

XVI. NOTES ON BIRDS OBSERVED IN SOUTHERN FLORIDA.*

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(PLATES XXXIX-XLIV.)

On January 12, 1924, the senior author, proceeding from Miami, established headquarters at the Royal Palm State Park. From this base the neighboring Long Pine Key was worked and a special trip was made to Flamingo and the offshore keys, January 17-20. January 26-31 were spent at 'Gator Lake; and on February 6 the region was abandoned altogether to take up work on the Kissimmee Prairies.

The junior author arrived at Coconut Grove on March 10 and the next day set out in an automobile with Mr. Semple and made camp near the old club-house about two miles east of East Cape. On March 15 camp was moved to a point on the canal-road just south of East Fox Lake. March 19 to 26 were spent at 'Gator Lake. This camp was struck on March 27 and the return to Coconut Grove, via East Cape, begun. Coconut Grove was reached on the 28th and daily excursions were made into the surrounding country until April 1, when

*The paper here presented embodies the results of the observations made by Mr. Ernest G. Holt on a field-trip to southern Florida in the winter of 1923, under the auspices of the Cleveland Museum of Natural History, and on a field-trip to the same general region made in the spring of 1924 by Mr. George Miksch Sutton of the Carnegie Museum. Mr. Holt's expenses were borne by Dr. George W. Crile, one of the Trustees of the Museum in Cleveland; Mr. Sutton went to Florida as the guest of Mr. John B. Semple of Pittsburgh, who has done much to increase the ornithological collections of the Carnegie Museum.

Although working quite independently of each other, the two observers have combined their notes, restricting their report to that part of the mainland of Florida which lies south of Palm Beach, including one or two Keys on Biscayne Bay visited by Dr. Crile and to several small Keys lying off East Cape visited by Mr. Holt. Mr. Holt's notes from the Florida Keys as well as his observations north of Lake Okeechobee are purposely omitted, it being thought best by the joint authors to confine their report to localities visited by both of them.

The kindness of the authorities of the Cleveland Museum of Natural History in giving us permission to use Mr. Holt's observations is gratefully acknowledged. At the time he made them he was a member of the staff of the Cleveland Museum.

W. J. HOLLAND, EDITOR.

an auto trip was made up the coast almost to Palm Beach. April 2 the Tamiami Trail was followed to a point about fifty miles west of Miami; April 3 Hialeah and the country west to the end of the road were visited; and a cruise, at the invitation of Mr. L. H. Somers, to Elliott's and Seiberling's Keys on April 4 concluded the field-work.

THE COUNTRY.

The region about Miami, and in fact almost the whole of the East Coast, has suffered extensive "improvement" at the hand of man. Tomato-fields now occupy the swales among the pines, while one of the finest semitropical hammocks has given way to the streets of Miami. The pine-woods themselves retain more nearly their original character than any other type of country, and it is probable that the fauna of this plant association has undergone correspondingly little change.

In our region the pines (*Pinus caribæa*) extend westward some miles from the coast between Miami and Homestead, and below the latter place occur still farther out in the Everglades on a series of oölite "islands," or out-crops known as keys. Such an "island" is Long Pine Key (Pl. XL, fig. 1) on the eastern end of which the Royal Palm State Park corners. A single species of saw palmetto (*Serenoa serrulata*) furnishes the dominant undergrowth in the pine woods. The characteristic birds were: Little Sparrow Hawk, Red-cockaded Woodpecker, Flicker, Loggerhead Shrike, Pine Warbler, and Brown-headed Nuthatch.

Royal Palm State Park lies eleven miles southwest of Homestead, just within the edge of the Everglades, and is reached by a good road from that place. Its most striking feature is the tropical jungle, known as Royal Palm Hammock, with the stately palms (*Roystonea regia*) which give it its name. Other characteristic trees are the live oak (*Quercus virginiana*), gumbo-limbo (*Elaphrium simaruba*), and strangling fig (*Ficus aurea*). The most conspicuous bird was the Florida Crow.

Beyond Royal Palm Hammock the road to Cape Sable passes out into the Everglades and continues on an embankment of rock and dirt thrown up during the excavation of a drainage canal from the western boundary of the Park, in a southwesterly direction, to East Cape. The Everglades (Pl. XL, fig. 2 and Pl. XLI, fig. 1) defy description.

The mere statement that they are a vast expanse of sedges, more or less wet, and dotted here and there with bushy hammocks fails utterly to convey the sense of distance, wildness, and freedom which chiefly impresses the traveler within their borders. Saw-grass (*Mariscus jamaicensis*) and switch-grass (*Spartina* sp.) are the dominant plants, and herons are, of course, the principal birds. Florida Red-shouldered Hawks and Kingfishers also abound, while at the time of our visits Palm Warblers were legion.

A few miles from the coast mangroves (*Rhizophora mangle*) appear and become progressively larger and more numerous to the south, until the Everglades give way entirely to a great wooded swamp (Pl. XLI, fig. 2) so nearly tropical that true mahogany thrives there and the mangroves reach a height of seventy feet. Finally the road emerges at Flamingo from this dense jungle and leads out over a narrow strip of prairie, which extends between the shore and the swamp some nine miles west to East Cape. The Spanish bayonet and several cacti are perhaps the most characteristic prairie plants.

'Gator Lake, where each of us spent much profitable time, is a very shallow, brackish body of water overlying very deep muck. It is about three-quarters of a mile in diameter, approximately circular, and lies in the Everglades five miles northeast of East Cape. A rank marginal growth of red mangroves screens the lake from the open Everglades, which surround it, and furnishes roosting and nesting places for many species of water-birds. The most notable was the Wood Ibis. Here opossums, otters, raccoons, cotton-rats, shrews, marsh-hares, and a wild-cat (*Lynx*) were seen, and alligators were common.

The keys offshore at Flamingo are mere mud-banks grown up to black mangroves (*Avicennia nitida*), with a ground cover of saltwort (*Batis maritima*), and always fringed with red mangroves (*Rhizophora mangle*). The larger keys are open in the center, and the very largest support a dense growth of thorny undergrowth, including cactus, of xerophytic appearance.

More detailed description of the region is not warranted here, Southern Florida has long attracted the attention of geologists, botanists, zoölogists, and, in ever increasing numbers, those enthusiastic amateurs, collectively known as "nature-lovers." Volumes have been written in description and praise of its beauties and wonders. Of

these we might suggest the following to those who would pursue the subject:

Sanford, Samuel. *The Topography and Geology of Southern Florida*. 2d Annual Report, Fla. State Geological Survey, Tallahassee, 1909, pp. 175-231.

Safford, W. E. *Natural History of Paradise Key and the Near-by Everglades of Florida*. Annual Report Smithsonian Institution for 1917, pp. 377-434.

Simpson, Charles Torrey. *In Lower Florida Wilds*. New York, 1920, 8vo., 404 pp.

In the following list, all records prior to March 1, 1924, result from the senior author's observations, while all subsequent notes, excepting those relating to the breeding farther north of the Water-turkey, were made by the junior author. The nomenclature and sequence of the one hundred and twenty-three forms listed follow the Third Edition of the *A. O. U. Check-List of North American Birds* and the 16th, 17th, and 18th *Supplements* thereof.

SPECIES OBSERVED.

1. *Larus argentatus*. HERRING GULL. Two were seen offshore at Flamingo, January 18.

2. *Larus atricilla*. LAUGHING GULL. A large flock of adults in changing plumage was repeatedly observed near Flamingo, March 12-15. The birds stayed almost exclusively about a shallow pond a short way in from the beach. Most of their feeding was done afoot, the whole flock wading about like sandpipers, sometimes up to their bellies in the water. At Palm Beach and Miami the gulls about the harbor were almost always on the wing, individuals occasionally dropping into the water beside a morsel to devour it. One Laughing Gull in immature plumage was observed many times on 'Gator Lake, at close range.

3. *Larus philadelphia*. BONAPARTE'S GULL. Several were seen whirling about at Palm Beach on March 10.

4. *Gelochelidon nilotica aranea*. AMERICAN GULL-BILLED TERN. One individual was seen several times, March 12 and 13, near Flamingo, flying about or resting with the Laughing Gulls. Its visits were usually brief, however, and, when the gulls paused to rest, the tern often went out to sea.

5. *Sterna caspia imperator*. COUES' CASPIAN TERN. But one individual of this species in full summer plumage was noted, a bird seen when we were *en route* to Elliott's Key on April 4. Numerous birds in winter dress were recorded in March at Flamingo, near East Cape, at Coconut Grove, and at 'Gator Lake, and on April 4 off Seiberling's Key. They were very wary. Their notes were surprising and were so varied as to be sometimes confusing. One note might be syllabilized as *tchak-kee*, and there were also high, thin squeals, which were characteristic. In feeding the birds kept well offshore, except during strong winds, when they usually beat back and forth on the lee. The heavy bill proved to be a good field mark.

6. *Sterna maxima*. ROYAL TERN. Several were seen offshore at Flamingo on January 17 and 18, one was noted over 'Gator Lake, January 28, and another was seen over Little Cat-tail Lake, January 30.

7. *Rynchops nigra*. BLACK SKIMMER. On January 18 four flocks, each of about twenty-five skimmers, were seen at dusk, flying westward just off shore at Flamingo. They were moving in a compact group and so low that they barely cleared the surface of the water. Two days later the same phenomenon was observed in two flocks of about twenty and forty individuals. A single bird was seen on March 26 at 'Gator Lake, passing over to the northward.

8. *Anhinga anhinga*. WATER-TURKEY. In January this species was noted in the slough just east of Royal Palm Hammock; at 'Gator Lake, where an adult female with active ovaries was taken on the 28th; and on Little Cat-tail Lake. In March it was observed rather commonly at East Fox and 'Gator Lakes. Several nests were found at varying heights in the mangroves, but although some of them looked fresh, no eggs or young birds were found. Most of the birds were obviously mated, however. In this connection it may be of interest to observe that at Bassenger a large downy white young with black pin feathers in the wings was seen in the nest on February 11, while at Gainesville fresh eggs were taken as late as April 19.

As the Snake-birds sat in the dense foliage of the mangroves they were often very difficult to see, and were sometimes closely approached. At such times they left their perches with a great commotion, and hollow squawks, which sounded like the rumbling of air in lead pipes. When the birds were surprised near the water, they

dived characteristically and as a rule were not seen again. But their soaring was even more amazing than their other abilities. When circling about, their heads seemed particularly long and slender. Once, when we slowly pushed through the terrible saw-grass at East Fox Lake, a pair of Snake-birds came out from the mangroves and circled above us for half an hour, apparently watching our every movement. At the edge of the lake, in some cat-tails, two were seen with their wings partly open and hanging loosely, standing idle for some minutes before plunging into the water. Very often when there was a commotion of any kind about 'Gator Lake the Snake-birds would join the Wood Ibis circling high above.

9. *Phalacrocorax auritus floridanus*. FLORIDA CORMORANT. Few cormorants were found at 'Gator Lake in January. Individuals were also noted in the drainage canal in that vicinity and near Ingraham Lake. On the Oyster Keys off Flamingo, however, they were abundant. There hundreds of cormorants roosted in the mangroves with other hundreds of Brown Pelicans. January 18, on an unnamed key a little farther out, hordes were found in the marginal mangroves and in the water about the edge of the island, keeping up a mighty splashing as an accompaniment to a perfect hubbub of voices. Their old flimsy nests of sticks were stuck all over the overhanging branches of the mangroves, while the ground beneath was strewn with empty eggshells.

Along the canal near East Fox Lake, Florida Cormorants were often seen fishing in March. They were recognized at a great distance by their steady, direct flight. At 'Gator Lake they were then particularly common and were observed every day as they sat on the protruding stubs along shore, or floated in a scattered silent group in the middle of the lake. In leaving a perch they almost always first descended to the water with a splash, and then with wing-tips striking the surface, and great clumsy feet beating simultaneously to propel the body along faster, they would gradually rise. Occasionally we came very near the females, as they sat lazily on their perches, tails often half under water, and with grayish-green eyes staring at us. The males, on the other hand, were not easily approached and were usually observed in a separate flock out in the lake. The iris of the male is a startlingly clear, bright green. Cormorants were numerous on the piles and the old wharf near East Cape.

10. *Pelecanus erythrorhynchos*. WHITE PELICAN. Houston Irwin of Flamingo reports that a flock of fifty or seventy-five White Pelicans was seen on a small lake back of East Cape about January 1, 1924.

11. *Pelecanus occidentalis*. BROWN PELICAN. In January pelicans and cormorants were roosting by hundreds on West Oyster Key, just off Flamingo. The eastern point of the island is covered thickly with a pure stand of rather large mangroves and it was here that the birds gathered in greatest numbers. The sun was sinking into the Gulf, as we landed on the key and slipped quietly through the trees to the roost, where scores upon scores of birds were with much preening settling themselves for the night. It was a weird place in the gloom, in a world of roots, mud, and dark glossy green leaves; weirder still were the noises that filled the air. The cormorants, so far as could be observed, were silent; but the queerest of vocalizings, guttural pig-like grunts, and much popping of enormous beaks disclosed the perches of the pelicans.

Pelicans were often seen at 'Gator Lake, where both adult and immature birds were noted. We very closely approached one unsuspecting young pelican. He was obviously trying to catch fish, and his clumsy, sprawling attempts were very funny. The pelicans and vultures roosted almost side by side in one of the larger clumps of mangroves in the lake.

12. *Fregata aquila*. MAN-O'-WAR-BIRD. Two were seen soaring over West Oyster Key, January 20; they were also observed at Coconut Grove, flying overhead, March 10 and 11; and at 'Gator Lake, March 22 and 24. One thing particularly noted was, that, when the birds were sailing into the wind, their tails seemed not to be forked, but composed simply of a single long feather. Only when they turned quickly was the deep furcation obvious. There is an impression among residents thereabouts that the "Man-o'-war Hawk" actually has but a single long tail-feather.

13. *Mergus serrator*. RED-BREASTED MERGANSER. A flock of seven was observed near Coconut Grove, as we were on our way to Elliott's Key, April 4.

14. *Querquedula discors*. BLUE-WINGED TEAL. No teal were seen at 'Gator Lake in January, but they were extremely abundant there

March 19-26, and were usually found in the small, very muddy coves along the edge of the lake. Often large flocks were seen sitting among the mangrove roots, or running about in the open spaces between clumps of grass. They were surprisingly wild, and even at a great distance, as soon as we were observed, they would set up an agitated calling and begin moving about uneasily. It was interesting here to see a Red-shouldered Hawk capture a male Blue-wing. The hawk had somehow cornered its victim along the edge of the mangrove bushes, and, although the duck would dive when its pursuer struck, the hawk was ever ready to grab it when it reappeared, and the contest eventually became too strenuous for the duck.

Although many of the teal seemed to be mated, no courtship antics were observed.

15. *Marila affinis*. LESSER SCAUP DUCK. On January 17 a lone adult male was taken in the canal at Bear Lake and hundreds of ducks, presumably of the same species, were seen well out in the shallow water of the lake itself. A flock of about twenty-five was noted on 'Gator Lake, January 26-29, and single birds were taken at the same time on the canal in that vicinity. March 19-26 these ducks were abundant on 'Gator Lake, where they usually kept out in the open water, or rested on one of the open banks on the southern shore. During this time no particular change in the number of ducks present was noted, but the fact that more species were not seen leads to the conclusion that a great many of the ducks, which must have wintered thereabouts, had left for the north. Upon two occasions ducks other than teal and "Blue-bills" were seen, but could not be certainly identified. One such pair were very likely Shovellers; the others may have been Florida Ducks. On April 15 Mr. Semple saw only a few "Blue-bills" and Blue-winged Teal remaining at 'Gator Lake.

16. *Ajaia ajaja*. ROSEATE SPOONBILL. Two richly colored, apparently fully mature birds were seen on the wing at 'Gator Lake, January 26, and two days later one was flushed from the Wood Ibis rookery, where it had gone to roost. "K," our camp-man, seemed abashed to find the "pinks" so scarce, after having assured us that we could easily obtain them at 'Gator Lake. Local hunters told us that there were none this year at Cuthbert Lake, so "K" decided that were any left in the Cape Sable region they must be at Little Cat-tail Lake. A special trip to that place, however, proved vain.

March 19-26 several Spoonbills were found at 'Gator Lake, almost always together in a flock. The birds evidently had become attached to certain suitable portions of the lake, for they were usually seen in one of two or three sheltered muddy pools along the edge, back among the trees. They often circled about with the Wood Ibis in the sky, at which times their rosy plumage was very noticeable. A specimen which was crippled fell into the water. When captured it grunted and obviously tried to keep under the surface. When its head was under, an unusual protuberance was noticed on the chin, and upon examination it was found that the gular sac was tightly filled with air which the bird would not give out when taken from the water. The air was apparently retained even when the bill was opened. Although it struck with its bill, it could not bite at all hard; in fact, when it nibbled a finger, it gave the impression that so doing was hurting the bird! The specimen collected had not yet acquired its full breeding dress (March 22).

17. *Guara alba*. WHITE IBIS. January 20 two lone adult females with inactive ovaries were shot from the mangroves on West Oyster Key, where they had gone to roost with the cormorants and pelicans. January 26-29 both adult and immature birds were common at 'Gator Lake in mixed flocks, numbering up to about twenty-five individuals. White Ibises were seen at East Fox Lake on March 17. For several days thereafter only a few isolated individuals were noted, but toward the end of the March sojourn at 'Gator Lake they suddenly became more abundant and were seen in flocks of from fifty to seventy birds. Many wore the mottled plumage of immaturity.

One evening, as we rounded the point of a mangrove clump at 'Gator Lake, a great commotion was heard back among the trees, and, having pushed our way in silently, we saw a large flock of White Ibises feeding at a pool. What a noisy, careless group! Chasing each other, fighting, squealing, and running about excitedly, they hardly had time to notice us. Then, when we were observed, there was a tremendous whirl of wings, and most of the birds rose directly (if clumsily) and were off. Those remaining, in statuesque poses, watched intently for danger.

The White Ibis and the herons roosted in the Wood Ibis rookery. Here in the evening the noise was indeed riotous. They never could

settle down without much quarreling over perches. The notes of the White Ibis were more insistent and cackling, and were repeated more rapidly than those of the Wood Ibis. Long files of White Ibises coming in for the night seemed to fly very rapidly. The birds gave the impression of being weighted towards the rear, or of having insufficient wing-feathers to keep a proper balance.

18. *Mycteria americana*. WOOD IBIS. At 'Gator Lake a breeding colony of Wood Ibis occupied a cluster of tiny muck and mangrove islands just off the north shore. This colony was divided into two unequal parts, a main division, taking possession of almost the whole of a separate group of islets; and a smaller section, occupying the nearest point of a neighboring island. January 26-29, activity in the rookery was at its highest pitch. Young were in every stage of development from unhatched embryos to husky nestlings able to stand; but none was yet venturing out of the nest.

A careful survey of the main division was made on January 29, when it was found to comprise a total of two hundred and thirty nests arranged in ten groups, each of from four to thirty-three nests. These nests were placed all over the peripheral branches of the trees, and only in mangroves, at elevations ranging from five feet above the water to about twenty-five feet up in the tops of the tallest trees. A single large mangrove supported the whole of the largest group of nests, thirty-three. The nests themselves were constructed rather carelessly of twigs and vines, and the fresher ones, which still held eggs, were lined with one or two green mangrove sprays. The nests were strikingly small for the size of the builders. The average diameter was certainly less than two feet, and some of them could not have been over eighteen inches wide. These nests thus differ markedly from the three-foot structures of large sticks, which were found not far distant at Bear Lake by Mr. Bent (*The Auk*, XXI, January, 1904, p. 28).

The young averaged three in number, with minima and maxima of one and five. In one nest of four, two were twice the size of their fellows, and often there was considerable though less difference in the sizes of nestlings of the same brood, indicating that incubation is commenced before all the eggs are laid. On the heels of some young, whose legs were still too wobbly to support them, were large sores due to constant abrasion by the rough material of the nests.

Unlike the birds seen by Mr. Bent (*l. c.*), which were reported very

shy, the adults at 'Gator Lake seemed reluctant to leave the rookery, at least when it was first visited. Even after several visits, some simply flew to near-by trees, though others went away. During the unusual disturbance incident upon the counting of the nests many soared at a great height above the rookery. Florida Crows were in close attendance and made the most of any molestation of the adult ibises. Turkey Vultures too kept a continual vigil here, though for what purpose it could not be ascertained.

In March about three hundred Wood Ibises were seen at 'Gator Lake and single birds or pairs were noted at points near-by. Days before the lake was actually reached, it was thought that there must be a colony of these spectacular "flintheads" somewhere near, for on the first evening at East Fox Lake the great birds had flown out from the trees and circled about, giving an occasional grunt. Pairs usually appeared; but often long files of them, their black and white plumage flickering in the sun, would move across the sky. There seemed to be a daily movement to a northeasterly point somewhere, perhaps for fresh water. But the birds observed at the East Fox Lake camp represented only a small fraction of the colony. When at length the open water of 'Gator Lake was sighted, the little wooded islands off the opposite shore, literally covered with birds, immediately held attention. A beautiful sight it was, the clear blue of sky and water, and the birds sitting about in the sunshine.

When the colony was approached, the older birds took wing. The young, though all fully fledged and well able to fly, were not wild, and many of them stood about on their platform-nests or the branches close by, looking about blankly with mouths open. From them came an incessant muttering, the noise, which we had heard particularly at evening for days before. The jargon of voices was laughable. It sounded like a great barnyard, or circus, with many voices and notes commingled. The young birds were occasionally a little unsteady in flight, but, although many of them were so undeveloped as to have noticeably short bills, all could soar remarkably well. The nests were covered with excrement and smelled violently; and the young had apparently long since forgotten to which parents they belonged.

The flight of the adults was easy and graceful, when once their perches were cleared. The feet were usually held straight back, though occasionally a bird would let its legs hang limp, particularly during high winds. The bill was pointed forward so straightly that

the angles of the mandible often showed plainly protruding below the lower contour line of the head. The most remarkable thing about these birds was their daily, voluntary soaring. When the whole colony left the trees and circled about, the air seemed filled with birds, as though in the smoke above a flame ashes of paper were being whirled higher and higher, till they were mere specks in the sky. High-flying birds in returning to the colony slid sidewise down the air in a breath-taking manner. Even at great heights, sometimes of a mile or more, the rush of their huge wings was often audible, and, when a whole flock of circling birds simultaneously returned to earth, it was indeed a memorable spectacle.

The Wood Ibis can bite savagely. A crippled one, when picked up, quickly brought blood from the hand, which it attacked, not with the tip, but with the hard, rough, cutting edge of the bill. The toes of the living birds were pale flesh-color, in contrast to the dull black of the tarsus. The eyes were an almost neutral gray-brown, and were not bright and piercing, but rather dull and expressionless.

Some young were still being fed by their parents on March 21, though many were then procuring their own food. The stomach of one adult contained thirteen fish, three of which were over seven inches long. The stomachs of the four adults taken in January were examined by Messrs. J. R. Greeley and F. M. Uhler, of the U. S. Biological Survey, and, through the courtesy of Mr. W. L. McAtee, head of the Division of Food Habits Research, their findings are here published:

- (1) Stomach nearly empty. Contents: Remains of at least 2 *Poeciliidæ* and fragments of plant-stems and fibers.
- (2) Stomach two-thirds full. Contents: 68 *Mollienisia latipinna*, 5 *Cyprinodon variegatus*, 4 *Gambusia affinis*, 2 *Lepomis holbrookii*. Fish 100 percent. Vegetable debris, 5 percent. of gross contents.
- (3) Stomach full. Contents: 17 *Mollienisia latipinna*, 3 *Cyprinodon variegatus*, 1 *Gambusia affinis*, 1 *Cyprinidæ*, 5 *Lepomis holbrookii*. Fish 98 percent.; traces of crustaceans; 16 seeds of *Cephalanthus occidentalis*, 1 seed of *Nyssa* sp. (probably *biflora*); vegetable matter 2 percent.
- (4) Stomach very full. Contents: 317 *Mollienisia latipinna*, 46 *Cyprinodon variegatus*, 9 *Gambusia affinis*, 6 *Adinia multifasciata*. Fish 100 percent; vegetable debris, a trace.

The fact, that a single ibis may take three hundred and seventy-two top-minnows at one time, is apt to lead to severe criticism of the species by over-ardent exterminators of mosquitos. For like reasons several of the herons have already been savagely attacked by certain Floridians. The best refutation of these arguments is that every year untold myriads of these fish perish with the drying of the pools. Were there no birds to prey upon them, there would simply be a few more myriads annually to die in this manner.

Although there were so many Wood Ibises at 'Gator Lake during our encampments there, Mr. Semple writes that on April 15 they had almost entirely disappeared; departed, he thinks, for more northerly regions such as Lake Okeechobee, or the cypress-swamps. The lower stage of water and its consequent greater salinity at that time, may account for this.

The future of this colony is sad to contemplate. The completion of the tourist road along the canal to East Cape will speedily bring about the abandonment of the rookery, after thirty years of use, and force a fast-disappearing bird even nearer the danger line of extinction in the United States.

19. *Ardea occidentalis*. GREAT WHITE HERON. January 18 and 20 this majestic species was common on the keys and mud-banks off Flamingo, where several specimens were collected. One strong-flying immature female was taken on West Oyster Key, and on East Oyster Key one young, still unable to fly, was seen, but no eggs or nestlings were observed there. In the canal near Ingraham Lake a single bird was seen on January 25 and in the same canal near 'Gator Lake lone individuals were seen on January 26 and 28. In March Great White Herons were seen along the canal road (particularly at Bear Lake), at East Cape, and on the muddy areas outside the rim of trees bordering 'Gator Lake. They were very wary and kept in the open. Along the shore of Florida Bay they waded about in the pools, or stood on protruding stubs. One roosted in a mangrove clump near East Fox Lake. Even in the darkness its white form could be detected against the black foliage. It was evident that the birds were not nesting close at hand, for usually only individuals were seen, and in leaving they nearly always struck out to sea, probably bound for rookeries on the keys.

20. *Ardea herodias wardi*. WARD'S HERON. Both of us found

Ward's Herons throughout the entire region, wherever canals, sloughs, or lakes offered suitable feeding-places. They were especially common on the mud-banks off Flamingo, and both eggs and nestlings were found on the near-by keys, January 18 and 20. Most of the birds seen at 'Gator Lake were immature.

21. *Casmerodius egretta*. EGRET. At sunset on January 28 several Egrets were found roosting in the Wood Ibis rookery on 'Gator Lake; and on the 30th others were seen about Little Cat-tail Lake.

22. *Egretta candidissima candidissima*. SNOWY EGRET. This species also was found roosting in the 'Gator Lake Wood Ibis rookery on January 28. At Little Cat-tail Lake on the 30th about fifteen were found perched on the marginal bushes. Three specimens secured were all adult males with active testes. About two dozen birds were recorded at 'Gator Lake, March 19-26. All were in full nuptial plumage, but there was no further indication of nesting. One specimen, when shot, fell into the water. Upon picking it up, it was noticed that no water adhered to the feathers, and that the lake for several feet about was covered with fine powder, doubtless from the powder-down patches of the egret. This was not the case with a Great White Heron secured at East Cape, March 13. Portions of this bird's plumage were thoroughly wet when it was taken from the water. In a freshly killed Snowy Egret there is a warm creamy glow of the plumage, which was not noted in the white plumage of the Little Blue Heron.

23. *Hydranassa tricolor ruficollis*. LOUISIANA HERON. Excepting, perhaps, the Little Blue Heron, this species was the most abundant of the herons. It was seen wherever there was water, except on the keys off Flamingo. The Louisiana Herons were the noisiest of all their congeners. Their notes were loud and harsh, and often quite annoying, when they warned other birds of our presence. These warning notes occasionally rather closely resembled those of young crows; other notes sounded like *kuk-keów*, repeated several times.

24. *Florida cærulea*. LITTLE BLUE HERON. Either this species, or the last, would probably outnumber in individuals all the other herons put together. Apparently there were more white than blue individuals. The pale bills and greenish feet of the white birds were good field-marks and quickly distinguished them from Snowy Egrets, when

seen afield. The Little Blue Herons were also tamer, less active, and much noisier than the Snowy Herons. At the 'Gator Lake Wood Ibis rookery, Little Blue and Louisiana Herons roosted in the lower branches, the White and Wood Ibises usually above them. Unlike the Louisiana, the Little Blue Heron was commonly found on the keys off Flamingo.

25. *Butorides virescens virescens*. GREEN HERON. January 26-31 this heron was very common in the mangroves and tall grass about 'Gator Lake and only less so along the canal. It was also seen at Little Cat-tail Lake. In March, however, Green Herons were not common at 'Gator Lake and vicinity, although single birds were seen at intervals along the canal, and at Bear and East Fox Lakes.

When disturbed along the shore the Louisiana, Little Blue, Ward's, and Snowy Herons nearly always flew out over the water, up over the trees, and away. Not so the Green Herons; they flew, screeching, back through the mangrove roots, where they were often wont to conceal themselves. A strange cry, *kek kek kek*, repeated nervously many times, was often given before flight. The habit of twitching the tail was characteristic of this heron only.

26. *Nycticorax nycticorax naevius*. BLACK-CROWNED NIGHT HERON. January 26-29 the mangroves about the margins of 'Gator Lake harbored a large population of both adult and immature Black-crowned Night Herons. The young were mostly out of the nest, clambering about over the branches, though on the 26th a flimsy nest of small sticks and leaves, which was discovered about ten feet above the water, contained three downy slate-colored nestlings (one dead), while near-by another nest, about five feet above the water, held two small young. A few days later a single nestling was found in a mangrove, which supported twenty-four nests of the Wood Ibis. In the very midst of the Wood Ibis rookery three young had left their nest to explore the branches, but one luckless fellow had made a misstep and, still feebly kicking, was stuck fast, its neck caught between the boles of two small trees. A number of Black-crowned Night Herons were found at Little Cat-tail Lake, January 30.

The birds were not common at 'Gator Lake March 19-26, but Mr. Semple writes that they were much more numerous on April 15. About three times as many individuals were in immature as in adult plumage. Adults were very wary.

27. *Nyctanassa violacea*. YELLOW-CROWNED NIGHT HERON. Apparently more adults and fewer immature individuals of this species were seen than of the Black-crowned Night Herons. It was noted from specimens in hand that the iris of the Yellow-crowned Night Heron was more orange than that of the Black-crowned, rendering the facial expression of the Yellow-crowned Night Heron more owl-like.

28. *Rallus crepitans waynei*. WAYNE'S CLAPPER RAIL. Although rails, presumably of this subspecies, were heard grunting loudly in the saw-grass at 'Gator Lake, they were seen only at Mr. Semple's home in Coconut Grove, where the birds have nested for several years. There, particularly in the morning and evening, they were heard calling loudly and insistently, sometimes four of them in a weird chorus, and occasionally one was seen deliberately walking across one of the paths, or slipping through the grass. Although the spear-grass was thoroughly searched on April 4, no nest was found. A dead bird, probably killed by an automobile, was found on April 2 between Coconut Grove and Miami.

29. *Porzana carolina*. SORA. At 'Gator Lake Soras were abundant in March. There their notes were constantly heard in the tall saw-grass. At East Fox Lake Mr. Semple saw a raccoon following a Sora through the grass.

30. *Ionornis martinicus*. PURPLE GALLINULE. One individual was positively identified at 'Gator Lake, March 19. The species should certainly have been common there.

31. *Gallinula chloropus cachinnas*. FLORIDA GALLINULE. Common, though not often seen at 'Gator, Little Cat-tail, and other lakes. Occasionally one was seen swimming leisurely across an open space in the water, head bobbing like a pigeon's and wings held in a partially lifted manner. They often rested on the mangrove roots in the shadows. One morning an otter was seen chasing a gallinule through the cat-tails.

32. *Fulica americana*. COOT. One seen in the open water at 'Gator Lake, March 24; two at Bear Lake, March 28; and a small flock near Miami on April 3.

33. *Himantopus mexicanus*. BLACK-NECKED STILT. One seen on a muddy shore at East Fox Lake, March 17. Mr. Semple saw one at 'Gator Lake, April 15.

34. *Gallinago delicata*. WILSON'S SNIPE. Four were recorded near 'Gator Lake: one on the canal, January 31; two on the edge of the lake, March 26; and another, which was heard one night, hooting, as is their custom in courtship farther north.

35. *Pisobia maculata*. PECTORAL SANDPIPER. Recorded March 11, 13, and 14, near camp at East Cape, and March 26, at 'Gator Lake. The birds did not feed on the shore of the bay, but among the weeds about the inland pools.

36. *Pisobia minutilla*. LEAST SANDPIPER. Seen in small flocks about the shallow pools at East Cape, March 11 and 14. They were apparently not so common as the following species.

37. *Ereunetes pusillus*. SEMIPALMATED SANDPIPER. Several fair-sized flocks were observed at East Cape, March 13 and 14. They were extremely restless.

38. *Totanus melanoleucus*. GREATER YELLOW-LEGS. Recorded several times at East Cape, Bear Lake, 'Gator Lake, and Miami, in March. They were noticeably commoner than the Yellow-legs; usually one, two, or three birds were seen.

39. *Totanus flavipes*. YELLOW-LEG. Observed March 12 and 13 on the flats near East Cape.

40. *Tringa solitaria solitaria*. SOLITARY SANDPIPER. One flew by camp at 'Gator Lake, March 23, calling loudly.

41. *Bartramia longicauda*. UPLAND PLOVER. Seen on the canal road near East Fox Lake, March 16 and 23.

42. *Actitis macularia*. SPOTTED SANDPIPER. Recorded at 'Gator Lake, March 21 and 24.

43. *Numenius americanus*. LONG-BILLED CURLEW. One seen on the flats near East Cape, March 13.

44. *Squatarola squatarola cynosurae*. BLACK-BELLIED PLOVER. A flock of five seen on the Cape Sable flats, March 13 and 14.

45. *Oxyechus vociferus*. KILLDEER. In January several were seen about the tomato-fields just west of Royal Palm Hammock; and individuals, as well as two flocks, the larger judged to contain about twenty-five birds, were found about Ingraham Lake. Killdeers were

repeatedly observed singly or in a flock on the flats near East Cape in March. At the wooded lakes Killdeer were seen only in transit.

46. *Colinus virginianus floridanus*. FLORIDA BOB-WHITE. Observed at Coconut Grove, where birds were seen in the town and in the palmetto-scrub in the vicinity. A female collected on April 2 apparently was not ready to nest.

47. *Zenaidura macroura carolinensis*. MOURNING DOVE. A few seen at Coconut Grove, but found to be common at Yamato, north of Miami, during early April. Not recorded in the Cape Sable region.

48. *Chæmepelia passerina passerina*. GROUND DOVE. This species was noted at Cutler on December 21, 1923, and in mid-January, 1924, at Royal Palm Hammock, Long Pine Key, Clive Key, and an unnamed key off Flamingo. On March 10 a Ground Dove was found in Mr. Semple's yard, resting on a banana leaf. Though natal down was still clinging to its feathers (Pl. XLIII, fig. 2) it was able to fly extremely well. The eyelids were yellowish, the bill dark at the tip, and orange-yellow at the base, and the feet dull pinkish. No adult birds were seen anywhere, though their soft cooing was often heard. At East Cape they were repeatedly seen in a tract of dead weeds, but they were noticeably more plentiful to the north in the vicinity of Delray.

If the young bird discovered at Coconut Grove on March 10 represents average development, the eggs must usually be laid in early February.

49. *Cathartes aura septentrionalis*. TURKEY VULTURE. Common throughout the region from Miami to East Cape and on the off-shore keys; especially numerous about the lakes in the Everglades. The "buzzards" were occasionally bothersome about camp; and, while laboring through the saw-grass or mangroves, one would become weary of their constant beating back and forth low over one's head. Probably they expected to feast on alligator, since alligator hunters often work these lakes, and the vultures were most likely accustomed to their ways. The "buzzards" about 'Gator Lake were observed many times eating dead fish.

50. *Coragyps urubu urubu*. BLACK VULTURE. Not nearly so common as the last species. Several were noted at 'Gator Lake and at other points all along the trip in March and April, but it is note-

worthy that between December 21 and February 6 only two were seen south of Lake Okeechobee. These were at Ingraham Lake with thirty Turkey Vultures.

51. *Elanoides forficatus*. SWALLOW-TAILED KITE. Observed during March at Royal Palm Hammock, along the canal road in the region of Bear Lake, at Flamingo, and twice at 'Gator Lake. The deliberate grace and clean-cut beauty of these birds always won our admiration. Above the tangled woodland at Flamingo, sometimes as many as seven were observed sailing about apparently only at leisure, or play. As a rule the forked tail and wings were spread wide, at least while soaring, and the same ease of movement characterized their flight as did that of the "Man-o'-war Hawks." The birds observed on March 27 seemed to be mated, although the male, which was collected, showed no positive signs of breeding.

That this kite is playful, or mischievous, was obvious. Once a pelican flew slowly along under a soaring kite. The kite swooped down at the pelican and naggged the big clumsy creature for half a mile, crying loudly the while in a high voice, *kii-ki-ki*. Again, when a Barred Owl was flushed from a thicket, two kites slashed furiously down at the owl, crying loudly, and clearly intent on driving the creature away.

The soiled or bloody condition of the white belly feathers of our specimens of this essentially aerial bird furnish additional, although circumstantial, evidence of its habit of feeding while on the wing from prey held in its talons.

52. *Circus hudsonius*. MARSH HAWK. In the latter half of January these harriers were recorded at Royal Palm Hammock, at Flamingo, and at Ingraham, 'Gator, and Little Cat-tail Lakes. They were commonly observed in the prairie region of East Cape in March. All birds seen were in flight, and they all seemed to be moving steadily northward. Only one in pale gray plumage was seen.

53. *Accipiter velox*. SHARP-SHINNED HAWK. One individual was seen on January 15 in the woods of Royal Palm Hammock, and another on March 28, chasing a warbler near East Cape. Apparently not a common bird.

54. *Accipiter cooperi*. COOPER'S HAWK. One was seen at close range in a live oak, March 13, near East Cape.

55. *Buteo lineatus alleni*. FLORIDA RED-SHOULDERED HAWK. The commonest hawk in the Everglades in January. It not only frequented the mangrove jungles, but was often seen sitting on the embankments along the canals. Abundant almost everywhere in March, but less so in pine woods than elsewhere. The tameness of these birds (particularly the young) was remarkable. They were often approached to within a very few feet in the canoe, and one bird seemed to have no idea of leaving, even when we stood up under him and waved our hands, only about five feet from him. The adults were very noisy, particularly about their nests. They responded quickly to squeaking, and came very close. Three nests were found, all of which held young: (1) in a mangrove hammock near East Fox Lake, (2) in a live oak near East Cape, (3) in a large mangrove at 'Gator Lake. These nests were placed high in the trees, but, as rather small trees were used, they were easily reached. The young in all the nests were at about the same stage of development. Doubtless the food of these birds consists usually of smaller animals, but we saw one with a large snake, and another was seen to catch a male Blue-winged Teal.

56. *Buteo platypterus*. BROAD-WINGED HAWK. Recorded twice near East Cape, March 11 and 13. These birds also were very tame.

57. *Haliaeetus leucocephalus leucocephalus*. BALD EAGLE. January 18 and 20 three occupied nests were found on the keys off Flamingo. The first nest, which may be taken as typical (Pl. XLIV, fig. 1) was an enormous structure of large sticks, four and a half or five feet in diameter, placed about twenty-five feet up in the crotch of a black mangrove, and overlooking three nests occupied by young Ward's Herons. The inside of the nest was built up almost to the rim, flattened, and covered with dried grass on which sat two huge dark brown young with contour feathers appearing through the down. The second nest (Pl. XLIV, fig. 2) contained but a single very small eaglet, covered with pale buffy down, and possessing a shrill voice; while the third harbored a big very dark downy youngster and an egg. All reeked of rotting fish. The parents attending these nests were in fully adult plumage. In fact no immature birds were seen, other than the nestlings. The same key never sheltered more than one occupied eagle's nest. On the other hand nests of Ward's Herons were quite often placed almost in the shadow of an aerie, and no evidence was obtained that the eagles ever abused this confidence.

Only one adult Bald Eagle was seen on the mainland in March, although immature birds were observed nearly every day. The Lesser Scaup Ducks at 'Gator Lake showed plainly that they feared the eagles, but no eagle was ever seen to chase a duck. The notes of the Bald Eagle were surprisingly thin, high, and weak. One eagle examined in the flesh on March 17 was apparently in the moult between the plumage of the second and third year, a much bedraggled, worn specimen.

58. *Falco peregrinus anatum*. DUCK HAWK. On March 21 there was a high wind, during which many of the birds about 'Gator Lake gathered in the sheltered recesses. In one of these coves suddenly appeared a Duck Hawk, the only one recorded, chasing a Tree Swallow.

59. *Falco columbarius columbarius*. PIGEON HAWK. Although repeatedly recorded along the south shore of 'Gator Lake in March, the same bird might have been seen many times. Its flight was very rapid.

60. *Cerchneis sparveria sparveria*. SPARROW HAWK. This large northern form seemed to be almost confined to the prairie region of Cape Sable. On January 16, however, a specimen was taken on Long Pine Key and on March 28 a female was shot in the pines near Homestead. Both were within the normal habitat of subsp. *paula*, but even in the field the larger, heavier build of *C. sparveria sparveria* is obvious.

61. *Cerchneis sparveria paula*. LITTLE SPARROW HAWK. Abundant in certain parts of the pine-lands as far west as Long Pine Key, but never seen anywhere but in the pines. It was so common in some areas that every separate clump of trees was certain to have its pair of birds. In March a female was observed to enter a hole in a charred pine stub, but no infallible breeding signs were evident in the specimen.

This form is certainly worthy of subspecific separation. It is smaller and more delicately built than the northern form, a fact noticeable even in the field, and its flight is more rapid, and its voice shriller. Its movements, while typical to some extent of the species in general, are those of a lighter bird. Upon comparing specimens in the flesh, it was found that in both sexes there is a very pronounced difference in the color of the soft parts. The cere and eyelids of

C. sparveria paula are strongly reddish orange, those of *C. sparveria sparveria* dull yellow; and the feet of *C. s. paula* are dull buffy orange, while those of the larger form are soiled grayish yellow. This reddish tinge in the flesh parts of *C. s. paula* gives it a bright, colorful appearance, quite different from that of the most highly colored northern bird.

62. *Pandion haliaëtus carolinensis*. OSPREY. Observed at 'Gator and Ingraham Lakes in January, but not about the keys off Flamingo. In March it was found about the water nearly everywhere. One bird had a favorite perch not far from camp at 'Gator Lake. It would sit for a long time with wings drooping, intently watching the surface of the water.

63. *Tyto alba pratincola*. BARN OWL. Observed twice; March 20, in the mangroves at 'Gator Lake, and March 27, on the prairies at Flamingo, where the bird was circling about above the grass, like a Short-eared Owl.

64. *Asio flammeus*. SHORT-EARED OWL. Two seen at East Cape on March 14.

65. *Strix varia alleni*. FLORIDA BARRED OWL. In January these owls commonly hooted at night and sometimes even in daylight about the lodge in Royal Palm Hammock. They were heard almost every night in March. As a rule the cry consisted of eight hoots in groups of four, but occasionally a hoot was omitted. At East Cape they fed on the numerous Cotton Rats (*Sigmodon*). The small birds, which most constantly besieged the Barred Owls, were the Key West Vireos.

66. *Otus asio floridanus*. FLORIDA SCREECH OWL. One was observed in a public park at Miami during a band concert on the night of December 21. Despite the throngs of people, the owl seemed perfectly composed upon its perch on the illuminating wires. Mr. Semple considers the species uncommon.

67. *Coccyzus minor minor*. MANGROVE CUCKOO. One was taken in the mangroves at 'Gator Lake, March 22. It was very quiet and not wild. A cuckoo had been heard calling a day or two before in the late evening.

68. *Ceryle alcyon*. BELTED KINGFISHER. Common on the keys and on the mainland, wherever there was sufficient water.

69. *Dryobates villosus auduboni*. SOUTHERN HAIRY WOODPECKER. Taken February 2 in the pines on Long Pine Key; seen once at 'Gator Lake, March 20; and once near Deerfield on April 3 in rather open pine-woods.

70. *Dryobates pubescens pubescens*. SOUTHERN DOWNY WOODPECKER. One taken February 2 on Long Pine Key, two seen near Flamingo, March 14, and two others noted on March 28 near Flamingo.

71. *Dryobates borealis*. RED-COCKADED WOODPECKER. Common on Long Pine Key in mid-January. Three birds were observed in the pine-woods near Deerfield, April 1.

72. *Sphyrapicus varius varius*. YELLOW-BELLIED SAPSUCKER. Observed at 'Gator Lake among the lower growth, March 24 and 26.

73. *Phlæotomus pileatus floridanus*. FLORIDA PILEATED WOODPECKER. Fairly common in deeper woods, particularly near the lakes and canals. A bird was found at work on its nest in a dead palmetto not far from Flamingo on March 28. The excavation was about a foot deep and had plainly just been made. Apparently the examination of the nest caused the birds to desert it, for Mr. Semple writes that it was unoccupied on April 17. At 'Gator Lake there was a pair of these handsome birds, but they were not often seen. Numerous old excavations of the birds were noted in palmettos, buttonwoods, and other dead trees.

The voice of the Florida form seems clearer and finer than that of *P. p. abieticola*. Certainly the Florida birds do not cackle so plainly as do the northern birds, and their notes even more resemble those of a Flicker.

74. *Centurus carolinus*. RED-BELLIED WOODPECKER. Common on both the mainland and the keys, in mangroves and pines alike. This bird was a frequent visitor at Mr. L. H. Somers' feeding table at Coconut Grove, and has nested regularly in Mr. Semple's yard, in a dead stub not far from the bay shore.

75. *Colaptes auratus auratus*. FLICKER. Common locally, but not evenly distributed. One of the few woodpeckers recorded in the

Everglades. A nest just ready for eggs was found near Flamingo on March 15.

76. *Antrostomus carolinensis*. CHUCK-WILL'S-WIDOW. First recorded on March 16, by Mr. Semple at Coconut Grove. Mr. Somers saw one on Elliott's Key, April 4. Heard several times about Coconut Grove, but apparently the birds had not arrived in full numbers by April 6.

77. *Archilochus colubris*. RUBY-THROATED HUMMINGBIRD. Seen repeatedly at Coconut Grove during March, and once at East Cape, March 14.

78. *Tyrannus tyrannus*. KINGBIRD. Recorded daily from March 23 on, along the canal road from 'Gator Lake, east.

79. *Myiarchus crinitus*. CRESTED FLYCATCHER. Observed nearly every day in the woods about 'Gator, East Fox, and Bear Lakes, March 15-28.

80. *Sayornis phæbe*. PHŒBE. Common, and widely distributed. Found in the pines of Long Pine Key and in the grass of the Everglades alike.

81. *Cyanocitta cristata florincola*. FLORIDA BLUE JAY. Common about Coconut Grove and Royal Palm Hammock, but strangely absent almost everywhere else. Several were seen on March 31 in the pine-woods near Coconut Grove, and on April 4 a pair was building its nest in the town. No vocal peculiarities could be detected in this southern form.

82. *Aphelocoma cyanea*. FLORIDA JAY. Three Florida Jays were seen and a specimen collected at Delray on April 1. Judging from the bird's actions and condition it was nesting. The title "Scrub Jay" is very appropriate. It is much quieter than the Blue Jay; in fact it was not heard to utter any notes at all.

83. *Corvus brachyrhynchos pascuus*. FLORIDA CROW. In January Florida Crows were recorded at Flamingo, West Oyster and Clive Keys, and Ingraham and Little Cat-tail Lakes, but were particularly common and noisy at Royal Palm Hammock and Long Pine Key. At 'Gator Lake several were always to be found about the Wood Ibis

rookery and the robbery of at least five nests of ibis eggs is unhesitatingly charged against them. In March Florida Crows were strangely rare at 'Gator Lake, being recorded only on March 22 and 26. Perhaps they had departed for more favorable hunting-grounds after the Wood Ibis eggs were hatched. At Flamingo and East Cape they were common and a nest with well-developed young was found in a live oak near East Cape on March 13.

It is remarkable that no Fish Crows were seen south of Lake Okeechobee.

84. *Agelaius phæniceus phæniceus*.* RED-WINGED BLACKBIRD. Two males were shot near East Cape on March 12, and, though it was impossible to preserve them, they were compared in the field with male specimens of *A. phæniceus floridanus*. Their much heavier, coarser build was noticeable in life. These birds were members of a flock of about fifteen which departed northward on March 13.

85. *Agelaius phæniceus bryanti*. BAHAMA RED-WING. The inclusion of this form is based upon five females secured on April 2 on the Tamiami Trail, twenty-five miles west of Miami. They are plainly paler and smaller than females of *A. phæniceus floridanus* in the collection of the Carnegie Museum, and have narrower dark streaks on the under parts. These birds were taken from an unmixed flock of females, which kept very closely together, and paid no attention to some males (now believed to have been *floridanus*) near-by. Males collected at the same time are closer to *floridanus* in every way than to *bryanti*. It seems strange that no males of *bryanti* were taken, but the sexes keep in separate flocks at that time of year, and it may well be that the wandering males simply did not cross our path.

86. *Agelaius phæniceus floridanus*. FLORIDA RED-WING. All male Red-wings secured in January, March, and April were of this form, except the two *phæniceus* shot near East Cape. Adults were taken at Ingraham Lake, January 30; East Cape, March 12; East Fox Lake, March 17; 'Gator Lake, March 25; and on the Tamiami Trail, twenty-five miles west of Miami, April 2. Two specimens were taken from

*The nomenclature here used for the forms of *Agelaius phæniceus* conforms strictly to the A. O. U. "Check-List" of 1910. This is to be construed, not as ignoring the work of Mearns (Proc. Biol. Society of Washington, XXIV, 1911, pp. 226-227) but rather as an effort to obviate confusion in the minds of non-professional readers.

a large flock of immature males near Flamingo, March 27. The noisy flocks in the live oaks there on that date were composed wholly of immature birds, all males, so far as could be determined. A flock of forty and another of twenty-five, seen at Ingraham Lake on January 30, comprised only adult males. Single birds, or scattered groups of two or three, were always adult males. No females were seen anywhere! The birds seen at East Cape, March 11-14, were clearly in a migrating flock, and disappeared on March 15.

The Florida Red-wings are much more graceful than the northern birds. Often they were seen swinging and climbing about the willow or bay-berry bushes, like Baltimore Orioles searching for insects.

It is very interesting to find three forms of the same species together in a circumscribed area, but it must be remembered that our notes were made in early spring at a very strategic point and have to do with migratory birds. That *phaniceus* was a migrant is certain; *floridanus* must have been. And it is probable that *bryanti* was just wandering about more or less aimlessly.

87. *Sturnella magna argutula*. SOUTHERN MEADOWLARK. Common and singing in January on Long Pine Key (where specimens were taken), at Flamingo, and in the Everglades at Ingraham Lake. Meadow-larks were particularly abundant on the Cape Sable prairies in March.

88. *Quiscalus quiscula aglæus*. FLORIDA GRACKLE. Common locally. Specimens collected in March at East Fox and 'Gator Lakes had not completed the pre-nuptial moult, but those taken April 4 on Elliott's Key were in fresh plumage. A loose flock at East Fox Lake, March 17, were moving deliberately through the trees, picking at the mangrove "floaters" and investigating the air-plants. At 'Gator Lake they were often observed among the mangrove roots searching for food at the water's edge.

89. *Megaquiscalus major major*. BOAT-TAILED GRACKLE. Common along the ditch through the Everglades between Ingraham and Little Cat-tail Lakes, January 30. In March the species was most often observed at 'Gator Lake, where at morning and evening, the big shiny males would sit in the tops of the trees and sing back and forth to one another their musical *keép keép, keép keép keép*. Noted also at East Fox Lake, March 15, and a large flock of males and two females were seen in the fields at Hialeah, April 2.

The flight of the male Boat-tail is quite labored, as though the tail were weighted.

90. *Poæcetes gramineus gramineus*. VESPER SPARROW. Two observed in the weeds near East Cape, March 14.

91. *Passerculus sandwichensis savanna*. SAVANNAH SPARROW. Common in the prairie region near Flamingo; one female secured March 12.

92. *Ammodramus savannarum australis*. GRASSHOPPER SPARROW. Observed several times in the grass-land bordering the salt marsh where the Cape Sable Seaside Sparrows occurred. Specimens taken March 13 and 14.

93. *Passerherbulus nelsoni nelsoni*. NELSON'S SPARROW. Specimens were secured, March 13 and 15, from the matted weeds surrounding some of the hammocks near Flamingo. One had not nearly completed the moult.

94. *Thryospiza mirabilis*. CAPE SABLE SEASIDE SPARROW. (Pl. XXXIX.) More downright labor was required to find this rare and little-known species than any other encountered. Many hours were spent before even the right environment was located. Then, when it was decided that a certain area ought to harbor the birds, if they were to be found anywhere, it took great strength of conviction to keep plowing through the tall grass in the full sun.

The moment the first bird sprang up, it was recognized by the dull gray of the back and its trailing flight, as it dropped back into the grass. Once while crouched under some grass clumps during a rain, a male perched on some low stems of grass only a few feet away and sang softly, *d'le, d'le, d'le*. Its yellow superciliary was clearly visible. When hunting down wind a flushed bird would sometimes fly up towards us, showing plainly its heavily streaked underparts. One specimen secured (March 15) had somewhat enlarged testes, but one of the females had not completed the moult.

The particular salt marsh where the sparrows were found is several miles long but only about a mile wide, and seemed to be the only marsh of the type thereabouts. Though the birds were very rare, or at least were very rarely flushed, it is hardly conceivable that the species is restricted to so extremely small a range. However, it is

well to mention the constant danger of extermination of this colony by fire. In March the region was very dry and fires were often seen. It is quite possible that the whole area might be devastated by a single blaze.

95. *Melospiza georgiana*. SWAMP SPARROW. Seen in Royal Palm State Park and at Little Cat-tail Lake in January, and near East Fox Lake and at 'Gator Lake in March.

96. *Pipilo erythrophthalmus alleni*. WHITE-EYED TOWHEE. One taken, April 1, near Delray, where others were heard calling. Observed neither in the Cape Sable region, nor about Coconut Grove.

The note of this bird seems to be merely *twee*, or *twee-ow* instead of the distinct *tow-wheel* of the typical form.

97. *Cardinalis cardinalis floridanus*. FLORIDA CARDINAL. Recorded in January at Royal Palm Hammock, Long Pine Key, and on an unnamed key off East Cape. Common everywhere in the woodland during March, particularly at Cape Sable in the cactus-filled jungles, where the tangles were thickest. The birds seemed to be paired, but no nests were found.

98. *Passerina ciris*. PAINTED BUNTING. A male seen in scrub growth at Flamingo, March 15, and another on the canal road north of Flamingo, March 27. Reported at feeding stations in Coconut Grove in January and February.

99. *Piranga rubra rubra*. SUMMER TANAGER. Seen only at Mr. Semple's home in Coconut Grove, where it arrived on March 30. Thereafter both male and female were often seen, and the former sang repeatedly a very musical full song, somewhat like that of the Baltimore Oriole. The call note sounded something like *purrr-chick'-et*.

100. *Progne subis subis*. PURPLE MARTIN. Recorded at 'Gator Lake, March 22 and 24.

101. *Iridoprocne bicolor*. TREE SWALLOW. Abundant in March on the prairies about East Cape, and near East Fox Lake.

102. *Bombycilla cedrorum*. CEDAR WAXWING. Large flocks were observed on March 10 and 11, in the avenue of Australian pines leading up to Mr. Semple's home at Coconut Grove. Seen at 'Gator Lake, March 20.

103. *Lanius ludovicianus ludovicianus*. **LOGGERHEAD SHRIKE**. Seen at Miami in December, 1923, and at Flamingo and Long Pine Key in January, 1924. In March shrikes were found to be common at Coconut Grove, Homestead, and Florida City. Shrikes and Little Sparrow Hawks are usually to be found in the same type of country.

104. *Vireo griseus maynardi*. **KEY WEST VIREO**. An adult female was taken, January 16, in a hammock on Long Pine Key. In March the species was found to be abundant in the mangrove swamps and other thick growth at East Cape. April 4 two specimens were secured on Elliott's Key, where also the birds were abundant.

Mr. Semple has sent the Carnegie Museum a beautiful nest with two eggs which he found, April 23, twenty-five miles south of Coconut Grove. He closely observed the parents many times, and waited several days to make sure that two eggs constituted the complete set. The nest is two inches deep and about three inches in diameter outside, and one and one-half by two and one-half inches inside. It is thinly but securely bound by spider-webs and lined entirely with fine shreds of palm-fiber, and was placed at the tip of a branch of a large bayberry bush.

105. *Mniotilta varia*. **BLACK AND WHITE WARBLER**. One seen, January 31, in the edge of mangroves at Bear Lake. In March the species was observed at Coconut Grove, Bear Lake, and 'Gator Lake. In two instances, March 10 and 30, the birds seemed to be paired.

106. *Compsothlypis americana* subsp. **PARULA WARBLER**. One recorded at East Cape, March 14. At 'Gator Lake both sexes were seen on March 22.

107. *Dendroica coronata*. **MYRTLE WARBLER**. Numerous in deciduous growth in Royal Palm Hammock and on Long Pine Key in mid-January. In March it was still abundant throughout the Cape Sable region. This species, however, is not so often found in strictly treeless places as the Palm Warbler.

108. *Dendroica vigorsi*. **PINE WARBLER**. Singing commonly in the timber on Long Pine Key, January 15. Several seen near Royal Palm Hammock, March 28.

109. *Dendroica palmarum palmarum*. **PALM WARBLER**. An abundant and ubiquitous species throughout the region during the entire

period covered by our observations. It was noted at every locality worked by us between Coconut Grove and East Cape and on the keys offshore, and was found alike in hammock, mangrove jungle, prairie, and Everglades. Especially numerous in the switch-grass along the canal banks near 'Gator Lake.

110. *Dendroica discolor*. PRAIRIE WARBLER. Seen in the mangroves at Bear Lake, January 31, and at East Cape and 'Gator Lake in March. On April 1 the species was found to be much more common in the scrub farther north, about Delray.

111. *Seiurus aurocapillus*. OVENBIRD. Recorded in the cactus at East Cape, at Bear and 'Gator Lakes, and at Coconut Grove. Not in song.

112. *Seiurus noveboracensis* subsp. WATER THRUSH. Recorded several times between March 11 and 28 at Flamingo and East Cape, but nowhere else. These birds were fond of the partially dried basins of the swamps, where mangroves stood.

113. *Geothlypis trichas ignota*. FLORIDA YELLOW-THROAT. Abundant in all suitable places throughout the region, but particularly numerous at 'Gator Lake, in the salt-marsh inhabited by the Cape Sable Seaside Sparrows at East Cape, and along New River near Miami. Common also on the keys off East Cape. Specimens were taken on Long Pine Key and in the Everglades near Ingraham Lake.

114. *Setophaga ruticilla*. REDSTART. Observed at 'Gator Lake, January 29 and March 28, and at Coconut Grove, April 3.

115. *Mimus polyglottos polyglottos*. MOCKINGBIRD. One of the commonest birds in the Cape Sable region and found even in wild, uninhabited portions of the Everglades.

116. *Dumetella carolinensis*. CATBIRD. Common in the thickets on Long Pine Key, in Royal Palm Hammock, in the mangrove jungle about Bear Lake, at 'Gator Lake, and on the keys off East Cape. A very tame individual frequented camp at 'Gator Lake in March and regularly ate bits of meat from skinned specimens, almost from the hand.

117. *Thryothorus ludovicianus miamensis*. FLORIDA WREN. Recorded at East Cape, 'Gator Lake, and East Fox Lake. These birds were rather difficult to observe, as they jumped about among the dense mangrove roots. Three males in full song, and in excellent condition, were secured.

118. *Troglodytes aëdon aëdon*. HOUSE WREN. January 15, three were seen in low shrubbery among the timber on Long Pine Key. The single specimen taken proves to be a richly colored example of the typical subspecies. In March House Wrens were recorded three times, in full song, along the canal road north of Flamingo.

119. *Cistothorus stellaris*. SHORT-BILLED MARSH WREN. Common in the switch-grass along the canal near Ingraham Lake on January 25. Contrary to Seton (Chapman's "Handbook of Birds of Eastern North America," 1912, p. 480), the birds were found to flush easily. They would rise above the tall grass and fly straight away, but for only a short distance, and then settle back into the grass. March 11-15 they were fairly common in the grass on the East Cape prairie.

120. *Telmatodytes palustris palustris*. LONG-BILLED MARSH WREN. Recorded only from the marsh near Flamingo where several were observed and one female was collected, March 17. For the proper subspecific identification of this specimen we are indebted to Dr. Alexander Wetmore, Superintendent of the National Zoölogical Park.

121. *Sitta pusilla*. BROWN-HEADED NUTHATCH. A number seen among the pines of Long Pine Key on January 15 and 16.

122. *Polioptila cærulea cærulea*. BLUE-GRAY GNATCATCHER. Recorded from Long Pine Key, January 15-16; in the mangrove jungle at Bear Lake, January 17; at East Cape, March 13; and at 'Gator Lake, March 22-26.

123. *Sialia sialis sialis*. BLUEBIRD. Heard calling on Long Pine Key, January 15.



CAPE SABLE SEASIDE SPARROW
(*Thryospiza mirabilis* Howell)
Slightly less than natural size.



FIG. 1. Slash-pines and saw-palmettos on Long Pine Key. Habitat of Red-cockaded Woodpecker, Brown-headed Nuthatch, and other species frequenting pine-woods.

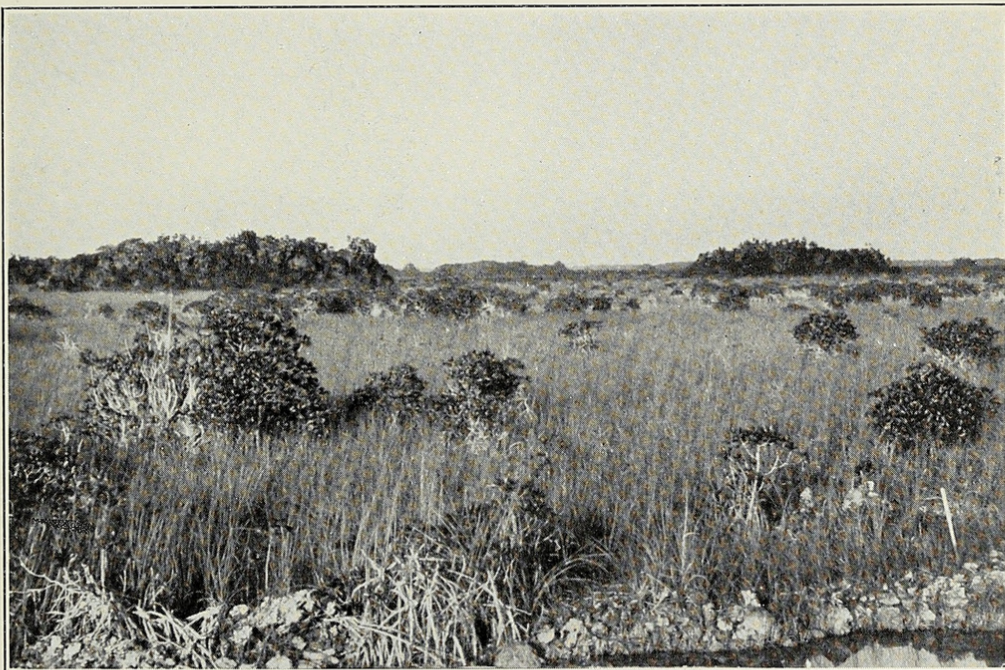


FIG. 2. Lower border of the Everglades not far from the coast. Small clumps of Red Mangroves are beginning to appear.

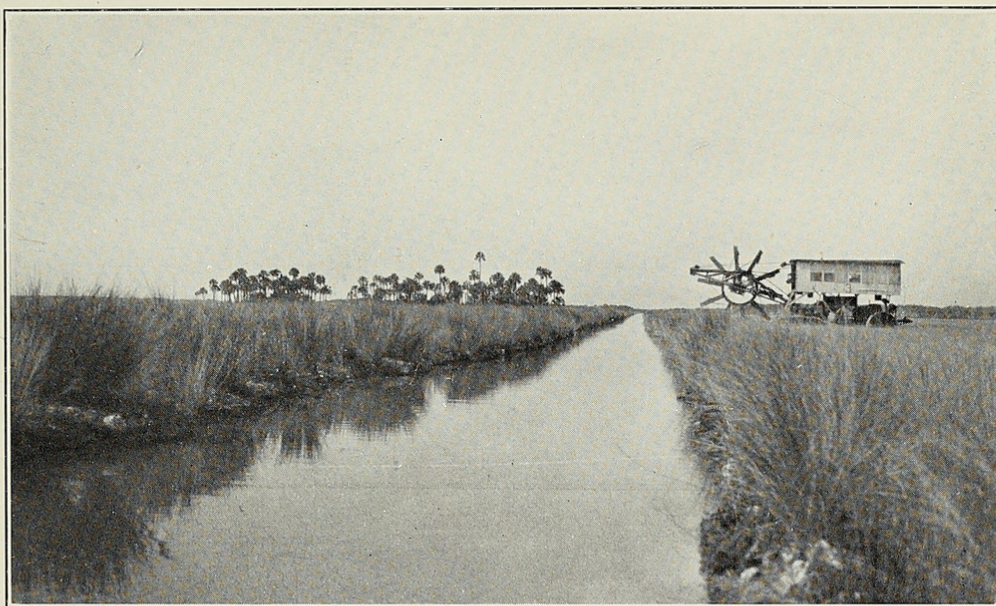


FIG. 1. Cabbage-palm hammock in the Everglades near 'Gator Lake. The ditching machine served as the senior author's camp.



FIG. 2. Dense mangrove swamp between the Everglades and the coast. An automobile-road is being built along the bank of this canal.

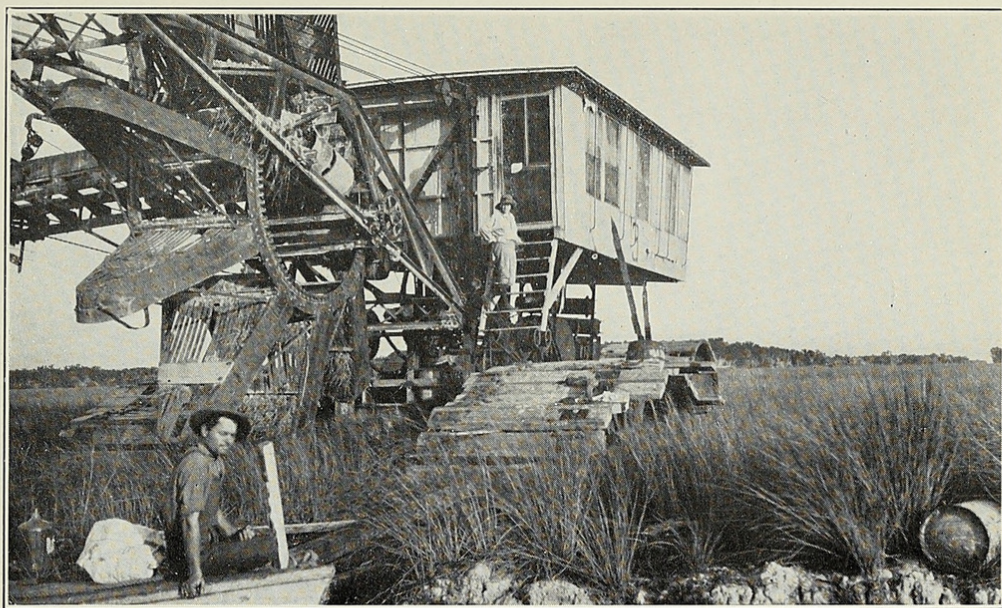


FIG. 1. Near view of our ditching machine used as a camp. The vegetation is switch-grass (*Spartina* sp.).



FIG. 2. Nesting Wood Ibis at 'Gator Lake. Note how the birds sit back upon their heels. Holes are often worn into them by the rough material of the nests.



FIG. 1. Adult Wood Ibis at the 'Gator Lake Rookery. They withdrew to the tops of the tallest trees while the rookery was inspected.



FIG. 2. Young Ground Dove at Coconut Grove. Natal down still adheres to the feathers.

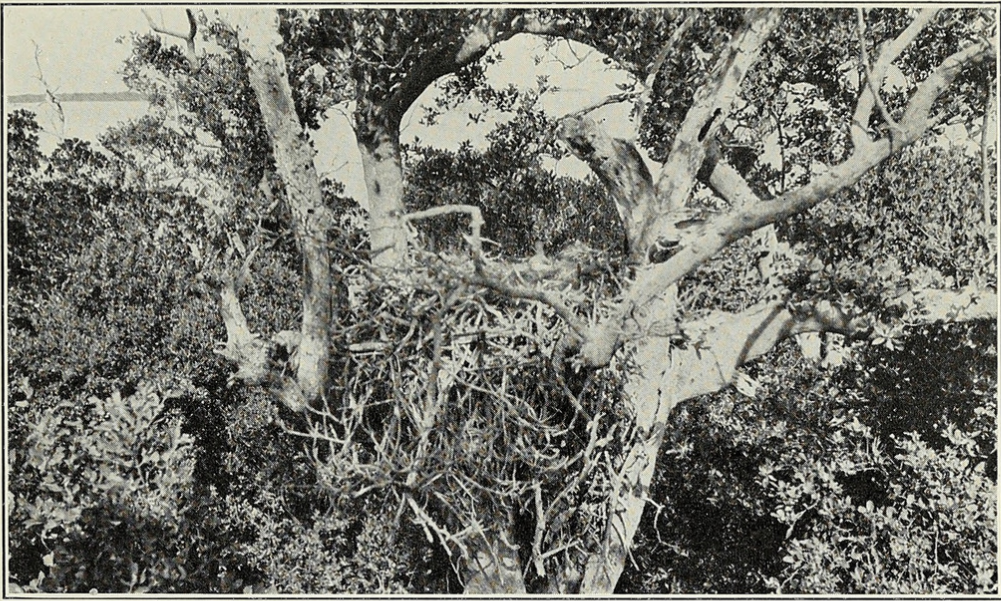


FIG. 1. Nest of Bald Eagle on Man-o'-war Key. This huge structure is situated about twenty-five feet above the ground in a black mangrove.



FIG. 2. Young Bald Eagle. While this photograph was made on Barnes Key, it well serves to illustrate the details of the nest shown above, even to the rotting fish.



Holt, Ernest G. and Sutton, George Miksch. 1926. "Notes on birds observed in southern Florida." *Annals of the Carnegie Museum* 16(3-4), 409–439.

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