DORSAL WING COVERTS OF BLUE JAY (CYANOCITTA CRISTATA) GUIDE TO AGE

By Eleanor Dater

Early in 1965 I started taking notes on the dorsal wing plumage of the blue jay. My aim was to find a definite formula for determining age. I also hoped to find some means of determining their sex.

Method

All data came from live wild birds captured, banded and released in my back yard, 259 Grove St., Ramsey, N.J. In July 1966 I started recording my findings on 8½" x 11" sheets on which is a printed dorsal wing pattern with plenty of room for notes. See Fig. 1. In addition to wing data I recorded dorsal body molt, eye, tongue and bill color and chord of wing on every jay handled, new or return from before 1966.

This has given me the following material from which to work. From 1956 through 1965 I banded 1,350 jays, from which I have had 124 returns. There were no records on age at banding. From 1966 through 1969 I banded 1200 jays from which I have 241 returns. Of this latter group (1200) 70% to 75% were in juvenal and or first winter plumage when banded. Those juvenal birds taken from July 1 through October repeated several times a day over the four month period. From these data I found the sequence of the wing covert molt as noted below; the summer and winter population density around my station and some possible significant data on tongue and throat color relative to sex; also interesting material on jay migration.

There are four distinct plumages from fledgling to full adult bird: (1) fledgling or juvenal; (2) first winter or post juvenal which persists through 1st breeding; (3) first post nuptial molt which produces second winter plumage or second breeding plumage; (4) second post nuptial molt which produces the third winter and or final adult plumage.

I. Juvenal or fledgling plumage see fig. 2 or fledgling plumage. Head and body gray; nuchal band brownish gray black; bill light or white inside, darkens with age; tongue always pink which it retains at least until Feb. 1; all lesser coverts gray; all middle coverts gray; greater secondary coverts slightly brownish dull blue with white tips edged with tan. They are <u>unbarred</u>; greater primary coverts dull blue tan cast; alular feathers same color as greater primary coverts but sometimes show black dots or very faint bars in a few birds.

II. First Winter Plumage see fig. 3. The molt from juvenal into first winter plumage is gradual and may take 8 to 10 weeks from time of leaving nest. Depending on hatch date this molt may start as early as July 1 and as late as August 1. It starts at the bend of the wing with the gray lesser coverts and proceeds toward the body and middle coverts. It may take as long as three weeks, usually less, for all lesser coverts to molt from gray to blue.

The single row of gray middle coverts starts to molt proximally and proceeds distally. This process is arrested at about mid point and may not start again for several days. Proximal half will be blue, the distal half gray, which suggest the division is actually into middle secondary and middle primary coverts. The complete process may take as long as 6 weeks. These new blue feathers have narrow faint black bars.

Soon, usually about a week after all middle coverts have molted to blue, the greater secondary coverts start their molt proximally and proceed hit or miss toward feather No. 1. The new feathers are a brighter, stronger blue, barred with black and tipped with white. An early hatched bird will complete this molt by October 1, sometimes earlier.

Sometimes the molt of the greater secondary coverts is arrested at No. 7, leaving nos. 3, 2 and 1 in juvenal condition throughout the first breeding season. When this occurs to a bird hatched in my area, it is definitely a sign of a late hatched bird. I find this condition in fall migrants from farther north, perhaps Maine, Mass., or Conn. Some of these have only molted 2 or 3 of the greater secondary coverts. This is a significant point to remember and record.

The greater primary coverts do not molt the first summer. They are a dull blue with a brownish or tan tinge on inner web side and have no bars.

The alular feather similar in color to the greater primaries are not molted in the post juvenal molt. There should be no bars in the alular feather of the typical bird, but I have found a few with a faint line or dots of black.

It is well to mention here that there is also a dorsal body molt going on at the same time. The body molt usually starts simultaneously with that of the greater secondary coverts. It begins at the shoulder and proceeds down the back to include the upper tail coverts. During this time the two central tail feathers are molted. The two juvenal central tail feathers are usually pointed at the tip. The replacements are a brighter blue with stronger and wider black bars. The tip is

usually rounded. On rare occasions the first feathers either side of the two central tail feathers are molted.

The head is the last to molt. It starts at the bill, proceeds back to include the nuchal band which is actually the finale of the juvenal molt. This band is good black at completion; the head may be bright, light or gray blue.

By mid October the bird will cease to molt, regardless of hatch date.

III. The first post nuptial molt. See fig. #4.

The above plumage is retained throughout the first winter and nesting season. In late July or August the first post nuptial molt occurs. This is a complete molt. The details of order and timing are incomplete in my data. The completed molt leaves two significant changes in the wing coverts from the first winter plumage.

There is no change in the greater secondary coverts unless the bird had not molted all of its juvenal coverts during the post juvenal molt. In this first post nuptial molt the greater secondary coverts are molted from No. 1 towards No. 10. The coverts will be a bright strong blue barred with black and tipped with white.

The greater primary coverts will now have a strong blue; no tan as in the juvenal stage. There should be no black bars. Occasionally I have found birds with a faint suggestion of these bars.

The alular feathers are also a brighter blue and match the greater primaries. The distal or longest alular feather will have narrow black bars. The other two may be unmarked, or have faint bars. There is no hard and fast rule on this point. However, the brighter color of the greater primary coverts must be stressed. This plumage is retained throughout the second winter and nesting season. The remiges of course molt and they are also a darker stronger blue with no brownish cast.

IV. Second post nuptial molt, see fig. #5.

At the second post nuptial molt, which is also a complete molt, the bird acquires his full adult plumage which is: The lesser and middle coverts are blue: The middle coverts have narrow black bars as in the post juvenal molt. The greater secondary coverts have broad balck bars and the greater primary coverts have narrow black bars. The alular feather have black bars.

Conclusion: The age of a blue jay can be accurately determined in its first two years of life by taking note of the barring and coloring of all dorsal wing coverts.

A bird that has blue lesser and middle coverts, barred greater secondary and primary coverts, barred alular feathers, is at least 3 or 4 months into its third biological year of life. Example: a bird hatched in April of 1965 will attain full adult plumage by September 1967.

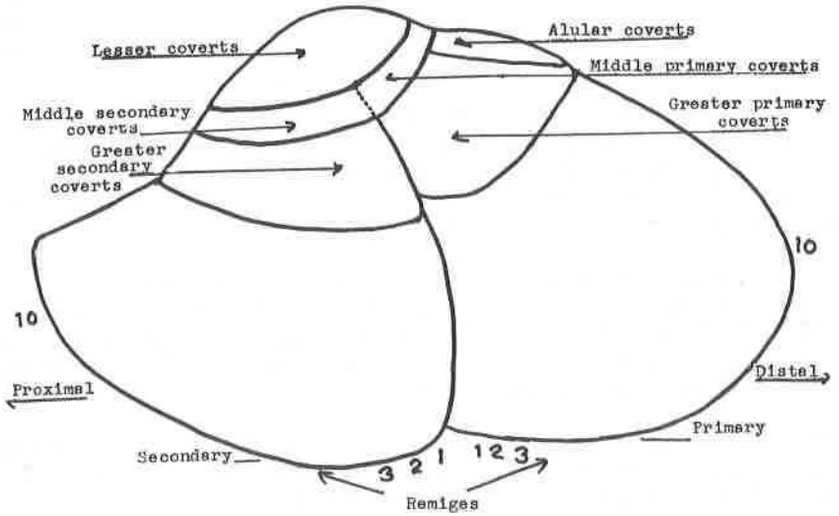

Fig. 1 Right Wing Map - Dorsal side

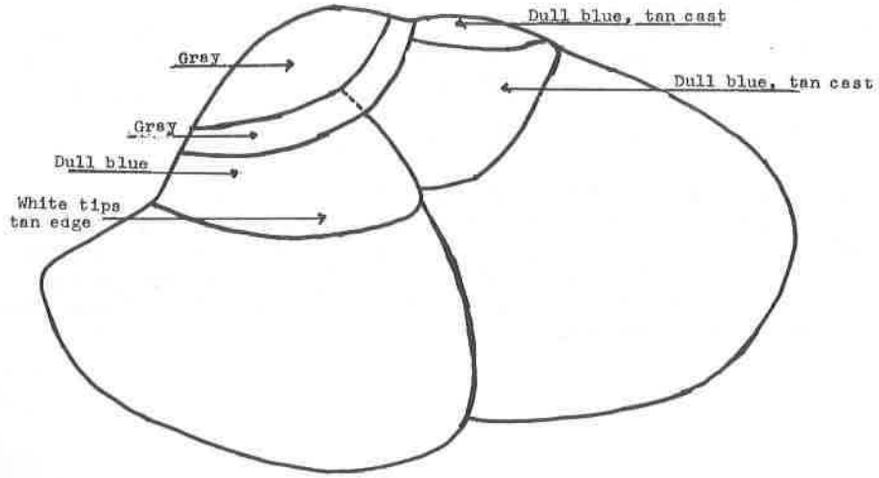

Fig. 2

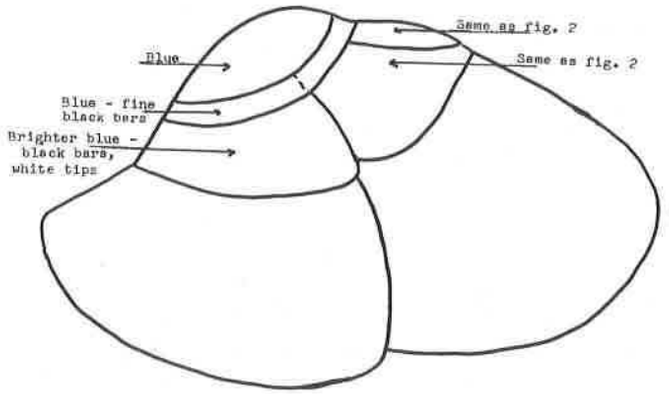

Fig. 3

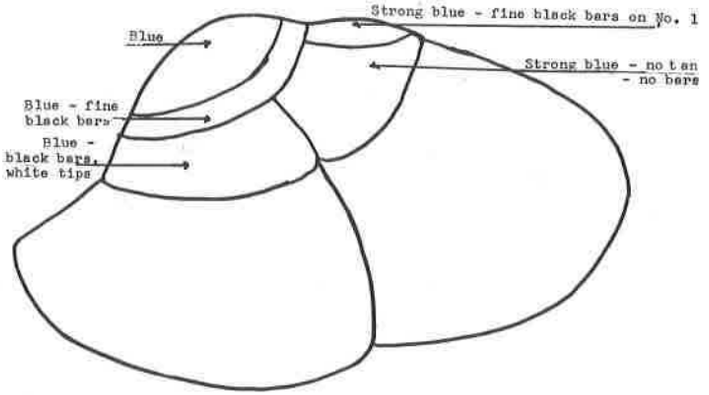

Fig. 4

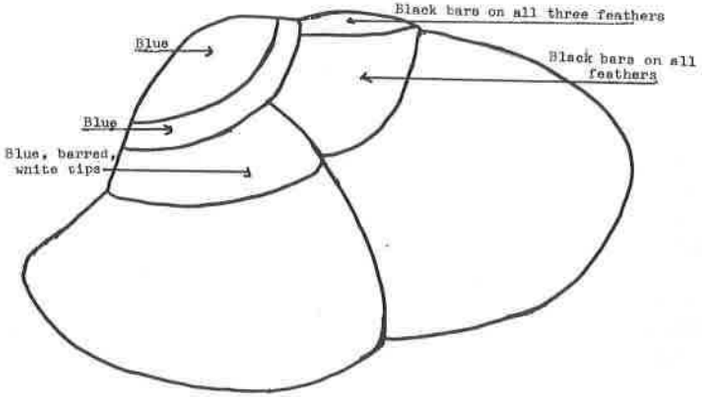

Fig. 5