NOTES ON THE HERONS OF THE DISTRICT OF COLUMBIA

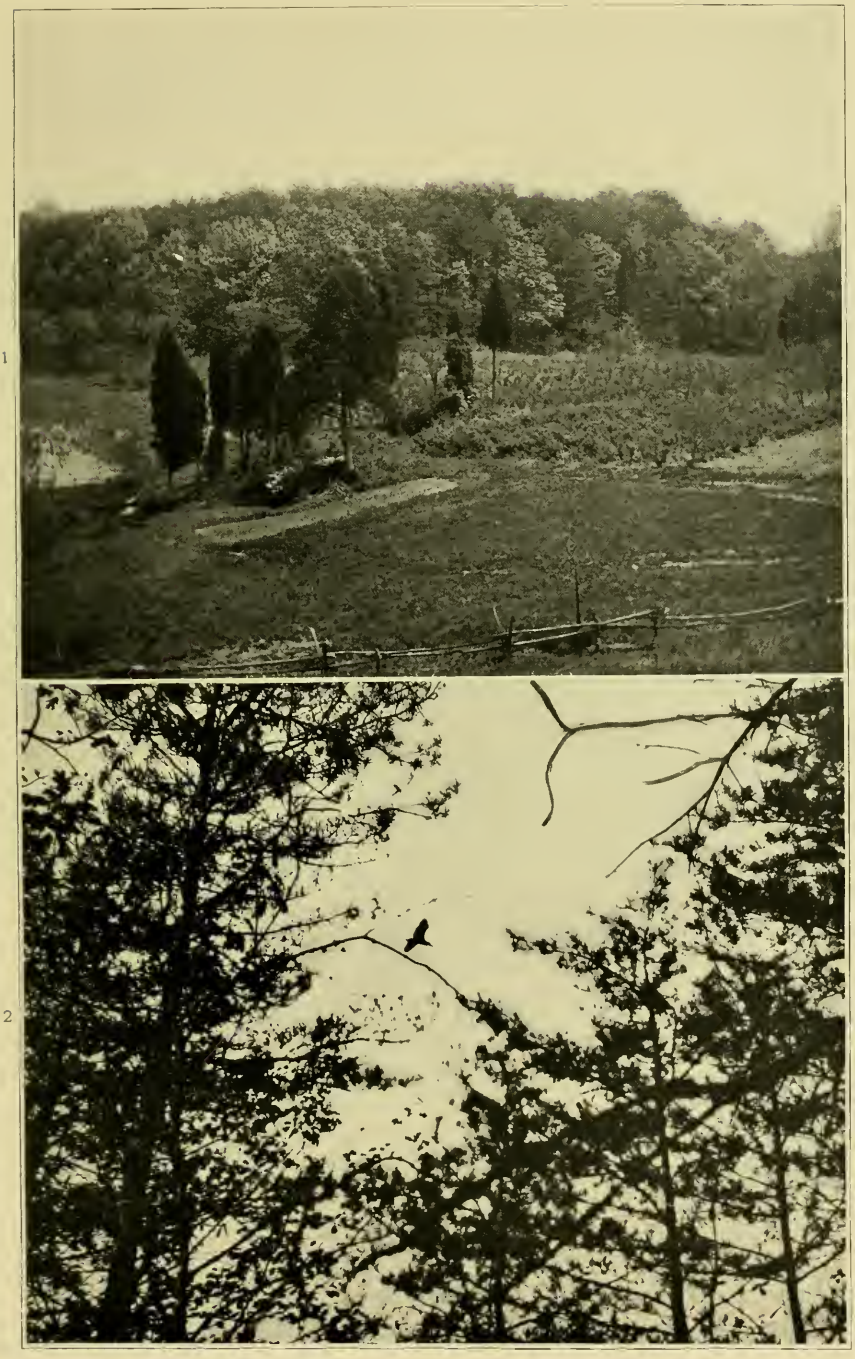
By PAUL BARTSCH

The extensive tidewater marshes bordering the two arms of the Potomac at Washington afford splendid feeding grounds for many of our birds, particularly the water birds and waders, and are doubtless responsible for the large number of the latter which visit the District of Columbia each season. Birds as large and beautiful as our herons are always conspicuous marks and must of necessity be shy to keep from serving as targets for the ever-present gunner. It is this habit, I am sure, which has led many persons to deem it necessary to visit secluded swamps, or even the subtropical everglades of Florida, to see herons in their native haunts, whereas a little search might reveal these wary members in their own locality where they may even rear their young.

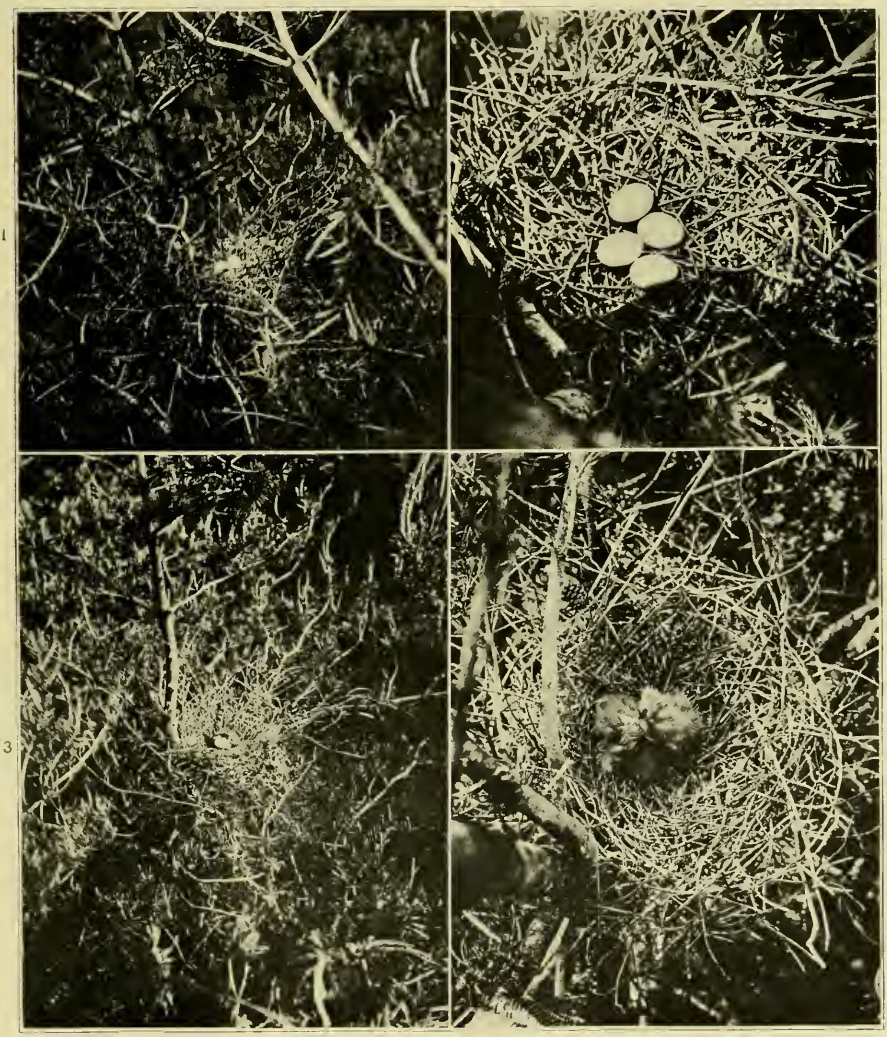
No fewer than nine of the eighteen species which inhabit North America have been recorded within the limited area of the District of Columbia; four have been found breeding, and the Great Blue Heron, which is with us in small numbers all the year, is strongly suspected of conducting his domestic affairs within our territory.

The most abundant member of the family is the Black-crowned Night Heron (*Nycticorax Nycticorax nævius*), or Quak, as he is usually called by the untutored (plate XXXV, 2). He is about 25 inches long, with bright-red eyes, black bill, and pale yellow legs and feet; the feathers of the crown are glossy greenish-black, except three long, narrow, white plumes which stream downward over the equally glossy greenish-black back; the forehead, neck, and median underparts are creamy-white, shading gradually to ashy on the sides, while the wings and tail are deep ash-gray.

Three colonies of these birds have their breeding grounds within the District and a fourth has been reported only a short distance beyond its limits. All of these are in small, dense pine coppices. In 1902 I visited two of these at various times while tenanted. In the latter part of April most of the nests, which were



1. Nesting site of Colony I of the Black-crowned Night Heron. 2. Adult flying (same colony).



1 Nest and eggs of Black-crowned Night Heron in situ. 2. Detailed view of same. 3. Young and eggs of same, just hatched and hatching. 4. The young three days after hatching.

placed in the tops of slender pines, close to the center, twenty-five to forty feet from the ground, contained eggs. The nests (plate XXXIII, 1) are poor structures, mere platforms of dead twigs, somewhat depressed in the center and abundantly chalked with the excreta of the birds; they are so thin that the eggs could frequently be seen through them from the ground.

Night Herons, as their name implies, are nocturnal in their habits. During the day all is quiet at the heronry. The males sit in the pines while the females pursue their task of incubation. Late in the afternoon, however, they leave the breeding grounds, flying in all directions to their favored hunting places. If disturbed during the day they will leave the trees with a few short, harsh quacks, sail about overhead for a while (plate XXXII, 2), then settle down quietly to watch the proceedings of the intruder. If the colony be invaded a little later when the large, light bluish-green eggs (plate XXXIII, 2) have delivered up their charge, the anxiety of the parents becomes more manifest and the birds leave the premises more reluctantly; in fact, it seems almost as if one had invaded a hen-roost, each bird shrieking and cackling as he or she leaves the nest or perch. Add to this the notes or calls of the young, and one has a fair notion of the din that greets him.

The young at birth (plate XXXIII, 3) are about as ugly birdlings as can be imagined; they are dark-skinned, wet, almost nude, with immense heads and large bills, quite out of proportion to the rest of the body, bearing a fairly strong, pointed knob at the tip which assisted them in breaking their egg-shell prisons. Weak and limp they lie stretched out in the middle of the nest. But a few hours bring wonderful changes. The wet down which clung closely to the body has become dried and fluffed up and the little birds are now enveloped in a coat of fine slaty-blue down. They even possess a decided head-crest of somewhat lighter color than the body-down, which gives to them a grotesque if not formidable appearance. Young herons grow very rapidly. Three days after hatching they are much increased in size, having considerably longer down and the first indications of pin-feathers (plate XXXIII, 4). By the end of the first week they are fairly bristling with pin-feathers and the feather-tracts have become strongly marked (plate XXXIV, 1). On the tenth day (plate XXXIV, 2) many of the feather-sheaths have become ruptured at the tips, and the birds begin to appear in their first plumage. About three weeks mark the termination of their stay in the nest

(plate XXXIV, 3); they are now almost as large as their parents, but quite differently colored, bearing still the little ivory tip at the point of the bill. Leaving the nest, they climb into the branches, a very praiseworthy act, for the old home and immediate surroundings have been thoroughly fouled by the combined wastes of the whole family, the nest, its supporting branches, and everything below it being completely whitewashed with the excreta of the birds, while undigested or dropped food adds to the disagreeableness of their old quarters. Then, too, from the branches they are better able to see the parents as they return from their foraging expeditions.

Young herons, though weak, have several methods of defense. When one climbs a tree in which the young have passed the second week, and the movements of the climbing begin to shake it, he may be sure to receive a contribution of whitewash from the various members. If the climber persists, the birds will even sacrifice their last meal in his favor, or rather disfavor, and a continuance of the climber's efforts will be met by the bird's final resort, which is to launch at the intruder with full force, spreading his wings and opening his cavernous mouth, striking with such violence that were he not securely anchored by his feet, he must surely be carried some distance beyond the nest. His fierce appearance and method of attack would repel any foe which might propose to dine upon his tender flesh.

By looking out over the tree-tops about the end of June, one may see many heron sentinels (plate XXXIV, 4) watching and waiting in the tips of trees. It is interesting to see how successfully these birds, built especially for the marsh, carry on arboreal life. The young, if disturbed when out in the branches, will, if old enough, either fly to a neighboring tree or climb rapidly from branch to branch. If they lose their balance in a jump, or fail to grasp a branch or twig with their toes, the bill comes to their aid; and I have seen birds suspended by their bills for some minutes, struggling all the while to reach the same twig with their toes, usually with success. A bird may even strike a branch with its neck, in which case this member is instantly crooked and serves as a hook to hold him until he regains his balance.

The feeding is all done at night, and it is interesting to be in the colony after sunset—such clamoring, such calling, such din! Everyone, no doubt, has heard the racket with which young crows greet their parents when they come with food. The heron's greeting is

1. Young Black-crowned Night Herons seven days old. 2. Same, ten days old. 3. Same, three weeks old. 4. A favorite position in the tree-top after leaving the nest.

1

2

1 Young Black-crowned Night Heron in full juvenile dress. 2. An adult.

similar, only louder and more vociferous, if such be possible. All sorts of notes are heard, from the weak "pip, pip, pip, pip" of the tiny baby to the loud clucking of the parents, the latter reminding one strongly of the ejaculations of a sitting hen which has been suddenly dipped into a barrel of cold water and then released.

Fish seem to form the chief article of the heron's diet, and the little yellow perch appears to contribute the largest share; at least this was the conclusion reached from an examination of the contributions and accidentally dropped material. I also noted several small eels, one small garter-snake, and parts of frog skeletons, but no crayfish. The young are fed by regurgitation.

On June 1, 1902, I made a systematic survey of a colony of herons, the results of which are tabulated as follows:

COLONY I (June 1st, 1902)[1]

Nest No.	Eggs.	Young Birds. 1	2	3	4	Empty.
1				*n*		
2			*nb*			
3				*b*		
4					*n*	
5				*b*		
6					*n*	
7				*nb*		
8			*n*			
9						*c*
10				*b*		
11						?
12						?
13						*c*
14						*c*
15						*c*
16						?
17						?
18						*c*
19						?
20						?
21						?
22						?
23						?
24						?
25					*b*	
26						?
27					*n*	
28					*nb*	
29						?
30					*b*	
31					*b*	
32					*n*	
33					*n*	
34						?
35						?
36						?
37	4					
38					*n*	
39				*b*		
40						?
41				*b*		?
42						?
43						?
44						?
45					*n*	
46						?
47						?
48						?
49						?
50						?
51						?
52						?
53						?
54						?
55						?
56						?
57						?
58						?
59						?
60						?
61					*nt*	
62						
63						
64						
65						
66						
67						
68						
69	?					
70						
71						
72						
73						
74						
75						
76						
	4		2	12	7	39

Total nests examined 61
" eggs 4
" young birds (40 in nests, 28 on branches), 68.

NOTE.—Nests numbered 62 to 76 were not examined, but if the same average number of young to the fourteen nests be allowed, this colony should have produced 88 young in 1902.

[1] In the above tables *n* = young in nests, *b* = young in branches, *c* = nest well chalked but empty, ? = empty without positive signs of having been occupied this season.

On June 19 an examination of another colony was made, the results of which are tabulated as follows:

COLONY II (June 19th, 1902)

Nest No.	Eggs.	Young Birds. 1	2	3	4	Empty.
1				*nb*		
2				*n*		
3	4					
4				*n*		
5			*n*			
6						*c*
7	4					
8						*n*
9			*n*			
10				*n*		
11						*n*
12				*n*		
13						?
14				*b*		
15						?
16				*b*		
17				*b*		
18				*b*		
19				*b*		
20		*b*				
21	2					
22						*c*
23				*b*		
24				*b*		
25		*n*				
26				*b*		
27			*b*			
28				*n*		
29						*c*
30				*n*		
31				*b*		
32				*nb*		
33						*c*
34						?
35				*b*		
36				*b*		
37				*b*		
38				*n*		
39				*n*		
40				*n*		
41				*n*		
42				*b*		
43						*c*
44				*b*		
45				*b*		
46			*b*			
47					*b*	
48				*nb*		
49						?
50			*n*			
51				*n*		
52				*b*		
53				*nb*		
54				*b*		
55						?
56			*b*			
57				*nb*		
58				*nb*		
59				*b*		
60				*b*		
61				*b*		
62				*b*		
63				*b*		
64			*b*			
65				*nb*		
66		*b*				
67				*n*		
68					*bn*	
69		1	*n*			
70		*b*				
71				*b*		
72			*b*			
73			*b*			
74				*b*		
75				*b*		
76				*n*		
77						?
78				*n*		
79		*b*				
80					*b*	
81				*b*		
82					*n*	
83				*b*		
84		*b*				
85				*b*		
86						?
87						?
88						?
89						?
90				*b*		
91						?
92				*b*		
93				*b*		
94				*b*		
95				*n*		
96				*n*		
97				*n*		
98				*b*		
99				*b*		
100						?
101				*b*		
102					*n*	
103						?
104		*n*				
105						?
106				*b*	*b*	
107				*b*		
108						?
109						?
110						?
111				*b*		
112				*n*		
113				*b*		
114						?
115						?
116			*b*			
117			*n*			
118				*b*		
119				*b*		
120						?
121						?
122				*b*		
123				*n*		
124				*n*		
125				*n*		
126			*n*			
127			*b*	*b*		
128				*b*		
129				*b*		
130						?
131			*n*			
132						?
133			*b*			
134						?
135				*b*		
136						?
137 to 177	?					
	11	7	16	74	8	29

Total nests examined 136

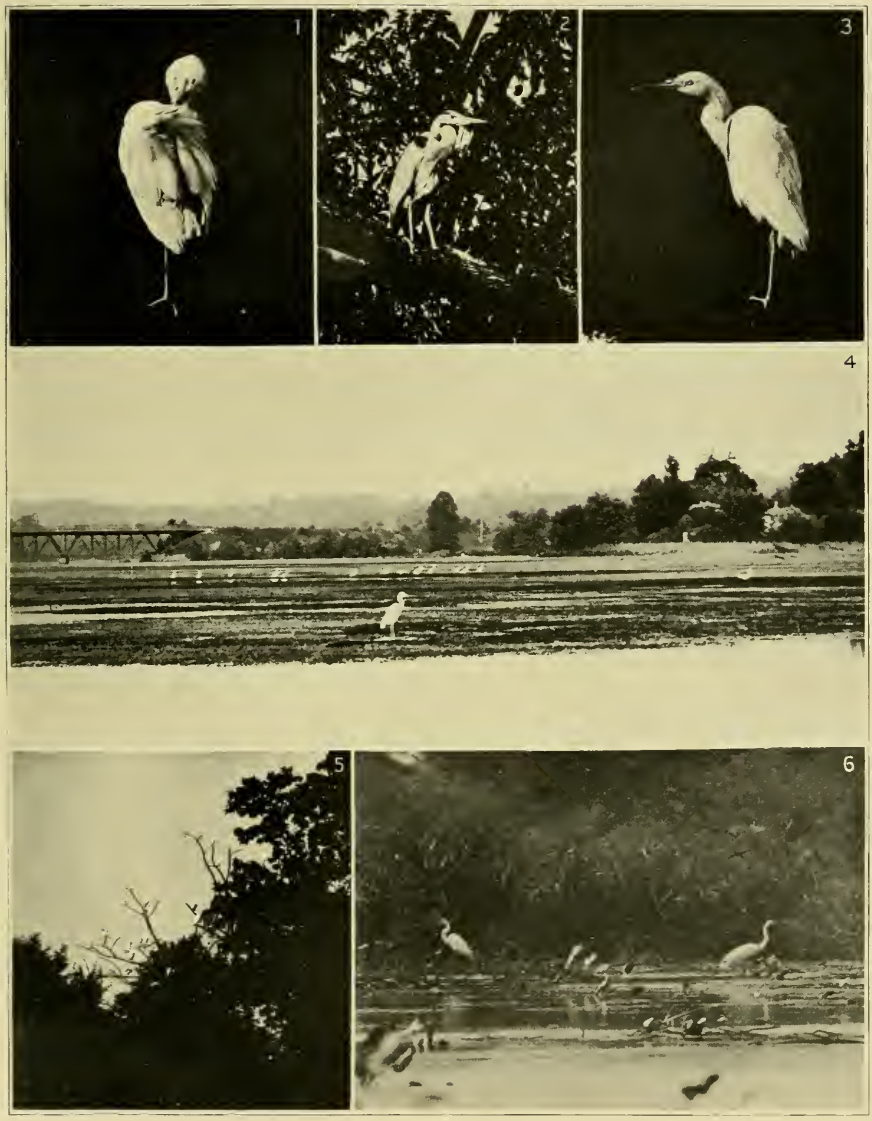
" eggs 11

" young birds (123 in nests, 170 in branches), 293.

NOTE.—Nests numbered 137 to 177 were not examined, but if we allow the same average number of young to these forty-one nests, this colony should have produced 395 young in 1902.

There are still many unsolved problems about bird life, among which are the age that birds attain, the exact time at which some birds acquire their adult dress, and the changes which occur in this with years. Little, too, is known about the laws and routes of bird migration, and much less of the final disposition of the untold thousands which are annually produced.

1. Two young Green Herons 24 hours old and two addled eggs.
2. Twelve days old—on the defense.



1, 3. The white phase of the Little Blue Heron. 2. Great Blue Heron in a tree. 4. Little Blue Herons feeding on Anacostia River. 5, Roosting place of American Egret and Little Blue Heron. 6. American Egret on the marsh.

When I visited the heron colony for the first time, it occurred to me that some light might be shed on one or more of these unsolved problems, at least so far as the present species is concerned, by marking the successive broods of young birds for a number of years. I explained the situation to Dr. F. W. True, Head Curator of Biology in the National Museum, who agreed to procure the necessary bands. These were inscribed "Return to Smithsonian Institution," and bore the year and a serial number. Unfortunately no aluminum tubing of the desired caliber could be obtained at once, hence the bands arrived so late in the season that only twenty-three herons of the entire heronry were marked.

These bands are mere rings, of extremely light weight, large enough to fit comfortably about the tarsus of the adult bird. The fact that the bands are closed necessitates very early application, since the foot soon grows too large to permit the ring to slip over it. Once on, there is little danger of its ever being dislodged, for the heron's toes are always partly spread as he clings to the twigs of his nest. Only one return resulted from the 1902 marking of Night Herons; this was a specimen shot September 24, 1902, at Abington, Maryland, about fifty-five miles northeast of Washington.

During the present year (1903) both colonies have changed quarters. One of the colonies selected an adjacent hillside where eighty-nine nests have been counted. The location of the other is still unknown, since lack of time prevented a thorough search for it. No complete systematic survey was made of the known colony, which was in a mixed forest. All but seven of the nests were placed in pines, the others in oaks. Four trees harbored two nests each.

Seventy-eight young birds were banded in 1903, five of which have already been heard from. The first was captured July 19 in a street in Leesburg, Virginia; the second was caught July 20 in a fish-trap on the Potomac below Washington; the third was shot at Pennsville, New Jersey, July 18; while the fourth and fifth were found dead under the tree in which the young had been marked. The birds were almost full grown, and there are strong indications that the last two specimens had been stoned to death by ruthless boys before they left their nesting tree.

I visited this colony on August 10, and was surprised to find about a dozen large young present with their parents. These must have been a second brood, raised, perhaps, by the birds whose first nest had been plundered by some small boys after incubation was well advanced. In the preceding year (1902) a large number of the eggs were carried off from the smaller of the two colonies and the

steps taken by many of those who were in a position to render aid should have prevented a similar occurrence.

The nearest relative of the Black-crowned Night Heron is the Yellow-crowned Night Heron (*Nyctinassa violacea*). Of the occurrence of this species in the District of Columbia there is but a single record—that of a juvenile individual, captured in the Smithsonian grounds, the skin of which is in the National Museum collection.

The remaining seven species listed for the District are diurnal waders and may be found feeding on the marshes and along creeks and lakes during the day. The most abundant of these is the little Green Heron (*Butorides virescens*), a bird of many names, among the most common of which are Shitepoke and Fly-up-the-creek. He is not a sociable fellow, shunning company and rarely allowing other birds to feed or to build their homes near him. For a nesting site he chooses, like the Night Heron, a pine coppice and builds an equally flimsy nest on which the four pale-blue eggs are deposited. The young are even more downy than those of the Night Heron, and are altogether much more dainty and fluffy than the latter. Their color, too, is much softer, somewhat lighter and more bluish —almost maltese. Plate XXXVI, 1, 2, shows the changes which took place in the same bird in twelve days.

It is interesting to watch this bird on his hunting ground as he moves stealthily along the shore, with indrawn neck, horizontally tilted body, and forward-pointed beak. If he espies a small fish or other object which may serve as food, he moves almost imperceptibly toward it, crouching lower and lower as he nears the victim, striking finally with such force that he appears fairly to lose his balance. This heron is not fond of wading, preferring to hunt along the shore or to seek his food by walking over the masses of aquatic vegetation which cover the Potomac to a great extent in summer and autumn.

The third species found breeding in the District of Columbia is the Least Bittern (*Ardetta exilis*). This is the smallest of our herons, and although with us every year from May to September, is seldom seen. His diminutive size and subdued coloration make him difficult to find, even in his favored haunts. One or two pairs breed annually in the cattail border which surrounds one of the fish-ponds near the Washington Monument. His large relative, the American Bittern (*Botaurus lentiginosus*), occasionally spends the winter in the District, but is most abundant in the fall, when he is frequently flushed by the ortolan hunter and added to his bag of game.

Anacostia River between Anacostia and Bennings in the latter part of August fairly teems with bird life. Countless numbers of

SNOWY HERON (photographed at National Zoological Park).

swallows find an abundant food supply on the marsh and an open field to train their wings for the long journey soon to be undertaken. This arm of the Potomac is at this season almost completely covered by wild rice and aquatic vegetation. The first covers completely the low mud flats and furnishes the thousands of sparrows, reed-birds, redwings, and ortolans with grain, while the latter forms a dense mat over all the water except the very narrow portion marking the channel. This green water-carpet is a favorite resort of the herons, and there may be seen the American Egret (*Herodias egretta*), that large white heron second in size only to the Great Blue (*Ardea herodias*) which is also present; the Little Blue (*Florida cærulea*), and an occasional Snowy Heron (*Egretta candidissima*), all busily engaged in finding their daily food.

The most abundant of these is the Little Blue (plate XXXVII, 1, 3, 4), although few would recognize him as such, for at the season referred to there may be at least fifty white birds (a color phase of this species) to one of dark color. Their food consists almost exclusively of crayfish, which at this season have the habit of flipping from the bottom of the shallow water to the surface of the floating vegetation where they lie quiet for some time and fall an easy prey to the hungry heron. The Little Blue, like the Green Heron, seems to prefer walking to wading, though he is much more active than the latter species, flying up and down the marsh from one favorable feeding place to another. They are sociable birds, always fond of company.

The American Egret (plate XXXVII, 6) and the Great Blue (plate XXXVII, 2) occur in about equal numbers. The former has been known to nest at Arlington Cemetery. Both are fishers, fond of wading, the Great Blue even more so than the Egret. The latter frequently joins the Little Blues, when he appears as a giant of the same race. Among the host of white Little Blues there appears occasionally a bird, much more trim and graceful, whose yellow feet distinguish him at a glance from the other species. This is the Snowy Heron (*Egretta candidissima*), shown in plate XXXVIII, which is undoubtedly the most beautiful of all our waders, although it is quite rare in the District of Columbia.

As evening advances, the few Night Herons which remain go to the Anacostia marsh, while the diurnal members rise one after another and fly up the stream. I followed them one evening and found a secluded place on the bank where the tops of several dead trees were fairly well surrounded and hidden by green vegetation. Here the herons had assembled in numbers and were preening their beautiful dresses, preparing for the night which was fast approaching (plate XXXVII, 5).