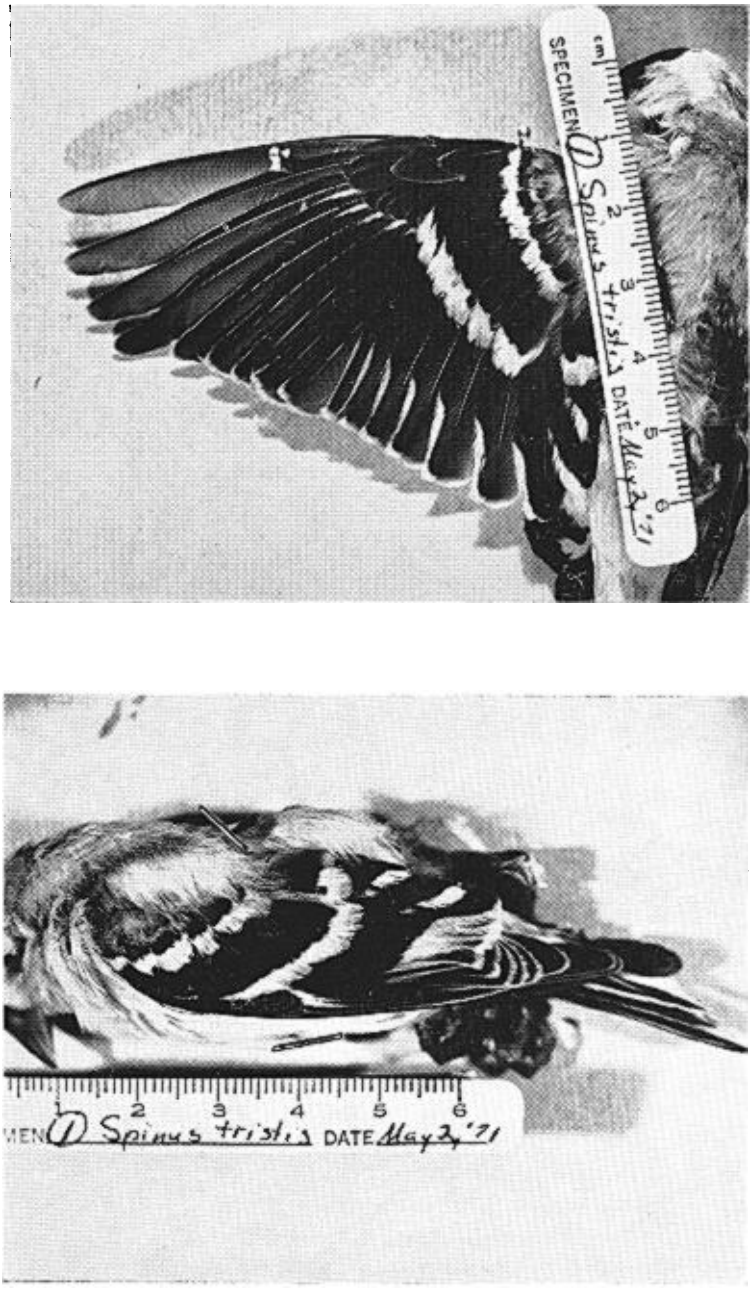

FIGURE 2. Wings of males in first nuptial plumage in spring.

WING PATTERN AND COLOR IN FEMALE GOLDFINCHES

The age classes of female goldfinches differ as follows:

1. Females in adult winter plumage and adult nuptial plumage (Fig. 3).

(a) Wing color: blackish, scorched blackish, dull charcoal gray-black.

(b) Color of lesser coverts: olive green, olive greenish-yellow, olive brown, olive gray. Many of the color combinations have scaled appearance due to tiny blackish tips on lesser coverts.

(c) Color of greater and middle covert wing-bars: dull white washed with buff in November through January. After this period, disappearance of the buff, due to wear or fading, varies. Some individuals have some buff on both wing-bars until April. Some individuals have buff on only tips of greater coverts until April. But many adult females have lost the buff wash altogether by the middle of March. Without buffy tips, the wing-bars are a dull white, rather than the snowy bright white of the adult male's wing-bar. The wing-bars of the adult females tend to be fairly broad in the late fall and early winter, and become narrower with wear by March and April.

(d) No white "spots" occur on the outer vane at base of primaries. On a very few individuals a trace of white might be found on one or two primaries, these showing up as faint specks. All females of both age classes have the pencil-thin white or buffy white edges on the outer vane of the first eight primaries. The ninth primary is plain black on the outer vane, but the tip is buffy or whitish.

(e) The alula and primary covert tips are generally very narrow buffy or whitish.

(f) The feet are dusky in the late fall and winter, turning pink in mid-spring and remaining pink until at least September.

2. Females in first winter plumage and first nuptial plumage (Fig. 4).

(a) Wing color: blackish, scorched blackish, very dark brown; a few individuals in late spring seem lighter brown, possibly due to fading.

(b) Color of lesser coverts: dull olive green, olive brown, olive gray, or very dull goldish. Many of these color combinations have scaled appearance due to tiny blackish tips on lesser coverts.

(c) Color of middle and greater covert wing-bars: broad white with rich buff wash in November through January. By early March, the buff has worn off or faded on many individuals, thus leaving dull white wing-bars, but much variation exists. Some individuals have slight buff on wing-bars until late April or early May. In January the wing-bars are usually broad in width, becoming narrower during the spring months by wear. By late August the wing-bars become very narrow and frequently are ragged. At this

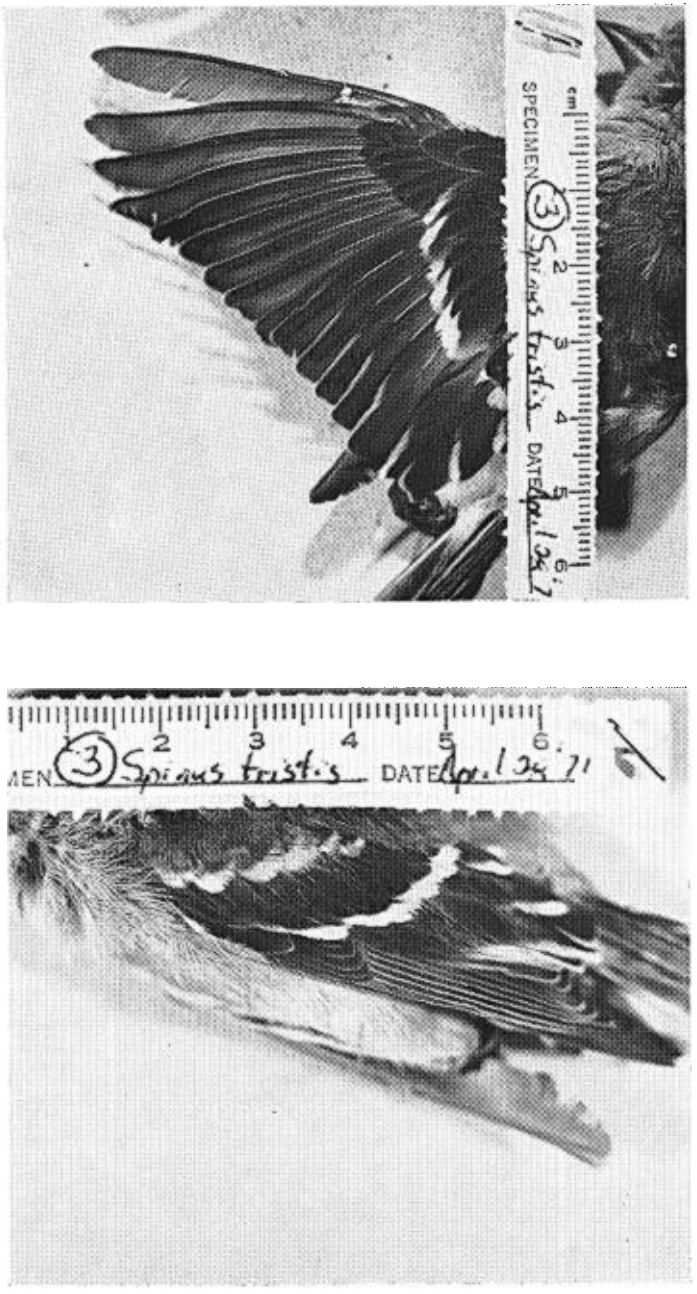

FIGURE 3. Wings of females in adult nuptial plumage in spring.

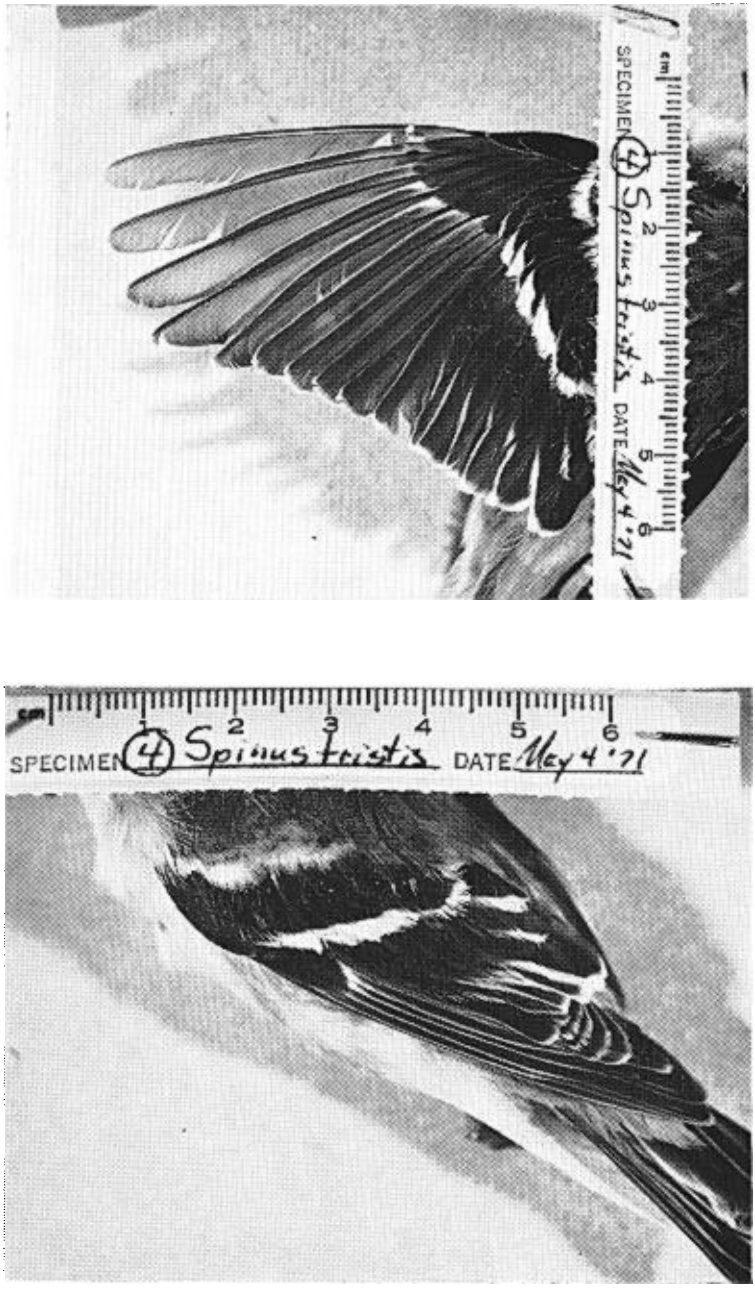

FIGURE 4. Wings of females in first nuptial plumage in spring.

time of year the greater coverts are worn to the point where the white tips have almost disappeared on some individuals.

(d) White "spots" are found on outer vane at the base of the primaries. As many as seven primaries may have these "spots," but more commonly three or four (some individuals have as few as two). These "spots" are seen plainly just below the primary coverts when the wing is spread in the hand. When the wing is closed, all "spots" show up as one large white "spot" just behind the primary coverts and below the greater covert wing-bar. The first eight primaries are also narrowly edged on the outer vane with dull white or buffy white. The ninth primary (outermost) is plain except for a whitish or buffy tip.

(e) The alula and primary coverts have narrow but distinct whitish or buffy tips. Sometimes only the alula feathers are tipped, and sometimes, only the primary coverts.

(f) The feet are a dark dusky color during the late fall, winter, and early spring. In middle or late spring, they become pink and retain that color through the summer and most of September.

SUMMARY

This paper describes age-related differences in wing color and pattern in female American Goldfinches that parallel differences in males and that permit differentiation of age classes in both sexes. The age classes can be identified by reference to the following key:

1. Wing color rich velvety black to dull black.....males...2

1A. Wing color scorched blackish, grayish black, or brownish .....females...3

2. Wings rich velvety black with gloss, lesser coverts bright yellow, no "spots" at base of outer vane of primaries.
   Males in adult winter and adult nuptial plumage.

2A. Wings dull black, lesser coverts greenish, or pale yellowish and scaled in appearance; white "spots" at base of primaries.
   Males in first winter and first nuptial plumage.

3. No white "spots" at base of primaries.
   Females in adult winter and adult nuptial plumage.

3A. White "spots" at base of primaries.
   Females in first winter and first nuptial plumage.

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