

THE IDENTIFICATION CHARACTERS OF NESTS, EGGS AND NESTLINGS
OF SOME HERONS, IBISES AND ANHINGAS

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Nesting colonies of herons and ibises are found with enough frequency in Alabama that bird students ought to be able to identify their nests, eggs and young, in order to prevent gathering inaccurate information.

Since 1953, the writer has been banding nestling herons and ibises and has accumulated the information on which this paper is based.

The most common species in heron colonies in inland Alabama are the Little Blue Heron (Florida caerulea) and, in the last several years, the Cattle Egret (Bubulcus ibis). Near the coast, White Ibises (Eudocimus albus) are often very numerous, or even the predominant species of the colony. Other species which might be present are the Snowy Egret (Leucophoyx thula), the Common Egret (Casmerodius alba), Black-crowned Night Heron (Nycticorax nycticorax), and the Yellow-crowned Night Heron (Nyctanassa violacea). Occasionally a pair of Green Herons (Butorides viridescens) nests at the edge of a colony. The Anhinga (Anhinga anhinga) sometimes nests in ibis colonies. On the off-shore islands, the Louisiana Heron (Hydranassa tricolor) and Reddish Egret (Dichromanassa rufescens) replace the Little Blue Heron but are not usually found inland. Great Blue Herons (Ardea herodias) usually nest in isolated colonies in very high trees and are not usually easily available for study. The Louisiana Heron, Reddish Egret and Great Blue Heron will not be treated in this paper.

There is a large amount of variation in the physical make-up of the colonies. Those on off-shore islands are in low bushes. Those in coastal plain swamps are usually in bushes or trees 10 to 40 feet high, and those in upland situations are usually in spindly trees 30 to 60 feet high. The variation in the physical setting of the colony results in a variation of nest positioning and nesting material. Therefore, nests on shrubby off-shore islands are frequently so low that you bend over to reach them, and in inland upland colonies, you need a long extension ladder to reach them. The nests are made from twigs broken from the trees and bushes present and vary somewhat in appearance depending upon the nest materials available.

Identifications of nests, eggs and young, can usually be made from the information given following. If in doubt, it is best to wait unobtrusively until the adults return to the nest or young in question.

Little Blue Heron

This has been the most common species until the Cattle Egret appeared, and it has been the species most studied by the writer.

These herons arrive at the nesting colony area by mid-March and frequently nests are built by the 20th.

Nests.--Construction is of twigs or sticks 10-15 inches long, which the herons break from the deciduous trees and bushes of the nesting site. Dead twigs are usually used, or if live ones are obtained, they do not bear leaves at this time. Therefore, few, if any, leaves are present in the nests. The nests are loosely built, about 10-18 inches across.

Eggs.--Color is a medium blue-green with a definite blue cast. In shape, the eggs have quite rounded ends, both ends being similar. Size varies (in 150 eggs measured) from the extremes of 41-51 millimeters in length and 31-36 millimeters in width. Examples of extremes are eggs which measured 51 X 34 and 41 X 31 millimeters. Clutch size is usually four but will vary from three to five, with rarely six. They are laid at intervals with incubation beginning after the first or second egg is laid. Because of this, an uneven aged brood results, with the eldest being about a week older than the youngest.

Young.--Several stages at which different characteristics are in evidence are given for this and other species in which distinct changes occur.

1. At hatching, the young have a very few white feathers growing from the major tracts, especially the dorsal. Their skin, legs and bill are pink.
2. Several days after hatching, primaries begin to appear and even in the sheaths they are darkly pigmented. Pigment also appears in the skin, especially on the legs, and is a medium green. The bill becomes dark on the tip and lighter in the middle.
3. At the age of one week, they are fairly well-feathered. Primaries are darkly pigmented, legs green, and the bill is black on the tip and lighter in the middle and at the base.
4. After one week, they slowly become fully feathered. No color characteristics change.

Behavior.--When the young become alarmed and cannot escape, they show the displacement behavior of regurgitation and defecation that is characteristic of many herons. Regurgitated food contains fish, amphibians and crayfish as the major items.

Cattle Egret

The Cattle Egret is becoming equally as abundant as the Little Blue Heron in most colonies. They arrive at the colony site at about the same time as the Little Blue Heron but don't begin nesting until early May, after the pastures have grown and there is abundant insect food.

Nests.--Construction is very much like Little Blue Heron nests. Frequently the twigs have leaves on them. They are usually in less choice spots and may be as close as one foot from another nest. Usually they nest close to associated species.

Eggs.--Color is very similar to Little Blue Heron eggs, except that the egret eggs are more green and slightly lighter. In shape, the eggs are slightly slimmer and more pointed. In 73 eggs measured, length varied from 41.3-49.0 millimeters, and in width they varied from 30.8-35.1. One large egg measured 48.8 X 34.2, and a small egg, 42 X 32 millimeters. The eggs in one clutch frequently showed great size variation. Clutches usually contained four eggs, but clutches varied from two or three to five. Egg laying and incubation were similar to those of the Little Blue Heron, resulting in uneven sized broods.

- Young.--1. At hatching, the young have a few white feathers growing from major tracts, pink skin and bills.
2. Several days after hatching, unpigmented primaries begin to appear. Greenish pigment is present in the skin. The bill becomes black with a yellow tip.
 3. At the age of one week, they are fairly well-feathered with no pigment on any feathers. Legs are green with a blackish wash appearing on the anterior and dorsal side of tarsals and toes.
 4. After one week, they slowly become full feathered. No feathers are pigmented. Legs become solid black and the bill is black with a yellow tip in most individuals. Occasionally, a yellow-billed individual is seen.

Behavior.--If they cannot hide or climb out of reach, the young are very belligerent. They may regurgitate and defecate. Items regurgitated are mainly insects, although toads, frogs and lizards have been found present occasionally.

Snowy Egret

Snowy Egrets arrive at the colony area shortly after the Little Blue Herons. Only a few pairs are present in most colonies. Usually they are to be found in the coastal area and the Tennessee Valley, but not in most mid-state colonies. So few are present that much needed data are missing from the writer's files.

Nests.--The nests are very much like those of the Little Blue Heron.

Eggs.--They are very similar to Little Blue Heron eggs, averaging slightly smaller.

Young.--Very much like the Little Blue Heron young in most respects. The primaries are not pigmented, however, and the toes are yellow.

1. At hatching, they are presumably like Little Blue Herons. The writer has no data at hand for this stage.
2. Several days after hatching, it is presumed that pigmentation begins, but no data are at hand to support this.
3. At the age of one week, they are fairly well-feathered. The feathers are all white. Legs are greenish and the toes are yellowish-green.

4. After one week, they slowly become fully feathered, remaining completely white. Toes remain yellow and legs become a darker green. The bill is like the Little Blue Heron's in color and color distribution.

Behavior.--Very similar to the Little Blue Heron in activity and foods.

Common Egret

These egrets arrive at the colony at about the same time as the Little Blue Heron. Many of them winter on the Gulf Coast and some are found inland, so they may winter not very far from the nesting area. Usually only a few pairs are present in a colony.

Nests.--The nest is of similar construction to that of the Little Blue Heron, but it is larger and usually is placed higher.

Eggs.--The same blue-green as the Little Blue Heron eggs but the size is considerably greater and the ends more pointed. Reference is made to Bent, A.C., 1926, "Life Histories of North American Marsh Birds." for average egg dimensions: 56.5 millimeters in length and 40.5 millimeters in width. Clutch size is usually three or four.

Young.--The young have a much longer development period than the smaller herons. After several days, they appear colored like the adults, with white feathers, yellow bill and black legs.

Behavior.--They are very belligerent. Careful handling is necessary to avoid being struck in the face or eye with the bill. The young are clumsy and frequently fall into the water in escape attempts.

Black-crowned Night Heron

This species is occasionally found in inland colonies and is common in the colony at the Swan Creek Shooting Area, Decatur, Alabama.

Nests.--Location is high in the trees, above Little Blue Heron nests but of similar construction.

Eggs.--The eggs are large and light bluish-green. One egg measured was 52.6 X 39.5 millimeters. Clutch size is usually four.

Young.--They are slow in development and ungainly like Common Egret young. Color is streaked and spotted shades of light and dark brown. The bill and legs are dark. The only similar young would be those of the Green Heron and Yellow-crowned Night Heron.

Behavior.--The young try to hide in the nests or perch rigidly near the nest. They are slow and stupid. They regurgitate fish that are sometimes quite large.

Yellow-crowned Night Heron

These birds usually nest in separate colonies, or isolated from the rest of a mixed colony. They have not been observed, by the writer, in the same colonies with Black-crowned Night Herons.

Nests.--They are built like Black-crowned Night Heron nests.

Eggs.--The eggs closely resemble those of the Black-crowned Night Heron in size, color, and number.

Young.--The young look very much like young Black-crowned Night Herons, except that feather colors are generally darker.

Behavior.--They are rather slow and stupid. They are frequently seen on the Gulf Coast beaches in late summer and usually can be approached without being easily alarmed. The writer caught one of these in an insect net one evening.

Green Heron

Pairs occasionally nest at the edge of a heron colony. Usually they are well separated from the rest of the colony. They nest slightly later than Little Blue Herons.

Nests.--The small stick nest, six to twelve feet above the ground or water, resembles a Mourning Dove nest.

Eggs.--Much smaller than those of the other herons, these eggs are the same light blue-green and both ends are bluntly rounded, equally, like Little Blue Heron eggs. One measured 37 X 29 millimeters. The usual clutch size is four eggs.

Young.--The young are small and develop rapidly, some leaving the nests by mid-May. Coloration is shades of brown and greenish-black on the dorsal surface with striped underparts. Legs and bill are yellow, with the legs additionally having a greenish cast. They so totally resemble the adults that there is little possibility of misidentification.

Behavior.--They are quite agile climbers and try to escape, if they are fairly well grown. They are not belligerent, nor do they frequently regurgitate.

White Ibis

This is the only ibis commonly nesting in Southern Alabama. Colonies are known from the vicinities of Dothan, Opp, Florida and Stockton, not all of which are presently active. They arrive early, sometimes in late February, but do not nest quite as early as the Little Blue Heron.

Nests.--These are usually positioned a little higher than the Little Blue Heron nests. Leaves are present in the nests in addition to

twigs. The diameter of the nest is about 10-12 inches, the same size or slightly smaller than Little Blue Heron nests. They frequently are close together and may be grouped in one part of the colony.

Eggs.--The eggs are larger than Little Blue Heron eggs. The color is a darker bluish-green with speckles or blotches of brown. They are decidedly more pointed at one end. Two eggs measured 58.0 X 38.0 and 58.0 X 39.2 millimeters. Clutch sizes are usually four, with three eggs commonly found also.

Young.--The young develop fairly rapidly. They are much more massive birds, however, and the total development period is longer than that of the Little Blue Heron.

1. At hatching, they have black down on them. The bill is pink with a black tip and the legs are pink.
2. Several days after hatching, size increases rapidly and some contour feathers appear.
3. At the age of one week, the contour feathers cover much of the down. Primaries and tail feathers are slowest to appear. The bill develops an intermediate black band and the base darkens. It elongates and becomes slightly decurved. Legs become almost black.
4. After one week, feathering continues slowly.

Behavior.--The nestlings are slow and awkward, in part because of their rapidly increasing weight. They try to hide or escape when disturbed. They defecate and regurgitate readily. Food regurgitated frequently contains the remains of crayfish, insect larvae and small fish.

Anhinga

A pair or two of Anhingas are often present in the colonies where the White Ibis nests.

Nests.--This is a stick nest very much like that of the Common Egret in form and size.

Eggs.--The writer has no acquaintance with Anhinga eggs. Bent, A.C., 1922, "Life Histories of North American Petrels, and Pelicans and their Allies," describes their color as pale bluish-white, with chalky markings. He gives the average of 42 eggs as 52.5 X 35 millimeters, and describes the shape as ovate to elongate ovate.

Young.--Early plumage is a tan down that completely covers the nestling. The down is gradually covered with dark feathers. The webbed toes and very short, thick tarsus, are good identification characters. The small head with its long pointed bill and the long, oddly-jointed Anhinga neck are also good identification points.

Behavior.--The downy young do little to escape, but the well-feathered young climb well and do not hesitate to drop into the water, swim under water, and escape. Well-feathered young are adept at using their bills for defense and should be carefully handled.

SUMMARY

The most abundant species in inland colonies in Alabama are the Little Blue Heron and Cattle Egret. Near the coast White Ibises may also be abundant colony members.

The nests are of stick construction, with leaves being typical in Cattle Egret and White Ibis nests. Height of nests varies with the colony site vegetation.

Eggs all differ, at least slightly. Those most nearly alike are the eggs of the Little Blue Heron, Cattle Egret, and Snowy Egret. They are about the same size and differ only slightly in color and shape. Common Egret and night heron eggs are larger than the other heron eggs, but similar in color. White Ibis eggs are usually speckled. Green Heron eggs are much smaller.

The young of the Little Blue Heron, Cattle Egret, and Snowy Egret are also somewhat similar. The Little Blue Heron nestling has dark primaries, green legs, and a dark bill with a lighter middle region. The Cattle Egret has completely white plumage, black bill with yellow tip, or rarely a yellow bill, and the legs are blackish green. The Snowy Egret has completely white plumage, a bill like that of the Little Blue Heron, dark green legs and yellowish toes. None of the other nestlings should be easily confused.

If in doubt of the identification, wait for the return of an adult to the nest or young.

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CHANGES IN ABUNDANCE OF MYRTLE WARBLERS
DURING SPRING MIGRATION AT TUSCALOOSA, ALABAMA

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In the spring of 1965, I undertook a project to ascertain the pattern of migration and the effects of weather on migration of birds in Tuscaloosa County, Alabama. A set schedule for periodically observing the birds as they appeared was followed. The objective was to compute the arrival and departure dates and migration peaks of migrant species--this paper being concerned only with the migration of one species, the Myrtle Warbler.

Great appreciation and gratitude go to those who made so many of the morning walks with me: John Hall, Jim Owens, and especially Charles Moses III, who met me with breakfast under one arm and binoculars under the other and made every one of my March walks with me. Invaluable aid was given by the Flight Service Station of the Federal Aviation Agency in Tuscaloosa for their 6:00 a.m. weather information bulletins. The habitat description of the Tuscaloosa area was based primarily on Dr. Roland M. Harper's Forests of Alabama. My deep thanks also go to Dr. Maurice F. Baker, Dr. William J. Calvert, Jr. and Mr. C. W. Summerour who have read this paper and made suggestions as to its handling.

Procedure

The count period was from the 1st of March to the 30th of April, 1965. A count was made on every day possible--the total being 52 counts made in 61 days. These counts consisted of daily walks made along the southeastern edge of the Warrior River. Each count lasted exactly 1½ hours and was begun every day at sunrise computed from the Standard Mean Time--the times of sunrise varying from 6:16 to 4:57 a.m. The starting point for the census was a wooded area 100 feet from the men's dorms on the northern boundary of the University of Alabama campus. The area covered was approximately 1½ miles of river-side habitat on the upper coastal plain in Tuscaloosa County. Each day all the birds seen and heard in the area were recorded as to species seen and total number of each species sighted.

The weather conditions for 6:00 a.m. were recorded from information supplied by the Federal Aviation Agency located at the Tuscaloosa airport. The following weather conditions were recorded: wind speed and direction; percent of sky covered by clouds and the height of the cloud base; temperature; visibility; and precipitation in the last 24 hours.

Habitat Description

Tuscaloosa lies within the short-leaf pine region, the largest of three regions of pine woodlands which comprise the central pine belt, based on Harper's forest classification. The topography is moderately hilly with wide level terraces occurring along some of the rivers, particularly along the Warrior at Tuscaloosa, the river