

OBSERVATIONS ON THE FLORIDA BLUE JAY

BY DONALD J. NICHOLSON

My experiences with habits of Florida Blue Jays (*Cyanocitta cristata florincola*) has extended over a period of more than thirty years and I felt that the subject might be interesting to some.

RANGE IN FLORIDA

This subspecies is found throughout the entire State, but the center of their abundance is central Florida, in Orange, Lake, and Volusia Counties. They are especially numerous in this section on account of the large acorn-bearing oaks. The center of their abundance appears to be in Orlando and Winter Park. These cities are literally alive with them.

Jays are most commonly found where large water oaks and live oaks prevail, and elsewhere are far less numerous. They are to be found on all high ground, but not in marshes except in rare cases. Cypress swamps, pine timber, little hammocks in prairie country, sandy wastes with scrubby oaks, are all frequented. Birds found in cities and villages greatly outnumber those which inhabit sparsely populated areas, and are even more noticeably rare in wild parts of Florida. They seem to have a preference for human society, and are not wild in the cities. The birds of the unpopulated sections are entirely different, becoming most secretive and shy, avoiding man.

Should Mr. W. E. Clyde Todd's new subspecies of the Blue Jay be accepted by the A. O. U. Committee, it will leave in doubt the exact range of the Florida Blue Jay in southern Florida.* Mr. Todd's specimens were collected near Cocoanut Grove, Dade County, Florida.

As some few individuals in this section (Orlando) are noticeably darker than others during the breeding season, Todd's specimens may prove to be only a case of individual variation, occasionally found.

GENERAL HABITS

The bird is very bold and dashing, being able to cope with most any bird of its own size, and frequent encounters take place among such birds as mockingbirds, woodpeckers of several species, Florida grackles, cardinals, brown thrashers, and others. These conflicts are usually about food supply, or following territory intrusions.

Their bitterest enemies seem to be any species of owl, and when once discovered, these noisy fellows make life miserable for a luckless Screech Owl found dozing on some limb. I can invariably tell when

*Editor's Note. This paper was submitted before the Fourth Edition of the A. O. U. Check-List appeared in 1931.

a Screech Owl is in the neighborhood by the deafening din caused by all the jays in the vicinity assembling and voicing their protest. Excitedly jumping from limb to limb or flying here and there, they dive and peck at the unfortunate owl until he is so dazed and harassed that he hurriedly seeks refuge and after him goes the entire flock screaming as they follow. This is often repeated until the object of their wrath moves out of their range and finds a safe hiding place. Crows are probably as badly hated, and are promptly put to flight. Small hawks or even larger ones are likewise bombarded. Snakes, squirrels, cats, and dogs come in for their full share of attention and for long periods the jays will clamor loudly, pecking and darting at such enemies. Oölogists are classed as first-rate nuisances and are treated as pests in case one molests their nests; and woe to the man or boy who ascends bare-headed, be his intentions mere curiosity or "egging", for most surely he will receive a smart jab on the top of the head, with a couple more thrown in for good measure. However, this depends on individual pairs of birds; some will quietly fly away, perhaps giving a few outcries; but in the majority of cases both parents, augmented by many others, will come shrieking and attempt to intimidate the intruder.

It is a decidedly embarrassing moment to a sensitive oölogist, to be found robbing a jay's nest, on some main street in town, by a benevolent old man, attracted to the scene by these vociferous defenders, and he will have to do some tall explaining at times, especially if he is caught on the old man's property. I well remember an amusing incident that occurred years ago. I had spotted a nest in an oak, under which there was a public bench, in a fashionable section of town, and to obtain this set of eggs I was compelled to climb after nightfall. I had ascended and was in a precarious position out on a slender limb, when along came a spooning couple and parked on the bench below. Fearing detection, and probable accusation of eavesdropping, I ceased all movements, hardly daring to breathe. The outcome was that this pair remained until I was all but exhausted, and a very sleepy young man, and vowing to never again resort to such means of collecting. The eggs are in my collection to remind me of this now amusing predicament.

Just a little after day-break the jays begin their day, and practically every morning they give a really beautiful musical concert, which is impossible to describe on paper. The manner in which it is given is as follows: One bird will utter a mellow two-syllabled note which to me sounds like, "*toooo-el, toooo-el*"; the o's (uttered like u)

are repeated many times and by many birds, creating a pleasing effect. This is kept up for fifteen or twenty minutes and then is heard no more. I have noticed this peculiar program for a year and it occurs throughout the entire year. Whether this is merely a local habit, or not, I cannot say.

They have a very large vocabulary, and quite varied tones. Nearly every one is familiar with their loud *day, day, day* notes, but the bird also has a low, sweet, musical, mimicking twitter, which is delivered while perching, and is not accompanied by the bobbing motion of the body, as when uttering their calls. The most uncommon and peculiar vocal sound is a rattling of the throat producing a sound like marbles being shuffled in a bag, and is always done with an energetic bobbing of the head and body. This is usually a sign of great agitation, and is often followed by vicious pecking and pounding on the perch. The bird is angry and wrecking its vengeance on something to display its feelings.

A series of low, soft notes uttered in rapid succession, sounding like, *tit-tit-tit-tit-tit-tit-tit*, are invariably given while the birds are both at the nest during building, or when the male returns to feed the female on the nest, which he does frequently. Countless other indescribable notes are given in pitches of different degrees. These jays are quite expert at imitating the call notes of the Florida Red-shouldered Hawks, and they are thus commonly heard in any part of their range. The deception is difficult to detect. It is the only mimicry practiced by this bird.

Jays are restless, energetic birds, moving from place to place among the trees, and just as much at home on the ground, where they hop about in search of food or nesting material. They are more or less sociable, and go about in troupes, but are often found singly.

The flight of these birds is strong and is generally in a straight, direct course, with medium wing-beats. But another form of flight is a slow-moving undulating sweep, given with an occasional flap, and only used in going short distances. This slow flight is more often seen when the birds give their musical "*Tooo-del*" notes.

They are much attached to certain given ranges and remain for years near the same spot.

NESTING HABITS

The Florida Blue Jay is a most abundant breeder at Orlando, and I doubt if there are any other cities in the State where it can be found in such large numbers, due to ideal food conditions and nesting places. In any part of its range it is found to breed much more commonly in

densely populated towns and cities in preference to uninhabited areas. Whether this is due to a plentiful food supply or for protection against natural enemies not found in inhabited areas, or a combination of both I do not know, but I am inclined to lean towards this theory. It would not be an exaggeration to give an estimate of 15,000 jays within a radius of six square miles in this district (Orlando and Winter Park).

The favorite nesting-tree is the oak, and on many streets along the sidewalk I could count from three to six nests within one city block, which will give some idea of their numbers. At this present writing (April 27) I counted three nests within a circle of 150 feet, and as close as forty feet one way and seventy-five feet the other way from the center nest, and all occupied. A huge oak over 100 feet high with a spread of 200 feet is as readily used as a small tree. Such trees as pine, oak, orange, grapefruit, china-berry, bamboo, hickory, and a few others are also used.

The most cunningly concealed nests are placed in moss-draped trees, and the hardest of all to detect are those in tall pines. As a general rule no special pains are exerted to conceal their nests, at least not in cities; but a country nest is indeed difficult to see and the birds are very wild. Nests are placed anywhere from seven feet above the ground to seventy feet, but on the average a nest is from eighteen to twenty-five feet high. In large trees the nests are placed on small out-cropping branches of some immense limb, or occasionally saddled in a fork of a horizontal branch among a few sprouts. Upright or horizontal branches are equally used, and sometimes the extremity of a long slender branch is used. Most generally the interior of trees is chosen, thus saving the nest from destructive swaying branches.

A foundation of course twigs is always used, and frequently mud is employed to cement the lining to remain intact. Sticks, Spanish moss, paper, twine, rags, pieces of crockery, wire metal, are all more or less used, and the lining is composed of either black or yellowish-brown oak rootlets, or fine orange roots. Grass or weeds are seldom used, strange to say. A nice, neat hollow is made. Some nests are very slim, while others are quite bulky. The time required to build a nest varies from six days to a month, but this is in unusual cases. Horse-hair formerly was used frequently along with the rootlets in lining, but this is a scarce article now.

During the later part of February jays begin building their nests and by the middle of March many have completed their sets of from

two to five eggs. The most common number is four, but three eggs are quite common and full sets of two eggs are not at all unusual. A set of five eggs is very rare. Williams, at Tallahassee years ago, recorded one set of six eggs but out of hundreds of nests examined I have seen but five eggs as the extreme.

I have found nests containing eggs as early as late February in very warm early springs, but eggs are rarely deposited until March 10; and from then on until August. Two nests found by my brother, Wray H. Nicholson, and myself, contained eggs during the first week in September. This gives this bird a breeding period of eight months, but, strictly speaking, it nests regularly for six months.

Again during May a second set is laid, which is comprised of about the same number of eggs as the first set, and again in July or August a third set is deposited. This prolific nature accounts for the large number of these birds, and as they have few enemies (such as gray squirrels, an occasional prowling crow, and even their own species) their chances are excellent for rearing many young. I once caught a squirrel robbing a jay's nest. The jays themselves have a habit of robbing a neighboring jay's nest, and oftentimes I have found holes pecked in eggs.

As a usual thing a jay will not abandon the nest if inspected, whether the set is complete or not, but on numerous examinations I have returned only to find the eggs pecked and destroyed or entirely missing. This I am not sure was caused by the birds themselves (parents), but am inclined to believe they had at times something to do with this destruction.

These birds will resort to a certain tree or group of trees each year to nest and you can be sure of finding a nest at the proper time. If a nest is taken she will within a few days build another a short distance away, or in the next tree a few yards from the first site, or even in the original tree in another limb. I have known them to rebuild and lay another complete set of four eggs in twelve days. I once took a set of eggs, and passing several weeks later found that they had rebuilt in the identical crotch where the first nest had been. In another case I took a set and the bird again built her nest on the same limb within four feet of the first nest, which was still intact. On March 17, 1929, I collected all of four eggs. On April 29 a third nest was found fifty feet away, with three eggs, one a runt about the size of an English Sparrow egg. These eggs were all identical in shape, ground-color, type of markings, in all three sets, except the runt which was very dark; it was without a yolk.

A most unusual occurrence is the laying of a second set in the same nest when robbed. My brother Wray once collected a set of three fresh eggs from a nest and some weeks later happened to find a bird sitting on the same nest. Upon investigation he found her on five pipped eggs. I found a jay's nest in a grapefruit tree in April, 1929, and in less than two weeks she was sitting upon another set in the same nest.

The birds sit quite closely upon their nests and seldom flush until you ascend within several feet of them. Then they either hop off into a limb within several feet and scold, or fly quite a distance screaming as they go; or more rarely, leave silently and remain away while you are at the nest. The parents usually keep up a fierce clamoring, and are often joined by other jays adding to the turmoil.

Some sitting birds are quite tame and can be handled and placed back upon the nest, remaining as if nothing happened. Such behavior has been observed by my brother, Wray, the late William Leon Dawson, and myself. This is of course, unusual. Last year I found a jay sitting on her nest and, reaching over carefully, lightly touched her bill. She never moved, but blinked her eyes. Very slowly I moved my hand and stroked her head, and along the back; she, then, became alarmed and flew away. The next day I repeated the operations, lifted her off the eggs, and placed her gently back on the nest; she remained perfectly quiet, seeming not to mind in the least. No scolding or pecking was done, nor did her mate utter any outcry. Several "close-ups" were snapped within two feet of her, taken by William Leon Dawson, just seven weeks prior to his death. This was some of the last photographing he did in Florida.

The eggs of the Florida Blue Jay, vary more, I presume, in pattern of markings, shade of ground-colors, and the inconstancy in sizes, than any other of the North American Corvidae. Few other species on the A. O. U. list can compare with it for variation in the eggs. The ground-color can be dark green, light green, pale blue, putty-color, salmon-color, gray, all shades of brown, and even dirty white. The markings are either brown, gray, lilac, or purple, with occasional black shell markings. Some eggs are finely speckled, others sprinkled with large dots, some with heavy capped ends, and a few with lines finely drawn connecting the markings. The usual type of marking is a speckling over the entire surface, with less at small end and confluent at large end. However, many eggs are almost devoid of markings on the lower half of egg. Others are so finely sprinkled over the entire egg that it obscures the ground-color. The shape of mark-

ings may be round, irregular, streaked, or pin-point dots, but I have never seen large blotches or splashes. Some eggs are identical with the Crow, and look like miniature eggs of that species.

The most common shape of the egg is quite pointed, few are quite blunt and some are very nearly equal-ended. There is a great discrepancy in size and many eggs are three times as large as others, while others quite small although fertile. But as a general thing the eggs in one set average alike in size, also in type of color and markings. I have never seen an unmarked egg. The shell is smooth and hard, with or without gloss, and much tougher than that of a Crow in comparison. Often little pimples are found on their eggs. To display a few sets in one drawer to an oölogist, and then have another drawer of different patterns shown later would completely throw him off his guard, as to the identity.

FOOD AND THE YOUNG

Jays generally speaking will eat almost anything. They are fond of kitchen scraps, meats and bread, fruits of many kinds, bugs, insects, beetles, eggs, worms, corn, and all sorts of grain, green food, and have been accused of devouring young birds, which I have never seen them do. The cannibalistic habits must be infrequent or else I would have noted it, and neighboring small birds would be more antagonistic towards this saucy bird. I have never seen the nests of other birds with punctured eggs, or few deserted nests, where jays were numerous, which to my mind is evidence of innocence. I forgot to mention acorns which is their favorite food, and any time of the year they drop to the ground, pick up a fallen nut and perching with it firmly held by their strong toes, hammer with heavy blows until opened. They fly onto an ear of corn and pick away until the objective is secured. They hang upside down chickadee-fashion in trees, on moss clumps, or on ends of branches, searching for insects. I have seen them dart out from a tree and pursue, flycatcher-like, an insect, chasing it for long distances. Farmers do not class this bird as destructive, but as a beneficial species.

As mentioned before the female is fed upon the nest, but often also while off the nest. She entreats in the teasing manner of the young, and with quivering out-spread wings, using the *exact* notes of the hungry young, until the male gives her food. This voice positively can not be told from that of the young. I once saw a female feed a young one of the first brood, and a minute later settle down upon her second set of eggs, on the same limb upon which she fed

the young bird, which was apparently full grown. The young follow the parents for weeks begging for food, and are fed.

When first hatched the nestlings are perfectly naked, hideous-looking objects, with their eyes closed. They leave the nest in from fifteen to eighteen days, at which time the tails are quite short, and the feathers not fully developed on any part of the body or wings. Their power of flight is not by any means strong when they first leave the nest, and only short spaces can be covered. Many a young bird at this time of the year falls an easy prey to cats and various snakes. Many meet tragic deaths. A stray cat or dog is a sure target for jays in the neighborhood of a nest, and spirited dives and dashes are made, even sharp thrusts are given the animals, the birds all the while yelling and screaming their loudest.

In three weeks to a month, it is difficult to distinguish the young from the adults, but the face and throat is a smoky, dark color, instead of the rich black of the adult, and the bill is horn-colored, instead of black as in the parents; otherwise the plumage is apparently the same to all outward appearances. By the following spring no difference is seen. Even by fall I can not discern a particle of difference. A fledgling when caught, if caught by anything, emits terrified screeches as if in mortal agony, bringing the parents to its defense at once.

In preparing this article, I forgot to mention, under the caption of "Nesting", a few other facts worthy of note. The approach to the nest may be direct, but more often the bird flies to another part of the tree and gradually works its way to the nest. Both birds assist in nest-building, incubating, and rearing the young. There is practically very little mortality, as the young are quite hardy. Infertility in eggs is infrequent and a high percentage are hatched. I am ashamed to admit that I do not know the exact time required for incubation, but think seventeen days is about right.

ORLANDO, FLA.

NESTING OF THE PRAIRIE FALCON IN MONTANA

BY V. L. MARSH

Early Sunday morning, May 13, 1934, Ellsworth D. Lumley, Wm. Reavley, Jr., and I left Great Falls to visit the nest of a pair of Prairie Falcons (*Falco mexicanus*) that had been reported nesting a short distance from the Sun River Park road about one mile from the park and about a quarter of a mile south of the road.