

Denver, though at a slackened rate. The horse population of Denver as last reported, February, 1921, was 347, and that the displacement of horses in this and other urban areas is still going on, probably at an accelerated rate, seems indisputable. It was reported in March, 1921, in the public press, that motor trucks had increased in New York City to 68,000, an increase bringing about an actual, and a potential, displacement of hundreds, if not thousands, of horses; in fact the ton capacity of these 68,000 trucks, it is said, would employ 1,260,000 horses. The facts herein reported seem of especial importance to our western states, notably California, and it appears to the writer that in these states persistent and thorough attention to suppressing or removing adventitious food supplies of the English Sparrow will give gratifying results in preventing the establishment, and the spread and increase of this pest.

Conclusions:

- 1—That there are fewer English sparrows in Denver than ten years ago.
- 2—That there has been a notable decrease in the horse population of Denver during the past five years.
- 3—That there has been a very patent diminution in the amount of sweepings gathered from the streets of Denver during the past decade.
- 4—That the reduction in street sweepings has resulted in diminishing Denver's English Sparrow population by starvation.
- 5—That all of the above results hinge on the introduction, and multiplied uses, of the motor vehicle.

1159 Race St., Denver, Colo.

A LIST OF THE BIRDS OF ROYAL PALM HAMMOCK, FLORIDA.

BY ARTHUR H. HOWELL.

Royal Palm Hammock—known also as Paradise Key—is an island or 'Key' situated on the eastern edge of the Everglades in southern Dade County, about 11 miles southwest of Homestead.

This hammock, containing about 400 acres, largely covered with a dense tropical jungle, together with a considerable tract of the surrounding Everglades, has been set aside recently as a reservation under the name of the "Royal Palm State Park," and given into the custody of the Florida Federation of Women's Clubs.¹ The Federation has built a roomy and comfortable lodge in the Hammock and a warden is stationed there. A good rock road leads to the Hammock and in a short time is expected to be continued to Cape Sable. Numerous trails have been cut through the jungle and many of the more interesting trees have been provided with labels giving their common and scientific names. It is now easily possible, therefore, for anyone to visit this unique and attractive spot and to study under especially favorable conditions its fauna and flora.

The Hammock has received considerable attention from botanists, particularly Dr. John K. Small, who has made many trips to the region and has published an extended description of its history and principal botanical features.² More recently Mr. W. E. Safford, of the U. S. Department of Agriculture, has published an interesting account of the natural history of the Hammock, in which four pages are devoted to a cursory account of some of the birds occurring in the region.³

According to Dr. Small 162 native species of flowering plant and 13 species of ferns are known from the Hammock. The list of trees numbers 46 species. The flora is almost wholly tropical in its affinities, most of the trees and shrubs being unknown in the United States outside of the Florida Keys and the Everglade Keys. The most striking feature of the Hammock vegetation—that which makes it unique—is the presence of upwards of a hundred tall and graceful royal palms (*Roystonea regia*) which tower far above the rest of the forest, reaching, it is said, 100 to 120 feet in height.

¹ For a full account of the history of the Park consult an article by Mrs. W. S. Jennings, in *The Tropic Magazine*, Vol. IV, No 1, April, 1916.

² Small, John K., *Journ. New York Bot. Garden*, Vol. 17, Oct., 1916, pp. 165-172.

³ Safford, W. E., *Natural History of Paradise Key and the Nearby Everglades of Florida*: Smithsonian Rept. for 1917 (1919), pp. 419-423.

Considering the richness of the flora in the subtropical jungle of the Hammock, the bird fauna is surprisingly meagre. Of the breeding species, only three can be said to be abundant, these being the Florida Cardinal, the Florida Wren, and the Key West Vireo. Occurring less commonly in the forest are the Chuck-will's-widow, Yellow-billed Cuckoo, Summer Tanager, Florida Crow, and Southern Pileated Woodpecker. It will be seen from this list that in spite of the distinctly Tropical character of the flora no birds of Tropical affinities are found in the Hammock.

In the pine lands on Long Pine Key and on the mainland east of the Hammock, Pine Warblers, Red-bellied and Red-cockaded Woodpeckers, Crested Flycatchers, and Bluebirds are the most numerous resident species.

In winter, also, the bird life of the Hammock is not nearly so abundant as in northern Florida, but in the migrations this region is visited by a considerable number of species, some of which at certain times occur abundantly.

The land birds of southern Florida have received comparatively little attention from naturalists. The southern limits of both the breeding and winter ranges of even the commonest species are not well known, almost nothing has been recorded concerning their migrations, and very few specimens have been collected.

The present list, therefore, while of a preliminary nature and doubtless far from complete, is presented as a résumé of our present knowledge and a basis for future investigations. Royal Palm Hammock apparently serves as a convenient way station at irregular intervals for a considerable number of migratory species on their journeys to and from the West Indies or South America, and continuous observation covering a period of years will be necessary before even a measurably complete list of the birds can be prepared. It is hoped that the warden of the Park will be encouraged to keep as full notes as possible of the birds visiting the Hammock and in the case of certain rare or obscurely marked species, he be permitted to collect specimens to verify his observations.

The list presented herewith gives the results of two collecting trips to the Hammock by the writer, in the interests of the U. S. Biological Survey, covering the periods from January 15-Febru-

ary 5 and June 11-19, 1918, together with notes made on numerous trips to the Park by Mrs. Hiram Byrd, and the observations of the Park Warden, Mr. Charles A. Mosier. Notes made in the Park by Dr. Henry C. Burgess, of Canandaigua, N. Y., December 26-28, 1917, and by Dr. Alexander Wetmore, February 20-28, 1919, are also included. My thanks are gratefully extended to the persons mentioned for their valued assistance.

I am likewise greatly indebted to the officers of the Florida Federation of Women's Clubs for permission to collect a limited number of specimens in the Park and for other courtesies freely extended.

Podilymbus podiceps. PIED-BILLED GREBE.—Winter resident; not common; seen frequently in Taylor River slough in December and January.

Anhinga anhinga. WATER TURKEY; "SNAKE-BIRD."—Common winter resident; less numerous in summer; seen in Taylor River slough, October 12, 1917 (Mrs. Byrd), December 27, 1917 (H. C. Burgess), January, 1918, and June 12, 1918.

Phalacrocorax auritus floridanus. FLORIDA CORMORANT.—Rare winter visitant; one specimen taken, January 21, 1918, as it flew over Taylor River slough.

Pelecanus occidentalis occidentalis. BROWN PELICAN.—A lone Pelican appeared on January 26, 1918, in a ditch along the road crossing the glade to the eastward of the Hammock; it was very tame, remaining unalarmed as automobiles passed within a few feet; the bird remained in the vicinity during most of two days.

Fregata magnificens rothschildi.¹ MAN-O-WAR BIRD.—Irregular visitor; Mr. Mosier has frequently seen single individuals soaring over the Hammock.

Anas platyrhynchos. MALLARD.—Rare migrant; Mosier reports a pair or two seen nearly every spring and fall.

Anas fulvigula fulvigula. FLORIDA DUCK.—Occasional, both in winter and summer; may breed. Noted by Mrs. Byrd, November 11 and December 24, 1917; a pair seen, June 12, 1918, by D. J. Nicholson, flying up Taylor River slough; small flock seen June 18, 1918, by workmen in the canal south of the Hammock.

Querquedula discors. BLUE-WINGED TEAL. Reported by Dr. H. C. Burgess, December 26-28, 1917.

Aristonetta valisineria.² CANVASBACK.—Mr. Mosier reports a pair seen about the last of December, 1917, in the glade east of the Hammock.

Guara alba. WHITE IBIS.—Common winter resident; less numerous in summer. Seen by Mrs. Byrd on October 12, November 4, December

¹ *Fregata aquila* of the A. O. U. Check-List.

² *Marila valisineria* of the A. O. U. Check-List.

23, 1917; flock of about 100 seen by the writer, January 15, 1918 and smaller flocks January 24 and June 12, 1918; Wetmore saw about a dozen, February 21-27, 1919.

Mycteria americana. WOOD IBIS.—Occasional winter visitant; single birds seen January 26, 28, and February 3; bunch of three on January 29, 1918; one seen by Wetmore, February 22, 1919.

Botaurus lentiginosus. AMERICAN BITTERN.—Regular winter resident in sloughs and ponds; noted by Mrs. Byrd, March 4, October 13, December 23, 1917; one or two seen almost daily from January 15 to February 4, 1918. Mr. Mosier found a nest of the Bittern in the Park in 1917; the bird was seen on the nest at close range.

Ardea occidentalis. GREAT WHITE HERON.—Rare or casual resident; a pair nested in March, 1916, in a pond apple tree near the head of Taylor River slough; one young was raised and the family remained in the vicinity till the summer of 1917. One adult individual was observed in the slough. January 15-18, 1918.

Ardea herodias wardi. WARD'S HERON.—Resident in moderate numbers; seen occasionally in the sloughs and prairie glades in January, February, and June.

Hydranassa tricolor ruficollis. LOUISIANA HERON.—Common winter visitant; seen by Burgess, December 26-28, 1917; and by Wetmore, February 20-28, 1919; numerous on the glades and along ditches, January 15-26, 1918 after which date they disappeared.

Florida caerulea caerulea. LITTLE BLUE HERON.—Common winter visitant; rare summer visitant; seen by Burgess, December 26-28, 1917; numerous on the glades and along ditches, January 15-26, 1918, associating with Louisiana Herons. Flock of 8 seen, June 12, 1918.

Butorides virescens virescens. GREEN HERON.—Moderately numerous, both in winter and summer; several noted daily, January 15-February 5, in Taylor River slough; about two pairs in same locality, June 12, 1918.

Nycticorax nycticorax naevius. BLACK-CROWNED NIGHT HERON.—Common winter resident; seen by Burgess, December 26-28, 1917; 15-20 living in Taylor River slough, January 15-February 5, 1918.

Nyctanassa violacea. YELLOW-CROWNED NIGHT HERON.—Winter visitant, not common; probably breeds; one adult taken January 15, 1918; three immature individuals seen June 14, 1918; two seen by Wetmore, February 23, 1919.

Grus canadensis mexicana. SANDHILL CRANE.—Rare; a pair of these birds were seen by Mosier every day during the first half of June, 1918, flying to the slough from the sawgrass glades south of the Park, where probably they were nesting; a pair seen also, by Wetmore, February 27, 1919.

Aramus vociferus. LIMPKIN.—Rare summer resident; a pair living on the glade just east of the Hammock, June 12-16, 1918, probably bred there; Wetmore observed three individuals in the same locality, February 20-27, 1919, feeding on marsh snails (*Ampullaria depressa*).

Rallus elegans. KING RAIL.—Rare resident, probably breeds; seen by Mrs. Byrd, October 12 and 20, and December 24, 1917; several observed in Taylor River slough, January 15 and 21, 1918, and one on the marshy glade adjoining the slough, June 12, 1918.

Porzana carolina. SORA, OR CAROLINA RAIL.—Winter visitant; two specimens caught, January 19, 1918, in rat traps set on the marshy glades.

Ionornis martinicus. PURPLE GALLINULE.—Uncommon winter visitant; single birds seen, January 7, 1917 (Mrs. Byrd), December 27, 1917 (Burgess), January 15 and 20, 1918.

Gallinula chloropus cachinnans.¹ FLORIDA GALLINULE.—Common winter resident; noted by Mrs. Byrd, October 13, and November 11, 1917; numerous in Taylor River slough, January 15–February 5, 1918.

Fulica americana. COOT.—Uncommon winter resident; noted by Mrs. Byrd, January 17 and November 11, 1917; three or four in the slough January 15–26, 1918.

Gallinago delicata. WILSON'S SNIBE.—Two individuals observed by Mosier, December 24, 1917.

Totanus melanoleucus. GREATER YELLOWLEGS.—Rare winter visitant; seen by Mrs. Byrd, December 24, and by Dr. Burgess, December 27, 1907; one specimen collected, January 15, 1918.

Totanus flavipes. YELLOWLEGS.—Flock of 7 observed by Mrs. Byrd, December 24, 1917; seen also by Dr. Burgess, December 26–28, 1917.

Catoptrophorus semipalmatus. WILLET.—Occasional visitant; single individuals observed by Mrs. Byrd, December 24, 1917 and January 4, 1918 on the glade east of the Hammock.

Oxyechus vociferus vociferus. KILLDEER.—Common winter resident on the Everglade prairies; noted on various dates between November 11 and February 5.

Colinus virginianus floridanus. FLORIDA BOB-WHITE.—Rare resident; a pair were living on the borders of Long Pine Key, on the edge of the glades, in June, 1918, probably breeding there. Mr. Mosier has seen two quail in the Hammock proper.

Meleagris gallopavo osceola. FLORIDA TURKEY.—Very rare resident; one seen in the Hammock by Mosier on January 14, 1918.

Zenaidura macroura carolinensis. MOURNING DOVE.—Rare resident; a few seen in December, 1917 (Burgess) and January, 1918.

Chaemepelia passerina passerina. GROUND DOVE.—Uncommon resident; reported by Burgess, December 26–28, 1917; three or four seen in the road through the Hammock in January, 1918 and three around a mule pen on the rock road across the Everglades south of the Park, June 17, 1918.

Cathartes aura septentrionalis. TURKEY VULTURE.—Common resident, less numerous in summer.

¹ *G. galeata* of the A. O. U. Check-List.

Coragyps urubu. BLACK VULTURE.—Uncommon; six seen over the glades, January 24, 1918; seen by Mrs. Byrd, December 24, and by Dr. Burgess, December 26–28, 1917.

Elanoides forficatus forficatus. SWALLOW-TAILED KITE.—Uncommon summer resident; Mrs. Byrd saw one, May 21, 1915; a single specimen was collected in the pineland just east of the Hammock, June 13, 1918 and two days later, four birds were seen at once sailing over the glades.

Rostrhamus sociabilis. EVERGLADE KITE.—Rare summer resident; one seen by Mrs. Byrd, May 21, 1915. A pair—the first of the season—seen over the glades on January 26 and 27, 1918, but not again during my stay; on June 19, 1918, as I drove out from the Hammock in an automobile, we passed within a few feet of an Everglade Kite sitting on a bush close to the road across the glade. The species was several times observed by Mr. Mosier in October, 1918.

Circus cyaneus hudsonius.¹ MARSH HAWK.—Uncommon winter visitant; single individuals noted January 7, 1917 (Mrs. Byrd); December 27, 1917 (Burgess); January 18, 20, and 30, 1918; and February 23, 1919 (Wetmore).

Accipiter velox. SHARP-SHINNED HAWK.—Uncommon winter visitant; single individuals seen, January 15 and 18, 1918.

Buteo borealis (subsp.?). RED-TAILED HAWK.—Uncommon resident; small numbers seen, January 26 and 30, 1918.

Buteo lineatus alleni. FLORIDA RED-SHOULDERED HAWK.—Common resident; found both on Royal Palm Hammock and on the smaller hammocks which dot the everglades; several specimens taken.

Buteo platypterus platypterus. BROAD-WINGED HAWK.—One specimen taken, January 19, 1918, along the road through the Hammock.

Haliaeetus leucocephalus leucocephalus. BALD EAGLE.—Rare resident; single birds seen by Mrs. Byrd, January 7, 1917 and by Mr. Mosier, January 13, 1918.

Cerchneis sparveria paula.² LITTLE SPARROW HAWK.—Not uncommon in pineland and between Florida City and the Hammock; has been seen in the Hammock by Mosier.

Pandion haliaetus carolinensis. OSPREY.—Occasional visitant; two seen by Mrs. Byrd, January 4, one by the writer, January 20, and several by Mr. Mosier, October 17, 1918.

Tyto alba pratincola.³ BARN OWL.—“White” owls are frequently seen in the Hammock by the warden; a feather picked up in the jungle was identified as belonging to this species. In December, 1919, Mr. Mosier picked up a pellet which the owl dropped as he flew from his perch; this was examined in the Biological Survey and found to contain the remains of a cotton rat *Sigmodon hispidus*.

¹ *C. hudsonius* of the A. O. U. Check-List.

² *Falco* of the A. O. U. Check-List.

³ *Tyto pratincola* of the A. O. U. Check-List.

Strix varia alleni. FLORIDA BARRED OWL.—Common resident on Royal Palm and other smaller hammocks in the Everglades; one specimen taken, January 23, 1918.

Otus asio asio.¹ FLORIDA SCREECH OWL.—Fairly common resident; one heard calling nearly every evening near the Lodge.

Coccyzus americanus americanus. YELLOW-BILLED CUCKOO.—Fairly common summer resident; rare winter resident; single individuals noted by Mrs. Byrd, January 7 and December 24, 1917; numerous, June 12–19, 1918 (one specimen taken).

Streptoceryle² alcyon alcyon. BELTED KINGFISHER.—Common winter resident on the glades and about ditches in the pineland.

Campephilus principalis. IVORY-BILLED WOODPECKER.—Very rare resident; in May, 1917, Mr. Mosier found a nest of this species in a dead royal palm stub, about 35 feet from the ground; he had a perfectly clear view of the old birds and of three young sticking their heads out of the hole. He has on a few occasions since then seen or heard this bird, but no indications of breeding were discovered in 1918 or 1919; it was last seen in February, 1919.

Dryobates villosus auduboni. SOUTHERN HAIRY WOODPECKER.—Rare resident; reported by Dr. Burgess, December 26–28, 1917; one seen, January 30, 1918, in pineland east of the Park; one heard calling in the Hammock, June 12, 1918.

Dryobates pubescens pubescens. SOUTHERN DOWNY WOODPECKER.—Uncommon; two seen near the Park lodge, June 12, 1918.

Phrenopicus³ borealis. RED-COCKADED WOODPECKER. Common resident in pineland between Florida City and the Hammock and on Long Pine Key on the Everglades; Mosier has seen the species in Royal Palm Hammock.

Sphyrapicus varius varius. YELLOW-BELLIED SAPSUCKER.—Rare winter visitant; single individuals seen by Mrs. Byrd, March 11 and November 11, 1917, and by Dr. Burgess, December 26–28, 1917.

Phloeotomus pileatus pileatus. PILEATED WOODPECKER. Uncommon resident in the dense jungle of the Hammock, nesting in royal palms; they are frequently heard, but rarely seen.

Centurus carolinus. RED-BELLIED WOODPECKER.—Common resident, both in the Hammock and in pineland hammocks on Long Pine Key and on the mainland eastward of Royal Palm.

Colaptes auratus auratus. FLICKER.—Occurs in small numbers, at all seasons; a few pairs breed in the Hammock and on Long Pine Key; seen by Mrs. Byrd, October 13, 20, and 27, 1917; and by the writer, January 21–28 and June 12–18, 1918.

Antrostomus carolinensis. CHUCK-WILL'S-WIDOW.—Uncommon summer resident; several were heard singing every evening near the Park lodge, June 12–18, 1918.

¹ *O. A. floridanus* of the A. O. U. Check-List.

² *Ceryle* of the A. O. U. Check-List.

³ *Dryobates* of the A. O. U. Check-List.

Setochalchis¹ vocifera vocifera. WHIP-POOR-WILL.—Moderately common winter resident; January 15, 1918, I saw two feeding at dusk over the glade east of the Hammock and the next evening shot a specimen in the road; January 24, in the forenoon I saw one in open, rocky pine woods on Long Pine Key, flushing it several times at close range, and the same evening saw two more in the road in Royal Palm Hammock; January 28, about daybreak, I heard one singing a few times. Wetmore observed the Whip-poor-will and heard it singing, February 20–26, 1919.

Chordeiles minor chapmani. FLORIDA NIGHTHAWK.—Moderately common migrant and summer resident; seen by Mrs. Byrd, October 12 and 20 and November 4, 1917; two or three seen every evening, June 12–18, 1918, hawking about the clearing around the Park lodge and others seen frequently over the glades in full daylight.

Archilochus colubris. RUBY-THROATED HUMMINGBIRD.—Rare winter resident; two seen, January 24, 1918.

Tyrannus tyrannus. KINGBIRD.—Common summer resident; June 12, 1918, a pair of Kingbirds were found nesting in a small pond-apple tree on the edge of a slough on the glades north of the Hammock; the nest, which was over the water, contained 4 young birds. Kingbirds were numerous, June 14, in pineland about a mile east of the Hammock, and several were seen, June 17, on Long Pine Key.

Tyrannus dominicensis. GRAY KINGBIRD.—Observed by Dr. Burgess, December 26–28, 1917; this is a common species in summer along the coast, but is rarely seen far from salt water.

Myiarchus crinitus. CRESTED FLYCATCHER.—Moderately common resident; several were heard or seen daily in the Hammock jungle, January 15–February 5, 1918; a pair bred near the Lodge in June and several specimens were collected in a little hammock on Long Pine Key, June 17, 1918; seen also in open pineland east of Royal Palm Hammock.

Sayornis phoebe. PHOEBE.—Common winter resident; seen daily in small numbers during my January visit, chiefly on the prairie glades and around sloughs or ditches; they perch on low bushes over or near the water and make sallies for their food out over the water.

Myiochanes virens. WOOD PEWEE.—Uncommon transient; observed in fall or winter by Mrs. Byrd.

Cyanocitta cristata cristata. FLORIDA BLUE JAY.—Uncommon resident; seen in small numbers, January 15–February 5, 1918, in the Hammock and nearby pinelands; one or two heard calling in the Hammock in June.

Corvus brachyrhynchos pascuus. FLORIDA CROW.—Common resident, less numerous in summer than in winter. In January, 1918, Crows were numerous in the Hammock and on the surrounding glades, often as many as 20 being seen in a flock. They are very tame and several individuals come regularly to a platform close to the lodge to feed on table

¹ *Antrostomus* of the A. O. U. Check-List.

scraps put out for them. One individual with a very high-pitched voice has been noted by Mr. Mosier from time to time for over a year. Only about two pairs bred in the Hammock in 1918; in June, one pair were feeding large young in a nest in the woods close to the lodge.

Corvus ossifragus. FISH CROW.—Rather uncommon and irregular in their appearance; one specimen was collected, January 29, 1918, from a flock of 8 which had alighted in trees near the rock pit; three were seen, February 3, feeding along a ditch on the Everglades, and three in nearly the same place on June 18, 1918.

Agelaius phoeniceus phoeniceus.¹ FLORIDA RED-WING.—Common summer resident; less numerous in winter. A few small flocks and single birds were seen, January 15–25, 1918, on the prairie glades; June 12, several nests containing young and others containing eggs were found in sawgrass and small bushes on the glades.

Sturnella magna argutula. SOUTHERN MEADOWLARK.—Common resident; in January, 1918, small numbers were noted on the prairie glades west of the Hammock, and in June the birds were abundant in the same locality, flying about with large young.

Icterus spurius. ORCHARD ORIOLE.—One was noted, October 13, 1917, by Mrs. Byrd.

Euphagus carolinus. RUSTY BLACKBIRD.—Irregular migrant; about 20 were noted by Mrs. Byrd, October 20, 1917; others January 7 and November 4, 1917.

Quiscalus quiscula quiscula.² FLORIDA GRACKLE.—Uncommon winter resident; apparently does not breed in the vicinity of the Hammock, though breeding commonly near Florida City. Single birds were seen, January 19, 26, and 30 and a flock of 30 on February 3, flying to a roost to the southward of the Park.

Megaquiscalus major major. BOAT-TAILED GRACKLE.—Common at all seasons on the wet everglades around the Hammock, breeding in tall reeds in the sloughs. Nearly full-grown young were flying with the adults by the middle of June, and all seemed to be going at night to a common roost south of the Park.

Passerculus sandwichensis savanna. SAVANNAH SPARROW.—Fairly common winter resident; seen in small numbers on the everglade prairie west of the Hammock, January 19–28, 1918; the birds were living around seed beds and apparently caused some damage by nipping off young tomato plants. Six birds of this species were noted by Mrs. Byrd, December 24, 1917.

Ammodramus savannarum (australis?). GRASSHOPPER SPARROW. Rare winter resident; observed by Mrs. Byrd, December 24, 1917 (4 individuals), and January 4, 1918; one specimen taken (but not saved) January 25, on Long Pine Key.

¹ *A. p. floridanus* of the A. O. U. Check-List.

² *Q. q. aglaeus* of the A. O. U. Check-List.

Zonotrichia albicollis. WHITE-THROATED SPARROW.—Rare winter resident; six observed by Mrs. Byrd, November 4, 1917; seen also by Dr. Burgess, December 26–28, 1917; I saw none in January.

Melospiza melodia melodia. SONG SPARROW.—Rare winter resident; small numbers seen by Mrs. Byrd, November 11 and December 24, 1917 and January 3, 1918.

Melospiza georgiana. SWAMP SPARROW.—Rare winter resident; seen by Mrs. Byrd, December 24, 1917, and January 4, 1918, and by Dr. Wetmore, February 22, 27, and 28, 1919; I observed a few in thick brush or sawgrass, January 15, 20, 24, and 30, 1918.

Pipilo erythrophthalmus alleni. WHITE-EYED TOWHEE.—Rare winter resident; none seen in summer. One or two birds were living in thick scrub on the edge of the heavy jungle, January 15–February 5, 1918; their notes were heard nearly every morning, but the bird was so shy that it was seen only once.

Cardinalis cardinalis floridanus. FLORIDA CARDINAL.—Abundant resident, though less conspicuous in winter by reason of not being in song. In summer, this is probably the most abundant bird in the Hammock. Heard singing at all hours of the day, from daybreak to sundown.

Zamelodia ludoviciana. ROSE-BREADED GROSBEEK.—Rare migrant; one noted by Mrs. Byrd, December 24, 1917.

Passerina ciris. PAINTED BUNTING.—Rare winter resident; single individuals observed by Mrs. Byrd, March 11, 1917 and by the writer, January 25 and February 4, 1918.

Piranga rubra rubra. SUMMER Tanager.—Rare summer resident; only one male was seen in the Hammock in June, singing every day from tall live oaks near the Lodge. One or two were noted in pineland east of the Hammock.

Progne subis subis. PURPLE MARTIN.—Abundant migrant; Mrs. Byrd describes a very large flight of Martins in November, 1917, as follows:

“At 4 p. m., November 4, the Martins were observed circling over a glade at edge of Park, and as far as we could see. Starting home (toward Homestead) they did not diminish in numbers until we had gone nine miles. We roughly estimated ten to the acre. In places the air was thickly peppered with them. There might have been anywhere from a hundred thousand to a million or more. Again late in the afternoon of November 11th, we saw great flocks of swallows over the glades. Some were Martins, some Cliff Swallows.”

Petrochelidon albifrons albifrons.² CLIFF SWALLOW.—Common migrant; Mrs. Byrd observed the species in numbers on November 11, 1917, as described under *Progne subis*.

Hirundo rustica erythrogastris.³ BARN SWALLOW.—Uncommon migrant; three seen by Mrs. Byrd, October 27, 1917.

² *P. lunifrons* of the A. O. U. Check-List.

³ *H. erythrogastra* of the A. O. U. Check-List.

Iridoprocne bicolor. TREE SWALLOW.—Common winter resident; observed by Mrs. Byrd on October 12 and 27 and December 24, 1917; I saw small flocks of 10 to 20 birds flying northward over the everglades, January 18, 24, and 25, 1918.

Bombycilla cedrorum. CEDAR WAXWING.—Rare and irregular migrant; seen several times by Mr. Mosier.

Lanius ludovicianus ludovicianus. LOGGERHEAD SHRIKE.—Moderately common resident of the pine and prairie regions around Homestead; rare in the Hammock but has been seen there by Mr. Mosier.

Vireosylva olivacea. RED-EYED VIREO.—Uncommon migrant; seen by Dr. Burgess, December 26–28, 1917.

Vireosylva gilva gilva. WARBLING VIREO.—Uncommon migrant; one was seen, January 7, 1917, by Dr. Herbert R. Mills and Mr. Oscar E. Baynard.

Lanivireo solitarius solitarius. BLUE-HEADED VIREO.—Rare winter resident; one specimen taken, January 28, 1918; noted by Mrs. Byrd, January 7, 1917 and by Dr. Burgess, December 26–28, 1917.

Vireo griseus maynardi. KEY WEST VIREO.—Fairly common, both summer and winter, in the dense hammock jungle; noted in late December by Dr. Burgess and in late January by the writer; one was heard singing February 1, 1918. Specimens of this race were taken on February 2 and June 17, 1918.

Vireo griseus griseus. WHITE-EYED VIREO.—A specimen of this northern race was taken in the Hammock, January 25, 1918.

Mniotilta varia. BLACK-AND-WHITE WARBLER.—Migrant and possible rare winter resident; noted by Mrs. Byrd, January 7, 1917.

Vermivora ruficapilla ruficapilla. NASHVILLE WARBLER.—Migrant and rare winter resident; individuals were noted by Mrs. Byrd, October 12 and 27, and December 24, 1917; also by Dr. Burgess, December 26–28, 1917. Mrs. Byrd has seen the species a number of times at Silver Palm Hammock, near Princeton, and has identified specimens caught by a cat.

Vermivora celata celata. ORANGE-CROWNED WARBLER.—Rare winter resident; one seen by Mrs. Byrd, January 4, 1918.

Compothlypis americana subsp. PARULA WARBLER.—Occasional in migration; seen on numerous occasions by Mrs. Byrd.

Dendroica caerulescens. BLACK-THROATED BLUE WARBLER.—Reported quite common by Mr. Mosier, October 18, 1918; arrived about October 5.

Dendroica coronata coronata. MYRTLE WARBLER.—Common winter resident, found in open timber, scrubby tracts, and along roadsides. Observed in numbers by Mrs. Byrd, December 24, 1917 and by the writer, January 24–February 5, 1918.

Dendroica dominica dominica. YELLOW-THROATED WARBLER.—Rare winter resident; noted by Mrs. Byrd, January 7, 1917.

Dendroica vigosii. PINE WARBLER.—Common resident of the pine-lands between Florida City and Royal Palm Hammock and on Long Pine

Key; has been seen in the Hammock by Mosier. The birds were heard singing on January 24 and 28, 1918; a full-grown young bird was collected on June 13.

Dendroica palmarum palmarum. PALM WARBLER.—Common winter resident in the open parts of the Hammock and along roadsides in the pineland. Observed by Mrs. Byrd, October 20 and 27, 1917; by Dr. Burgess, December 26–28, 1917 and by the writer, January 15–February 5, 1918. In January, several birds came regularly to feed at a feeding stand near the Park lodge.

Dendroica discolor. PRAIRIE WARBLER.—Rare winter resident; observed by Dr. Burgess, December 26–28, 1917. The species breeds on the coast near Florida City, but not, so far as known in the vicinity of the Hammock.

Seiurus aurocapillus aurocapillus. OVEN-BIRD.—Fairly common winter resident; noted by Mrs. Byrd, October 20 and 28, 1917, by Dr. Burgess, December 26–28, 1917, and by the writer, January 15–February 5, 1918. Most of the birds stay in the dense jungle and they are so quiet and retiring that it is difficult to say how numerous they are. Two birds living near the Park lodge became very tame, coming to the doorstep and the feeding stand to pick up crumbs and at times almost walking over an observer's feet. One bird was caught in a mouse trap set in palmetto scrub in a clearing.

Seiurus noveboracensis subsp. WATER THRUSH.—Mrs. Byrd reports seeing large numbers of these birds along ditches in the Park one day in fall (date not recorded). Wetmore saw one in the Hammock, February 21, 1919.

Geothlypis trichas ignota. FLORIDA YELLOW-THROAT.—Occurs in small numbers, both in winter and summer, in patches of sawgrass or rushes on the glades, or in dense palmetto scrub in the Hammock. Specimens taken.

Setophaga ruticilla. REDSTART.—Migrant; Mosier states that a swarm of Redstarts invaded the Hammock about May 1, 1918, for a week. [A warbler heard singing in the heavy jungle on June 13 sounded somewhat like this species, but it could not be satisfactorily identified.]

Mimus polyglottos polyglottos. MOCKINGBIRD.—Occurs in small numbers in winter in the Hammock, and more commonly on Long Pine Key; none bred in the Hammock in 1918 and only one was observed on Long Pine Key. In January, the first song was heard on the 26th and on January 30, one bird was singing vigorously.

Dumetella carolinensis. CATBIRD.—Fairly common winter resident in the Hammock and on Long Pine Key.

Thryothorus ludovicianus miamensis. FLORIDA WREN.—Common resident of the dense hammock jungle, less conspicuous in winter; found also on Long Pine Key. In late January songs were occasionally heard in the early morning; in June the birds sing at any time of day.

Troglodytes aedon (subsp.?). HOUSE WREN.—Rare winter resident; single birds were noted by Mrs. Byrd, January 7, 1917, by Dr. Wetmore, February 21 and 23, 1919, and by the writer (on Long Pine Key), January 24 and 28, 1918.

Cistothorus stellaris. SHORT-BILLED MARSH WREN.—Two individuals were observed, January 24, 1918, in dense grass on the glades; they flushed several times at close range and flying a short distance, settled into the grass again.

Telmatodytes palustris iliacus. PRAIRIE MARSH WREN.—Uncommon winter resident; one or two seen frequently in January in patches of reeds on the glades; a specimen taken January 29, 1918, is referable to this form.

Certhia familiaris americana. BROWN CREEPER.—Rare winter resident; Mosier states that he has several times seen this bird in the Hammock in March and April.

Sitta carolinensis carolinensis. WHITE-BREADED NUTHATCH.—Rare migrant; Mosier sees a few in the Hammock every spring and fall.

Sitta pusilla. BROWN-HEADED NUTHATCH.—Resident in small numbers in the pineland east of the Hammock; several specimens, adult and full-grown young, were taken there, June 13, 1918.

Baeolophus bicolor. TUFTED TITMOUSE.—Has been seen once in the Hammock by Mrs. Byrd—date not recorded.

Corthylio¹ calendula calendula. RUBY-CROWNED KINGLET.—Rare winter resident; one observed by Mrs. Byrd, January 4, 1918.

Polioptila caerulea caerulea. BLUE-GRAY GNATCATCHER.—Uncommon winter resident; noted by Mrs. Byrd, January 7, 1917, by Dr. Burgess, December 26–28, 1917; by Dr. Wetmore, February 21–27, 1919; and by myself, January 18–28, 1918.

Hylocichla guttata pallasi. HERMIT THRUSH.—Rare winter resident; one was seen, January 26 and 30, 1918, around the edge of the clearing near the Park lodge; noted also by Dr. Burgess, December 26–28, 1917.

Planesticus migratorius migratorius. ROBIN.—Moderately common winter resident; small numbers seen in the Hammock on several days in late January and a flock of about 25 on Long Pine Key, January 28, 1918; noted by Mrs. Byrd, January 7 and December 24, 1917, and by Dr. Wetmore, February 21–26, 1919. Specimens taken January 24 and 28, 1918, proved to belong to the northern race.

Sialia sialis sialis. BLUEBIRD.—Fairly common resident in the pineland east of the Hammock where adults and full-grown young were seen June 13, 1918; two pairs were seen on Long Pine Key, January 24, 1918; a pair nested close to the lodge in the Hammock in the spring of 1918.

Biological Survey, U. S. Dept. Agr., Washington, D. C.

¹ *Regulus* of the A. O. U. Check-List.