

## II BIRDS OF OKLAHOMA

### LOONS: ORDER GAVIIFORMES

#### LOONS: FAMILY GAVIIDAE

##### (7) COMMON LOON: *Gavia immer immer*

Rare transient, usually occurring in October and November.

Migration: Tulsa—\*Nov. 3, '28; one found dead in Arkansas covered with oil \*Oct. 18, '30 (G<sup>3</sup>); Payne Co.—\*Oct. 18, '19, \*Oct. 29, '28 (M<sup>3</sup>); Kingfisher Co.—1 taken at Dover. \*Nov. 3, '22 (U. O. M.);—specimen taken, also a wounded bird caught on the Cimarron, still in winter plumage May 26, '23 (W<sup>3</sup>); Lake Overholser—1 seen Oct. 29, '27 (S<sup>1</sup>); Cleveland Co.—dead bird found by the Canadian Apr. 29, '26 (N).

The Loon flies with rapid wing strokes, its neck stretched out in front, its feet out behind, the bird's figure forming a slight curve. Mr. Saunders watched one on Lake Overholser for two hours, during which time it gave its weird, wild cry eleven times.

### GREBES: ORDER COLYMBIFORMES

#### GREBES: FAMILY COLYMBIDAE

The Grebes are lobe-footed divers with weak wings and rudimentary tails.

##### (3) HORNED GREBE: *Colymbus auritus*

Rare transient.

Specimen: Tulsa Co.—\*†Nov. 15, '27 (G<sup>3</sup>).

This rare grebe is unmistakable in the spring with its red neck, full ruff, and light ochre ear tufts, but in fall and winter it is difficult to distinguish in the field from the Eared Grebe; specimens can be separated by the shape of the bill which in the Horned Grebe is higher at the base than wide, and in the Eared Grebe wider than it is high.

##### (4) AMERICAN EARED GREBE: *Colymbus nigricollis californicus*

Uncommon transient in April and May.

Migration: Sapulpa—1 May 2, '20 (B<sup>3</sup>); Lake Overholser—8 Apr. 11, 6 Apr. 14, 4 Apr. 23, 1 May 12, '28 (S<sup>1</sup>);—Apr. 23, '29 (Mrs. L. O. Ingalls); Alva—pair \*May 14, '06, now in Normal College Museum (C<sup>2</sup>); Gate—5 May 7, '24 (L<sup>2</sup>).

This is a striking bird in the spring with its black neck, and long pointed black crest and spray of golden feathers on the cheeks; in the fall and winter it may be distinguished from the Pied-billed Grebe by its sharp, slender bill and pure white throat and underparts.

##### (6) PIED-BILLED GREBE. *Podilymbus podiceps podiceps*

Transient throughout the state, breeding locally.

Migration: Ottawa Co.—\*Mar. 21, '09; \*Sept. 26, '06 (P<sup>4</sup>); Tulsa—Apr. 2, 23, May 8, Nov. 5 (K<sup>3</sup>); \*Oct. 15, \*Nov. 3 (G<sup>3</sup>); Okmulgee—\*†Oct. 19, '25 (F); Stillwater—\*Oct. 8, '23 (M<sup>3</sup>); Cleveland Co.—1 Apr. 2, '24, 1 June 27, '22 (N); Carter Co.—\*Oct. 10, '14 (C<sup>5</sup>); Gate—1 May 15, '27 (L<sup>2</sup>).

Nesting: Tulsa—eggs May 15 to June 10 (M<sup>3</sup>); Sapulpa—rather common breeder (B<sup>3</sup>); Love Co.—2 nests with 5 and 6 eggs May 15, striped immature bird shot \*June 28, '89 (R<sup>1</sup>); Alva—2 nests found in the vicinity (C<sup>2</sup>); Kenton—nest June 2, '13 on Marselus Bros. ranch (T<sup>1</sup>).

This attractive little "Water-witch" or "Hell-diver" is a welcome sight on our ponds and sloughs. Its short, blunt bill, brownish fore-neck and upper breast, and the absence of a conspicuous white patch in the wing prevent any confusion with the two rarer grebes.

PELICANS, CORMORANTS, DARTERS, ETC.: ORDER  
PELICANIFORMES

PELICANS: FAMILY PELECANIDAE

(125) WHITE PELICAN: *Pelicanus erythrorhynchos*

Uncommon transient.

Migration: Copan—2 Oct. 6, 14, '16 (K<sup>1</sup>); Rogers Co.—\*Oct. 18, '30 (G<sup>3</sup>); Tulsa—immense flock Sept. '22 (P<sup>2</sup>); 1 Apr. 5, '30 (F); Muskogee Co.—flock on Arkansas early in Oct. '29 (L<sup>4</sup>); Canadian Co.—\*May 27, '12 (C<sup>5</sup>); Lake Overholser—15 May 15, '26 (S<sup>1</sup>);—Apr. 23, '29 (Mrs. L. O. Ingalls); Cleveland Co.—flock of 150 on So. Canadian, 1907 (Lane, '26: 499);—never seen by us (N);—100 Sept. 13, '29 (B<sup>5</sup>);—\*Oct. 2, '24 (U. O. M.); Gate—occasional lone summer visitor, 250 spring of 1923 (L<sup>2</sup>); Kenton—1 fall of 1906, 4 Nov. 26, '23 (T<sup>1</sup>). Crabb gives the following dates for the state: Apr. 25—May 27; Sept. 24—Oct. 8.

This majestic bird has become all too rare. It is protected by law and if one is shot, the offence should not be ignored, as so often happens. Formerly they were abundant. James speaks of great flocks by the Canadian Sept. 2 and 3, 1820, and Irving describes them in central Oklahoma in October 1832 "stalking like spectres about a shallow pool."

The only other bird which has the same pattern of snowy white body and black wing tips is the Snow Goose; the Pelican is much larger with a shorter neck, more prominent head and bill and slower wing beat, alternating with long intervals of sailing. Geese usually are noisy, while Pelicans fly silently.

Mr. Lewis ('30: 38) tells of a wing-tipped bird which became an amusing pet in Gate. "It would eat quite a variety of food, but only when there were bones in it. The village dogs, seeing this great strange bird walking about, thought to attack it, but a few blows from its great beak soon convinced them that they had no business with it. . . . In the spring of 1923 a flock of 250 or more rested over night on the big lake. It was a magnificent, never-to-be-forgotten spectacle."

CORMORANTS: FAMILY PHALACROCORCIDAE

(120) DOUBLE-CRESTED CORMORANT: *Phalacrocorax auritus auritus*

Rare transient in October and November.

Migration: Copan—flock seen fall of 1916 (K<sup>1</sup>); Tulsa Co.—Miller's Lake \*+Oct. 14 '26, pair \*Oct. 5, '28 (G<sup>3</sup>); Lake Overholser—early in \*Oct. '27 (S<sup>1</sup>); Kingfisher—1 taken about 18 years ago (W<sup>3</sup>); Woods Co.—\*Nov. '07 on Cimarron (C<sup>2</sup>T<sup>2</sup>);—another taken in autumn in same locality (S<sup>3</sup>).

Cormorants fly with necks outstretched, alternating flapping with brief sailing; a flock may go in single file, in a V, or irregularly. When perched they stand nearly upright with their long necks slightly curved.

DARTERS: FAMILY ANHINGIDAE

(118) WATER-TURKEY: *Anhinga anhinga*.

Accidental. Two were shot on Falls Creek in Murray County in the fall of 1913; one of these was fed to some pet skunks but its wing and

skeleton were rescued by Dr. Crabb and are now preserved in the University of Oklahoma Museum.

## HERONS, STORKS, IBISES, ETC.: ORDER CICONIIFORMES

### HERONS, BITTERNS, ETC.: FAMILY ARDEIDAE

#### HERONS AND EGRETS: Subfamily Ardeinae

#### (194) GREAT BLUE HERON: *Ardea herodias herodias*

##### Transient.

Migration: Okmulgee Co.—fall \*†1924, \*†Oct. 19, '25 (F, '28); Oklahoma Co.—\*†Nov. 5, '25 (U. O. M. Z.).

Three forms of the Great Blue Heron occur in Oklahoma, the first as a transient only, the others as breeders. The Great Blue Heron is smaller and darker than the Ward Heron, while the Treganza Heron is about the size of the first with the coloring of the second. In the field these subspecies are not distinguishable, hence sight records of migrating birds may be called Great Blue Heron (*Ardea herodias* subsp.)

#### (194b) WARD HERON: *Ardea herodias wardi*

##### Summer resident in eastern Oklahoma.

Specimens: Tulsa—\*†Mar. '27 (G<sup>3</sup>); Cleveland Co. \*†Apr. 7, '03 (U. O. M. Z.).

Migration: Copan—Apr. 3—Oct. 14, '16 (K<sup>1</sup>); Tulsa—Apr. 1—Nov. 1 (K<sup>2</sup>);—Mar. 4, '28 (F);—50 along Arkansas Mar. 23, '27 (G<sup>4</sup>); Oklahoma Co.—1 Dec. 23, '27 (S<sup>1</sup>); Cleveland Co.—Mar. 26-Apr. 27; Sept. 10-Oct. 17; 7 May 25, '21 (N); Bryan Co.—3 Feb. 11, Mar. 18, '84 (C<sup>4</sup>).

Nesting: Osage—colony (K<sup>1</sup>); Cherokee Co.—colony (P<sup>4</sup>); Tulsa—nest with 2 eggs, from a colony where there were 11 old nests in one tree, 15 miles north and east of Tulsa in Caney River bottoms, Mar. 28, '28 (G<sup>3</sup>),—pair nesting in Mohawk Park 1928 (Will Dolittle).

Food: fish, frogs, snakes, crayfish; pocket gophers, ground squirrels, field mice.

This tall, ascetic looking bird with its dignity and statuesque poses adds a picturesqueness to our landscapes which recalls the beauty of a Japanese print. All herons fly slowly with the neck drawn in and the legs stretched out behind. Although they cannot be encouraged around fish hatcheries, in all other situations their food habits are harmless or distinctly beneficial.

#### (194c) TREGANZA HERON: *Ardea herodias treganzai*

##### Summer resident in western Oklahoma.

Specimen: Canadian Co.—\*†May 24-28, '14 (C<sup>5</sup>).

Migration: Washita Co.—Apr. 22, '95 (B<sup>4</sup>); Kenton—last seen Oct. 17, '26 (T<sup>1</sup>).

Nesting: colonies reported from southwestern Oklahoma: Comanche Co.—on Cache Creek near Lawton, on Deep Red south of Chattanooga in 1905 (L<sup>1</sup>); Jackson Co.—small colony on the north side of Red river July '23 (M<sup>4</sup>); Washita Co.—1895 (B<sup>4</sup>). In northwestern Oklahoma: Woods Co.—eggs taken by Stevens north of Alva (C<sup>2</sup> T<sup>2</sup>); Cimarron Co.—56 nests in large dead cottonwood on Marselus Bros. ranch June 25, '11 (T<sup>1</sup>).

Unfortunately the great trees by the Cimarron River near the end of the Panhandle that harbored such vast numbers of Treganza Herons were carried out by a flood in 1912.

#### (196) AMERICAN EGRET: *Casmerodius albus egretta*

Formerly abundant summer visitant, rare for many years, but now recovering somewhat in numbers.

Records: 1820—1 seen Aug. 23 by Say, "numbers" near the mouth of the North Canadian Sept. 3 (James, '05:172); 1849—"quite abundant in portions of Indian Terri-

tory" (W<sup>5</sup>); Cleveland Co.—"common at times" (B<sup>6</sup>);—\*Aug. 5, '02 (O. Hanes, specimen burned); 1910—July and August on Red River (I); Tulsa Co.—Aug. 24, Sept. 7, 24, Oct 7, '24 (K<sup>8</sup>);—60-75 on Skybuck Lake near Sperry Aug. 7, 8, '26 (G<sup>4</sup>); 25 seen, 1 taken on Big Lake \*Aug. 10, '30 (G<sup>8</sup>); Lake Overholser—3 Aug. 14, 4 Aug. 16, 2 Aug. 18, '28 (S<sup>1</sup>).

August 23, 1820 Thomas Say told how "a large white crane (*ardea egretta*) stalked with slow and measured strides in the shallows of the creek" (James '05: 254). There are no records of its breeding in Oklahoma, although it does so in central Arkansas and in Texarkana (Cooke, '13a: 42). This White Heron, sometimes erroneously called White Crane, appears as large as a Great Blue Heron. Its bill is yellow, while those of the two small white herons are largely black.

(197) SNOWY EGRET: *Egretta thula thula*

Formerly abundant summer visitant; now very rare.

Records: 1820—numbers Sept. 3 near mouth of the North Canadian (James '05: 172), 1849—"abundant in Indian Territory" (W<sup>5</sup>); 1876—a few in late June on the Canadian in western Oklahoma (McCauley); 1907—one taken in the fall near Alva (C<sup>2</sup>T<sup>2</sup>); 1910—"these birds sometimes appeared in flocks of a dozen or more" on the Red River in July and August (I, '11); 1914—a Snowy Heron with aigrettes on its back seen Apr. 17 near Copan (K<sup>1</sup>) Lake Overholser—3 Aug. 14, 2 Aug. 16, 2 Aug. 18, '28 (S<sup>1</sup>).

This bird of transcendent beauty has become very rare in Oklahoma. It may be distinguished from the immature Little Blue Heron by its black legs and yellow feet. It is more active than the Little Blue and much smaller than the American Egret.

(200) LITTLE BLUE HERON: *Florida caerulea caerulea*

Summer visitant in eastern and central Oklahoma, increasing of late years.

Migration: Ottawa Co.—\*Aug. 1, '12 (P<sup>4</sup>); Copan—8 July '16-Aug.2, '16 (K<sup>1</sup>); Tulsa—Aug. 20-28, '28 (G<sup>8</sup>); Pushmataha Co.—\*July 14, '14 (C<sup>5</sup>); McCurtain Co.—\*July 4, \*10, \*17, '25 (O<sup>2</sup>); Red river—common July and August 1910 (I); Lake Overholser—hundreds Aug. '28 (S<sup>1</sup>); Cleveland Co.—"not uncommon." \*Aug. 5, '01 (B<sup>6</sup>);—2 Sept. 18, Oct. 2, '26 by South Canadian (N); Payne Co.—June 17, '22 (M<sup>3</sup>); Gate—1 May 20, '21 (L<sup>2</sup>).

Food: worthless fish, snakes, crayfish, cutworms; 51 grasshoppers in 1 stomach.

Most of the Little Blue Herons we see in Oklahoma are the immature birds in white plumage. These may be distinguished from the Snowy Egret by their greenish legs and feet, and the bluish tips to their wings, and from the American Egrets by their small size and black bills. Occasionally one is seen in mottled blue and white. There is no record of its breeding in Oklahoma, although it does so at Texarkana. Happily these beautiful birds are visiting us in greater numbers in the last few years. On Aug. 22, 1930 Mr. H. A. Yokum captured a Little Blue Heron that had been caught by the toe by a clam; he presented the bird to Mohawk Park at Tulsa.

(201) EASTERN GREEN HERON: *Butorides virescens virescens*

Summer resident in eastern and central Oklahoma, as far west as Woods, Major, Blaine, Cleveland, and Murray Counties.

Migration: Copan—latest Oct. 14, '16 (K<sup>1</sup>); Tulsa—Apr. 30-Oct. 10 (K<sup>8</sup>); Cleveland Co.—\*Apr. 17, '02 (B<sup>6</sup>);—Apr. 19-Sept. 18 (N).

Nesting: Osage Co.—4 eggs May 17, '10 (K<sup>1</sup>); Copan—5 eggs May 26, '17 (K<sup>1</sup>); Tulsa—taken every year in bottom land, usually 12 to 20 feet up, from May 10 to June 15, sets of 3 to 5, usually 4 (M<sup>6</sup>);—4 eggs May 1, '27 (G<sup>8</sup>); Cleveland Co.—building near Lexington, May 4, '29 (B<sup>8</sup>).

Food: frogs, small fish, insects, crayfish, grasshoppers, mole crickets.



One early morning in May as I was peacefully birding on Snail Brook, I was greatly startled by the most extraordinary sound as if a species of wildcat was saying *myow* very loudly and gruffly; there were three solemn Green Herons sitting hunched up in the trees. Mr. Kirn found a nest of the Shikepoke in an elm and ten feet away was a nest containing three young Crows.

(202) BLACK-CROWNED NIGHT HERON: *Nycticorax nycticorax hoactli*

Summer resident in Kay and Woods Counties, transient in rest of state.

Migration: Ottawa Co.—\*Apr. 16, '08 (P<sup>4</sup>); Tulsa—1 July 27, '24 (K<sup>3</sup>);—\*Sept. 30, '27 (G<sup>3</sup>); Stillwater—\*Nov. 28, '24 (M<sup>3</sup>); Oklahoma County—\*Sept. 18, '11 (C<sup>5</sup>); —1 Mar. 28, several Apr. 4, '25 (S<sup>1</sup>); Cleveland Co.—\*Oct. 2, '01 (B<sup>6</sup>);—\*Apr. 26, '03 (Hefley); Murray Co.—immature \*June 8, '24 (O. U. Museum); Gate—13 Apr. 17, '21 (L<sup>2</sup>).

Nesting: Kay Co.—“nest found in April 1899. on Ranch 101” (C<sup>2</sup> & T<sup>2</sup>, '08:15); Woods Co.—nest found near Alva (S<sup>3</sup>).

Food; frogs, worms, small fish, insects.

Mr. Lewis wrote me of an old lady in Beaver who has a Black-crowned Night Heron as a pet. “It came in during a storm in the fall of 1923 exhausted and somewhat crippled. It is quite tame and stands upon a book case in one corner of the room very solemnly.”

The flight of this rather stocky heron is slow and heavy with intervals of sailing. The young birds are sometimes mistaken for the Bittern, but they are spotted with whitish, are less reddish brown than that bird and lack the black stripes on the side of the neck. They are difficult to distinguish in the field from the immature Yellow-crowned Night Herons; the latter are darker in color, with the head darker than the back, and the primaries slate colored instead of tinged with rusty.

(203) YELLOW-CROWNED NIGHT HERON: *Nyctanassa violacea violacea*

Summer resident in northeastern and central Oklahoma.

Migration: Ottawa Co.—\*Mar. 23, '07, \*Apr. 12, '13 (P<sup>4</sup>); Copan—last seen Aug. 30, '16 (K<sup>1</sup>); Cleveland Co.—Mar. 20, '26, Mar. 29, '27 (N).

Nesting: Copan—pair building 34 feet up in elm Apr. 24, 4 eggs Apr. 30, '13 (K<sup>1</sup>); Tulsa—a colony of 3 pairs in 1921, 12 pairs in 1926; nests 25 to 50 feet up, far out on limbs; 4 to 6 eggs from Apr. 15-May 18 (M<sup>5</sup>);—5 eggs, Mar. 25, '27, 7 eggs May 2, '28 (G<sup>3</sup>); Creek Co.—nest May 2, '20 (B<sup>3</sup>); Stillwater—5 eggs May 21, '25 (M<sup>3</sup>); Fort Reno—breeding in 1890 (M<sup>2</sup>); Cleveland Co.—2 pairs in 1926 near So. Canadian, young in one nest from May 25th to June 21; 1 pair in 1927 first nesting from Apr. 10 to June 7, second brood 5 large young in nest and nearby Aug 8 (N); in 1928 5 pairs, 1929 2 pairs, 1930 3 pairs (F. Oliver). The nesting cycle from the building or adoption of the nest to the leaving of the young lasts about 2 months.

Food: crayfish, crustacea, worms, fish, snakes.

On Apr. 15, 1927 I was watching a pair of these handsome herons in the Olivers' woods south of Norman. The female was incubating at 7 A. M., her mate standing a little above her in the ash. Suddenly at 7:19 he struck his bill straight up, crouched down with all his plumes erected and uttered a loud whoop, then immediately returned to the usual heron attitude. He repeated this performance nine times, about once a minute, going through it quickly and nearly overbalancing himself as he made the low bow. He then started to walk majestically toward his mate, erecting his crest and wing coverts, she doing the same. She left rather hurriedly,

he stepped on to the nest and settled down to brood, but in nine minutes she returned to the eggs, both birds displaying.

May 19 the female again returned after a nine minute absence, but this time it was merely to give her mate a slender twig which he added to the nest. At this date the male regurgitated food into the bills of the young, but six days later he dropped it into the nest.

It was not until the evening of June 7 that I saw the male's song and dance again; this time it was evidently in anticipation of a second nesting. The six young were full grown and climbed about in the tree to some extent although for the most part they stood like statues. Life at a Yellow-crowned Night Heron's nest moves with great deliberation.

#### BITTERNS: Subfamily Botaurinae

##### (190) AMERICAN BITTERN: *Botaurus lentiginosus*

Transient and rare winter visitant, breeding locally.

Migration: Ottawa Co.—\*Apr. 1, '07, \*Apr. 4, '11 (P<sup>4</sup>); Copan—Apr. 3, 5, '16, Apr. 19, May 13, '17 (K<sup>1</sup>); Washington Co.—\*Nov. 23, '14 (C<sup>5</sup>); Tulsa—Apr. 16, '28 (F);—\*Oct. 23, '28 (G<sup>8</sup>); Okmulgee—\*Jan. 16, '25 (F); Stillwater—\*Dec. 7, '23 (M<sup>8</sup>); Cleveland Co.—\*May 1, '02 (B<sup>6</sup>); \*Oct. 24, '14 (C<sup>5</sup>); Apr. 11-May 15, Aug. 12-Oct. 15 (N);—\*Nov. 25 '27 (U. O. M. Z.)

Nesting: Tulsa—4 eggs May 18, 5 eggs May 19, '24 (M<sup>5</sup>);—5 eggs June 8, '27 (G<sup>8</sup>); Sapulpa—common breeder (B<sup>8</sup>); Love Co.—2 birds \*June 28, '89 (R<sup>1</sup>); Alva—set May 5 '05 (S<sup>8</sup>); Gate—summer resident (L<sup>2</sup>).

Food: frogs, snakes, small fish, crayfish, mice, moles, grasshoppers.

When walking by a marsh or slough one may flush a large brown bird that flies slowly away with neck drawn in and legs extended behind, its wide brown wings showing black tips. If a Bittern is standing motionless in the reeds with its long yellow bill pointing up, the wide black streak at the side of the neck may be seen. Young Black-crowned Night Herons are somewhat similar, but they are grayish brown, not tawny and blackish; moreover they alight in trees, something the Bittern never does.

##### (191) EASTERN LEAST BITTERN: *Ixobrychus exilis exilis*

Uncommon summer resident.

Migration: Copan—1 Aug. 30 '16 (K<sup>1</sup>); Tulsa—Apr. 16, 3 May 5, '28 (F);—\*Oct. 30, '27 (G<sup>8</sup>); Okmulgee—\*May 9, '27 (U. O. M. Z.); Lake Overholser—1 Apr. 19, 1 Aug. 14, 1 Sept. 17, 27, '28 (S<sup>1</sup>); Cleveland Co.—\*May 1, '02 (B<sup>6</sup>).

Nesting: Tulsa—6 eggs, June 6, '22, 5 eggs May 18, '24, earliest date May 15, latest June 26 (M<sup>5</sup>); Stillwater—1 seen June '24 (M<sup>5</sup>); Love Co.—1 shot and 4 seen June 28, '89 (R<sup>1</sup>); Ivanhoe Lake—3 Aug. 12, '06 (B<sup>1-2</sup>).

This curious little denizen of the marshes has a genius for concealment; patient study of marsh areas will probably show that it is less rare than the records indicate.

#### IBISES: FAMILY THRESKIORNITHIDAE

##### SUBFAMILY: Threskiornithinae

##### (187) WHITE-FACED GLOSSY IBIS: *Plegadis guarauna* Accidental.

Specimen: Kingfisher Co.—taken about \*1897 near Dover (W<sup>8</sup>).

## DUCKS, ETC.: ORDER ANSERIFORMES

## DUCKS, GEESE, AND SWANS: FAMILY ANATIDAE

## SWANS: Subfamily Cygninae

(180) WHISTLING SWAN: *Cygnus columbianus*

Rare transient and winter visitant.

Migration: Nowata—\*Nov. 2 '28 (in Fish & Game Dept. at Capitol); Pittsburg Co.—\*Dec. 26 '14 (U. O. M. Z.); Love Co.—\*Mar. 7 '91 (R<sup>1</sup>); Cleveland Co.—\*Mar. 19 '03, \*Mar. 19, '09 (U. O. M. Z.); Kingfisher—about \*1918 (W<sup>2</sup>); Dewey Co.—2 seen, 1 shot by hunter \*Dec. 26 '24 (W<sup>2</sup>, '25b).

The three Swans, Whistling, Trumpeter and Mute (*Cygnus olor*, occasionally escaping from parks) are alike in their pure white plumage, the main difference being in the bills. The first species has a black bill with a small yellow spot near the eye, the second an entirely black bill, while in the third nearly half of the bill is reddish orange and at the base of the upper mandible there is a knob which both of our native species lack.

Shooting of Swans is now entirely forbidden, and as a result their numbers are increasing in the east.

(181) TRUMPETER SWAN: *Cygnus buccinator*

Formerly probably a numerous transient; now almost extinct.

Van Vleet ('02:166) records it in his list of birds collected in Oklahoma, but no specimen is extant.

In describing a prairie fire in November 1850, Glisan ('74: 69) wrote, "To add to the wildness of the scene, on the night in question, vast flocks of white cranes, of swans, and wild geese, flew to and fro over the lurid flames in utter bewilderment and consternation."

## GEESE: Subfamily Anserinae

(172) CANADA GOOSE: *Branta canadensis canadensis*

Common transient in October and March, irregular in winter.

Migration: Copan—Mar. 11-14, Sept. 27, Oct. 16-Dec. 8 '16 (K<sup>1</sup>); Tulsa—Oct. 1-Nov. 7, Mar. 11-Apr. 7 (K<sup>2</sup>, G<sup>4</sup>, F); Bryan Co.—Oct. 10-Apr. 1 '84, seen every few days throughout the winter (C<sup>4</sup>); Cleveland Co.—Oct. 6, '13; Oct. 15:: Oct. 18; Oct. 27, '23; Mar. 3 '23; Mar. 11:: Mar. 26; Mar. 31 '26; also recorded Nov. 22 '23, 4 times in December, Feb. 21 '20, Feb. 19, '22 and a single bird Apr. 22 '24 (N); Minco—a single bird seen flying north up the South Canadian May 26 '05 (W<sup>1</sup>); Kenton—Oct. 11-14 '23, Oct. 15-20 '24, Sept. 21, big flights Oct. 6-11 '25, Sept. 25-Oct. 7 '26; Mar. 28 '26, Feb. 2 '29 (T<sup>1</sup>). Recorded on 3 Christmas censuses in central Oklahoma, on one (1929) from Kenton.

May these splendid birds with their wild cry that heralds the coming of winter and of spring, ever remain wary and evade their enemies. One December afternoon while we were listening to the fine carollings of Fox Sparrows near the South Canadian River, we were startled by an extraordinary clanking, honking, deafening clamor, and there was a flock of fifty of these great geese sweeping down the valley.

(172a) HUTCHINS GOOSE. *Branta canadensis hutchinsi*

Transient and winter visitant.

Migration: Tulsa—Mar. 30 '29 a pair joined the captive birds in Mohawk Park (Will Dolittle); Kiowa Agency—\*Apr. 5 '67 on Washita River (P<sup>1</sup>); Woods Co.—\*Jan. 12 '06 (C<sup>2</sup>). A specimen was taken by Van Vleet \*Apr. 5 '02, but no locality is given in the record.

This bird closely resembles the Canada Goose except that it is smaller; it is about as large as the White-fronted Goose.

(171) WHITE-FRONTED GOOSE: *Anser albifrons albifrons*

Uncommon transient.

Migration: Broken Arrow—25 Dec. 18 '27, 42 Oct. 13, 450 Nov. 10, '28 (S<sup>2</sup>); Perry, Noble Co.—100 Nov. 15 '28, 150 Mar. 12, 50 Apr. 15, '29 (M<sup>6</sup>); Stillwater—\*Mar. 4, '27 (M<sup>3</sup>); Lake Overholser—30 Mar. 9, 11 Mar. 11, 1 Apr. 14, '28 (S<sup>1</sup>); Canadian Co.—\*1911 (C<sup>5</sup>); Gate—20 in fall of 1920, 1 Oct. '24 (L<sup>2</sup>).

The White-fronted Goose has a white forehead and pink bill, grey head and neck, white belly and yellow feet; near the end of the tail there is a white crescent, edged with brown. Dr. A. Dugans of Gate once had one of these geese for a pet; he found it a very noisy bird. Mr. Lewis ('30:40) tells of one that stayed on his place for three weeks in October 1924, grazing on the wheat in the daytime and spending the night on the small pond nearby; "it finally became so tame that several times I walked past it within a distance of two rods without alarming it."

(169) LESSER SNOW GOOSE: *Chen hyperboreus hyperboreus*

Transient in March and October.

Migration: Ottawa Co.—\*Mar. 4, '09 (P<sup>4</sup>); Copan—Mar. 11-14, 42 Oct. 16, '16 (K<sup>1</sup>); Osage—near Graniola \*Nov. 19, '14 (C<sup>5</sup>); Tulsa Co.—59 Apr. 7, '23 (Gubser); —14 Mar. 19 '28, 150 Mar. 25, '30 (Langenkamp); —\*Oct. 28 '27, \*Oct. 18, 30, '28 (G<sup>3</sup>); —45 Nov. 14, '29 at Broken Arrow (S<sup>2</sup>); Lake Overholser—90 Mar. 17, also seen Mar. 20, 30, '28 (S<sup>1</sup>); Cleveland Co.—\*Apr. 5, '02 (B<sup>6</sup>); —12 Mar. 27, '26, 50 Mar. 30 '27 (N); Bryan Co.—first arrived Mar. 10, 84. "Immediately became common" (C<sup>4</sup>); Gate—regular transient, but far less common than 18 years ago (L<sup>2</sup>).

It is a thrilling experience to hear strange, confused honking and to see a flock of these white birds with black-tipped wings rapidly flying in a wide V. Mr. Lewis ('30:40) says: "They are less wary than the Canada Goose and suffer more from hunters, both on that account and because they are so conspicuous. They like to feed on green wheat, and a flock of them in a green field makes a striking and beautiful sight, like a drift of snow on a green background."

(169.1) BLUE GOOSE: *Chen caerulescens*

Rare transient.

Migration: Cleveland Co.—8 Apr. 15, '24 (N); Payne Co.—\*Mar. 19, '28 (M<sup>3</sup>, '29). It is listed by Van Vleet.

Blue Geese are grey birds with white heads and upper necks.

## RIVER DUCKS: Subfamily Anatinae

These are surface feeding ducks, getting their food mainly by tipping in shallow water. Most of them have a bright patch on each wing called the speculum.

(132) MALLARD: *Anas platyrhynchos platyrhynchos*

Abundant transient and winter resident throughout the state, occasionally nesting in northern Oklahoma.

Migration: a few are seen in September and October, but the main flight comes in November; found in large numbers throughout the winter, leaving in March, a few seen in April and a very few in May. In Bryan county they arrived Sept. 21, '83 and a few flocks started north Jan. 31 (C<sup>4</sup>).

Nesting: Tulsa—6 eggs July 28, 13 eggs Aug. 1, '27 (G<sup>3</sup>); —Harper Co.—nest found near Roston, eggs taken and hatched in captivity; birds are tame, but hardly breed at all (A. Dugans); Gate—nested in 1922 (L<sup>2</sup>).

The Mallard is the most abundant duck and one of the most important game birds of Oklahoma. Mr. Lewis tells of the immense numbers present near Gate in February 1921. "They rested in the day time, as

is their custom, in a fairly compact mass toward the middle of the lake, covering probably twenty-five or thirty acres, with at least a thousand birds to the acre, and flew out to their feeding grounds in the fields just as dusk came on. The ducks here like to feed on the grain fields of milo and kaffir, and in the autumn often do great damage to fields where the stalks have broken over or been blown down, so that the head of grain is on the ground." ('30: 38).

A great many Mallards have been banded, and thirty-one returns have been published from Oklahoma, taken from one month to three years after banding. Most of these were banded in Illinois and Missouri; one banded on Avery Island, La. Feb. 9, 1922 was taken in Rogers County Dec. 6, 1924 (Lincoln, '27); one banded at Yorktown, Sask. July 26, 1926 was taken in Canadian County Nov. 10, 1927; while a female reared by D. H. Bendick and banded by him at Leduc, Alberta Oct. 12, 1927, was shot at Muskogee Nov. 10, 1927 (Dept. of the Interior, Canada '29).

(133) Red-legged Black Duck: *Anas rubripes rubripes*

Rare transient.

Migration: Creek Nation—Snake Creek \*Oct. 30 '01 (B<sup>0</sup>); Tulsa—pair taken by hunter (G<sup>3</sup>); Payne Co.—\*Nov. '27 (M<sup>3</sup>, '29); Lake Overholser—18 Apr. 11, '28 (S<sup>1</sup>); Cleveland Co.—specimen taken (V); Wichitas—"only specimen I ever saw in Oklahoma; collected in the Wichita National Forest with a flock of Mallards" \*Dec. 1, '14 (C<sup>5</sup>).

The Black Duck resembles a female Mallard, but is darker; it has almost no white on the border of the speculum, and as it flies it shows silvery linings under its wings. One of these birds banded at Lake Scugog, Ont. Sept. 16, 1924 was taken in Oklahoma City Nov. 23, 1924 (Lincoln, '27: 23).

(135) GADWALL: *Chauleasmus streperus*

Uncommon transient and winter visitant.

Migration: Osage—20 Nov. 10 '29 (W. A. Blasingame); Rogers Co.—\*Oct. 3 '28 (G<sup>3</sup>); Broken Arrow—20 Mar. 11, 12 Apr. 9, 20 Nov. 10, '28 (S<sup>2</sup>); Tulsa—Apr. 23 '24 (K<sup>3</sup>); Stillwater—\*Nov. 2, '23 (M<sup>3</sup>); Lake Overholser—Dec. 26, '26, 24 Mar. 2, 2 Mar. 9, 30 Mar. 17, '28 (S<sup>1</sup>); Cleveland Co.—\*Dec. 6, '02, \*Nov. 24, '23 (U. O. M. Z.); Bryan Co.—Feb. 19—Apr. 2, '84 (C<sup>4</sup>); Comanche Co.—36 Apr. 9, '29 (C<sup>6</sup>); Cotton Co.—50 Dec. 25, '28 (C<sup>8</sup>).

The Gadwall is a slender grey duck with long pointed wings and a small white speculum. The female is greyer than the female Baldpate with a darker back; she is smaller than the female Mallard and shows white below in flight.

(137) BALDPATE: *Mareca americana*

Fairly common transient.

Migration: Copan—common Aug. 28—Sept. 20, '16 (K<sup>1</sup>); Broken Arrow—50 Nov. 13, '28 (S<sup>2</sup>); Tulsa—\*Oct. 20, \*Nov. 1, '28 (G<sup>3</sup>); Lake Overholser—Mar. 2—May 12, '28, abundant Mar. 5 and 11 (S<sup>1</sup>); Cleveland Co.—Feb. 6—May 4, most common in April, 80 Mar. 24, '27 (N); Bryan Co.—first flocks Feb. 19, '84 (C<sup>4</sup>); Wichitas—\*May 6, '04 (C<sup>2</sup>); Kiowa Agency—\*Apr. 5 '67 (P<sup>1</sup>).

The conspicuous white crown and large white patch on the fore wing easily identify the male Baldpate. The female is smaller and paler than the female Mallard and has much more white on the wings.

(143) AMERICAN PINTAIL: *Dafila acuta tzitzihoa*

Common transient and winter visitant throughout the state; rare breeder at Gate.

Migration: Copan—Aug. 27-Oct. 14, '16 (K<sup>1</sup>); Lake Overholser—2000 Jan. 7, Feb. 11, Mar. 2, 800 Mar. 5, 8 Apr. 9, 3 May 8 (S<sup>1</sup>); Cleveland Co.—Feb. 19—May 11 (N). Most common in November, February and early March.

Nesting: Gate—"more than one season have nested near a quiet pool on Horse Creek" (L<sup>2</sup>, '30: 39).

The long neck, thin body, white under plumage and narrow pointed wings with no white in them render the Sprig identifiable at long distances. It rides high on the water and thus appears taller than most other ducks. There have been three returns from banded birds published: one banded at Avery Island, La. Feb. 12, 1917 was taken in Kingfisher County, Mar. 1918 (Lincoln '24); one banded at Portage des Sioux, Mo. Mar. 16, 1923 was taken at Beaver City Nov. 1, 1924 (Lincoln '27: 27); one banded at Davidson Sask. Oct. 6, 1927, was taken at Webbers Falls Nov. 11, 1927 (Dept. of the Interior, Canada '29).

(139) GREEN-WINGED TEAL: *Nettion carolinense*

Transient and winter visitant throughout the state.

Migration: Copan:—12 Sept. 18, '16 (K<sup>1</sup>); Broken Arrow—Nov. 12, '28-Apr. 9, '29, Oct. 13, '29 (S<sup>2</sup>); Payne Co.—\*May 4, '25 (M<sup>3</sup>); Cleveland Co.—Feb. 8-Apr. 15, Nov. 27, '23 (N);—\*Sept. 14 '01 (B<sup>6</sup>); Bryan Co.—Oct. 6-Apr. 2 (C<sup>4</sup>).

This, the smallest of our ducks, and one of the hardiest, may be known by its extremely rapid flight and the lack of any white in the wing.

One day in mid March when strange frog voices were wheezing and grunting, Flickers whickering and Chickadees chattering, Snail Brook was honored by the arrival of four Green-winged Teal. By cautiously advancing on hands and knees I was able to get within a few yards of them and could watch them as they dabbled in the mud or rested on the bank. The leader of the flock was a female, the other three were beautiful males with gorgeous green and chesnut heads. It was a wonderful experience to view these lovely birds so near at hand and unafraid.

(140) BLUE-WINGED TEAL: *Querquedula discors*

Common transient, sometimes nesting in northern Oklahoma.

Migration: from late March to May, August to November, a very few in December, most common in October and April. Tulsa—Apr. 13-May 8 '24 (K<sup>3</sup>);—\*Nov. 20, \*Dec. 15 '27 (G<sup>8</sup>); Cleveland Co.—Mar. 24-May 20 (N).

Nesting: Adair Co.—mother with 12 young on Illinois River May 26, '26 (J. D. Averyt); Cleveland Co.—nested by So. Canadian in 1927 (J. Schuyler); Fort Reno—nested occasionally (Cooke, '06: 32); Gate—some regularly nest (L<sup>2</sup>).

The broad white crescent in front of the eyes and sky blue in the fore part of the wing are striking field marks of the drake Blue-winged Teal. The blue is conspicuous in both sexes in flight.

(141) CINNAMON TEAL: *Querquedula cyanoptera*

Rare transient.

Migration: Gate—male shot by hunter \*Nov. '20, another in \*1921 (L<sup>2</sup>, '25); Payne Co.—pair seen Feb. 25, Mar. 7, '28 (M<sup>3</sup>, '29).

The male of this western species is different from any other duck with his bright cinnamon head, neck and under parts. The female is indistinguishable in the field from the female Blue-winged Teal.

(142) SHOVELLER: *Spatula clypeata*

Fairly common transient, rare breeder in Cimarron County.

Migration: Ottawa Co.—\*Sept. 5, '14 (C<sup>5</sup>); Broken Arrow—50 Nov. 12, '27, 15 Mar. 11, 150 Apr. 9, 8 Sept. 10, 8 Oct. 13, 3 Nov. 10, '29 (S<sup>2</sup>); Lake Overholser—15 Nov. 12, '27, 22 Mar. 17, 6 Apr. 9, 12 May 12, '28 (S<sup>1</sup>); Cleveland Co.—Mar. 23-June 10 (N); Pauls Valley—27 Dec. 10, '27 (W. L. Hart).

Nesting: Cimarron Co.—“bred along the Cimarron and Beaver rivers,” nest with eggs June 12, '30 (T<sup>1</sup>).

The queer great bill, the contrast of the red on the sides with white areas in front and behind, and the large amount of white in the wing identify the male Spoonbill. His mate looks much like a female Blue-winged Teal, but her greater size and large bill distinguish her.

(144) WOOD DUCK: *Aix sponsa*

Once a common resident, now rare.

Records: 1820—the hunters “brought in three ducks (*anas sponsa*)” Aug. 25 (Say in James, '05: 255); 1832—several Oct. 12 (Irving); 1850—“This beautiful species breeds in the Indian Territory and Texas. In the former country I found it very abundant” (W<sup>5</sup>, '53: 102); 1902—Chickasaw Nat. \*Jan. 1 '02 (V); 1905—a female seen several times near Woodward July 13—23 (L<sup>1</sup>); 1906—Salt Plains, Alfalfa Co. \*Nov. (C<sup>2</sup> & T<sup>2</sup>); 1906—Ottawa Co. \*May 1, '06, \*Feb. 5, '07 (P<sup>4</sup>); 1919—3 seen on University Lake at Enid all summer (H. H. Lane); 1920—pair at Spavinaw \*Oct. 28 (Markowiz); 1924—Okmulgee \*Nov. 15 (F); 1924—Payne Co. Dec. 30 (W<sup>2</sup>, '25b); 1926—flock seen at Twin Lakes west of Guthrie in early April (F. Cosman, Jr.); 1928—accidentally shot by hunter \*Oct. 15 (G<sup>3</sup>); 1930—Tecomseh \*Nov. 1 (B<sup>5</sup>).

Nesting: Atoka Co.—nested in Ivory-billed Woodpecker's hole about 1875 near Old Boggy Depot (E. N. Wright); Pushmataha Co.—2 immature birds taken out of a flock of 8 near Eubanks \*July 15-20 '14 (C<sup>5</sup>); Coal Co.—breeding near Coalgate 1921 (Ben Watts); Lake Overholser—bird frightened from nest which had no eggs June '26 (Fred Cosman, Jr.).

On October 12, 1832 Washington Irving “passed by a lovely pool, covered with the most magnificent water-lilies I had ever beheld; among which swam several wood ducks, one of the most beautiful of water-fowl, remarkable for the gracefulness and brilliancy of its plumage” ('65:49). This exquisite bird, once abundant, came to the verge of extinction, but now, given strict protection, is slowly increasing again. It is essential that the law be observed and that people refrain from shooting the Wood Duck. The male is unmistakable in his resplendent apparel, but the female is a more difficult problem; the white eye ring and patch behind the eye, white chin, whitish under parts and crested appearance of the hind head are good field marks. It is the only river duck with a white belly, except the Baldpate which differs markedly in other respects. Moreover, the Wood Duck when coming in over decoys “*never* careens to face the wind in alighting as is so often noted in other water-fowl. He comes *rolling* from afar, little change in style of flight, and never hits the water without giving that weakish, peeping call for many rods before preparing to alight.” (Forbush, '25: 228).

## SEA DUCKS: Subfamily Fuligulinae

The sea ducks are expert divers; their feet are larger than those of the river ducks and placed further back; the hind toe is lobed. The plumage is less inclined to bright colors than in the river ducks.

(146) REDHEAD: *Nyroca americana*

Rather common transient and winter visitant throughout the state.

Migration: from October to April, most common in November and March;—Payne Co.—flocks, Oct. 13, '28 (L. B. Starks); Lake Overholser—Dec. 23, '25, Dec. 26, '26, 40 Nov. 12, 35 Dec. 2, '27, 20 Mar. 2, 41 Mar. 5, 10 Mar. 11, 2 Mar. 17, '28 (S<sup>1</sup>); Cleveland Co.—rather common Mar. 24-Apr. 22 (N).

The Redhead has a high forehead, black lower neck and grey back in contrast to the low forehead, brown neck and whitish back of the Canvasback. The female resembles somewhat the female Scaup, but is more uniformly brownish and lacks the white ring around the base of the bill.

(150) RING-NECKED DUCK: *Nyroca collaris*

Uncommon transient.

Migration: Copan—7 Oct. 29, '16 (K<sup>1</sup>); Tulsa—1 banded Apr. 3 '28 (F);—pair \*Nov 3, '28 (G<sup>3</sup>); Lake Overholser—1 Nov. 20 '27, 60 Mar. 5, 8 Mar. 9, 4 Mar. 17, '28 (S<sup>1</sup>); Cleveland Co.—\*Nov. '13 (C<sup>5</sup>);—1 Mar. 20, 4 Mar. 27, 7 Apr. 2-6, '26 (N).

The handsome little drake has a high head, black back and pale ring around the tip of the bill. The female, if seen at close range, may be distinguished from the Scaup and Redhead by the white eye ring, greyish cheeks and ring near the end of the bill. A good field mark for the male is the narrow white flash at the bend of the wing, as the bird drops down on the water.

(147) CANVASBACK: *Nyroca valisineria*

Transient and winter visitant.

Migration: most common in November and March; Tulsa—\*Nov. 1 '27 (G<sup>3</sup>); 3 Nov. 14 '29 at Broken Arrow (S<sup>2</sup>); Perry—15 Nov. 15 '28, 100 Jan. 12 '29 (M<sup>6</sup>); Payne Co.—\*May 13, '25, 25 Oct. 8, '27, 150 Mar. 11, '28 (M<sup>3</sup>); Lake Overholser—Dec. 23, '25, Dec. 26, '26, 50 Nov. 12, '27, 3 Mar. 2, 27 Mar. 5, 56 Mar. 11, '28 (S<sup>1</sup>); Cleveland Co.—Feb. 10-Apr. 16, 2 males May 23 (N).

The sloping foreheads and long bills of these ducks distinguish them from the somewhat similarly colored Redheads.

(148) GREATER SCAUP DUCK: *Nyroca marila*

Rare transient.

Migration: Ottawa Co.—\*Mar. 16, '09 (P<sup>4</sup>); Rogers Co.—\*†Nov. 7, '14 (C<sup>5</sup>); Tulsa—pair \*Nov. '27 (G<sup>3</sup>); Payne Co.—\*May 4, '25 (M<sup>3</sup>); Lake Overholser—2 Nov. 12, '27 (S<sup>1</sup>).

If seen at close range in a favorable light, the head of the Greater Scaup shows greenish iridescence.

(149) LESSER SCAUP DUCK: *Nyroca affinis*

Fairly common transient, rare in winter.

Migration: Rogers Co.—\*†Nov. 7, '14 (C<sup>5</sup>); Tulsa—\*Apr. 20, '27 (K<sup>3</sup>); Lake Overholser—Dec. 26, '26, 1 Jan. 7, 27 Mar. 2, 55 Mar. 5, 16 Mar. 17, '28 (S<sup>1</sup>); Cleveland Co.—Mar. 24, May 11-30, '24, Mar. 27-May 5, '26 (N);—20 Nov. 9, '29, 3 Jan. 11, '30 (B<sup>5</sup>); Minco—6 May 26, '29, '05 (W<sup>1</sup>); Wichitas—4000 Feb. 1, '28 (H. H. French); Gate—usually not very numerous but 2000 Oct. 28, '25 (L<sup>2</sup>).

The Blue-bill's head is purplish when seen in strong sunlight. The brown-headed females have a white crescent shaped area over the bill. A Lesser Scaup banded at Lake Surgog, Ont. Oct. 24, 1926 was shot at Barlesville Nov. 6, 1927 (Dept. Int. Canada, '28:160).



(151) AMERICAN GOLDEN-EYE: *Glaucionetta clangula americana*

Rare transient:

Migration: Tulsa—\*Nov. '27, \*Nov. 7, '28 (G<sup>3</sup>); Lake Overholser—1 Mar. 5 '28 (S<sup>1</sup>); Wichitas—\*†Nov. 28, '14 (C<sup>5</sup>); Woods Co.—\*Feb. '08 (C<sup>2</sup> & T<sup>2</sup>); Gate—1 Nov. 20, '20 (L<sup>2</sup>).

This duck has a bushy head, short white neck and a large amount of white in the wing. It flies with rapid wing beats and a musical whistling of the wings which has won it the name of "Whistler."

(153) BUFFLE-HEAD: *Charitonetta albeola*

Uncommon transient.

Migration: Tulsa—\*Nov. 1, \*Dec. 28, '28 (G<sup>3</sup>); Stillwater—\*Nov. 21, '25 (M<sup>3</sup>); Chickasaw Nation—\*Feb. 14, '03 (Hefley); Wichitas—pair \*Dec. '14 (C<sup>5</sup>); Gate—2 shot by a hunter \*Apr. 10, '24 (L<sup>2</sup>).

"The butterball," writes Mr. Taylor ('25:33), "is the smallest of our deep water ducks and seldom is seen in large flocks. It arrives in October and generally is found where the water is deep." The male has a large area of white on the head and snow-white flanks; the female is brown with an elongated white spot on the side of the head.

## SPINY-TAILED DUCKS: Subfamily Erismaturinae

(167) RUDDY DUCK: *Erismatura jamaicensis rubida*

Uncommon transient.

Migration: Rogers Co.—\*Nov. 7, '14 (C<sup>5</sup>); Tulsa—\*Oct. 18, '28, \*Nov. 24, '27 (G<sup>3</sup>); Okmulgee—\*Oct. 19, '25 (F); Payne Co.—\*Nov. 1, '23 (M<sup>3</sup>);—30 Nov. 12, '27 (L. E. Elledge); Bryan Co.—\*Oct. 14, '14 (C<sup>5</sup>); Lake Overholser—Oct. 9-Nov. 20, '27, 6 Mar. 17, '28 (S<sup>1</sup>); Woods Co.—common in migration (C<sup>2</sup> & T<sup>2</sup>).

This comical, dumpy little duck with its cocked-up tail is an expert diver. The cheeks are white or light grey, the bill short, broad and bright blue in color. Rafts of the little Ruddy collect on Lake Overholser the last half of October and during November.

## MERGANSERS: Subfamily Merginae

(131) HOODED MERGANSER: *Lophodytes cucullatus*

Uncommon transient and winter visitant.

Migration: Ottawa Co.—\*Dec. 9, '07 (P<sup>4</sup>); Tulsa—\*Nov. 8, '27 (G<sup>3</sup>); Payne Co.—\*Nov. 21 '24 (M<sup>3</sup>); Cleveland Co.—\*Dec. 22, '02, 2 \*Apr. 7, '03 (B<sup>6</sup>); Wichitas—pair seen Mar. 19, '04 (G<sup>2</sup>); Camp Supply—\*Jan. 6, '78 (K<sup>2</sup>); Ivanhoe Lake—first to come in spring, last to leave in fall (W. F. Adams).

The Mergansers or fish-eating ducks have tooth-like projections on their mandibles especially adapted for holding slippery prey. The broad white stripe through the side of the bushy head, narrow blackish bill and chestnut sides, distinguish the handsome male Hooded Merganser. Females and young are decidedly smaller than the females of the other two Mergansers and much greyer.

(129) AMERICAN MERGANSER: *Mergus merganser americanus*

Uncommon transient and winter visitant.

Migration: Broken Arrow—5 Nov. 10, '27, 5 Apr. 9, '28, 10 Nov. 14, '29, (S<sup>2</sup>); Tulsa—\*Nov. 10, '27 (G<sup>3</sup>); Lake Overholser—Dec. 23, '25, Dec. 26, '26, 72 Dec. 23, '27, 2 Mar. 5, 17, '28 (S<sup>1</sup>); Cleveland Co.—\*Nov. 2, '20, \*Feb. 15, '22 (O. U. Museum); Wichitas—\*Dec. 6, '14 (P<sup>4</sup>); Tillman Co.—20 Dec. 7, '29, Jan. 19, '30 (G. M. Burkhardt); Camp Supply—\*Jan. 2, '78 (K<sup>1</sup>); Gate—common (L<sup>2</sup>).

The white sides, neck and under parts, dark head, bright red bill and broad white patch in the wing identify the male of this species. The fe-

male is difficult to distinguish from the female Red-breasted Merganser, but under favorable circumstances the pure white throat surrounded by reddish brown may be seen.

(130) RED-BREASTED MERGANSER: *Mergus serrator*

Rare transient and winter visitant.

Migration: Rogers Co.—taken at Big Lake (F); Payne Co.—\*Nov. 11, '22 (M<sup>2</sup>); Tillman Co.—several Jan. 19, '30 (G. M. Burkhardt); Gate—seen only once (L<sup>2</sup>); Kenton—\*June 6, '10, 4 Oct. 15, '26 (T<sup>1</sup>).

The male Red-breasted Merganser has a more conspicuous crest than the American Merganser, and also has a dark collar across the breast. In the female there is a gradual change from the color of the head to the whitish throat instead of the abrupt contrast in the female of the other species, but this distinction cannot be observed except at very close range.

VULTURES, HAWKS, AND EAGLES: ORDER FALCONIFORMES

AMERICAN VULTURES: FAMILY CATHARTIDAE

(325) TURKEY VULTURE: *Cathartes aura septentrionalis*

Summer resident over the entire state, a few wintering in southern Oklahoma; abundant in the days of the buffalo and great cattle ranges; now very common in the Wichita Mountains and along the Red River in Harmon County.

Migration: Copan—Mar. 17, '16, Feb. 15, '17 (K<sup>1</sup>); Tulsa—Apr. 6—Nov. 1 (K<sup>2</sup>); Cleveland Co.—occasionally seen from Mar. 17—Nov. 20 (N); Bryan Co.—abundant throughout the year, increased Oct. 18—20, '84 (C<sup>4</sup>); Arbuckles—a few seen Dec. 29, '27 (S<sup>1</sup>); Wichita Mountains—large flocks appeared Mar. 26, '04 along Medicine Creek, apparently moving northward, migration continued about a week (G<sup>2</sup>); Kenton—50 seen Aug. 27, '22; 4 Dec. 25, '29 (T<sup>1</sup>). Kumblein found them abundant in northern Indian Territory along the M. K. and T. railway in December 1875.

Nesting: Copan—5 nests all in large cavities in trees, from 7 to 15 feet up; earliest 2 eggs Apr. 28, '13, latest 2 half-incubated eggs June 16, '14; in 1914 and 1916 the same cavity was used (K<sup>1</sup>); Tulsa—"extremely abundant about Red Fork," several times "specimens were noted feeding on carcasses of skunks"; nest with young along a rock bluff June '04 (G<sup>2</sup>);—nest with 2 eggs found Apr. 29, '28 on a heap of rocks 15 miles northeast of Tulsa near Caney River (G<sup>2</sup>); Wichitas—nest found near summit of Mt. Scott May, '04 (G<sup>2</sup>).

Food: carrion, a useful scavenger. "Reports that this bird is responsible for dissemination of diseases among domestic stock are wholly without foundation and it should be protected as a useful species." (W<sup>1</sup>, *N. Y. Acad. Sci.* vol. 9, part 3:319-320, 1927).

On August 21, 1820 in western Oklahoma, James wrote that, "Black bears had been frequent in the country passed since the 15th. . . . It is not uncommon to see them disputing with the wolves and buzzards for their share of the carcasses of bisons and other animals, which had been left by the hunters or have died of disease."

"The hunter is the wolf's and vulture's provider on these great plains; and they know it, and follow his trail on the Buffalo-range with the certainty of having their share of the spoil," said Latrobe after the famous buffalo hunt in Cleveland County in October 1832. "Such a hubbub of detestable sounds as filled our ears, that and the following night, I think I never heard. It was now a faint melancholy sound; and then the whole pack would break out into full cry. You could distinguish the sharp yell of the prairie wolf rising over the long-continued howl of the large grey

species, as they fed, and snarled, and fought together through the long dark night." ('36:231).

In October 1845 Abert wrote of his party's first camp in Oklahoma: "Some turkey buzzards, *Cathartes aura*, had taken possession of a grove of dead timber, and were quietly making preparations for night, when some of our party mistaking them for wild turkeys, sallied forth with desperate intent. They, however, were so fortunate as to frighten away the birds, which doubtless saved them a disagreeable adventure with these carrion eaters. . . . These birds show the wary hunter the remains of butchered buffalo, when, on inspection, he discovers that the animal has come to its death by the bullet of the white man, or by the arrow of the Indian, and thereby judges of the vicinity of friend or foe" ('46:55).

Forty years later the vulture's sphere of usefulness had changed from the buffalo herd to the cattle industry. In what is now Bryan county, Dr. Cooke (14b:479) wrote that in 1883 "this species and the Black Vulture were so numerous that in the fall and early winter when cattle feed was good and dead animals were few, these two species had hard work to get a living. They could be seen sailing overhead in great flocks seeking for food, or sitting in long lines on the fences. An animal killed in the morning would be picked clean by night and there was great quarreling and some fighting over the carcass. After the snows and freezing rains came cattle began to die by the hundred, and before spring more than 15,000 died within 30 miles of Caddo. Then, particularly in March, scarcely a Vulture was ever seen in the air. They became so particular that they would not touch a carcass on the prairie, but selecting those that had fallen in or near timber, would gorge themselves, fly heavily to the nearest tree and stay there until there was room in their bodies for more of their disgusting food."

(326) BLACK VULTURE: *Coragyps atratus atratus*

Uncommon summer resident in northeastern Oklahoma, resident in southeastern Oklahoma and the Arbuckles.

Migration: Tulsa—pair Feb. 10, '05 (G<sup>2</sup>);—first arrival Apr. 10, '24 (K<sup>8</sup>); Creek Co.—rather common migrant (B<sup>8</sup>); Payne Co.—Oct. 2 '24 (M<sup>8</sup>). In the Arbuckles Dec. '27 about 10 times as common as Turkey Vulture; in summer the proportion is reversed (S<sup>1</sup>).

Nesting: Osage—nest with 2 eggs May 25, '18 (G<sup>4</sup>); Tulsa—full fledged young seen July 6, '04 (G<sup>2</sup>); Wagoner Co.—eggs taken at Taft Apr. 20 (P<sup>2</sup>); Muskogee Co.—6 pairs breeding in 1925, 2 eggs Mar. 28, '25 (M<sup>5</sup>); Arbuckles—2 half-grown young in a cleft of rocks June 26, '23, 2 downy fawn-colored young and parent in same cavity Apr. 23, '27 (N).

Formerly this vulture must have ranged further to the west than it does at present. On August 28, 1820 in about the region of Cleveland County, James wrote, "We passed great numbers of carcasses of bisons recently slaughtered, and the air was darkened by flights of carrion birds, among which we distinguished the obscene vulture *aura*, and the vulture *atrata* the black vulture of the Southern states" ('05: 159). McCauley in 1876 found it "the most numerous of the *Cathartidae*" on the Staked Plains, but does not mention whether or not it occurred in Oklahoma.

The Black Vulture has a short, square-cut tail and shorter and broader wings than the Turkey Vulture; it is far less expert at sailing than its relative, flapping its wings fairly frequently. The Turkey Vulture has a long tail and long wings with upcurved tips; it sometimes soars for hours without flapping.

## HAWKS, EAGLES, KITES, ETC.: FAMILY ACCIPITRIDAE

With a few exceptions the hawks are among our most useful birds. Their large size enables them to wage effective war on rats, mice, rabbits, and grasshoppers; hence they should be vigorously protected by the farmer. The majority of hawks also help the game birds, first by preying on their worst enemies—rats and snakes, secondly by catching old, diseased and crippled birds they assist in keeping the stock healthy. The two injurious hawks—the Sharp-shinned and Cooper, or “Blue Darters”—live almost exclusively on birds, and it is their depredations that have given a bad name to the whole family. People should learn to discriminate between the good and bad hawks, protecting the former while outlawing the latter.

The Blue Darters or Accipiters are small hawks with round wings and long tails—an airplane outline. The soaring hawks or Buteos are large with short tails and all are beneficial. The Marsh Hawk, with long wings and long tail, does much more good than harm. The Mississippi Kite is entirely beneficial, never touching a bird. The Falcons, with long tails and long pointed wings, are (except for the Sparrow Hawk) too rare in Oklahoma to be of any economic importance.

Hawks are not easy to identify. It is important to fix in mind the outline of each of the different subfamilies so that a Buteo, Falcon, Accipiter, or Harrier will be recognized, and after that the finer distinctions can be noted. In the hawks the females are larger than the males.

In 1926 the Izaak Walton League of Oklahoma put on a contest offering prizes for the greatest number of crows, hawks, and chaparrals killed in the state during the year, and also a prize to the winner in each county. The total numbers of crows and hawks shot by the winner in each of 62 counties were announced in the *Daily Oklahoman* of January 24, 1927, no details being given in the case of ten men, chaparrals not being listed at all. The total kill of the 62 winners amounted to 24,932 crows and 2,792 hawks.

The counties with largest records of hawks destroyed (in each case, let it be remembered, by one man) were: Woods, 321; Texas, 277; Roger Mills, 238; Jefferson, 207; Beaver, 140; Choctaw, 116; Comanche, 99; Carter, 98; Ellis, 90. In ten counties the number ranged from 49 to 86. Most of the slaughter occurred in western Oklahoma. When we consider that no figures are given for ten of the winners, including the man from Cimarron county, and nothing as to the numbers shot by all the contestants who did not win, it seems likely that over 4000 hawks must have fallen victims. Since Sharp-shinned and Cooper Hawks are skillful in evading the gunner, the majority of these were undoubtedly our highly beneficial species.

Mr. W. L. McAtee, economic ornithologist of the U. S. Biological Survey in discussing hawk campaigns (*Auk*, 1926, p. 544) says that the injurious species “rarely are seen by the ordinary observer while the larger, more slowly moving, and more beneficial Buteos are comparatively easy victims. Thus the result of a Hawk campaign is the maximum destruction of the more beneficial species, and minimum destruction of, and subsequent freedom of the field, for the more injurious

types." Mr. A. A. Saunders in Alleghany State Park found that a bounty on hawks had nearly exterminated in one year "a beautiful, magnificent and useful species"—the Red-tail, but that the Sharp-shin meantime had increased. (*Roosevelt Wild Life Bull.* 1926, vol. 3, no. 3, p. 480). "This smaller hawk, being swifter in flight, and less given to soaring or perching in the open and more to skulking in thickets, had not suffered as had the Red-Tail. . . . With the Red-Tail that had formerly occupied most of the territory gone, this smaller species found room to live and came into the area in greater numbers. If these are the facts, then a general attempt to destroy all hawks results in upsetting the balance of nature in favor of the smaller, more harmful species. (cf. Fisher, '93, pp. 32-37)."

In Oklahoma the Buteos used to be abundant while the Accipiters were "scarce" in 1902 according to Mr. Bunker; now the former are rather rare, and the latter fairly common. Dr. Bird on his field trip in eastern Oklahoma in June and July 1929 found almost no hawks or owls; he concludes that no raptores are common in Oklahoma in summer "except perhaps the Cooper Hawk." So here we have the disastrous effect of all this indiscriminate killing—the disappearance of almost all the useful hawks, and the actual increase of the injurious ones.

#### SUBFAMILY PERNINAE

#### (327) SWALLOW-TAILED KITE. *Elanoides forficatus forficatus*

Formerly a common summer resident; not recorded since 1910.

Records: 1850—"common in Texas and in the Creek and Cherokee Nations. It appears to have a fondness for frequenting streams; along the Arkansas and its tributaries it was very abundant." (W<sup>5</sup>, '53:60); 1867—pair taken at Kiowa Agency, one still in National Museum (P<sup>2</sup>); 1876—noted on Wolf creek (McCauley '77:682); 1910—female taken at Fairland, Ottawa Co. \*June 18 (P<sup>4</sup>).

Nesting: "In Texas, the Indian Territory, and Kansas, this species builds frequently in the tops of the tallest cottonwood trees, occasionally in pin oaks or pecans, where these are found, and always as near to the tops of the trees as the nest can safely be placed." (Bendire, '92:72). Seminole Co.—pair nested in 1902 (B<sup>0</sup>).

Food: snakes, small frogs, grasshoppers, beetles, cotton worms.

This marvellously graceful and entirely beneficial species has fallen a victim to the mania that possesses some men of shooting every striking and unusual bird. Not only do they wantonly kill a gentle, beautiful creature, but they rob those of us who love nature of the delight of ever seeing this surpassingly lovely bird.

#### SUBFAMILY Milvinae

#### (329) MISSISSIPPI KITE: *Ictinia mississippiensis*

Summer resident in western Oklahoma, not including the Panhandle; most common in Woods county. Eighty years ago it was "abundant on Arkansas river and its tributaries" (W<sup>5</sup>); but unfortunately this is no longer true.

Range in summer: there is only one record from southeastern Oklahoma—Pushmataha Co. \*July 14 '14 (C<sup>5</sup>) and 2 from central Oklahoma—Murray Co. common Aug. 12-17 '92 (P<sup>3</sup>); Pottawatomie Co. \*June 14, '01 (B<sup>0</sup>); in southwestern Oklahoma it is an uncommon summer resident in Stephens, Comanche, Tillman, Jackson and Harmon Cos., in northwestern Oklahoma common in Major and Woods Cos. along the Cimarron in 1930 (B<sup>5</sup>); Woodward Co.—2 Aug. 12-14, '06 (B<sup>1-2</sup>); Blaine Co. \*July 7, '01 (B<sup>6</sup>); Alfalfa Co. \*July 11, '25 (L<sup>4</sup>); Kay Co. Aug. 3-6 '92 (P<sup>3</sup>).

Migration: Copan—May 22, 25, '17 (K<sup>1</sup>); Pittsburg Co.—last of August '92 (P<sup>8</sup>); Latimer Co.—Sept. 2-14, '92 (P<sup>8</sup>); Payne Co.—May 30, '24 (M<sup>3</sup>); Cleveland Co.—\*Sept. 7, '01 (B<sup>9</sup>);—several Sept. 9, '22 (C<sup>5</sup>); Wichitas—May 7, '04 (G<sup>2</sup>); North Fork Canadian—\*Sept. 19, '50 (W<sup>5</sup>); Gate—unusual summer visitor (L<sup>2</sup>).

Nesting: Trout creek—1 egg June 2, '60 (C<sup>3</sup>); North Fork Canadian—2 eggs June 5, 2 eggs June 12, 2 eggs June 25, '60 (M<sup>1</sup>); Wichitas—a pair carrying food up West Cache creek Aug. 4-10, '06 (B<sup>1-2</sup>); Pawnee Co.—eggs June 20, '03 (Short, '04); Woods Co.—7 sets of 2 eggs, 7 of 1 egg each taken by Stevens June 5-13, '03 (Short, '04);—19 sets of 2 eggs each in Carroll collection in O. U. museum, 1 taken June 22, '04, 16 June 8-21, '06, 2 June 15, 16, '07; heights of the 34 nests ranged from 12 to 50 feet averaging 25; 21 nests were in elms, 6 in blackjack oaks, 4 in cottonwoods; eggs in same nest often differed in size (S<sup>3</sup>);—June 5, '05 an egg found "with a wreath of light brown specks and scrawls around the large end." (S<sup>3</sup>, '05);—3 nests with 1 egg, 1 nest with 2 eggs, June 24, '10 (Love, '11);—1 egg 20 feet up in cottonwood May 27, '22 (N).

Food: cicadas, snakes, frogs. "The stomachs of those I examined were filled with insects, principally locusts." (W<sup>5</sup>).

When my daughter was climbing the tree near Alva to examine the nest we had found, the parent birds swooped at both of us. Perhaps they had had sad experience with collectors and did not realize we came merely to admire. These beautiful and beneficial birds should be protected by every means in our power.

(328) WHITE-TAILED KITE: *Elanus leucurus majusculus*

Formerly a rare summer resident.

Nesting: 25 miles from Fort Arbuckle—4 eggs May 9, '60, also the female parent \*May 9, '60 (C<sup>8</sup> & M<sup>1</sup>), now in the National Museum.

It is strange that this specimen of a breeding bird and her eggs should be the only record of the occurrence of this bird in Oklahoma. One of the eggs was chosen as the type specimen.

HAWKS: Subfamily Accipitrinae

(334) EASTERN GOSHAWK: *Astur atricapillus atricapillus*

Occasional winter visitant.

Migration: Copan—\*winter, '16-'17, 2 seen from Nov. 26-Feb. 19, '17 (K<sup>1</sup>); Payne Co.—\*Feb. 10, '28 (M<sup>3</sup>); Kingfisher Co.—1 Dec. 12, 1 Dec. 13, '25 (N); Oklahoma Co.—\*Dec. '26 (S<sup>1</sup>); Cleveland Co.—2 Dec. 23, '25, 1 Jan. 1, '26 (N); Woods Co.—2 fall of 1906 (C<sup>2</sup> & T<sup>2</sup>).

The adult Goshawk has a very grey appearance; its black cap and white line over the eye are distinctive field marks. The immature bird resembles a young Cooper Hawk, and a male Goshawk of this age cannot with certainty be told in the field from a female Cooper. The rapid flight, short, broad wings and long tail reveal this hawk's relationship to the Accipiters.

(332) SHARP-SHINNED HAWK: *Accipiter velox*

Winter resident throughout the state, occasionally breeding in Cimarron county.

Migration: Okmulgee—\*Oct. 5, '25 (F); Tulsa—Nov. 8-Apr. 13 (K<sup>3</sup>); Cleveland Co.—Sept. 19-Mar.27 (N);—\*Mar.29, '02 (V).

Nesting: Cimarron Co.—nest and eggs July 1, '09 on Marselus Bros. ranch (T<sup>1</sup>, '23:44).

Food: Mostly birds, but occasionally mice, grasshoppers, caterpillars, lizards.

Both this and the next species—the Blue Darters or Blue Devils—are shy, silent birds with the outline of an airplane. They do not perch in the open, but hide in the thick foliage of trees; their nests also are

well concealed. The Sharp-shin and Cooper are almost exactly alike except that the latter is larger, but a female Sharp-shin and male Cooper may be practically the same size. When the bird is perched, the end of the Sharp-shin's tail is square, that of the Cooper rounded. Both birds are sometimes seen taking a few rapid strokes and then sailing around in circles, but they do not hover over their prey as does a Sparrow Hawk.

(333) COOPER HAWK: *Accipiter cooperi*

Resident in northern and central Oklahoma and the Wichitas, winter resident in southern Oklahoma.

Migration: Bryan Co.—first seen Sept. 17, '83 (C<sup>4</sup>).

Nesting: Copan—nest built on top of old squirrel nest 30 feet up in oak, 3 eggs Apr. 16, '14 (K<sup>1</sup>); Tulsa—eggs Apr. 15 (P<sup>2</sup>);—5 eggs May 15, '28 (G3); Wichitas—a pair feeding young out of the nest Aug. 4-10, '06 (B<sup>1-3</sup>); Cimarron Co.—nest and eggs June 30, '13 (T<sup>1</sup>);—nest with 4 eggs 10 feet up in hackberry June 1, '22 (N).

Food: birds, poultry, lizards.

The Cooper Hawk may be distinguished from all other hawks except the two other Accipitrine species by its short rounded wings and long tail; its difference from the Sharp-shin has been discussed under that species. In 1923 near Tulsa Mr. Geo. W. Morse collected five Crow's eggs from a nest on March 12; on May 20 he gathered four Cooper Hawk eggs from the same nest and still later six eggs of the Yellow-crowned Night-Heron ('24).

BUZZARD HAWK AND EAGLES: Subfamily Buteoninae

There are six species of Buzzard Hawks in Oklahoma and two Eagles. These hawks are large, with short tails that are spread like a fan as they soar high in the air. They select perches by the roadside, and conspicuous sites in tree tops for their nests; moreover most of them are noisy. They are the ones erroneously called "hen-hawks" and are the chief sufferers from the man with the gun or traps set on poles. They are all useful in their food habits, some of them eminently so.

(337) EASTERN RED-TAILED HAWK: *Buteo borealis borealis*

Resident in eastern and central Oklahoma.

Specimens: Okmulgee—\*†Oct. 25, \*†Dec. 2, '25 (F); Pawnee Co.—albino \*†Jan. 4, '05; Cleveland Co.—\*†Mar. 26, \*†Oct. 14, '03, \*†Dec. 23, '20 (U. O. M. Z.).

Migration: Copan—Sept. 21-Mar. 26, common Oct. 19, '17 (K<sup>1</sup>); Cleveland Co.—Oct. 4-Apr. 23 (N).

Nesting: Vinita—3 eggs Mar. 16, '12, 2 eggs in same nest Apr. 21 (K<sup>1</sup>); Copan—2 eggs in top of elm, 40 feet up Mar. 22, '14 (K<sup>1</sup>); Tulsa—eggs Mar. 3 to May 20 (P<sup>2</sup>, M<sup>2</sup>); McClain Co.—adult and full grown young taken May 18, '24 (D. McRuer); Wichitas—1 young in nest on face of cliff June 3, '27 (N).

Food: ground squirrels, prairie dogs, cotton tail and jack rabbits, mice, snakes—including rattlesnakes—grasshoppers, cattle grubs and other insects (B<sup>1</sup>).

On a cliff above Cache creek below Eagle Mountain in the Wichitas there is an ancient pile of sticks that looks large enough to be an eagle's nest. Here in June 1929 was one well feathered young Red-tail. I was studying Rock Sparrows and Black-capped Vireos on the opposite slope and meantime took notes on the hawks. At 4:30 on June 3 the young bird received a snake. I watched from 9:30 to 11:30 and 2:40 to 3:40 on June 4 and from 9:15 to 11:45 the next day, but during these five

and a half hours he was given just one meal—another snake— at 10:12 June 4. The parents were seldom seen but often heard; 136 screams were given during the session June 5 and as many as 120 between 10:30 and 11:30 the day before. Most of the screams were given in threes, many in twos, only a few singly or four together. From 3 to 18 were uttered per minute.

An adult Red-tail can be distinguished by its dark reddish tail, visible in good sunlight as the bird wheels in flight. There is usually a large whitish area on the breast. Immature birds are difficult to separate from young Red-shouldered Hawks.

(337a) KRIDER HAWK: *Buteo borealis krideri*

Transient and winter visitant.

Specimens: Okmulgee—\*†fall or winter '23-24, \*†Dec. 10, '25 (F, '28); Bryan Co.—\*†Oct. 14, '14 (C<sup>5</sup>).

The Krider Hawk has more whitish under parts than the Eastern or Western Red-tails; the wings, neck and head usually have a larger admixture of white which often gives the upper parts a lighter appearance than in the other subspecies.

(337b) WESTERN RED-TAILED HAWK: *Buteo borealis calurus*

Resident in Cimarron county, fall and winter visitant throughout the state.

Specimens: Osage—\*†Nov. 19, '14 (C<sup>5</sup>); Washington Co.—\*†Nov. 23, '14 (C<sup>5</sup>); Tulsa—\*†Nov. 15, '28 (F) Okmulgee—\*†winter '24 (F, '28); Cleveland Co.—\*†Nov. 22, '24 (U. O. M. Z.); Oklahoma Co.—\*†Dec. 2, '30 (B<sup>5</sup>).

This is the darkest of any of the Red-tails that is found in Oklahoma.

(339) NORTHERN RED-SHOULDERED HAWK: *Buteo lineatus lineatus*.

Transient.

Specimen: Oklahoma Co.—\*†Nov. 3, '26 (S<sup>1</sup>).

There is only one record of this northern form of the Red-shouldered Hawk for Oklahoma—that of a bird taken by Mr. Geo. Saunders.

(339a) FLORIDA RED-SHOULDERED HAWK: *Buteo lineatus alleni*

Summer resident in eastern Oklahoma as far west as Cleveland county, rarely seen in winter.

Specimens: Ponca Agency—\*†Aug. 5, '92 (P<sup>8</sup>); Cleveland Co.—\*†Sept. 20, \*†26, '01 (B<sup>6</sup>); McCurtain Co.—\*†June 25, '25 (O<sup>2</sup>).

Migration: Cleveland Co.—uncommon, seen between Feb. 22 and Nov. 17 (N); —\*Sept. 17, '22, '02 (B<sup>6</sup>); Latimer Co.—many seen, evidently migrating Sept. 10-14, '92 (P<sup>8</sup>).

Winter records: Okfuskee Co.—3 seen Dec. 1875 (Kumlein); Oklahoma Co.—1 Dec. 23, '25, 1 Dec. 26, '26 (S<sup>1</sup>).

Nesting: Vinita—2 eggs 18 feet up in small tree Apr. 2, '12 (K<sup>1</sup>); Copan—4 eggs 23 feet up in sycamore Feb. 28, '13, 4 eggs 26 feet up in sycamore Mar. 16, '14 (K<sup>1</sup>); Tulsa—3 eggs Mar. 17, '24 (M<sup>6</sup>);—2 eggs Mar. 2, '28 (G<sup>3</sup>); Cleveland Co.—nest 40 feet up in elm, incubating Mar. 30, '27, large young May 27, 2 left by June 1 (N).

Food: small rodents, chiefly mice, frogs, snakes, insects. The stomach of a bird taken at Yukon Sept. '16 contained remains of 288 grasshoppers (C<sup>5</sup>, '21).

On March 30 I discovered a bulky nest in a sloping elm in the Olivers' woods near the South Canadian river, while a hawk flew silently overhead. After I left the woods a pair flew about screaming *pee-dúr pee-dúr*, sometimes holding their tails fan-wise, but for the most part straight.



Later as I returned through the woods I saw a parent's head over the rim. On April 15 one of the hawks brought a snake to the nest. One of the young was found dead at the foot of the tree, the same fate that came to one of the three in a nest we found in Massachusetts. On May 27 the other two young were large and well feathered and by June 1 they were out in the woods, giving the characteristic cry that is indistinguishable from one of the Blue Jay's notes.

"The *only necessary* field mark" writes Mr. Farbush ('27:129) "when the bird is soaring . . . is the apparent translucent spot in the wing near its tip formed by the short black and white wing barring. . . . When seen nearby in the woods, look for the bright ruddy *shoulders*. *Adults*: Ruddy lower plumage. . . *Young*: Distinguished from young of 'Red-tail' by dark streaks, uniformly distributed over lower surface of body, where young of 'Red-tail' has an unmarked whitish area on breast and a wide abdominal band of dark streaks."

(342) SWAINSON HAWK: *Buteo swainsoni*

Uncommon summer resident in western half of Oklahoma, occasional transient in eastern Oklahoma, rarely wintering in northwestern Oklahoma.

Migration: Tulsa—flock of 50 Oct. 15, '20 (P<sup>2</sup>);—a few seen Nov. 7, 11, '23, Sept. 27, Oct. 1, '24 (K<sup>3</sup>); \*Nov. 5, '28 (G<sup>3</sup>); Okmulgee—\*†Apr. 10, '26 (F); Cleveland Co.—\*Feb. 19, \*Mar. 21, \*Oct. 4 '03 (U. O. M. Z.);—Mar. 27, '26, Mar. 14, '27, 36 Oct. 17, '23 (N); Marshall Co. —\*Oct. 12, '14 (C<sup>5</sup>).

Nesting: Cleveland Co.—building 20 feet up in elm Apr. 26, 3 downy young June 11, all feathered July 9, '22; same nest 3 eggs June 3-17, '23; nest 40 feet up in black walnut with fully fledged young on edge July 14, '26; nest 40 feet up in cottonwood Apr. 3, '27 (N); Woods Co.—5 sets of eggs in the Carroll collection; 2 sets of 2, 3 sets of 3, May 25, 26, '06, May 16, 19, '07, May 24, '10, fresh to half incubated, 30 to 60 feet up in 4 cottonwoods, 1 elm (S<sup>8</sup>); Kenton—nest with eggs June 27, '10 (T<sup>1</sup>), nest with 2 eggs 15 feet up in hackberry June 1, '22 (N).

Food: rats, mice, gophers, rabbits, grasshoppers, crickets.

The first nest of this fine hawk that we ever found was in open woods near the Canadian ten miles west of Norman; it was used two years in succession, but after that the birds were not seen in the vicinity. In 1922 we visited the nest three times while it contained young—June 11 and 25 and July 9. On both June dates a parent flew away at our approach and was not seen again while we stayed, but in July when the young were nearly ready to fly, one of the hawks flew about continually calling and swooping down toward us. The other did not appear until we left the vicinity. The next year nesting was later, since there were three eggs as late as June 17; on July 18 there were two young, one downy and white, the other with black feathers. This time both parents swooped about uttering cries of distress, as the tree was climbed. Evidence as to the good character of these hawks was given by the remains of a ground squirrel and rabbit in the nest, and also by the fact that a pair of Baltimore Orioles had their home in the same tree.

In typical plumage a Swainson Hawk may be known by its clear white throat and reddish band across the breast and by its light grey tail with a whitish base. In the dark phase the bird is sooty brown above, chestnut and blackish below, but in all plumages there is a broad "un-

marked buffy area on the under surface of the wing" (Hoffman). The ordinary call sounds like *pick-pick-pick-pick*.

This is the only hawk we ever see in flocks in Oklahoma. Dr. Chas. N. Gould tells me of a correspondent reporting an immense flock in Garfield county about October 1920 and another of some 300 birds in Alfalfa county in the fall of 1924 or 1925. The Swainson Hawk is wholly beneficial, living almost entirely on rodents and grasshoppers. Maj. Bendire stated "From an economic point of view I consider it by far the most useful and beneficial of all our hawks." Its services to western farmers have been estimated as worth \$117,000 annually.

(343) BROAD-WINGED HAWK: *Buteo platypterus platypterus*

Rare summer resident in northeastern Oklahoma.

Migration: northeastern Oklahoma—\*Aug. '14 (C<sup>5</sup>); Mayes Co.—\*Aug. 30, '14 (C<sup>5</sup>); Adair Co.—\*Apr. 9, '97 (L<sup>5</sup>); Tulsa—May 4, Sept. 7, '24 (K<sup>3</sup>); \*fall '26 (G<sup>3</sup>); Canadian Co. —\*Aug. '13 (C<sup>5</sup>).

Nesting: Tulsa Co.—3 eggs 20 miles east of Tulsa Apr. 26, '29 (G<sup>3</sup>).

Food: largely insects, small mammals, reptiles, batrachians, crayfish; fond of large caterpillars that feed on leaves of orchard and shade trees.

This small Buteo may be distinguished by the two to four showy, broad light-colored bars in its tail (the Red-shoulder having five to six narrow white bands), and the pure white under surface of the wing with a black tip. Immature birds are difficult to separate from immature Red-shoulders except by smaller size. The note is like that of a Wood Pewee but louder. A specimen of this useful little hawk taken near Yukon had eaten only cicadas and grasshoppers (C<sup>5</sup>, 21).

(347a) AMERICAN ROUGH-LEGGED HAWK: *Buteo lagopus s-johannis*

Winter visitant throughout the state.

Migration: Tulsa—Oct. 28-Mar. 26 (K<sup>3</sup>); Cleveland Co.—Oct. 18-Feb. 20 (N).

Food: largely mice, also gophers, rabbits, weasels, frogs, grasshoppers.

In December 1875 Kumlein ('77a, '77b) observed great numbers of this fine hawk along the M. K. and T. railroad "from Sans Bois Valley to the Sans Bois Mountains." Now unfortunately we seldom see more than single birds.

In the light phase this hawk has white at the base of the tail, black patches at the bend of the wing and usually a dark solid band across the lower belly. The dark phase is almost solid black, but birds in all plumages have a large area of silvery white on the under surface of the wings. This hawk perches on low trees and flies over the marshes; at such times it can be distinguished from a Marsh Hawk by the different shape of its wings and tail and its heavier build and flight. When it soars its pattern below differentiates it from a Red-tail. It may be separated from the Ferruginous Rough-leg by the dark band across the belly and by the absence of white areas on the upper surface of the wings.

(348) FERRUGINOUS ROUGH-LEG: *Buteo ferrugineus*

Uncommon resident in the Panhandle; rare winter visitor in the rest of state.

Migration: Tulsa—\*Nov. 1, '30 (G<sup>3</sup>); Payne county—\*Nov. 19, '26 (M<sup>3</sup>);

Comanche Co.—several seen Nov. '04 (L<sup>1</sup>); Camp Supply—\*Feb. 23, '78 (K<sup>2</sup>); Woods Co.—winter resident (C<sup>2</sup> & T<sup>2</sup>).

Nesting: Cimarron Co.—eggs taken (M<sup>4</sup>).

Food: mice, rabbits, prairie dogs, pocket gophers, ground squirrels, snakes.

This useful "Squirrel Hawk" was "common in the west on the prairies" in 1901 (B<sup>6</sup>); ten years later Prof. Stevens (Barde, '12:127) said that "in winter it pushes far eastward in the state; in summer it goes north and west and is found nesting only in the extreme western parts of Oklahoma." There are few definite records of this bird in Oklahoma; I have given them all above except for four birds I have myself seen—one May 31, 1922 in Cimarron county, one August 22, 1926 in Harper county, and two August 23, 1926 in Beaver county.

"To be sure of a Ferruginous Rough-leg one must see that a *considerable portion* of the base of the tail is white or whitish and above all note the white areas in the upper surface of the wings" (Hoffman). It is a pity that this most beneficial hawk is now so rare. "Few birds in Oklahoma" wrote Barde, "render so much valuable service to the farmer as does this hawk and it should be protected by law."

(349) GOLDEN EAGLE: *Aquila chrysaetos canadensis*

Rare resident in western Oklahoma, formerly common.

Nesting: Woods Co.—nest collected 2 miles west of Cimarron river in 1907, 2 other nests within 5 miles (Green, '27);—2 or 3 sets taken each year for the last 4 or 5 years by Prof. Stevens (C<sup>2</sup> & T<sup>2</sup>, '08:14); Cimarron Co.—nest seen on Cimarron river May 9, '16 (M<sup>4</sup>, '20).

Food: ground squirrels, rabbits, prairie dogs, a few birds, carrion, rattlesnakes.

Eagles are all too rare in Oklahoma. Few of us have the inspiration of seeing one of these majestic birds soaring overhead. The nest collected by Prof. Stevens and Mr. Green ('27) in Woods county "was so large that it constitutes nearly a wagon load of material." Some of the material was of surprising size. "One piece was as long and fully half as large as a fence post." An immature Golden Eagle has a white area at the base of the tail and whitish patches in the wings.

(352) SOUTHERN BALD EAGLE: *Haliaeetus leucocephalus leucocephalus*

Rare resident, formerly common.

Nesting: Osage—reported as nesting along Arkansas river (C<sup>2</sup> & T<sup>2</sup>). No definite record of a nest.

Food: fish, rabbits, prairie dogs, wounded water-fowl, carrion.

Bald Eagles must have been very common in the days of the buffalo. J. R. Mead ('98:280) wrote that in 1859 they were numerous in western Kansas "especially along the southern border. Many of them and thousands of ravens were killed by eating our baits or the viscera of wolves we had poisoned." Prof. E. E. Dale writes me that "wolves were poisoned on a large scale in western Oklahoma during the late 90's, and I have known many eagles to be killed by eating the poisoned bait."

The adult with its splendid white head and tail is unmistakable, but the immature bird is difficult to distinguish in the field from the Golden Eagle. The latter has the legs feathered to the toes, while in the Bald Eagle the feathers extend to within an inch of the toes. A juvenile Bald Eagle that had been wounded near the Canadian became a de-

voted friend to a hen that had been designed for its food, tearing a side off its cage when bidly was removed for a few minutes.

#### HARRIERS: Subfamily Circinae

##### (331) MARSH HAWK: *Circus hudsonius*

Resident in the western part of the state, transient and winter visitant in the eastern part.

Migration: Copan—Sept. 13, '16-Mar. 23, Aug. 24, '17 (K<sup>1</sup>); Tulsa—\*Oct. 1, '28 (G<sup>8</sup>); Okmulgee—\*Oct. 13, \*26, '25, albino \*Nov. 25, '24 (F. '28); Cleveland Co.—Sept. 9-Apr. 13, usually from October to late March (N); Custer Co.—Mar. 30-Nov. 10, '02, Mar. 28, '03, Apr. 1, '04 (S<sup>4</sup>).

Nesting: Cimarron Co.—nest with 3 young on Marselus Bros. ranch June 4, '08 (T<sup>1</sup>); Cherokee Salt Plain—nest with 5 eggs, one chipping, June 20, '30 (B<sup>8</sup>).

Food: meadow mice, rabbits, gophers, ground squirrels, snakes, a few birds.

The Harrier as it beats back and forth over the fields for mice and cotton rats is easily recognized by its white rump, long tail and long pointed wings. The male is a very beautiful bird, so light in color that he is sometimes mistaken for a gull, but in the latter the whole tail is white, not just the upper tail coverts. Dr. Cooke found the Marsh Hawk the most common winter hawk near Caddo in 1883; it is now our most common winter hawk in Norman. It has been observed on more Christmas censuses—20—than any other hawk in Oklahoma, the Red-tail being a close second with 19 records.

#### OSPREYS: Subfamily Pandioninae

##### (364) OSPREY: *Pandion haliaetus carolinensis*

Rare transient in central and western Oklahoma, rare breeder in eastern Oklahoma.

Migration: Tulsa—Mar. 27, Nov. 2, '25 (K<sup>8</sup>);—\*Sept. 15, '27, \*Sept. 29, '30 (G<sup>8</sup>); Cleveland Co.—single birds seen by the Canadian Nov. 25, '21, Apr. 24, '26 (N); Ivanhoe Lake—spring and fall transient (W. F. Adams).

Nesting: Cherokee Co.—a pair nesting by the Illinois 40 miles below River Side Park at Tablequah June 2, '28 (Sam Davis, game warden);—seen in June '26 (J. D. Averyt).

McCauley was the first to mention the Fish Hawk in Oklahoma; he noted a "very few, chiefly along the Canadian" in the spring of 1876. This fine hawk with white head and white underparts lives on fish, mostly slow-moving ones such as carp and suckers.

#### FALCONS AND CARACARAS: FAMILY FALCONIDAE

##### FALCONS: Subfamily Falconinae

##### (355) PRAIRIE FALCON: *Falco mexicanus*

Rare resident in western Oklahoma, rare transient and winter visitant in rest of state.

Migration: Okmulgee—\*†Nov. 12, '25 (F); Camp Supply—\*Mar. 12, '78 (K<sup>2</sup>);—\*Oct. 29, '77 (E. Coues); Comanche Co.—1 Nov. '04 (L<sup>1</sup>); Gate—1 Aug. 8, '10, \*†Jan. '27 (L<sup>2</sup>); Alva—several taken, all in winter (C<sup>2</sup> & T<sup>2</sup>); Kenton—1 Jan. 1, '30 (T<sup>1</sup>).

Nesting: Kenton—two nests found on Black Mesa June 2, '14, (T<sup>1</sup> '23:44); a pair seen in same region Aug. 23, '26 (N); Harmon Co—bird seen on Red river July 6, '23 (N).

Food: ground squirrels, reptiles, insects, birds.

All the falcons have long tails, long pointed wings and powerful

rapid flight. The Prairie Falcon is brown above with a brown mustache. It is too rare to be of any economic importance.

(356a) DUCK HAWK: *Falco peregrinus anatum*

Rare fall visitant.

Migration: Sapulpa—one captured a barnyard fowl Nov. 13, '19 (B3); Canadian Co.—\*fall '11 (C<sup>5</sup>); Lake Overholser—1 Sept. 2, 5, 6, '29 (S<sup>1</sup>); Cherokee Salt Plains—1 Oct. 18, '30 (B<sup>5</sup>).

"This beautiful falcon is rare," wrote Woodhouse ('53:60). "The specimen in my collection was procured in the Creek country." It resembles a Prairie Falcon, but is very dark above with a broad black stripe on the side of the head.

"The Duck Hawk" wrote Forbush ('27:166) "is the American representative of the Peregrine Falcon, a noble bird, a '*falcon gentil*,' that was used for hawking by the knights and ladies of the days of chivalry. . . . When a Duck Hawk 'stoops' from a great height upon its prey, its plunge is so lightning-like that the bird seems to have been evolved out of a clear sky, and the sound of its rush is like that made by a rocket. The sudden arrow-like fall of this bird from far heights is one of the most impressive sights in bird life."

(357) EASTERN PIGEON HAWK: *Falco columbarius columbarius*.

Rare transient and winter visitant.

Migration: Ottawa Co.—\*Sept. 22, '12 (P<sup>4</sup>); Tulsa Co.—1 Feb. 6, '05 (G<sup>2</sup>); Sapulpa—Feb. 9, '19 (B<sup>3</sup>); Lake Overholser—Jan. 7, '28 (S<sup>1</sup>); Cleveland Co.—immature bird Oct. 5, '26, adult Apr. 6 '27 (N); Gate—1 Sept. 10, '20 (L<sup>2</sup>).

Woodhouse found the Pigeon Hawk "common throughout Indian Territory, Texas and New Mexico; more particularly in the timber lands about streams." Kumlein noted it in eastern Oklahoma in December 1875. This falcon is about the size of a Mourning Dove and resembles it in flight; when perched it sits erect and the tips of its wings nearly reach the tip of the tail. It can be distinguished from the Sparrow Hawk by the absence of reddish brown on the upper parts, and from the Sharpshin by the long pointed wings and dark breast.

(357b) RICHARDSON PIGEON HAWK: *Falco columbarius richardsoni*

Very rare transient in northwestern Oklahoma.

Specimen: Camp Supply—adult male, sometime between Jan. 2 and \*Mar. 14, '78 (K<sup>2</sup>), specimen still in National museum—No. 743901.

In the Eastern Pigeon Hawk the middle tail feathers are "crossed by not more than four blackish or five lighter bands;" in the Richardson Pigeon Hawk they are "crossed by 5 dark and 6 light bands." (B<sup>1</sup>, 21:169).

(360) EASTERN SPARROW HAWK: *Falco sparverius sparverius*

Uncommon resident in eastern Oklahoma, transient in central Oklahoma.

Specimens: Craig Co.—\*†Sept. 2, '14 (C<sup>5</sup>); Tulsa—\*†Feb. 13, '27, \*†Jan. 5, '28 (F); Oklahoma City—\*†Sept. 28, '27 (S<sup>1</sup>).

Nesting: Tulsa—eggs Apr. 27 (P<sup>2</sup>); McCurtain Co.—pair with a nest in a hole in a dead tree July 2, '23 (N).

Food: grasshoppers, crickets, beetles, mice, shrews, lizards, snakes, spiders, small birds.

This brightly colored and useful little hawk is far too uncommon in Oklahoma. Its long pointed wings, reddish brown back, black marks

on the side of the head and piercing cry, *killee, killee, killee*, render identification easy. It often hovers on quivering wings over the grass looking for grasshoppers and mice.

Near our home in Columbus, Ohio, two pairs of these falcons nest within 400 yards of each other. Although war raged early in the season between one of the Sparrow Hawk pairs and half a dozen Starlings over the woodpecker holes in an ancient sycamore, by June three pairs of birds were peacefully nesting there—Sparrow Hawk, Starling and Flicker. These little hawks greet with angry screams and spirited attack the appearance within their domain of any other Raptor—from Osprey to Barn Owl.

(360c) LITTLE SPARROW HAWK: *Falco sparverius paulus*

Transient.

Specimen: Okmulgee—male \*†fall of 1924 (F, '28).

It is possible that the Little Sparrow Hawk is the breeding bird along the eastern border of Oklahoma. Since no specimens of this form or the Eastern Sparrow Hawk have been taken in summer, it is impossible at the present time to decide on their respective ranges, nor on the true status of this subspecies in the state.

(360a) DESERT SPARROW HAWK: *Falco sparverius phalaena*

Resident in western Oklahoma, transient in central Oklahoma.

Specimens: Cimarron Co.—\*†July 7, '26 (L<sup>4</sup>); Cleveland Co.—\*†Oct. 4, '01 (U. O. M. Z).

Migration: Cleveland Co.—Aug. 18, '26: Sept. 23:: Apr. 22: Apr. 26, '26, most common in September, October and April, a few wintering; probably the eastern form occurs also (N); Custer Co.—Mar. 27-Nov. 25, '02, Mar. 28, '03, Apr. 1, '04 (S<sup>4</sup>).

Nesting: Kenton—nested in 1925 (T<sup>1</sup>).

On August 22, 1926 as we were leaving the valley of the Cimarron in Harper county in the still uncertain light just before dawn, we noticed that the tops of some of the telegraph poles beside the road looked peculiar; eight of them were serving as watch towers for Sparrow Hawks. Mr. Tate writes that a pair nested in Kenton in the wall of a big frame building between the weather boards inside the woodwork 30 feet from the ground.

### GALLINACEOUS BIRDS: ORDER GALLIFORMES

Oklahoma used to have seven species of these splendid game birds, four of them in immense numbers. It is probable that the Ruffed Grouse (*Bonasa umbellus umbellus*) was a rare resident in eastern Oklahoma at one time, but there is no record of such a fact. The Sharp-tailed Grouse and Sage Grouse occurred only in northwestern Oklahoma and are now extirpated from the state. The countless hordes of Wild Turkeys and Prairie Chickens that saved many an explorer's life are now confined to small areas; both are given complete protection by law. The Scaled Quail is holding its own and increasing a little, but its range is limited to the end of the Panhandle. The Bobwhite is now the only one of these birds that is generally distributed and continues to be of much importance as a game bird.

From 1911 to 1916 "an honest, earnest effort" was made to stock the

state with Ring-necked Pheasants, "hundreds of mature birds and thousands of eggs for hatching were issued to different farmers and sportsmen of the state," during the next two years "several dozen birds" were released in different localities (Smith, '18: 48). In 1926, 2100 were "planted" (Reeves, '26: 28). Apparently all these experiments failed. The Game Department has come to the conclusion that these birds do not thrive in most of the state because of chiggers, ticks and summer heat; yet in 1930 666 were released in northwestern Oklahoma.

Oklahoma still has five of the finest game birds in the world, and does not need an exotic to eat the farmer's grain, compete with our native birds for food and nesting sites, and destroy the eggs of Bobwhites. What the State Game Department and Izaak Walton League should do is to take care of our own game birds by providing them places for nesting, shelter, and feeding, and by controlling their enemies—cats, rats and self-hunting dogs.

#### GROUSE, PTARMIGANS, ETC: FAMILY TETRAONIDAE

##### (305) GREATER PRAIRIE CHICKEN: *Tympanuchus cupido americanus*

Formerly an abundant resident from eastern to central Oklahoma; now confined to northeastern Oklahoma.

Records: 1832—great flocks (Irving); 1845—found all along the Canadian (Abert); 1849—"abundant throughout the Indian Territory; more numerous, however in the vicinity of settlements. During the fall of 1849, as we were passing down the Arkansas, along the road leading from Fort Gibson to Fort Smith, these birds were in large flocks, feeding among the oaks upon the acorns; hundreds were to be seen at the same time" (Woodhouse, '53: 96); 1874—"extends throughout the Indian Territory, where it appears to be extending with the areas developed by civilization" (Baird, Brewer, and Ridgway, '74, vol. 3: 442); 1883—"one of the common birds" around Caddo. "Some 18-20 covies were reared within a radius of mile of the town and by September 24, these had begun to unite into larger flocks. At least a hundred were seen in one small field November 6" (Cooke '14b: 478); 1884—in September near the site of Spiro "prairie chickens flew about as the house pigeons do now" (Culbertson, '27:415); 1885—at Prairie City "the continual shooting of them out of season, prairie fires while they were nesting, and an insect called a chicker that destroys them when young are the cause of their scarcity" (T. '85); 1886—"very scarce at Fort Gibson" (Potter, '86); 1898—a few still in Cleveland Co. (V); 1916—1 seen near Copan Oct. 31, 1 Mar. 8, '17 (K<sup>1</sup>); 1925—"some 3000" in refuge in Osage Co. (Cosman, '25); 1926—in a Game Census taken by rangers 700 were reported in Craig Co., 700 or 800 in Mayes Co., "several scattered bunches" in Nowata Co., "around 1500" in Ottawa Co. (Reeves, '26:31); 1929—farmer reported flock of 9 in Washington Co. (B<sup>5</sup>).

Nesting: Osage Village—16 eggs (Baird, Brewer and Ridgway, '74, vol. 3: 445); Fort Reno—14 eggs, May 20, '90 (M<sup>2</sup>).

Food: chinch bug, cotton worm, army worm, cutworms, May beetle, 12-spotted cucumber beetle, Colorado potato beetle, sugar beet leaf-beetle; weed seeds, waste grain. A great destroyer of grasshoppers; 16 birds had eaten 866 Rocky Mountain locusts.

The Prairie Chicken multiplied under early conditions of settlement, but vanished when regions became thickly populated. It is evidently not as adaptable to civilized conditions as the Bobwhite. Under the protection of a long closed season it should increase once more in favorable localities.

An interesting account of the habits of these birds in the vicinity of Fort Gibson in November 1832 was given by the English traveller Latrobe ('36, vol. 1: 191): "The prairie-fowl had now completely thrown aside their summer habits. Instead of keeping apart in distinct families scattered over a vast extent of country, they now appeared congregated in immense flocks in the immediate vicinity of farms. . . . It appeared that at this time of

year all the birds within an area of three or four miles square, congregated together by common consent at sundown to a given spot in the rank dry grass of the unburnt prairie, to sleep. Many a time I have seen them at sun-set from every point of the compass, with their remarkably level and even flight over the swells of the prairie, towards the place of rendezvous . . . . . Their number must have amounted to many thousands and the sound of their wings might be heard at a very great distance. After rising, for about half an hour they crowd the scattered trees on the edge of the prairie by hundreds at a time, after which they disperse. Their wariness at this time is extreme; and the slightest indication of the approach of man even at a great distance is noticed by the cock; who, perched on the top-most twig, elongates his neck and peeps first on one side, and then on another, with the most provoking caution." When he "finally sent up that clear tremulous crow. . . . the instant and complete dispersal of the whole covey to a great distance would be the immediate consequence."

(307) LESSER PRAIRIE CHICKEN: *Tympanuchus pallidicinctus*

Formerly abundant resident in western Oklahoma and the Panhandle; now found in Beckham, Woodward, Roger Mills, and Ellis Counties and the Panhandle.

Specimen: Camp Supply—\*1878 (K<sup>2</sup>).

Nesting: 40 miles west of Fort Cobb—3 nests with 7, 7, and 8 eggs June 1, '60 (M<sup>1</sup> and C<sup>2</sup>); Cimarron Co.—2 pair and 1 nest on Marselus Bros. ranch June 20, '13, nest on Stonebreaker Zea ranch. July 1, '18 (T<sup>1</sup>).

"Pioneers of Oklahoma do not forget the low booming that made vibrant the early spring mornings at sunrise. The sound came from the countless host of prairie chickens which civilization had not dislodged from their primeval range. What fine birds they were! . . . The prairie chicken was a dependable source of food in a land where the pinch of poverty was keenly felt in the first few winters, and without them there often would have been empty pots." (Barde, '14: 82).

Major Abert in 1845 found these birds abundant in western Oklahoma; in what is now Dewey County his party came upon a large flock "which were so unaccustomed to the effect of fire arms that we killed a number before they attempted to fly." Lieut. McCauley in 1876 first observed this species "between the Cimarron and north fork of the Canadian. It was abundant in coveys from twenty to thirty; south of that less frequently seen." ('77: 689).

In 1924 Mr. Tate ('25b:31) wrote that these birds after a period of scarcity "are now increasing rapidly in numbers and extending their range west and north having appeared during the past two years along the Oklahoma-New Mexico line between the Cimarron River and Currumpaw Creek, and also in the edge of the hills along the Cimarron."

The Lesser Prairie Hen is paler than the other species and the back is crossed with wide brown bars inclosed in two narrow black ones, instead of with single black bars. One of McCarthy's eggs taken west of Fort Cobb was chosen as the type specimen.

There has been some trapping of these birds and releasing them in refuges in eastern Oklahoma, particularly the Osage (*Report Okla. Game Com.* '30:39). "This is an attempt to introduce the Lesser Prairie Chicken into the range of the Greater Prairie Chicken.



(308b) PRAIRIE SHARP-TAILED GROUSE: *Pedioecetes phasianellus campestris*

Former resident in northwestern Oklahoma.

Nesting: Cimarron Co.—nest with 4 eggs under a tuft of sand grass on Marselus Bros. ranch June 11, '12 (T<sup>1</sup>).

Mr. J. R. Mead who was a cattleman in western Kansas from 1859 to 1869 wrote that Bobwhites "were plentiful along the southern border of the State (Kansas) and in the Indian Territory where shelter was better. In the same localities were considerable numbers of prairie hens and sharp-tailed grouse" ('97: 278). As to Cimarron County, Mr. Tate, who has collected a specimen of this grouse, reports: "once numerous, now rare. Observed six or seven on Marselus Bros. ranch May 30, 1910. Some were dancing, ruffling their feathers, and making a peculiar cooing noise, as they were mating. . . . Saw three of these Grouse on A 11 ranch June 6, 1920" ('23: 43). There has been no record since then.

Dr. Elliott Coues (Birds of the Northwest, 1874: 411) discussed the replacement of the Sharp-tail in Minnesota by the Prairie Hen "as the wheat fields advance. . . . Just as the Quail is a 'home-bird,' loving the stubble-field and hay-rick near the owner's house, so the Pinnated prefers to glean over cultivated fields, while the wilder Sharp-tailed clings to its native heath. The railroad will take the former along and warn away the latter."

(309) SAGE HEN: *Centrocercus urophasianus*

Formerly a rare resident in the sage brush in the Panhandle.

Records: Woods Co.—seen south of Waynocka Aug. '02 (D. B. R. Johnson); Cimarron Co.—north of Beaver Creek, Aug. '10 (Johnson);—5 June 3, '11, 2 July 1, '20, specimen taken (T<sup>1</sup>).

Nesting: Cimarron Co.—nest with 3 eggs on A 11 pasture June 13, '11 (T<sup>1</sup>).

Mr. Tate writes of this unique bird: "Very rare: five observed in mating season June 3, 1911, among sagebrush in A 11 pasture along the Beaver River. Some were strutting about, the sacks on their necks inflated and tails erect, and were hissing or buzzing" ('23:43). The nest was found ten days later on the same ranch and it was also here that the two birds were seen in 1920. There has been no later record.

## QUAILS, ETC.: FAMILY PERDICIDAE

## BOBWHITES AND QUAILS: Subfamily Odontophorinae

(289) EASTERN BOB-WHITE: *Colinus virginianus virginianus*

Resident throughout the whole state.

Specimens: 40 miles west of Fort Cobb—\*May 29, '60 (M<sup>1</sup>); Camp Supply—\*1878 (K<sup>2</sup>); Harmon Co.—\*†June 18, '26 (L<sup>4</sup>); McCurtain Co.—\*†June 25, '25 (O<sup>2</sup>); Okmulgee—\*†Nov. 7, \*†Dec. 9, '25 (F). Dr. Oberholser writes me: "All the bobwhites of Oklahoma are to be referred to *C. v. virginianus*, though some are intermediate. Some Texas Panhandle birds, some from the Oklahoma Panhandle, and some from southwestern Kansas are rather pale and if considered separately might easily be referred to *texanus*, but the average from all these intermediate regions is nearer to *C. v. virginianus*." 3 partially albino females have been taken: Chickasaw Nation—\*June '03; Madell—\*Feb. 15, '25; Tulsa—\*Nov. 20, '27.

Nesting: Copan—10 fresh eggs, Aug. 1, '17 (K<sup>1</sup>); Tulsa—eggs May 28, June 10, July 6 (P<sup>2</sup>, M<sup>5</sup>); Sapulpa—eggs May 9, '19 (B<sup>3</sup>); Cimarron Co.—nest with 10 eggs June 29, '11 (T<sup>1</sup>).

Food: chinch bugs, cutworms, army worms, cotton worms, May beetles, potato beetles; 47 cotton boll weevils at one meal; 1532 insects eaten by one bird in one day. Numbers of weed seeds eaten during one day by one Bobwhite; barnyard grass 2500, pigeon grass 3000, pigweed 12000, lamb's quarters 15000.

This fine bird was noted in eastern Oklahoma in 1719 by La Harpe; along the western border in 1845 by Abert; in northwestern Oklahoma in 1859 by Mead, and in 1876 by McCauley. Of late years Mr. Tate ('25b) reports it "has extended its range west twelve miles during the past ten years and is now found nearly to the Oklahoma-New Mexico line north and west of Kenton."

In the past Bobwhites from Oklahoma have been trapped and sent to New England and New Mexico (Philipps, '15; Ligon, '27), but now the State Game Department is importing large numbers from Mexico—10,000 in 1926, 10,000 in 1927 (Reeves, '26: 28), 10,000 in 1928, 15,000 in 1929, 10,000 in 1930, according to Mr. Van H. Montgomery. These birds belong to a different subspecies from the native birds—the Texas Bobwhite—*C. v. texanus*—in northern Mexico, *C. v. macularus* from central Tamaulipas south for some distance, still others south of that.

An exhaustive study of the Bobwhite has been made by Mr. H. L. Stoddard in Georgia. He found that many nests were incubated by the cock, the rest being entirely in charge of the hen. The parent bird leaves the eggs only once a day, usually in the afternoon, and then stays off from one to six or seven hours. The chief enemies are house cats, cotton rats, dogs, skunks, black snakes, rattle snakes, crows and Cooper and Sharp-shinned hawks, commonly called "blue darters." "All other hawks are too slow to catch quail in any numbers and are a distinct aid on quail preserves in keeping down reptiles and small mammals." (*Report on Co-operative Quail Investigation 1925-26*: U. S. Biol. Surv. Washington, D. C.).

The best way to help Bobwhite is to leave plenty of cover for nests and for protection during the winter. Cats, rats and wandering dogs should be controlled. If quail nests are broken up during farming operations, the eggs may be put under a small hen; fresh clabber has proven an excellent food for little Bobwhites. Detailed information as to quail preserves may be found in Mr. Stoddard's Bulletin.

In Ohio where Bobwhite is given permanent protection on the song bird list, it is abundant and friendly and can carry on its laudable activities of weed and insect destruction undisturbed. This most interesting and lovable bird is far too uncommon in Oklahoma.

(293) ARIZONA SCALED QUAIL: *Callipepla squamata pallida*

Resident in Cimarron County.

Specimen: \*+July 5, '26 (L<sup>4</sup>).

Nesting: nest with 12 eggs June 11, '11 (T<sup>1</sup>).

Food: grasshoppers, ants, beetles, leaf chafers, cucumber beetles; clover weevils, scale insects; Russian thistle, pigweed, bind weed, sunflower, lamb's quarter.

This quaint and beautiful bird with its many curious cries—the nasal *pay-cós pay-cós* and loud strange *kuck yur* is one of the delights of Cimarron county. Mr. Tate (25b) writes of its extension of range since 1905; they had been in the Cimarron valley in the western half of Cimarron county for over 30 years before this; they have worked east and northeast into Kansas, a distance of about 60 miles. In 1925 their numbers were greater than for the last 10 or 12 years but since then they have decreased again, the reason being, according to Mr. Brill ('26), because of the extermination of prairie dogs by systematic poisoning, hawks and coyotes have turned on the quail.

These gentle birds come to Mr. Tate's home to his feeding table. On June 26, 1925 a mother Blue Quail brought eleven tiny chicks into the yard.

## TURKEYS: FAMILY MELEAGRIDAE

(310a) EASTERN TURKEY: *Meleagris gallopavo silvestris*

Formerly abundant resident throughout the whole state except the two western counties of the Panhandle; now confined largely to the southeastern corner of Oklahoma, a few being found in Sequoyah, Adair, and Delaware Counties, also Comanche and Dewey Counties.

Records: James in 1820, Irving and Latrobe in 1832, Gregg in 1839, Abert in 1845 and Woodhouse in 1850 all spoke of the abundance of these birds. In 1867 Jacob stated that a pound of flour or sugar was given at Fort Cobb to the Indians in exchange for a turkey. McCauley was the first to mention a diminution: "Numbers observed at Wolf Creek, Indian Territory, but not in the abundance in which it was found as lately as two years ago." In 1877 Gen. Sheridan visited a roost 3 miles long on the Canadian River (Lane, '26: 496). Cooke found it "very common in the bottom lands a few miles from Caddo" in 1883. But by 1886 near Fort Gibson they "seem rather hard to get as the supply has not been well kept up" (Potter). There were still a few in eastern Cleveland county in 1898 (V); in 1902 Bunker summed up the situation—"formerly plentiful, rare now."

Nesting: Choctaw Nation—10 eggs May 5, 3 eggs May 5 '60 (C<sup>8</sup> & M<sup>1</sup>); Washita River—4 eggs May 16, 2 eggs May 17 '60 (C<sup>8</sup> & M<sup>1</sup>); Leflore Co.—many nests found in Ottawa township; birds gobble about middle of April and nest immediately after (J. D. Averyt).

Food: grasshoppers, beetles, caterpillars; weed seeds, mast.

Many an explorer and frontiersman in Indian Territory has owed his life to the timely capture of Wild Turkeys. No other bird is mentioned so often in the early accounts; indeed quite a number of the titles in the bibliography are included because of the turkey alone.

A curious method of capturing this bird is described by Capt. Marcy ('50:33): a hunter saw a turkey a half mile away on the plain; pursued it on horseback and ran it down, informing the Captain "that they seldom ever fly more than twice before they become exhausted and are easily taken."

A picture of bygone days is given by Barde ('12:68-71) as told him by a hunter who went to the Osage in the 80's. "In those days every growth of timber along every stream was a turkey roost. Turkeys ranged the country by thousands." They were camped on Rock Creek in late November and there had been a six inch snow; the next morning they came upon a valley full of turkeys. "That scene is my one great memory of the woods, dream-like and beautiful, that stands out beyond all other things that I ever beheld as a hunter. The turkeys easily scratched through the crusted snow in their search for the nut-like acorns. And as they scratched they brought up the red and yellow leaves of autumn, still deeply tinted, until the white field of snow was stained with beautiful colors. The glossy, bronzed bodies of the feeding host glistened in the sunlight." His old companion gazed for a long time, and finally said, "As beautiful as flowers when spring comes on the prairies."

## CRANES, RAILS, ETC.: ORDER MEGALORNITHIFORMES

## CRANES: FAMILY MEGALORNITHIDAE

(204) WHOOPING CRANE: *Grus americana*

Formerly a common transient; not recorded for twenty years.

Migration: Cleveland Co.—"numerous bands of the snow white cranes," Oct. 29, '32 (Latrobe, '36: 236);—"seen flying over in large flocks" 1901-02 (B<sup>6</sup>); Woods Co.—2 in museum at Alva, \*Apr. 7, '07 (C<sup>2</sup>); Gate—"Fairly large flocks of these beautiful

white birds were seen in 1909, 1910, and 1911. In the fall of 1912 a single individual was seen and since that none have been seen (L<sup>2</sup>, '30: 41).

A hundred years ago Latrobe wrote of listening to "the wailing cry of the cranes above our heads, descried like so many white specks floating in the blue ether." A prairie fire near Fort Arbuckle in November 1850 on "a dark and cloudy night" was described by Dr. Glisan ('74: 68) with its "flames of liquid fire rolling in wild fury over all barriers. . . . To add to the wildness of the scene. . . . vast flocks of white cranes, of swan, and wild geese, flew to and fro over the lurid flames in utter bewilderment and consternation."

Miss Muriel Wright (*Chronicles of Oklahoma*, 1929, vol. 7, p. 191) suggests that the Kiamichi River might have been named by the early French explorers from the Whooping Cranes that they "noted on the banks of the stream in the spring of the year—*kamichi* meaning "horned-screamer"—a South American bird of the same order." These great waders were so abundant in the Mississippi Valley in 1811 that Nuttall said the bustle of the great migrations and the passage of the mighty armies filled the mind with wonder. Now the species is almost extinct. Mr. Lewis writes, "Apparently their fatal gift of beauty has doomed them to extermination."

(205) LITTLE BROWN CRANE: *Grus canadensis canadensis*

Formerly abundant transient.

Specimen: Cleveland Co.—\*Apr. 8, '02, taken by R. I. Cain, burned in 1903.

In 1902 Mr. Bunker noted that this Crane and the Sandhill were "found together; abundant." The Little Brown Crane closely resembles the Sandhill, except that it is distinctly smaller.

(206) SANDHILL CRANE: *Grus canadensis tabida*

Transient, once very common.

Migration: Bryan Co.—common Nov. 6-11, '83, Feb. 6-Apr. 4 "vast numbers dotted the prairie" Apr. 1-4 (C<sup>4</sup>); Tillman Co.—\*Feb. 20, '23 (O. U. Museum); Arbuckles—5 Apr. 1, '29 (B<sup>5</sup>); Cleveland Co.—\*Apr. 3, \*8, '02 (B<sup>6</sup>);—50 Mar. 25, '21, flocks Apr. 3-5, '23, 33 Apr. 1, '26, 60 Mar. 26, flock Apr. 3, '27, 15 Oct. 18, '26 (N); Washita Co.—flocks Jan. 25, Feb. 5, 19, 28, Mar. 31, Apr. 6, 12, 19, Oct. 3-7, '11, Mar. 28-Apr. 18, '12 (C<sup>1</sup>); Cherokee Salt Plains—50 Oct. 18, '30 (B<sup>5</sup>); Gate—common in migration, sometimes wintering if the weather is mild (L<sup>2</sup>); Beaver Co.—Oct. 11, '12, Apr. 20, '13 (T<sup>1</sup>); Kenton—Sept. 22, hundreds Oct. 6-11, '25, hundreds Mar. 28, Sept. 24-Oct. 7, '26 (T<sup>1</sup>).

Food: grasshoppers, other insects, snakes, small rodents, frogs, tadpoles, roots.

It is a thrilling experience to hear the strange wild *krroo*, *krroo* and see these great birds flying with slow, steady strokes, their long necks fully extended. Mr. Lewis writes ('30:40) "When first heard they are probably half a mile high and two or three miles away, yet their powerful call comes clear and melodious. When they are close overhead another note can be distinguished, a kind of hissing undertone that in a large flock is almost constant. Cranes are generally seen in flocks of from thirty to sixty, but in the spring of 1923 I saw a flock of 275 pasturing on my growing wheat; and in early October, 1926, a flock of more than three hundred passed over."

RAILS, COOTS, ETC.: FAMILY RALLIDAE

RAILS: Subfamily Rallinae

(208) KING RAIL: *Rallus elegans elegans*

Summer resident in main body of state; occasional in winter.

Migration: Cleveland Co.—Apr. 28, '27 (N); Bryan Co.—Nov. 1, '83 (C<sup>4</sup>); Tulsa—male caught in muskrat trap Jan. 8, '29 (G<sup>3</sup>).

Nesting: Tulsa—eggs May 20-June 15, (M<sup>5</sup>); nest with 10 eggs May 19, '27, nest with eggs Apr. 29, '28 (G<sup>3</sup>); Stillwater—a male taken \*May 25, '25, had been incubating 10 eggs, 5 of them infertile (M<sup>3</sup>); Woods Co.—nests in marshes east of Alva (C<sup>2</sup> & T<sup>2</sup>); Cleveland Co.—nest with 13 eggs May 22, '27, an old nest 15 feet away (J. B. Goldsmith); Love Co.—an immature bird \*June 26, '89 (R<sup>1</sup>).

When Mr. Goldsmith took us to see the King Rail's nest near the Canadian on May 22, the incubating parent let us come within 5 feet, then left. But eight days later the bird stayed until we were only three feet away and then fluttered and tumbled about in the sedges nearby, making the most extraordinary cackling, angry noises: *kraaa; kow kow kow kow; ick; jip; jup, jup, jup; quick, quick, quick; chump, chump, chump.*

(212) VIRGINIA RAIL: *Rallus limicola limicola*

Rare summer resident in western Oklahoma.

Migration: Copan—May 14, '17 (K<sup>1</sup>); Tulsa—Apr. 26, 28, '30 (F); Cleveland Co.—\*Apr. 29, '03 (O. U. Museum).

Nesting: Pond Creek, probably in Washita Co.—7 eggs June 13, '60, 3 still in National Museum (M<sup>1</sup>); Gate—sometimes nests in the bog along the Cimarron, have seen half grown young (L<sup>2</sup>, '30); Ivanhoe Lake—"here all summer" (W. F. Adams); Tulsa—female collected with 11 well developed eggs \*Apr. 27, '30 (G<sup>3</sup>).

The Virginia Rail looks much like the King Rail, but is only about a third as large. Its long slender bill and cinnamon breast are very different from the short yellow bill and grey breast of the Sora.

(214) SORA RAIL: *Porzana carolina*

Rare summer resident.

Migration: Ottawa Co.—\*Nov. 1, '06 (P<sup>4</sup>); Copan—Apr. 30, May 19, October 14, '16, Sept. 7, 8, '17 (K<sup>1</sup>); Tulsa Co.—Apr. 16, '15 (K<sup>1</sup>);—\*Apr. 28, '28 (G<sup>3</sup>), Lake Overholser—May 8, 12, 26, '28 (S<sup>1</sup>); Stillwater—\*May 12, '24 (M<sup>3</sup>); Cleveland Co.—\*May 20, '07 (V) \*May 20, '22 (G. H. Williams); Apr. 19, '26, Apr. 20, '27 (N); Woods Co.—"common in spring migration" (C<sup>2</sup> & T<sup>2</sup>).

Nesting: Tulsa—nest with 7 eggs at Katy Lake, southeast of Tulsa May 30, '24, nests with eggs May 28, June 20, '26 (M<sup>5</sup>).

"During the summer of 1850," wrote Dr. Woodhouse, "whilst attached to the Creek boundary survey under Lieut. J. C. Woodruff, Topographical Engineer, I met with the Sora rail on several occasions, on the prairies, but always near water." By Persimmon Pond south of Norman I once came upon a migrating Sora—a most fascinating creature paddling about on the edge of the pond, sometimes running in water that came half way up its sides. It ran out on logs and gave little flights where the water grew too deep. It continually twitched its absurd perked up tail; I counted for one minute and there were 75 twitches.

(216) BLACK RAIL: *Cresiscus jamaicensis stoddardi*

Rare transient.

Records: Cleveland Co.—male taken at Mussel Shoals, \*May 15, '24 (C. Fleming); Gate—1 "caught alive in my garden after a heavy rain in the early fall of 1915" (L<sup>2</sup>, '30).

This miniature rail is no larger than a sparrow and might be taken for a field mouse as it runs for shelter with head low and neck extended. The black downy young of the larger rails are sometimes mistaken for this species. Their bills are yellow or scarlet while that of the Black Rail is black.

GALLINULES: Subfamily Gallinulinae

(218) PURPLE GALLINULE: *Iornis martinicus*

Rare transient.

Specimen: Grady Co.—1 found alive in company with 2 Coots near Amber \*Apr. 28, '25 (H. U. Goltry); now mounted in A. & M. College Museum.

(219) FLORIDA GALLINULE: *Gallinula chloropus cachinans*

Rare summer resident.

Nesting: Love Co.—adult, young and eggs taken \*May 15, '89, 2 young and 3 eggs from same nest \*June 28, '89 (R<sup>1</sup>); Woodward—single bird seen July 13-23, '05 (L<sup>1</sup>).

The flaming scarlet bill and forehead, brown back and white patch under the tail render this bird unmistakable. Ragsdale describes the only nest recorded from the state as made "entirely of a green water grass broken down on the water amid growing rushes and lilies."

Coors: Subfamily Fulicinae

(221) AMERICAN COOT: *Fulica americana americana*

Common transient, breeding locally throughout the state; most abundant in April and October.

Migration: Copan—Sept. 18-Oct. 20, '16 (K<sup>1</sup>); Lake Overholser—Oct. 8-Dec. 10, '27, Mar. 6-June 9, '28 (S<sup>1</sup>); Cleveland Co.—Mar. 10-June 1 (N);—1 Dec. 8, '29 (B<sup>5</sup>); Lake Lawtonka, Comanche Co.—Oct. 8-Dec. 10, '27, Feb. 11-June 9, '28 (C<sup>6</sup>); Gate—Apr. 7-June 11 (L<sup>3</sup>).

Nesting: Love Co.—2 nests with 6 eggs each, 1 nest with 1 egg May 15, '89, nest with 6 eggs, young nearly grown and fledglings seen June 28, '89 (R<sup>1</sup>); Gate—several pairs nest (L<sup>3</sup>); Cimarron Co.—nest with 8 eggs on Marselus Bros. ranch June 23, '13 (T<sup>1</sup>). A pair seen in Pushmataha Co. June 23, '29 (B<sup>5</sup>); seen daily June 16-July 8, '05 at Chattanooga (L<sup>1</sup>).

The white bills of these slate colored Mud-hens present a curious effect in sharp contrast to their dark heads. Since they are so common and widely distributed as transients, it seems probable that they will be found breeding in more localities than have been recorded. A Coot banded at Woodward Oct. 20, 1925 by Mrs. F. E. Chilcott was taken at Big Trout Lake, Saskatchewan May 10, 1926 (Liicoln '27:33).

## SHORE-BIRDS, GULLS, AUKS, ETC.: ORDER CHARADRIIFORMES

## PLOVERS, ETC.: FAMILY CHARADRIIDAE

PLOVERS: Subfamily Charadriinae

(278a) CUBAN SNOWY PLOVER: *Charadrius nivosus tenuirostris*

Summer resident on the Salt Plains.

Migration: Salt plains along the Cimarron—arrive about the first of May (Goss, '85: 36); Lake Overholser—rather common—Sept. 5-10, '29 (S<sup>1</sup>); Tulsa—1 Aug. 24, '24 (K<sup>3</sup>).

Nesting: Salt Plains along the Cimarron—"begin laying the last of May," 3 eggs nearly ready to hatch June 18, '86 (Goss, '86); Cherokee Salt Plain.—nest with 3 eggs June 13, '30 (B<sup>5</sup>);—young July 4-15, (Wm. Bayliff); Edith Salt Plain—common, July '30 (B<sup>5</sup>); Gate—2 young with parent by the Cimarron July 28, '22 (L<sup>2</sup>); Greer Co.—\*+June 9, '14 (C<sup>5</sup>).

In Oklahoma the same ecological niche appears to fit two diminutive white birds—the Least Tern and the Snowy Plover, although the range of the former is somewhat less restricted. Along the south side of Red river near Vernon, Texas, opposite Tillman County Mr. W. L. More writes: "Wherever you find Least Terns breeding in this country you will also find the Snowy Plover. You will find a nest of the tern and then of the plover." It has not yet been reported as nesting on the north side of Red River, but adults were seen there in large numbers by Dr. Van Vleet's party in 1901.

(274) SEMIPALMATED PLOVER: *Charadrius semipalmatus*

Uncommon transient in May, August, and September.

Migration: Tulsa—1 May 18, '24 (M<sup>5</sup>); Lake Overholser—May 12-26, common Aug. 18, Sept. 5, 6, '28 (S<sup>1</sup>); Cleveland Co.—†May 15, '24 (N); Cherokee Salt Plains—large flocks May 24, '30 (B<sup>5</sup>).

This gentle little plover may be known by its short black and orange bill and single well-defined band across the breast.

(281) MOUNTAIN PLOVER: *Eupoda montana*

Rare summer resident in western Oklahoma.

Migration: Cleveland Co.—4 Mar. 15, '26 (N); Camp Supply—seen in May '76 (McCauley); Panhandle—\*Oct. 6, '89, now in American Museum (R<sup>2</sup>).

Nesting: west of Fort Cobb—nest, 1860 (M<sup>1</sup>); Cimarron Co.—nest and eggs on Marselus Bros. ranch June 30, '10 (T<sup>1</sup>).

In May 1913 Prof. Stevens "found a few pairs of the Mountain Plover about on the open prairies of western Cimarron county," but we did not see them either in 1922 or 1926. Of the set taken by McCarthy somewhere "west of Fort Cobb" one egg, No. 4013, is still in the National Museum and was reported by Mr. J. H. Riley as correctly identified.

(273) KILLDEER: *Oxyechus vociferus vociferus*

Summer resident over the entire state except the mountains in southeastern Oklahoma; rarely recorded in winter.

Migration: Copan—Feb. 19, '17 (K<sup>1</sup>); Tulsa—\*Feb. 14, '29 (G<sup>8</sup>);—Dec. 12, '27 (F); Bryan Co.—last seen Nov. 9, '83, first arrival Feb. 22, '84 (C<sup>4</sup>); Cleveland Co.—Feb. 1, '23; Feb. 17: Nov. 17; Dec. 7, '25; 2 Jan. 18, 23, '27 (N); Washita Co.—"migratory during hard winters," usually leaving about Dec. 10, generally returning about Jan. 15 (C<sup>1</sup>); Kenton—Mar. 8, '26; Mar. 13: Sept. 25, '26 (T<sup>1</sup>).

Nesting: Tulsa—eggs May 10-June 27 (M<sup>5</sup>); Wichitas—nest with 4 eggs June 12, '20 (N); Cimarron Co.—nest with eggs Apr. 20, '12 (T<sup>1</sup>).

Food: cotton boll, alfalfa, clover-root, cloverleaf and rice weevils, cowpen curculio, bill bugs, cotton worm, cotton cutworm; May, click, grapevine, leaf, and southern corn-leaf beetles, grasshoppers, horse flies, mosquitoes, cattle ticks; crayfish.

The Killdeer is the harbinger of spring in central Oklahoma and if his far reaching *kill-dee* strikes one as rather the opposite of joyful, still it has the advantage of unmistakability. One September afternoon when Persimmon Pond had dried to a mere mud puddle, four Least Sandpipers and a Killdeer flew down beside it. As I slowly approached, the larger bird flew wildly about screaming warning to his small companions; they gazed at me and deeming me harmless, stood their ground, whereupon the Killdeer gave up in despair and left. It has been found, at least in some cases, that the male Killdeer incubates the eggs (G. Pickwell, *Auk*, 1930, vol. 47, pp. 499-506).

(272) AMERICAN GOLDEN PLOVER: *Pluvialis dominica dominica*

Uncommon transient, formerly abundant in spring.

Migration: Tulsa—flock Apr. 23, '22 (P<sup>2</sup>); Wagoner Co.—75 Apr. 5, '30 (R. Langenkamp); Bryan Co.—"not nearly as common as was to have been expected; a few were reported March 12, and a single one seen March 25, '84" (C<sup>4</sup>, 14b: 418); Payne Co.—Apr. 21, '26 (M<sup>8</sup>); Cleveland Co.—23 May 25, '23, 5 Apr. 3, 6, '26, Oct. 26, 31, '25 (N); Cherokee Salt Plains—20 June 10, '30 (B<sup>5</sup>); Gate—12 May 18, '22 (L<sup>2</sup>); northwestern Oklahoma—abundant in late June 1876 (McCauley).

Food: "feeds ravenously on several destructive insect pests, such as grasshoppers, locusts, crickets, white grubs, cutworms and wireworms" (Forbush '25).

In spring this strikingly handsome bird "passed up the Mississippi Valley in countless hordes and this great migration continued annually until the time that the hosts of Passenger Pigeons began to disappear. Then

the Golden Plover commenced to come into the chief game markets in barrels to take the place of the pigeons" (Forbush, '25: 463). In 1876 Lieut. McCauley noted: "none of this species had, when we were travelling south early in May through Kansas, Indian Territory and Texas to the Red River, as yet found their way hither or been noticed in that region. The days, especially mornings were often cold, and northers not infrequent. On our return, in the latter part of June, this fine game bird had, like the buffalo, come north with the increasing heat, and were abundant on the route."

This species may be distinguished from the Black-bellied Plover by the gray under surface of the wings, its lack of white in wings and upper tail coverts, its smoky under parts in fall, and its call which is a harsh *queedle*.

(270) BLACK-BELLIED PLOVER: *Squatarola squatarola*

Rare transient.

Migration: Gate—1 seen Aug. 18, '25, 2 May 14, '27 (L<sup>2</sup>).

Although for many years Black-bellied Plover were on the game bird list in Oklahoma, I have not been able to get a record of a specimen taken in the state. Now, fortunately, all Plover are protected at all times. The whitish tail, black axillars (feathers close to the body under the raised wings) and white in the wing in flight distinguish it from the Golden Plover. Its note is a musical, mournful call, suggestive of the *toor-a-wee* of a Bluebird.

SNIPES, SANDPIPERS, ETC.: FAMILY SCOLOPACIDAE

SNIPES: Subfamily Scolopacinae

(228) AMERICAN WOODCOCK: *Philohela minor*

Rare transient in eastern Oklahoma, probably a former breeder.

Migration: Craig Co.—"years ago" abundant several miles east of Vinita (Barde, '12: 109); Leflore and McCurtain Cos.—"making its last stand in southeastern Oklahoma" (Barde, '12: 110); Ottawa Co.—2 males \*Nov. 6, '13 (P<sup>4</sup>); Rogers Co.—Apr. 15, '21 south of Catoosa (G<sup>4</sup>); Tulsa—Apr. 10, '26 in Indian Woods (M<sup>5</sup>);—\*Nov. 1, '28 (G<sup>3</sup>).

The Woodcock has the distinction of being one of the three Oklahoma birds that received the earliest mention in print, for on Aug. 28, 1719 Bernard de La Harpe wrote of seeing "*beaucoup de perdrix, de bécasses et de vanneaux*" in what is now Pittsburg county. The date appears too early for migrating birds. Dr. Cooke wrote in 1912 that it "will probably be found breeding in some of the bottom lands of eastern Oklahoma," ('12: 21) since it used to nest in Kansas and Arkansas, but I fear it would have been better to say it "probably used to breed in Oklahoma."

It is pleasing to know that *bécasses* were abundant two hundred years ago, but sad to think how few there are at present. Even Woodhouse in 1850 found them rare. Woodcock can adapt themselves to quite an extent to civilization if only some woods are left undisturbed, but they cannot battle against hogs, cats, dogs, and gunners and still survive. This unique bird is so rare in Oklahoma that it should be given the protection of a long closed season.

(230) WILSON SNIPE: *Capella delicata*

Regular transient in March and April, October, and November, sometimes wintering; a rare breeder in Cimarron county.



Migration: Copan—Mar. 8-Apr. 29, Oct. 21, 22, '16 (K<sup>1</sup>); Tulsa—Mar. 10-Apr. 14, Oct. 28, \*Dec. 5, '27 (F); —\*Jan. 5, '28 (G<sup>3</sup>); Stillwater—\*May 7, '24 (M<sup>2</sup>); North Fork of Canadian—\*Sept. 6, '50 (W<sup>5</sup>); Cleveland Co.—Oct. 12-Apr. 24 (N).

Nesting: Cimarron Co.—nest and 3 eggs on hay meadow on H. G. Wilson's ranch, June 3, '10 (T<sup>1</sup>, '23:42).

Food: grasshoppers, mosquitoes, crane flies, predaceous diving beetles that cause trouble in fish hatcheries, crayfish, seeds.

The Jack Snipe is found in wet meadows and near ponds but almost always in grass, rather than on open mud flats. As it flushes, it gives a curious sharp *scape*. It has been recorded on five Christmas censuses, one in Tulsa, four in central Oklahoma.

#### CURLEWS, ETC.: Subfamily Numeniinac

##### (264) LONG-BILLED CURLEW: *Numenius americanus americanus*

Uncommon summer resident in the Panhandle, formerly breeding as far south as Washita county.

Migration: Washita Co.—Mar. 30, '94, Apr. 4, '95, Mar. 25, '96 (B<sup>4</sup>);—Apr. 5, 19, '11, Apr. 5-20, '12 (C<sup>1</sup>); Cleveland Co.—\*Dec. 27, '02 (O. U. Museum); Gate—appear nearly every spring, sometimes singly, often in flocks; 20 in 1926 (L<sup>2</sup>); Cimarron Co.—last seen Sept. 2, '26 (T<sup>1</sup>).

Nesting: Washita Co.—bred in 1893 (B<sup>4</sup>); Camp Supply— bred (Gen. T. E. Wilcox in Cooke, '12:71); Ivanhoe Lake—said to breed in 1906 (B<sup>1</sup> & <sup>2</sup>); Beaver and Texas Co.—nests found (T<sup>1</sup>, M<sup>4</sup>); Cimarron Co.—fresh eggs from May 10, June 1 (M<sup>4</sup>);—4 nests with 4 eggs each seen July 1, '13 near Boise City (T<sup>1</sup>).

Food: grasshoppers, 51-70 in single stomachs, beetles, flies, crayfish.

"Large flocks of these birds," wrote Dr. Woodhouse "I have frequently found feeding upon the prairies in the Indian Territory;" this was in 1849-1850 in northeastern Oklahoma. It is a pity that this unique and striking bird is now so uncommon; we saw but two pairs in the Panhandle on our trip in 1922, both near Boise City, and none on our visit in August 1926, nor did Dr. Little see any earlier in that same summer; although Dr. A. I. Ortenburger noted four or five in southwestern Cimarron county, July 7, 1926.

In 1876 Lieut. McCauley found the Sickle-bill "frequent" and "of general distribution." In early May they were very shy, but in June "frequently, in riding along, the bird would wait till within 25 yards before rising, mounted or afoot making little difference. In early May they were in flocks of from three or four to ten or twelve; but, in June, in smaller numbers, not half a dozen being seen together. Their vocal powers, at no time weak, are apparently strengthened during their hatching; then, as a shrieker the mother proves herself an immense success. On her nest being approached, she waits until within forty yards perhaps, often less, rises up, and, circling about the spot, sends forth those touching notes so well calculated to induce one to leave to get rid of them. Their immediate effect, however is the sympathy she seeks. At once appear a few more intimate friends, doubtless to join in the chorus, each attempting louder calls and harsher than the rest, all circling about as if desirous of attacking the intruder with their long, ungraceful bills. This curlew pandemonium is continued with energy until the invader has gone from the vicinity and there is no sign of his return." ('77:692).

(266) ESKIMO CURLEW: *Phaeopus borealis*

Formerly an abundant spring transient, now nearly or quite extinct.

Migration: Camp Supply—2 taken \*1878, probably in March (K<sup>2</sup>); sent to National Museum, but no longer in existence; Bryan Co. (?)—“as late as the spring of 1884 the writer saw (Eskimo) Curlews by thousands going north across the Oklahoma prairies” (Cooke '14c:287); Fort Reno—Mar. 20, '90 (M<sup>2</sup>); Woods Co.—“In 1910 while driving from Alva to Healdton, Kans., a flock of 12 or 15 flew over in plain sight and near enough to be distinctly heard. Having seen these birds abundantly in many successive years when a boy, I am certain of their identity, for their voice is as distinctive as a crane's.” (S<sup>3</sup>).

On the plains of western Kansas between 1859 and 1869 “millions” of Eskimo Curlews “passed in the spring, but none in the fall” (Mead, '97: 216). “In the prairie states,” wrote Mr. Forbush, ('25:458) “the numbers so resembled the tremendous flights of the Passenger Pigeons that they were called 'Prairie Pigeons.' . . . The destruction of the Eskimo Curlew followed that of the Passenger Pigeon, whose place it took in the markets of the country. In the spring migration in the west it was slaughtered at times by wagon-loads. Market hunters made it their business to follow the birds from state to state during the migration. . . Although a very useful bird in the prairie states where it fed on such destructive pests as the Rocky Mountain locust, it was rapidly and completely destroyed like the Passenger Pigeon for the price that it brought in the market.”

(261) UPLAND PLOVER: *Bartramia longicauda*

Formerly abundant summer resident on the prairies, now a rare breeder in northern Oklahoma.

Migration: Ottawa Co.—\*Apr. 25, '07, \*Apr. 13, '11 (P<sup>4</sup>);—July 19, '29 (B<sup>5</sup>); Copan—Mar. 31, '17 (K<sup>1</sup>); Oklahoma Co.—Mar. 25-May 8, July 19—early October (S<sup>1</sup>); Cleveland Co.—\*Apr. 5, '02 (B<sup>6</sup>);—Apr. 20-May 12, July 31—Sept. 18, 1 heard Oct. 12, '23 (N); Comanche Co.—flocks of 8 and 10 birds Oct. 25, '04 (G<sup>2</sup>); Gate—pass in spring, return in July, sometimes by July 1 (L<sup>2</sup>, '30).

Nesting: Craig and Washington Cos.—rare breeder 1910 to 1917 (K<sup>1</sup>); Osage—breeder in hills in northeast (G<sup>4</sup>); Ponca City—“covered the prairie 40 years ago; nested in thousands (Dr. A. Dugans); Fort Reno—nested in 1890 (M<sup>2</sup>); Washita—4 eggs 40 miles west of Fort Cobb June 1, '60 (M<sup>1</sup>); Comanche Co.—found nesting in 1902 (Judge T. S. Fullerton); Cimarron Co.—nest with 3 eggs, nest with 4 eggs June 24, '10, nest with 2 eggs June 6, '28 (T<sup>1</sup>).

Food: cotton boll, clover-leaf, and clover root weevils, bill bugs, grape-vine, May, and southern corn leaf beetles, cutworms, army worms, cotton worms, crane flies, horse flies, cattle ticks, seeds of foxtail, button weed, and sand spurs.

“During the month of August 1850,” wrote Dr. Woodhouse ('53: 100), “whilst attached to the Creek boundary survey, in crossing the prairies beyond the Red Fork of the Arkansas these birds were to be seen daily in immense flocks; more particularly on the portion of the prairie which had been recently burnt. They appeared to be feeding upon the parched grasshoppers and were excessively fat.”

After the destruction of the Passenger Pigeons the market hunters turned on the birds that swarmed upon the prairies—the Upland Plover, Eskimo Curlew, Golden Plover and Buff-breasted Sandpiper, and in a few years only a pitiful remnant survived. All of these are now given complete protection by law, but according to an editorial entitled *Don't Shoot in Outdoor Oklahoma* in 1925 “thousands” of Upland Plover “are slaughtered illegally every fall.” There are many other adverse forces

with which the greatly diminished numbers of the "Prairie Plover" or Bartramian Sandpiper have to contend: their nesting places are plowed up or turned into towns, cats and dogs catch the parent on the nest or the tiny young, while in their winter home on the Pampas in South America they are relentlessly persecuted. We must protect and encourage in every way these gentle, useful and altogether lovely birds.

The song is a weird, mellow whistle *wh-e-e-e-e-o-o-o*. Mr. Forbush ('25:450) says, "Except the wail of the wind, there is nothing else like it in nature. It is an ethereal sound which might well pass for the utterance of the fabled wind spirit."

A beautiful tribute is given by the English naturalist W. H. Hudson who was born and brought up in the Argentine; many years after leaving his native land he wrote in "A Hind in Richmond Park" of the tri-syllabic cry *pittiwit* or *quitty quit* which we hear so often on August nights:

"Lying awake in bed, I would listen by the hour to that sound coming to me from the sky, mellowed and made beautiful by distance and the profound silence of the moonlit world, until it acquired a fascination for me above all sounds on earth, so that it lived ever after in me; and the image of it is as vivid in my mind at this moment as that of any bird call or cry, or any other striking sound heard yesterday or but an hour ago. It was the sense of mystery it conveyed which so attracted and impressed me—the mystery of the delicate, frail, beautiful being, travelling in the sky, alone, day and night, crying aloud at intervals as if moved by some powerful emotion, beating the air with its wings, its beak pointing like the needle of the compass to the north, flying, speeding on its seven-thousand-mile flight to its nesting home in another hemisphere."

(263) SPOTTED SANDPIPER: *Actitis macularia*

Summer resident in Tulsa and Cimarron counties; transient throughout the state.

Migration: Copan—Apr. 18-30, July 20-Oct. 4, '16, July 3-31, '17 (K<sup>1</sup>); Tulsa—Apr. 22-Sept. 27 (K<sup>2</sup>); Cleveland Co.—Apr. 24-May 30, July 14-Sept. 18 (N); Bryan Co.—Oct. 1-16 (C<sup>4</sup>); Red river—"with us daily" July and August '10 (I).

Nesting: Tulsa—4 eggs May 30, '23 (M<sup>5</sup>); Cimarron Co.—nest with 3 young on H. G. Wilson's ranch June 30, '10, nest with 3 young July 12, '11 (T<sup>1</sup>).

This champion teeterer of the sandpiper tribe is distinctive enough in the spring with its white, black spotted breast but in the fall it must be distinguished from the Solitary Sandpiper by its lighter color above, its unstreaked breast and the white that shows in the wing in flight. Its notes are a single *peet* repeated several times or a *peet weet*, the second lower than the first. It has been found that the male Spotted Sandpiper incubates the eggs and cares for the young with no help from his mate. (Theodora Nelson, 1930. *Bird-Banding* 1:1-13).

(256) EASTERN SOLITARY SANDPIPER: *Tringa solitaria solitaria*

Transient throughout the state.

Migration: Cleveland Co.—\*†Aug. 3, '07 (U. O. M. Z.);—Apr 10-June 4, July 8, Sept. 29 (N). All the dates from the rest of the state fall within these limits, except for a specimen taken in Blaine Co. \*July 7, '01 (B<sup>6</sup>); it is most common in April and May, August and September.

It is probably the Western Solitary Sandpiper that migrates through Cimarron Co., where 14 were seen Sept. 18, '22 (T<sup>1</sup>).

This graceful bird frequents creeks, ditches, and wooded ponds rather than river banks; it is often found alone but on April 28, 1922, I met as many as five together. On this occasion two Solitaries had a fight somewhat as young roosters do; they spread their spotted tails to the farthest extent, each hitched up one shoulder and both maneuvered about threatening each other, but only came to blows once. This sandpiper is dark above, and its tail, when spread to alight looks white in contrast to the dark central feathers. Its *peet weet* is a little higher pitched and thinner than that of the Spotted Sandpiper.

(258a) WESTERN WILLET: *Catoptrophorus semipalmatus inornatus*

Rare transient.

Migration: Stillwater—\*May 12, '25 (M<sup>3</sup>); Logan Co.—1 Aug. 9, '92 (D); Cleveland Co.—5 May 12, '24 (N); Chickasaw Nation—2 \*†May 7, '03 (Hefley); Red river—4 shot by ferryman Aug. '10 (I); Gate—1 Sept. 4, '21 (L<sup>2</sup>); Cimarron Co.—\*†July 9, '26 (L<sup>4</sup>).

It is possible that some of these records may refer to the Eastern Willet. These great birds are a sober gray when seen at rest, but astonishingly striking as they fly with loud cries exhibiting their black and white wings.

(254) GREATER YELLOW-LEGS: *Totanus melanoleucus*

Fairly common throughout the state.

Migration: Ottawa Co.—\*Apr. 26, '07 (P<sup>4</sup>); Tulsa—Mar. 23-Apr. 30 (K<sup>3</sup>); North Fork of Canadian—\*Sept. 15, '50 (W<sup>5</sup>); Creek Nation—\*Oct. 4 '49 (W<sup>5</sup>); Bryan Co.—Mar. 11, '25, common Apr. 4, '84 (C<sup>4</sup>); Cleveland Co.—Apr. 5-May 30-July 14 (N); Woods Co.—1 July 8, '30 (B<sup>5</sup>); Beaver River in Panhandle—\*Oct. 17 (R<sup>2</sup>).

This large, slender, grey bird with its long yellow legs and white rump cannot be confused with any other shore bird but the Lesser Yellow-legs; here one must depend on the larger size and longer, stouter bill, and particularly the notes. The most common of these are a high, sharp whistle of 3 or 4 notes *whew, whew, whew*, often given as the bird takes flight, and a curious complaining *toop toop toop toop* like a young turkey that has lost its way; this is often heard from a lone bird standing on the shore and bobbing its head with each note.

(255) LESSER YELLOW-LEGS: *Totanus flavipes*

Common transient throughout the state.

Migration: Copan—Mar. 28-May 19, '17, Aug. 7-Sept. 24, '16 (K<sup>1</sup>); Okmulgee—\*Oct. 5, '07, '25 (F); Cleveland Co.—Apr. 5-June 1, most common in late April and early May (N).

The Lesser Yellow-legs gives the whistled *whew* only once or twice instead of three or four times as does the larger bird; it also utters an abrupt *kup*. Neither Yellow-legs appears to be especially clannish with its own kind, but each individual runs bobbing about more or less independently.

SANDPIPERS: Subfamily Calidridinae

(239) PECTORAL SANDPIPER: *Pisobia melanotos*

Transient, sometimes common.

Migration: Tulsa—Apr. 22, '30 (K<sup>3</sup>); Stillwater—\*Oct. 3, '24 (M<sup>3</sup>); Cleveland

Co.—\*Apr. 23, '02 (B<sup>6</sup>);—42 May 14, '21, 2 May 10, '23, from 10 to 20 Apr. 11–May 25, '24, 3 May 17, '27, 11 May 29, '29; 1 July 14, '26 (N); Chickasaw Nation—\*†May 2, '03 (V).

This sandpiper, sometimes called the Krieker from its notes, is decidedly larger than the "Peeps" with which it is often found, but in coloring with its white throat, finely streaked buffy breast, brownish back and yellowish legs, it is much like the Least Sandpiper.

(240) WHITE-RUMPED SANDPIPER: *Pisobia fuscicollis*

Uncommon transient.

Migration: Love Co.—seen Sept. 12, '79 (R<sup>1</sup>); Chickasaw Nation—\*May 2, '03 (V); Cleveland Co.—a few seen May 12, 20, 30, June 8, '24; May 14, 21, '27; 1 July 14, '26 (N); Lake Overholser—fairly common May 12–26, '28, very common Sept. 5–9, '29 (S<sup>1</sup>).

The White-rumped is larger than the Semipalmated Sandpiper, but smaller than the Pectoral. It closely resembles the Baird except in flight when its white rump is distinctive; it is, however, browner on the back with a distinctively streaked head. Its flight note is a squeaky *jeet-jeet*.

(241) BAIRD SANDPIPER: *Pisobia bairdi*

Uncommon transient.

Migration: Stillwater—2 \*Apr. 22, '26 (M<sup>3</sup>); Lake Overholser—Mar. 31, '28, 1 Aug. 18, 11 Sept 5, 6, '29 (S<sup>1</sup>); Chickasaw Nation—2 \*†May 2, '03 (B<sup>6</sup>); Cleveland Co.—rare, none seen in 1924, 10 Apr. 24, '26, 2\*May 7, 3 May 13, '27 (N); Gate—seen Aug. 14, '27 (L<sup>2</sup>).

This bird is difficult to distinguish in the field. It is smaller than the Pectoral and its legs are black. It is about the size and coloring of the White-rumped, but its rump is dark; above it is more uniformly colored and of a grayer cast especially on the head. The breast is buffy with indistinct streakings in the adult, but unmarked in the immature bird.

(242) LEAST SANDPIPER: *Pisobia minutilla*

Transient throughout the state.

Migration: Copan—July 29–Oct. 16 (K<sup>1</sup>); Stillwater—2 \*May 10, '25 (M<sup>3</sup>); Cleveland Co.—\*Apr. 11, '02 (B<sup>6</sup>);—1 May 11, '24, 3 Apr. 24, 25, '26, 10 May 7, 13, '27, 4 Sept. 18, '26 (N); Chickasaw Nation—\*May 2, '03 (V); Chattanooga—5 Oct. 28–Nov. 3, '04 (L<sup>1</sup>); Woods Co.—common July 26, '30 (B<sup>5</sup>); Gate—seen Aug. 14, '27 (L<sup>2</sup>).

These tiny birds must be carefully distinguished from the more common Semipalmateds. They have brown backs and greenish yellow legs, while their bills are sligher than those of the other "Peep."

(237) LONG-BILLED DOWITCHER: *Limnodromus griseus scolopaceus*

Rare transient.

Migration: Cleveland Co.—4 seen Apr. 5, 6, 8, '24, all in winter plumage (N); Gate—15 May 7, '24 (L<sup>2</sup>); Cherokee Salt Plain—2 seen, 1 taken \*†June 14, '30 (B<sup>5</sup>).

On April 5, 1924 four of these curious birds suddenly flew down into "Shorebird Pond" south of Norman and then stood stock still for a long time, in great contrast to the busy activities of most of the other shorebirds. At last they flew with a cry, showing their narrow white rumps. They kept close together during the three days they spent with us.

(233) STILT SANDPIPER: *Micropalama himantopus*

Rare transient.

Migration: Cleveland Co.—6 May 14, 15, '24, \*May 15, '24 (N); Lake Overholser—May 26, '28 (S<sup>1</sup>); Woods Co.—specimen in museum at Alva (C<sup>2</sup>); Harper Co.—3 seen, 1 taken \*Aug. 22, '26 (N).

In winter plumage the Stilt Sandpiper resembles somewhat the Lesser Yellow Legs, but may be known by its shorter legs which are *dull olive green* in color and by its longer bill. The three birds seen by us August 22 were in winter plumage, those May 14 in summer plumage. These latter did not associate with the other shorebirds but stayed in a compact flock by themselves.

(243a) RED-BACKED SANDPIPER: *Pelidna alpina sakhalina*

Rare transient.

Migration: Lake Overholser—4 seen, 1 taken \*May 26, 2 May 28, '28 (S<sup>1</sup>); Cleveland Co.—5 in summer plumage, 1 taken \*May 15, '24 (N); Love Co.—seen Sept. 3, '79 (R<sup>1</sup>).

Nothing could be more striking than the red back and black belly of this sandpiper in summer plumage, but in fall it is not easy to identify. Then its dark brownish grey plumage and long slightly decurved bill are the best field marks: there is a greyish band across the breast and in flight white lines show in the wings.

(246) SEMIPALMATED SANDPIPER: *Ereunetes pusillus*

Common transient.

Migration: Tulsa—Oct. 18, '24 (K<sup>1</sup>); Cleveland Co.—common Apr. 4-June 8, '24, commonest in May; 27 Mar. 30, '27. 1 May 27, '29 (N); Chickasaw Nation—2 \*May 2, '03 (V); Old Greer Co.—\*July 19, '01 on Red river (B<sup>6</sup>); Gate—1 hanging on a barbed wire fence evidently a shrike victim, June 2, '22 (L<sup>2</sup>).

The black legs, gray back, and stout bill distinguish this little "Peep" from the Least Sandpiper. This was the most abundant species and was seen for the longest period of any of the shorebirds on the wet weather pond south of Norman that proved such a boon to us in the spring of 1924. Their numbers in April and May varied from about 20 to nearly 100 except on May 18 when only four birds were present. It was an entertaining sight to see these little birds that were running in and out of the water all day long, take regular baths like any sparrow.

(247) WESTERN SANDPIPER. *Ereunetes mauri*

Rare transient.

Migration: Old Greer Co.—1 taken on Red river \*July 19, '01 (B<sup>6</sup>).

This little sandpiper probably occurs more commonly than is realized, but it is a very difficult bird to identify in the field. In summer and autumn it is indistinguishable from the Semipalmated, but in the spring the Western shows a rustier tone on the back and head.

(249) MARBLED GODWIT: *Limosa fedoa*

Rare transient.

Migration: Woods Co.—1 taken \*June 15, '05, now in museum at Alva (C<sup>2</sup>).

This great shore bird can be told by the long, straight or slightly upturned bill, by its light reddish color and the absence of white at the base of the tail.

(251) HUDSONIAN GODWIT: *Limosa haemastica*

Rare transient.

Migration: Canadian Co.—3 taken \*1911 (C<sup>5</sup>); Cleveland Co.—4 May 11, 3 May 15, '24 (N); Payne Co.—2 taken \*May 15, '24 on Cimarron (M<sup>8</sup>, '28b).

The first of these great shorebirds that we ever saw was a single bird in the chestnut summer plumage feeding in the weeds only 15 feet from us; three others were seen on the other side of Shorebird Pond. Our only other sight of this species were three birds in gray winter plumage on Apr. 15; they were shy and flew away showing their white rumps. This fine bird is so rare now throughout the country that it is a pity to shoot one for any purpose whatever.

(248) SANDERLING: *Crocethia alba*

Rare transient.

Migration: Woods Co.—a specimen in the museum at Alva (C<sup>2</sup>); Harper Co.—3 immature birds seen, 1 taken \*Aug 22, '26 (N); Edith Salt Plain—\*†July 26, '30 (B<sup>5</sup>).

This, the whitest of the shorebirds, has a short black bill and black legs, and shows a white bar in the wing in flight.

## AVOCETS AND STILTS: FAMILY RECURVIROSTRIDAE

(225) AMERICAN AVOCET: *Recurvirostra americana*

Rare transient.

Migration: Cimarron river—"I have seen a few specimens in Indian Territory." \*Aug. 20, '50 (W<sup>5</sup>); Camp Supply—\*1878 (K<sup>2</sup>); Red river—taken \*July, '01 (V); Stillwater—2 taken \*Oct. 4, '24 (M<sup>8</sup>); Cleveland Co.—10 by South Canadian Apr. 25, '29 (B<sup>8</sup>); Gate—small flocks Apr. 24, '21, May 20, '22, 10 May 1, '25, 1 about Apr. 27, 3 Aug. 14, '27 (L<sup>2</sup>).

"Few birds are more beautiful than this wading bird with the up-curved bill," writes Mr. Lewis ('30:42). "The rich cinnamon of its head and chest, and the contrasting black and white of its body, make a picture not soon to be forgotten. Near the first of May, 1925, a flock of about ten appeared in my pasture pond. They were not especially shy, and permitted observers to approach within a few rods to admire their graceful movements and their exquisite coloration. "A caller to whom I showed them could scarcely believe that objects of such grace and beauty could be seen here."

(226) BLACK-NECKED STILT. *Himantopus mexicanus*

Very rare transient.

Migration: Old Greer Co.—2 taken on the Red river \*July 18, '01 (B<sup>8</sup>).

Mr. Bunker wrote that this handsome and curious bird was "common on Red river in July," but he and Dr. Van Vleet are the only observers who have recorded it in Oklahoma.

## PHALAROPES: FAMILY PHALAROPODIDAE

(224) WILSON PHALAROPE: *Steganopus tricolor*

Uncommon transient throughout the state.

Migration: Ottawa Co.—\*May 15, '12 (P<sup>4</sup>); Copan—1 May 16, '16 (K<sup>1</sup>); Payne Co.—May 10, '24 (M<sup>8</sup>); Cleveland Co.—\*†Apr. 28, '02 (U. O. M. Z.);—May 10, 12, '23, Apr. 5, 6, 14 May 11, 2 May 14, 15, '24 (N); Love Co.—May 10, Sept. 12, '79 at Blue Lake (R<sup>1</sup>); Cherokee Salt Plains—2 June 14, '30 (B<sup>8</sup>); Gate—regular and numerous in migration (L<sup>2</sup>).

On April 5 at Shorebird Pond a male Phalarope appeared and joined company with three Lesser Yellow-legs; the next day he was flocking with the Dowitchers. No others were seen until May 11 when fourteen of both sexes of these lovely, dainty birds were swimming about. The

next day to our keen disappointment all had left. Two males on May 14 and 15 were the only others observed.

Phalaropes are the classical example of those unconventional birds among which the female is larger and handsomer than the male, and where he takes charge of the eggs and young. This arrangement offends some humans, but do they berate those more numerous bird fathers that take no interest in their families? So long as the species thrives, why find fault with its domestic economy?

## GULLS AND TERNS: FAMILY LARIDAE

Gulls are larger than Terns and of stouter build, with relatively shorter and wider wings, and the tail usually even or rounded. When flying they carry the head horizontally. Terns are slighter in form with long, narrow, pointed wings, and forked tails; they fly with the bill pointing down.

### GULLS: Subfamily Larinae

#### (51) HERRING GULL: *Larus argentatus smithsonianus*

Uncommon transient and winter visitant.

Migration: Ottawa Co.—\*Feb. 20, '14 (P<sup>4</sup>); Tulsa—Apr. 3, 5, Sept. 20 (K<sup>3</sup>);—14 Apr. 29, '28 (F); Enid—\*Feb. 5, '12 (W<sup>6</sup>); Lake Overholser—4 Mar. 2, 17, 1 Apr. 9, '28, Nov. 12, '27 (S<sup>1</sup>); Cleveland Co.—taken at Noble, \*Mar. 21, '21 (U. O. M. Z.); Apr. 2, '26, (N); Edith Salt Plain—1 July 14, '30 (B<sup>5</sup>); Gate—occasional visitor; in Dec. '21 6 appeared and stayed through the winter (L<sup>2</sup>).

This is the largest of the Gulls that visit Oklahoma.

#### (53) CALIFORNIA GULL: *Larus californicus*

Rare transient.

Migration: Altus—1 taken \*Oct. 29, '28.

This bird was banded as a chick between one and two weeks old July 13, 1928 on Chase lake, North Dakota by Mrs. Marjorie Lee Guest.

#### (54) RING-BILLED GULL: *Larus delawarensis*

Uncommon transient.

Migration: Okmulgee—1 taken \*winter of '24 (F); Cleveland Co.—\*Nov. '13 (C<sup>5</sup>); Woods Co.—1 near Alva \*May '06 (C<sup>2</sup> & T<sup>2</sup>); Camp Supply—\*Mar. 12, '78 (K<sup>2</sup>); Gate—1 May 20, '21, May 24, '24 (L<sup>2</sup>:30).

This bird is difficult to distinguish from the Herring Gull, since young of the latter have dark rings near the ends of their bills. The only reliable field mark is the color of the legs—yellowish green in this species, flesh-colored in the Herring Gull.

#### (59) FRANKLIN GULL: *Larus pipixcan*

Common transient in western Oklahoma, irregular in eastern Oklahoma.

Migration: Ottawa Co.—\*Apr. 26, '08 (P<sup>4</sup>); Copan—Apr. 21-28, '17, Sept. 17-Oct. 21, '16 (K<sup>1</sup>); Tulsa—Apr. 23, 29, '28 (F); Okmulgee—\*Nov. 1, '25 (F); Stillwater—\*May 16, '24 (M<sup>3</sup>); Cleveland Co.—\*May 2, \*7, '03 (U. O. M. Z.); 2 Mar. 21, '27, usual dates Apr. 6-30, Oct. 8-18 (N);—flock June 1, '29 (B<sup>5</sup>); Cherokee Salt Plains—flock June 7,30 Oct. 18, '30 (B<sup>5</sup>); Gate—vast numbers in spring, late summer and fall (L<sup>2</sup>).

Food: grasshoppers, crickets, May beetles. One bird had eaten 126 grasshoppers; another 20 beetles, 66 crickets, 34 grasshoppers; another 142 grasshoppers and 10 other insects; another 1,157 insects.



"During the summer of 1925 Franklin Gulls were with us more than usual," wrote Mr. Lewis from Gate ('27). "About 5000 appeared in early July; among them were a goodly number in immature plumage. The middle of August a good shower filled a dry pond near our house and this has been used by about a thousand gulls as their headquarters. They made a very pretty sight as they stood in the shallow water with their heads all in one direction against the wind. There was a constant hubbub of mewing and squalling amongst them. Some birds would be flying up to soar about in the air above while others would be settling down with the flock. Some of them would go through intricate acrobatic maneuvers pitching and diving, while two different individuals actually banked their wings until they were in a vertical position and then went over and floated on their backs *upside down*, then with a flip they righted themselves and came on down to the water.

"The gulls were very assiduous in their search for grasshoppers and there was a noticeable diminution in the abundance of those insects as a result of their labors. Most of their hunting was done in the cooler parts of the day—in the morning and evening; about sundown they would come trooping back in long straggling lines. During the hotter part of the day the Gulls were far aloft, sometimes getting so high in the sky that they became merely faint specks which one could see only as they turned in their soaring and their white plumage glinted in the sunlight. In other years when they have been in abundance later in the season I have seen the air alive with these soaring specks for miles."

(60) BONAPARTE GULL: *Larus philadelphia*

Rare transient.

Migration: Creek Nation—immature bird taken on Cimarron river \*Oct. 1, '49 (W<sup>5</sup>).

Woodhouse ('53:105) states that he "procured a young specimen of this bird at the mouth of the Red Fork of the Arkansas River." In the catalog of the National museum this specimen is listed as 12578 "Creek Nation, Oct. 1, 1849. Woodhouse. Sitgreaves." The Red Fork in this case was the Cimarron.

(62) SABINE GULL: *Xema sabini*

Rare transient.

Migration: Rogers Co.—1 taken on Big Lake near Claremore \*Nov. '10 (Strode'11).

Mr. W. S. Strode, after mentioning the Pileated Woodpeckers seen in the "Big Lake region five miles from Claremore," states "On the lake I secured a Sabine Gull in fine plumage." This record is mentioned by Ridgway ('19:664) and Cooke ('15:68).

TERNs: Subfamily Sterninae

(70) COMMON TERN: *Sterna hirundo hirundo*

Uncommon summer visitor.

Migration: Sequoyah Co.—1 taken on Illinois river, near Gore \*†July 3, '29

(B<sup>5</sup>); Gate—occasional summer visitor (L<sup>2</sup>).

This lovely bird appears about twice as large as our most common Oklahoma Tern—the Least; its bill and feet are bright red instead of yellow as in the Least. In size and coloring however, it is almost in-

distinguishable from the Forster Tern, the only sure criterion for field identification being the cries. The Common Tern gives a harsh *teé-ar-r-r*, while in the Forster Tern the young bird in juvenal plumage gives a shrill, high-pitched squeal, and the adult a harsh, rasping low note—*tza-a-ap, zreep, zrurr*.

(74) LEAST TERN: *Sterna antillarum antillarum*

Summer resident on Salt Plains and along the rivers in western Oklahoma, also the Red River.

Summer range: McIntosh and Pittsburg Cos.—June 28, 29, '29 (B<sup>5</sup>); McCurtain Co.—on Red River 1 mile west of Arkansas \*July 11, '25 (0<sup>2</sup>); Old Greer Co.—\*July 19, '01 (V); Harmon Co.—July 5, '23 (N);—\*June 18, '19, '26 (L<sup>4</sup>); Cleveland Co.—seen on Canadian throughout summer (N); Edith Salt Plain—July, '30 (B<sup>5</sup>); Harper Co.—\*July 10, '26 (L<sup>4</sup>); Gate—summer resident "near old swimming hole on Horse Creek, a small tributary of the Cimarron" (L<sup>2</sup>, '30).

Migration: Cleveland Co.—May 14-Aug. 12 (N); Camp Supply—\*Oct. 21, '77 (E. Coues).

Nesting: Cherokee Salt Plains—nest with 2 eggs half mile out on Salt Plain June 17, '30 (B<sup>5</sup>); Cimarron Co.—nest with eggs June 2, '13 in the valley of the Cimarron (T<sup>1</sup>).

This dainty little bird may be known by its small size, yellow feet and yellow, black tipped bill and its cry—a shrill *zip zip*.

(64) CASPIAN TERN: *Hydroprogne caspia imperator*

Rare transient.

Migration: Canadian Co.—1 taken near Okarche \*Aug. 19, '25 (Lincoln '27).

The individual that gives us the only record for the species in Oklahoma was banded as a chick by Mr. Wm. I. Lyon July 23, 1924 on Gravelly Island, Michigan.

Gulls and terns are protected at all times and no one can legally shoot one of these birds unless in possession of state and government permits for scientific collecting.

(77) AMERICAN BLACK TERN: *Chlidonias nigra surinamensis*

Irregular transient, usually seen in flocks in May.

Migration: Copan—May 12-22, July 29-Aug. 16, '16; May 13-17 '17 (K<sup>1</sup>); Tulsa—May 21-24, '26, May 16, '28 (F); Stillwater—May 13, '24 (M<sup>3</sup>) Cleveland Co.—irregular transient, 6 to 9 May 17, 20, 25, June 15, '23; 20 to 50 May 11-20, 2 May 30, 3 June 10, '24; 2 May 18, '26 (N); Carter Co.—12 Apr. 9, '29 (B<sup>5</sup>); Love Co.—2 May 18, '89 (R<sup>1</sup>); Minco—common May 26, 29, '05 (W<sup>1</sup>); Cherokee Salt Plains—flock June 7, '30 (B<sup>5</sup>); Woods Co.—flock July 26, '30 (B<sup>5</sup>); Gate—common migrant, often in immense numbers (L<sup>2</sup>).

Food: small fish, grasshoppers, predacious diving beetles, gnats, click beetles, cotton boll worm, fall army worm.

It is a beautiful sight to watch these graceful birds courasing over a pond or following a farmer harrowing his fields. Mr. Lewis writes ('30: 37) "These useful birds. . . . are faithful in scanning the freshly turned earth in the fields in search of insects. About the middle of May, 1912, an unusually large number passed in migration. It was toward the middle of the day when my attention was accidently directed upward and I discovered a remarkable flight. At a height of about one thousand feet a stream of Black Terns about one-quarter of mile wide was rapidly flying northward. I could distinguish their calls like the faint barking of prairie dogs. The flight continued for more than half an hour during which time countless thousands of individuals passed on their way to their northern breeding grounds."

## PIGEONS, DOVES, ETC.: ORDER COLUMBIFORMES

## PIGEONS AND DOVES: FAMILY COLUMBIDAE

(312) BAND-TAILED PIGEON: *Columba fasciata fasciata*

Accidental.

Specimen: Logan Co.—1 taken near Crescent in \*1905, now in the Alva Museum (C<sup>2</sup> & T<sup>2</sup>).

(316a) WESTERN MOURNING DOVE: *Zenaidura macroura marginella*

Abundant summer resident throughout the state, a few wintering.

Specimens: Arbuckles—\*†June 23, '24 (Hefley); Hughes Co.—\*†June 22, '27 (W<sup>4</sup>). The type specimen of this subspecies was collected by Woodhouse ('52) in the "Cross Timbers" near the Canadian River.

Migration: Cleveland Co.—Mar. 6 '21; Mar. 12:: leave in September and October. Reported on 6 Christmas censuses, once from Tulsa, 5 times from Cleveland County, from 2 to 10 birds at a time.

Nesting: Ottawa Co.—4 Dove eggs in a Robin's nest (P<sup>4</sup>); Tulsa—2 eggs Mar. 7, '27 (G<sup>8</sup>);—4 eggs May 23, '25 (M<sup>5</sup>); Cleveland Co.—"common, nests on ground" '02 (B<sup>8</sup>);—655 nests recorded 1917-1927, 3 on ground, others 3 to 35 feet in height, average 13.4 feet; 130 nests succeeded, 119 failed; 81 raised 2 young, 48 1 young, 1 nest 3 young; 5 nests contained 3 eggs each; earliest set Mar. 22, '21, in all other years the first eggs being found in early April; in 1919 28 occupied nests were seen in September, 14 in 1920, 8 in 1921, 12 in 1922, 8 in 1923, 44 in 1925, 22 in 1926; 3 nests had young Oct. 1, '19, 1 had young Oct. 6, '22, 1 Oct. 5, '26 (N); Washita Co.—"breed everywhere, generally on the ground" '10 (C<sup>1</sup>); Gate—"almost all nest on the ground, many disturbed by harvesting" (L<sup>2</sup>); Cimarron Co.—3 eggs in nest June 21 '10, 4 young in one nest Sept. 1, '12, 3 nests with eggs Sept. 7, '25, nest with young Sept. 25, '11 (T<sup>1</sup>).

Food: weed seeds, crabgrass, pigeon grass, ragweed, smartweed, bindweed, lambs-quarters, pigweed, sunflowers; as many as 6400 to 9200 seeds have been found in a single bird.

The sweet, melodious song of the Turtle Dove is heard from March through August and to some extent in early September; in 1925 when Doves nested in phenomenal numbers in September I recorded it as late as the 24th. The life history of this beautiful bird is of much interest. When a pair are hunting a nest site, each gives the "nest call" in spots that strike his or her fancy, this is a *coo-roo* or at times a single *coo*, sometimes given 10 or 12 times a minute. While building, the male gathers material, one piece at a time, and brings it to his mate who fashions the nest. Both parents incubate and brood, the male from about 8:30 in the morning to about 4:30 in the afternoon, the female the rest of time. The eggs hatch in 14 to 15 days; the young stay in the nest from 12 to 15 days. The young are fed "pigeon milk" regurgitated from the crops of the parents; they put their bills *inside* the parent's bill, sometimes both infants at once. A few doves never indulge in the "broken wing" ruse, a few show it from beginning to end of nesting, but the majority practice it when their young are half to nearly grown, parental solicitude typically increasing with the advance of the nesting cycle.

Nests with three and four eggs are rarities and should be watched carefully. The two nests with three eggs found in 1923 both came to untimely ends, in each case when the young were two to three days old and the extra egg unhatched. But in 1921 two nests with three eggs were more successful. In the first the three hatched a day apart in a new Robin's nest and all the young were raised, but in the second the third nestling hatched five and six days after the others and only lived two days. One September

afternoon on the campus of the University of Oklahoma I saw a parent dove welcomed by four young recently out of the nest, but unfortunately I know nothing of the previous history of these birds.

The adaptability of this bird is shown by the wide range of habitats that suit it—farms and towns, prairies and woods—and also by the change in its nesting habits in recent years, for in 1901 practically all nested on the ground in Cleveland County, whereas from 1917 to 1927 we found less than one half of one per cent of the nests in this location—only three out of 655. Its success as a species undoubtedly is owing partly to this adaptability; other favorable factors being its powers of swift flight, its lack of gregariousness when nesting, and its very long breeding season, counterbalancing the small clutch and frailty of the nest.

It is a pity that doves are shot in September, since they are still nesting then in large numbers, and the helpless young of the victims are left to starve. An editorial ('26) in *Outdoor Oklahoma* estimated that 1,000,000 doves were shot during the hunting season in 1925. From 1913 to 1917 these lovely birds were entirely protected in Oklahoma. Why not renew this kindly provision, as so many northern states have done?

(315) PASSENGER PIGEON: *Ectopistes migratorius*

Formerly an abundant transient and winter resident in eastern Oklahoma, irregular in the Arbuckles; now totally extinct.

Records: 1820—"several small flocks of the common wild pigeon flew by us in a southwesterly direction" Aug. 27, probably in the Osage (Say, in James, '05: 259) 1832—about the middle of November at Fort Gibson "a fall of snow, and two or three days' cold weather, were succeeded by a fine genial season; . . . those countless bands of waterfowl, and flights of pigeons which had been constantly observed passing to the southward during the prevalence of the cold wind, ceased to attract the attention" (Latrobe, '36: 249) 1850—"common in spring and fall during their migrations" (W<sup>8</sup>) 1850—vast flocks in December, also May 13, '53 at Fort Arbuckle (Glisan 74: 109) 1860—"One of the largest pigeon roosts in the southwest in earlier days was in Going Snake District, in the Cherokee Nation, in a timbered canyon that debouched into Barron Fork, ten or twelve miles above the junction of that stream with the Illinois River. At the head of this canyon was a spring called Alum Spring. A Cherokee citizen who lived near this roost said that when he was a boy 50 years ago, the number of pigeons that frequented the locality was beyond calculation. They swept across the sky in clouds, darkening the sun. At night their chattering swelled into a roar. Struggling for a place to alight, the birds dropped onto each other's backs in the greatest confusion. As their number and weight increased, the branches would bend until finally they broke with a loud snapping, and the fluttering pigeons went whirling into the air. . . . This roost on Barron Fork was most populous about the time of the Civil War. This Cherokee saw them there as late as 1873. In 1874 the main roost had shifted to what was known as 'Hildebrand's Hill', on Flint Creek, a stream now known as Cow Creek. In that year one hunter hauled two wagon-loads to Vinita and shipped them to market. This same observer saw a few wild pigeons near Stringtown in 1881" (Barde, '12: 110-111); 1872—"After the building of the M. K. and T. railroad carloads of pigeons were shot and shipped from Atoka. I was away at college from 1879-1884; upon my return, the thousands of wild pigeons, which formerly had descended in great flocks around the vicinity of Old Boggy Depot in the autumn, had almost entirely disappeared." (Dr. E. N. Wright, Olney, Okla.); 1877—"James V. Bennet, a famous pigeoneer, left Pennsylvania for Arkansas in search of a pigeon roost there. He found at Highcove, Indian Territory a roost estimated to be 15 miles wide by 40 miles long" (Forbush, '27: 69). 1886—"A large number of pigeons from Indian Territory were used for pigeon shoots at John Watson's Grand Crossing, Chicago (Mershon, '07: 135). 1887—"Pigeons were in Cherokee Nation near Westville, Adair Co. Came in countless thousands. They began to come in September, just 2 or 3 up to a dozen at a time. If feed was plentiful they came later in larger numbers. They went north in spring about last of March or April 1st. They roosted in flat woods and fed every day on black jack

and post oak acorns, going out in different directions about sun-up and returning about sundown; usually flew out against the wind if feed was in all directions. It was said they once did a nesting in Indian Territory. A Mr. J. K. Little of Cartersburg, Ind. came to Indian Territory about 1886 and introduced the netting of them. We could tell new arrivals when caught as they would be gaunt and thin from a long journey. We caught them on beds we made on water, used a stool pigeon and fliers—real live birds—for decoys. Then we fattened them and killed them and shipped them. There was a very large body of pigeons up to 1888 or '89; they came back for a few years, but never nearly so many, and finally disappeared altogether" (letter from J. E. Kelly, Kellyville, Okla. Mar. 23, '28). 1889—4 Canadian River, \*Jan. (R<sup>2</sup>) in National Museum;—2 Fort Holmes, Hughes Co. \*Jan. (Seton '08);—2 Canadian River \*Nov. 10 (R<sup>2</sup>); in American Museum; 1892-93—"I was in New York in the latter part of Nov. 1892 and was then assured by Mr. Rowland, a well known taxidermist, that he had recently seen several barrels of pigeons that had been condemned as unfit for food; they had come to New York from the Indian Territory and I believe had had their tails pulled out to permit of tighter packing. Mr. Wm. Brewster has recorded the sending of several hundred dozens of pigeons to the Boston Market in December of the same year, and in January, 1893; these were also from the Indian Territory. These are the last records we have of the passenger pigeon as anything more than the casual migrant" (J. H. Fleming, '07: 236).

All the records come from eastern Oklahoma with the exception of two from the Arbuckles. Dr. Glisan wrote of his experiences at Fort Arbuckle from September 1850 to Nov. 29, 1854: "Pigeons are rarely to be found in this vicinity, but occasionally make their appearance in vast flocks, as was the case for a few days in the latter part of last December (1850). They were attracted hither by the mast or post-oak acorns" ('74: 64) On May 13, 1853 he noted the "first appearance of wild pigeons in the neighborhood. It was not long ere the pigeons could be seen in every direction skimming along the surface of the hills and dales about tree-top high." ('74: 109).

Specimens of Passenger Pigeons from Oklahoma are rare; there are only six in the principal museums in the country, and two in a private collection; there is not a single one in any museum in this state.

The Passenger Pigeon, the finest of all Pigeons, once perhaps the most numerous of all birds, has been utterly exterminated by man. It was relentlessly persecuted both in its winter roosts and on its nesting grounds, and even after it had disappeared from most of the country, was followed to its final refuge in Oklahoma and the last flocks slaughtered. There is no blacker page in American history.

#### (382a) LOUISIANA PAROQUET: *Conuropsis carolinensis ludovicianus*

Former resident in the eastern part of the state, once recorded from Caddo County; now totally extinct.

Records: 1820—"A flock of paroquets flew over our heads uttering their loud notes with their usual loquacity" Aug. 24 in the Osage. "Another flock of paroquets were seen today" Aug. 25 (Say, in James, '05: 254, 256); 1845—"very abundant" Oct. 19 and 20 near the mouth of the North Canadian (Abert); 1850—"quite numerous in eastern Texas and in the Indian Territory confining itself to the timber lands of the large streams" (W<sup>5</sup>); 1860—4 taken at \*Fort Cobb (C<sup>3</sup>);—"In 1860 I well remember seeing large flocks of these birds throughout that year in the vicinity of Fort Smith, Ark. and near several of the military posts in the Indian Territory" (Bendire, '95: 1); 1867—Boggy Depot, Choctaw Nat. \*July 1 (P<sup>1</sup>); 1870—"seen on Hominy Creek, in the Osage country, as late as the early 70's" (Barde, '12:112);—common in the vicinity of Old Boggy; arrived in flocks in August and September and attacked the apples and pears in the orchards (E. N. Wright); 1875—pair taken on Neosho River\* Oct. 21 (Kansas State Museum); 1882—mouth Grand river\* Feb. 1, \*17, Gibson 3 \*Feb. 20, 3 \*Feb. 21, Choctaw Nat. 3 \*May 31, Cherokee Nat. \*5 July 1 (Museum of University of Iowa);—Gibson \*Feb. 20 (Field Museum);—Choctaw Nat. \*May 31, \*July 1 (Colorado Museum of Natural History), all 19 specimens taken by D. H. Talbot;—"In 1882 a large flock was seen about 18 miles from Caddo; other smaller flocks were reported from time to

time, the last being January 15, 1884 on the Blue River about eight miles from Caddo" (C<sup>4</sup>, '14: 489); 1889—"In 1880 Mr. D. C. Harrison of the Geological Survey was stationed at Spencer Academy, some twenty miles from Caddo; he found the birds very abundant, describing them as appearing in large flocks like Blackbirds, and on his return brought six specimens with him. . . . An army officer stationed at Fort Gibson, saw and recognized a flock in 1889, which alighted in a tree directly over the spot in which he and his men were encamped" (Hasbrouck, '91: 337).

"The paroquets, *pitacus Carolinensis*" wrote Lieut. Abert October 20, 1845 "were very abundant, and numerous flocks of them were constantly darting around, describing large circles through the topmost branches of the tall trees. We had taken a gun with the intention of killing some of them, which were rapidly sweeping around our heads, and uttering screams as if in highest irritation at our bold intrusion within the precincts of their domain, with such murderous intent. Their principal food consists of the cocklebur, which they easily dissect by means of their strong bills. Mr. Riely tells me that their flesh is pleasant to the taste and is frequently sought for by the inhabitants of the neighborhood" ('46: 73).

As to its range in Oklahoma, Cooke ('88: 124) stated, "Formerly numerous flocks were found all over the reservation (Indian Territory) but at present (1885) it is almost extinct in the eastern part of the Territory, while in the western and middle parts they are about as common as ever." Yet I can find only one definite record west of Osage, Atoka and Bryan Counties, the four specimens taken at Fort Cobb in 1860. Interestingly enough it was in 1860 to 1861 and 1862 that they were seen in Colorado (Coues, *Bull. Nutt. Ornith. Club* 2:50, 1877). Glisan does not mention it in his list of birds in the vicinity of Fort Arbuckle in the early fifties. There is no definite record for it anywhere in Oklahoma later than 1889. There is no specimen of a paroquet in any museum in Oklahoma.

The paroquets undoubtedly damaged the early settlers' grain and fruit, but any bird that ate *cockleburs*, might have been forgiven a few indiscretions in the rest of its diet. The extermination of this gentle, confiding and marvellously beautiful bird is an irreparable loss to the world.

## CUCKOOS, ROAD-RUNNERS, ETC.; ORDER CUCULIFORMES

### CUCKOOS AND ROAD-RUNNERS: FAMILY CUCULIDAE

#### Cuckoos: Subfamily Cuculinae

(387) **YELLOW-BILLED CUCKOO:** *Coccyzus americanus americanus*  
Summer resident throughout the whole state, common in wooded sections.

Specimens: LeFlore Co.—\*†June 18, '27 (W<sup>4</sup>); Cimarron Co.—\*†July 5, '26 (L<sup>4</sup>).

Migration: Copan—Apr. 24, '14; May 5: Sept. 23, '16 (K<sup>1</sup>); Tulsa—Apr. 29, '28: May 3: Sept. 24 (K<sup>8</sup>, F); Cleveland Co.—May 4, '29: May 14: usually leave in August, late records Sept. 15, '25, Sept. 20, '26 (N); Custer Co.—Apr. 17, '02 (S<sup>4</sup>).

Nesting: Bartlesville—3 eggs, May 14, '10 (K<sup>1</sup>); Vinita—4 eggs, 14 feet up, May 23, '12 (K<sup>1</sup>); Copan—2 eggs, 6 feet up, June 21, '16 (K<sup>1</sup>); Tulsa—3 eggs May 12, '26 (M<sup>8</sup>);—2 eggs June 20, '27 (G<sup>8</sup>). Norman—3 eggs June 16, '20 (N); Tillman Co.—4 eggs July 6, '22 (N); Wichitas—nest 4 feet up in black jack, another 30 feet up in walnut June 5, '29 (N).

Food: cotton worm (from 100 to 150 found in single stomachs), tent caterpillar (100 or more in a single stomach), fall webworm (250 in one stomach).

This slim, trim devourer of caterpillars shows rufous on its flight feathers and conspicuous white marks on the black tail feathers. Its notes are somewhat louder and deeper than those of the Black-billed Cuckoo,

and the *cow cow* notes are given separately, not connected as with that species.

(388) BLACK-BILLED CUCKOO: *Coccyzus erythrophthalmus*

Rare transient in central and eastern Oklahoma, rare breeder in Tulsa county.

Migration: Cleveland Co.—1 May 2, '26, 1 May 5, '27 (N).

Nesting: Tulsa—5 eggs in thorn tree 8 feet from ground, north of Golf Club, June 11, another set July 10, '26 (M<sup>5</sup>)—3 eggs 6 feet up in thorn tree east of Harvard Avenue June 20, '27 (G<sup>8</sup>).

Woodhouse "observed but a few of these birds in Indian Territory." Mrs. Gilmore collected a specimen in Tulsa June 15, 1927. This rare Cuckoo may be distinguished from the common Yellow-billed by its black lower mandible and small white tips to its dusky tail feathers. Its notes, though very similar to the other species are softer and more liquid.

ROAD-RUNNER: Subfamily Neomorhinae

(385) ROAD-RUNNER: *Geococcyx californianus*

Resident in western and central Oklahoma, a few found as far east as Muskogee and McCurtain Counties.

Records: 1867—2 taken at Kiowa Agency, \*Mar. 19 (P<sup>1</sup>); 1901—"straggler in southwestern part, common in Texas" (B<sup>6</sup>); 1909-11—in early meetings of the Academy of Science, the members used to report on the extension of range of the Road-runner; in 1909 or 1910 the farthest north and east was Paul's Valley, Garvin Co., the next year it was Pottawatomie Co. (Chas. N. Gould); 1914—seen in Coal and Atoka Cos. (C<sup>5</sup>); 1921—first seen by us in Cleveland Co. Apr. 9 (N); 1924—1 taken in winter Okmulgee Co. (F, '28); 1926—reported in Muskogee Co. (C. N. Gould); 1927-28—Tulsa \*Mar. '27 (G<sup>8</sup>), seen May 5, '28 (F); 1929—seen in McCurtain Co. (Frank S. Gibbs).

Nesting: Cleveland Co.—5 young of different ages in nest 8 feet up in old peach tree, July 21, '27; 2 old nests found near the Canadian River, both 8 feet from ground (N); Kingfisher Co.—4 eggs 15 feet up in chittim May 18, '27, old nest 10 feet up in nearby chittim (N).

Food: lizards, cutworms, wireworms, grasshoppers, beetles, centipedes, snakes, including rattlers.

The Chaparral's conquest of practically the whole of Oklahoma in the last thirty years, even in spite of mistaken persecution, is a great gratification to the lover of nature. Dr. A. Dugans of Gate told us that twenty years ago he used to see about one Road-runner a year, but that now they are quite common. Asked whether they do harm, he said, "The only harm they do is to grasshoppers." In Cleveland County it was only on our last two Christmas censuses (1925 and 1926) that we recorded them.

It is a great pity that the sportsmen have put a ban on this interesting and useful bird. It doubtless does occasionally destroy a quail's nest, but so does the Ring-necked Pheasant which is actually being introduced into Oklahoma that already has all the kinds of native game birds any one could wish for. Moreover the Pheasant comes into direct competition with Bobwhite and Prairie Chickens for food and nesting places, while the Chaparral eats no weed seeds or grain and nests in trees.

In an interesting article in the July 1926 *Outdoor Oklahoma* Mr. Tate tells of his observations on this bird: "The chaparral is sometimes accused of destroying the eggs and killing the young of quail and other ground-nesting birds, but in over fifteen years of study, observation and the examination of several hundred stomachs I have only six records where fledg-

lings other than English sparrows have been devoured and but one record where a few eggs in a quail's nest had been molested."

The Chaparral is a unique and fascinating bird, one that is adapted to life on the desert, yet is willing to try civilization if given a chance. Any bird that kills rattlesnakes surely deserves our gratitude and friendship.

#### OWLS: ORDER STRIGIFORMES

Owls are nature's chief device for keeping the mouse and rat population in check. Endowed with extremely acute hearing, remarkable vision, and noiseless flight, they are admirably fitted to prey upon nocturnal rodents and insects. Dr. A. K. Fisher ('93) who has tabulated the contents of 2700 stomachs of these birds, says, "It may be stated with confidence. . . that owls are the most beneficial of all birds, inflicting very little damage upon the poulterer and conferring vast benefits upon the farmer." In Oklahoma owls are far too rare; they should all be zealously protected, except perhaps the Horned and Screech Owls if they should become common.

#### BARN OWLS: FAMILY TYTONIDAE

##### (365) BARN OWL: *Tyto alba pratincola*

Uncommon resident throughout the state.

Nesting: Vinita—nest with 5 eggs in cavity in a maple Mar. 4, '10, 5 eggs in hole in sycamore, Apr. 21, '10 (K<sup>1</sup>); Tulsa—5 eggs Mar. 8, '28 in pecan (G<sup>8</sup>); 6 eggs in elm Apr. 10, '28 (M<sup>6</sup>); Grant Co.—15 sets of eggs collected from cliffs on the Salt Fork, Apr. 6, '05 (W<sup>6</sup>); Gate—nested in an unused pit silo in 1923 (L<sup>2</sup>).

Food: meadow and house mice, cotton rat, common rat, wood rat, pocket gopher; sometimes insects.

This handsome great "Monkey-faced Owl" is a pre-eminently useful bird, since it lives almost entirely on rats and mice. The persecution of this interesting and beneficial owl is a piece of deplorable folly.

#### HORNED OWLS, ETC.: FAMILY STRIGIDAE

##### (373) EASTERN SCREECH OWL: *Otus asio naevius*

Resident in northeastern Oklahoma.

Specimens: Tulsa—\*†Jan. 5, \*†Mar. 27, \*†Sept. 14, \*Dec. 3 (F);—3 in \*†summer 1926 (G<sup>8</sup>); Okmulgee—\*†fall and winter \*'23-'24 (F); \*†D ec. 4, '26 (O. U. Museum). Dr. Oberholser writes that the bird taken at Ponca Agency Aug. 5, '92. (P<sup>2</sup>) is nearer this form than the Southern Screech Owl. It is probably the southern form that nests in southeastern Oklahoma, but no specimens are available.

Nesting: Tulsa—nest with 5 eggs Mar. 13, '28 (M<sup>5</sup>);—nest with 4 eggs Mar. 20, '28 (G<sup>8</sup>).

Food: gophers, mice, rats; small birds; lizards, grasshoppers, beetles.

The weird quavering call of this little owl is much liked by some people, but one girl I heard of believed it emanated "from a lost soul." Strangely enough it is given only during late summer and fall.

##### (373g) AIKEN SCREECH OWL: *Otus asio aikeni*

Resident in central and western Oklahoma, winter visitant in eastern Oklahoma.

Specimens: Cleveland Co.—\*†Jan. 6, \*†July 8, \*†Nov. 4, \*†21, \*†Dec. 9 (O. U. Museum); Arbuckles—2 \*†Jan. '14 (C<sup>5</sup>); Tulsa—\*†Feb. 8, '27 (F).

Nesting: Cleveland Co.—nest with young May 26, '20 (Constance Nice).

One fall a flicker enlarged one of the compartments in our Martin box and spent the winter in it; the next winter it housed a Screech Owl. The curious call has been heard from July 17 to Nov. 21. On June 21, 1926



some children brought us two young Screech Owls, one grey, the other red; they had found them in a tree not far away where they were being mobbed by Mockingbirds, Bluebirds and Grackles. A Mockingbird had even knocked one from its perch.

(375) GREAT HORNED OWL: *Bubo virginianus virginianus*

Uncommon resident in eastern Oklahoma.

Specimens: Okmulgee—\*†fall '23 (F); Cleveland Co.—\*†Nov. 13, '20 (O. U. Museum).

Nesting: Vinita—3 eggs Feb. 26, 3 eggs in same nest Apr. 14, '12 (K<sup>1</sup>); Copan—3 eggs Feb. 21 '14, 2 eggs 18 feet from ground Feb. 14, 2 young about 3 days old Feb. 22 '16, 2 eggs 50 feet from ground Feb. 15, '17 (K<sup>1</sup>); Tulsa—2 eggs Jan. 28, '23 (M<sup>8</sup>); —2 nests with 2 and 3 young about 3 weeks old Mar. 3, '29 (G<sup>8</sup>). All these nests were in cavities.

Food: ground squirrels, prairie dogs, pocket gophers, rats, mice; cattle grubs, beetles; birds, poultry.

"This powerful and spirited species" wrote Woodhouse "I did not find abundant, having seen but few of them in the Creek and Cherokee Country; most abundant in the timber lands of the Arkansas river and its tributaries; also in Texas." The hoots of this owl are a deep bass and usually given in triplets.

(375j) WESTERN HORNED OWL: *Bubo virginianus occidentalis*

Uncommon resident in central and western Oklahoma.

Specimens: Creek Co.—\*†May 12, '27 (U. O. M. Z.); Gate—\*†Nov. 25 '26 (L<sup>2</sup>); Roger Mills Co.—\*†Oct. 26, '26 (J. N. Cross).

Nesting: Cimarron Co.—nest with eggs on Marselus Bros. ranch May 30, '12 (T<sup>1</sup>).

On Oct. 8, 1845 in what is now Cleveland County, Lieut. Abert wrote, "A large hooting owl 'Strix Virginianus' commenced a hideous serenade," and "all night long did he utter his doleful song."

The Horned Owls are partly beneficial and partly injurious, but they are so uncommon in Oklahoma that they should be left in peace unless actually caught molesting poultry. Although we camped in very many localities throughout Oklahoma, it was only near Kenton that we ever heard the voice of this Owl.

(376) SNOWY OWL: *Nyctaea nyctaea*

Rare winter visitor.

Migration: McCallister—\*Dec. 10, '80 in Kansas State Museum; Craig Co.—\*winter 1917-18 (S<sup>3</sup>); Pawnee Co.—\*Dec. '18 (W<sup>2</sup>); Kenton—1 Dec. '18, 1 Dec. 25, '29 (T<sup>1</sup>).

Let us hope this rare and beautiful visitor will be treated in the future with the kindness and courtesy due to a distinguished stranger.

(378) WESTERN BURROWING OWL: *Speotyto cunicularia hypogaea*

Resident in western Oklahoma, formerly abundant, now uncommon.

Range: Cleveland Co.—in 1820, Long passed "a village of the prairie marmots" about a mile square (James, '05:158);—a few prairie dogs and 2 pairs of owls in 1920, a few dogs and 11 owls July, '26, all had disappeared in November (N); Bryan Co.—common resident 30 miles to northwest of Caddo in 1884 (C<sup>4</sup>);—none in that region now; Payne Co.—in 1920 a pair of captive prairie dogs escaped and established themselves in college sheep pasture, in 1922 a pair of owls appeared (W<sup>2</sup>);—common resident '24 (M<sup>3</sup>); Lincoln Co.—colony of dogs and owls in 1920 (N). Prairie dogs were practically exterminated from the state in 1922 by a campaign of poisoning, and these owls became correspondingly rare. In July 1923 when driving through Harmon, Jackson, Tillman and Comanche Cos. we saw only 2 or 3 Owls in each county; in August 1926, we saw 3 owls in Harper Co. 4 in Beaver Co. and none in Texas or Cimarron Co.

Nesting: Woods Co.—3 sets of 10 eggs May 8, 18, 24, \*'06, incubation begun, all at end of prairie dog burrows, 4, 5, and 6 feet from opening (S<sup>8</sup>).

Food: grasshoppers, crickets, "immense numbers of noxious insects, mice, ground squirrels, young prairie dogs, as well as scorpions and centipeds," (Fisher, '93).

It is unfortunate that this charming and absurd little owl is so dependent on the prairie dog as a host, for since people apparently will not tolerate the presence of that amusing little beast that comes in competition with their cattle, its beneficial associate is banished also. Let us hope it can adapt itself to living in deserted dog towns.

In 1876 in northwestern Oklahoma Lieut. McCauley found them abundant, stating "in many prairie dog towns they outnumber the other inhabitants, the route south of the Cimarron being still remembered for its large number of birds. Their shyness seemed to vary with the sun; at midday or afternoon exceedingly wary generally; in the early morning the reverse. It may have been a morning nap, or a delusive idea that they alone had eyes. Be that as it may, before the sun was well up, they showed the utmost indifference to our approach, and never moved until we were almost upon them. It was particularly so upon a damp or drizzly morning; and as we drove by the dogs' town, we merely caught a glimpse of the hind legs and tail of the dog himself scampering into his hole, intent upon the interests of his family; whilst nearer, upon a small sunflower or reed, perched the Owl as immovable as a supreme court judge. The Owl was always apparently lost in thought, had nothing to do in particular, and more time at his disposal than anything else in the world, whilst the dog was always busy and without a moment to spare." ('76:681).

(368) NORTHERN BARRED OWL: *Strix varia varia*

Resident in northern Oklahoma as far west as Payne and Logan Counties.

Specimens: Ottawa—\*Nov. 13, '12 (P<sup>4</sup>); Osage—\*†Nov. 19, '14 (C<sup>5</sup>); Okmulgee—\*†Nov. 1, '25 (F).

Nesting: Copan—3 eggs Mar. 14, '14, 3 eggs Mar. 4, '16 (K<sup>1</sup>); Tulsa—eggs Feb. 28-Apr. 10, 2 to 4, usually 2 (M<sup>5</sup>);—3 eggs Mar. 11, '27 (G<sup>3</sup>).

Food: mice, crayfish, a few birds, reptiles, insects.

The notes of this fine owl are not as deep as those of the Horned Owl, and they are usually given in couplets.

(368a) FLORIDA BARRED OWL. *Strix varia alleni*

Resident in central and southern Oklahoma.

Specimens: Cleveland Co.—\*†June 12, '01, \*†Mar. 13, '22, \*†Dec. '24 (O. U. Museum); Caddo Co.—Kiowa Agency, \*Mar. 21, 67 (P<sup>1</sup>).

Nesting: Cleveland Co.—2 eggs Apr. 23, 2 young May 8—June 6, '20 at Rock Creek; 4 young Apr. 7, '27 in Olivers' woods (N).

The nest at Rock Creek in 1920 was in a hollow in a large cottonwood about 30 feet from the ground; our nine year old daughter examined it by shinning up a pole laid against the tree. On Apr. 16 and 23 there were eggs in the nest, but on May 8 two fuzzy babies, one with eyes shut, the other open. This was the last time we found a parent at the nest. On the 21st the young were still covered with white down, but on June 6 this had been replaced by brown and white feathers. We wished to photograph the owls at this time, but when Constance tried to get them the larger one started to climb up to the entrance snapping its bill—a formidable assailant for a child in a precarious position. She managed to shake the bird off and it fluttered to the ground. She then slipped a rope around the leg of

the other nesting and lowered it to the foot of the tree, returning both birds in the same way after their pictures had been taken.

(366) LONG EARED OWL: *Asio wilsonianus*

Rare resident in northern Oklahoma.

Nesting: Tulsa—pair taken Mar. '28, female contained well developed eggs (G<sup>8</sup>); Alva—pair nesting May, '22 (L. C. Thomas); Gate—a nest with one owlet May 9, '23 (L<sup>2</sup>); Kenton—nest and eggs June 14, '13 (T<sup>1</sup>).

Food: mice, gophers, frogs, beetles, especially wood borers; a few birds.

The Long-eared Owl may be distinguished from the Screech Owl by its larger size and rusty brown face; it is slimmer than the Great Horned Owl and lacks a white collar; it is greyer than the Short-eared Owl. When it flies it shows a brown patch on the buff lining of the wings. Dr. Crabb knew some children who had a Long-eared Owl for a pet; it made a most amiable playmate, not even resenting being dressed up in doll's clothes.

(367) SHORT-EARED OWL: *Asio flammeus flammeus*

Irregular winter visitor throughout the state, rarely nesting in Woods County.

Migration: Copan—common Sept. 29-Mar. 9, '17 (K<sup>1</sup>); Tulsa—\*Dec. 5, '27, \*Nov. 5, '28 \*Nov. 18, '30 (F); Okmulgee—\*Oct. 26, '26 (U. O. M. Z.); Yukon—\*Nov. 11, '20 (C<sup>5</sup>); Cleveland Co.—rather common from Dec. 12-Mar. 1, '22, only other record Feb. 1, '26 (N); Beaver River in Panhandle—\*Nov. 9, '89 (R<sup>2</sup>).

Nesting: Woods Co.—a nest found near Freedom (C<sup>2</sup>).

Food: mice, rabbits, gophers, shrews, grasshoppers, May beetles, cutworms; a few birds.

This yellowish brown owl is usually seen sitting on the ground or flying over open country in the daytime. The ear tufts are rarely visible. It has been recorded on only two Christmas censuses in Oklahoma—single birds in Cleveland County in 1921 and Oklahoma County in 1925.

GOATSUCKERS, ETC.: ORDER CAPRIMULGIFORMES

WHIP-POOR-WILLS, NIGHTHAWKS, POOR-WILLS, ETC.: FAMILY CAPRIMULGIDAE

WHIP-POOR-WILLS AND POOR-WILLS: Subfamily Caprimulginae

(416) CHUCK-WILL'S-WIDOW: *Antrostomus carolinensis*

Summer resident in woods throughout most of the state except the extreme west.

Range: it has been reported as far west as Woods, Blaine, Custer and Comanche Counties. In northern Oklahoma it is recorded from Delaware, Mayes, Washington, Osage (on Bird Creek 7 miles south of Kansas line May 22, '02, Colvin, '05:81) and Woods Counties. In Cleveland County it summers in the black jacks to the east of Little River; only twice have we heard it near the South Canadian—May 19, '21, June 15, '23.

Migration: Tulsa—Apr. 20, '19 (P<sup>2</sup>); Sequoyah Co.—Apr. 13, '97 (L<sup>5</sup>); Norman—Apr. 30, '26 (N); Arbuckles—Apr. 22, '27 (N). Sept. 5, 1820 seen near the mouth of the North Canadian (James, '05: 172).

Nesting: Copan—fairly common, eggs found May 18, 19, '16, June 5, 23, '13 (K<sup>1</sup>); Tulsa—uncommon, eggs May 4-20 (P<sup>2</sup>);—2 eggs May 30, '18 (G<sup>3</sup>); Wichita—2 eggs June 6, '29 (B<sup>5</sup>); Woods Co.—2 sets taken on the Cimarron (S<sup>3</sup>).

Food: May beetles, spotted vine chafer, southern pine sawyer, click beetles, crane flies, horse flies, roaches.

The Chuck-will's-widow is mistakenly called Whip-poor-will by many people; its song is more soothing than that of the northern bird and given about half as fast—from 27 to 31 times a minute. The chuck cannot be heard unless one is very close, so the usual effect is a soft, not unmusical *will willow*.

(417) EASTERN WHIP-POOR-WILL: *Anrostomus vociferus vociferus*  
Rare summer resident in northeastern Oklahoma.

Migration: Cleveland Co.—one heard singing Sept. 11, '21 (N); Payne Co.—one shot \*spring '25 (M<sup>3</sup>).

Nesting: Copan—rare summer resident; no nests found (K<sup>1</sup>).

The Whip-poor-will has a harsher, more insistent song than the Chuck-will's-widow and delivers it about twice as fast; a bird in Massachusetts—on July 18, 1928 gave the following number of cries per minute 56, 62, 62.

(418) NUTTALL POOR-WILL: *Phalaenoptilus nuttalli nuttalli*

Rare summer resident in northwestern Oklahoma.

Migration: Canadian Co.—\*Sept. '12 (C<sup>5</sup>).

Summer records: Woods Co.—frequently heard from the bluffs south of the Cimarron (S<sup>9</sup>);—heard several times near Waynoka June 30-July 9, '30 (B<sup>5</sup>); Wood-ward—heard in the sand hills July 13-23, '05 (L<sup>1</sup>); Gate—rare summer visitor (L<sup>2</sup>); Cimarron Co.—rare summer resident, \*July 5, '13, 1 Aug. 26, '26 (T<sup>1</sup>). There is no record of a nest.

McCauley was the first to record this bird from Oklahoma; he heard it along the Cimarron and Canadian in 1876. Mrs. Bailey writes ('21: 225); "The poor-will himself is less well known than his voice, which is inseparably associated with the warm still western evenings. Coming from the canyons in the moonlight it is one of the softest, most soothing sounds in nature."

NIGHTHAWKS: Subfamily Chordeilinae

(420) EASTERN NIGHTHAWK: *Chordeiles minor minor*

Transient.

Migration: Norman—\*†Oct. 4, '26 (N).

This should be the breeding form in northeastern Oklahoma, but no specimens of nesting birds have been identified from that region.

(420e) HOWELL NIGHTHAWK: *Chordeiles minor howelli*

Common summer resident throughout the state, except the southeastern corner where no nighthawks have been reported and probably the northeastern corner where the form should be the Eastern Nighthawk.

Specimens: breeding birds from Canadian, Grady, Caddo, Harmon, Roger Mills and Cimarron Counties have been identified.

Migration: Copan—May 5-Oct. 5, '16, May 8, '17 (K<sup>1</sup>); Tulsa—Apr. 25-Oct. 13 (K<sup>8</sup>); Bryan Co.—migrating Sept. 9, common Sept. 18, last seen Oct. 10 '83 (C<sup>4</sup>); Cleveland Co.—Apr. 26, '21; May 1: Oct. 15; Oct. 18, '26 (N); Washita Co.—Apr. 24, '93, Apr. 23, '94, Apr. 24, '95, Apr. 28, '96 (B<sup>4</sup>);—Apr. 28-Sept. 9, '11, May 2, '12 (C<sup>1</sup>); Custer Co.—Apr. 18, '04 (S<sup>4</sup>).

Nesting: Copan—eggs May 30, '14, May 24, '16, May 30, June 22, '17 (K<sup>1</sup>); Tulsa—eggs May 20-July 13 (M<sup>5</sup>, G<sup>4</sup>); Washita Co.—2 eggs June 1, '60 (M<sup>1</sup>); Cherokee Salt Plains—3 nests with 2 eggs each June 13, '30, eggs in 2 nests hatched June 21 (B<sup>5</sup>); Woods Co.—2 eggs May 27, '22 (N).

Food: mosquitoes (500 found in a single stomach), grasshoppers, May beetles, Colorado potato, striped and spotted squash beetles, bark beetles, rice, clover leaf and cotton boll weevils, cotton worm, ants (20,000 eaten at one meal).

These friendly and useful birds—popularly called bullbats—are often seen perched on fence posts, but on Aug. 21, 1926 in Alfalfa county we noted four nighthawks perched on telephone wires. In Cleveland county we see migrating flocks from August 20 to mid October.

(420a) WESTERN NIGHTHAWK: *Chordeiles minor henryi*

Transient.

Migration: Minco—\*†May 24, 2 \*†May 31, '05 (W<sup>1</sup>, '18: 7).

Dr. Wetmore ('27: 197) writes thus about these three specimens of the Western Nighthawk which nests in New Mexico, Arizona, and South-western Colorado. "As the latter were at a point farther east than ever previously recorded, we can only suppose that they were in migration and were following the course of the South Canadian River through Oklahoma to its headwaters in the mountains of New Mexico."

(420c) SENNETT NIGHTHAWK: *Chordeiles minor sennetti*  
Transient.

Specimen: Osage—taken near Pawhuska \*†July 22, '29 (B<sup>8</sup>).

Since this pale subspecies breeds from the plains of Saskatchewan and Manitoba south to central Nebraska it should be found regularly in Oklahoma during migrations.

SWIFTS AND HUMMINGBIRDS: ORDER MICROPODIIFORMES

SWIFTS: FAMILY MICROPODIDAE

SPINE-TAILED SWIFTS: Subfamily Chaeturinae

(423) CHIMNEY SWIFT: *Chaetura pelagica*

Summer resident throughout eastern Oklahoma as far west as Oklahoma and Cleveland Counties, more common in eastern than central Oklahoma.

Migration: Copan—Apr. 21-Oct. 1 (K<sup>1</sup>); Tulsa—Apr. 9, '22: Apr. 20:: Sept. 25, '24 (P<sup>2</sup>, G<sup>1</sup>, L<sup>8</sup>); Norman—Apr. 5, '21: Apr. 19:: Oct. 9, '23, sometimes not seen after August (N).

Nesting: Okmulgee—nest found May 19, '26 (F); Tulsa—3 eggs in large chimney June 18, '25 (M<sup>5</sup>).

Food: flies, beetles, ants, grasshoppers, bugs, mosquitoes.

Chimney Swifts have extended their range into central Oklahoma since the building of chimneys. Goss ('91: 350) wrote "I have often found them in the Indian Territory and early settlements of Kansas occupying large hollow trees—the sycamore the favorite." Perhaps they still follow this practice to some extent for on July 5, 1920 we saw many in Pushmataha county far from human habitations. A swift banded by H. L. Stoddard Oct. 3, 1925 at Thomasville, Georgia was captured June 6, 1928 at Claremore, Oklahoma and again at the same place May 8, 1929 (*Bird Banding Notes U. S. Biol. Surv.* 3 (1): 12).

HUMMINGBIRDS: FAMILY TROCHILIDAE

SUBFAMILY: Trochilinae

(428) RUBY-THROATED HUMMINGBIRD: *Archilochus colubris*

Summer resident in eastern and central Oklahoma as far west as Comanche and Woods Counties.

Migration: Copan—May 12-Sept. 16 (K<sup>1</sup>); Tulsa—Apr. 25-Oct. 1 (K<sup>8</sup>); Bryan Co.—Oct. 7, 8, '83 (C<sup>4</sup>); Norman—Apr. 26, '27: May 6:: Sept. 22: Oct. 17, '25 (N); Fort Reno—May 7, '90 (M<sup>2</sup>).

Nesting: Delaware Co.—female feeding young in nest June 23, '25 (S<sup>1</sup>); Tulsa—2 eggs June 15, '23 (M<sup>8</sup>);—eggs May 24, June 25 (P<sup>2</sup>); Sapulpa—nest with young Aug. 25, '22 (B<sup>8</sup>); Oklahoma City—nest with eggs Aug. 8, '25 (S<sup>1</sup>).

Food: nectar; spiders, gnats, small Hymanoptera and Hemiptera.

This, tiniest of our birds, epitome of energy, beauty and courage, is one of the marvels of nature. Fortunately for us it summers in about two-thirds of the state. Observations were made by Mr. Saunders ('27: 75) on

a nest with eggs from Aug. 8 to 16 in Oklahoma City. "The average length (of incubation) during the mid-day period and during the hottest hours was fifteen minutes, while the periods of absence from the nest varied from three to five minutes. . . . When it came time for her trips for food, she left the nest without warning, flying down the ravine like a bullet. The male was seen rarely. Only twice did he alight near the nest, and once he annoyed a jay until the intruder departed in haste before the furious attack of the tiny hummer."

(432) BROAD-TAILED HUMMINGBIRD: *Selasphorus platycercus platycercus*

Rare transient and summer resident in Cimarron County.

Migration: Kenton—1 Sept. 28, '22, 1 Sept. 23, Oct. 15, '24 (T<sup>1</sup>).

Nesting: nest with 2 eggs found on Marselus Bros. ranch June 20, '12 (T<sup>1</sup>, '23: 45).

The male Broad-tailed Hummingbird has a bronze green head, back and middle tail feathers, with black outer tail feathers edged with rufous; his throat is deep rose pink. Mr. Tate has taken a specimen.

(433) RUFIOUS HUMMINGBIRD: *Selasphorus rufus*

Rare transient in Cimarron County.

Migration: Kenton—male seen Aug. 10, 12; 2 males Aug. 13-15, 2 males Aug. 29, Sept. 1, '27 (T<sup>1</sup>, '28a).

"A peculiar sound, somewhere between a buzz and a grunt" led Mr. Tate to the discovery of a beautiful male Rufous Hummingbird bird poised before the flowers of a trumpet vine on his porch. This bird and three others with their coppery red throats and reddish upper parts visited the vine on five different days in August and the first of September. No specimen has been taken in the state.

KINGFISHERS, ETC.: ORDER CORACIIFORMES

KINGFISHER: FAMILY ALCEDINIDAE

SUBFAMILY Cerylinae

(390) EASTERN BELTED KINGFISHER: *Megasceryle alcyon alcyon*

Summer resident throughout the state wherever there is sufficient water; occasionally winters.

Migration: Tulsa—Mar. 26, '28 (F); Cleveland Co.—Mar. 21-Nov. 2 (N); Washita Co.—Mar. 29, '96 (B<sup>4</sup>). Winter records in Tulsa, Creek, Oklahoma, Cleveland, Bryan, Murray and Woodward Counties.

Nesting: Tulsa—nest with eggs June 19 (P<sup>2</sup>); Sequoyah Co.—nesting in bank of Arkansas Apr. 15, '97 (L<sup>5</sup>); Minco—nesting in railroad cut near South Canadian May 23, '05 (W<sup>1</sup>); Wichita—nest with young June 4, '29 (B<sup>5</sup>).

Food: fish, usually of no commercial value, aquatic insects injurious to fish, grasshoppers, beetles, crawfish, small snakes.

It is a pleasant thing to meet this bold fisherman on our streams and lakes. A study of his bill of fare shows us that, except about fish hatcheries, he is beneficial as well as ornamental.

WOODPECKERS, ETC.: ORDER PICIFORMES

WOODPECKERS: FAMILY PICIDAE

SUBFAMILY Picinae

(412) SOUTHERN FLICKER: *Colaptes auratus auratus*

Resident in eastern and central Oklahoma.

Specimens: Ottawa Co.—\*†July 20, '29 (B<sup>5</sup>); Tulsa—\*†Feb. 23, \*†Mar. 14, '30

(F); Okmulgee—\*†Oct. 26, '25, \*†Nov. 18, '26 (F); Pittsburg Co.—\*†June 28, '29 (B<sup>2</sup>); Hughes Co.—\*†July '27 (W<sup>4</sup>); Oklahoma Co.—\*†Oct. 20, '27 (S<sup>1</sup>); Canadian Co.—\*†Jan. 1, '23, \*†Nov. 1, '21 (C<sup>5</sup>); Cleveland Co.—6 specimens \*†Mar. 16, \*June 23, '23 (C<sup>5</sup>).

Nesting: Tulsa Co.—nests with 4, 6, 8 eggs Apr. 24, '21, 7 eggs Apr. 30, '22 (P<sup>2</sup>);—8 eggs June 3, '26 (M<sup>2</sup>);—9 eggs May, 3, 27 (G<sup>3</sup>).

Food: ants, chinch bugs, beetles, white grubs; wild berries. Two stomachs contained 3000 ants each, one 5000 ants.

These handsome and amusing birds are uncommon in Cleveland county in the nesting season but abundant from October to March. Doubtless both subspecies are present in the winter.

Miss Althea Sherman (*Wilson Bull.* 22:135-171, 1910) found the male flicker more devoted to his family than the female. Incubation lasts from 11 to 12 days, the parents taking turns on the eggs of 1½ to 2 hours during the day, the male incubating at night. When very small the young begin to give a hissing sound "that is uttered day and night for two weeks. A parent upon taking its place to brood these wailing nestlings begins to croon a lullaby and continues this musical murmur until it falls asleep, which is often quite soon. It has no effect in lessening the noise of the youngsters, yet the parent faithfully renders its cradle song until the young cease to make this noise which is about the time they begin to show fear." They stay in the nest for 25 to 28 days.

(412a) ~~WESTERN~~ EASTERN FLICKER: *Colaptes auratus luteus*

Resident in northwestern Oklahoma, winter visitor in central Oklahoma.

Specimens: Canadian Co.—\*†Jan. 1, '23 (C<sup>5</sup>); Oklahoma City—\*†Nov. 7, '27 (S<sup>1</sup>); Cleveland Co.—a hybrid between this form and *C. c. collaris* \*†Nov. 12, '21 (C<sup>5</sup>). There is no specimen of a breeding bird.

Nesting: Woods Co.—7 eggs May 19, '10 (S<sup>3</sup>);—7 eggs, newly hatched young May 27, '22 (N); Cimarron Co.—rare resident, nest with 7 eggs in a hole in a fence post on C. F. Rowan ranch June 6, '13 (T<sup>1</sup>).

One sometimes witnesses curious ceremonies between flickers in the fall, when they bow, spread their tails and raise their wings, saying *pow-pow-pow-pow* or *pooh pooh* or perhaps *whickum whickum*. The participants in one of these October encounters were two Yellow-shafted Flickers, in another a Yellow-shafted and a Red-shafted, all four birds being males.

(413) RED-SHAFTED FLICKER: *Colaptes cafer collaris*

Common resident in the Panhandle, a few in Woods and Major Counties; regular winter visitant in central Oklahoma, rare in eastern.

Summer range: Cimarron Co.—common resident (T<sup>1</sup>); Gate—"almost as common as the Golden-shafted" (L<sup>2</sup>); Woods Co.—seen at Edith and Waynoka July '30 (B<sup>2</sup>); Major Co.—June '30 (B<sup>2</sup>); Minco—2 May 26, '31, '05 (W<sup>1</sup>);—we saw only Yellow-shafted May 20, '23 (N).

Migration: Copan—rare, single birds seen Feb. 10, Dec. 22, '16, Mar. 27, 29, '17 (K<sup>1</sup>); Tulsa—1 Oct. 15, '17 (G<sup>4</sup>);—1 Oct. 21, '27 (K<sup>2</sup>); \*Jan. 20, '30 (G<sup>2</sup>); Creek Co.—\*Dec. 28, '21 (L<sup>2</sup>); Noble Co.—1 Apr. 15, '26 (N); Bryan—uncommon Jan. 11 to mid March '84 (C<sup>4</sup>); Cleveland Co. Sept. 26, '20: Sept. 30: Apr. 5: Apr. 10, '24 (N); Comanche Co.—Nov. '04 (L<sup>1</sup>); Tillman Co.—common Mar. 15, '21 (K<sup>1</sup>).

Nesting: Cimarron Co.—12 pairs "had nests under a plank on top of an adobe wall on Marselus Bros. ranch July 1, 1910" (T<sup>1</sup>, '23: 45).

Food: codling moths, grasshoppers, ants, alfalfa weevils; weed seed, wild berries.

It is always a delight to meet this beautiful bird with its ruby colored wings. In our Christmas censuses in Cleveland county they averaged about 10 per cent of all Flickers seen, from one to five being recorded on

the different trips. Dr. Cooke was the first to mention the Red-shafted Flicker in Oklahoma ('84a: 25). He wrote ('09b: 413) that in 1845 when Abert visited Colorado the range of the Yellow-shafted Flicker extended much farther west than at present ;since then it has been displaced by the Red-shafted.

(405) SOUTHERN PILEATED WOODPECKER: *Ceophloeus pileatus pileatus*

Resident in eastern Oklahoma.

Range: formerly as far west as Canadian County, Aug. 25, 1820 (James, '05: 152); 1883—fairly common resident in Bryan Co. (C<sup>4</sup>); 1904—a few seen in Comanche Co. along Medicine Creek (G<sup>2</sup>). Now found as far west as Osage, Tulsa, Johnston and Murray Counties, but rare in all these places, rare in Bryan Co., fairly common in southeastern Oklahoma.

Nesting: Verdigris River bottoms—eggs Apr. 20, 30, '22 (P<sup>2</sup>);—4 eggs 40 feet up in oak Apr. 12 '26 (M<sup>6</sup>).

Food: wood-boring larvae, ants, caterpillars; wild fruit, acorns, nuts.

The splendid great Log-cock, as large as a crow, with its black body, large white patch in the wing and flaming red crest, is regaining a little of its lost ground in the state, due, let us hope, to a growing sentiment against killing birds just for the fun of it. From Nov. 9, 1925 to Apr. 21, 1926 a pair of these notable woodpeckers lived in the Olivers' woods south of Norman, but unfortunately they did not stay and nest. Although Dr. Crabb ('30:139) has always found these birds wary, the female of this pair paid no attention to my close approach.

(409) RED-BELLIED WOODPECKER: *Centurus carolinus*

Resident throughout eastern and central Oklahoma as far west as Kay, Major, Blaine, Grady, and Comanche Counties.

Nesting: Copan—4 eggs, 28 feet up in a maple Apr. 28, '13; nest with young 29 feet up, nest of flying squirrels in same tree May 14, '16; 4 eggs 45 feet up in maple Apr. 27, '17; 3 eggs, 40 feet up in maple Apr. 30, '17 (K<sup>1</sup>); Tulsa—eggs Apr. 10-May 15 (P<sup>2</sup>), 5 eggs 20 feet up in dead elm Apr. 3, '25 (M<sup>5</sup>); Cleveland Co.—birds nesting Apr. 5, '23 (N).

Food: weevils, ants, cockroaches, grasshoppers, stink-bugs; mast, wild fruit, persimmons.

I have often wondered what the "Chad" is forever complaining about. It possesses a great variety of notes most of which are loud and querulous—*chow chow chow*, *quorrck*, *quorrck*, a rattling kind of *rrrrrrrr*, and many others. Its name seems singularly inappropriate, the "red belly" being so inconspicuous that one lady indignantly refused to believe my identification of the bird. Dr. Cooke saw 50 to 60 Nov. 29, 1883 in a three-mile walk along the Blue River in Bryan County, but with us it was somewhat less common than the Downy, from 2 to 8 being seen on the 8-mile censuses throughout the year and 1 to 8 on the Christmas censuses.

(406) RED-HEADED WOODPECKER: *Melanerpes erythrocephalus*<sup>1</sup>

Resident in eastern Oklahoma and Cimarron County, summer resident in central and western Oklahoma.

Migration: Copan—Apr. 24-Oct. 18, '16, Apr. 19, '17 (K<sup>1</sup>); Bryan Co.—11 flew

<sup>1</sup>Dr. H. C. Oberholser ('19: 49) has separated the Red-headed Woodpecker into eastern and western forms. Specimens from eastern Oklahoma from \*†March to \*Oct. 25 and one from Cleveland Co. \*†June 23, he has identified as *M. e. erythrocephalus*; one from Caddo Co. \*†Apr. 1, '68 and two from Comanche Co. \*†Mar. 26, \*27, '04 he has referred to *M. e. erythrophthalmus*. This subspecies has not been included in the fourth checklist.



over town Sept. 12, 2 more Sept. 18 '83, a very few wintered (C<sup>8</sup>); Cleveland Co.—Apr. 20, '26; Apr. 26:: Oct. 3; Nov. 13 '26 (N); Canadian Co.—Mar. 9, '90 (M<sup>2</sup>); Custer Co.—Apr. 17, '04 (S<sup>4</sup>).

Nesting: Copan—6 eggs May 7, '17 (K<sup>1</sup>); Tulsa—5 eggs Apr. 25, '27 (M<sup>5</sup>);—5 eggs May 5, '28 (G<sup>8</sup>); Cherokee Co.—3 pairs excavating in telephone poles May 5, '23 (N); Pushmataha Co.—young bird left nest July 7, '20 (N); Cleveland Co.—pair enlarging old hole May 12, '20 (N); Corral Creek—4 eggs June 9, '60 (M<sup>1</sup>); Adalene Creek—4 eggs June 10, '60 (M<sup>1</sup>).

Food: grasshoppers, clover beetles, corn weevils, codling moths, 17-year locusts; mast, fruit.

This gorgeous bird is abundant in the eastern part of the state, especially where there are many girdled trees. It has been recorded in nine of the ten Christmas censuses in eastern Oklahoma, in one of the eleven in central Oklahoma (one bird in Oklahoma County Dec. 26, 1926), and in five of the six at the end of the Panhandle.

Mr. Tate watched a Red-headed Woodpecker storing grains of corn in a dead cottonwood Oct. 20, 1911. On Dec. 31, 1911 "one of these birds was observed digging live grasshoppers out of a hole in a cottonwood tree on Marselus Bros. ranch," where he had cached them months before. (T<sup>1</sup>, '23: 45).

(408) LEWIS WOODPECKER: *Asyndesmus lewisi*

Uncommon resident in Cimarron County, accidental winter visitor in Tulsa County.

Nesting: Cimarron Co.—nest seen near Kenton June 19, '20, 6 or 7 other nests found (T<sup>1</sup>);—pair at their nesting hole May 31, '22 (N).

Food: grasshoppers, weevils, borers, leaf-eating beetles, squash bugs, ants, corn ear worms; acorns, fruit.

The sight of this strikingly beautiful great bird with its dark red head and rose colored under parts is well worth a trip to Cimarron County. Mr. J. R. Pemberton ('23) saw one of these woodpeckers Dec. 24, 1922 on the Oakhurst Country club, 8 miles southwest of Tulsa, "flying out over one of the fairways and returning to a large oak after each flight."

(402) YELLOW-BELLIED SAPSUCKER: *Sphyrapicus varius varius*

Uncommon transient and winter visitant in eastern two-thirds of the state.

Migration: Ottawa Co.—\*Dec. 31 (P<sup>4</sup>); Copan—Oct. 23-Mar. 13, '17 (K<sup>1</sup>); Tulsa —\*†Nov. 1, '27 (K<sup>8</sup>); Feb. 11-Mar. 14 (F); Cleveland Co.—Oct. 12-Mar. 20, most common from December to February (N); Pittsburg Co.—\*Mar. 21, '14 (C<sup>5</sup>); Bryan Co.—rare winter visitant (C<sup>4</sup>); Wichitas—seen Mar. 14-15, '04 (G<sup>2</sup>).

Food: sap procured by puncturing trees; forest insects; persimmons, other wild fruit and berries.

Yellow-bellied Sapsuckers are recorded in three of the ten Christmas censuses taken in eastern Oklahoma, in both from southern Oklahoma, and in six of the eleven in central Oklahoma. Sometimes a curious cat-like cry or a *ping* resembling the whizz of a bullet betrays its presence. The adult male is strikingly handsome with its red crown and throat and black upper breast, but the immature bird is a dingy-looking creature; it may be known by its stout flattened shape, yellowish tinge throughout, speckled back and stripe of white down the black wing. This bird undoubtedly injures trees in some localities, but is too rare in Oklahoma to be of any economic importance.

(402a) RED-NAPED SAPSUCKER: *Sphyrapicus varius varius megalis*

Accidental visitor from the west.

Specimen: Latimer Co.—\*†Mar. 23, '14 (C<sup>5</sup>, '23a).

This bird that nests in Colorado and New Mexico differs from the Yellow-bellied Sapsucker in the male having a narrow line of crimson across the nape where the western bird is brownish white.

(393) EASTERN HAIRY WOODPECKER: *Dryobates villosus villosus*

Hairy Woodpeckers are uncommon residents throughout the eastern half of the state as far west as Kay, Kingfisher, Oklahoma, Cleveland, McClain and Comanche counties, also occasionally in Woodward county and at Gate. The Eastern Hairy is the breeding form in central Oklahoma.

Specimens: Tulsa—\*†Feb. 22, '29 (G<sup>3</sup>); Creek Co.—\*†Dec. 28, '21 (L<sup>3</sup>); Pottawatomie Co.—\*†June 17, '01 (B<sup>6</sup>); Cleveland Co.—\*†Nov. \*†Dec. '13, \*†Jan. 6, '23 (C<sup>5</sup>).

Nesting: Cleveland Co.—nest with young Apr. 18-21, '20 (N).

Food: wood boring beetles (1 stomach contained 100), curculios, engraver beetles, ants, caterpillars, wild fruit, mast.

In Cleveland county the Hairy Woodpecker occurs in about one fourth the numbers of its smaller relative—the Downy. Throughout their ranges the Downy is usually "common," the Hairy "uncommon." Perhaps an explanation for the difference in abundance of these two species so similar in habits, haunts and everything but size, lies in the greater number of eggs regularly laid by the smaller bird. The Hairy usually lays four eggs (average of 5 Oklahoma nests 3.6 eggs), the Downy regularly six (average of 8 Oklahoma nests 5.4 eggs). The only nest of the Hairy Woodpecker that we found was ten feet from the ground in a locust on the university campus; on April 21 from 10:57 to 11:18 the female made four trips with food, the male one.

(393b) SOUTHERN HAIRY WOODPECKER: *Dryobates villosus auduboni*

Resident in eastern Oklahoma.

Specimens: Tulsa—\*†Oct. 12, '29 (K<sup>3</sup>); Okmulgee—\*†Nov. 29, '25 (F); McCurtain Co.—\*†July 1, '23 (N).

Nesting: Vinita—3 eggs Apr. 27, '12 (K<sup>1</sup>); Copan—4 eggs Apr. 14, '13, 3 eggs May 3, '16 (K<sup>1</sup>); Tulsa—eggs Apr. 5 (P<sup>2</sup>);—eggs Apr. 18-May 27 (M<sup>5</sup>).

The Hairy Woodpecker closely resembles the Downy, but is larger, with a relatively larger, longer bill and unmarked white outer tail feathers. Its notes are louder than the Downy's and the rattle does not have the falling inflection of the latter's.

(394) SOUTHERN DOWNY WOODPECKER. *Dryobates pubescens pubescens*

Common resident throughout eastern and central Oklahoma as far west as Comanche county.

Specimens: Tulsa—\*†Jan. 18, '27 (K<sup>3</sup>);—\*†Mar. 16, '28, \*†Feb. 11, '29 (G<sup>3</sup>); Okmulgee—\*†Nov. 29, '25 (F); McCurtain Co.—\*†June 25, '25 (O<sup>2</sup>); Cleveland Co.—12 specimens from \*†January to \*†July (C<sup>5</sup>).

Nesting: Copan—5 eggs Apr. 17, 6 eggs Apr. 25, '13, young Apr. 24, 6 eggs Apr. 27, 4 eggs Apr. 30, 6 eggs May 3, 5 eggs May 7, '17 (K<sup>1</sup>); Tulsa—eggs Apr. 18-28 (P<sup>2</sup>);—eggs Apr. 28-May 6 (M<sup>5</sup>); Cleveland Co.—building Mar. 17, '21; young nearly ready to leave May 21, '26 (N).

Food: codling moth, borers, weevils, caterpillars, eggs of grasshoppers, mast, berries.

On May 27, 1927 I heard a rapid *chitter chitter chee*, and there was a

father Downy raising his red crest and giving a small caterpillar to a full grown son with red on top of his head. The youngster crept about after his father, seemingly pecking at random and giving this explosive call at short intervals.

(394c) NORTHERN DOWNY WOODPECKER: *Dryobates pubescens medianus*

Resident in northwestern Oklahoma.

Specimens: Minco—pair \*†May 31, '05. "These two birds while intermediate in measurements between *pubescens* and *medianus* are nearer the latter form" (W<sup>1</sup>, '18:6); Creek Co.—\*†Dec. 20, \*†26, '21 (L<sup>3</sup>); Cleveland Co.—\*†Jan. 6, \*†Mar. 17, '23 (C<sup>5</sup>).

Nesting: Minco—young bird recently out of nest May 31, '05 (W<sup>1</sup>, 18:6); Cimarron Co.—nest with 4 eggs in a hole in an apple tree on Marselus Bros. ranch June 7, '13 (T<sup>1</sup>, '23:45).

Downy Woodpeckers are rare in the Panhandle. Mr. Lewis reports them as "not common spring visitors" at Gate; they are seldom seen in Cimarron county. It is a question as to which subspecies breeds in the latter locality; it is probably *D. p. medianus*, but it might be *D. p. homorus*, the Batchelder Woodpecker.

(395) RED-COCKADED WOODPECKER: *Dryobates borealis*

Uncommon resident in the pine forests of southeastern Oklahoma.

Records by counties: Leflore—1 seen July 10, '20 (N),—\*†June 21, '27 (W<sup>4</sup>); Latimer—only one pair seen Sept. 2-14, \*Sept. 10, '92 (P<sup>3</sup>); Pittsburg—2 seen, 1 taken \*†Mar. '14 (C<sup>5</sup>); Pushmataha Co.—6 seen together near Nashoba July 5, '20, 1 July 5, 6, '20 near Cedar creek (N); McCurtain—none seen June 27—July 3, '23 (N); \*†June 26, '25 (O<sup>2</sup>).

Although Woodhouse wrote that this woodpecker was common in Indian Territory in 1850, for the last forty years it has been rare here at the western limit of its range. Perhaps the cutting of the virgin timber is responsible. The "cockades" are inconspicuous scarlet tufts on each side of the head of the male. The bird is about the size of a Hairy with a black crown, white cheeks, and back barred with black and white. It is active and noisy, one of its notes resembling the *yank yank* of a White-breasted Nuthatch.

(396) TEXAS WOODPECKER: *Dryobates scalaris symplectus*

Uncommon summer resident in the southwestern corner of the state and in the west end of Cimarron county.

Southwestern records: North Fork, Old Greer Co.—a pair taken on the boundary between Kiowa and Greer or Jackson County, \*†July 22, '01 (V); Tillman Co.—1 seen Mar. '15, '21 (K<sup>1</sup>); Harmon Co.—\*June 17, '26 (L<sup>4</sup>). We saw none in this region July 4-7, '23.

Northwestern records: Cimarron Co.—1 seen in Kenton May 30, '21, 1 seen at Dalhart's ranch Aug. 25, '26 (N).

Nesting: Cimarron Co.—nest with 3 eggs and 1 young bird on C. F. Rowan's ranch June 29, '13 (T<sup>1</sup>).

Food: wood-boring beetles, ants, and caterpillars including many cotton worms.

This little woodpecker has the upper parts including the outer tail feathers barred with black and white except for the middle tail feathers which are black; the under parts are smoky, lightly spotted with black; the forehead is smoky, while the crown is black in the female and red in the male, preceded by specks of white.

(392) IVORY-BILLED WOODPECKER: *Campophilus principalis*

Formerly a resident in eastern Oklahoma, now almost extinct.

Records: 1820—near mouth of the North Canadian (James, '05:172); 1850—quite rare in timber of the Arkansas (W<sup>5</sup>, '53:90); 1884—near Caddo Jan. 12 (C<sup>4</sup>). "A peace pipe in the Public Museum of Milwaukee from the Iowa Indians of Oklahoma is ornamented with six bills and crests of this bird." (C<sup>5</sup>, '25b).

Nesting: Atoka Co.—nested near Old Boggy Depot about 1870-1874 (E. N. Wright).

"We listened as we rode forward" wrote James, Sept. 5, 1820, "to the notes of a bird, new to some of us, and bearing a singular resemblance to the noise of a child's toy trumpet; this we soon found to be the cry of the great Ivory-billed Woodpecker (*picus principalis*), the largest of the North American species, and confined to the warmer parts." Thirty years later Woodhouse stated, "I have only observed this magnificent bird in the timber of the Arkansas river and in eastern Texas, in both of which places it was quite rare."

Miss Muriel H. Wright of Olney wrote me "Ivory-billed Woodpeckers were in the vicinity of Old Boggy Depot, but were not readily found as they were very wild and wary. The feathers of the crest were such a clear, beautiful red, that hunters often killed the birds and liked to use the gay crest for decoration on their hat bands. My father says a pair of these woodpeckers nested for several seasons high up in the trunk of a tree that had been broken off at the top. The tree was in the woods about a quarter to a half mile west of my father's home. This must have been about 1870 to 1874."

The last record of the bird for the state was given by Dr. Cooke ('14b:480) at Caddo: "Resident and not considered by the local hunters as any great rarity. Seen on two visits to the heavy timber of the Blue river—November 29 and January 12, 1884." Although there have been various reports of Ivory-bills† since then, they always prove to be Pileated Woodpeckers. The cutting of the timber and killing by hunters are responsible for the disappearance of this—the finest of all woodpeckers.

## PERCHING BIRDS: ORDER PASSERIFORMES

## TYRANT FLYCATCHERS: FAMILY TYRANNIDAE

(444) EASTERN KINGBIRD: *Tyrannus tyrannus*

Summer resident throughout the entire state.

Migration: Copan—Apr. 16, '17; Apr. 25:: Sept. 18, 16 (K<sup>1</sup>); Tulsa—Apr. 20, '19; Apr. 22:: Sept. 2, '24 (P<sup>2</sup>, G<sup>4</sup>); Cleveland Co.—Apr. 14, '22; Apr. 20:: Sept. 13; Sept. 18, '26, flocks seen May 19, '27, Aug. 23, '23 (N); Bryan Co.—several seen Sept. 10-14, '83 (C<sup>4</sup>); Fort Reno—Apr. 19, '90 (M<sup>2</sup>); Washita Co.—Apr. 25, '93; Apr. 28:: Sept. 14, '11 (B<sup>4</sup>).

Nesting: Vinita—4 eggs 10 feet up, June 5, '12 (K<sup>1</sup>); Copan—4 eggs 5½ feet up June 5, '13, 4 eggs 12 feet up June 1, '16 (K<sup>1</sup>); Tulsa—4 eggs, May 16, '28, 14 feet up in oak (M<sup>5</sup>);—3 eggs, June 5, '27, 10 feet up (G<sup>3</sup>); North Fork Canadian—4 eggs June 12, '60, 15 feet high (C<sup>3</sup>).

Food: May beetles, click beetles, weevils, ants, grasshoppers, crickets, robber flies, cutworms, wild fruit.

†Barde's account of these woodpeckers being taken in Oklahoma in 1911 and sent to the Smithsonian Institute proves to be an error for there are no specimens of this species from this state in the National museum.

A family of Kingbirds near the house is a protection to the poultry and song birds for these courageous birds attack any hawk or crow that ventures near. Although they are sometimes accused of eating honey bees, the United States Biological Survey found that only 14 out of 420 birds had done so, and that all but four of the few bees taken were drones. By destroying robber flies Kingbirds do far more good than harm to the beekeeper, not to mention all the other injurious insects they eat.

Sometimes Kingbirds are aggressive in defense of their nests. June 8, 1917 one of my small daughters reported that when she climbed up to examine a partly built nest in the old peach tree, the pair "darted all around me screeching."

(447) ARKANSAS KINGBIRD: Western Kingbird: *Tyrannus verticalis*

Summer resident throughout the western half of the state, rarely found as far east as Tulsa and Okmulgee counties. Its range has been greatly extended in the last twenty-five years.

Records before 1900: western Oklahoma—adult and nest taken on Trout creek \*June 21, '60 (C<sup>3</sup> & M<sup>1</sup>); northwestern Oklahoma—seen May, '76 (McCauley). 1901-1910; negative: not found in Alva Aug. 3-6, '01 (O<sup>1</sup>); nor in southwestern Oklahoma July '01 (V & B<sup>6</sup>); nor in Minco June '05 (W<sup>1</sup>); positive—Wichitas—Apr. 26, '04 (G<sup>2</sup>);—1 Aug. 10, '06 (B<sup>1-2</sup>); Alva—fairly common breeder '08 (C<sup>2</sup> & T<sup>2</sup>); Panhandle—spread south from Cimarron and Beaver rivers over whole of Panhandle '09 or '10 (T<sup>1</sup>), 1911-1920: negative—not reported from Washita Co. 1912 (C<sup>1</sup>); nor Custer Co. 1913 (W<sup>2</sup>); positive: Enid—first nested about 1913 (W<sup>6</sup>); Alfalfa Co.—first nest seen in 1916 (Wm Bayliff); Canadian Co.—first seen 1916 (C<sup>5</sup>); Tulsa—several May 27, '17 (G<sup>4</sup>); Osage—2 May 17, '19 (G<sup>4</sup>); Cleveland Co.—1 Aug. 29, '19 (N); 1920-1930: Cleveland Co.—first nest in Norman 1923 (N); Minco—nesting in 1923 (N); Tulsa—first nest in 1924 (M<sup>5</sup>); Okmulgee—1 May 30, 2 June 3, '24 (Elrod, '25); Hughes Co.—2 May 17, '29 (B<sup>5</sup>).

Migration: Cimarron Co.—Apr. 25, '25:: Apr. 26:: Sept. 13, '26 (T<sup>1</sup>); Cleveland Co.—Apr. 29, '23: May 7:: Sept. 11, '22 (N).

Nesting: Trout creek—nest with eggs June 21, '60 (C<sup>3</sup> & M<sup>1</sup>); Kenton—nest on windmill July '21 (T<sup>1</sup>); Minco—building May 20, '23 (N); Norman—first nest June 4, '23, building on campus May 29, '29 (N); Tulsa—3 eggs May, 18, '24 (M<sup>6</sup>).

Food: grasshoppers, crickets, beetles, cicadas, drones of honey bees, stink bugs.

It is a great pleasure to welcome this spirited and handsome kingbird on its triumphal progress across Oklahoma. It is eminently fitted to thrive in civilization, finding congenial surroundings in villages and on farms, and willing to nest on telegraph poles as well as in trees.

It evidently became established in northwestern Oklahoma first and then spread southeast. In Alva they were fairly common in 1908, but at Vernon, Texas, directly south and eight miles from the Red river the first nest was found in 1918 (M<sup>4</sup>), Mr. Tate ('25b:32) writes that up to 1909 the range of this bird "was along the Cimarron river in Cimarron county and along the Beaver river in Texas and Beaver counties. But in Cimarron county along the Currumpaw and Seneca creeks and where these creeks join and become the Beaver river, they were unknown until either in 1909 or 1910, although there were trees at many places along these streams, while in Texas and Beaver counties they did not breed along the creeks at the south sides of these counties. For four or five years before the dates mentioned I worked through the southern parts of these counties after cattle every summer and never saw one of them, although I was frequently out for days along the streams on that side of the Okla-

homa panhandle. In 1909 or 1910 they appeared to spread south suddenly and in 1911 I saw them on the South Canadian river in the Texas panhandle. The trees planted on the flats all over the counties by the settlers who had come in 1905 and 1906 had by that time reached a size where they were attractive to the birds and this condition may have been responsible for their extension of range."

(443) SCISSOR-TAILED FLYCATCHER: *Muscivora forficata*

Summer resident throughout the entire state.

Migration: Copan—Apr. 16, '16, '17 (K<sup>1</sup>); Tulsa—Apr. 5, '30: Apr. 10: latest Oct. 11, '25 (F, P<sup>2</sup>, G<sup>4</sup>, K<sup>3</sup>); Cleveland Co.—Apr. 3, '20: Apr. 10: Oct. 16: Oct. 23, '26 (N); —Mar. 29, '29 (B<sup>5</sup>); Paul's Valley—Apr. 3, '23, Apr. 2, '24, Apr. 1, '25 (C. Latimer); Bryan Co.—Apr. 11, '84; "gathering in flocks September 11; moving southward in the early evening September 14; the height of fall migration was September 20-22 (C<sup>4</sup>); Washita Co.—Apr. 3, '93: Apr. 10 (B<sup>4</sup>); Custer Co.—Apr. 8, '03: Apr. 9 (S<sup>4</sup>).

Nesting: Copan—5 eggs June 1, '14, 5 young July 3, '10 (K<sup>1</sup>); Tulsa—earliest, May 30 (M<sup>5</sup>), latest, 4 eggs July 28, '27 (G<sup>3</sup>); Kingfisher—5 eggs May 22, '27 (N); Fort Cobb—3 nests with 4 eggs each, 1 nest with 1 egg May 24, '60, nest with 4 eggs May 25, '60 (C<sup>3</sup>); Harmon Co.—5 young, June 17, '26 (L<sup>4</sup>); Kenton—nest with 3 eggs June 19, '14 (T<sup>1</sup>). 7 nests had 5 eggs; 7 had 4 eggs, 4 had 3 young; most of the nests were 7-15 feet from the ground, one 26 feet. One was placed on the cross bar of a telegraph pole, another in the cupola of the stock pavilion at the state fair grounds in Oklahoma City.

Food: grasshoppers, cotton boll weevils, 12-spotted cucumber beetle, squash bugs, cotton leaf and cotton boll worms.

One of the blessings of living in Oklahoma is the fact that the Scissor-tailed Flycatcher lives there too. For a hardy bird that comes early in spring and stays late in the fall, it has a curiously restricted range—Texas, Oklahoma and southern Kansas. Such a courageous bird should have few enemies; it lays four to five eggs and often raises a second brood; why does it not increase in numbers and extend its range giving new regions the pleasure of its presence? It appears to be spreading a little to the east into Arkansas and a little to the west into New Mexico, but not, so far as I know, to the north. No visitor could be more welcome to a farm or village than this remarkable bird with its appetite for injurious insects, its enmity toward hawks and its spirited, spectacular behavior.

Like the Kingbirds, Crested Flycatcher and Wood Pewee the "Texas Bird of Paradise" has a "twilight song" given before dawn during the nesting season. I have only one record of it, obtained at Cashion June 2, 1929 where a pair of these birds had a nest containing one egg. At 5:01 a. m. (26 minutes before sunrise) the male began to shout *pup-pup-pup-pup-pup-pup-perléep* 16 times a minute for about four minutes. Then for three minutes nothing was heard but a few *pups*. At 5:07 he began with a new note, *pup-pup-pup-peróo*, lower and less loud than the first phrase, the number of *pups* varying from one to three, the most common number being two. A minute later he started to fly about, but kept up a continuous chatter of *pup-peróo* till 5:12.

On a day in mid September a dozen or more of these lovely birds gathered in the little willows growing in a small pond; one by one they swooped down to the water, but came up without quite touching it. Finally one brave bird splashed its breast into the water, whereupon they all followed suit, sometimes singly, sometimes two or three at a time,

darting down quickly—a sudden dip into the water and then up again. The colors on their sides and under their wings shone pink and salmon and ruby in the late afternoon light. It was a rarely beautiful sight—the exquisite birds in their fairy-like evolutions.

(452a) NORTHERN CRESTED FLYCATCHER: *Myarchus crinitus boreus*.

Summer resident throughout eastern and central Oklahoma as far west as Woods, Woodward, Caddo, Comanche, Tillman and Jackson counties.

Migration: Copan—Apr. 18, '16; Apr. 21:: Sept. 18, '16 (K<sup>1</sup>); Tulsa—Apr. 16, '27; Apr. 24:: Sept. 10, '27 (F, P<sup>2</sup>, K<sup>3</sup>); Sequoyah Co.—Apr. 13, '97 (L<sup>5</sup>); Cleveland Co.—Apr. 4, 22; Apr. 20:: Aug. 28; Sept. 16, '25 (N); Gate—1 May 9, '23 (L<sup>2</sup>).

Nesting: Copan—5 young 10 feet up in sycamore June 11, '14, 6 eggs in knot hole 50 feet up in elm May 18, '16, 4 eggs June 17, '17 55 feet up in elm (K<sup>1</sup>); Tulsa—eggs May 17 to June 12 (P<sup>2</sup>); Norman—building in telegraph pole May 25 5 feet from ground, 5 eggs June 8, hatched June 18, 4 young left June 30, '22; building in martin box May 18, feeding young June 22, '23; building in Bluebird box May 18, '23 (N); Wichitas—5 eggs 8 feet up in stub June 6, '26 (N); Chattanooga—nest in fence post with fully fledged young July 3, '05 (L<sup>1</sup>).

Food: cotton boll and strawberry weevils, May beetles, plum curculio, leaf and tree hoppers, caterpillars, moths, grasshoppers.

In the east this is a deep woods bird, but in Oklahoma it is more friendly, nesting in telegraph poles and bird boxes in town as well as in cavities in woods. It ordinarily expresses itself with grunts and shouts, but in late May and in June the male sings a real song before dawn. It cannot compare in beauty with the Wood Pewee's "twilight song," but nevertheless it is more musical than one would deem possible, judging from the usual utterances of the bird. The song consists of a low *wheeyer*, a pause, then a high *wheeyer* and a pause, over and over again at the rate of 28 to 30 notes a minute. In 1927 the Crested Flycatcher in the Olivers' woods had not begun his singing on May 19, merely calling from 5 a. m. on. But on May 27 he sang from about 5:03 to 5:07 o'clock, and on June 4 from about 4:55 to 5:12. The song of a bird at Snail Brook May 30 lasted 28 minutes; those of two individuals in the Wichitas on June 4, more than 35 minutes. It would be of great interest to study the appearance, development and waning of this song, especially in correlation with the nesting cycle.

(454) ASH-THROATED FLYCATCHER: *Myarchus cinerascens cinerascens*

Rare summer resident in Cimarron county.

Nesting: Cimarron Co.—nest with 2 eggs on C. F. Rowan ranch June 4, '14 (T<sup>1</sup>, '23:46).

This pale relative of the eastern Crested Flycatcher is not at all common in Cimarron county; we did not see it on our two visits there. Mr. Tate records one in Kenton June 6, 1920; and Dr. Little took two specimens July 2 and 5, 1926, observing two others on the latter date.

(456) EASTERN PHOEBE: *Sayornis phoebe*

Summer resident in eastern and central Oklahoma, rarely found in winter.

Migration: Copan—Mar. 3, '17; Mar. 12:: Oct. 7, '26 (K<sup>1</sup>); Tulsa—Mar. 3, '24; Mar. 15:: Oct. 15, '24, (P<sup>2</sup> K<sup>3</sup>); Bryan Co.—Oct. 18, rare in winter; transients seen,

Mar. 8, 15, 25, '84 (C<sup>4</sup>); Cleveland Co.—regular transient, Mar. 12, '21: Mar. 21: Apr. 5: Apr. 6, '24; Sept. 2, '20: Oct. 2: Oct. 18: Oct. 28, '23; 1 seen Jan. 20, '24 (N); Washita Co.—Mar. 10, '94: Mar. 18 (B<sup>4</sup>).

Nesting: Vinita—4 eggs under railroad bridge, destroyed by high water, Apr. 16, '12 (K<sup>1</sup>); Copan—nest with 1 young bird, 1 fresh egg, 1 heavily incubated egg, Apr. 26, '17 (K<sup>1</sup>); Delaware Co.—nest with young found in cave May 30, '25, left June 11; bird returned 5 days later to build second nest (S<sup>1</sup>); Mayes Co.—nest with young, July 15, '29 (B<sup>5</sup>); Adair Co.—newly finished nest Apr. 2, '27 (L<sup>5</sup>); Tulsa—eggs found from Apr. 7 to June 10 (P<sup>2</sup>, M<sup>5</sup>, G<sup>3</sup>); Arbuckles—nest with 5 eggs Apr. 22, '27 (N). It also breeds in Cherokee, Pushmataha, McCurtain, Canadian, Major, Washita, and Comanche counties. In Cleveland county we heard a bird singing near the mouth of Bishop creek July 13, '23, and found a last year's nest on a small cliff 8 miles east of Norman in 1927.

Food: cotton boll and strawberry weevils, cucumber beetle, grasshoppers, horse flies.

This is the earliest flycatcher to come in the spring and the only one ever found in winter in Oklahoma. Twice I have heard migrating birds singing in Cleveland county. March 12, 1921. March 20, 1926. The Phoebe flirts its tail almost constantly and gives a characteristic *tip*; its bill is wholly black. In the spring it has no wing bars as do the Wood Pewee and other small flycatchers; underneath it is whitish with grey on the throat and breast. In the fall the birds are yellowish below with small greyish patches on the side; the young show cinnamon wing bars at this season.

(457) SAY PHOEBE: *Sayornis sayus sayus*

Uncommon summer resident in Cimarron county, rare transient at Gate.

Migration: Kenton—Mar. 18, '27: Mar. 20: Oct. 19, '26 (T<sup>1</sup>); Gate—Apr. 10, '23 (L<sup>2</sup>).

Nesting: Cimarron Co.—4 young in nest on log in thicket of plum trees June 15, '11; 4 eggs in nest on Marselus Bros. ranch June 26, '12; 3 young in nest July 1-14, '25 (T<sup>1</sup>).

This handsome Phoebe is dark brick color below and ashy brown above with a black tail. The coloring of its back and tail is somewhat like that of the Western Kingbird, but its size is smaller, its head darker and the color of its underparts entirely different. The young in Mr. Tate's barn left the nest July 14, but stayed on the brace in the barn roof for four and a half days before they flew out into the world. One was killed by a cat, but the other two and their parents were still keeping together fairly well on August 3.

(466a) ALDER FLYCATCHER: *Empidonax trailli trailli*

Rare summer resident in Craig and Tulsa counties.

Specimens: Tulsa Co.—\*†July 29, '22 (P<sup>2</sup>); \*†June 13, '25 (K<sup>3</sup>).

Nesting: Vinita—3 eggs, in upright fork of small tree in brushy, marshy field May 26, '12 (K<sup>1</sup>); Tulsa Co.—3 eggs June 18, 3 eggs June 25, '22, 10 miles south-east of Tulsa, male taken in same place (P<sup>2</sup>); 3 eggs northeast of Mohawk Park May 28, '27 (M<sup>5</sup>); 2 eggs 3 feet from ground 12 miles southeast of Tulsa June 18, '27 (G<sup>3</sup>).

This is the eastern form of the Traill Flycatcher. It has a browner tinge above than the other small flycatchers. Its nesting haunts are brushy, wet meadows; its nest is a well built structure placed in an upright fork. Its song may be written *che-bée-u*, or *great dé-al*.



(466) LITTLE FLYCATCHER: *Empidonax trailli brewsteri*

Transient.

Specimens: Pittsburg Co.—1 taken at Hartshorne \*†Aug. 25, '92 (P3); Murray Co.—1 taken at Dougherty \*†Aug. 16, '92 (P3).

This is the western form of the Traill Flycatcher (Oberholser, '18:94). It is possible that this bird is a rare breeder in central or western Oklahoma, but the dates of the specimens might well have been of individuals on their southward migration.

(463) YELLOW-BELLIED FLYCATCHER: *Empidonax flaviventris*

Rare transient in eastern and central Oklahoma.

Migration: Tulsa—single birds seen May 17, '23, May 8, '24 (K3); Norman—1 May 18, '20 (N).

This little flycatcher "should be unmistakable in spring as it is then the *only flycatcher that is distinctly yellow below, including the throat*; our other small flycatchers have the throat white or whitish; Acadian Flycatcher is only *yellowish* below; in autumn when others are yellowish below, identification is more difficult." (Forbush, '27:350). No specimen has been taken in the state, the bird recorded in the first edition of "Birds of Oklahoma" proving to be a Least Flycatcher.

(465) ACADIAN FLYCATCHER: *Empidonax virescens*

Summer resident in eastern Oklahoma, rarely summering as far west as Oklahoma, Cleveland and Murray counties.

Migration: Copan—May 3-Aug. 30, '16, Apr. 28, '17 (K<sup>1</sup>); Cleveland Co.—May 9, '23 (N).

Nesting: Vinita—3 eggs 3 feet from ground May 23, '12 (K<sup>1</sup>); Copan—3 eggs 9 feet up June 6, '14; 4 nests June 4-12, with 3, 1, 3 and 2 eggs respectively, 7, 8, 12 and 32 feet from ground, all in box elders (K<sup>1</sup>); Tulsa—3 eggs in nest 6 feet up June 10, '22 (M<sup>b</sup>); 3 eggs 4 feet from ground June 18, '27 (G<sup>b</sup>); Oklahoma Co.—parent carrying food July 2.3 in a swamp near the North Canadian (S<sup>1</sup>).

Occurrence in central Oklahoma: Cleveland Co.—a singing bird found in Olivers' woods June 25, '26, May 27, '27 (N); Arbuckles—pair in 1923, none found in 1920 or 1926 (N);—one bird in Washita valley in 1928 (S<sup>1</sup>).

Food: leaf beetles, banded-winged horse fly, wasps, spiders, small berries.

The different species of *Empidonax* are exceedingly difficult to distinguish in migration unless they sing; the Least Flycatcher does this regularly in spring, but the others only rarely. In fall it is impossible to identify them in the field. All four Oklahoma species are olive green above with pale wing bars and eye ring; all but the Yellow-bellied are whitish and yellowish below.

The two most common species in Oklahoma are the Acadian and the Least, the former a breeder, the latter a transient only. The Acadian shows a greenish tinge to the upper parts in a favorable light. Its chosen haunts are rather open woods usually near water and its nest—a frail structure with a flimsy bottom—is placed toward the end of low or drooping branches. Its call note is a single *jeep*, and its song an emphatic *peé-yup*; it also gives a soft *pitty pitt*y *pitty pitt*y at times when it flies.

(467) LEAST FLYCATCHER: *Empidonax minimus*

Transient in eastern and central Oklahoma.

Migration: Tulsa—Apr. 30, May 4, '24 (K<sup>3</sup>); Latimer Co.—\*†Sept. 5, '92 (P3); Cleveland Co.—singing birds recorded May 3, 10, '23, May 4, 12, '26, May 7, 14,

'27 (N); Canadian Co.—†May 19-25, '14 (C<sup>5</sup>); Kingfisher Co.—singing bird May 8, '26 (N).

Food: house flies, codling moths, canker worms, boring and bark beetles.

Fortunately the amiable *Chebec* often sings his name as he travels through Oklahoma on his way to his northern breeding grounds.

(461) EASTERN WOOD PEWEE: *Myiochanes virens*

Summer resident throughout Oklahoma as far west as Kay and Cleveland counties, sometimes found in Major, Caddo and Comanche counties.

Occurrence on western edge of its range: Major Co.—found on Eagle Chief creek June '30 (B<sup>5</sup>); Caddo Co.—†June 29, '03 (B<sup>5</sup>); Minco—"tolerably common; breeding" in 1905 (W<sup>1</sup>);—none found in 1923 (N); Wichita—May 8, '04 (G<sup>2</sup>);—nesting in 1906 (B<sup>1-2</sup>);—common in 1920, absent in 1923, 1926 and 1929 (N); Arbuckles—common in 1920, absent in 1923 and 1926 (N);—2 seen in 1928 (S<sup>1</sup>).

Migration: Copan—May 5-Sept. 21, '16 (K<sup>1</sup>); Tulsa—Apr. 30, '24 (K<sup>5</sup>); Sequoyah Co.—Apr. 16, '97 (L<sup>5</sup>); Cleveland Co.—Apr. 27, '27; May 2: Sept. 5: Sept. 23, '26 (N).

Nesting: Copan—3 eggs 54 feet from the ground June 2, '16 (K<sup>1</sup>); Tulsa—3 eggs 8 feet up June 2, '23 (M<sup>5</sup>); Cleveland Co.—nest with young blown down in storm May 30, '26; bird building 20 feet up in locust July 8, '26 (N); Wichita—pair feeding young Aug. 5, '06 (B<sup>1-2</sup>).

Food: house flies, horse flies, mosquitoes, clover-leaf, corn and rice weevils, cankerworms, squash and stink bugs, plum curculios.

This is our only flycatcher that has a sweet song; indeed from early June through July it sings a remarkably beautiful song before dawn—the so-called "twilight song" described by Dr. Wallace Craig (*Auk*, Apr. 1926, p. 150). Ordinarily the Wood Pewee sings two different phrases, but in the twilight song a third is added and the three are combined into an intricate and lovely composition. The day time singing is heard throughout the bird's stay with us.

The eastern Wood Pewee is intermediate in size between the Phoebe and the small flycatchers; it has two pale wing bars and its lower mandible is light in color.

(462) WESTERN WOOD PEWEE: *Myiochanes richardsoni richardsoni*

Rare summer resident in Cimarron county.

Nesting: Cimarron Co.—nest with eggs on Marselus Bros. ranch June 3, '20 (T<sup>1</sup>, '23:46).

This bird resembles the Eastern Wood Pewee in size and coloring, but its notes are harsh and unmusical. Mr. Tate has taken a specimen.

(459) OLIVE-SIDED FLYCATCHER: *Nuttallornis mesoleucus*

Rare transient.

Migration: Cleveland Co.—1 Sept. 14, 2 Sept. 15, '25, 1 May 10, 1 May 21, '26 (N<sup>1</sup>, '27f); Cimarron Co.—3 Sept. 16, '25 (T<sup>1</sup>).

The Olive-sided Flycatcher is about the size of a Phoebe, but has very dark sides and a narrow whitish line down the middle of the under parts; it has a large head and short neck; sometimes two white tufts are visible on each side of the rump. All of the birds seen near Norman were perched on the tops of tall trees, one in woods, the others in rather open country. There is no record of a specimen taken in the state.

## LARKS: FAMILY ALAUDIDAE

(474b) PRAIRIE HORNED LARK: *Otocoris alpestris praticola*

Summer resident in eastern Oklahoma, winter visitant in eastern and central Oklahoma.

Specimens: Tulsa—\*†Apr. 16, '22 (P<sup>2</sup>);—\*†Apr. 20, \*†Mar. 16, '30 (F); Okmulgee—\*†June 8, '26 (F); Choctaw Co.—\*†July 3, '23 (N); Cleveland Co.—\*†Feb. 17, \*†Mar. 2, '02 (B<sup>6</sup>).

Nesting: Vinita—4 young Apr. 20, '12 (K<sup>1</sup>); Copan—1 egg, snow on ground Mar. 19, 3 eggs Apr. 4, '14; young fully feathered Apr. 11, '17 (K<sup>1</sup>); Tulsa—eggs found from Apr. 2-May 21, '28 (F);—2 eggs and 2 young in nest July 5, '17 (G<sup>4</sup>).

Food: cutworms, grasshoppers, chinch bugs, leaf beetles injurious to strawberries, melons and beets; cabbage, clover-leaf, and clover-root weevils; seed of fox-tail, pigweed, ragweed, crabgrass.

Horned Larks are much more apt to visit us in cold snowy winters than in open mild ones. Both 1883-84 and 1905-06 were exceptionally severe winters and during both of these Horned Larks were abundant. In Tulsa county Gaut saw large flocks during his stay from Jan. 29 to Feb. 14, 1905. Some two dozen "were constantly feeding about the doorway and barn." On the ten Christmas censuses in Creek, Tulsa and Okmulgee counties from 1919 to 1929, Horned Larks were recorded only once, four birds near Tulsa Dec. 21, 1929. Of his experiences in Bryan county in 1883 Dr. Cooke ('14b:482) wrote: "The appearance of a large flock October 26, marked the arrival of this species in its winter quarters. They soon became common and remained in fairly constant numbers until the real winter of January when they doubled their former numbers. When the earth was covered February 13 with a half inch of fine frozen sleet, the Horned Larks seemed to be having a hard time to get a living. The air was full of swiftly flying flocks that alighted only to start again before the last straggler had fairly touched the ground. A decided decrease was noticeable February 18 and two days later not a bird was visible in the fields where they had been common all winter. Others in less numbers soon came to take their places and about March 8 the flocks broke up and the few remaining birds were seen in pairs."

(474c) DESERT HORNED LARK: *Otocoris alpestris leucolaema*

Summer resident in central and western †Oklahoma, irregular winter visitor.

Specimens: Minco—\*†May 24, \*†May 25, '05 (W<sup>1</sup>); Washita Co.—\*†July 11, '01 (B<sup>6</sup>); Cleveland Co.—\*†Mar. 2, '02 (B<sup>6</sup>); Fort Reno, Beaver creek, Tepee creek \*†Oct. or \*†Nov. '89 (O<sup>1</sup>, '02:825).

Migration: Cimarron Co.—Mar. 14-Oct. 18, flocks recorded on Christmas censuses in 1926, 1929 (T<sup>4</sup>); Cleveland Co.—Mar. 4, '23, Mar. 10, '27; flocks winter of '1918-19 and Nov. 29, '19-Feb. 12, '20—both snowy winters; 80 Feb. 5, '21, 10 Feb. 20, '27; no other winter flocks seen (N). Recorded on only 3 of the 11 Christmas censuses in central Oklahoma, all in Cleveland Co.: 7 in 1919, 1 in 1923, 65 in 1929. 1929-30 was exceptionally cold.

Nesting: Cleveland Co.—nest with 4 eggs in plowed field Apr. 5, '30 (B<sup>5</sup>); Minco—broods of young with their parents seen in the roads June 2, '05 (W<sup>1</sup>); Texhoma—

†Dr. Oberholser has identified 3 specimens taken in Cimarron Co. \*†June 29, \*†30, \*†July 4, '26 (L<sup>4</sup>); also 3 wintering birds \*†Feb. 17, \*†Mar. 2, '03 (B<sup>6</sup>) in Cleveland Co.—\*†Jan. '14 (C<sup>5</sup>) in the Arbuckles as *O. a. enthymia*—Saskatchewan Horned Lark; but this new subspecies has not been accepted by the Committee on Nomenclature and Classification of North American Birds, hence the breeding birds in the Panhandle are to be referred to *O. a. leucolaema*.

young out of the nest May 28, '22 (N); Cimarron Co.—nest with 4 eggs May 26, '20, nest with 2 nearly grown young July 20, '11 (T<sup>1</sup>).

This is the most abundant bird on the prairies in Beaver and Cimarron counties, in the latter place coming about farm houses in the friendliest manner. In the heat of the summer days they seek the shade of the fence posts beside the road. Dr. Wetmore ('18:8) writes of these birds at Minco in 1905: "These Horned Larks were found everywhere across the rolling prairie, especially on the higher portions away from streams. A few frequented cornfields in which plant growth was still small. . . . Once I watched a male singing in flight as he sustained himself against a strong wind for three or four minutes and then pitched quickly to earth."

#### SWALLOWS: FAMILY HIRUNDINIDAE

##### (614) TREE SWALLOW: *Iridoprocne bicolor*

Transient in eastern and central Oklahoma.

Migration: Copan—May 2, '17 (K<sup>1</sup>); Muskogee—September 10, '14 (C<sup>5</sup>); Cleveland Co.—single birds Mar. 30-Apr. 25, common in large flocks Aug. 4-Oct. 13, most common in September (N); Wichitas—one seen Aug. 5, '06 (B<sup>1-2</sup>); Gate—about a dozen flying around a pond May 2, '24 (L<sup>2</sup>).

Food: canker worms, cabbage butterflies, leaf-eating beetles, 40 chinch bugs and 10 other insects found in one stomach.

The adult Tree Swallow with its blue-green back and pure white underparts is unmistakable, but the immature bird with its brownish grey back and dusky collar nearly across the breast must be carefully distinguished from the Bank Swallow whose collar goes entirely across the breast.

##### (616) BANK SWALLOW: *Riparia riparia*

Summer resident, breeding locally.

Migration: Copan—Mar. 21-May 3, Sept. 16-Oct. 8, '16 (K<sup>1</sup>); Tulsa—Mar. 26-Oct. 15 (K<sup>3</sup>); Cleveland Co.—1 May 25, '29, flocks Aug. 10-Oct. 10 (N).

Nesting: Tulsa—5 eggs May 16, '23 (M<sup>5</sup>); Gate—uncommon summer resident (L<sup>2</sup>); Cimarron Co.—'35 or 40 working on tunnels of nests in a cut bank of Seneca creek, June 7, '20" (T<sup>1</sup>).

Food: cotton-boll weevil, horse flies, mosquitoes, plant lice, gnats, grasshoppers.

In the spring this bird has a brownish band across the breast and a white throat; it is more greyish on the back than the Rough-wing and is slightly smaller. In fall the breast band is less distinct than in spring.

##### (617) ROUGH-WINGED SWALLOW: *Stelgidopteryx serripennis*

Summer resident, breeding locally.

Migration: Tulsa—Apr. 6, '25 (K<sup>3</sup>); Apr. 11, '19 (P<sup>2</sup>).

Nesting: Tulsa—eggs May 12-20 (P<sup>2</sup>); 6 eggs taken May 19, '24 (M<sup>6</sup>); Fort Gibson—common June '92 (B<sup>2</sup>); Minco—two seen at a nesting hole in a railroad cut May 28, '05 (W<sup>1</sup>); Cleveland Co.—nests along Canadian (N).

The Rough-winged Swallow has a uniformly brownish grey throat and breast; its back is more brownish than the Bank Swallow, and its shoulders broader. It is one of the first of our nesting birds to leave for the south.

##### (613) BARN SWALLOW: *Hirundo erythrogaster*

Summer resident, nesting locally throughout the state.

Migration: Copan—Apr. 18-Oct. 21, '16, Apr. 27-Sept. 20, '17 (K<sup>1</sup>); Tulsa—Apr. 30-Oct. 6, '26 (K<sup>3</sup>); Cleveland Co.—Apr. 23, '26, a few in flocks made up of Cliff and Tree Swallows Sept. 23-Oct. 11, '25 (N).

Nesting: Vinita—5 eggs May 26, '12 on rafter in old house (K<sup>1</sup>); Osage Co.—1 nest 5 eggs, 2 nests with young July 22, west of Pawhuska, practically every bridge and large culvert had 1 to 3 nests, 2 contained eggs, the rest young July 23, '29 (B<sup>5</sup>); Tulsa—4 eggs under a culvert May 20, '27 (M<sup>5</sup>);—5 eggs under old bridge June 5, '27 (G<sup>8</sup>); Sequoyah Co.—quite common along the Arkansas, nesting in the cut bank Apr. 13-17, '97 (L<sup>5</sup>); Stillwater—young nearly ready to leave June 16, 1 fresh egg June 23, '24 (M<sup>3</sup>); Kingfisher—nest with 4 young and 1 egg under bridge May 27, '23 (N); Cleveland Co.—nest with 4 young under culvert July 17 and 23, another with 4 young Aug. 12, '26 (N); Wichitas—many nests under bridges by Buffalo Lodge June 14, '20, some contained eggs, some young, while other young were flying with adults (N); Kenton—abundant, seen building June 2, '13 (T<sup>1</sup>).

Food: mosquitoes, flies, gnats, cutworms, canker worms, cottonboll weevils.

I cannot find one instance of a Barn Swallow nesting in a barn in Oklahoma; the only one approximating such a situation being the pair found by Mr. Kirn in a deserted house. Many "improvements" of civilization are disastrous to wild life, but the state roads with their culverts have proved a boon to Barn Swallows. Until 1925 these birds had been known to us in Cleveland county only as uncommon transients but as soon as the cement road was built from Norman to Oklahoma City they adopted the culverts as nesting sites. The chestnut throat, and white in the deeply forked tail are distinguishing marks of this fine swallow.

(612) NORTHERN CLIFF SWALLOW: *Petrochelidon albifrons albifrons*

Summer resident, breeding locally throughout the state.

Migration: Copan—May 14-28, July 19-Oct. 8, '16, May 25—June 2, Aug. 2-Sept. 26, '17, do not breed (K<sup>1</sup>); Delaware Co.—great numbers feeding on prairie July 12, '29 (B<sup>5</sup>); Bryan Co.—late August to Oct. 9, '83 (C<sup>4</sup>); Oklahoma City—Aug. 15-Sept. 5, '29 (S<sup>1</sup>); Cleveland Co.—Sept. 20-Oct. 3 (N); Custer Co.—Apr. 18, '04 (S<sup>4</sup>); Johnston Co.—flock of about 80 June 27, '23 (N).

Nesting: Osage Co.—nesting abundantly at Shell creek dam May 30, '23 (G<sup>4</sup>); Fort Gibson—nested in 1850 (W<sup>5</sup>); Tulsa—nest with 5 eggs June 1, '27 15 miles northwest of Tulsa (G<sup>8</sup>); Creek Co.—nest May 2, '19 (B<sup>3</sup>); Crowder, Pittsburg Co.—nest under So. Canadian bridge June 29, '29 (B<sup>5</sup>); Canadian Co.—nests seen at Devils' Canyon near Hinton, 1930 (B<sup>5</sup>); Custer Co.—nest on cliff 6 miles to northwest of Thomas (S<sup>4</sup>); Alva—nests observed along Salt Fork Aug. '01 (O<sup>1</sup>); Gate—very common, colonies nest on cliffs and also under barn gables, as many as 25 nests in a group (L<sup>2</sup>); Kenton—abundant, 186 seen repairing old nests May 29, '12 (T<sup>1</sup>).

Food: flies, moths, ants; 35 birds taken in Texas cotton fields had eaten 638 cottonboll weevils; 6 birds in Nebraska had eaten 229 grasshoppers.

The cream white frontlet and reddish brown rump serve to identify the Cliff Swallow. In Oklahoma it usually breeds in colonies on cliffs, but at Gate it merits its other name of Eaves Swallow in nesting under the gables of barns.

(611) PURPLE MARTIN: *Progne subis subis*

Summer resident throughout the state except the southwestern corner; most numerous in southeastern Oklahoma where every cabin in the woods has a martin box.

Migration: Copan—Mar. 12, '17 (K<sup>1</sup>); Tulsa—Feb. 13, '28: Mar. 14:: Aug. 14, '27 (P<sup>2</sup>, G<sup>4</sup>, F); Norman—Mar. 7, '22: Mar. 22:: Aug. 18, '26, one bird Sept. 9, '20 (N); Bryan Co.—last seen Sept. 12, '83, first arrivals Mar. 5, 11 (C<sup>4</sup>); Ardmore—Feb. 19, '31 (R. Hutchinson).

Nesting: Tulsa—6 eggs June 5, '23 (M<sup>5</sup>); Norman—pair began to build Apr. 16, '20, 3 pairs of young birds arriving May 1, began to build May 8, they and their young left July 27; building began Apr. 7, '21 (N); Fort Reno—full sets of 4, 5,

and 6 eggs collected from porch of hospital May 26, '90 (M<sup>2</sup>); Kenton—rare, nest seen in a hollow tree June 9, '14 (T<sup>1</sup>).

Food: clover leaf and cotton boll weevils, stink bugs, leaf hoppers, grasshoppers, drone bees.

Purple Martins are the earliest risers of all our birds; I often depended upon them to wake me when I wanted to start by starlight on a trip to the Olivers' woods. Their numbers can be increased and their range extended by erecting suitable boxes for them. Besides all the pleasure they give by their happy twitterings and winning ways, they are materially useful by driving off hawks and by consuming enormous quantities of noxious insects.

## MAGPIES, JAYS, CROWS, ETC.: FAMILY CORVIDAE

### MAGPIES AND JAYS: Subfamily Garrulinae

#### (477) NORTHERN BLUE JAY: *Cyanocitta cristata cristata*

Resident throughout the state. At Copan more common in winter than summer; in Custer county it was only a winter resident in 1890.

Specimens: McCurtain—\*†June, '25 (O<sup>2</sup>); Tulsa—\*†Mar. 19, '27, \*†Dec. 9, '29 (F); Harmon and Texas Co.—\*†June '26 (L<sup>4</sup>).

Migration: Copan—last seen in numbers May 15, '16 (K<sup>1</sup>); Bryan Co.—flock of 18 flew over Oct. 18, '84, another flock Oct. 25; on Nov. 29, 150 seen in a 3 mile walk along the Blue river, rare throughout the winter (C<sup>4</sup>); Cleveland Co.—seldom seen in town during the winter, but found in flocks in woods near the Canadian; usually arrive in Norman from early March to mid April; migrants seen Sept. 18-Oct. 18 (N).

Nesting: Copan—4 eggs, Apr. 25, '14, pair building May 13, '16 (K<sup>1</sup>); Tulsa—eggs May 2-June 2 (G<sup>8</sup>, M<sup>5</sup>, P<sup>2</sup>); Cleveland Co.—building Apr. 30, '21; nest with young May 2, '26; young recently out of nest June 9, '23, July 20, '26 (N); Alva—6 eggs May 28, 5 eggs June 25, '10 (S<sup>8</sup>); Kenton—4 eggs June 21, '13 (T<sup>1</sup>);

Food: grasshoppers, beetles, caterpillars; mast, grain.

This handsome creature has the reputation of being a nest robber, but in the vicinity of Norman it seemed to lead a comparatively blameless life. Only twice did I see jays eating young birds (and one was an English Sparrow); once I was told of one killing a young dove. In Columbus, Ohio, Blue Jays arouse distrust and resentment among the other birds wherever they appear during the nesting season, but this was not true in central Oklahoma.

#### 480 WOODHOUSE JAY: *Aphelocoma californica woodhousei*

Common resident on mesas in Cimarron county.

Nesting: Cimarron Co.—"nest a platform of twigs in a pinyon, with three eggs, taken May 31, 1911 on Marselus Bros. ranch." (T<sup>1</sup>, '23:46).

Food: grasshoppers, caterpillars; pinyon nuts, acorns, eggs and nestlings.

Among the junipers, pinyons and scrub oaks of the mesas near Kenton lives the Woodhouse Jay—dull blue above with a brown back, and greyish below except for its throat which is striped with bluish grey. As early as August 25, 1926 they had gathered into large flocks. On his Christmas censuses Mr. Tate records flocks of twenty to forty of these birds. The Paiute Indians call this bird *wé ahk* from its harsh piercing cry.

#### (475) AMERICAN MAGPIE: *Pica pica hudsonia*

Resident in Cimarron county since 1919.

Nesting: Cimarron Co.—nested on Brookhart ranch in 1919 and each year afterwards; nested on Hamm ranch in 1927 (T<sup>1</sup>).

Food: grasshoppers, crickets, alfalfa weevils (181 and 204 had been eaten by 2 birds), codling moth, carrion, small birds and mammals.

In 1919 three pairs of "these loud voiced and extremely conspicuous birds" writes Mr. Tate ('27:244) "appeared on the A. L. Brookhart ranch nearly twenty miles east of the Oklahoma-New Mexico line and three miles south of the Oklahoma-Colorado line—approximately thirty miles east of their former known range. . . . The six magpies nested on the Brookhart ranch in 1919, and since that time the species has been permanently resident there, with the result that a flock of from fifteen to twenty or more is present the year around. During the nesting season it is possible to find from one to several nests in an hour's walk through the hackberry thickets along two spring fed creeks." On Oct. 20, 1927 Mr. Tate wrote me: "Magpies are found in a new location now. There are five or six around a ranch six miles southeast of Kenton, on Dry Canyon, on the C. W. Hamm ranch. They have been there since last winter and nested there this summer."

Mr. Lewis has seen this bird occasionally at Gate. We have no record of a specimen for the state.

#### RAVENS, CROWS, ETC.: Subfamily Corvinae

##### (486) AMERICAN RAVEN: *Corvus corax sinuatus*

Formerly resident throughout the state, abundant in the days of the buffalo; now rarely recorded in Cimarron county.

Records of Ravens and buffalo: 1820—buffalo in "immense herds" from western to central Oklahoma, less common in eastern Oklahoma, Ravens "common in all open plains," both recorded near mouth of North Canadian (James); 1832—buffalo found only in Oklahoma and Cleveland counties, Ravens mentioned in same places (Irving); 1839—flocks of Ravens; as to buffalo "the continual wanton slaughter of them by travellers and hunters, and the still greater havoc made among them by the Indians (for the market) . . . are fast reducing their numbers" (Gregg, '05:264); 1845—buffalo in western and central Oklahoma, last seen at Old Fort Holmes, western Hughes county; Ravens in Canadian Co. (Abert); 1850—Ravens "exceedingly abundant on the great prairies in the buffalo range;" as to the buffalo "this noble animal is from year to year fast diminishing in numbers, and its range, once so extensive, is now quite limited." (Woodhouse); 1850—Raven mentioned; "vast herds" of buffalo "were wont to roam" near Fort Arbuckle until within a very few years (Glisan); 1852—"multitude of ravens" in southwestern Oklahoma; deplors "rapid diminution" in number of buffalo (Marcy, '53:105); 1875—no Ravens seen in eastern Oklahoma (Kumlein); 1876—many Ravens in Texas Panhandle, no statement as to Oklahoma; many buffalo "slaughtered for their hides alone" (McCauley, '77:687); 1878—"The buffalo disappeared in Oklahoma about 1878" (E. E. Dale in letter). Marcy's account is the last mention of Ravens in Oklahoma for over 50 years; all recent records come from Cimarron Co.—3 pairs by Black Mesa, specimen taken \*May, '08 (T<sup>1</sup>); 1 June 11, '18 (T<sup>1</sup>);—1 Aug. 27, '26 (N);—1 Oct. 27, 1 Dec. 25, '29 (T<sup>1</sup>).

Nesting: Cimarron Co.—3 nests seen on side of Black Mesa May 21, '08 (T<sup>1</sup>, '23:46).

Food: carrion, grasshoppers, locusts, young birds and eggs.

"With the buffalo also disappeared the countless flocks of ravens, a beautiful glossy bird, larger and much handsomer and smarter than the crow" wrote J. R. Mead ('98:280) of conditions in western Kansas from 1850 to 1869. "Thousands of ravens were killed by eating our baits or the viscera of wolves we had poisoned." Here seems to lie the explanation of the practically complete disappearance of this once abundant bird from Kansas and Oklahoma—the extermination of the buffalo on

whose carcasses it fed, and the unintentional, yet wholesale, poisoning by cattlemen. The Vultures were able to adapt themselves to the new conditions, but the Raven could not.

On October 6, 1845 in what is now Canadian county, Lieut. Abert's party encountered a heavy rain. "The gloom of the day has been increased by the ill-boding croakings of a number of ravens (*Corvus corax*), which appear to have a decided fondness for hovering over our camp. The poet could not well find a more suitable object by the means of which he might increase his representations of the terrible, than these birds offer, with their sombre plumage and sinister voice" (46:64). Gregg mentioned how flocks of ravens "follow in the wake of caravans with even greater constancy than wolves." On June 7, 1852 along the North Fork of Red river Capt. Marcy "observed a pack of wolves in company with a multitude of ravens, making merry over the carcass of the buffalo we had killed in the morning" ('66:133).

Lieut. McCauley well describes one of the preferred habitats of this bird—the Staked Plains fifty-five years ago. "As may be imagined, this most striking of the Corvidae was frequently seen. No place could be found that would better suit its preferences for a habitat than the great Llano Estacado. Fearfully monotonous, and with solitude as its main characteristic, rarely crossed by man, save in a few portions where the marches may be made to strike water, it is perfectly congenial to the Raven, offering adequate sustenance in the carcasses of animals that are often too numerous to be pleasant to the traveller." ('76:669).

(487) WHITE-NECKED RAVEN: *Corvus cryptoleucus*

Rare resident in southwestern Oklahoma and Cimarron county.

Records: McAlester—a pair seen several years before 1880 (Goss, '91:383); Indian Territory—\*May 21, '80 taken by "Tichkemaste," now in National museum; Cimarron Co.—rare resident, 3 seen June 1, '09 (T<sup>1</sup>); occasionally seen in 1913 (S<sup>3</sup>); Harmon Co.—3 July 5, '23 (N); Jackson Co.—3 March 27 (L<sup>4</sup>).

Nesting: western Oklahoma—3 eggs Pond Creek June 12, '60, 4 eggs Corral creek June 12, '60 (M<sup>1</sup>); these sets are still in the National museum; a set of 5 eggs from Trout creek June 20 could not be found; Cimarron Co.—nest in a scrubby mesquite on Currumpaw creek June 1 '09 (T<sup>1</sup>, '23:46).

Mr. R. L. More wrote me in 1922 from Vernon, Texas, 8 miles south of Oklahoma opposite Tillman county, "White-necked Ravens are here by the thousands, and figuratively speaking, nearly every mesquite tree has a nest. In the winter time I have seen as many as 1000 in the city limits of Vernon." It is curious that they are so rare in Oklahoma.

(488) EASTERN CROW: *Corvus brachyrhynchos brachyrhynchos*

Summer resident in eastern and central Oklahoma as far west as Woods, Comanche and Tillman counties.

Specimens: Tulsa—\*†Nov. 8, '27 \*†Mar. 4; '30 (F); Cleveland Co.—\*†Apr. 27, '03 \*†May 17, '22 (U. O. M. Z.); Murray Co.—\*†June 12, '24 (U. O. M. Z.).

Nesting: Vinita—5 eggs Mar. 21, 7 eggs May 21, '12 (K<sup>1</sup>); Copan—full sets Mar. 20, young left nest May 9, '16; 4 nests with 5 eggs each Mar. 30-Apr. 20, '17 (K<sup>1</sup>); Tulsa—eggs Mar. 17-Apr. 20 (M<sup>5</sup>, P<sup>2</sup>):—6 eggs Mar. 5, '28 (G<sup>3</sup>); Cleveland Co.—4 downy young Mar. 28, left nest by Apr. 24, '20 (N).

Food: grasshoppers, beetles, caterpillars, nestlings and eggs; grain, pecans.

"This is perhaps the most generally known, and least beloved, of all our land birds;" wrote Alexander Wilson, "having neither melody of



song, nor beauty of plumage, nor excellence of flesh, nor civility of manners, to recommend him." Crows are common nesting birds in eastern Oklahoma, fairly common in central Oklahoma, but rare in western. Mr. Lewis wrote in 1921 that he had seen only two in twelve years at Gate. Wm. E. Hoffman notes an increase in northeastern Grant county "Up to 1912 or 1913 crows were not numerous in this locality and were seldom seen during the summer. About this time, however, they became more noticeable during the summer months and an occasional nest was found." ('24:176).

(488b) WESTERN CROW: *Corvus brachyrhynchos hesperis*

Abundant winter resident in central Oklahoma.

Specimens: Cleveland Co.—7 birds from \*†Feb. 20 to \*†Mar. 7 (Oliver); McClain Co.—\*†Jan 11, '30 (B<sup>5</sup>); Arbuckles—\*†Jan. '14 (C<sup>5</sup>). Whether the eastern or western form occurs in eastern Oklahoma in winter has not been determined.

Migration: Cleveland Co.—large flocks from the last of October to the last of March, earliest record 17 seen Oct. 5, '23 (N); Beaver Co. 1 May 3, '13 (T<sup>1</sup>); Cimarron Co.—1 June, '03; 25 came to O. W. Tucker ranch 7 miles northwest of Kenton Oct. 15, '25 and stayed 6 weeks (T<sup>1</sup>).

The wily crow has thriven under civilization and Oklahomans will agree that there are now far too many of this species. It has been recorded on every one of the Christmas censuses from eastern, southern and central Oklahoma; from 1 to 50 in eastern Oklahoma, averaging 10 to a census; from 11 to 1800 in Cleveland county, an average of 700 to a census; and 400, 20,000 and 50,000 in Oklahoma county.

Most of the winter roosts are located in central Oklahoma from Grant and Kay counties down to Jefferson county; the farthest west being Blaine county (Sanborn, '19); there are also roosts in northeastern Oklahoma in Craig and Ottawa counties.

In northern Oklahoma crows have become a serious pest in pecan orchards. Mr. Wm. E. Hoffman in an interesting article ('24) tells how "they become numerous about two weeks before the ripening of the pecans (middle October) and commence carrying away the green nuts" in Grant county. "They arrive at the pecan groves before sunrise, while it is still too dark to see the sights on a gun, and settle on the trees." Each crow takes a pecan and leaves the grove, returning in half to three-quarters of an hour for another; the flock then travels southeast for about five miles when they begin to scatter and feed. "The major portion of the flock worked its way in a general southeasterly direction. By noon they would be some fifteen miles from the grove, or eighteen miles from the roost." About three in the afternoon the crows changed their general direction of flight to the northwest, and about four reached the grove for another pecan on their way to their sleeping quarters.

"In order to save the pecan crop it is necessary to commence patrolling the grove about two weeks before the pecans are ready to harvest. Shooting at this time does not cause them to leave the grove, but only to move to another part of it. It takes about an hour of walking and shooting to get them to abandon the pecans. Later they will attempt to come back, and another shot or two is necessary. As the season advances they are more easily discouraged and a few shots early in the morning will drive them out for the day. In the evening when they return a few

shots at the first crows will cause the main flock to detour, or go higher, flying across the grove without attempting to pilfer the nuts. . . . During those seasons when the pecan crop is not sufficient to warrant the time and expense of fighting the crows, and they are accordingly unmo'lested, they soon learn to spend the entire day in the pecan grove. On such occasions the crows are in all their glory, and remind one of an old-fashioned, last-day-of-school basket dinner." ('24:176-182).

Crows are a serious economic problem in Oklahoma and also on their northern breeding grounds where they destroy the eggs and young of waterfowl, game and song birds. Vast numbers have been killed in Oklahoma: 10,000 in one week near Chickasha in February, 1926, 11,000 in Payne county during the winter 1927-28, 3692 in two nights by means of dynamite near Vinita in January, 1929, according to the newspapers; but vast numbers remain.

Prof. C. E. Sanborn of A. and M. college, who has made a special study of the situation wrote me in January 1930: "The Izaak Walton Leagues of Oklahoma have lessened the number of crows somewhat and have apparently caused the main body to have a tendency to migrate farther southwest. In some instances dynamite has been used to good advantage, but the use of this depends on the terrain of the roosting quarters. Ordinarily it cannot be depended upon as a safe method. The best means that we have for combatting it is through the use of the automatic shotgun at night in its roosts."

Banding has given three interesting returns. A crow banded by Prof. Sanborn at Stillwater on Jan. 2, 1923 was taken Apr. 15 the same year at Woodstock, Minn. (Lincoln, '24). One banded at Indian Head, Sask., June 23, 1924 was taken at Lexington (Cleveland Co.) Jan. 21, 1925 (Lincoln, '27). An immature bird banded at Treesbank in western Manitoba by Dr. Bird was killed at Pond Creek (Grant Co.) Jan. 15, 1927.

(492) PINYON JAY: *Cyanocephalus cyanocephalus*

Resident in Cimarron county; irregular fall and winter visitant in western Oklahoma.

Migration: Gate—occasional visitor, about 20 came Sept. 22, '26 (L<sup>2</sup>); Canadian Co.—great numbers in post oak canyons of southwestern portion in fall '14 (C<sup>5</sup>); Wichitas—vast flocks appeared Mar. 14, disappeared Apr. 6, '04 (G<sup>2</sup>); present in 1910; Oct.-Dec. '14 (C<sup>6</sup>).

Nesting: Cimarron Co.—nest 8 feet from ground in cedar on top of mesa with 2 young and 1 egg June 1, '22 (Constance Nice).

Food: pinyon nuts, juniper berries, hackberry, grain, seeds, grasshoppers.

"Blue Squawkers" come to Gate in flocks of two or three hundred, according to Dr. A. Dugans; they arrive in fall and stay all winter, eating hackberries. He believes they come during hard winters. The jitney driver from Forgan to Liberal, Kansas, told us that "Mountain Jays" sometimes come into Beaver county in large numbers and then they will not be seen for years.

At times these birds nest in colonies, as many as three nests being found in one tree in Oregon (Braly, J. C. *Condor*, 33:29); the females incubated while the males fed in a large flock one-fourth to three-fourths of a mile away, returning at intervals to feed their mates by regurgitation.

## TITMICE, CHICKADEES, ETC.: FAMILY PARIDAE

## TITMICE AND CHICKADEES: Subfamily Parinae

(735a) LONG-TAILED CHICKADEE: *Penthestes atricapillus septentrionalis*

Winter visitant in northeastern Oklahoma.

Migration: Tulsa—winter visitor, specimen taken (K<sup>3</sup>); Creek Co.—common in winter (B<sup>3</sup>).

The Black-capped and Long-tailed Chickadees are hardly distinguishable from the Carolina and Plumbeous Chickadees except by the notes; the *phoebe* song is given singly by the former species, doubled by the latter. Miss Clara Bates has well described the difference in their other notes, in a letter telling of the Plumbeous Chickadees in Oklahoma City: "It is interesting to compare their 'lispings numbers' to my old familiars, the Black-capped Chickadees,—all their *d*'s are *s*'es. The softer spirit of the south seems to have affected their vocal impulses. The dear little song with its minor inflections would never be recognized by its northern relatives. The Black-cap's emphatic *Chic!* and their little drum beating *Dee! Dee! Dee!* is a part of crisp cold and the snapping sound of icy branches."

(736) CAROLINA CHICKADEE: *Penthestes carolinensis carolinensis*

Resident in eastern Oklahoma, winter visitor in Tulsa and Okmulgee counties.

Specimens: Ottawa Co.—\*†July 19, '29 (B<sup>5</sup>); Adair Co.—\*†Apr. 1, '97 (L<sup>5</sup>); Leflore Co.—\*†June '27 (W<sup>4</sup>); Pushmataha Co.—1 at Kosoma \*†June 24, '29 (B<sup>3</sup>); Tulsa—\*†Feb. 2, '27 (K<sup>3</sup>); Okmulgee—\*†Nov. 29, '25 (F).

Nesting: Vinita—5 eggs in Downy hole Apr. 14, '12 (K<sup>1</sup>).

Food: eggs and pupae of noxious insects, coddling moth, tent caterpillars, plant lice, scale insects, stink bugs, tree hoppers.

This little chickadee has a great variety of notes, but nothing corresponding to the song of most Passerine birds; even the *phoebe phoebe* song is given a t all seasons of the year and by both sexes.

(736a) PLUMBEOUS CHICKADEE: *Penthestes carolinensis agilis*

Resident in central Oklahoma from Tulsa and Hughes to Woodward and Jackson counties.

Specimens: Tulsa—\*†Apr. 16, '22 (P<sup>2</sup>);—\*†Feb. 5, '29 (G<sup>3</sup>); Creek Co.—\*†Dec. 19, \*†28, '21 (L<sup>4</sup>); Hughes Co.—\*†July '27 (W<sup>4</sup>); Cleveland Co.—\*†May 17, '22 (N); Fort Cobb—\*†May 26, '60 (M<sup>1</sup>); Camp Supply—\*†Mar. 8, '78 (K<sup>2</sup>).

Nesting: Copan—7 eggs Apr. 7, 6 eggs Apr. 11, 8 eggs Apr. 19, '13; 7 eggs Apr. 3, 9 eggs Apr. 18, '16 (K<sup>1</sup>); Tulsa—1 set of 4, 5, 7, and 8 eggs each, 8 sets of 6 eggs Apr. 5-20 (P<sup>2</sup>); Cleveland Co.—building Mar. 9, 30, young being fed out of the nest May 13, 14, '27, May 27, June 1, '26 (N).

In Norman the Chickadees were among the most charming of our feeding shelf guests, announcing their arrival with a cheery *peep*, enjoying everything we had to offer except raisins, but fondest of sunflower seeds and nuts, sometimes taking baths in the water dish in January. In 1921-22 a pair came from Dec. 9 to Mar. 11; the next winter a pair (which I banded) visited us from October to Feb. 4, but were never seen afterwards, a new pair coming from Feb. 17 to Mar. 4. In 1923-24 a pair were with us from Nov. 23 to Mar. 23, after that a single bird coming till May 21, one of the pair perhaps having come to its end. In

1925-26 a lone bird that I banded visited us from Nov. 3 to Jan. 8, but was never seen later; a pair the male of which I banded came from Nov. 28 to Apr. 8, nested in a neighbor's wren box, and patronized us the next winter from Sept. 20 to May 27 (since the female was not banded I cannot be sure that she was the same bird). Another pair also came that winter from Dec. 8 to Mar. 12. These little birds are so friendly, so full of individuality and have so many different notes and pretty ways that they afford a most promising subject for a careful life history study.

Chickadees are rare in northwestern Oklahoma. In Woods county they were reported as fall and winter visitors (C<sup>2</sup> & T<sup>2</sup> '08:12), but Dr. Bird observed them there in July 1930. Mr. Lewis' only record at Gate is a single bird Jan. 30, 1927.

(731) TUFTED TITMOUSE: *Baeolophus bicolor*

Resident in eastern and central Oklahoma as far west as Woodward, Custer and Comanche counties, rare in Woods county.

Nesting: Copan—eggs found from Apr. 7-29, 5 to 7 in a set 9 to 30 feet from ground: one nest made of strips of bark, hair and snake skin; one in a redbud 2½ feet above a Chickadee's nest; in one nest 3 of the five eggs were sterile, the female refused to leave but fluttered around and fought till eggs were completely covered with nest material (K<sup>1</sup>); Cherokee Co.—female gathering nesting material while the male accompanied her with happy notes on every trip May 7, '23 (N); Cleveland Co.—building Mar. 18, 40 feet from ground, building Mar. 29, 30, '27 in a cavity 3 feet from ground (N); Arbuckles—building Apr. 22, '27; feeding young June 6 and 7, '26 (N).

Tufted Titmice are birds of character and originality. They possess a large repertoire of calls given by both sexes, but nothing that seems to answer to a real song. Dr. Cooke (14b:492) found them near the Blue river noisy in November, silent in January, and vociferous in March. For the most part they frequent woods, but wander along creeks and into towns to some extent in fall, winter, and spring.

In the Wichita Reserve June 6, 1926, we discovered we had fastened our tent to a black jack in a cavity of which five fully feathered titmice were housed; happily the parents accepted the situation with equanimity. I watched the nest from 2 to 4 p. m. the first day, from 10:40 to 12:10 the next. Despite the hot weather mother Tit brooded 3 and 8 minutes the first day, 8 and 15 the next, father in the meantime giving the food he brought to her. Both birds kept their crests depressed, both often twitched their wings—the female more than her mate—and both used a great variety of notes. During the first two hours 18 meals were given, during the last hour and a half, seven.

Mr. Kirn had a unique experience near Copan while quietly watching a titmouse carry material to a dead tree. "The bird left the nest and flew down straight toward me but lit on an old sprout and then on my arm after fluttering in front of my face. I held up my hand to shade my face; she pecked on my sleeve, then flew to the top of my felt hat and pecked a mouthful of material from it."

(733a) GRAY TITMOUSE: *Baeolophus inornatus griseus*

Uncommon winter visitant in Cimarron county.

Migration: Cimarron Co.—Jan. 6, '20, 6 Dec. 22, '22, 3 Jan. 1, '23, 1 Jan. 1, '30 (T<sup>1</sup>). A specimen taken (T<sup>1</sup>).

This entertaining titmouse with its soft grey coloring has been seen both on the C. F. Rowen ranch and at Kenton, where it eats the weed seeds at Mr. Tate's feeding shelf. ('25c:35).

BUSH-TITS: Subfamily Psaltriparinae

(744) LEAD-COLORED BUSH-TITT: *Psaltriparus plumbeus*

Resident in west end of Cimarron county.

Specimen: Cimarron Co.—\*July 5, '26 (L<sup>4</sup>).

Nesting: Cimarron Co.—a nest under construction on H. C. Labrier ranch June 7, '20 (T<sup>1</sup>).

We first met three of these tiny birds on top of the mesa near Kenton June 1 and 2, 1922, but to our disappointment could find no trace of the elaborate nest. In 1926 we saw them only once—a company of six August 27.

NUTHATCHES: FAMILY SITTIDAE

SUBFAMILY Sittinae

(727) WHITE-BREASTED NUTHATCH: *Sitta carolinensis carolinensis*

Resident in wooded districts throughout eastern Oklahoma except as noted under the Florida Nuthatch; it breeds as far west as Kay, Pawnee, Creek and Murray counties. Rare visitor in central Oklahoma—Oklahoma Co.—1 May 14, '24, a few the next winter, (S<sup>1</sup>): Cleveland Co.—1 Jan. 16 '22, 1 Apr. 5, '23 (N).

Specimens: Ponca Agency—\*†Aug. 3, '92 (P<sup>3</sup>): Tulsa—\*†Feb. 16 '27 (K<sup>3</sup>): Okmulgee—\*†Nov. 29, '25 (F): Arbuckle—\*†Jan. '14 (C<sup>5</sup>): \*†June 30, '20 (N); Pittsburg Co.—\*Aug. '92 (P<sup>3</sup>): Pushmataha Co.—3 miles east of Tuskahoma, \*†July 18, '25 (O<sup>2</sup>): McCurtain—2 miles north of Broken Bow \*†July 7, '25 (O<sup>2</sup>).

Nesting: Copan—"earliest woods nesting bird," usual time of nest building Mar. 10; full sets Mar. 21-30; eggs, 6-8; height from ground of 6 nests 38 to 65 feet, one nest 13 feet (K<sup>1</sup>): Tulsa—eggs Mar. 26-27 (P<sup>2</sup>).

Food: wood boring beetles and scale insects; ragweed, wild sunflower seeds, nuts; 1629 eggs of the fall canker worm were found in one stomach.

This amusing little bird with its nasal *yank yank* and its proficiency in running down a tree head foremost is called by Forbush "the particular guardian of the deciduous trees." Mr. Kirn who had much experience with this species in Copan often noted the male carrying food to his sitting mate. In one case the same cavity was used two years in succession.

(727b) FLORIDA NUTHATCH: *Sitta carolinensis atkinsi*

Resident in eastern McCurtain and LeFlore counties.

Specimens: LeFlore Co.—\*†June 21, '27 (W<sup>4</sup>): McCurtain Co.— Mountain Fork about 20 miles north of Broken Bow \*†June 30, '20 (N).

Curiously enough a nuthatch taken two miles north of Broken Bow has been identified by Dr. Oberholser as the northern form. In regard to this he wrote, "This fits in with the distribution of the two races in Texas, where the ranges are very peculiar." The range of the northern bird goes down into the middle of the state, while the southeastern nuthatch is found in the northeastern corner of Texas, "running diagonally southwestward toward the center of Texas."

(728) RED-BREASTED NUTHATCH: *Sitta canadensis*

Rare transient.

Migration: Tulsa—1 Apr. 30, '24 (K<sup>3</sup>);—1 Apr. 12, '30 (F); Logan Co.—

"twice during the winter of 1899-1900 I saw and once collected this species near a small creek northeast of Guthrie" (S<sup>8</sup>, in letter); Cleveland Co.—1 seen on campus May 13, '24 (N).

The Red-breast is a handsome little bird, more brightly colored than the White-breast, with a black stripe through the eye. Its call note—a nasal *ank ank*—is higher pitched than that of the larger bird. Its migrations are very irregular.

(730) PYGMY NUTHATCH: *Sitta pygmaea pygmaea*

Uncommon winter visitant in Cimarron county.

Migration: Cimarron Co.—several seen, 1 taken \*Dec. 10-13, '13; 2 Dec. 25, '28; 5 Dec. 25, '28; 5 Dec. 25, '29 (T<sup>1</sup>).

On Dec. 10, 1913 Mr. Tate watched one of these funny little birds take suet from the feeding shelf and cache it between the wood and dry bark of a tree. (T<sup>1</sup>, '23:50).

(729) BROWN-HEADED NUTHATCH: *Sitta pusilla pusilla*

Rare resident in the pine forests of southeastern Oklahoma.

Records: Pushmataha Co.—1 July 6, '20 (N, '21d).

There is only the one record for this small nuthatch here at the western border of its range—one bird seen by me on a yellow pine near Cedar creek; we could find none in McCurtain county in 1923, nor did the Ortenburger party meet with it in southeastern Oklahoma in 1925. No specimen has been taken.

CREEPERS: FAMILY CERTHIDAE

SUBFAMILY Certhinae

(726) BROWN CREEPER: *Certhia familiaris americana*

Uncommon winter visitant.

Migration: Copan—Oct. 20-Apr. 10 (K<sup>1</sup>); Tulsa—Oct. 15-Apr. 15 (K<sup>3</sup>); Bryan Co.—appeared Nov. 29, '83, uncommon until Feb. 23, abundant for a few days then all disappeared (C<sup>4</sup>); Oklahoma City—first seen Oct. 12, '25 (S<sup>1</sup>); Cleveland Co.—Oct. 14-Apr. 9, never common (N); Alva—common bird in winter (C<sup>2</sup> & T<sup>2</sup>).

Specimens: Canadian Co.—\*†Dec. 25, '13 (C<sup>5</sup>), Tulsa—\*†Mar. 10, '27 (K<sup>3</sup>).

Food: beetles, sawflies, spiders, weevils, grasshoppers; pine seed.

This inconspicuous little tree climber is best discovered by its note—a fine *tseep*—like a Golden-crowned Kinglet's or Cedar Waxwing's; it is forever ascending tree trunks or else flying to the base of another to start over again. It has been recorded on only nine of the 29 Christmas censuses, six of the records coming from central Oklahoma; in Cleveland county it was found on but three of the eight censuses, one, two and three birds respectively during the all day trips.

The birds reported in the Panhandle—single birds May 28, 1922 at Texhoma (N), Jan. 11, 1920 and Dec. 25, 1929 in Cimarron county (T<sup>1</sup>)—may have been Rocky Mountain Creepers (*Certhia familiaris montana*).

WRENS: FAMILY TROGLODYTIDAE

(721a) WESTERN HOUSE WREN: *Troglodytes aedon parkmani*

Transient throughout the state, sometimes nesting in northern Oklahoma.

Migration: Copan—Apr. 26-May 5, '17, scarce (K<sup>1</sup>); Tulsa—Apr. 20-May 18, Aug. 10, Oct. 12, '24, Apr. 20, '26 (K<sup>3</sup>); Cherokee Co.—a few May 5-6, '23 (N);

Cleveland Co.—Apr. 16, '24; Apr. 20: May 12; May 28, '27; Oct. 14, '26; Oct. 16: Oct. 19; Oct. 23, '26; singing heard Apr. 29, May 3, '23; Apr. 21–May 16, '24, Apr. 22–24, May 5, Oct. 14, '26 (N); Gate—rare visitor (L<sup>2</sup>); Texhoma—1 May 28, '22 (N); Kenton—1 or 2 seen July 16 (first seen in two years), Aug. 25, Sept. 7, '25; June 15, July 17, Aug. 21, '26 (T<sup>1</sup>).

Nesting: there are breeding records from only 4 localities: Tulsa—pair nested early in June, '22 (Gabriella Pratt);—7 eggs, May 7, '27 (M<sup>5</sup>); Enid—1 or 2 nested sometime before 1923 (W<sup>6</sup>); Norman—only record from central Oklahoma, 8 fresh eggs, May 21, '24, parents disappeared after eggs were laid (N); Kenton—a nest without eggs June 1, '18 and 1 young bird not long out of the nest June 25, '20 (T<sup>1</sup>).

Fortunately the House Wren is rare in Oklahoma as a nesting species; may it always remain so. In southern Illinois sixty years ago "Bewick's Wren was the House Wren of the entire region" wrote Robert Ridgway in the January 1905 *Bird-Lore*; since then the House Wren has come in "and wherever it has chosen a home, Bewick's Wren is forced out, for Troglodytes will not brook the presence of any species, Wren, Chickadee, Titmouse, or Nuthatch, which requires similar nesting-sites." Not only that, but it destroys the eggs of Bluebirds and of many small birds that build open nests—sparrows, vireos and warblers.

If a wren with no light line over the eye, and no white across the tip or along the sides of the tail, and with a bubbling, gurgling song in descending scale—if such a wren shows an interest in your bird box, discourage him by every means in your power.

#### (722) EASTERN WINTER WREN: *Nannus hiemalis hiemalis*

Rare winter visitant.

Migration: Copan—last seen Apr. 7, '17 (K<sup>1</sup>); Tulsa Co.—1 Dec. 27, '28 (F);—4 Jan. 14, '28 (G<sup>3</sup>);—1 Feb. 6, '05 (G<sup>2</sup>); 1 Mar. 2, '24 (K<sup>3</sup>); Bryan Co.—rare, seen from Nov. 29–Mar. 25, '84 (C<sup>4</sup>); Arbuckles—1 Mar. 31, '29 (B<sup>5</sup>); Cleveland Co.—1 Dec. 23, '22, 1 Jan. 24, '23 (N); Oklahoma City—1 Dec. 26, '27 (S<sup>1</sup>); Gate—5 Jan. 30, '27 (L<sup>2</sup>).

Specimen: Cleveland Co. or Arbuckles—\*†Nov. '13 (C<sup>5</sup>).

This smallest of all the wrens has been recorded on only three of the Christmas censuses, one each from eastern, southern, and central Oklahoma respectively. The extremely short tail often carried high over the back, the dark underparts, and buffy line over the eye distinguish it from the House Wren; it also has a habit of extravagant bobbing which serves to identify it, and a loud cackling scold.

#### (719c) TEXAS WREN: *Thryomanes bewicki cryptus*

Common resident throughout central Oklahoma, uncommon resident in northeastern and northwestern Oklahoma as far west as Woodward county; summer resident in Cimarron county.

Range: Recorded in Delaware, Mayes, Cherokee, Washington, Tulsa, Creek, Okmulgee, and McIntosh counties; Bryan Co., all the central counties from north to south as far west as Tillman, Comanche (where it is abundant), Caddo, Blaine, Woodward, and Woods counties. At Gate it is seen occasionally.

Specimens: Tulsa—\*†Sept. 19, '27 (K<sup>3</sup>); Okmulgee—\*†spring, \*†Dec. \*†Feb. (F); Pottawatomie Co.—\*†June 15, '01 (B<sup>6</sup>); Cleveland Co.—\*†Nov. '13; Canadian Co.—\*†Dec. '13 (C<sup>5</sup>); Blaine Co.—\*†July 2, '01 (B<sup>6</sup>); Cimarron Co.—\*†July 5, '26 (L<sup>4</sup> '30). The form on the eastern border may be *T. b. bewicki*, but no specimens are available.

Nesting: Osage Co.—nest with 8 eggs in end of pipe in engine house Apr. 21, '10 (K<sup>1</sup>); Tulsa—eggs Apr. 20–June 9 (P<sup>2</sup>); Cleveland Co.—building usually Mar. 15–19, in 1921 2 nests were built in late February, but eggs not laid till late March, 7 young hatched in one nest Apr. 16, left Apr. 30 and May 1, the parents herding

them into an old Mockingbird's nest the night of May 2 and into the woodpile May 4, still feeding them May 9, female began to lay again in same nest May 12 (N); Wichita—several broods recently out of the nest June 9-16, '20, 2 nests with eggs, 2 with newly hatched young, one in a cow skull (N).

Food: cotton boll weevils, engraver beetles, leaf beetles, leaf bugs, stink bugs, leaf hoppers, plant lice, scale insects, grasshoppers.

We are indeed fortunate in Oklahoma in the fact that our house wren is the altogether desirable Bewick Wren—a delightful singer the year around and a peaceful neighbor. It is an adaptable bird, found in woods, ravines and thickets as well as around houses. Its song resembles somewhat that of the Song Sparrow, it is sweet and very variable. In May 1926 I recorded ten different types of songs given by one bird on our grounds. When thoroughly in the spirit of it, a bird may sing as often as ten times a minute, but he does not keep up this rate for long. The largest number of songs I ever counted in one hour was 223.

On Apr. 18, 1926 a pair of Texas Wrens were building with great enthusiasm in one of our bird boxes; in three and three-fourths hours they made 239 trips—slightly more than one a minute. Their best record was 20 trips in six minutes. Both labored most of the time. The male was so busy that he only sang 17 songs during the period I watched. Two sample minutes will give an idea of their energy.

9:49. Both wrens coming to box, one goes in with a big twig, other says *jee, jee, jee*, gives its twig to the bird inside, leaves, is back with a rag which it pushes part way in, saying *jee, jee*, leaves.

1:57. Bird goes in with dead leaf, out again; other goes in with grass root, out; first enters with dead grass, out; other in with twig, out.

These lovely birds should be encouraged and protected in every way. When they adopt a box, they usually stay in the vicinity the whole year, so that not only in the nesting season does their host have the pleasure of their company and happy songs, but throughout the winter too.

#### (718) CAROLINA WREN: *Thryothorus ludovicianus ludovicianus*

Resident throughout eastern and central Oklahoma as far west as Kay, Payne, Cleveland, Caddo, and Comanche counties: it is abundant in the southeastern portion of the state.

Nesting: Copan and Vinita—16 nests with fresh eggs from Apr. 4 '10 to July 9, '17; 3 had 6 eggs, 5 had 5 eggs, 2 had 4 eggs, 1 had 3 young; 2 had 4 Wren and 1 Cowbird egg each, 1 had 3 eggs and 1 Cowbird egg, only the latter hatching, the others being sterile; 1 had 2 Wren eggs and 3 Cowbird (K1); Tulsa—eggs Apr. 8, June 21, July 9. (P<sup>2</sup>); Arbuckles—bulky nest with 7 eggs in corner of porch Apr. 23, '27 (N).

Food: cotton boll weevil, bean leaf, cucumber and flea beetles, stink bugs, chinch bug, grasshoppers, crickets, caterpillars, moths.

This large and handsome wren frequents woods and creek beds in most of Oklahoma, but in Blackwell it sometimes comes into town and nests in gourds. Singing is heard throughout the year. Each bird sings many different songs, all of which are loud and vehement. The bird declaims with energy for a few minutes giving from 6 to 13 songs a minute and then stops for a while. Here are a few of the songs I recorded in Oklahoma: *Per-dééde per-dééde per-dééde; túrtree túrtree túrtree tót; per-chít per-chít per-chít; whiddlely whiddlely whiddlely whée.*



(725c) WESTERN MARSH WREN: *Telmatodytes palustris plesius*

Transient in the Panhandle.

Record: Beaver river—1 taken Oct. 10, '89 by Richardson (Ridgway, '04:494).

This Western Marsh Wren perhaps was migrating from a summer home in western Colorado to a winter home in central Texas.

(725d) PRAIRIE MARSH WREN: *Telmatodytes palustris iliacus*

Uncommon transient.

Migration: Copan—May 3-9, Aug. 2-Oct. 20, '16, May 1-5, '17 (K<sup>1</sup>); Fort Reno—Mar. 24, '90 (M<sup>2</sup>); Oklahoma City—Apr. 14, \*†Apr. 23, May 21, '28 (S<sup>1</sup>); Cleveland Co.—1 Mar. 30, Apr. 5, '23 (N); Camp Supply—\*Mar. 12, '78 (K<sup>2</sup>).

This subspecies of the Long-billed Marsh Wren may be known by its blackish-brown unstreaked head, white line over the eye and black patch streaked with white on the upper back. The song is bubbling and rapid, somewhat on the order of a House Wren's.

(724) SHORT-BILLED MARSH WREN: *Cistothorus stellaris*

Rare transient.

Migration: Woods Co.—specimen taken near 21 Crossing in 1912 (S<sup>3</sup>, letter); Cleveland Co.—2 seen, one heard singing near the South Canadian Apr. 25, '26 (N); Love Co.—2 taken "at Big Lake where they were common" \*Sept. 16, \*18, '79 (R<sup>1</sup>).

The Short-billed Marsh Wren is distinguished from the Long-billed by its streaked head and upper back and the absence of a white line over the eye. The song is a rather absurd affair, grating and mouse-like.

(717a) CANYON WREN: *Catherpes mexicanus conspersus*

Summer resident in the Wichita Mountains and Cimarron County.

Nesting: Cimarron Co.—nest with 3 eggs found on H. C. Labrier ranch June 11, '20 (T<sup>1</sup>, '23: 50);—nest with 4 eggs 15 feet back from entrance to a cave July 5, (A. I. Ortenburger); Wichitas—nest with 2 newly hatched young in crack in face of cliff June 6, '29 (B<sup>5</sup>).

Strangely enough there was no record of this wren in the Wichitas until Maj. E. A. Goldman took a specimen there in 1921; it had not been found by Mr. Gaut in 1904, nor the Baileys in 1905 nor by us in 1920. We first heard it there in 1923 on Elk Mountain; in 1929 we heard two not far from Camp Boulder. In Cimarron County we did not find it in 1922, but heard it Aug. 25, 1926 on the mesa south of Kenton where we had studied birds four years before; we also heard it Aug. 27 on the W. O. Cochran ranch south of the Texakite. The wild and lovely notes, dropping down the scale, find their perfect setting in the strange rugged beauty of the western canyons.

(715) ROCK WREN: *Salpinctes obsoletus obsoletus*

Summer resident in rocky localities in western Oklahoma.

Summer records: Wichita Mountains in Comanche and Jackson Cos. (C<sup>5</sup>); Washita Co.—\*July 10, '01 (B<sup>6</sup>); Woodward Co.—gyp hill region (C<sup>2</sup> & T<sup>2</sup>); Woods Co.—Edith Salt Plain, July, '30 (B<sup>5</sup>); Cimarron Co.—\*June 30, \*July 5, '26 (L<sup>4</sup>).

Migration: Wichitas—Apr. 10, '05 (C<sup>2</sup>); Norman—1 at brick kiln Apr. 7, '20 (H. Hefly),—1 at Snail Brook Oct. 5, '21 (N); Tulsa—1 seen about an abandoned pile of building stone June 8, '26 (K<sup>3</sup>).

Nesting: Cimarron Co.—nest with 2 eggs and 1 young bird June 13, '18 (T<sup>1</sup>),—feeding young out of the nest May 29, '22 (N).

This absurd little dweller on crags and boulders possesses a number of harsh, grating, curious vocalizations which are vastly appropriate to his environment. "Kerée Kerée Kerée" he says, "Chair chair chair chair, Deedle deedle deedle deedle, Tur tur tur tur, Kerée kerée kerée trrrrrrrrrrrrr. His

greys blend perfectly with the rocks, but how could a wren stand still long enough for effective camouflage with his surroundings? I believe he depends on popping into crevices to escape from his enemies.

#### THRASHERS, MOCKINGBIRDS, ETC: FAMILY MIMIDAE

The four species of this family in Oklahoma have long tails, short wings, and grey or brown coloring. All are fine singers.

##### (703) EASTERN MOCKINGBIRD: *Mimus polyglottos polyglottos*

Common summer resident in eastern Oklahoma, a few wintering.

Specimens: Tulsa—\*†Jan. 12, '30 (G<sup>3</sup>); McCurtain Co.—\*†July 2, '23 (N) Choctaw Co.—\*†July 11, '25 (0<sup>2</sup>); Murray Co.—\*†June 4, \*†28, '24 (Hefley); Cleveland Co.—\*†Dec. 9, '21.

Migration: Copan—Apr. 4, '10, Mar. 29, '17, Apr. 12, '17 (K<sup>1</sup>). Recorded on 6 of 9 Christmas censuses in eastern Oklahoma.

Nesting: Tulsa—eggs Apr. 30-June 25 (M<sup>5</sup>, P<sup>2</sup>);—7 eggs, May 3, '27 (G<sup>3</sup>); Creek Co.—nest with Cowbird egg '19 (B<sup>3</sup>).

Food: cotton leaf worm, cotton boll worm, cotton boll weevil, chinch bug, 12-spotted cucumber beetle, grasshopper; wild fruit.

No bird is better loved by the people of this country than the Mockingbird. It has accepted civilization and chosen the garden and orchard as its favorite haunts.

A charming account of an albino Mockingbird has been written by Mrs. Rachel Hutchinson ('30); further details were given me by letter. "An ordinary-looking gray mockingbird built her nest" in the cemetery at Ardmore; one bird of the first brood "was pure white, with ivory-colored bill and feet." The mother laid four more eggs in the same nest; "we saw her leave the nest while incubating the eggs which later hatched into the white 'twins' and help feed the four young which included the first white one. From the moment the three wee birds (of the second brood) hatched it was easily seen that two were albinos. Their flesh was pink with a decided tinge of orange, their fuzzy down snow-white." They were banded when they left the nest July 19 and were seen in the cemetery until August 4. Strangely enough on August 30 one of the twins appeared at Mrs. Hutchinson's home three miles from the cemetery and there she stayed throughout the winter, the most winningly tame and friendly bird imaginable. Her notes were as follows: "the few, short musical phrases she used to answer my call and my questions; the 'here I am' call to me, the somewhat less musical 'talking' she did when rations were scarce, and the alarmed or scolding notes heralding an intruder. . . . Through the winter Ally did not tolerate another mockingbird in her territory, or any other bird on the table when she was eating except a male cardinal. . . . They were together constantly; if one appeared the other was almost certain to be nearby." Unfortunately in the spring she met her death by accident.

When Thomas Nuttall was exploring southeastern Oklahoma he met with an inspiring experience. ('05:220).

"June 6, 1819: I now, for the first time in my life. . . . hearkened' to the inimitable notes of the mockingbird. After amusing itself in ludicrous imitations of other birds, perched on the topmost bough of a spreading elm, it at length broke forth into a strain of melody the most wild, varied and pathetic, that ever I had heard from any thing less than human. In the midst of these enchanting strains, which gradually increased to

loudness it oftentimes flew upwards from the topmost twig, continuing its notes at if overpowered by the sublimest ecstasy."

(703a) WESTERN MOCKINGBIRD: *Mimus polyglottos leucopterus*

Common summer resident throughout central and western Oklahoma, a few wintering.

Specimens: Cleveland Co.—\*†June 12, '01; Hughes Co.—\*†July 15, '27 (W<sup>a</sup>); Minco—\*†May 26, '05 (W<sup>1</sup>); Fort Cobb—(Mearns '02); Harmon Co.—\*†June 17, '26 (L<sup>4</sup>); Texas Co.—\*†June 27, '26 (L<sup>4</sup>). In fall, Tulsa—\*†Nov. 7, '27 (K<sup>3</sup>).

Migration: Cleveland Co.—Mar. 21, '22; Mar. 24:; Oct. 14; Oct. 16, '25; none recorded on 3 Christmas censuses, 1, 1, 2, 3, 6, on the others (N); Kenton—May 1, '25, Mar. 14-Sept. 15, '26, Apr. 18, '29 (T<sup>1</sup>).

Nesting: Cleveland Co.—25 nests found, earliest 3 eggs Apr. 25, '20, latest 4 young just hatched, Aug. 1, '20, young out of nest being fed Aug. 20, '20, Sept. 3, '23; 15 nests were from 3 to 7 feet from the ground, 2 10 feet, 1 15; 6 nests had 3 eggs or young, 10 nests had 4 (N); Washita Co.—2 nests 5 eggs each May 23, June 7, '11 (C<sup>1</sup>); Woods Co.—2 nests 5 eggs each May 20, 21, '06, 6 eggs May 28, '07 (S<sup>3</sup>); Gate—5 eggs in nest on wheat binder June 9, '27 (L<sup>2</sup>). In Cleveland Co. we never found more than 4 eggs in a nest but 5 of 7 nests in western Oklahoma held 5 eggs, one had 6.

Not all Mockingbirds mock by any means, and of those that do, many have only a limited repertoire. Usually it is the loud and striking songs that strike their fancy, not the delicate, sweet ones. I have been shocked to hear two different birds imitate the yap of the English Sparrow. Of 22 Mockingbirds I listened to in Cleveland County three did not mock at all, while the others incorporated from one to eight foreign notes into their songs, most of them three or four at one session of singing. As a rule two or three notes of each imitation are given between portions of the Mocker's own song. The most popular model was the Blue Jay, heard from 11 birds the next was the Scissortail and after that the Robin—his scold, *not* his song. A good mocker is continually changing his repertoire, so a careful record throughout a season would amount to a large list of imitations. For instance the bird on our grounds one spring began to give the Least Flycatcher's *chebec* on May 14, but gave it up by the 22nd. Of the 23 species imitated by these 19 Mockers, 19 nested in the region, the other four being transients. Mr. Tate wrote me of a Mockingbird at Kenton that imitated the Scaled Quail, Lark Sparrow, Canyon Towhee, Bullock Oriole, Western Kingbird and House Finch.

The Mockingbird's rightful song is a fine, varied roundelay, given from his arrival in early April to the end of July. While his mate is incubating, he spends most of his time singing, even flooding the moonlit nights with melody. On mild days in December, January and February, wintering birds have given us music that seemed particularly beautiful because of its rarity at that season.

(704) CATBIRD: *Dumetella carolinensis*

Summer resident in northern and central Oklahoma. It breeds from Ottawa to Woods County, is an uncommon transient at Gate, but a rare summer resident in Kenton. There is only one summer record south of Cleveland county, a bird taken in Pushmataha county, July 18, '25 (O<sup>2</sup>).

Migration: Copan—May 8-Sept. 16, '16, Apr. 28, '17 (K<sup>1</sup>); Tulsa—Apr. 30-Oct. 2 (K<sup>3</sup>); Sequoyah Co.—Apr. 13, '97 (L<sup>5</sup>); Cleveland Co.—Apr. 28, '27; May 1:; Sept. 28: Oct. 4, '26 (N); Wichitas—1 Apr. 13, '04 (G<sup>2</sup>); Custer Co.—Apr. 16-Sept. 1, 02, Apr. 8, '03, Apr. 9, '04 (S<sup>4</sup>); Kenton—May 25-Sept. 8, '26 (T<sup>1</sup>).

Nesting: Tulsa—4 eggs May 2, '27 (G<sup>3</sup>); eggs May 14-June 8 (M<sup>5</sup>);—4 eggs

June 22 (K<sup>3</sup>); Cleveland Co.—building May 1, '27; eggs from June 6-23, 1 bob-tailed young Aug. 22, '20 (N); Kenton—building June 1, '10 (T<sup>1</sup>).

Food: grasshoppers, May beetles, locust beetles, ants, weevils; wild and cultivated fruit.

Catbirds are benefiting from civilization; they have become more common about Norman in the last few years, and have appeared at Minco since Dr. Wetmore was there in 1905. They sing from their arrival to early or mid July, and occasionally in August and September, often whispered songs at these late dates.

#### (705) BROWN THRASHER: *Toxostoma rufum*

Summer resident throughout northern and central Oklahoma, occasionally wintering. It is an abundant breeder in Cleveland County; south of the Canadian River we have seen a few of these birds in summer in McClain, Grady, Caddo, Comanche, Murray, and Latimer Counties. At Gate it is a common migrant but rare breeder, in Cimarron County a rare transient.

Migration: Tulsa—Mar. 25-Oct. 20, Feb. 3, '24, Feb. 20, '25 (K<sup>3</sup>); Okmulgee—\*Feb. 16, '26, 1 Dec. 10-Feb. 6, '27 (F); Cleveland Co.—Mar. 11, '21; Mar. 28:: Oct. 28; Nov. 17, '23; 1 Jan. 23-Mar. 2, '24 another Jan. 21-Feb. 21, '24; 1 heard singing Feb. 1, '26 (N); Bryan Co.—2 Mar. 8, '84 (C<sup>4</sup>); Cimarron Co.—1 May 27, '22 (N); 1 Oct. 9, '24, 1 Sept. 15, '26 (T<sup>1</sup>). Recorded on 2 Christmas censuses, 2 in Tulsa 1927, 1 in Oklahoma City 1926.

Nesting: Vinita—eggs 12 feet up in tree May 5, '12 (K<sup>1</sup>); Copan—4 eggs and 1 Cowbird's May 9, '13 (K<sup>1</sup>); Tulsa—eggs Apr. 25-June 25 (P<sup>2</sup>);—5 eggs and 1 Cowbird's 1924 (M<sup>5</sup>);—3 eggs and 1 Cowbird's 1929 (G<sup>8</sup>); Cleveland Co.—87 nests found; earliest full sets Apr. 27, '20, Apr. 15, '21, Apr. 23, '22 and '26, Apr. 26, '27; latest dates—young in nest July 11, '22, July 31, '21, newly hatched July 21, '20, full grown young fed by parent Aug. 10-19, '26. 11 nests had 3 eggs, 13 had 4, 5 had 5, 1 had 6 (May 15 '21); average of 30 was 3.9 eggs. 3 nests had 4 young, 7 had 3, 3 had 2, 6 had 1; average of 19 was 2.4 young; 1 nest was placed on the ground, 1 on a pile of lumber (later deserted. 1 was 2 feet from the ground, 15 were 3-4 feet, 11 5-6 feet 7 8-10 feet, 2 15 feet, 2 20 feet.

Food: May beetles, cotton boll weevil, 12-spotted cucumber beetle, ants, stink bugs, chinch bugs, grasshoppers; wild fruit.

In the east the Thrasher is a bird of briar patches and old pastures, but here in Oklahoma it nests in our gardens as well as in thickets and along creek beds. Thirty years ago in Norman Mr. Bunker noted they were "few, breed, found in low thickets"; now it is one of our abundant nesting birds. In 1905 Dr. Wetmore did not find it in Minco but on May 20, 1923 we saw several there.

The proud and splendid song is heard through much of April, but not again until the beginning of the second nesting and then normally for only a day or two. In 1926 we had the privilege of hearing two sing on our grounds from June 4 to 15, the reason being that an extra male was interfering with a mated pair; they had built a nest in a mulberry tree, but deserted it because so busy chasing the interloper.

The Mockingbird's song has an abandon and lack of method in contrast to the Thrasher's lay; the latter usually repeats a phrase twice, pauses, then gives his next phrase twice, while the Mocker pours out his phrases three or four in succession. On Apr. 1, 1926 I noted the number of times a Thrasher repeated each phrase and found the scheme less regular than I had suspected; it went thus: 2, 1, 2, 3, 2, 1, 2, 2, 2, 1, 1, 1, 1, 1, 2, 3, 3, 1, 2, 2, 3, 1, 3, 4, 2, 3, 1, 3, 4, 2, 3, 2, 2, 2, 2, 1. Later he sang a whisper song and in this the phrases were repeated twice in regular fashion.

The male Brown Thrasher is a devoted father for he helps build the nest, giving a brief whisper song as he adds materials; he shares incubation, and helps brood and feed the young.

Mrs. Maude Hunter while in Norman rescued a baby Thrasher from a nest after a cat had eaten the rest of the brood. This was on July 18; the next day she put it by the window and the father came with food in his bill, so on the 20th she fixed a lattice front to a card board box and put the little bird on the roof. Father fed it with insects and also with the egg and potato mixture that Mrs. Hunter had prepared. He sang softly in the near-by elm, and while he fed gave a low double note and also snatches of his song. He fed his baby until the 24th, the next day he came twice to the elm, but did not offer to feed and after that was seen no more. On Aug. 2 the young bird made a few tiny singing notes; on Sept. 19 he was singing occasionally, while a Mockingbird about 10 days younger sang every day. Later in the fall the Thrasher sang with the Victrola in Mrs. Hunter's school room.

(702) SAGE THRASHER: *Oreoscoptes montanus*

Rare summer resident in western Cimarron County.

Nesting: Cimarron Co.—nest with 4 eggs in A-11 pasture in southern part of the county June 13, '20 (T<sup>1</sup>, '23:49).

The Sage Thrasher is dull grayish brown above, with two narrow white wing bars, white corners to its blackish tail, and a whitish breast spotted with brown. A specimen has been taken by Mr. Tate. Mrs. Bailey ('21:435) tells how this bird sings on top of a telegraph pole or "a tall sage bush and as his song is poured out even long after dark and sometimes by moonlight, with scarcely less richness than the true thrasher's, you are glad he lives in the deserts."

THRUSHES, SOLITAIRES, BLUEBIRDS, ETC.: FAMILY TURDIDAE

(761) EASTERN ROBIN: *Turdus migratorius migratorius*

Summer resident in northern Oklahoma, transient in central Oklahoma.

Specimens: Ottawa Co.—\*†July 20, '29 (B<sup>5</sup>); Norman—\*†Mar. 2, '30 (B<sup>5</sup>).

Records, (eastern and southern subspecies): 1850-listed by Glisan ('74: 88); 1867—2 taken at Kiowa Agency \*Mar. 14 (P<sup>1</sup>); 1883—winter visitants in Bryan Co., Nov. 3, Nov. 29-Mar. 24 (C<sup>4</sup>); 1890—transients in Canadian Co. (M<sup>2</sup>); 1892—"breeds sparingly" in Pittsburg Co. (P<sup>3</sup>); 1901—not found at Alva Aug. 3-7 (O<sup>1</sup>); 1903—"common in low timber during winter" in Cleveland Co. (B<sup>6</sup>); 1904—winter visitants in Custer Co. (S<sup>4</sup>); 1905—not found in summer in Woodward (L<sup>1</sup>), nor in Minco (W<sup>1</sup>); 1908—a few nesting in Alva (C<sup>2</sup> & T<sup>2</sup>); 1908—first nested in Enid (W<sup>6</sup>); 1911—nesting in Custer Co. (W<sup>2</sup>); 1913—nesting in Cleveland Co. (N); 1916—pair bred successfully, but did not return the next year, only case known of from 1909-20 in Stratford, Garvin Co. (Mrs. Geo. Merrill). In southern Oklahoma Robins are still rare, but a few have been seen in summer in Leflore, Latimer, McCurtain, Murray and Caddo Counties.

Food: beetles, caterpillars, grasshoppers; fruit, wild and cultivated.

One of the compensations of civilization has been the spread and increase of this handsome friend of man. Originally nesting only in eastern Oklahoma, it has followed the planting of trees until now it nests in most of the state except the most southern and western tier of counties. In the eastern two-thirds of Oklahoma north of the South Canadian it is abundant. It is a pity that there are so few definite dates of first nesting in a locality, but it seems as if much of the extension of range must have taken

place from about 1907 to 1910. Robins are increasing now in the regions recently adopted, but do not appear to be seeking new territory to any great extent. In central and western Oklahoma they are seldom found nesting except in the vicinity of man, but in Cherokee County I discovered a nest in a pasture far from any house.

(761b) SOUTHERN ROBIN: *Turdus migratorius achrusterus*

Summer resident in eastern and central Oklahoma; irregular winter visitant.

Specimens: Tulsa—\*†Mar. 12, \*†Apr. 4, '27, \*†Apr. 9, \*†May 10, \*†29, '28 (F); —\*†Feb. 11, '29 (G<sup>3</sup>); Okmulgee—\*†May 4, '26 (F); Lefflore Co.—\*†June 20, '27 (W<sup>4</sup>); McCurtain Co.—\*†June 29, '23 (N); McClain Co.—\*†Jan. 8, '30 (B<sup>5</sup>); Cleveland Co.—\*†Jan. 6, '23 (C<sup>5</sup>);—†Jan. 19, '30 (B<sup>5</sup>) Oklahoma Co.—\*†July 18, \*†Aug. 3, '29 (S<sup>1</sup>).

Nesting: Tulsa—6 nests with 3 eggs, 5 nests with 4 eggs Apr. 22-May 26 (F, M<sup>5</sup>, G<sup>3</sup>); Cleveland Co.—77 nests recorded, earliest 4 eggs Mar. 23, '21, young left Apr. 23; 10 nests with full sets by end of March '21, earliest bird to leave nest Apr. 21, '21; usually build first week in April; building for second brood May 24, June 1, 16; latest date, large young in nest Aug. 24, '26, few nests found after June. 10 nests had 3 eggs, 6 nests 4 eggs, average 3.4. 2 nests had 1 young, 6 nests had 2, 8 nests 3, 1 nest 4; average 2.5. Nests built from 3 to 30 feet from ground, most from 10 to 15; average of 30 nests was 15.2 feet (N).

Robins are present so much of the year that it is difficult to record migration dates; in Cleveland County if they did not winter, they came in early February and were seen until late November. They have been observed on 5 Christmas censuses in eastern Oklahoma and 8 in central Oklahoma, but these records represent only 7 of the ten winters. In eastern Oklahoma they were found in 1919, 1925, and 1929, and not in 1923, 1926, 1927, or 1928. In Cleveland County they were noted in 1919, 1922, 1923, 1925, and 1929, not in 1920, 1921, and 1926; in Oklahoma County they were found in 1925, 1926, 1927. Only in 1925 and 1929 were they abundant and widely distributed. We hear singing regularly from February to July and occasionally from September to January, sometimes whisper songs during fall and winter.

(761a) WESTERN ROBIN: *Turdus migratorius propinquus*

Summer resident in western Oklahoma, winter visitant in central Oklahoma.

Specimens: Wichita—\*†May 9, '04 (G<sup>2</sup>); Cleveland Co.—\*†Nov. '13 (C<sup>5</sup>).

Nesting: Gate—nest on his ranch (A. Dugans); Beaver Co.—nest with eggs May 28, '13 (T<sup>1</sup>); Cimarron Co.—nested on her ranch in 1923 (Mrs. A. L. Brookhart).

The three subspecies of the Robin in Oklahoma intergrade so that it is difficult to assign limits of each form, especially without series of specimens on hand. In the Western Robin the white tips to the outer tail feathers are indistinct or absent. Mr. Tate has seen Robins in Kenton as follows: four May 1, 1923 after a hard north wind, one Mar. 29, 1925, two Feb. 4, 1928 and two Mar. 2, 1929.

(759) ALASKA HERMIT THRUSH: *Hylocichla guttata guttata*

Rare winter visitant.

Specimen: Tulsa \*†Feb. 15, '30 (C<sup>3</sup>).

(759b) EASTERN HERMIT THRUSH: *Hylocichla guttata faxoni*

Rare transient and winter visitor.

Specimen: Latimer Co.—\*Mar. 21, '14 (C<sup>5</sup>).

(759e) SIERRA HERMIT THRUSH: *Hylocichla guttata sequoiensis*

Rare transient, probably occurring in winter also.

Specimens: Adair Co.—\*†Apr. 9, '97 (L<sup>5</sup>); Tulsa—\*†Mar. 24, '27 (K<sup>3</sup>).

Sight records for Hermit Thrushes have been recorded as follows: Creek Co.—single birds Dec. 23, '20, Dec. 26, '23 (B<sup>3</sup>); Bryan Co.—2 Nov. 28, '83, a few all winter, last seen Mar. 1 (C<sup>5</sup>); Cleveland Co.—single bird Dec. 23, '25, Feb. 1, Mar. 27, '26 in Olivers' woods (N); Oklahoma City—single bird Nov. 23, 25, '24, Jan. 11, '25 on Hare Estate, 1 Dec. 23, '27 (S<sup>1</sup>); Gate—rare transient (L<sup>2</sup>); Cimarron Co.—11 May 11, '12 (T<sup>1</sup>). It is not possible to distinguish the different subspecies in the field.

The Hermit Thrush has an olive brown back and a reddish brown tail which it often raises slightly and then lowers, especially after alighting, a habit possessed by no other thrush.

(755) WOOD THRUSH: *Hylocichla mustelina*

Summer resident throughout the eastern half of Oklahoma, common in most of the eastern counties, but rare along the western border of its range—Kay, Garfield, Major, Oklahoma, Cleveland and Murray Counties.

Occurrence on western edge of its range: Oklahoma Co.—1 heard singing by North Canadian June 4, '23 (N);—another 6 miles east of city on North Canadian July 7, '25 (S<sup>1</sup>); Cleveland Co.—singing at Little River 10 miles east of Norman May 2, 8, '20; by So. Canadian 3 miles south of Norman May 17, '22, not heard there before nor after (N); Major Co.—in heavy patch of woodland on Eagle Chief Creek at Cleo Springs July, '30 (B<sup>5</sup>).

Migration: Copan—last seen Sept. 30, '16 (K<sup>1</sup>); Tulsa—Apr. 15-Sept. 24 (K<sup>3</sup>); Sequoyah Co.—"heard every morning and evening" Apr. 13-16, '97 (L<sup>5</sup>).

Nesting: Copan—4 nests from May 13—June 28, 3 eggs in each case (K<sup>1</sup>); Tulsa Co.—nest with 4 eggs and 1 of Cowbird near Leonard June 29, '27 (G<sup>3</sup>); Sapulpa—nest with eggs May 9, '20 (B<sup>3</sup>).

Food: cutworms, potato beetles, grasshoppers, wire worms, rose beetle, tent caterpillars, ants; wild fruit.

Woods are the natural home of this wonderful singer, yet it is a friendly bird and often comes into gardens if there are enough trees and shrubs to please its taste. In Tahlequah on May 3, 1923, I saw one building in an oak in front of some fortunate person's house. Mr. Forbush ('29: 388) has beautifully described the song. "*A-olee*, he sings, and rests, then unhurried, pours forth a series of intermittent strains which seem to express in music the sentiment of nature; powerful, rich, metallic, with the vanishing vibratory tones of the bell, they seem like a vocal expression of the mystery of the universe, clothed in a melody so pure and ethereal that the soul still bound to its earthly tenement can neither imitate nor describe it."

(758a) OLIVE-BACKED THRUSH: *Hylocichla ustulata swainsoni*

Regular spring transient throughout the state.

Migration: Copan—Apr. 20-May 30, '16, Apr. 25-May 25, '17 (K<sup>1</sup>); Cherokee Co.—rather common May 6, '23 (N); Tulsa—May 2-22, '24, \*†May 11, '27 (K<sup>3</sup>); Cleveland Co.—Apr. 21, '26: Apr. 27:: May 19: May 26, '23 (N); Alva—1 May 27, '22 (N); Gate—rare transient 2 May 20, '22 (L<sup>2</sup>); Cimarron Co.—6 May 21, '12 (T<sup>1</sup>);—several May 30, June 1, '22 (N).

In May 1927 we had the rare privilege of hearing this fine thrush sing in our garden, one bird staying with us from the 11th to the 22nd. The song is more throaty in character than those of the Wood Thrush or Hermit. It was given at the rate of nine and ten songs a minute, and might be written *whée-ah ye whée ah ye whée-ah*; sometimes there were four *whée-ahs* and often less distinct preliminary or concluding notes. The

call note is a characteristic *whit*. The lack of fall records is curious; for seven reasons I followed the fall migration with the keenest interest, but never once saw a thrush of any species.

(757) GRAY-CHEEKED THRUSH: *Hylocichla aliciae aliciae*

Uncommon spring transient.

Migration: Cherokee Co.—fairly common May 5-6, '23 (N); Tulsa—1 May 7, '24, \*†May 16, '27 (K<sup>2</sup>); Cleveland Co.—uncommon spring transient Apr. 24-May 25 (N); Gate—rare transient, "more than a dozen seen May 15, '27" (L<sup>2</sup>).

On May 13, 1927 near Bishop Creek south of Norman I heard an unfamiliar thrush song—*wheeyer wheeyer whee*, less musical than that of the Olive-backed; investigation showed it came from a Gray-cheeked Thrush. We were fortunate that spring in hearing the songs of both these northern thrushes, a new experience for us. The Gray-cheeked and Olive-backed Thrushes are alike in coloring—entirely olive-brown above, below white spotted with black—except for the sides of the head. If a good view is obtained in strong light, they may be distinguished; the Olive-backed has a buffy cheek and eye-ring, the Gray-cheeked is true to its name. The call note of this thrush is a sharp, petulant *fée—a*.

(766) EASTERN BLUEBIRD: *Sialia sialis sialis*

Resident throughout most of the state, transient at Gate, uncommon summer resident in Cimarron County, abundant in eastern Oklahoma where there are many woodpecker holes in the girdled trees, common in the Wichitas, but not found by us in the southwestern corner of the state.

Nesting: Copan—eggs Apr. 4, '16, 4 eggs in top of 3 inch pipe of gas well July 31, '10 (K<sup>1</sup>, '15b); Tulsa—eggs Mar. 20-June 21, one set of 5 pure white eggs (P<sup>2</sup>); 5 eggs "almost as round as marbles" 1924 (M<sup>2</sup>, '24); Copan & Tulsa—7 sets of 5 eggs, 3 sets of 4 recorded; Cleveland Co.—26 nests recorded, 11 successes, 3 failures; single Cowbird eggs in 3 nests; heights of nests from 4 to 30 feet; earliest building, Feb. 21, Mar. 3, '21 Mar. 16, '23; earliest set Mar. 27, '21; first broods left May 6, '20, Apr. 29, '21, May 2, '22, May 11, '22, May 15, '23; second brood left June 24, '22; 1 nest had 2 eggs (and a Cowbird's), 3 nests had 3, 4 nests had 4, 2 had 5, 2 had 6, an average of 4.2 eggs; 3 nests had 2 young, 2 had 3, 2 had 5, 2 had 6, an average of 3.8 young. Incubation lasted 14 days, beginning with 5th egg in set of 6; young stayed in nest 16, 16 or 17, 16 or 17, 17, 17 and 18 days; young bird fed by father 3 weeks after he had left the nest. May 3, '20 13 day young were fed 12 times by female, 13 by male, from 1-3 P. M., once every 4.8 minutes, female taking excreta 3 times, male not at all; June 21, '22 11 day young were fed 16 times by female, 18 by male from 11-2, 3.45-4.15 P. M., an average of once every 6.6 minutes, female took excreta 4 times, male 3 (N.)

Food: May beetles, ants, chinch bugs, caterpillars, stink bugs, grasshoppers; wild fruit.

After the young take their first flight, the whole Bluebird family leaves the vicinity for a while, the birds on our grounds returning to start the second brood after intervals of 14, 16, 9, and 10 days from 1920 to 1923. The first year on this occasion—May 20—two females had a fierce fight, but the next day a pair were peacefully building and on May 25 the first egg was laid, 19 days after the departure of the young. This year the young of the first brood returned with the parents and two of them helped feed their younger brothers and sisters in the nest, also carrying off excreta.

The winter of 1920-21 was unusually mild and several species nested early—notably Robins; Texas Wrens and Bluebirds started their nests late in February but did not lay till late March. It is interesting to note that only twice were infertile eggs found in the 8 sets laid in our Bluebird box, two of four in this set which was complete Mar. 27, building having



been recorded Feb. 21 and Mar. 3; and one of four in 1923 when nest building began 17 days before egg laying, this time the disturbing factor having been a different box which the bird first chose, later adopting the proper one.

Bluebirds were abundant in and around Norman until 1923, three of the four nests we knew of raising young to maturity that season, but for some inexplicable reason they became scarce the winter of 1923-24, and never again were seen on our grounds and very little in the general region. By 1927 they had begun to recover their numbers to some extent. The banding of nesting Bluebirds will enable us to tell whether or not our birds are individually resident.

(768) MOUNTAIN BLUEBIRD: *Sialia currucoides*

Summer resident in northeastern corner of Cimarron County, common fall and winter visitant in that region, irregular in rest of Panhandle, rarely reaching central Oklahoma.

Migration: Kenton—earliest arrival Oct. 19, '26, very common in 1924-1925 (T<sup>1</sup>); Beaver Creek—\*Oct. \*Nov. '89 (Ridgway '07: 158); Gate—wintered 1921-1922, also Jan. '27 (L<sup>2</sup>); Woods Co.—few found in winter (C<sup>2</sup> & T<sup>2</sup>); Custer Co.—wintered, last seen Apr. 4, '04 (S<sup>4</sup>); Cleveland Co.—2 taken \*Feb. 13, '03, 1 \*Nov. 21, '03 (B<sup>0</sup>); Bryan Co.—seen once during the fall '83 (C<sup>4</sup>).

Nesting: Cimarron Co.—4 or 5 nests around the mouth of an old copper mine prospect hole "one mile east of the New Mexico line and two miles south of the Colorado boundary" in 1922 and 1923 (T<sup>1</sup>, '25b).

These beautiful birds with their turquoise blue breasts and backs are abundant winter residents around Mr. Tate's home; they are attracted to his feeding table by dried grapes, Virginia creeper drupes, and sumac and cedar berries. He writes in November 1930 that they are still increasing in numbers and have now extended their range into Oklahoma eleven miles from the New Mexico line and eight from Colorado.

(754) TOWNSEND SOLITAIRE: *Myadestes townsendi*

Rare visitor in western Oklahoma.

Records: Kenton—7 seen, 1 taken \*Dec. 11, '11, 1 Dec. 25, '28, 2 Dec. 25, '29 (T<sup>1</sup>); Gate—a flock of 30 or 40 July 20, '21, 1 July 25, '25 (L<sup>2</sup>); Kiowa Agency—\*Mar. 19, '67 (P<sup>1</sup>); Arbuckles—1 Dec. 29, '27 in Falls Creek Canyon (S<sup>1</sup>, '28a).

Four of these records are in December, one in March, two in July. Sand plums were the attraction near Gate where Mr. Lewis saw the flock in 1925, but four years later when he saw just one bird in exactly the same place, the crop of sand plums had been a failure. The Solitaire is a long, slim, grey bird 8 to 9 inches in length with white outer tail feathers, white eye ring and narrow buffy spots in the wing; its song is one of the finest in the Rocky Mountains.

KINGLETS, GNATCATCHERS, ETC.: FAMILY SYLVIIDAE

GNATCATCHERS: Subfamily Polioptinae

(751) EASTERN BLUE-GRAY GNATCATCHER: *Polioptila caerulea caerulea*

Common summer resident throughout eastern and central Oklahoma as far west as Kay, Payne, Canadian, Grady and Comanche counties.

Migration: Copan, Mar. 20, '16, Mar. 24, '17 (K<sup>1</sup>); Tulsa—Mar. 20, '21: Mar. 27: Sept. 30, '24 (P<sup>2</sup>, F, K<sup>3</sup>); Bryan Co.—Sept. 10-Nov. 6, common Mar. 25, '84 (C<sup>4</sup>); Cleveland Co.—Mar. 26, '27: Mar. 28: the nesting birds leave in August; transients have been seen from Mar. 30-Apr. 27; Sept. 13, '22, Sept. 4, 26, '23, Oct. 2, '26 (N).

**Nesting:** Copan—"the commonest woods nesting bird;" of 17 nests found in 1910, most were 12 to 20 feet from the ground, the lowest 6 feet up in a bush, the highest 40 feet; of 16 nests in 1917 only 2 hatched young, 11 being destroyed by wind or rain; eggs, 4 to 5, once 4 eggs and a Cowbird's; earliest date of building Apr. 4, '14 (K<sup>1</sup>); Tulsa—eggs from Apr. 25-July 1 (P<sup>2</sup>, M<sup>5</sup>); Norman—of 16 nests, 8 were failures; heights from 10 to 50 feet, averaging 25; 12 on branches, 4 in crotches, 7 matched their surroundings well, 1 fairly well, 3 not at all; in 1927 nest building was at its height Apr. 10; young out of the nest May 19, '27 (N); Wichitas—young out of nest May 10, '04 (G<sup>2</sup>); 2 broods of young seen Aug. 9, '05 (B<sup>1-2</sup>). Second broods are sometimes raised.

**Food:** caterpillars, moths, flies, beetles, spiders.

Never were there more enthusiastic nest builders than Blue-gray Gnatcatchers and their finished product is one of the most exquisite of woodland structures. The male particularly bubbles over with excitement. At a nest by Persimmon Pond south of Norman Apr. 24, 1926 the female made 12 trips from 8:00 to 9:00, the male 15. She said *spee* at 5 of her visits, being silent at the rest, while he said *spee* every single time, once giving 17 of these notes while fixing the nest; moreover he sang a little sputtering song at 7 of his visits. The next year Apr. 10, in the Oliver's woods, each bird made 11 visits to their half finished nest from 9:41 to 10:11, the female being entirely silent, the male *speeing* every time and giving one small song. The easy time to find Gnatcatcher nests is during building.

The real song seems to be given only near the beginning of the nesting cycle; I have recorded it Apr. 6, 7, 1926 and Mar. 29, 30, Apr. 5, 9, 10, 1927 in Cleveland County and June 6, 1929 in the Wichitas. It is an ecstatic, warbling high pitched song, so high pitched in fact that often much of it is inaudible to human ears. One song that I timed lasted 4 seconds.

Both birds incubate. At a nest in the Arbuckle Mountains Apr. 23, 1927 the female sat for 15 minutes, the male 19, then after a minute's absence with his mate, 7 minutes more and after that the female took an 18 minute turn. At a nest south of Norman near the end of incubation the female sat 23 minutes, the male 29 between 7:00 and 8:00 A. M. May 14, 1927. At neither of these nests were the eggs left uncovered more than a minute. The birds gave *spee spee* and a few other notes near the nest, but I have never heard either in Oklahoma or Ohio a male singing or even *speeing* while sitting on the eggs. A female in Ohio sat for 40 minutes at one time, the male for 34; the eggs were left unguarded for an interval of 4 minutes.

The parents are comparatively quiet around the nest after the young have hatched. Near the South Canadian during an hour in the late afternoon a female fed newly-hatched young 4 times, the male twice; she brooded 5 times from 5 to 10 minutes at a stretch while he brooded 3 times—for ½, 1 and 3 minutes. Three days later from 4:08 to 5:23 p. m. she brooded for 22 minutes, then left for 26, and brooded again 18 minutes; he did not brood at all. She fed only twice, he did so 7 times, 4 times giving the food to her, which she invariably passed on to the young.

Blue-gray Gnatcatchers are like fairy birds, so tiny, dainty, and graceful, yet they are hardy, for they come to us in March; they are fearless of human kind, devoted to their families and amazingly exuberant.

KINGLETS: Subfamily Regulinae

*Coothyleid*(748) EASTERN GOLDEN-CROWNED KINGLET: *Regulus satrapa satrapa*

Uncommon transient and winter visitant in eastern and central Oklahoma.

Migration: Copan—seen every winter (K<sup>1</sup>); Tulsa—Oct. 28-Dec. 6, '23, Mar. 30, Apr. 15, '24, (K<sup>3</sup>);—Oct. 29, '27 (G<sup>3</sup>); Mar. 6, Dec. 26, '28 (F); Sapulpa—\*Dec. 28, '21 (L<sup>3</sup>); Hartshorne—\*Mar. '14 (C<sup>5</sup>); Bryan Co.—common from Nov. 29-Jan. 12, '84 (C<sup>4</sup>); Arbuckles—\*Jan. '14 (C<sup>5</sup>); Cleveland Co.—uncommon, 1 to 2 birds seen Nov. 14, '20, Oct. 12, Dec. 13, '21, Oct. 16, 20, 30, '25, Oct. 23, '26, Mar. 22, '27 (N); Oklahoma City—2 seen Dec. 23, '25 (S<sup>1</sup>).

This dainty little bird is rather rare in Oklahoma; only four of the 29 Christmas censuses have been graced by its presence. Like the Ruby-crown it has a habit of often twitching its wings; its note is a thin *see-see-see*. One March day I came upon a lovely little Golden-crowned Kinglet keeping company with a flock of Juncos; in half a minute she caught 14 insects.

(749) EASTERN RUBY-CROWNED KINGLET: *Regulus calendula calendula*

Transient, rarely seen in winter.

Migration: Ottawa Co.—\*May 19, \*Sept. 22, '11 (P<sup>4</sup>); Copan—Apr. 3, '16, Mar. 27-Apr. 16, '17 (K<sup>1</sup>); Tulsa—\*Mar. 31-Apr. 30; Sept. 21-Nov. 16 (K<sup>3</sup>);—1 Dec. 21, '27 (G<sup>3</sup>); Cherokee Co.—several May 6, '23 (N); Bryan Co.—Nov. 7-Dec. 9, Mar. 25, '84 (C<sup>4</sup>); Cleveland Co.—Mar. 17, '17; Mar. 21:: May 3: May 6, '21; Sept. 26, '26; Oct. 8:: Nov. 3: Nov. 24, '21: 1 Dec. 28, '26, none recorded during spring of 1923 (N); Oklahoma City—1 Dec. 26, '27 (S<sup>1</sup>); Gate—Jan. 30, '27 (L<sup>2</sup>).

Food: leaf bugs, leaf hoppers, scale insects, leaf miners, weevils, grasshoppers.

This Kinglet may be recognized by its white eye ring, pale wing bars and the absence of any markings over the eye; its bright crown is usually concealed. I have heard it singing near Norman Mar. 29, 1924, Mar. 20, 1926, Sept. 30, Oct. 16 and 28, 1926. The airy fairy song of this little mite is utterly charming.

## PIPITS, ETC.: FAMILY MOTACILLIDAE

(697) AMERICAN PIPIT: *Anthus spinoletta rubescens*

Transient throughout the state.

Migration: Copan—flocks seen Sept. 28-Oct. 12, '16; Mar. 2-May 14, '17 (K<sup>1</sup>); Tulsa—Apr. 6, 27, 30, '25 (K<sup>3</sup>); Oklahoma Co.—large flocks Mar. 29-Apr. 5, '25 (S<sup>1</sup>); Cleveland Co.—flock Nov. 5, '22, single birds Mar. 20, Apr. 30, '24, flock Apr. 14-18, '27 (N); Woods—transient in April, \*Nov. 10, '07 (C<sup>2</sup> T<sup>2</sup>).

Food: vast numbers of white grubs and cotton boll weevils; one bird had eaten more than 100 grain aphids.

Both pipits walk instead of hop; both constantly wag their heads and tails. Their bills are slender and their white tail feathers conspicuous. The American Pipit or Tidark has a uniform grey or olive back. Its note is a soft plaintive *dee dee* or *pi-pit! pi-pit!* Its flight is erratic and undulating and the bird itself is slender, while the Horned Lark whose notes are rather similar, is broad-shouldered and its flight even.

(700) SPRAGUE PIPIT: *Anthus spraguei*

Transient and winter visitant.

Migration: Tulsa—about 40 seen Apr. 3-27, '24, (K<sup>3</sup>); Hartshorne—\*Mar. 17, \*+23, '14 (C<sup>3</sup>); Bryan Co.—40 to 50 Feb. 18, '84 (C<sup>4</sup>); Gate—common every year from April 1-20, seen in fall Oct. 15, '29 (L<sup>2</sup>).

Food: grasshoppers, weevils, stink bugs, false chinch bugs; goat weed, spurge.

This pipit has a streaked back and more distinct markings than the preceding species. Its single note given as it takes flight is harsher than that of the other. In its summer home on the plains of North Dakota, Montana, and southern Canada, the sweet and silvery-toned flight song of the "American Skylark" or "Missouri Skylark" is given for 20 minutes at a time so high in the air that the singer is almost invisible.

#### WAXWINGS: FAMILY BOMBYCILLIDAE

##### (618) BOHEMIAN WAXWING: *Bombycilla garrula pallidiceps*

Rare winter visitor.

Records: Logan Co.—"During both winters of 1898-99 and 1899-1900 I collected Bohemian Waxwings in Cedar Canyon, two miles west of Guthrie" (S<sup>3</sup>, letter); 2 mounted in Normal Museum at Alva collected by J. Langley, locality of capture not stated (C<sup>2</sup> & T<sup>2</sup>, '08: 12).

This rare northern visitor is larger than the Cedar Waxwing, has white markings on the wings, grey flanks instead of yellow as in the smaller bird, and its tail coverts are chestnut.

##### (619) CEDAR WAXWING: *Bombycilla cedrorum*

Winter and spring visitant throughout the state, occasionally breeding in the Panhandle.

Migration: Okmulgee—\*Oct. 10, '25 (F); Tulsa—Oct. 24-May 29 (K<sup>3</sup>); Cleveland Co.—Nov. 11-June 1, most common in April and May (N); Alva—large numbers April, '28, uncommon here before (C<sup>2</sup>).

Nesting: Gate—nested in 1921 (L<sup>2</sup>); Kenton—rare summer resident, nest and 4 young birds seen June 15, '14; another with 3 eggs June 3, '20 (T<sup>1</sup>).

Food: canker worms, plant lice, leaf beetles, grasshoppers, scale insects; hackberries, choke cherries.

These beautiful birds are irregular winter visitors. They have been seen on three Christmas censuses in Cleveland County, 1919, 1923, 1929, and on five other censuses in eastern, southern, and central Oklahoma.

#### SHRIKES: FAMILY LANIIDAE

##### SUBFAMILY Laniinae

##### (621) NORTHERN SHRIKE: *Lanius borealis borealis*

Rare winter visitor in northern Oklahoma.

Migration: Creek Co.—a few noted from Nov. 18-Dec. 26, '19 (B<sup>3</sup>); Alva—one taken in 1905 (C<sup>2</sup> & T<sup>2</sup>); Camp Supply—\*Feb. 23 '78 (K<sup>2</sup>).

The Northern Shrike is larger than the White-rumped or Migrant; it has faint dusky lines across its underparts where the latter are unmarked; the black stripes through its eyes do not meet across the forehead, as they do in our common species.

##### (622) MIGRANT SHRIKE: *Lanius ludovicianus migrans*

Resident throughout eastern and central Oklahoma.

Specimens: Tulsa—\*†Mar. 2, '27 (G<sup>3</sup>), Okmulgee—\*†Nov. 29, '26 (F), Bryan Co.—\*†July 3, '23 (N); Cleveland Co.—\*†May 4, \*†7, '27 \*†Dec. 10, '02. (U. O. M. Z.).

Nesting: 21 nests are recorded, 1 contained 7 eggs, 10 contained 6 eggs, 2 5 eggs, 1 5 young; the earliest date is a set of 6 Mar. 20, '27 near Tulsa (G<sup>3</sup>); latest, June 19, '14 Copan (K<sup>1</sup>). Five of the 20 nests were second broods. One nest in Copan was 18 feet from the ground; 3 in Tulsa were 6, 8, and 10 feet. One nest in Norman was 10 feet, another 15 feet (used 3 years in succession), one 40, one 30.

Food: grasshoppers, crickets, caterpillars, cankerworms, cutworms, mice; occasionally small birds.

Shrikes are curious birds in the matter of singing; I recorded this event only 4 times: Sept. 29, '23, Nov. 5, '22, Feb. 15, '23, Mar. 21, '27; the song was rather musical, but not powerful. Despite their large broods shrikes nowhere become really common. On our Christmas censuses we recorded one bird on 4 censuses and 2, 4, 9, and 11 on the others; it appears to be slightly more numerous in central Oklahoma in fall, winter and spring than in summer. Second broods are raised in some cases. Although I have seen shrikes chasing small birds on various occasions, I never saw one captured and only once have I seen this species eating birds—May 25, 1917. Mr. Koons and Mr. Crabb have recorded finding English Sparrows impaled on barbed wire and Mr. Lewis a Semipalmated Sandpiper.

On May 25, 1927 near Snail Brook west of Norman I came upon a family of five fluffy little shrikes with tails about an inch long. Their mother was alternately feeding them and carrying twigs and twine from the nest they had just left 40 feet up in an elm to a new nest 100 feet distant, 30 feet up in another elm; the father was hunting insects constantly for the brood. The begging note was a harsh *ker ker ker*. The young pecked at leaves as they perched in trees, or flew to the place where a parent had mounted guard, or hurried over to beg frantically beside a lucky brother that had just been fed. From 6:00 to 7:00 A. M. they were given 23 insects.

Four days later the female was working rather energetically at her task of moving house, while the male gave the brood 8 meals in 15 minutes. The young birds flew to the ground and experimented busily picking up various small objects and tweaking cotton stalks. One hurried after a grasshopper in vain, but at last one got something edible and ate it with gusto.

The shrike in Oklahoma is friendly, fearless, and comparatively common; some one should take advantage of the opportunity of making a careful study of its original ways.

(622a) WHITE-RUMPED SHRIKE: *Lanius ludovicianus excubitorides*

Summer resident in Cimarron County, resident in rest of western Oklahoma, winter visitant in central Oklahoma.

Specimen: Cleveland Co.—\*†Dec. 10, '02 (U. O. M. Z.)

Nesting: Kenton—nest in a tree with 5 young birds June 11, '11 (T<sup>1</sup>);—nest with 6 eggs 6 feet up in a willow June 1, '22 (N).

One day in late February, Mr. Tate wrote: "a White-rumped Shrike was perched in a plum tree chirping, twittering and singing, while all around him on the other branches of the tree were at least a hundred English Sparrows; they were chirping too and appeared much excited. After I had watched the gathering about fifteen minutes, a Cooper Hawk flew over and all the birds scattered."

In Cimarron County Mr. Tate counted 48 grasshoppers and an English Sparrow impaled on cactus thorns near a shrike's nest, and 56 grasshoppers and 11 potato bugs near another.

STARLINGS: FAMILY STURNIDAE

(493) STARLING: *Sturnus vulgaris vulgaris*

Winter visitant, first recorded in November 1929.

Records: Tulsa Co.—flock of 75 or 80 birds on east bank of Arkansas opposite 55th St., in late Nov. '29 (C. L. Dewey);—flock seen between Tulsa and Bixby Dec. 1, '29

(H. A. Yokum);—65 seen, 1 taken \*Dec. 18, '29 (G<sup>8</sup>); Lake Overholser—1 taken by hunter \*Nov. 3, '29 (State Game Dept.); Norman—15 on H. Hefley's farm Jan. 15, 28, 1 near Oliver's woods Dec. 25, '30. (B<sup>8</sup>, '30a, '31).

This major pest was brought to New York City in 1890 and 1891 by Eugene Schieffelin, the same man who had imported one of the shipments of English Sparrows; from these hundred birds have descended the millions that now afflict the eastern half of the country. The Starling is worse than the other alien because so much larger; it dispossesses Bluebirds, Red-headed Woodpeckers, and Flickers from their homes, and a flock will eat in a day berries and wild fruit that would have sufficed many native birds all winter. It is a chunky black bird with a short tail; in a good light the birds in winter show buffy spots all over the plumage; they walk with a peculiar waddling gait.

## VIREOS: FAMILY VIREONIDAE

### SUBFAMILY Vireoninae

This family of plain colored, slow moving birds are indefatigable singers, singing as a rule through the heat of the day and throughout the summer. The Warbling and Bell Vireos even sing while taking their turns at incubating the eggs. Three of the nesting species in Oklahoma are arbored—the Red-eyed, Warbling and Yellow-throated; the other—the Black-capped, White-eyed and Bell—haunt the undergrowth and shrubbery. (630) BLACK-CAPPED VIREO: *Vireo atricapillus*

Summer resident, common in the Arbuckles and in deep gypsum canyons in Blaine County, rare in the Wichitas and in Creek and Tulsa Counties.

Migration: Arbuckles—Apr. 23 '27 (N); Cleveland Co.—one seen and heard singing May 11, '26 (N); Gate—one seen May 5, '23 (L<sup>2</sup>).

Nesting: Tulsa—on north Lewis road, 4 miles from Tulsa, 4 eggs May 20, '28, other nests May 20, June 1, '26; 18 inches to 3 feet from ground in elm or plum thickets on sloping ground (M<sup>5</sup>); Sapulpa—found nesting July 20 '29 "in a blackberry patch about 20 yards from a much used cow lot," 2 pairs seen, both nests contained Cowbird eggs (B<sup>8</sup>); Arbuckles—3 tiny young and 1 egg hatching, 3 feet from ground in small red bud June 17 '20 (N); Blaine Co.—usually 18 inches from ground, "always in center of a bush or clump of bushes, instead of on the outer edge" as with the Bell Vireo; 1 deserted nest with 2 Vireo eggs and 3 Cowbird eggs; eggs sometimes shaken out in severe storms, "about 50 such cases observed" (B<sup>8</sup>).

This rare little bird occurs for the most part in the same rough and rocky localities as the Rock Sparrow, but it has not been found in Cimarron County. It is not clear why it should so far forget its proper setting as to nest in Creek and Tulsa Counties. In Blaine County where Mr. Bunker found it abundant ('10: 70-73), "The canyons were about three hundred and twenty feet deep, with outcroppings of gypsum rock from bottom to top, with a strong salt stream running at the bottom. The only fresh water for miles was a spring on the ridge, a quarter of a mile above the head of the canyon. The canyon walls, and gulches leading to the canyons, were studded with clumps of bushes, mostly dogwood, scrub-oak and similar shrubs, forming ideal cover for vireos, of which *Vireo belli* was not uncommon. On one occasion the nest of a Bell Vireo was found in the same bush with that of a Black-cap."

Unlike most Vireos there are differences in the plumage of the two sexes, the male having a clear black head and neck, while the female's is slaty-gray; the male's wing bars are yellow, the female's whitish. Mr.

Bunker says the male does not sing near the nest, nor did he ever see him assist in building or in incubation.

On June 4 and 5, 1929 I watched one of these birds near the Lower Narrows of West Cache Creek in the Wichitas, as he flew about in the black-jack oaks on the hillside. He sang continuously, giving an extraordinary variety of phrases, all of them harsh, vehement and unmusical. One phrase (*tee war twit*) reminded me of a Chewink in its timing and pitch, others of a Chat. The number of phrases given per minute was 31, 31, 29, 28, 32. A different bird gave 29 in one minute. Intervals between beginnings of phrases varied from 1.8 to 3 seconds. No phrase was given more than once at one time. I was not able to record all of his expressions, but the following are samples:

*hee-hee chúr, hee prér, chee-chee-chee-chee, hee-hee-hee, whit whit whit, sissiwit hée, hay party, ter para chée, wheep, hur wee chée.*

The phrases of another bird across the creek were all somewhat different from those of the first bird. Some that I recorded are:

*which er chée* (a Chewink-like note), *dee dee dee, what kée, whip chúr whip kée.*

(631) WHITE-EYED VIREO: *Vireo griseus griseus*

Summer resident in the eastern half of the state, rare in Cleveland County.

Migration: Copan—Apr. 17-Sept. 18 (K<sup>1</sup>); Tulsa—Apr. 7, '21, Apr. 15, '22 (P<sup>2</sup>); —\*†Apr. 6 '27—Oct. 15 (K<sup>2</sup>); Oklahoma City—Apr. 26, '25 (S<sup>1</sup>); Cleveland Co.—\*Apr. 26 '02 (B<sup>2</sup>)—\*Apr. 24 '23, Apr. 15 '27 (N); Bryan Co.—Mar. 25 '84 (C<sup>4</sup>).

Nesting: Copan—3 nests, 4 eggs each, one with Cowbird's also, May 4-26 (K<sup>1</sup>); Adair Co.—several nests found Apr. 13-17, '97 (L<sup>5</sup>); Tulsa—eggs May 7, '22 (P<sup>2</sup>).—eggs May 3, June 12 (M<sup>5</sup>); Cleveland Co.—July 12 '26, male seen with food in bill (N). Pemberton did not find these birds near Tulsa until 1922. Our first record for Cleveland County was one bird June 29, 1922. We heard them singing sporadically in 1923, 1926 and 1927, but only in 1926 were we sure of the nesting of a pair. It is also an irregular visitor in the Arbuckles; we heard it May 15, 1926, but not on our visits in 1920, 1923 and 1927; Saunders recorded one in 1928.

Food: caterpillars, moths, leaf beetles, grasshoppers, stink bugs, scale insects.

Few songs are more absurd than the vehement, curious phrasings of this small bird. *Twich-u-all-chit, chee-ah-will-ah-will-ay, chip-ah-wee-oh, chip-ah-wee-chit, pickeray chip, chip-chip-a-red-oh*, are a few examples. Each variety is usually given for several minutes—from 10 to 13 songs a minute—before a new tune is taken up. The White-eye is a bird of brushy ravines and tangled thickets; it has a strong yellow tinge on the under parts and a yellow line to and around the eye. Let us hope this original and amusing little bird will continue to extend its range to the west.

(633) BELL VIREO: *Vireo belli belli*

Summer resident in northeastern and central Oklahoma, also Woodward and Tillman Counties.

Migration: Copan—Apr. 25 '16, Apr. 24 '17, last Sept. 29 '16 (K<sup>1</sup>); Tulsa—Apr. 20, '23: Apr. 21 (K<sup>2</sup>); Cleveland Co.—Apr. 25, '21: Apr. 28: Sept. 18: Sept. 21, '26, (N).

Nesting: records of 54 nests, earliest May 10, '28 at Tulsa (M<sup>5</sup>); latest, young out of the nest being fed by parents July 13, '23, July 21 '26 at Norman (N); one nest had 5 eggs, Copan May 17, '13 (K<sup>1</sup>); 16 had 4 eggs; 9 contained Cowbird eggs; heights of 18 nests ranged between 15 inches and 4 feet, averaging 2.7 feet; one was 10 feet from the ground. Of 17 nests found in Cleveland County, 15 were failures, 4 due to Cowbirds, at least 3 to cats. Kirn found a nest June 17 containing 1 egg and 1 young bird about 8 days old. Morse has sometimes found Cowbird eggs buried in the bottom

of a nest. He reports ('27) a double nest June 15, '26, the second having been built 2/3 of the way around the first and containing 2 eggs, when the young of the first brood were nearly ready to fly. Incubation lasts 14 days. The Bell Vireo has been recorded from the following counties: Craig, Delaware, Mayes, Cherokee, Washington, Tulsa, Creek, Okmulgee, Kay, Payne, Kingfisher, Blaine, Canadian, Oklahoma, Cleveland, Grady, Caddo, Comanche, Tillman, Woodward.

Food: grasshoppers, caterpillars, moths, stink bugs, weevils, leaf beetles; wild fruits.

There is no music to the Bell Vireo's refrain, but it possesses a quaint charm in its air of enthusiasm, in the rapid jumble of it all. It may be phrased *whillowhee, whillowhee, whee*; sometimes there are 3 *whillowhees*. Either song may end with a rising or falling inflection. When the bird is thoroughly in the mood, his rate is a song every 3 seconds, but this rapid pace is seldom kept up as long as a minute, 15, 16 and 17 songs a minute being the highest numbers I have recorded, while 8 to 12 are more commonly heard. As for hour records, a nesting bird sang the following number of times: 32, 56, 57, 61, 70, 99, 131 and 254. These birds seem to sing all day long and all summer long, although in August their zeal diminishes; the last songs are heard from the 13th to 21st of September.

The Bell Vireo is a plain little bird with a brownish-olive back, olive-green rump, two whitish wing bars, white eye ring, and sides and breast washed with yellow. Often it is not easy to see for it stays close to cover, sand plum thickets or tangles on hillsides, young willows by streams or shrubbery in town.

In 1926 I followed the fortunes of a pair for two months on the campus of the University of Oklahoma. Three exquisite little pensile nests were built, but every one was destroyed by a cat. During the first day of building the third nest, the male was in the highest of spirits singing 254 songs in one hour. The female was the chief architect, making 7 trips, but the male came 16 times as if he always had to be examining the structure and tinkering with it. I could not see anything in his bill, but I have seen other Bell Vireos carrying material and singing at the same time.

Unlike most birds the male sings a great deal in the home bush; in the 9 hours of observation 388 songs were given there and 417 elsewhere. He even sings while sitting on the eggs. On June 22 during a 41 minute session of incubation, the absurd little bird gave 30 songs.

The young were watched for a short period each day from May 29 (the day the last one hatched) to June 3; during 5 hours the female fed 21 times, the male 54, an average of a meal every 4.9 minutes. Twenty-five times he gave the food to her and often she ate it herself. She did most of the brooding, but occasionally he popped down on the babies and sat there puffed out and scolding, twice for one minute, once for 7 minutes.

Although not strikingly colored, nor blessed with a fine voice, this little bird will win a secure place in the affections of any one who comes to know him well. In the fragmentary study I made of their home life, the enthusiasm of the male throughout the cycle was delightful to witness—his intense interest in nest building, his exuberance while incubating, and his devotion to the young, both in occasionally brooding them and in assuming the major part of the task of feeding them.

#### (628) YELLOW-THROATED VIREO: *Vireo flavifrons*

Summer resident throughout eastern Oklahoma as far west as Washington, Tulsa, McIntosh, Pittsburg and Atoka Counties.

Migration: Copan—Apr. 3 '17 (K<sup>1</sup>); Tulsa—Apr. 15-Oct. 13 (K<sup>2</sup>); Adair Co.—



\*Mar. 31, '97 (L<sup>5</sup>); Stillwater—seen May 9, 11, '28 (M<sup>8</sup>); Cleveland Co.—\*Aug. 22, '03 (V); Latimer Co.—1 Sept. 13, '92 (P<sup>8</sup>).

Nesting: Copan—rare, building May 9, '16, no eggs May 16, 1 egg and 1 of Cowbird May 22 (K<sup>1</sup>); Tulsa—rare, nest June 28 '26, 3 eggs and 1 of Cowbird in nest 2 feet from ground in willow thicket June 21 '28 (M<sup>6</sup>); Pottawatomie Co.—\*June 15, '01 (B<sup>6</sup>).

Food: house flies, plant lice, tent and tussock caterpillars, mosquitoes, weevils, leaf hoppers.

This, the most beautiful of our Vireos, is unfortunately rather rare throughout its range in Oklahoma. It has a rich and varied song much like the Red-eye's in character, but timed more slowly; one that I heard in Ohio sang 20 phrases in 40 seconds.

(629) BLUE-HEADED VIREO: *Vireo solitarius solitarius*

Rare transient in eastern Oklahoma.

Migration: Cherokee Co.—one seen and heard singing May 6 '23 (N); Tulsa—one seen Sept. 7 '24 (K<sup>3</sup>).

This handsome Vireo has a slate-blue head, a white ring around the eye, and a white line from the eye to the bill. One of its songs resembles that of the Red-eye, but is richer and delivered more slowly; a bird in Massachusetts gave 25 phrases in a minute. There is no record of a specimen for the state.

(624) RED-EYED VIREO: *Vireo olivacea*

Summer resident throughout eastern and central Oklahoma as far west as Kay, Caddo, and Comanche counties; common in eastern Oklahoma.

Migration: Copan—Apr. 20, '16, Apr. 17, '17 (K<sup>1</sup>); Tulsa—Apr. 15, '22 (L<sup>3</sup>); Apr. 17-Sept. 25 (K<sup>3</sup>); Sequoyah Co.—Apr. 13, '97 (L<sup>5</sup>); Cleveland Co.—Apr. 15-Aug. 31, singing throughout stay; migrating birds, Apr. 26-May 12 (N).

Nesting: Copan—3 Vireo eggs and 2 Cowbird's May 18, '16; 1 nearly grown young and 1 infertile egg, June 16 '14; bird sitting on 1 Cowbird egg and 1 punctured egg of her own, another of hers on the ground June 20, '14, nest finally deserted (K<sup>1</sup>); Tulsa—rare, eggs May 15-June 15 (M<sup>5</sup>); Fort Cobb—3 eggs, June 1, '60 (M<sup>1</sup>); Wichitas—nest 40 feet up in walnut June 6, '29 (B<sup>5</sup>);—feeding young in nest Aug. 4-6, '05 (B<sup>1-2</sup>). Heights of nests range from 7 to 17 feet in eastern Oklahoma.

Food: tent caterpillars, codling moths, leaf beetles, weevils, stink bugs, spiders; wild berries.

The solemn continuous strain of this fine Vireo embodies the very spirit of serenity and content. The song consists of separate phrases of from two to four syllables, given usually at the rate of about 60 a minute. In the early morning at the Wichitas June 4, 1929 a bird sang faster—from 71 to 85 times a minute—but dropped to 57 to 63 later in the day. Some people have difficulty in distinguishing this song from that of the Robin; the latter is more powerful and boasts of a beginning and end, while the Vireo's flows on like Tennyson's brook.

This species may be known from the other Vireos by the white underparts and dark grey crown bordered by a black line. In the east it frequents tall shade trees in towns, but in Oklahoma we find it only in woods.

(627) EASTERN WARBLING VIREO: *Vireo gilva gilva*

Summer resident, breeding locally in eastern and central Oklahoma.

Migration: Tulsa—\*†Apr. 28, '27 (K<sup>3</sup>); Cleveland Co.—Apr. 24, '20, Apr. 29, '23, Apr. 28 '26, Apr. 19, 28, '27 (N).

Nesting: Sapulpa—nest found July 1, '19 (B<sup>3</sup>); Adair Co.—seen July 11 '29 (B<sup>5</sup>); Cherokee—common May 6, 7, '23 (N); Stillwater—nested on campus 1927 and 1928 (M<sup>3</sup>); Cleveland Co.—pair nested near the Canadian 10 miles west of Norman 1923; heard in large cottonwoods by Lexington June 2 '24; pair nested near Norman bridge 1927 (N); Minco—seen May 26, 29, '05 (W<sup>1</sup>)—not found May 20, '23 (N).

Food: horse flies, mosquitoes, caterpillars, twelve-spotted cucumber beetle, grasshoppers; wild fruit.

Warbling Vireos are wanderers, often nesting in new localities from year to year. Moreover a singing bird will be heard for just one day in a place during the summer. Mr. Saunders reported one in Oklahoma City May 16, another June 12. On the campus at Norman singing was heard June 10, 22, 1926, Apr. 19 and May 9, 1927, and in our garden July 22, 1926. May 29, 1929 I heard one singing on West Symmes Street in Norman, but not later. The song is perhaps the most beautiful of any of the Vireos; it is a warble-*whilyoh wilyoh wilyoh wilyoh whee*—and unlike most Vireo songs it is not varied. A bird near the Canadian May 14, 1927 sang 9 times a minute, the length of three songs being 3, 3.7, and 4 seconds.

The Warbling Vireo is slightly smaller than the Red-eye; it has no distinct dark line through the eye, nor is its crown bordered by a black streak.

(627a) WESTERN WARBLING VIREO: *Vireo gilva swainsoni*

Uncommon resident in the Panhandle.

Nesting: Gate—nesting in 1925 (L<sup>2</sup>); Kenton—nest with 2 young and 1 egg on C. F. Rowan June 1, '16, specimen taken (T<sup>1</sup>).

The Western Warbling Vireo is at home both in gardens and in the wilds. "It frequents, for the most part, the deciduous trees, especially the cottonwoods, and ranges from the valleys high up into the mountains," wrote H. W. Henshaw (*Wheeler's Rept. Geog. and Geol. Exp. and Surv. West 100th Meridian*, 1875, 5:222). "Its habits are everywhere the same, and the sweet, half meditative notes of its beautiful song have the same power to charm the ear in the solitude of its wild home as when heard under the more familiar conditions of civilization."

#### WOOD WARBLERS: FAMILY COMPSOTHTYPIDAE

The Wood Warblers comprise the second largest family of birds in North America, only the Fringillidae exceeding them in numbers. In central Oklahoma there are but six breeding species, but eastern Oklahoma is a paradise for these beautiful birds, no less than seventeen being found there in summer. The hosts of transient warblers that are the chief glory of the migration in the east do not pass through Oklahoma, but many should be found in late April and the first half of May along the eastern border of the state; here and at the end of the Panhandle a number of additions to the state list undoubtedly could be made.

(636) BLACK AND WHITE WARBLER: *Mniotilta varia*

Summer resident in eastern Oklahoma; in all the most eastern counties, also Mayes, Cherokee and Pushmataha; transient in central Oklahoma.

Migration: Copan—2 seen Sept. 15, '16 (K<sup>1</sup>); Tulsa—one seen May 17, '23 (K<sup>3</sup>); Adair Co.—common Mar. 31, '97 (L<sup>5</sup>); Oklahoma Co.—May 21, '24, Aug. 8, '25 (S<sup>1</sup>); Cleveland Co.—May 2, July 26, Oct. 2, '26, \*May 7, '27 (N); Arbuckles—May 1-5, '25 (S<sup>1</sup>); Dougherty—Aug. 12-17, '92 (P<sup>3</sup>); Wichitas—Apr. 30—May 8, '04 (G<sup>2</sup>); Gate—one May 15, '27. (L<sup>2</sup>).

Nesting: LeFlore Co.—on Winding Stair Mt. parents feeding a young bird out of the nest July 11, '23. (N). We have no record of a nest.

Food: wood boring insects, bark and click beetles, cutworms, curculios, grasshoppers.

June 26, 1920 we noted a Black and White Warbler in the Arbuckles,

but have seen none on our visits since then. The song is a wiry *wee-seé*, *wee-seé*, *wee-seé*.

(637) PROTHONOTARY WARBLER: *Protonotaria citrea*

Summer resident in eastern Oklahoma, rare in central Oklahoma. Recorded in summer in Washington, Tulsa, Creek, Pushmataha, McCurtain, and Cleveland Counties.

Migration: Copan—Apr. 20-Aug. 10, '16, Apr. 19, '17 (K<sup>1</sup>); Oklahoma City—5 or 6 seen Aug. 7-11, '92 (P<sup>8</sup>); Cleveland Co.—Apr. 13, '20, Apr. 19, '22, Apr. 28, '27 (N); Dougherty—common Aug. 12-17, '92 (P<sup>8</sup>).

Nesting: Copan—common all along the Caney River, 13 nests found in 1914, 1926 and 1927; earliest 5 eggs May 9, '17, latest 5 fresh eggs June 14, '17; young May 25, '14; building May 5 and June 22, '16; 7 sets of 5, 4 or 3, one nest with Cowbird eggs; nests in holes, woodpecker or decayed cavities in stumps, 3 to 5 feet from ground in stubs on creek bank, but occasionally away from water (K<sup>1</sup>); Tulsa—rare, nest with 6 eggs found 3 feet above water in a woodpecker's hole May 18, '23 (M<sup>6</sup>); Cleveland Co.—nesting locally, pair seen with green larvæ in their bills July 14, '26 (N).

This gorgeous little bird is a glowing orange on the head, back and breast; the wings are dark grayish without bars. The loud song—*sweet tweet tweet tweet* (sometimes 6 or 7 notes)—was not often given by the bird nesting in the Olivers' woods south of Norman in 1927. On May 27, only nine songs were heard from 5 to 7 a. m. On May 19 the first song was recorded at 5:20, on June 4 at 5:28, in both cases two being given. This warbler has two notes that are something like the Cardinal's, only softer—a *tchip* and a *pip-pip-pip-pip*.

(638) SWAINSON WARBLER: *Limnothlypis swainsoni*

Rare summer resident in Washington County.

Nesting: Copan—1 Warbler egg and 2 Cowbird's June 2, 4 eggs June 27, '14; 1 egg May 29, 2 Warbler and 2 Cowbird eggs June 2, 3 eggs June 20, another nest found deserted with broken eggs and 1 Cowbird's June 20, 2 deserted nests, one empty, other with punctured eggs June 22, '17 (K<sup>1</sup>).

"In a strip of woods a mile long and a little over a quarter of a mile in length" near the Little Caney River Mr. Kirn ('18a) found four pairs of these rare warblers nesting. "A well shaded clump of trees in the woods; such a place as would suggest itself for a Wood Thrush, yet not exactly so, with considerable 'buck brush' undergrowth, but no grass or weeds, is selected for a nesting site. In the top of this buck brush usually about two feet high the nest is built; about half of the nests found were close to the river bank. . . . The nests are always built of leaves. . . . Outwardly they look much like a bunch of fallen leaves caught in the top of the small bush in which they are placed. In size they range from five by six to five by eight or nine inches across and three to four inches deep." Mr. Kirn heard the beautiful song as late as July 6. There is no record of a specimen having been taken in the state.

(639) WORM-EATING WARBLER: *Helmitheros vermivorus*

Rare transient in eastern Oklahoma.

Migration: Cherokee Co.—2 seen May 6, '23 (N).

McCauley ('77) wrote that this warbler was "occasionally noted near the crossing of the Canadian" and his statement was incorporated into many of the earlier bird books; northwestern Oklahoma is far west of its expected range. It should be found nesting occasionally in eastern Oklahoma. The usual song is very like that of a Chipping Sparrow, but with

more of a buzzing effect. There is no record of a specimen taken in the state.

(641) BLUE-WINGED WARBLER: *Vermivora pinus*

Rare transient and summer resident in eastern Oklahoma.

Migration: Copan—rare, 1 Apr. 26, Apr. 27, '16, 1 May 5, 1 May 25, '17 (K<sup>1</sup>); Tulsa—seen May 4, 8, '24 (K<sup>3</sup>); Sapulpa—rare migrant (B<sup>3</sup>); Oklahoma City—1 Apr. 26, '25 near Belle Isle Lake (S<sup>1</sup>); Cleveland Co.—\*Apr. 26, '02 (B<sup>6</sup>).

Nesting: Woodhouse ('53: 72) stated it was "common in Indian Territory, breeds." In the catalog of the National Museum there is this entry. "No. 12195 Helminthophaga Pinus. Creek Nat. July 15, 1849. Woodhouse." In Tulsa Co. Mrs. C. M. Beck took a specimen in July or August 1929.

The Blue-winged Warbler has a yellow body with a black line through the eye; the two white wing bars are conspicuous. This is one of the birds that sometimes sings two notes at once, the second note of its commoner two-note song being frequently double. "From a distance the higher note is usually the only one audible, whereas near the bird only the low one can be heard, and at a medium distance both are heard at once." (A. A. Saunders, *Bird Song*, 1929, *N. Y. State Mus. Handbook* 7:93).

(645) NASHVILLE WARBLER: *Vermivora ruficapilla ruficapilla*

Uncommon transient in eastern and central Oklahoma.

Migration: northeastern Oklahoma—\*†Sept. 2-5, '14 (C<sup>5</sup>); Tulsa—Sept. 5, Oct. 12, 21, '24 (K<sup>3</sup>); Cherokee Co.—2 May 5, '23 (N); Cleveland Co.—May 11, '20, May 2, '26, Oct. 18, '22, Oct. 14, 15, 17, 19, '26—all single individuals except in Oct. '26 when 4 were seen the 19th, 6 the 16th, 2 the 19th (N).

This handsome little warbler is distinguished by its white-eye ring and entirely yellow under parts, its gray head, and lack of white in wings and tail. The song begins like a Black and White Warbler's, "and ends with two or three quick phrases that run down the scale, *wee-ise wee-ise, chiddle chiddle chiddle*" (Hoffman). On the breeding grounds it is given on an average five time a minute.

(646) ORANGE-CROWNED WARBLER: *Vermivora celata celata*

Transient throughout the main body of the state.

Migration: Copan—scarce, Apr. 25-May 2, '17 (K<sup>1</sup>); Cleveland Co.—regular spring and fall transient Apr. 15, '27; Apr. 19:: Apr. 30: May 2, '26; Sept 20, '20: Oct. 4:: Oct. 18: Oct. 19, '23 (N); Woods Co.—migrant, April (Barde, '12: 98); Gate—rare, seen May 1, '10 (L<sup>2</sup>).

Next to the Myrtle, this is our commonest transient warbler in Cleveland County. In the fall its favorite haunts are the sunflowers and giant ragweeds, where it may be found flipping its wings like a Ruby-crowned Kinglet and occasionally giving a rather loud, sparrow-like *tchip*. The dusky streaks on its greenish underparts, its lack of wing bars, obscure eye ring and the uniformity of its coloring above and below serve to identify this plain little bird. I have never yet seen its "orange-crown." The song is a loud trill ending abruptly on a rising scale; I have recorded it April 19 and 24, 1922, April 28, 1926, and April 18, 1927.

(647) TENNESSEE WARBLER: *Vermivora peregrina*

Rare transient in eastern and central Oklahoma.

Migration: Tulsa—Apr. 27, '24, \*†May 15 '25, Sept. 14, '24, Oct. 10, '27 (K<sup>3</sup>);—May 18, '25 (G<sup>1</sup>); Cherokee Co.—several seen May 6, '23 (N); Stillwater—seen Apr. 28, '18 (M<sup>3</sup>); Cleveland Co.—1 Sept. 20, '20, 3 Sept. 20, 2 Oct. 12, '25 (N).

This little warbler has a whitish or yellow line over the eye, but no eye ring; its underparts vary from pure white to pale lemon yellow,

while the under tail-coverts are white. In fall it is a strikingly greenish bird. The song is loud and unmistakable, a series of *sees* changing to a higher pitch in the middle and dropping again at the end.

(648) NORTHERN PARULA WARBLER: *Compsothlypis americana pusillat*†

Summer resident in eastern Oklahoma, recorded in summer from the eastern tier of counties (except Ottawa), also Pushmataha and Washington Counties.

Migration: Copan—Apr. 2, '17; last seen Sept. 17, '16 (K<sup>1</sup>); Tulsa—Apr. 15, '22 (L<sup>3</sup>),—\*†May 15, '27 (K<sup>3</sup>); Adair Co.—Mar. 31, '97 (L<sup>5</sup>), Sequoyah Co.—Apr. 15, '97 (L<sup>5</sup>); Latimer Co.—several seen Sept. 2-14, '92 (P<sup>3</sup>); Bryan Co.—Mar. 25, '84 (C<sup>4</sup>); Norman—\*†Aug. 22, '03 (B<sup>9</sup>).

Nesting: nest with 1 Warbler egg and 3 Cowbird eggs May 15, '16 (K<sup>1</sup>); Delaware Co.—watched young Cowbird being fed by female Parula Warbler for over an hour (S<sup>1</sup>, '26b:74); Leflore—\*†June '27 (W<sup>4</sup>).

Near Copan Mr. Kirn found a nest of this little warbler in a small hackberry in woods along the Caney River; it was fastened to ivy leaves and to a stick which was hanging down held by the vine. "In this hanging, swaying cluster about two feet long, the nest was built almost entirely of box elder blossoms held together by spider webs on the outside, and sycamore seed down on the inside with a light lining of fine strips of weed stems." Nest building began April 30; on May 15 the bird was incubating one of her own eggs and three Cowbird eggs.

(652) EASTERN YELLOW WARBLER: *Dendroica aestiva aestiva*

Summer resident in the northern half of Oklahoma, breeding as far south as Cherokee, Okmulgee, Cleveland, Grady, and Custer Counties.

Migration: Tulsa—Apr. 20-Aug. 15 (K<sup>3</sup>); Cleveland Co.—Apr. 16, '14; Apr. 20: Aug. 10, '26 (N); Custer Co.—Apr. 16-Sept. 11, '02, Apr. 26 '03, Apr. 12, '04 (S<sup>4</sup>); Kenton—immature male \*†Aug. 27, '26 (N).

Nesting: Copan—rare, did not breed (K<sup>1</sup>); Tulsa—common, eggs May 11-June 28 (P<sup>2</sup>, M<sup>5</sup>, G<sup>3</sup>); Cleveland Co.—3 eggs June 20, '20; 3 young left nest June 19, '20, Cowbird and Warbler egg found embedded in bottom of nest; 3 little Warblers and 1 large Cowbird in nest June 30, '22, young recently out of nest June 19, July 17, '22; pair feeding Cowbird July 11, '22.

Food: canker worms, tent caterpillars, bark and boring beetles, weevils, codling moths, plant lice.

Yellow Warblers have no white anywhere. The inner webs of nearly all the tail feathers are largely yellow—a distinguishing mark of the immature female that otherwise is largely olive. The plain little song *sweet sweet sweet sweet* is uttered persistently, from six to seven, occasionally eight times a minute. Sometimes it is given from the ground. The Yellow Warbler is one of the earliest of the nesting birds to leave us.

(652a) SONORA YELLOW WARBLER: *Dendroica aestiva sonorana*†

Summer resident in Cimarron County.

Specimen: Cimarron Co.—\*†July 3, '26 (L<sup>4</sup>, '30).

Nesting: Cimarron Co.—nest with 4 eggs on C. F. Rowan ranch June 3, '16 (T<sup>1</sup>).

†The Oklahoma specimens have been identified by Dr. Oberholser as *C. a. ramalinae*, Western Parula Warbler, but this subspecies of Mr. Ridgway's was not accepted by the Committee on Nomenclature.

†Identified as *D. a. morcomi*, Western Yellow Warbler, but this subspecies was not accepted by the Committee.

(652b) ALASKA YELLOW WARBLER: *Dendroica aestiva rubriginosa*  
Transient.Migration: Eastern Oklahoma—\*†Sept. 11, '14 (C<sup>5</sup>).(654) BLACK-THROATED BLUE WARBLER: *Dendroica caerulescens caerulescens*

Rare transient in eastern Oklahoma.

Migration: Creek Co.—rare migrant (B<sup>8</sup>).

Woodhouse listed this handsome warbler as "abundant in Indian Territory," but only one observer has noted it since his day. The different songs of the Black-throated Blue are all brief and most of them given with a husky tone; one variety uttered by a nesting bird in Massachusetts lasted six-tenths of a second, another a full second. This bird gave from 8 to 84 songs an hour as he fed his four nestlings.

(655) MYRTLE WARBLER: *Dendroica coronata*†

Transient throughout the main part of the state, sometimes wintering in central and southern Oklahoma.

Migration: Copan—Apr. 18-May 1, '16, Apr. 17-May 1, '17, Nov. 30-Dec. 23 (K<sup>1</sup>); Tulsa—Apr. 6-May 2, Oct. 12-Nov. 25, '24, Feb. 16, '25, \*†Apr. 20, '27 (K<sup>3</sup>); Cherokee Co.—2 seen May 6, '23 (N); Bryan—"the commonest warbler in the fall," "fairly common all winter," first seen Nov. 16, '83 (C<sup>4</sup>); Cleveland Co.—Apr. 10-May 3; Oct. 18, '26 earliest fall date; recorded most often in April and November, occasionally seen during winter and in March (N); Chickasaw Nation—\*†Mar. 14, '03 (V); Oklahoma City—15 Oct. 19, 50 Nov. 1, '25 (S<sup>1</sup>); Gate—uncommon, May 1, '10, Apr. 17, '21 (L<sup>2</sup>).

Food: plant lice, house flies, wooly apple tree aphid, cotton boll weevil; dogwood, poison ivy berries.

This warbler is handsome and distinguished in the spring, but a rather drab looking bird in the fall. Its white throat, yellow rump and white spots on the outer tail feathers serve to identify it. It was listed on both Christmas lists in southern Oklahoma, on one Christmas census in Cleveland County, all three in Oklahoma County, but in none of those in eastern Oklahoma. Its sleigh bell trill has been heard in Cleveland County April 20, 24, 1926, and April 10, 14, 15, 1927.

(656) AUDUBON WARBLER: *Dendroica auduboni auduboni*

Transient in the Panhandle.

Migration: Gate—May 8, '10, also several other years (L<sup>2</sup>); Cimarron Co.—common from May 1 to about May 15 (T<sup>1</sup>).

Like its close relative the Myrtle Warbler, this bird is streaked and dull in winter plumage, but gay enough in spring with the yellow throat, crown, rump and sides, and striking black, white and yellow under parts. In the adult the yellow throat distinguishes *D. auduboni* from *D. coronata*, in the young the larger amount of white in the tail of the western bird. Mr. Tate has taken a specimen.

(658) CERULEAN WARBLER: *Dendroica cerulea*

Summer resident in eastern Oklahoma, recorded from Washington, Delaware, Leflore, and McCurtain Counties.

Migration: Copan—8 Apr. 20, common Apr. 21, last Sept. 1, '16, 1 Mar. 27, common Apr. 16, '17 (K<sup>1</sup>).

Nesting: Copan—nest with 4 eggs Apr. 29, '13 (K<sup>1</sup>).

†A specimen taken Nov. '13 in Cleveland Co. was identified by Dr. Oberholser as *D. c. hooveri*, Hoover Warbler, but this subspecies was not accepted by the Committee. The other specimens listed were referred to *D. c. coronata*.

Woodhouse says: "This beautiful little wood warbler, so rare in the eastern and middle states, is quite common in Texas and the Creek and Cherokee countries. In the latter countries it breeds; there I obtained both old and young. Its nest I have never found. It was quite abundant in the timber of the Arkansas river and its tributaries." ('53:70). In the catalog of the National Museum under Nos. 12160 and 12162 are listed two males from the "Cherokee Nation, July 4, 1849 (Sitgreaves) R. J. Pollard."

The nest found by Mr. Kirn was "in a box elder near a creek in woods; it was saddled on a fork 23 feet up, made of fine grape vine bark, some fine grass and plant fibres, adorned with white lichens." The female and young are much like fall Black-polls but they are usually tinged with blue above and always show traces of blue in the tail; they have two conspicuous white wing bars and a whitish line over the eye.

(661) BLACK-POLL WARBLER: *Dendroica striata*

Transient in eastern and central Oklahoma.

Migration: Copan—rare, 1 May 18, 1 June 5, '17 (K<sup>1</sup>); Tulsa—rare, 1 May 2, '24 (K<sup>8</sup>); Cherokee Co.—common May 5-6, '23 (N); Cleveland Co.—uncommon transient in May and November, 1 May 16, '20, 1 May 5, '27; 1 Nov. 16, '19, 3 Nov. 5, '20, 1 Nov. 8, '21, 3 Nov. 4, '22, 1 Nov. 13, '26 (N). No record of a specimen.

This late migrant is a much streaked warbler with white wing bars in all plumages. The male in spring is easy to recognize by his black crown and white cheeks, but the female is an unpretentious bird with greyish olive upper parts and white or buffy underparts, streaked above and on the sides with black. In the fall all the birds resemble the spring female, but the under parts are more yellowish and the streaking above and below is faint. The under tail coverts are always white.

The song "is a high thin *tsit tsit tsit tsit tsit*, of a penetrating quality, delivered with a crescendo and diminuendo; the last notes are by some birds run rapidly together with almost a sputtering effect." (R. Hoffman, *Birds of New England and New York*, 1923:115).

(657) MAGNOLIA WARBLER: *Dendroica magnolia*

Rare transient in eastern Oklahoma.

Migration: Tulsa—one seen Apr. 13, '24 (K<sup>8</sup>).

This beautiful warbler may be known in any plumage by the pattern of the tail, which is black at the end with white patches half way down. There is no record of a specimen for the state.

(672) INTERIOR PALM WARBLER: *Dendroica palmarum palmarum*

Rare transient in eastern Oklahoma.

Record: Okfuskee Co.—seen near North Fork Dec. '75 (Kumlein, '77: 129).

This hardy warbler with its bright yellow throat, under tail coverts, and stripe over the eye, its reddish chesnut crown and its absurd tail wagging habit, doubtless occurs as an early spring and late fall transient in eastern Oklahoma. Kumlein speaks of it as follows: "The latter species here, as has been my experience in other of the Western States, seems to prefer the prairie." There is no record of a specimen taken in Oklahoma.

(663a) SYCAMORE WARBLER: *Dendroica dominica albilora*

Summer resident in eastern and central Oklahoma as far west as Cleveland County; it has been found in summer in Delaware, Mayes, Creek, Cleveland, Atoka, and Pushmataha counties.

Migration: Copan—2 Mar. 27, 28, '16, 3 Apr. 16, 20, '17 (K<sup>1</sup>); Mayes Co.—\*†Aug. 30, '14 (C<sup>5</sup>); Kay Co.—immature bird \*†Aug. 3-6, '92 (P<sup>8</sup>); Cleveland Co.—\*†Apr. 3, '02 (B<sup>6</sup>);—\*†Mar. 17, '23 (C<sup>5</sup>);—Mar. 30, '23, Apr. 4, '24, Mar. 26, '27 (N); Murray Co.—several Aug. 12-17, '92 (P<sup>8</sup>); Pittsburg Co.—several Aug. 19-23 (P<sup>8</sup>).

Nesting: Tulsa—building in elm 30 feet up May 8, '24 (K<sup>3</sup>); Creek Co.—nest found June 17, '19 (B<sup>8</sup>); Cleveland Co.—parents with insects in bill July 8, '22; female feeding several bob-tailed young high in the trees July 14, '26 (N).

The songs of this lovely warbler made one think of evergreen forests; they gave a wistful, haunting touch to the somber, leafless woods, where most of the bird notes were loud and ringing. The bird in the Olivers' woods in 1927 had two songs. "A" was in a continuously descending scale except for the last note which was slightly higher than that preceding—*see see see see see see chérwer*; the ending was abrupt. "B" was more musical; it consisted of four notes on the same pitch, then three descending, ending with one on a somewhat higher pitch. Both songs were given five and six times a minute. In 1926 only "A" was recorded on Apr. 8 and July 14, but in 1927 the two songs were heard as follows during early morning visits: March 26 to May 5—"B" only; May 19—"B" 5:37-7:30, "A" 7:40 on; May 27—"A" 5:31-7:30, singing fairly constantly; June 4—"B" 5:22-6:18, "A" 6:45-7:00, "B" 7:10.

(667) BLACK-THROATED GREEN WARBLER: *Dendroica virens virens*

Uncommon transient in eastern and central Oklahoma.

Migration: Cherokee Co.—2 singing males May 6, '23 (N); Tulsa—Apr. 26-May 16, Aug. 17-Oct. 8 (K<sup>3</sup>);—May 18, '25 (G<sup>4</sup>); Latimer Co.—immature bird Sept. 8, '92 (P<sup>8</sup>); Oklahoma Co.—male Aug. 7, 8, '25 (S<sup>1</sup>); Cleveland Co.—1 Oct. 16, '22, 1 Oct. 12, 16, '25 (N). There is no record of a specimen.

This handsome little warbler is more of a musician than most of his kind, his *trees, trees, murmuring trees* being sweet and pretty and unforgettable. A bird in Massachusetts while feeding young in the nest gave 287 songs during one hour.

(671) NORTHERN PINE WARBLER: *Dendroica pinus pinus*

Summer resident in the pine forests of eastern Oklahoma, common in Leflore, Pushmataha, and McCurtain Counties.

Migration: Osage Co.—Aug. 23, '20 (Say in James, '05: 254); Hartshorne—pair taken about \*Mar. 20, '14, (C<sup>5</sup>).

Nesting: Cherokee Co.—nest with eggs May 6, '23 (N); McCurtain Co.—female on nest 40 feet up in a yellow pine June 28, '23 (N); Pushmataha and Leflore Cos.—many young accompanying parents July 4-11, '20 (N).

Just south of Sycamore Inn east of Tahlequah at the top of the slope on which there were perhaps a dozen scrubby yellow pines, I found the nest of a Pine Warbler straddled on a branch of a small pine 25 feet from the ground. The little mother seemed rather restless, changing her position, jiggling her eggs and nibbling at the pine needles that stuck in her face. Her mate came and fed her, but immediately afterwards she darted off to feed herself.

The females and young are so dingy looking that they hardly seem like Warblers. The upper parts of the former are brownish with a faint greenish yellow tinge, the under parts greyish white with a hint of yellowish on the breast; the wing bars are narrow and greyish. The immature birds have no yellowish tinge and their wing bars are brownish white.



(673) NORTHERN PRAIRIE WARBLER: *Dendroica discolor discolor*  
 Summer resident in eastern Oklahoma, recorded from Ottawa, Tulsa, Leflore, Pushmataha and Pottawotomie Counties.

Migration: Cherokee Co.—very common May 5, 6, '23 (N); Cleveland Co.—1 Apr. 22, '23 (N); Dougherty—1 Aug. 12-17 '92 (P<sup>8</sup>).

Nesting: Tulsa—4 eggs, May 12, '24, 5 eggs May 12, '27, nests May 15, 17, '28 (M<sup>5</sup>); Pushmataha Co.—young recently out of the nest being fed by parents July 5, '20 (N). Specimens have been taken in summer in the following counties: Ottawa—\*July 12, '12 (P<sup>4</sup>); Leflore—\*†June 18, '27 (W<sup>4</sup>); Pushmataha—\*July '14 (C<sup>3</sup>); Pottawotomie—\*June 19 '01 (B<sup>8</sup>); \*June 2, '03 (V).

The first nest found by Mr. Morse was in a pasture with a ravine running through it; it was placed near the top of a golden rod stem in a fork about a foot from the ground. The song is a series of six or seven *zees*, each pitched higher than the preceding except the last note.

(674) OVEN-BIRD: *Seiurus aurocapillus*

Rare summer resident in southeastern Oklahoma.

Migration: Tulsa—2 Apr. 13, 28, '21 (P<sup>2</sup>); Creek Co.—transient (B<sup>8</sup>).

Nesting: McCurtain Co.—2 fully grown young birds July 1, '23 (N).

This trim bird with its bright orange crown and indefatigable *teacher teacher teacher* should be found nesting in a number of localities in eastern Oklahoma. In Arkansas Mr. Howell ('11:80) "found it very common and breeding both on Rich Mountain and in the Ozark hills around Pettigrew." On July 1 we saw two young birds on a great fallen tree near Mountain Fork, hearing the loud song of the male at the same time. Nesting birds that I watched in Massachusetts brought food to the young at very long intervals, averaging about once in forty minutes during the first four days of nest life, and about once in twenty during the last four. No specimen has been recorded for Oklahoma.

(675a) GRINNELL WATER-THRUSH: *Seiurus noveboracensis notabilis*

Rare transient.

Migration: Seminole Co.—\*†Aug. '14 (C<sup>5</sup>); Gate—May 18, '22 (L<sup>2</sup>).

This water-thrush has yellower under parts than the Louisiana, the yellowish throat is finely streaked and the line over the eye is buffy.

(676) LOUISIANA WATER-THRUSH: *Seiurus motacilla*

Summer resident in eastern Oklahoma and the Arbuckles along clear mountain streams.

Migration: Latimer Co.—\*†late Mar. '14 (C<sup>5</sup>); Oklahoma City—1 seen and heard singing Aug. 11, '25 on small creek northeast of Edgemere Public School (S<sup>1</sup>, '27b); Kiowa Agency—1 taken spring of '67 (P<sup>2</sup>).

Nesting: Delaware Co.—nest in roots of an up-turned tree near Honey Creek June 18, '25 (S<sup>1</sup>); nest with 3 young in a similar position June 25, '24, young being fed June 15, '21, both records near the Spavinaw (N). Recorded in summer from Delaware, Mayes, Cherokee, Sequoyah, Pushmataha, McCurtain, and Murray Counties.

It is a happy thing to hear the wild and ringing notes of this water sprite of our clear, dashing streams. In its summer haunts it could be confused with no other bird, but when met in migration, it may be distinguished from the Grinnell Water-Thrush by its greyer back, whiter under parts, whiter line over the eye and its unstreaked throat.

(677) KENTUCKY WARBLER: *Oporornis formosus*

Summer resident in eastern and central Oklahoma.

Migration: Copan—Apr. 26, '24, Apr. 19, '16, '17, last seen Sept. 16, '16 (K<sup>1</sup>);

Ponca Agency—1 Aug. 3-6, '92 (P<sup>8</sup>); Oklahoma City—Aug. 7-11, '92 (P<sup>8</sup>). Cleveland Co.—transients Apr. 29-May 3, '23 (N); Dougherty—common Aug. 12-17, '92 (P<sup>8</sup>); Kiowa Agency—\*spring '67 (P<sup>1</sup>).

Nesting: Copan—nest with 1 Warbler and 1 Cowbird egg May 8, nest with 2 Warbler eggs and 4 Cowbird eggs May 11, nest with 4 young May 31, '17 (K<sup>1</sup>); Tulsa—eggs June 1, '26, 5 eggs May 19, '27 (M<sup>5</sup>); Lefflore Co.—nest with 3 young July 10, '20 (N); McCurtain Co.—many young just out of nest July 1, '23 (N).

This Warbler nests in the eastern part of Cleveland County but is only rarely seen near Norman. We found it in the Arbuckles in June 1923 but not on our other visits. The Kentucky Warblers near Copan have their troubles. Mr. Kirn tells of his experiences during two seasons in *The Oölogist* ('15c). On May 26, 1913 he killed a snake that had eaten two of a brood of four, a fifth egg not having hatched. Later he discovered a deserted nest holding one Cowbird egg. The next year on May 6 he found a nearly completed nest; on May 11 it contained one Cowbird egg which he removed; May 12 the same story was repeated; May 15 it held one Warbler's egg and May 16 another Cowbird's; after which the nest was deserted. Later this pair raised a brood successfully. Another deserted nest was found with one Cowbird egg in it, while still another containing three Warbler eggs and one Cowbird's was emptied by some enemy.

(680) MACGILLIVRAY WARBLER: *Oporornis tolmiei*

Rare transient in Cimarron County.

Migration: Cimarron Co.—Aug. 16, 25, '27 (T<sup>1</sup>).

The white eye lids and black face of the adult male distinguish this western bird from the Mourning Warbler. Females and young of the two species are difficult to differentiate in the field. No specimen has been taken in Oklahoma.

(679) MOURNING WARBLER: *Oporornis philadelphia*

Uncommon transient in eastern and central Oklahoma.

Migration: Ottawa Co.—\*Sept. 13, '12 (P<sup>4</sup>); Copan—1 May 16, '16 (K<sup>1</sup>); Tulsa—1 May 20, '25 (K<sup>3</sup>); Pittsburg Co.—\*†Aug. 23, '92 (P<sup>3</sup>); Oklahoma City—several Oct. 6, '25 (S<sup>1</sup>); Cleveland Co.—1 Sept. 15, 2 Sept. 29, 1 Oct. 6, '25 (N).

In the fall of 1925 there was something of a migration of these handsome warblers in central Oklahoma—the only time I recorded them in the state. The first bird I saw on Sept. 15, darted into cover with a scolding *pit*. It was strange how such a brilliant bird could disappear so completely in the weeds.

(681d) NORTHERN YELLOW-THROAT: *Geothlypis trichas brachydactyla*

Summer resident in northern Oklahoma.

Specimens: Tulsa—\*†May 16, '25 (K<sup>3</sup>); Minco—\*†May 31, '05 (W<sup>1</sup>).

Migration: Copan—Apr. 16, '17; Apr. 21: Sept. 29, '16; 1 Nov. 29, '16 (K<sup>1</sup>); Tulsa—Apr. 24, '21, Apr. 23, '22 (P<sup>2</sup>);—Apr. 13-Sept. 15 (K<sup>3</sup>); Adair Co.—Apr. 7, 10, '97 (L<sup>5</sup>).

Nesting: Vinita—5 eggs May 21, '12, 4 eggs May 1, '13 (K<sup>1</sup>); Copan—5 nests May 11-24, 3 with Cowbird eggs (K<sup>1</sup>); Tulsa—eggs May 25-June 8 (P<sup>2</sup>);—4 eggs June 25, '22 (M<sup>5</sup>).

Yellowthroats nest throughout eastern and central Oklahoma as far west as Grant, Canadian, Caddo, Comanche and Tillman Counties, also at Gate and in Cimarron County. The birds in the latter locality should belong to *G. t. occidentalis*—Western Yellowthroat—but no specimens have been taken. The birds in central Oklahoma are intermediate between *trichas* and *brachydactyla*.

(681) MARYLAND YELLOWTHROAT: *Geothlypis trichas trichas*

Summer resident in southeastern and central Oklahoma.

Specimens: Pushmataha Co.—\*†July 14, '14 (C<sup>3</sup>);—\*†July 18, '25 (O<sup>3</sup>); Leflore Co.—\*†June '27 (W<sup>4</sup>); Cleveland Co.—\*†June 29, '22 "G. t. trichas verging towards *brachydactyla*" (N).

Migration: Cleveland Co.—Apr. 17 '20: Apr. 27:: Sept. 27, Oct. 14, '26 latest dates. (N).

While most of the songs heard in Cleveland County were the typical *wichery wichery wichery wee*, sometimes some were given with almost no change in pitch. Singing was not heard later than Aug. 12, 1923. The alarm note is a surprisingly loud *chuck* for so small a bird.

(683) YELLOW-BREASTED CHAT: *Icteria virens virens*

Summer resident throughout eastern Oklahoma.

Specimens: Tulsa—\*†Apr. 20, '27 (K<sup>3</sup>); Pushmataha Co.—\*†July 18, '25 (O<sup>3</sup>); McCurtain Co.—\*†June 28, '23 (N).

Migration: Copan—Apr. 21, '13, Apr. 20, '16, Apr. 23, '17, last seen Aug. 21, '16 (K<sup>1</sup>); Tulsa—Apr. 27, '19, Apr. 30, '22 (P<sup>2</sup>);—Apr. 30, '24 (K<sup>3</sup>); Latimer Co.—1 Sept. 16, '92 (P<sup>3</sup>).

Nesting: Copan—22 nests from 1910 to 1917, earliest May 11, latest July 14; 10 had 3 eggs, 5 had 4 eggs, 3 had 5 eggs; 13 contained from 1 to 3 Cowbird eggs; height varied from 3 inches to 4 feet (K<sup>1</sup>); Tulsa—abundant, eggs from May 5-June 20 (P<sup>2</sup>, M<sup>5</sup>, G<sup>3</sup>);—nest with 4 Chat and 6 Cowbird eggs May 24, '17 (K<sup>1</sup>); Pushmataha Co.—4 eggs, July 5, '20 (N).

The Chat is a suspicious, nervous bird supposed almost always to desert its nest when imposed upon by the Cowbird, although the latter's eggs are very like its own. However, Chats in northeastern Oklahoma seem to be more tolerant, for Mr. Kirn wrote me in regard to this question:

"I am sure that Chats do not always, nor do I think ordinarily, desert their nests when Cowbirds lay in them. I have found too many of them occupied with both species of eggs and do not recall finding any Chat's deserted with eggs in them, unless they contained one or two Cowbird's eggs and none of the Chat's."

(683a) LONG-TAILED CHAT: *Icteria virens longicauda*

Summer resident in central and western Oklahoma as far west as Blaine, Custer, Washita and Comanche Counties.

Specimens: Cleveland Co.—\*†June 17, '23 (N); Blaine Co.—\*†July 6, '03 (B<sup>6</sup>).

Migration: Cleveland Co.—Apr. 22, '23: Apr. 26:: Aug. 12, '26, last song heard July 27, '26 (N); Custer Co.—Apr. 21-Sept. 3, '02, Apr. 27, '03 (S<sup>4</sup>); Washita Co.—May 7, '94, Apr. 28 '96 (B<sup>4</sup>); Wichitas—May 4, '04 (G<sup>2</sup>); Gate—rare transient (L<sup>2</sup>).

Nesting: Cleveland Co.—nest with 2 eggs May 25, '23 (N); Fort Cobb—8 nests with 2, 3, and 4 eggs May 17-26, '60 (M<sup>1</sup>).

The Chat has one of the most ridiculous songs imaginable. One heard at Indian Springs southeast of Norman May 27, 1926 sang thus: *chip-chip purp chip pipl purp purp purp purp* A little later he said *chip-chip-chip-chip wheep chip-chip-chip-chip pur tut tut tut*, etc. The *chip-chip-chip-chip* was very high, the *purp* a low deliberate note.

Another Chat in the Olivers' woods June 4, 1927 had an almost entirely different repertoire, shouting *hur wheeple hur chee-chee-chee-chee chee wheepelet*, and later *hur-hur-hur-hur-hur-hur wheepelet ink chee*. Other phrases were *jup, wheep wheep, jink jink jink*, and a nasal *whank whank*.

(684) HOODED WARBLER: *Wilsonia citrina*

Summer resident in eastern Oklahoma, recorded in June and July from

McCurtain and Lefflore Counties (S<sup>1</sup>) and "Cherokee Nation" (3 specimens "July 1849 (Sitgreaves) Pollard" in the National Museum.)

Migration: Adair Co.—\*Apr. 9, '97 (L<sup>5</sup>); Sequoyah Co.—\*Sept. 11, '14 (C<sup>5</sup>); Gate—2 May 9, '23 (L<sup>2</sup>).

Nesting: McCurtain Co.—a young bird recently out of the nest July 2, '23 (N).

The ringing song of this brilliant Warbler was frequently heard near our camp by Mountain Fork in McCurtain County from June 29 to July 3, 1923. This Warbler is not generally distributed, since there are summer records from only three localities, two south of the Arkansas and one north of it—"Cherokee Nation."

(685) WILSON WARBLER: *Wilsonia pusilla pusilla*

Transient throughout state.

Migration: Copan—2 Aug. 28, '16, last Sept. 5 (K<sup>1</sup>); Craig or Mayes Co.—about \*†Sept. 1, '14 (C<sup>5</sup>); Tahlequah—2 May 7, '23 (N); Tulsa—May 16, '24, Aug. 27, '26 (K<sup>3</sup>); Oklahoma City—small flock Sept. 13, '25 (S<sup>1</sup>); Cleveland Co.—1 May 2, '29 (B<sup>5</sup>);—2 Sept. 14, '25 (N); Gate—2 Apr. 22, '23 (L<sup>2</sup>); Cimarron Co.—1 Aug. 25, '26, perhaps the Pileolated Warbler *W. p. pileolata* (N).

Giant ragweeds afford some of the best places for finding fall birds, for sparrows like their seeds, warblers their insects. One afternoon in mid September near the Canadian the gloomy ranks of these great plants were suddenly lighted by the gleam of tiny golden bodies—two little black-capped warblers on their long journey to the south.

(686) CANADA WARBLER: *Wilsonia canadensis*

Rare transient.

Migration: Gate—one seen May 2, '09 (L<sup>2</sup>). No record of a specimen.

This handsome warbler should be found occasionally in eastern Oklahoma. The fine ringing song was rendered by Thoreau as *te chit a wit, te chit a wit, tche tche*.

(687) REDSTART: *Setophaga ruticilla*

Summer resident in eastern, transient in central and western Oklahoma. It is common in Washington, Mayes, Delaware, Pushmataha, and McCurtain counties.

Migration: Apr. 24-Sept. 14, '16, Apr. 17, '17 (K<sup>1</sup>); Tulsa—Apr. 16, Sept. 14, 25, '24 (K<sup>3</sup>); Okmulgee—May 11, 16, '26 (F); Latimer Co.—Sept. 8, '92 (P<sup>3</sup>); Ponca Agency—2 seen Aug. 3-6, '92, (P<sup>3</sup>); Oklahoma City—common Aug. 7-11, '92 (P<sup>3</sup>); Sept. 15, '29 (S<sup>1</sup>); Cleveland Co.—\*Apr. 26, '02 (B<sup>6</sup>);—single birds May 2, '20, May 17, '23, May 2, '26, Aug. 30, Sept. 18, '22, Sept. 4, '23 (N); Dougherty—common Aug. 12-17, '92 (P<sup>3</sup>); Gate—regular transient (L<sup>2</sup>).

Nesting: Copan—8 nests from May 14 to June 15, 3 with Cowbird eggs (K<sup>1</sup>); Delaware Co.—pair feeding young June 25, '24 (N); Pushmataha Co.—young birds recently out of the nest July 7, '20 (N).

It is a red letter day when one of these exquisite Warblers is seen as it flashes about in the trees in pursuit of its insect prey, either in the gorgeous black and orange-red plumage of the adult male or the pretty olive-brown and yellow of the young male and female.

WEAVERBIRDS: FAMILY PLOCEIDAE

ENGLISH SPARROW: *Passer domesticus domesticus*

Abundant resident throughout the state.

First appearance: in 1886 it was reported absent from Vinita, Muskogee, Okmulgee, Oak Lodge, and Caddo (Barrows, '89:206). In 1892 Preble and Bailey found them common at Ponca Agency, although not reporting them at Oklahoma City and Woodward. D. E. Webb says they first appeared in Alfalfa county in 1896. In 1898 they

were common in Norman (V). They came to Kenton late in 1903, reaching their peak of numbers in 1920. (T<sup>1</sup>). In 1907 Worcester stated they were the most common bird in Enid. As late as 1925 Saunders ('27b) found them spreading into new localities in Oklahoma County.

Nesting: Tulsa—eggs Apr. 10-June 5 (P<sup>2</sup>); latest broods of small young Aug. 21, '30 (G<sup>3</sup>); Norman—young a week old found Mar. 20 and Aug. 21, '20; adults carrying nesting material from November to August (N). Kenton—nests from March till November (T<sup>1</sup>).

Food: wheat, kafir, millet, green garden plants, weed seed; grasshoppers, moths.

The English or House Sparrow appears to be the most abundant breeding bird in Oklahoma. On 1166 miles of "roadside censuses" taken in May, June and early July, 1920-1923, in all sections of the state, we counted 2055 of these birds; this was 26 per cent of all the birds seen and twice as many as the most common native bird—the Dickcissel.

One afternoon the female of the pair that had been building in our Bluebird box was caught in a trap; the male sat on the box or in the entrance yapping and calling for a long time. At last a female appeared and clung to the front of the box peering in; the male hopped about, puffed out and voluble, but all at once he gave his visitor a jab in the back. She gazed around in mild surprise; he repeated the performance and she left. Soon she or another returned and at length went into the box; when the owner approached she gave him a vicious peck. Soon he was swinging around while she held him by a feather. She came out, drove him off the top of the box, followed him inside the box and chased him out of there. Then she drove him off the top again and flew away. Five minutes later the male was in the box; two females alighted on the outside and started to fight; one popped inside and then there arose the greatest commotion, squeaks and yaps; the female came out in a hurry and both left.

Now that it has been discovered that this nuisance is not a sparrow at all, let us hope teachers will instruct their charges that only the "English Weaverbirds" are pernicious, and that our native sparrows are to be admired and cherished. It is a sad situation when one stops boys from killing Song Sparrows to have them say, "Why, isn't it all right to shoot sparrows!"

#### MEADOWLARKS, BLACKBIRDS, ORIOLES, ETC.: FAMILY ICTERIDAE

##### (494) BOBOLINK: *Dolichonyx oryzivorus*

Irregular transient between May 2 and 22 in eastern and central Oklahoma, rare at Gate.

Migration: Copan—4 May 15, '14, 1 May 22, '16 (K<sup>1</sup>); Osage Co.—common May 17, '20 (G<sup>4</sup>); Fort Gibson—2 males early in \*May 1850 (W<sup>5</sup>); Tulsa—May 2, '19, several May 12, '21 (G<sup>4</sup>); flock May 7, '22 (P<sup>2</sup>);—\*May 5, '28 (G. Pratt); Cleveland Co.—\*May 7, '03 (Kempke);—6 males May 13, '20, 1 male May 20, '23, 6 males May 15, '24 (N); Murray Co.—about 12 seen May 9, '29 (B<sup>5</sup>); Gate—1 May 16, '24 (L<sup>2</sup>).

Since most of the spring transients of this fine bird in Oklahoma are males, we can hope to be treated occasionally to the ecstatic song. Bobolinks should be found in the early fall in eastern Oklahoma; they give a characteristic *pink* as they migrate by night.

##### (501) EASTERN MEADOWLARK: *Sturnella magna magna*

Summer resident in central and western Oklahoma as far west as Woods, Blaine, Comanche, Tillman, Jackson and Harmon Counties; sometimes present in winter.

Specimens: Okmulgee—\*†spring '23, \*†Oct. 30, '25, \*†Jan. 15, '27 (F); Pittsburg Co.—\*†Aug. 23, '92, (P<sup>3</sup>); Oklahoma Co.—“my thirty Meadowlarks are much nearer *S. m. magna* than *S. m. argutula*, some being typical *S. m. magna*” (S<sup>1</sup>); Love Co.—\*†Oct. 9, '14 (C<sup>5</sup>); Harmon Co.—\*†June 17, \*†18, \*†20, '26 (L<sup>4</sup>).

Migration: Cleveland Co.—earliest arrival Feb. 26, '26, Mar. 6, '27 wintered 1921-22, 1922-23, 1923-24 did not winter 1920-21, 1925-26, 1926-27 (N); Oklahoma Co.—recorded on only one of 3 Christmas censuses—1927 (S<sup>1</sup>).

Nesting: Oklahoma Co.—nest with 3 small young July 7, '29 (S<sup>1</sup>); Cleveland Co.—young bird recently out of the nest May 24, '17 (N).

Food: “a highly beneficial species, its food consisting mainly of injurious insects, with a small percentage of seeds and some grain, mostly waste corn. . . . an important enemy of the cotton boll weevil” (Howell, '11: 58).

In western Oklahoma Eastern and Western Meadowlarks nest in the same fields. Practically alike in plumage, their songs are strikingly different. That of the Eastern Meadowlark is a clear, high-pitched, flute-like whistle: *tsee-yer tsee* or *ee-yer tsee-yer*, sometimes put into English as *spring o' the y-e-a-r*. Although it varies much, it is always shorter and of quite a different character from that of the Western Meadowlark. The call note of the Eastern Meadowlark is also distinctive—a sharp *yert* followed by a rattling, buzzing *titty, titty, tit*.

On May 24, 1917 my small daughter found a baby meadowlark in an orchard at Norman; she gave chase and captured it. It protested loudly for several minutes before the parents came flying to the rescue; they alighted near the child who immediately let the young bird go. The mother tried to lure her baby away while the father came up within four feet of the little girl, shouting and scolding, standing very straight, flapping his wings, rubbing his bill on the ground, and every now and then giving his song in his excitement—a wonderful picture of fatherly love and courage. Soon the child started again for the little bird; instantly both parents were at her side, the mother again trying to toll the baby off, while the father did his best to frighten the enemy away. She turned and ran to me, whereupon the meadowlark, evidently believing himself victor, chased her.

#### (501c) SOUTHERN MEADOWLARK: *Sturnella magna argutula*

Resident in eastern Oklahoma.

Specimens: Tulsa—\*†Apr. 3, \*†28, \*†Dec. 5 (F); Choctaw Co.—\*†July 3, '23 (N)

Nesting: Copan—1 nest with 3 eggs, 5 nests with 4 eggs, 4 nests with 5 eggs, 2 nests with 6 eggs, Apr. 18-June 17 (K<sup>1</sup>); Vinita—5 nests with 4 eggs, 2 with 5 eggs, Apr. 26-June 1, '12 (K<sup>1</sup>); Tulsa—1 nest with 4 young, July 5; 7 nests with 5 eggs Apr. 28-June 10 (M<sup>5</sup>, G<sup>3</sup>, F).

All the meadowlarks have the delightful habit of singing in winter. Since the Southern Meadowlark is a subspecies of the Eastern Meadowlark, all that has been said in regard to the song and call notes of the latter is equally applicable to this form. It has been recorded on eight of the ten Christmas censuses in eastern Oklahoma, whereas *Sturnella magna* has been noted on only three of eleven censuses in central Oklahoma.

#### (501.1) WESTERN MEADOWLARK: *Sturnella neglecta*

Resident in western half of the state, winter resident in central Oklahoma.

Range: summer—western Oklahoma as far east as Alfalfa, Major, Kingfisher, Canadian, Comanche and Tillman Counties; in Woods County it is the predominating Meadowlark, but in Comanche and Tillman Counties, the Eastern is more common; in Minco in June '05 fairly common (W<sup>1</sup>), none found in 1923 (N); winter—regular winter resident in Payne, Oklahoma, Cleveland, Murray and Bryan Counties. We have no definite record east of these counties.

Migration: Cleveland Co.—Oct. 16, '26; Oct. 20; Mar. 29; Apr. 7, '26 (N); Cimarron Co.—Dec. 25, '25 "This is the first winter in years that Meadowlarks are entirely absent; they came in great numbers during the latter part of September, but the weather was colder in October than ever before in the history of the region, and they passed on southward." (T<sup>1</sup>, letter).

Nesting: Washita Co.—5 eggs May 23, '11 (C<sup>1</sup>); Cimarron Co.—5 eggs, 7 eggs June 10, '24 (T<sup>1</sup>).

Food: alfalfa and cotton boll weevils, grasshoppers, cutworms, ants: weed seeds, waste grain.

One of the notable songsters of western Oklahoma throughout the year and central Oklahoma in the winter is the Western Meadowlark. It sings a fine, joyous, and endlessly varied carol of a mellow, bubbling quality—a much longer and richer song than that of the eastern bird. The call note is a *chuck chuck* followed by a rolling *br-r-r-r-r*. Once I heard one singing from the ground in this fashion: *chuck, chuck, terwée; chuck, chuck, terwée*, the *chucks* being nothing else than the chuckling, grating call notes.

Mr. Saunders collected 27 of these birds in late December, 1930 in Oklahoma county and found that every one was a male.

(497) YELLOW-HEADED BLACKBIRD: *Xanthocephalus xanthocephalus*

Transient, common in western Oklahoma, irregular in spring and rare in fall in eastern and central Oklahoma; uncommon breeder in Cimarron County.

Migration: Ottawa Co.—\*Aug. 10, '10 (P<sup>4</sup>); Copan—12 Apr. 22, '16, 1 Apr. 17, May 4, '17 (K<sup>1</sup>); Tulsa—Apr. 22, May 2, '17, Apr. 20, '21 (G<sup>4</sup>);—40 Sept. 30, '27 (G. Pratt); Fort Gibson—4 \*May 1850 (W<sup>5</sup>); Okmulgee—1 Apr. 30, '26 (F); Stillwater—\*Apr. 15, \*May 10, '24 (M<sup>5</sup>); Kingfisher—20 May 8, '26 (N); Oklahoma Co.—Apr. 5, '24 (S<sup>1</sup>); Cleveland Co.—irregular transient Apr. 8-May 8, in fall Sept. 24, '25, Nov. 17, '17 (N);—\*Apr. 26, \*May 23, \*May 29, \*Sept. 17, '03 (B<sup>6</sup>); Minco—fairly common May 25, 26, '05 (W<sup>1</sup>); Washita Co.—Apr. 12, '94, Apr. 11, '95, Apr. 13, '96 (B<sup>4</sup>); Custer Co.—Mar. 8, '02, Mar. 10, '03, Mar. 5, '04 (S<sup>4</sup>); Major Co.—1 Aug. 7, '20 (Shannon); Woodward Co.—2 Aug. 29-30, '92, numbers Aug. 10-14, '06 (B<sup>1-2</sup>); Woods Co.—pair July 13, '30 (B<sup>5</sup>); Gate—very common migrant (L<sup>2</sup>); Kenton—abundant in early fall, uncommon in summer (T<sup>1</sup>).

Nesting: Cimarron Co.—nest and 3 eggs on C. F. Rowan ranch June 19, '14. (T<sup>1</sup>).

Food: army worm, alfalfa weevil, grasshoppers; weed seeds, grain.

This is a bird of startling beauty, but with a very curious voice, which according to Mr. Bailey, sounds "Like the croaking of frogs and creaking of unrolled gates."

(498) EASTERN RED-WINGED BLACKBIRD: *Agelaius phoeniceus*

Red-wings breed throughout most of the state except the southeastern corner; they winter here in large flocks. The form in eastern and central Oklahoma is *A. p. phoeniceus*; the subspecies of the birds in southwestern and northwestern Oklahoma (except the Panhandle) has not been determined because of lack of specimens.

Specimens: Okmulgee—\*†June 8, '26, \*†Nov. 12, '25 (F); Cleveland Co.—\*†May 4, '27 (N);—\*†Nov. '13 (C<sup>5</sup>); Minco—\*†May 23, '05 (W<sup>1</sup>).

Migration: Copan—Mar. 18, '17 (K<sup>1</sup>); Cleveland Co.—Mar. 15, '20, Mar. 13, '27 (N).

Nesting: Copan—2 nests with 3 eggs, 2 with 4, 2 birds building May 30, '16 (K<sup>1</sup>); Tulsa—eggs May 5-June 25 (P<sup>2</sup>);—5 eggs May 17, '23 (M<sup>5</sup>); Oklahoma Co.—abundant nester at Belle Isle Lake, only 6 of 20 nests successful (S<sup>1</sup>); Cleveland Co.—nest with 3 small young July 23, '19; 28 nests in all stages from construction to emptiness after the young had left, 9 with 3 eggs or young, 6 with 4; 18 nests in small willows. 3 in

small cottonwoods, 3 in cat-tails, 3 in marsh grass; height 1-5 feet, averaging 3 feet, near So. Canadian May 30, '27 (N); Washita Co.—2 nests with 5 eggs each May 23, '11 (C<sup>1</sup>).

Food: alfalfa and cotton boll weevil, army worm, grasshoppers; weed seeds, grain.

Although the gorgeous male Red-wings do little work in connection with their families, (never assisting in building or incubation and seldom even feeding the young) they can be depended upon to make a great to-do when the nests are visited. When we were examining three small infants in a nest in the colony by the Canadian, the mother was not to be seen, but the father hovered in the air above us screaming an agonized *shree-e-e-e-e-e-e*.

(498d) THICK-BILLED RED-WING: *Agelaius phoeniceus fortis*

Summer resident in the Panhandle, wintering in central Oklahoma.

Specimens: Texas Co.—\*†June 29, '26 (L<sup>4</sup>); Panhandle—Beaver Creek in \*†Nov. '89 (Ridgway '02:33); Arbuckles—5 from \*†Jan. 9-20, '14 (C<sup>5</sup>).

Migration: Cimarron Co.—Apr. 4-Sept. 10, stayed in large numbers 1928-'29, large flock Apr. 1 (T<sup>1</sup>); Oklahoma Co.—\*†Apr. 23, '28 (S<sup>1</sup>); Cleveland Co.—wintered in large numbers except 1926-'27, when absent; perhaps all three subspecies present (N).

Nesting: Cimarron Co.—nest with 4 eggs July 2, '20 (T<sup>1</sup>).

Mr. Lewis ('25: 91) wrote a graphic description of the spectacular flight of these birds along with a few Cowbirds and Brewer Blackbirds to and from their roosts in rushes and cat-tails northwest of Gate during the winter of 1924-25. "They pass here in the morning a little before sunrise and return in the evening from about a half-hour before sunset until some time after sunset. They can be seen coming for three or four miles. They are in a column and resemble at that distance the line of smoke given off by a distant locomotive, except that it is constantly writhing and twisting like a sinuous serpent. . . . The column is not continuous; possibly there will be a mile or two of blackbird ribbon, then a gap of a half mile, then a longer section. Feb. 13 I saw a stream practically continuous seven miles long. It is hard to accurately estimate the total number, but I think thirty thousand would be conservative."

(498i) GIANT RED-WING: *Agelaius phoeniceus arctolegus*

Transient.

Record: an immature bird banded Aug. 14, '25 at Crystal Bay, Minn. by Frank W. Commons was shot at Wilburton, Oklahoma Mar. 5, '27.

Probably this larger northern subspecies is not uncommon among our flocks of wintering Red-wings.

(507) BALTIMORE ORIOLE: *Icterus galbula*

Summer resident in the northern half of the state, more common in central than in eastern Oklahoma.

Range: breeds occasionally in Cherokee Co., was fairly common at Bartlesville but absent from Copan, '10-'17 (K<sup>1</sup>); rare in Tulsa, no nesting record; common from Grady and Cleveland Counties north to Payne, Pawnee, Grant and Woods Counties, occasionally nesting at Gate and Kenton; Comanche Co.—seen at Apache June '08 (L<sup>1</sup>); Washita Co.—breeding '10 (C<sup>1</sup>); Caddo Co.—1 June 4, '26 (N).

Migration: Tulsa—Apr. 20, '25 (K<sup>8</sup>);—May 6, '26 (F); Cleveland Co.—Apr. 17, '27: Apr. 24:: Sept. 15: Sept. 20, '21 (N).

Nesting: Cleveland Co.—building May 3-5, young left nest June 19, '26, young in nest June 19, '26 young out of the nest being fed July 17, '22 (N); Washita Co.—4 eggs June 12, '11 (C<sup>1</sup>); Cimarron Co.—2 nests with young June 29, '22, nest with 4 young Aug. 2, '12 (T<sup>1</sup>).

Food: caterpillars, click beetles, cotton boll weevils, plant and bark lice, grasshoppers, ants; fruit.



This beautiful bird with its clear inspiring song has benefitted from civilization and increased with the growth of trees in towns and on farms. Records of its singing for three seasons in Norman are as follows: Apr. 24-June 18, Aug. 15-Sept. 7, 1922; Apr. 24-June 15, Aug. 20-Sept. 1, 1923; Apr. 24-June 17, Aug. 10-?, 1926. The latest date was Sept. 8, 1925.

The young begin to call from the nest quite regularly about the 18th to 20th of June. One bob-tailed baby that left the nest June 19 called from 14 to 22 times a minute with a four-syllabled *dee-dee-dee-dee*, preening itself in its momentary rests. It stayed in the same tree for three days, then moved to the neighbor's for one day; after that we heard its persistent cries no more.

(506) ORCHARD ORIOLE: *Icterus spurius*

Summer resident throughout the entire State.

Migration: Copan—Apr. 25, '17-Aug. 22 (K<sup>1</sup>); Tulsa—Apr. 20-Sept. 15 (K<sup>2</sup>);-Apr. 15, '22 (L<sup>3</sup>); Cleveland Co.—Apr. 17, '27; Apr. 22:: Aug. 11; Aug. 12, '26 (N); Ardmore—Apr. 13, '30 (Rachel Hutchinson); Kenton—May 11-Sept. 10 (T).

Nesting: Copan—4 eggs, 5 feet up, June 25, '17, 3 fresh eggs July 6, '17 (K<sup>1</sup>); Tulsa—7 eggs 12 feet up May 20, '27 (M<sup>5</sup>); 5 eggs 5 feet up May 20, '28 (G<sup>3</sup>); Okmulgee—3 eggs June 16, '26 (F); Kingfisher—5 eggs May 29, '20 (N); Cleveland Co.—young just out of nest June 22, '20, June 23, '23, June 19, '26 (N).

Food: grasshoppers, canker worms, other caterpillars, ants, cotton boll weevils.

Although not as brightly plumaged as the Baltimore Oriole, this bird has a more beautiful song, longer, richer and more melodious; indeed, it is one of the most musical we hear in Oklahoma. Singing has been recorded in Norman until July 28, 1922, Aug. 1, 1923, and July 14, 1926. Arriving on an average two days later than the Yellow Warbler, it leaves at about the same time—early August. Aug. 11, 1926 is the latest date on which I have seen an Orchard Oriole. The young begin to call about June 19; we may hear their persistent voices for a month. Their begging note is more run together than that of little Baltimore Orioles; their squeals of joy when food appears are higher pitched.

The females of the Orchard and Baltimore Orioles must be carefully distinguished; the former is olive-green above, not brownish olive like the other, nor does she have any orange tinge on her dull yellow breast. There is more contrast between the colors of the upper and under parts in the Baltimore than in the Orchard Oriole.

(508) BULLOCK ORIOLE: *Icterus bullocki*

Summer resident in southwestern and northwestern Oklahoma.

Records: 1876—a few seen by McCauley on Wolf Creek; not listed by Van Vleet in 1902, nor Stevens in 1912 nor Cross in 1917; 1923—several seen in Harmon and Jackson Counties (N).

Migration: Cimarron Co.—May 2, '25, last seen Sept. 14, '26 (T<sup>1</sup>).

Nesting: Cimarron Co.—common, 2 nests with young June 24, '22, nest with 1 oriole and 2 Cowbirds, 2 little orioles dead on the ground July 12, '11 (T<sup>1</sup>); Gate—rare, nested by Horse Creek 1920 (L<sup>2</sup>); Jackson Co.—pair feeding 4 young recently out of the nest July 5, '23 (N).

This handsome bird has evidently come into southwestern Oklahoma between 1902 and 1923. In appearance and notes it is much like the Baltimore Oriole, but the sides of the head and the forehead are orange and there is a large white patch on the wing. Mr. Lewis wrote of the pair in 1920, "I doubt whether the birds had much luck with their nesting for the last I saw of them some Blue Jays were trying to tear the nest to pieces."

(510) BREWER BLACKBIRD: *Euphagus cyanocephalus*

Summer resident in the Panhandle, occasionally nesting in Creek and Bryan Counties; winter visitant in main body of the state.

Migration: Rogers Co.—\*Nov. 7, '14 (C<sup>5</sup>); Tulsa—large flocks Jan. 29-Feb. 14 '05 (G<sup>2</sup>);—Dec. 16-Mar. 30, '24 (K<sup>3</sup>); Bryan Co.—abundant from Oct. 20-Nov. 8, '83, also Mar. 15, much less common in winter (C<sup>4</sup>); Arbuckles—\*†Dec. 25, '01 (B<sup>6</sup>); Cleveland Co.—Sept. 25, '20: Sept. 30:: seen till end of December (N).

Nesting: Cimarron Co.—common transient, occasionally nesting, nest with 4 eggs June 1, '10 (T<sup>1</sup>); Gate—common summer resident, some winter (L<sup>2</sup>); Bryan Co.—scarcely fledged bird caught in early September '83 (C<sup>4</sup>); Creek Co.—nest in a swamp occupied by Red-winged Blackbirds May 19, '20 (B<sup>3</sup>).

Food: cutworms, cotton boll worms, codling moth, grasshoppers, alfalfa and cotton boll weevils; fruit, grain.

At Caddo in 1884 "The spring 'song' was first heard January 9 and the male that uttered it was also going through the regular feather ruffling and swelling of the mating season. Females at this time were rather scarce and even as late as February 26, when the winter numbers had been somewhat increased by migrants the flocks were still at least three-fourths males." (Cooke, '14b:484).

The Brewer Blackbird is distinguished from the Bronzed Grackle by its smaller size and square tail, but it is easy to confuse with the Rusty Blackbird. The male Brewer is a shining solid black with purple reflections on the head; in the fall there are slight edgings of ashy to the feathers of head, breast, and back, but never any rusty tinge. The females and young are smoky colored, slightly lighter than the female Rusty, with an ashy tone to the breast, throat and face; the eyes of the female are brown, of the male straw-colored.

(509) RUSTY BLACKBIRD: *Euphagus carolinus*

Transient and winter visitant throughout the state.

Migration: Copan—common, last seen Mar. 1, '17 (K<sup>1</sup>); Okmulgee—flocks of 50 or more Dec. 10 to Feb. 6, '26 (F); Creek Co.—common in winter (B<sup>3</sup>); Cleveland Co.—Nov. 11-Jan. 29 (N); Kenton—185 Sept. 24, '25; 14 Sept. 18, '26 (T<sup>1</sup>).

Food: grasshoppers, beetles, weevils; waste grain.

The Rusty Blackbird is fond of swamps and is often seen walking with its peculiar gait through water. One late afternoon in December near the Canadian great flocks of Rusties with a few Red-wings assembled in the cottonwoods and gave their curious squeaky chorus; after a while they fell silent and soon all went to bed in the long marsh grass. The male Rusty is a uniform rusty black with greenish reflections to the head; the female is a solid smoky black, somewhat darker than the female Brewer, and is never ashy on the throat. The eyes of both sexes are straw colored.

(511b) BRONZED GRACKLE: *Quiscalus quiscula aeneus*

Summer resident throughout most of the state. We did not find it in southeastern Oklahoma. It breeds as far west as Harmon and Woodward County, is a common transient at Gate and Kenton, but has twice been recorded in summer in Texas County—one seen May 29, '22 (N), \*June 27, '26 (L<sup>4</sup>).

Migration: Copan—Mar. 9, '17 (K<sup>1</sup>); Tulsa—Mar. 10-Nov. 15 (K<sup>3</sup>); Cleveland Co.—Mar. 9, '26: Mar. 18:: Oct. 18: Oct. 21, '25, earliest flock July 3, '26; crippled bird on our grounds Oct. 23, '26-Feb. 22 (N); Grady Co.—flock July 1, '22 (N); Bryan Co.—common Oct. 2-Nov. 8, the last left Nov. 12, '84 (C<sup>1</sup>); Kenton—Sept. 1-Oct. 19, '26 (T).

Nesting: Tulsa—eggs May 5-25 (P<sup>2</sup>, M<sup>5</sup>, G<sup>3</sup>); Norman—21 nests recorded, 10 to 40 feet high, building Apr. 9-May 2, incubation 14 days, one brood being fed out of

nest July 4, '26; 1 nest had 2 young, 1 nest 3, 3 nests 4, 2 nests 5, 2 nests 6 (N); Minco—breeding colony of 30-40 pairs in small grove, nests 7-30 feet from ground, most nests had young, May 25, '05 (W<sup>1</sup>).

Food: cutworms, May beetles, grasshoppers, cotton boll weevils; grain.

Grackles are clannish birds, flocking nearly the whole year, often nesting in groups, and whenever the nest of one is examined all the others come to protest. They are not birds that take up and defend a territory. Courting is a group project. "The "song" is given by both sexes and is accompanied by an extraordinary puffing out of all the body feathers. In the spring the birds congregate in small companies in trees; one will make itself as round as a ball, holding its tail troughwise and saying loudly *wicher-chée*; after it subsides, another does likewise and then another. On April 19, 1927 two females were sitting side by side in our big mulberry saying *wicher-chée*, spreading every feather on their tails, wings and bodies, all apparently for the benefit of a handsome male that sat a little below them with his back turned. After many *wicher-chées* on the part of his admirers, he responded once, then suddenly darted at them and a great commotion resulted with angry screams from the females and another male that had been watching. A little later two females were there again demonstrating before a male, that puffed and "sang" very nicely, but all at once he received a vicious jab from one of the females and the party broke up in confusion.

The bulky nest is built by the female, her mate accompanying her on many of her trips for material. Young birds out of the nest are seen and heard from May 19 to early July; their begging note is a harsh *kack kack-kack kack-kack*, sometimes single and again double. Grackles in central Oklahoma seem to be peaceable neighbors; the other birds make no outcry at their appearance during the nesting season as I have heard them do in Ohio; occasionally in Norman they were driven off by Robins.

Grackles are both beneficial and injurious in their feeding habits, destroying many noxious insects, but attacking grain when newly sown and in the milk. They are also a nuisance at times by roosting in shade trees in towns. Methods for routing them include the use of smudges, the firing of Roman candles, soaking with streams of water from hose, and shooting. Grackles have undoubtedly become too abundant and when they collect in large flocks, they, like Red-wings, do considerable damage. They are not protected by law.

#### (495) EASTERN COWBIRD: *Molothrus ater ater*

Summer resident throughout the state; very abundant in late summer and fall; occasionally wintering. Much more common in summer in north-eastern than in central Oklahoma.

Migration: Copan—Mar. 5, '17 (K<sup>1</sup>); Cleveland Co.—Feb. 19, '22; Mar. 4:: Nov. 23; Dec. 13, '21, gather in large flocks as early as July 13 (N); Bryan Co.—common Sept. 1, '83, increasing to multitudes by Nov. 2, decreasing again, only a few seen after Nov. 15 (C<sup>4</sup>).

Winter record: Canadian Co.—\*Dec. 25, '13 (C<sup>5</sup>); Creek Co.—Dec. 26, '23 (B<sup>8</sup>); Tulsa—Dec. 21, '29 (F); Gate—a few in winter (L<sup>2</sup>); Bryan Co.—a few wintered, on Jan. 6 "seemed to be nearly through with the winter molt. The first male in full spring plumage was seen January 17, and two days later there was a marked increase in numbers, about half the birds being in bright black plumage." (Cooke '14b:483).

Nesting: 34 species have been found parasitized in Oklahoma: Carolina Wren, Mockingbird, Brown Thrasher, Wood Thrush, Bluebird, Blue-gray Gnatcatcher, Black-capped, White-eyed, Bell, Yellow-throated, Red-eyed and Warbling Vireos, Prothonotary, Swainson, Parula, Yellow, Sycamore and Kentucky Warblers, Maryland Yellow-throat, Chat, Redstart, Eastern Meadowlark, Red-winged Blackbird, Bullock Oriole, Summer

Tanager, Cardinal, Blue Grosbeak, Indigo and Painted Buntings, Dickcissel, Goldfinch, Lark, Field, and Chipping Sparrows. The earliest egg was found in a Cardinal's nest near Vinita Apr. 13, '12 (K<sup>1</sup>, '15 b); the latest July 22, '20, in a Goldfinch's nest in Norman (N).

Food: alfalfa weevil, grasshoppers, curculios, flies; weed seeds, grain.

In the past Cowbirds associated with the buffalo and hence were called "buffalo birds." On Oct. 9, 1846 Lieut. Abert wrote, "Our old friends the cowbirds danced about and turned summersaults in the air with unusual vivacity, as they snapped up the grasshoppers which flew around them. These birds rendered themselves very useful by destroying the insects which would otherwise have greatly annoyed our animals upon whose backs we frequently saw the birds engaged in busy scrutiny."

In northeastern Oklahoma it is abundant in the summer, and must act as a decided check on the increase of its hosts, but in central Oklahoma it is an uncommon breeder, although present in great flocks from the middle of July on. Among the list of species victimized in Oklahoma, there are several that Dr. Friedmann ('29) records as very uncommon hosts— Bullock Oriole, Mockingbird, Brown Thrasher, Carolina Wren, and Bluebird. It is curious that in Cleveland County where in thirteen years we found but fifteen nests parasitized, that three of these should have been Bluebirds.

The Cowbird is beneficial in its feeding habits, but since each individual is raised at the expense of all or part of a brood of birds, probably as useful and as a rule either more beautiful or more musical, I imagine most bird lovers will remove the parasitic egg whenever possible. There is no danger of exterminating the Cowbird. However, if an egg is found in a Mockingbird's or Thrasher's nest, it is a pity to destroy it or to collect the set rather than to watch the outcome; there is no record of a Cowbird having been raised by either of these large hosts.

#### TANAGERS: FAMILY THRAUPIDAE

##### (608) SCARLET TANAGER: *Piranga erythromelas*

Summer resident in eastern Oklahoma; recorded in summer from McCurtain, Pushmataha, LeFlore, and Ottawa Counties.

Migration: Adair Co.—Apr. 6, '97 (L<sup>5</sup>); Sequoyah Co.—common in heavy timber Apr. 13-17, '97 (L<sup>5</sup>); Tulsa—1 seen Apr. 20 and 23, '24, 4 or 5 in transition plumage Sept. 26, Oct. 1, '24 (K<sup>8</sup>); Oklahoma City—male seen Apr. 19 and 26, '25 (S<sup>1</sup>).

Food: caterpillars, gall insects, wood-boring and bark boring beetles, leaf-eating and click beetles; crane flies, grasshoppers.

In the pines on the mountains in eastern Oklahoma, one may hear the vehement *chip-churr* of these superb birds, or the song which resembles that of a hoarse Robin. Although not high in the musical order, yet when given in the gloom of an approaching storm it seems like a wild proud challenge, well in keeping with the gorgeous plumage of the Tanager.

##### (610) SUMMER TANAGER: *Piranga rubra rubra*

Summer resident in wooded districts throughout eastern and central Oklahoma as far west as Payne, Logan, Grady, Caddo, and Comanche Counties.

Specimens: Fort Cobb—\*May 20, \*June 24, '60 (M<sup>1</sup>); Caddo Co.—\*†June 26, '03 (B<sup>6</sup>).

Migration: Copan—Apr. 18, '17: Apr. 22:: Sept. 30, '16 (K<sup>1</sup>); Tulsa—Apr. 9, '21, Apr. 7, '23 (P<sup>2</sup>);—Apr. 10-Oct. 3 (K<sup>8</sup>); Cleveland Co.—Olivers' woods, young male Apr. 28, '27 (N); Arbuckles—Apr. 12, '29 (B<sup>5</sup>); Wichitas—Apr. 21, '04 (G<sup>2</sup>).

Nesting: Copan—3 eggs May 8, 4 eggs May 30, 4 eggs May 31, 4 eggs and 3 Cowbirds' June 6, '10, 3 eggs and 2 of Cowbird June 2, '16; 1 egg, 1 of Cowbird, 2 tanager eggs broken May 31, '17; nests 8, 10, 14 feet from ground (K<sup>1</sup>); Tulsa—eggs June 15 (P<sup>2</sup>); Locust Grove—3 eggs 12 feet up May 28, '23 (M<sup>6</sup>); Delaware Co.—female building June 24, '24 (N); Oklahoma Co.—rare, pair nested in scrub oak on Hare's estate in 1925 (S<sup>1</sup>); Cleveland Co.—common in black jacks 16 miles east of Norman, but rarely seen in western part of county, a male in Oliver's woods May 27, '29 (N);—nesting there in 1930 (F. Oliver).

The brilliant young males with their mixed plumages of rosy-red and yellow may puzzle the student who expects the male to be all red, the female all yellow. Some of the latter show considerable red about the head. The call note, *chickey tuck-tuck* is unmistakable. The song is rich, musical and varied, from 3 to 6 seconds in length, from 4 to 6 given a minute. One typical song went as follows: *hee para vee-er chewit terwee hee para vee-er*.

#### FINCHES, SPARROWS, BUNTINGS, ETC.: FAMILY FRINGILLIDAE

This is the largest family of birds; its members possess stout, conical bills adapted for crushing seeds. Oklahoma enjoys a wealth of beautiful grosbeaks and buntings, but has few nesting sparrows—the Lark Sparrow throughout the state, the Field in the eastern half, the Chipping in the eastern third and several locally in the west. In winter, however, there is an abundance both of species and individuals; they are the most numerous of our birds (except at times crows and blackbirds) and lend the chief interest to field work at this season, both because of their songs and the irregularity in the occurrence of the rarer species.

#### GROSBEAKS, ETC.: Subfamily Richmondinae

##### (593) CARDINAL: *Richmondia cardinalis cardinalis*

Resident throughout the main body of the state, abundant throughout most of its range, but rare at Gate.

Specimens: breeding birds have been identified from Tulsa, McCurtain and Cleveland Counties.

Nesting: 64 nests recorded, 22 in April, 23 in May, 8 in June, 3 in July, 3 in August; earliest Apr. 4, '10 at Copan (K<sup>1</sup>), Apr. 4 '25 at Tulsa (M<sup>6</sup>); latest, 3 fresh eggs at Vinita Aug. 18, '12 (K<sup>1</sup>); 5 nests had 2 young (Cowbird eggs had been removed from 2), 1 had 2 well-incubated eggs (Copan, June 16, '16, K<sup>1</sup>), 26 had 3 eggs, 9 had 4 eggs, 1 had 5 eggs (Minco, May 23, '05, W<sup>1</sup>); height from 1 to 12 feet, average 4 feet. Three of 23 nests in central Oklahoma were parasitized by Cowbirds, 12 of 24 in Copan and Vinita. On June 17, '14 near Copan Kirn found a nest containing 3 Cardinal eggs and one of Yellow-billed Cuckoo. Incubation lasts 12 days.

Food: cotton worm, boll worm, cotton cutworm, cotton boll weevil, codling moth, potato beetle, rose beetle; wild fruit, weed seeds.

In the Cardinal we have the embodiment of all bird virtues—devotion to family, beneficial food habits, flaming beauty and splendid song. We are fortunate that this lovely bird is a familiar resident throughout most of Oklahoma.

Each winter one male Cardinal patronized our feeding shelf, but never the same bird until the last two years. Three were amiable birds, but the other two were quite the opposite, tyrannizing over the smaller birds, especially Harris Sparrows, and driving away their future mates; both were afraid of Mockingbirds. But from late March to September the male is a model husband and father, bestowing sunflower seeds upon his mate and feeding the young of the first brood almost up to the day the second brood hatches, in one case even two days afterwards! Two different years young

males have been fed by their fathers for 17 days after they were fully grown, till July 10 and Sept. 30, respectively.

Each of these young birds was heard to give a queer, squeaky song, quite unrecognizable as coming from this species, the first on July 3, the other Oct. 2. On Sept. 28, 1925, I heard a strange Cardinal song, starting out in proper fashion but ending with low growling notes—all in a whisper. The singing of females I have only recorded three times, Mar. 1, Apr. 14 and 18. Male Cardinals sing occasionally from August through January, but their season of full song extends from early February into late July.

(595) ROSE-BREADED GROSBEAK: *Hedymeles ludovicianus*

Regular transient in eastern Oklahoma, rare in central and western Oklahoma.

Migration: Ottawa Co.—\*May 15, '10 (P<sup>4</sup>); Tulsa—May 16, '19, May 9, '20 (P<sup>2</sup>);—May 16, '24, Sept. 26, '26 (K<sup>3</sup>);—\*Apr. 8, '28 (G<sup>3</sup>);—May 13, '28 (F); Cherokee Co.—several May 5, 6, '23 (N); Oklahoma City—singing male Apr. 25, '25 (S<sup>1</sup>); Cleveland Co.—male May 15, '26 (Mrs. A. R. Ramey);—female May 22, '26 (N); Alva—several found dead \*May 17, '11 (S<sup>3</sup>).

“On the night of May 17, 1911,” wrote Prof. Stevens, “there occurred a stampede of birds at Alva in which there seemed to be thousands of birds flying about town. The next morning we picked up hundreds of birds, consisting of 27 species; a few were rose-breasted grosbeaks.”

(596) BLACK-HEADED GROSBEAK: *Hedymeles melanocephalus melanocephalus*

Rare transient in western Oklahoma.

Records: Caddo Co.—small flock seen, 2 taken \*1891 (S<sup>3</sup>); Norman—a male in full song May 17, '22 (N).

Since these fine birds nest in western Kansas, they should be found occasionally as transients in the Panhandle.

(597) EASTERN BLUE GROSBEAK: *Guiraca caerulea caerulea*

Summer resident throughout eastern and central Oklahoma as far west as the Wichita Mountains.

Specimens: Pushmataha Co.—\*†July 14, '25 (O<sup>2</sup>); Cleveland Co.—\*†June 18, '01, \*†May 26, '03 (B<sup>0</sup>); Logan Co., \*†May 24, \*†26, '01 (B<sup>0</sup>); Canadian Co.—\*†May 1914 (C<sup>5</sup>); Wichitas—\*†May 7, '04 (G<sup>2</sup>).

Migration: Copan—May 5-Aug. 22, '16, May 7, '17 (K<sup>1</sup>); Tulsa—Apr. 30, '22, Apr. 22, '23 (P<sup>2</sup>);—May 8, '24 (K<sup>3</sup>); Fort Reno—May 8, '90 (M<sup>2</sup>); Cleveland Co.—Apr. 29, '20; May 2:: Sept. 22, '26 (N); Wichitas—Apr. 30, '04 (G<sup>2</sup>).

Nesting: Vinita—4 eggs, June 30, '12 (K<sup>1</sup>); Copan—3 eggs July 11, '16 (K<sup>1</sup>); Tulsa—rare, eggs June 11, '17, July 6 (M<sup>0</sup>); eggs June 4-24 (P<sup>2</sup>); Kay Co.—nest with eggs Aug. 3-6, '92 (P<sup>8</sup>); Norman—parents feeding young July 17, '22 and Aug. 22, '20 (N); Wichitas—3 eggs and 1 Cowbird's 2 feet up in button bush June 7, '26 (N); Fort Cobb—4 eggs, May 26, '60 (M<sup>1</sup>).

Food: cotton cutworm, grasshoppers, squash bug, stink bug; wild fruit, weed seed.

Although the Blue Grosbeak arrives late and then waits some time before starting to nest, two broods are quite regularly raised. Singing has been heard until Aug. 6, 1923, and Aug. 12, 1926. The song is longer, more musical and more warbling than those of the Painted or Indigo Buntings. The grosbeak is larger than the Indigo Bunting and has two distinct chestnut-brown wing-bars, which the latter lacks. A nest 3 feet up in an elder by Snail Brook near Norman had been built almost entirely of newspaper, but was lined with reddish roots; it contained 2 eggs on June 20, 1926, at which date the young of the first brood had but recently left the nest. Someone or something robbed this conspicuous nest, but the

third attempt was partially successful, for on July 29, a young grosbeak and young Cowbird were sitting in a willow, the latter silent, the former teasing, *whip*, about once every second.

(597a) WESTERN BLUE GROSBEEK: *Guiraca caerulea interfusa*

Summer resident in northwestern Oklahoma and the Panhandle, transient in eastern Oklahoma.

Specimens, breeding birds: Minco—6 birds, \*†May 23-31, '05 (W<sup>1</sup>); Dewey Co.—\*†June 10, '14 (C<sup>3</sup>). Transients—Canadian Co.—\*†May 1914 (C<sup>5</sup>); Craig Co.—\*†Sept. 2, '14. (C<sup>5</sup>).

Nesting: Cimarron Co.—abundant, nest with 4 eggs June 21, '14 (T<sup>1</sup>);—nest with 2 eggs 3 feet up in willow, nest with 1 egg, 9 feet up in hackberry June 1, '22 (N).

In Minco from May 23 to June 2, 1905 Dr. Wetmore found that "though Blue Grosbeaks were found nearly always in pairs they did not seem to be nesting yet." A male secured May 31 "has the head and neck all around blue while elsewhere the body plumage is brown" with indistinct spots and marking of bluish on the underparts ('18: 57). Singing was heard by us on the Texakite in Cimarron County as late as Aug. 27, 1926.

(598) INDIGO BUNTING: *Passerina cyanea*

Summer resident in eastern half of the state, also Woodward, Custer, Washita, Caddo, and Comanche counties; abundant in east, less so in west.

Migration: Copan—Apr. 13, '13; Apr. 20:: Oct. 6, '16 (K<sup>1</sup>); Tulsa—Apr. 15, '22, Apr. 7, '23 (P<sup>2</sup>);—Apr. 30, '24 (K<sup>3</sup>); Fort Reno—May 3, '92 (M<sup>2</sup>); Cleveland Co.—Apr. 15, '27; May 6:: Oct. 17, '22 (N); Wichitas—May 8, '04 (G<sup>2</sup>); Custer Co.—Apr. 20-Sept. 11, '02 (S<sup>4</sup>); Washita Co.—May 2, '95, May 5, '90 (B<sup>4</sup>).

Nesting: Copan—5 nests June 5-18, 3 to 4 eggs, 2 to 12 feet up, Cowbird eggs in two (K<sup>1</sup>); Sequoyah Co.—3 young in nest July 6, '29 (B<sup>5</sup>); Tulsa—eggs May 18-June 23 (M<sup>5</sup>, P<sup>2</sup>); Cleveland Co.—female building May 12, '22 (N); Wichitas—2 broods of young seen Aug. 8, '06 (B<sup>1-2</sup>).

Food: caterpillars, grasshoppers, cankerworms, mosquitoes, flies; weed seed.

The songs of this handsome bunting vary much in quality, length and structure. A common one goes like this:

*sweet sweet sweet*

*sweet sweet*

*sweet sweet.* Often this is shortened.

Another song went *chee chee air chee chee weér chee chee*. On May 18, 1924 I heard such a queer unmusical song that it was only when I saw the singer that I realized it came from an Indigo Bunting; I transcribed it as *pée yer pée yer pee*. The rate of singing is usually 5 or 6 songs a minute. The latest date on which I have heard it is Aug. 12, 1926. The female Indigo Bunting can be distinguished from sparrows by her conical bill, unstreaked brown back and brownish under parts.

(599) LAZULI BUNTING: *Passerina amoena*

Rare summer resident in Cimarron County.

Migration: Cimarron Co.—last seen Aug. 20, '26 (T<sup>1</sup>); Gate—rare transient, seen May 2, '09 (L<sup>2</sup>).

Nesting: Cimarron Co.—nest with 3 young on Marselus Bros. ranch July 1, '14 (T<sup>1</sup>, '23: 48).

The azure of the head and back, chestnut breast and white bar in the wing are conspicuous field marks of the male Lazuli Bunting. The female is a dull brown bird, unstreaked, with a conical bill and a habit—shared by her mate—of nervously flipping her tail. Mr. Tate has taken a specimen.

**(601) PAINTED BUNTING: *Passerina ciris*†**

Summer resident throughout Oklahoma as far north as Delaware, Washington, Payne and Blaine Counties, as far west as Custer and Tillman Counties.

Migration: Tulsa—Apr. 28-Aug. 20 (K<sup>3</sup>); Cleveland Co.—Apr. 27 '26: May 4:: Aug. 10, '22 & '26 (N); Custer Co.—Apr. 22-Sept. 3, 02, Apr. 30, '03, Apr. 17, '04 (S<sup>4</sup>); Gate—very rare migrant, May 23, '09 (L<sup>2</sup>).

Nesting: Copan—4 eggs and 1 Cowbird's June 5, '17 (K<sup>1</sup>); Tulsa—3 and 4 eggs May 24-June 10 (M<sup>5</sup>, G<sup>3</sup>, P<sup>2</sup>); Cleveland Co.—female building in a green briar on a walnut, male accompanying her May 26, '26 (N); Wichitas—3 eggs in nest 3 feet from ground in a black jack oak June 4, '29 (N).

Food: cotton boll weevil, cotton worm, grasshoppers, caterpillars; pigeon grass.

This gay little bird arrives late and leaves early, the 10th of August being the latest I have seen it. The young male in his greenish yellow plumage has given trouble to many a beginner in bird study. Dr. Wetmore took a female in Minco that had "a reddish wash over the under surface (varying from flesh to salmon color) with a very faint rosy wash on the back and rump" ('18:58).

The song is a pleasant, unvaried *sweet sweet sweet sweet sweet sweet*, 1.5 seconds long, usually given at the rate of 5 and 6 songs a minute. The male in the Wichitas whose mate was incubating sang surprisingly little; I heard nothing from him from 9:30 to 11:30 June 4, and only about 19 songs from 2:40 to 3:40. At 3:55 he came near the nest and then flew west; his mate left her eggs and joined him.

In the Arbuckles on May 16, 1926 we saw two females having a fierce fight, even falling to the ground in their struggles. A male came down to investigate, they separated and the last we saw of them one female was hurrying away pursued by both of the other birds. Mr. Grant Foreman ('26b) tells of a female feeding three young recently out of the nest Aug. 4, 1925, she working incessantly, the male "interminably singing." In this case two broods must have been raised; I do not believe this is usual in Oklahoma.

**(604) DICKCISSEL: *Spiza americana***

Summer resident throughout the state; rare in the Panhandle.

Migration: Copan—Apr. 22-Sept. 18, '16, Apr. 23, '17 (K<sup>1</sup>); Tulsa—Apr. 22, '22: Apr. 26 (P<sup>3</sup>); Bryan Co.—common Sept. 14, last seen Sept. 25, '83 (C<sup>4</sup>); Cleveland Co.—Apr. 18, '27: Apr. 27:: Sept. 29, '23, most leave in August (N); Wichitas—Apr. 26, '04 (G<sup>2</sup>); Gate—"none May 13, '24, but the roads were full of them the 14th" (L<sup>2</sup>).

Nesting: 42 nests recorded from May 14, '27 (5 eggs Tulsa, M<sup>5</sup>) to Aug. 8, '12 (4 eggs 14 feet up in persimmon tree Vinita, (K<sup>1</sup>, '15b); only 3 found in July; 13 had 5 eggs, 12 had 4 eggs, 4 had 3 young, 1 had 2 young; 4 contained Cowbird eggs; 6 were on the ground, 10 from 1.5 to 5 feet, 1 at 6 feet, 1 at 14 feet. Cimarron Co.—5 eggs June 20, '11 (T<sup>1</sup>);—several in alfalfa fields in Kenton May '22 (N).

Food: enormous numbers of grasshoppers, 27 being found in one stomach, weevils, click beetles; pigeon grass.

There is something engaging in the whole-hearted earnestness with which this little bird utters his unmusical ditty *dick-dick, dickcissel* over and over again from barbed wire fence or telegraph wire no matter how hot the day. A Dickcissel in Kingfisher County June 2, 1929 began his concert about 15 minutes before sunrise, singing quite steadily for approximately 47 minutes of the first hour. Five minutes in which the songs were

†Specimens from central and western Oklahoma were identified as *P. c. pallidior*—Pale Painted Bunting, but this subspecies has not been accepted by the Committee on Nomenclature.



counted gave 15 songs a minute; at this rate he should have sung 700 songs in the hour. At 8:30 he was singing only 11 and 12 times a minute. Other birds that I have timed have sung from 11 to 19 times a minute.

Dr. Alfred Gross (*Auk* Jan. and Apr. 1921) found that the female takes all the care of the young, while the male devotes himself wholly to his art; even when his mate was killed, one still sang on and on while the young perished. This author calculates that one bird might sing 400 times an hour or 5000 times a day. Some one, or rather a company of people really should count the songs of one of these indefatigable creatures for one day. This task could very well be combined with observation of a nest.

Fluctuations in abundance have not been as noticeable in Oklahoma as in some regions. These birds have been exceedingly common in Cleveland County each season but that of 1926 when they were only fairly common; their numbers were also abnormally few that season on the roadsides to the Wichitas and to Kingfisher. About Tulsa there were as many as usual that year according to Mr. Morse, but in 1929 they were scarce in that region. In Washita County Mr. Camp reported in 1911 "common 5 years ago, but I have not seen any for two years." As to Gate, Mr. Lewis wrote, "I saw none at all from 1909 to 1912, have been increasingly abundant since that time."

At Minco Dr. Wetmore ('18:58) collected a Dickcissel thinking it a female, but which "on dissection proved to be a breeding male. In color and marking it is very similar to females." He reports the local names of "wheat bird" and "field canary;" another is "little field lark" from the similarity of its coloring to the meadowlark.

#### FINCHES, ETC.: Subfamily Carduelinae

##### (514) ROCKY MOUNTAIN EVENING GROSBEAK: *Hesperiphona vespertina brooksi*

Rare fall and winter visitant in western Oklahoma.

Migration: Caddo Co.—5 taken on Boggy Creek by G. W. Stevens in fall of \*1900 (C<sup>2</sup> & T<sup>2</sup>); Custer Co.—wintered, last seen Mar. 2, '02, Mar. 16, '03 (S<sup>4</sup>).

These beautiful and distinguished birds in their black, white and gold plumage are fond of box elder seeds and mountain ash and cedar berries; at feeding stations they accept sunflower and hemp seed.

##### (517) EASTERN PURPLE FINCH: *Carpodacus purpureus purpureus*

Irregular winter visitant in eastern and central Oklahoma.

Migration: Copan—Feb. 21-Apr. 18, '16, Jan. 9-Mar. 27, '17 (K<sup>1</sup>); Tulsa—Nov. 15-Apr. 1, (K<sup>3</sup>); Creek Co.—\*Dec. 28, '21 (L<sup>3</sup>); Latimer Co.—\*Mar. 23, '14 (C<sup>3</sup>); Bryan Co.—Jan. 10-Mar. 18, '84 (C<sup>4</sup>); Oklahoma Co.—2 seen Apr. 5, '25 (S<sup>1</sup>); Cleveland Co.—Jan. 30, '19, Mar. 30, Nov. 29 '20, Dec. 26 '21, Nov. 4, '22, Feb. 8-Mar. 30 '24, Nov. 1, '25-Apr. 2 '26 (N); Wichitas—Mar. 11-Apr. 10 '04 (G<sup>2</sup>).

Food: elm buds, giant ragweed, cottonwood catkins; plant lice, caterpillars.

Sometimes we are lucky enough to hear the joyous warble of this winter visitant. Dr. Cooke recorded it on March 15, 1884. Near Norman I have heard it only twice—March 2, 1924 and March 27, 1926. On the former date there were nearly a dozen of the birds, only one in adult male plumage; three or four of the young males sang, all but one in a rather subdued tone. One January day several were eating giant ragweed seeds, lighting up the pale brown stalks with their brilliant color.

Purple Finches have been recorded on only four Christmas censuses—1921, 1925, and 1929 in Cleveland County, and 1929 in Tulsa.

The old male is unmistakable in his raspberry-colored plumage; the females and young males resemble chunky, heavily-striped sparrows with large conical bills and forked tails.

(519) COMMON HOUSE FINCH: *Carpodacus mexicanus frontalis*

Resident in Cimarron County.

Nesting: first nests found in 1922, 6 on a 2 acre tract of land near Kenton 1923, 11 on same tract 1924 (T<sup>1</sup>, '25a).

Food: "Russian thistle seed, ragweed and nettle seeds, millet and wheat, and sunflower seed." (T<sup>1</sup>, 25c).

This attractive little bird with its bright plumage and charming song, given all year long, was first recorded in the northwestern corner of Cimarron County in a cottonwood grove on North Carrizo Creek six miles northwest of Kenton by Mr. and Mrs. E. P. Rothrock. In 1920 Mr. Tate found it near Kenton and since then "they have been present in large numbers the year around" (T<sup>1</sup>, '25a) In 1925 they had reached ranches nine miles southeast of Kenton, by 1930 they had advanced fifteen more miles.

May success attend its eastward progress.

(533) NORTHERN PINE SISKIN: *Spinus pinus pinus*

Irregular winter visitant in the state; rare breeder in Cimarron County.

Migration: Copan—common, last seen May 1, '17 (K<sup>1</sup>); Tulsa—Nov. 23, '24-Jan. 13, '25 (K<sup>3</sup>); Latimer Co.—\*Mar. 17, '14 (C<sup>3</sup>); Oklahoma Co.—irregular, first seen Oct. 18, '73 Dec. 23, '27 (S<sup>1</sup>); Cleveland Co.—Dec. 23, '22-Apr. 21, '23, Nov. 11, '25-Mar. 20, '26, Oct. 16, Nov. 13 '26 (N); Wichitas—Mar. 11-Apr. 14 '04 (G<sup>2</sup>); Alva—large number during April 1928, seldom seen before (C<sup>2</sup>); Kenton—occasional winter resident (T<sup>1</sup>).

Nesting: Cimarron Co.—nest with 3 eggs in a pinyon tree on Marselus Bros. ranch June 5, '11 (T<sup>1</sup>, '23: 47).

Food: seeds of Russian thistle, ragweed, sunflower, pigweed, dandelion, pinyon: plant lice.

The call note of the Pine Siskin is a characteristic husky *chee-ye-e*. It has been recorded on five Christmas censuses in Oklahoma—1922 and 1925 in Cleveland County, 1925 in Oklahoma County and in Tulsa and Kenton in 1929. One New Year's Day ten little Siskins, all busily preening, were clustered on branches in fours and a pair, for all the world like birds on a Christmas card.

(529) EASTERN GOLDFINCH: *Spinus tristis tristis*

Resident throughout eastern and central Oklahoma, more common in winter than summer. We have found them in summer as far west as Woods, Kingfisher, Grady, and Murray Counties and as far south as Pushmataha and McCurtain Counties.

Migration: Copan—last seen in numbers Mar. 28, far commoner in winter than in summer (K<sup>1</sup>); Tulsa—\*Apr. 25 in summer plumage (K<sup>3</sup>); Bryan—Nov. 12-Mar. 25 (C<sup>4</sup>); Cleveland Co.—most common in midwinter, least so in October (N); Gate—only record, one seen Jan. 30 '27 (L<sup>2</sup>).

Nesting: Copan—building May 25 '17, building Aug. 1, 3 small young Aug. 27. 3 well incubated eggs and 1 young Aug. 27, another bird building Aug. 27, '17 (K<sup>1</sup>); Tulsa—rare breeder, 4 fresh eggs Aug. 5 '26 (M<sup>3</sup>), 3 eggs, June 1 '27 (G<sup>3</sup>); Norman—nest 4 feet from ground in mulberry by sidewalk with 2 Goldfinch and 2 Cowbird eggs July 22, '20, hatched July 24 (N).

Food: seeds of thistles, ragweed, sunflowers, mullein; cankerworms, grasshoppers, plant lice—as many as 325 in one stomach.

The Goldfinch with its gay summer plumage, bounding flight, and

sweet and happy notes seems the very embodiment of joy. The ecstatic, jumbled warble has been heard by us in Cleveland County from April 5 to August 14.

(530) ARKANSAS GOLDFINCH: *Spinus psaltria psaltria*

Summer resident in Cimarron County.

Migration: Cimarron Co.—last seen Sept. 1, '26 (T<sup>1</sup>).

Nesting: Cimarron Co.—nest with 4 eggs in a young willow June 9, '11, nest with 3 eggs in small willow on Marselus Bros. ranch June 11, '13, nest with 5 eggs in tall rose bush in Kenton June 8, '24 (T<sup>1</sup>).

Mature males are black above and yellow below; females and young males are brownish or mottled with black and olive on the head and back; all the birds have white in the wings and tail. In flight and notes the Arkansas Goldfinch resembles its eastern relative. Mr. Tate has taken a specimen.

TOWHEES, SPARROWS, BUNTINGS, ETC.: Subfamily Emberizinae

(521) GREEN-TAILED TOWHEE: *Oberholseria chlorura*

Uncommon transient in Cimarron County.

Migration: Cimarron Co.—May 2-5; Oct. 20-25 (T<sup>1</sup>). No specimen has been taken.

This strikingly colored bird with its reddish brown crown, white throat patch and bright greenish wings and tail is a common summer resident in Colorado.

(587) RED-EYED TOWHEE: *Pipilo erythrophthalmus erythrophthalmus*

Summer resident in northeastern Oklahoma, rare winter resident in eastern half of state.

Migration: Ottawa Co.—\*Apr. 8, '11 (P<sup>4</sup>); Copan—Mar. 18, '14 (K<sup>1</sup>); Tulsa—Apr. 23, '21 (P<sup>2</sup>)—recorded throughout the winter (K<sup>3</sup>); Bryan Co.—first seen Oct. 24, '83, common from middle to last of November; rather common through the winter, migrants returned Mar. 8, only 3 birds seen Mar. 15, last seen Mar. 25 (C<sup>4</sup>); Cleveland Co.—rare visitor, all males, 2 Jan. 13, 1 to 3 Mar. 5-Apr. 8, '24, 1 Mar. 19, 1 Nov. 13, '26, \*†Jan. 24, '27 (N); Gate—May 18, '24 "saw my first eastern Towhee this evening in our yard" (L<sup>2</sup>).

Nesting: Tulsa—May 12, '22, set of 4 eggs (M<sup>5</sup>, '29: 81); Copan—3 full grown young seen June 9, '17 (K<sup>1</sup>); Ottawa and Delaware Counties—several seen June 12-15, '21 (N).

Food: moths, beetles, grasshoppers, cockroaches; seed, wild fruit.

The Chewink is distinguished from the Arctic Towhee, which is the common bird in central Oklahoma by the fact that it has practically no white on its wings or shoulders. The notes of the two species are different. This bird says *to-weet*, or *jo-ree*, and sings *dick-yoo*, *chiddle-chiddle chiddle* and *drink your tea-e-e-e-e*. Near Norman singing was heard Apr. 8, 1924 and Mar. 19, 1926.

(588) ARCTIC TOWHEE: *Pipilo maculatus arcticus*

Transient and winter resident throughout the state, common in central and western Oklahoma, rare in eastern.

Migration: Tulsa—\*†Mar. 15, '27 (K<sup>3</sup>); Sapulpa—\*Dec. 20, '21 (L<sup>3</sup>); Tupelo, Coal Co.—\*†Oct. 19, '14 (C<sup>5</sup>); Kingfisher—May 8, '26 (N); Oklahoma Co.—large flock Oct. 6, '25 (S<sup>1</sup>); Cleveland Co.—common the middle of October and the last half of April, uncommon in winter; arrive Oct. 11-18, leave Nov. 13-30; return late March to mid-April, last seen May 2-11, median date May 6 (N);—\*†Nov. '13 (C<sup>5</sup>); \*†Mar. 5, '25 '03 (B<sup>6</sup>); Kiowa Agency—\*Mar. 19, '67 (P<sup>1</sup>); Gate—common and regular migrant (L<sup>2</sup>); Kenton—transient (T<sup>1</sup>).

Arctic Towhees treat us to their ridiculous song most commonly in

April, but I have heard it once in December, once in January, twice in February, 3 times in March and twice in May. It is sometimes written *yang, kit-er-er*. The fluctuations in their numbers in winter are shown by our Christmas censuses: 1919, 1; 1920, 4; 1921, 30; 1922, 10; 1923, 35; 1925, 11; 1926, 9. Curiously enough females are rarely seen in Cleveland county.

(591) CANYON TOWHEE: *Pipilo fuscus mesoleucus*

Resident in the west end of Cimarron county, more common in summer than winter.

Nesting: Kenton—nest with 3 eggs 3 feet up in white cedar, June 1, nest with 3 eggs 3 feet up in pinyon, nest with 3 young 18 inches up in tree cactus June 2, '22 (N).

Food: grasshoppers, moths, ants; pigweed, Russian thistle.

These are large comfortable looking birds with their reddish brown caps, their plain grayish brown upper parts and sides, pinkish buff throats, small dark patch on chest and buffy bellies. They indulge in quite a variety of notes. The following were heard near the Texakite in Cimarron county in late August: a loud *sweet sweet sweet*, a *yap yap yap*; and a *spee spee spee chatter-chatter-chatter*, the last three notes being delivered very rapidly.

(605) LARK BUNTING: *Calamospiza melanocorys*

Transient in western Oklahoma, breeding in Cimarron county.

Migration: Tillman Co.—Mar. 15, '21 (K<sup>1</sup>); Jackson Co.—2 \*Mar. 27, '27 (L<sup>4</sup>); Wichitas—flock May 7, '04 (G<sup>2</sup>); Camp Supply—\* Feb. 7, '78 (K<sup>2</sup>); Woodward Co.—2 seen Aug. 29-30, '92 (B<sup>2</sup>); Alva—common in spring migration (C<sup>2</sup> & T<sup>2</sup>); Texas Co.—2 pairs and 1 male May 28, '22; 12 Aug. 23, '16 (N); Kenton—67 Apr. 26, '25, last seen Oct. 7, '26 (T<sup>1</sup>); flocks May 24-June 2, '22; 150, all but one in winter plumage Aug. 23, '26 (N).

Nesting: Kenton—nest with 3 young, July 7, '12, nest with 4 young on C. F. Rowan ranch July 6, '13 (T<sup>1</sup>).

Food: grasshoppers, leaf beetles, weevils; pigweed, amaranth, Russian thistle.

These highly sociable birds go about in flocks most of the year. The male in breeding dress is truly a "White-winged Blackbird," but most of the time he, like his mate, is grayish brown with a conspicuous white or creamy patch on the wing and a lightly streaked breast. The call note is a soft, sweet *hoo-ee* given with a rising inflection as the birds pass over in flight; the song, rich and joyous, often uttered in the air, has won them the name of Prairie Bobolinks.

(542a) EASTERN SAVANNAH SPARROW: *Passerculus sandwichensis savanna*

Winter resident in eastern and central Oklahoma.

Migration: Copan—last seen May 15, '17 (K<sup>1</sup>); Tulsa—\*†Nov. 6, '26 (F); Coal Co.—\*†Oct. 19, '14 (C<sup>5</sup>); Cleveland—\*†Feb. 2, \*†Mar. 2, '03 (B<sup>8</sup>); Canadian Co.—\*†May 14 (C<sup>5</sup>).

Food: cotton boll weevil, click beetles, army worms, plant lice (130 in one stomach), grasshoppers, ants, horse flies; weed seed.

Savannah Sparrows are difficult birds to see since they usually run from clod to clod in a cotton field or sneak away in the grass when a person approaches; if they flush, they fly but a short ways and drop again into cover. When they do give the observer a chance, the white median line through the crown, yellow mark over the eye, the fine, black streakings of the breast and the shortness of the tail are good field marks. This sparrow has been recorded on nine of the 23 Christmas censuses from eastern, southern, and central Oklahoma.

(542c) NEVADA SAVANNAH SPARROW: *Passerculus sandwichensis nevadensis*

Winter resident throughout the main body of the state.

Migration: Tulsa—\*†Apr. 17 '26 (K<sup>3</sup>); Pittsburg Co.—\*†Mar. '14 (C<sup>5</sup>); Bryan Co.—Sept. 7—Apr. 4 (C<sup>4</sup>); Cleveland Co.—8 taken \*†Mar. 2, '03, 1 \*†Mar. 10, '03, 1 \*†Apr. 17, '02 (B<sup>6</sup>);—Oct. 31-May 2, most common Apr. 6-10 (N); Gate—not common migrants (L<sup>2</sup>).

Food: important enemy of alfalfa weevil, caterpillars, plant lice; weed seeds.

This subspecies may be the predominant form in central Oklahoma; fourteen specimens from the state have been referred by Dr. Oberholser to this form, five to the eastern. This is the palest of the Savannah Sparrows, the yellow over the eye being sometimes entirely absent.

Dr. Cooke found Savannah Sparrows abundant near Caddo: "A decided increase was noted on February 13, and the next day the birds were common, scattered in parties of five or less all over the fields; two days later their numbers still further increased, only to decrease in another two days and to diminish by at least one half in two days more. They became rather uncommon the last week in February, but were common again March 3 and abundant by March 11. On March 21 the Savannah Sparrows outnumbered in the open fields all other species combined, and were still more common the next day, when in a single field there were certainly not less than a thousand, and probably over two thousand individuals. They could be seen and heard on all sides all the time. The next day the numbers remained the same, while the day following a walk over the same ground revealed two birds only." ('14b:485).

(546) EASTERN GRASSHOPPER SPARROW: *Ammodramus savannarum australis*

Transient in eastern Oklahoma.

Migration: Okmulgee Co.—\*†Oct. 15, '25 (F '28: 67).

The single specimen credited to the state was taken by Mark Moore, Jr. and presented by Miss Force to the Museum of Zoology, University of Oklahoma.

(546a) WESTERN GRASSHOPPER SPARROW: *Ammodramus savannarum bimaculatus*

Summer resident in prairie districts over much of the state; occasional in winter.

Range: Recorded in northeastern Oklahoma from Washington, Tulsa, Creek, Okmulgee and Muskogee counties, in central Oklahoma from Payne, Logan, Kingfisher, Canadian, Oklahoma, Cleveland, McClain, Grady, Murray and Comanche counties; in northwestern Oklahoma from Woods, Woodward, Harper, and Beaver counties. There are no records as yet from southeastern, northeastern, nor southwestern Oklahoma.

Specimens: Tulsa—\*†summer '22 (P<sup>2</sup>); Minco—\*†May '05 (W<sup>1</sup>); Oklahoma Co.—\*†May 28, '14 (C<sup>5</sup>).

Migration: Copan—Apr. 12, '17 (K<sup>1</sup>); Tulsa—Apr. 19, '21, Apr. 22, '22 (P<sup>2</sup>);—last seen Nov. 25 '24 (K<sup>3</sup>); Bryan Co.—Oct. 29 '84, common Nov. 5, left soon after, first spring migrants Mar. 3 (C<sup>4</sup>); Cleveland Co.—Apr. 8 '21, Apr. 6 '26, Oct. 21 '25 (N).

Winter records: Creek Co.—\*†Dec. 28 '21 (L<sup>3</sup>); Bryan Co.—2 seen Dec. 25, 1 Feb. 9, 16, Mar. 1 (C<sup>4</sup>); Norman—1 Feb. 20 '21 (N).

Nesting: Copan—5 nests with 5 eggs each May 12, 14, 18, 18, 19, '14, 2 eggs May 18, 5 eggs May 25, 4 eggs May 28, '17 (K<sup>1</sup>); Tulsa—eggs May 5—June 15 (P<sup>2</sup>);—5 eggs May 3, '27 (C<sup>5</sup>);—5 eggs May 25, '27 (M<sup>5</sup>); Canadian Co.—5 eggs May 31, '90 (M<sup>2</sup>); Oklahoma City—3 eggs July 1 '29 hatched July 4 (S<sup>1</sup>); Kingfisher Co.—feeding young May 29, '20 (N). We have seen young recently out of the nest July 1, '20 in the Arbuckles, July 15, '20 in Okmulgee County.

Food: grasshoppers, cutworms, army worms, weevils, leaf-beetles; ragweed, pigeon grass, panic grass.

Grasshopper Sparrows were noted by Mr. Bunker as "very common" 30 years ago in central Oklahoma; now we find them nesting in Cleveland County only on the great unbroken prairies. In the region of my bird studies—Norman and south and west to the South Canadian—I recorded them only four times, in each case single birds.

On April 6, 1926 in a cotton field I heard a faint *tsee-cep* and finally discovered a Grasshopper Sparrow very near me singing on the ground with his bill closed. On their nesting grounds, however, they sing with vigor and abandon, puffing out their breasts and throwing back their heads, a mighty effort for an infinitesimal result. Its most common song is almost exactly like that of the green grasshopper. The Baileys recorded singing by Ivanhoe Lake as late as August 12, 1906. The buffy line through the middle of the crown, the unstreaked breast, yellow bend to the wing and short tail are distinguishing marks of this small sparrow.

(547a) WESTERN HENSLOW SPARROW: *Passerherbulus henslowi*  
*henslowi* ~~*securans*~~

Rare transient.

Migration: Cleveland Co.—one seen Apr. 28, '23 (N).

This large-headed, large-beaked sparrow has a greenish cast over the head and neck, a narrowly streaked breast and a short tail. The only Henslow Sparrow I have observed in Oklahoma was a single spring transient watched at close range as it fed in an old corn field near the side of a pond. We have no record of a specimen.

(548) LECONTE SPARROW: *Passerherbulus caudacutus*

Uncommon transient and winter visitant throughout the main body of the state.

Migration: Copan—Oct. 18, '16—Feb. 27 (K<sup>1</sup>); Tulsa—\*†Dec. 12, '24, Jan. 23, Mar. 2, '25 (K<sup>8</sup>);—Dec. 24, '27 (F); Cleveland Co.—\*Mar. 7, \*10, '03 (B<sup>0</sup>);—one or two birds seen Dec. 6, 12, '21, Jan. 17, Mar. 1, 12, Apr. 3, '22, Oct. 19, '23, Oct. 12, '25 (N); Fort Reno—\*Mar. 7, '90 (M<sup>2</sup>); Bryan Co.—a dozen Feb. 16, abundant in all the open fields, Feb. 18, most leaving Feb. 19, two birds on Feb. 26 the last seen (C<sup>4</sup>); Gate—Mar. 25, '09 (L<sup>2</sup>).

It is a pity that such a gay little sparrow should hide its light under a bushel. Usually, like the Savannah Sparrow, it flushes from the grass and darts again into another clump. But occasionally it comes out of retirement and sits quietly in full view on a weed. Then one can admire at leisure the yellowish throat, breast, and line over the eye and on the crown and note the distinguishing chestnut hind neck and streaked sides and flanks. It has been recorded on only one of the 23 Christmas censuses in eastern, central and southern Oklahoma—two birds at Tulsa in 1927.

(540) EASTERN VESPER SPARROW: *Pooecetes gramineus gramineus*

Common transient in eastern and central Oklahoma.

Migration: Copan—Mar. 23-Apr. 18, '17, Oct. 16-Nov. 6, '16 (K<sup>1</sup>); Rogers Co.—\*†Nov. 7, '14 (C<sup>5</sup>); Adair Co.—common Mar. 29-Apr. 11 '97 (L<sup>5</sup>); Pittsburg Co.—3 \*†Mar. 22, '14 (C<sup>5</sup>); Bryan Co.—Oct. 14-Nov. 9, 1 seen Feb. 25, common Mar. 11-19, few Mar. 25 (C<sup>4</sup>); Cleveland Co.—regular in spring, rare in fall; Mar. 6, '21; Mar. 22; Apr. 19; Apr. 28, '26, most common from Mar. 20-Apr. 11; in fall seen only Sept. 29, Oct. 8, '20, Oct. 24, 26, '21, Oct. 22 '23 (N);—\*†Oct. 29, '02 (B<sup>0</sup>).

Food: cutworms, army worms, plant lice, beetles, grasshoppers; pigeon grass, crab grass, lamb's quarter, ragweed.

The Vesper Sparrow is easily identified when the two outer tail feathers

are shown in flight. When seen on the ground, its side view is characteristic with the dusky cheek patch bordered by a whitish rounded stripe.

I have heard them singing on three occasions in Oklahoma—Mar. 20 and 27, 1922, and Apr. 7, 1920. Theirs is a pleasing, happy song beginning with two long low notes followed by two higher notes and ending with a succession of trills.

(540a) WESTERN VESPER SPARROW: *Pooecetes gramineus confinis*  
Transient in central and western Oklahoma.

Migration: Cleveland Co.—\*†Mar. '14 (C<sup>5</sup>); Gate—common (L<sup>2</sup>).

Food: vast numbers of alfalfa weevils, also chick beetles, caterpillars; weed seeds.

On April 15, 1923 Mr. Lewis wrote that there were hundreds of these birds about Gate; "for about a week they were the commonest bird seen."

(552) EASTERN LARK SPARROW: *Chondestes grammacus grammacus*

Summer resident throughout eastern Oklahoma.

Specimens: Tulsa—\*†Apr. 27, '27, (K<sup>3</sup>); McCurtain Co.—\*†July 2, '03 (N).

Migration: Copan—Apr. 16, '15, Apr. 18, '16, Apr. 19, '17 (K<sup>1</sup>); Tulsa—Apr. 15, '22 (L<sup>3</sup>)—Apr. 11 '24 (K<sup>3</sup>).

Nesting: Copan: 5 eggs, May 14, '14 (K<sup>1</sup>); Tulsa—eggs May 15—June 27 (P<sup>2</sup>):—May 7—June 12 (M<sup>5</sup>). 5 nests had 4 eggs, 4 had 5; 3 were placed on the ground, 4 in trees.

Food: grasshoppers, weevils, caterpillars; pigeon grass, Johnson grass, ragweed, purslane, sunflowers.

The Lark Sparrow is a bird of charm and character. Unlike many of the sparrow tribe whose inconspicuous plumages and shy ways tantalize and bewilder the observer, this kind bird proclaims its identity as it sits on a barbed wire facing us, as it flies up from the road, or when it sings. The white stripe through the middle of the chestnut crown, the black stripes and chestnut patch on the sides of the head, the single dark spot in the middle of the breast and the white margin to the rounded tail are all welcome sights to the beginner in bird study.

The song is sweet and melodious, delivered hurriedly and interrupted at short intervals by a characteristic *buurr* or *chrr*. In my experience it is not given as constantly as in the case of many sparrows.

(552a) WESTERN LARK SPARROW: *Chondestes grammacus strigatus*  
Common summer resident throughout central and western Oklahoma, including the Panhandle; one winter record.

Specimens: Norman—\*†Apr. 21, '14; Minco—\*†May 23, '05 (W<sup>1</sup>); Harmon Co.—\*†June 16, '26 (L<sup>4</sup>); Cimarron Co.—\*†July 2-7, '26 (L<sup>4</sup>).

Migration: Cleveland Co.—Mar. 26, '27; Apr. 1; Sept. 25, '26 (N); Canadian Co.—Apr. 7, '90 (M<sup>2</sup>); Washita Co.—Apr. 10 '95, Mar. 29, '96 (B<sup>4</sup>).

Nesting: Cleveland Co.—earliest, 3 eggs May 1, '27; latest, parents feeding young out of the nest Aug. 10, '26 (N); Ardmore—pair adopted a Mockingbird's nest (Rachel Hutchinson); Wichitas—nest with 3 eggs on ground Apr. 14, '04 (G<sup>2</sup>); Cimarron Co.—4 eggs on ground May 29, 5 eggs on ground May 30, 4 eggs and 1 Cowbird's 4 feet from ground June 1, '22 (N). We have records of 23 nests in Oklahoma; 7 with 3 eggs, 6 with 4 eggs, 6 with 5 eggs, 1 with 2 young; 4 contained 1 Cowbird egg each, one 2 Cowbird eggs; 12 were placed on the ground, 6 in trees from 3 to 4 feet from the ground, 1 10 feet.

Food: helps check invasions of Rocky Mountain locusts; eats great numbers of alfalfa weevils; weed seeds.

On Jan. 6, 1921, to our great surprise, we saw a Lark Sparrow near Snail Brook west of Norman, apparently contented in the summer-like weather then prevailing. But a week later, after a snow storm, he looked

quite forlorn, puffed out and trying to warm one little foot under his feathers. He was busily eating grass seeds in company with a number of Harris, Song and White-crowned Sparrows. Fortunately he survived the winter, for on Feb. 23 I found him singing happily in the same locality.

A nest in a small tree held one egg and one newly hatched bird on June 5; eight days later I banded the two nestlings. At both visits the parents appeared in the nearby bushes and objected with gentle *tsips*, but on the 15th when we looked into the nest the young flew out and one of the parents became so distressed that it fluttered about on the ground as if it had a broken wing.

Singing has been heard in Cleveland County from March 26 till August 11, also twice in fall—Sept. 8, 1920, Sept. 19, 1926.

(585) EASTERN FOX SPARROW: *Passerella iliaca iliaca*

Winter resident in eastern and central Oklahoma.

Migration: Ottawa Co.—\*Dec. 31, '13 (P<sup>4</sup>); Copan—Nov. 3, '16 (K<sup>1</sup>); Tulsa—\*†Mar. 8, '27 (F); Bryan Co.—fairly common from Dec. 1—Mar. 15, spring migrants began to arrive Feb. 23, abundant Mar. 15, '84, but disappeared at once (C<sup>4</sup>); Oklahoma Co.—occasional winter visitant, recorded in only one of 3 Christmas censuses; Cleveland Co.—Oct. 18 '22; Oct. 28:: Mar. 3; Mar. 30, '22 (N); Woods Co.—rare visitant in winter (C<sup>2</sup> & T<sup>2</sup>); Gate—reported in spring of 1923 by Mrs. A. L. Dugans, the only record for the vicinity (L<sup>2</sup>).

Food: ragweed, polygonum, wild berries; millipeds, beetles.

The singing of the Fox Sparrow is one of the joys of our central Oklahoma winters. In heavy thickets, and woods near the South Canadian this rich and varied warble was recorded from Nov. 9—Mar. 7, the majority of records falling in December.

The numbers of birds on the 8 mile censuses were as follows: Jan. 1, 1926, 8; Feb. 1, 38; Nov. 13, 16; Dec. 4, 42; Jan. 8, 12; Feb. 22, 7. From 2 to 28 Fox Sparrows were recorded on 6 of the 7 Christmas censuses. The large size, rich reddish brown and grey upper parts, heavy reddish streaking of the under parts, bright reddish tail, and heavy bill are distinguishing marks of this fine sparrow.

(580b) ROCK SPARROW: *Aimophila ruficeps cremoeca*

Resident in the Arbuckles and Wichita Mountains, near Headrick in Jackson County, and gypsum hills in Blaine County; also breeding on the mesas at the west end of Cimarron County.

Specimens: Arbuckles—3 \*Jan. '14 (C<sup>5</sup>); Jackson Co.—\*June 5, '14 (C<sup>5</sup>); Blaine Co.—\*†July 2 '01 (B<sup>6</sup>); Cimarron Co.—\*†July 7, '26 (L<sup>4</sup>).

Nesting: Arbuckles—nest with 4 eggs found on slope opposite Turner's Falls on the ground, between 2 rocks, May 16 '26 (Constance Nicc.)

The Rock Sparrow is a bird of individuality and character. It lives only in rocky broken country in Oklahoma, Texas, and Mexico; granite boulders, small cedars, stunted oaks, and parched hillsides suit its fancy. Its plumage is distinctive, with its chesnut crown, black line down the side of the throat, olive-grey back and greyish white underparts. The male is not a shy bird, singing in fairly close proximity to the observer, but when disturbed, disappearing among the rocks.

The usual song is a chipping of 6 to 9 notes, the first two-thirds ascending slightly, the rest descending in a more marked degree. Its length varies from 1.2 to 1.5 seconds; 7 to 9 songs are given a minute. A different song was heard June 6, 1929 in the Wichitas from two birds that had previously sung the ordinary one; this might be written *hur zig-zig-zig-ziger*



*zah*, both the first and last notes being somewhat lower than the middle portion. Its length was 1.1 seconds, for an hour it was given quite regularly 6 times a minute. Neither of these songs are loud, nor to my mind musical.

The most peculiar thing about this interesting bird is its manner of scolding. A male that was feeding young indulged in the most extraordinary outburst, very loud, shrill, and nasal. The chief notes sounded to me like *peer*, but later when more vehement, *tau*. In one minute he uttered 71 *peers* and 16 *tsips* and in still another 137 *taus*. But the strangest of all was a kind of chatter something like the rattle of a Kingfisher, given with throat and tail quivering. Sometimes this did not last more than 2 seconds, but at other times extended to 4.8 and 5.5 seconds.

Altogether the Rock Sparrow is a citizen of whom we may well be proud and who offers a fascinating subject for study.

(575a) BACHMAN SPARROW: *Aimophila aestivalis bachmani*

Rare transient.

Record: Alva—one taken by Stevens, identified by Outram Bangs.

It is possible that this bird with its fat-famed song will be found nesting in eastern Oklahoma. Its favorite haunts are old brushy pastures or recently cut-over pine woods.

(578) CASSIN SPARROW: *Aimophila cassini*

Summer resident in the southwestern corner of the state and in Cimarron County.

Migration: Kenton—last seen Sept. 2, '26 (T<sup>1</sup>).

Nesting: Adalene Creek—3 eggs June 18, '60 (M<sup>1</sup>); Corral Creek—4 eggs June 25, '60 (C<sup>2</sup>); Rabbit Ear Creek—5 eggs July 9, '60 (M<sup>1</sup>); Cimarron Co.—nest with 3 eggs June 1, '16 on C. F. Rowan ranch (T<sup>1</sup>). Jackson Co.—several birds in sand dunes by Red River July 5, '23 (N); Harmon Co.—several by Red River July 6, '23 (N); Kenton—4 seen in alfalfa field May 30-June 2, '22 (N).

It is a pity that a bird with such an exquisite song as the Cassin Sparrow should have such a restricted range, where few people can hear it, while others with only poor excuses for songs or even mere *yaps* spread themselves over half the continent or perhaps the whole world. As these sand colored sparrows spring up into the air and float downward singing, they show a fringe of whitish from the light grey margins of their upper tail coverts. The hauntingly sweet song is one of the most touching and beautiful I have ever heard.

(575b) DESERT SPARROW: *Amphispiza bilineata deserticola*

Uncommon summer resident in Cimarron County.

Nesting: Cimarron Co.—nest with 3 young in a tree cactus on Marselus Bros. ranch June 12, '20, nest with 2 eggs at Kenton June 2, '22 (T<sup>1</sup>, '23: 48).

The black throat, white malar streak and line over the eye, and the blackish tail identify this bird of the arid mesa country. Mrs. Bailey ('21: 351) writes of "the cherry little tunes of *Amphispiza Tra-reé-rah, reé-rah-ree* was one of the commonest of its varied modifications, and it was generally given with a burr like that of the lark sparrow."

(566) WHITE-WINGED JUNCO: *Junco aikeni*

Winter resident and rare breeder in Cimarron County; rare winter visitor in rest of state.

Migration: Copan—1 Feb. 28, '13 (K<sup>1</sup>); Tulsa—1 Nov. 2, '14 (K<sup>2</sup>); Creek Co.—flock of 12 to 20 Nov. 10-Jan. 29, '20 (B<sup>2</sup>); Fort Reno—1 \*Dec. 1, '90 (M<sup>2</sup>, in Mus.

Comp. Zool. at Cambridge); Bryan Co.—2 Feb. 14-21, 1 Mar. 7, '84 (C<sup>4</sup>); Cimarron Co.—Oct. 19, '26; usually leave in late April (T<sup>1</sup>).

Nesting: Cimarron Co.—nest with 3 young on Marselus Bros. ranch June 28, '10 (T<sup>1</sup>, '23: 48).

In Colorado this is the most common wintering junco in the mountains.

(567) SLATE-COLORED JUNCO: *Junco hyemalis hyemalis*

Common winter resident throughout the state.

Specimens identified from Tulsa, Pittsburg and Cleveland counties and the Arbuckles.

Migration: Copan—Oct. 14-Apr. 15 (K<sup>1</sup>); Tulsa—Oct. 10-Apr. 20 (K<sup>8</sup>, F); Bryan—1 Oct. 25, flock Nov. 7, common Nov. 26-Dec. 25, uncommon until Feb. 23, largest flocks Mar. 1-9, 1 seen Mar. 19, 26, '84 (C<sup>4</sup>); Oklahoma Co.—1 Sept. 6, '29, a month earlier than previous record (S<sup>1</sup>); Cleveland Co.—Oct. 13, '26: Oct. 26:: Apr. 14: Apr. 25, '27, common (N); Kenton—uncommon. Oct. 16-Apr. 20 (T<sup>1</sup>).

Food: pigweed, lamb's-quarters, sunflower, chickweed, ragweed, grasses, elm blossoms; caterpillars.

The Junco is one of those blessed birds that proclaim their identity in nearly every way possible—front view, back view, and with a characteristic twitter as it flies. Its usual song, to be sure, resembles that of the Chipping Sparrow, but is somewhat more musical. This trill has been heard in Cleveland County from Feb. 22 to Mar. 25. Sometimes a more elaborate song is given—low and rapid, prettier and more varied than the trill, but still of the same character. I have recorded this March 2, 4, 5, 17, 1926 and March 3, 1927.

One day in late March several surprised me by chasing small flies in quite a flycatcher like manner. Sometimes albinistic birds are seen; in 1922 a female curiously mottled with white spots on head, back, and throat visited our feeding shelf, in 1926 we saw a male with a bib like a White-throat, a small round patch of white on his right side, two on his left and a tiny spot on the crown.

(567b) SHUFELDT JUNCO: *Junco oreganus shufeldti*

Winter visitant in Cimarron County.

Migration: Cimarron Co.—7 Dec. 25, '29, 13 Jan. 1, '30, specimen taken (T<sup>1</sup>).

The Shufeldt Junco has a black head, chest and neck, brown back, and pinkish sides.

(567f) MONTANA JUNCO: *Junco oreganus montanus*

Winter visitant.

Migration: Tulsa—1 \*†Mar. 4, '25 (K<sup>8</sup>);-50 Dec. 24, '27 (F); Creek Co.—23-Dec. 26, '23 (B<sup>8</sup>).

The Montana Junco is very like the Shufeldt but its head, neck, and chest are slate-colored instead of black.

(567g) PINK-SIDED JUNCO: *Junco meurnsi*

Winter resident in Cimarron County.

Migration: Cimarron Co.—Oct. 15, '26; leave about Apr. 20: \*Dec. 28 '22: (T); recorded in every Christmas census (T<sup>1</sup>); Gate—rare transient, seen Mar. 6, 10 (L<sup>2</sup>).

This junco has bright pink sides, light brown back and shoulders, and gray head, neck and chest.

(570b) GRAY-HEADED JUNCO: *Junco caniceps*

Uncommon winter visitant in Cimarron County, occasional transient as far east as Cleveland County.

Migration: Cimarron Co.—Jan. 8, '19, 14 seen, 1 taken \*Dec. 27, '22, 3 Dec. 25,

'28, 11 Dec. 25, '29; arrives Oct. 20-25, leaves about Apr. 20; 1 seen June '29 (T<sup>1</sup>). Gate—Feb. '08 (L<sup>2</sup>); Norman—1 Apr. 20, '27 (N).

This handsome junco has a bright reddish brown back and grey sides, breast and upper parts. It was a great surprise to meet one on the University campus at Norman Apr. 20, 1927.

(509) EASTERN TREE SPARROW: *Spizella arborea arborea*

Winter visitant in eastern and central Oklahoma, irregular in abundance.

Migration: Copan—Nov. 8—Mar. 19, '17, common (K<sup>1</sup>); Okmulgee—\*†Dec. 27 '25 (F); Bryan Co.—Oct. 31, '83, very common from Dec. 19-Feb. 26, last seen Mar. 11 (C<sup>4</sup>); Cleveland Co.—\*†Nov. '13 (C<sup>5</sup>). \*†Dec. 1, '22, see next form (N).

Food: pigeon grass, crab grass, poverty grass, ragweed, pigweed, lamb's-quarters.

Tree Sparrows are birds of fields and pastures; they are clannish creatures, roaming about in flocks of their own kind, up and away on the slightest provocation rather than sticking closely to weed patch or thicket as do most of our winter sparrows. Their merry, tinkling notes are a pleasant sound on winter rambles. The chestnut crown, plain breast with its central spot and white wing bars are characteristic field marks.

Tree Sparrows never visited our feeding shelf, but Dr. Cooke was more fortunate at Caddo. "Harris Sparrows almost monopolized the free lunch, but one bright Cardinal came occasionally, with a few White-crowns in plain brown head-gear, while the still more humble Tree Sparrow made up for its lack of beauty, by keeping steadily at work and devouring more seeds to the minute than any of the others." (14b. 487-488).

(509a) WESTERN TREE SPARROW: *Spizella arborea ochracea*

Winter visitant in central and western Oklahoma.

Migration: Cleveland Co.—Nov. 2-Mar. 15 (N); 2 \*†Feb. 25, '03 (B<sup>6</sup>); Wichita—Nov. 26, '04 (L<sup>1</sup>), Gate—common migrant, some wintering (L<sup>2</sup>).

Tree Sparrows are the last of the sparrows to come to Cleveland County in the fall and the first to leave in the spring. They vary greatly in numbers in different seasons. They were practically absent in 1921-1922, only three records of single birds having been made—Dec. 18, Jan. 24, and Mar. 1; rare 1919-1920, 1922-1923, 1923-1924; rather common 1920-1921 and abundant 1925-1926, 1926-1927. The numbers recorded on our Christmas censuses follow—1919, 3; 1920, 45; 1921, 0; 1922, 8; 1923, 2; 1925, 208; 1926, 136. They have been seen on 16 of the 23 Christmas censuses in eastern, southern, and central Oklahoma.

(560) EASTERN CHIPPING SPARROW: *Spizella passerina passerina*

Summer resident in eastern Oklahoma, transient in central Oklahoma, a few wintering in southern Oklahoma.

Range: it nests in the eastern tier of counties, also Mayes, Washington, Tulsa, Creek, Pittsburg, Pushmataha, Atoka, and rarely in the Arbuckles.

Specimens: Leflore Co.—\*†June 18, '27 (W<sup>4</sup>); Pittsburg Co.—\*†Aug. 25, '92 (P<sup>3</sup>); Laumer Co.—\*†Sept. 5, '92 (P<sup>3</sup>).

Migration: Tulsa—Mar. 15-Oct. 15 (K<sup>1</sup>); Bryan Co.—late October-November 6, '83, a few seen in December and January (C<sup>4</sup>); Kingfisher Co.—many seen May 8, '26 (N); Oklahoma City—common Oct. 4-Nov. 15 (S<sup>1</sup>); Cleveland Co.—regular spring transient—Mar. 26, '20; Apr. 7: May 6; May 12, '21; seen during two falls only, Oct. 12-16, '25; Oct. 15-18, '26 (N).

Nesting: Bartlesville—nest with young May 28, '10, (K<sup>1</sup>); Tulsa—eggs May 7-11; (P<sup>2</sup>);—nest with 4 eggs, 3 feet from ground in rose bush May 5, '24 (M<sup>5</sup>); Pushmataha and Leflore Cos.—many young recently out of the nest July 3-12, '20 (N); Arbuckles—one pair have nested each year from 1925-1928 in an oak beside caretaker's house. (S<sup>1</sup>).

Food: cankerworms, tent caterpillars, pea lice, army worms, May beetles, weevils, grasshoppers, plant lice (260 in one stomach); crab grass, chickweed, ragweed.

It is strange to find the friendly door yard Chipping Sparrow of the east, a deep woods bird in the pine forests of southeastern Oklahoma. In Creek County they nest both in dense woods and about houses. Mr. Beard wrote me from Sapulpa:

"A Chipping Sparrow nested near enough to the house this spring so that I could reach the nest from the window. Another nested in the garden and still a third in the barn lot. The two nests reported last year were in rather secluded places in the pasture. I have noticed them in the dense woods and have been scolded by them as though there were a nest near but never succeeded in locating one there. In one nest this year I found two Cowbird eggs and one Chipping Sparrow egg, the other three were on the ground broken."

In Cleveland County it is quite a local visitor, seldom having been found by us except on the University Campus and at Snail Brook. In 1929 one silent bird was noted on the campus on the very late date of May 29. The plain little song is given freely during migration; I have recorded it from March 26 to May 5.

(560a) WESTERN CHIPPING SPARROW: *Spizella passerina arizonae*

Uncommon summer resident in Cimarron County, irregular transient at Gate.

Migration: Gate—early May (L<sup>2</sup>).

Nesting: Kenton—nest and 4 young July 2, '22 (T<sup>1</sup>).

Food: grasshoppers, alfalfa weevils; weed seeds.

Immense numbers occurred at Gate in 1924. "From the first of May on for a week or ten days," wrote Mr. Lewis, "probably 40 or 50 per mile could be seen." They were not noted by him in the region until about 1914. Mr. Tate has taken a specimen.

(561) CLAY-COLORED SPARROW: *Spizella pallida*

Irregular transient throughout the state.

Migration: Copan—common some years (K<sup>1</sup>); Sapulpa—common some years (B<sup>3</sup>); Kingfisher—common and singing May 8, '26, feeding on a plague of canker worms (N); Fort Reno—one seen Apr. 19, '90, (M<sup>2</sup>); Cleveland Co.—seen 4 of 7 springs, 4 of 6 falls; Apr. 28-May 8, '20, Apr. 11-May 3, Nov. 13, '22; Apr. 28, May 4, Oct. 29, '23; Oct. 19, '25; Oct. 13-18, '26; Apr. 26-May 9, '27; heard singing Apr. 21-May 3, '22, Apr. 26-May 9, '27 (N); Texas Co.—1 seen May 28, '22 (N); Kenton—several seen Aug. 25-27, one taken \*Aug. 26, '25 (N);—common migrant and probable breeder, sometimes seen in late June (T<sup>1</sup>).

The Clay-colored's song has the same quality and tone as the cicada's only the tune is different. It reminds me of the squeak of a barbed wire fence as one tries to get through. Some write it *kah-kah kah*, some *buz-buz-buz*, others *scree, scree*; to me it sounds like *zee-zee-zee*. Songs may consist of any number of squeaks from 3 to 11.

The whitish jaw line, brown ear patch, white line over the eye, and median crown stripe distinguish this little sparrow from any other we are likely to meet in central or eastern Oklahoma. The plain grey hind neck is its chief point of difference from the Brewer Sparrow.

(562) BREWER SPARROW: *Spizella breweri breweri*

Migration: Kenton—14 seen Oct. 11, '25, 22 seen, one taken \*Mar. 20 '26, 2 seen Aug. 25, Sept. 4-15 '26 (T<sup>1</sup> '26a:181).

The Brewer Sparrow resembles a faded Clay-colored without the de-

cided cheek patch or median stripe; the crown and neck are evenly and narrowly striped. These two species are distinguishable in spring and summer, but often hard to separate in fall and winter.

(563) EASTERN FIELD SPARROW: *Spizella pusilla pusilla*

Summer resident in eastern and central Oklahoma as far west as Kay, Blaine, Caddo, and Comanche Counties; not recorded in southeastern Oklahoma south of the Canadian and Arkansas Rivers except in Atoka and Choctaw Counties. Occasionally winters in eastern Oklahoma.

Specimens: Okmulgee—\*†June 19, '26 (F); Cleveland Co.—\*†May 25, '23 (N); Ponca Agency—\*†Aug. 5, '92 (B<sup>2</sup>); Dougherty—\*†Aug. 16, '92 (P<sup>3</sup>); Tulsa—\*†Dec. 17, '26, \*†Feb. 2, '27 (K<sup>3</sup>).

Migration: Copan—Mar. 3, '17 (K<sup>1</sup>); Cleveland Co.—probably late March to September (N).

Nesting: Copan—16 nests, eggs from Apr. 20, '10 to July 31, '17; 5 nests with 3 eggs, 4 with 4 eggs, 1 with 6, 6 nests with 1-3 Cowbird eggs (K<sup>1</sup>); Tulsa—eggs Apr. 22-June 10 (P<sup>2</sup>, M<sup>5</sup>, G<sup>3</sup>).

Food: cankerworms, tent caterpillars, May beetles, grasshoppers, plant lice (196 in one stomach); grass and weed seeds.

The hauntingly sweet refrain of this gentle little sparrow is one of the loveliest of bird songs. Near the Canadian River I have heard it as late as the twelfth of August.

Field Sparrows are rather local birds, preferring hillsides of scrubby oak and brushy pastures. Interestingly enough the favorite haunts of the breeding birds are the same places that please the wintering birds, although they belong to different subspecies.

The pinkish bill, and general lack of striking markings are the best field characters.

(563a) WESTERN FIELD SPARROW: *Spizella pusilla arenacea*

Winter resident in eastern and central Oklahoma.

Specimens: Creek Co.—\*†Dec. 1, '21 (L<sup>3</sup>); Oklahoma City—\*†Feb. 26, '28 (S<sup>1</sup>); Cleveland Co.—\*†Jan. 30, \*†Mar. 7, \*†Mar. 24, '03 (B<sup>6</sup>);—3\*†Nov. '13 (C<sup>5</sup>).

Migration: Bryan Co.—several appeared Oct. 6, '83, increased slowly for about a month, remained fairly common throughout winter; Feb. 20-23, "migrants from the south caused a notable increase, but these passed on almost immediately, taking with them the winter visitors and before March 25 all had left" (C<sup>4</sup>); Cleveland Co.—arrive Oct. 11-27, winter in large numbers; a flock on our grounds left Mar. 23, '21, a banded bird Mar. 28, '22. (N).

In the winter of 1921-1922 we were blessed with a flock of about 20 Western Field Sparrows that came every day to our feeding table. They were the tamest, gentlest little birds, nibbling crumbs and seed entirely oblivious of the admiring spectators only a few feet away. On January 3 there were nine on the table at once; one brave bird took a bath in the water dish. Field Sparrows do not scratch but one discovered on a snowy day that a Junco was a benefactor and he stayed close by the hole that Junco had made. The latter would get a seed and while rolling it in his bill, he would scratch for more, Field Sparrow in the meantime gobbling up the choice tid-bits. Junco made a few feints at this parasite, but did not appear in earnest. A White-crowned Sparrow, however, drove off two hopeful Field Sparrows quite viciously.

This flock sang from Feb. 6 to Mar. 23 when all but one left, the single bird coming to the table until April 1. These winter songs were exceptionally fine, much more elaborate than the summer songs, long and varied and not at first recognizable as coming from this species. The next year

we had only one Field Sparrow as a constant visitor; she (a banded bird) came from Nov. 19 till Mar. 28.

(553) HARRIS SPARROW: *Zonotrichia querula*

Winter resident, abundant in central Oklahoma, not common in eastern Oklahoma, irregular at Gate.

Migration: Copan—Nov. 3-May 5, '17 (K<sup>1</sup>); Tulsa—Nov. 9-May 4 (K<sup>3</sup>); Bryan Co.—Nov. 8-Mar. 25, most common in late December, least so Jan. 15-Feb. 23, common again Feb. 26-Mar. 15 (C<sup>4</sup>). Cleveland Co.—Oct. 27, '20: Oct. 30: May 6: May 13, '25, most abundant in December and January, increased after 1919 to greatest abundance in 1923-24, decreased somewhat in 1925 and more in 1926 (N); Comanche Co.—common along all timbered streams Nov. '04 (L<sup>1</sup>); Gate—Apr. 5, '14, abundant the first week in March 1916 and 1920, a few Jan. 30, '27 (L<sup>2</sup>).

Food: grasshoppers, leaf hoppers; ragweed, polygonum; elm blossoms, poison ivy berries, black haw.

We are indeed fortunate that this distinguished bird chooses Oklahoma as one of its chief winter homes. Not only is it striking in plumage, but it delights us all winter long with its singularly sweet song.

The fully adult plumage with the black crown, neck, throat and chest patch is unchanged throughout the year except for the cheeks; in the winter they are buffy with a brown ear patch, in late spring grey with a black (occasionally brown) patch. The sexes are alike. Only a few of the birds have the black hoods in the autumn—in my experience from one-tenth to one-twentieth—but all assume it by late April. The birds of the year in autumn have white chins and throats; their crowns vary from buffy to speckled, the feathers being black in the center margined with pale greyish buffy; the chest patches are brownish. About a third of the population appears to be intermediate—apparently year old birds—with some black on the head and throat and darker crowns and chest patches than the immature specimens. "The variations in the crown and throat markings of first and second winter birds is very great, and they form a practically intergrading series" (Swenk and Stevens, '29: 164). The acquirement of the solid black crown is an earlier and more regular process than the blackening of the throat and chest.

Harris Sparrows are pre-eminently birds of underbrush; they frequent thick shrubbery along creeks and at the edges of woods, especially trees that are covered with vines. When alarmed, they, like Tree Sparrows, fly up, instead of diving into depths of cover as Song and Lincoln Sparrows do. At the feeding shelf we found they were particularly fond of canary and sunflower seeds. In general they drove away smaller birds to some extent, but suffered themselves from a special animosity from Cardinals. Two banded birds that visited us all winter and stayed until April 17 and 28 were fond of sunning themselves on the shelf, lying down stretched out with feathers puffed up, even at times while eating.

The common call note is a loud staccato *tchip*, sometimes given singly, sometimes several in succession. At night fall a flock of Harris Sparrows will utter a great many of these notes, much like the bed time hubbub of White-throated Sparrows.

The querulous exclamation or "scold," a curious, grating, chuckling series does not seem to indicate displeasure. It is heard by itself and also during winter interspersed freely with the fine notes of the song. Nothing could be more incongruous than this mingling of serene beauty and absurd grumbings.

The song is remarkable not only for its loveliness but also for its variability and its extreme length—in these characteristics resembling a Thrush's song more than a Sparrow's. It consists chiefly of clear minors of different pitches, besides which there is an occasional low husky note repeated three or four times. Towards the end of their stay with us the querulous notes become fewer and fewer till in some songs they have entirely disappeared.

One 24th of April I recorded eight minutes of an unusually beautiful song in which only high and low notes appeared, none being of intermediate pitch nor were there any husky nor scolding notes to mar the effect. Thirty-four to thirty-five notes were given in a minute, the general scheme consisting of two or three high notes and then two low, but there were continual variations. Nothing could have been more perfect in its way; it was of exquisite sweetness, the very spirit of serenity and peace.

(554) WHITE-CROWNED SPARROW: *Zonotrichia leucophrys*

Transient throughout the main body of the state, sometimes wintering.

Migration: Ottawa Co.—\*Dec. 28, '12 (P<sup>4</sup>); Copan—Oct. 6-18, '16, Mar. 29—May 5, '17 (K<sup>1</sup>); Cherokee Co.—3 May 6, '23 (N); Tulsa—May 17, '23 (K<sup>3</sup>); Oct. 21, '28 (F); Bryan Co.—first seen Nov. 9, '83, numbers increased gradually, common between Nov. 29 and Dec. 19, rare throughout the winter, last seen Mar. 11 (C<sup>4</sup>); Stillwater—\*May 1, '24 (M<sup>3</sup>); Oklahoma City—Nov. 16, '24—Feb. 15; Oct. 18, '25 (S<sup>1</sup>); Cleveland Co.—usually uncommon, arriving Oct. 9-18, leaving Oct. 29-Nov. 17, returning Mar. 11 to 31, leaving May 4-12; occasional in winter, recorded on three Christmas censuses—1921, 1922, 1926, quite common the winter of 1921-1922 (N); Arbuckles—May 16, '29 (B<sup>5</sup>), Gate—common transient (L<sup>2</sup>).

Food: caterpillars, ants, alfalfa weevils; ragweed, chickweed, pigweed, lambs-quarters.

This striking and spirited bird is a more frequent visitor in central Oklahoma than the White-throat. In the winter of 1921-1922 we were fortunate in that considerable numbers stayed with us, treating us to their sweet and happy songs from Nov. 18-Apr. 8; later birds were heard singing from Apr. 11 till May 3. In 1924 our single boarder was heard singing from Feb. 13-Apr. 21; in 1926 transients sang from Apr. 8 to 20. "The song is composed of two long whistled notes, the first sliding up to the second with grace notes, the second followed by a lower note repeated rapidly three times." (B<sup>1</sup>, '21:339).

One blizzardy day in February an immature White-crown by industriously scratching had made himself quite a hole in the snow on our feeding table; two Field Sparrows were standing close by and enjoying the seeds that were uncovered. White-crown, however, did not care to be a benefactor and drove off the little fellows quite viciously. On March 17 a real White-Crown hopped about on the table, but was driven off by a young upstart.

The immature bird may be distinguished from other Sparrows by its large size, reddish brown bill and the square appearance of its grey head. Jan. 18, 1924 the only bird of this species we saw all winter was a young male that became a regular pensioner at our shelf, thereby acquiring a band. On April 9 his crown was reddish brown except for one small spot on the right side, but on the 24th he appeared in gorgeous black and white livery. Two days later he had a fight with a Harris Sparrow and that was the last we ever saw of him.

A White-crowned Sparrow banded at Goshen, Ind. May 9, 1929 was recovered at Delhi, Okla. on Dec. 8 of the same year. (Witmer, '31).

(554a) GAMBEL SPARROW: *Zonotrichia gambeli*

Regular winter resident in Cimarron County, uncommon transient in central Oklahoma.

Migration: Cleveland Co.—2 Apr. 24, '22, 1 May 6, '26 (N); Camp Supply—\*Mar. 8, '78 (K<sup>2</sup>); Gate—May 1, '10, Apr. 20, '18, occasionally since (L<sup>2</sup>); Kenton—Sept. 23, '24, Oct. 1, '26, remaining through winter, leave about April 20 (T<sup>1</sup>).

The Gambel Sparrow has a different expression from the White-crowned because in the former the white line over the eye is continuous to the bill, whereas in the latter the space between the eye and bill is black. Observers should carefully differentiate the two species; probably the Gambel Sparrow will be found occurring more often than the present records indicate.

(558) WHITE-THROATED SPARROW: *Zonotrichia albicollis*

Transient and winter visitant, common in eastern, uncommon in central Oklahoma.

Migration: Copan—Oct. 14-May 6 (K<sup>1</sup>); Tulsa—Oct. 28-Apr. 30, \*Feb. 21, '27 (K<sup>3</sup>); Bryan Co.—common Nov. 29-Feb. 23, last seen Mar. 25, '84 (C<sup>4</sup>); Wichitas—common Mar. 11, '04, disappeared in early April (G<sup>2</sup>); Cleveland Co.—more regular in fall than spring, arriving Oct. 18-20, leaving Nov. 1-21, in spring Apr. 4-May 5, 1 to 2 birds at a time, but none noted in spring in 1920 and 1922; occurred during two winters in small flocks: Feb. 14-27, '23, Dec. 23-Mar. 30, '24 (N).

Food: weevils, May beetles, ants; ragweed, polygonum, pigeon grass, crab grass; wild berries.

In Bryan County Dr. Cooke found the White-throat "the most common sparrow in the woods through the whole winter and to February 24. During all this time not one seen in town, where all the other sparrows came frequently, but on March 5 its clear spring song was heard in the village" (14b: 487). We have found it only twice in winter, once for two weeks in February, the next year for over three months, both years a small flock in the same woods near the Canadian river. Singing has been recorded in Cleveland County Feb. 12, 1924, Apr. 24, 1926, Apr. 29, 1923, Nov. 1, 1925. In the winter many of the notes are much like those of the Harris Sparrow, but in spring the songs are very different in form.

(581) INTERIOR SONG SPARROW: *Melospiza melodia beata*

Common winter resident in eastern and central Oklahoma.

Specimens: Tulsa—\*†Jan. 28, '27 (K<sup>3</sup>); Cleveland Co.—\*†Feb. 28, '23 (N); Arbuckles—2 \*†Jan. '14 (C<sup>5</sup>).

Migration: Copan—last seen Apr. 13, '17 (K<sup>1</sup>); Tulsa—Nov. 2-Apr. 30 (K<sup>3</sup>); Bryan Co.—Nov. 6-Mar. 21, many spring transients Mar. 11, '84 (C<sup>4</sup>).

Food: crab grass, pigeon grass, polygonum, dandelions; cutworms, grasshoppers, weevils.

The scientists have done well in calling this bird "blessed" for there is no bird more beloved nor more deserving of high praise. Consider its extraordinarily wide range, its hardihood, its adaptability, its devotion to home and family, its versatility and originality in song.

Song Sparrows are sturdy looking, reddish brown birds with heavily streaked breasts with a large spot in the center. One of their notes is distinctive—a nasal *ichink* or *ichunk*. They frequent brush and thickets preferably near water, diving in to cover when alarmed with a pumping motion of the tail.



(581j) DAKOTA SONG SPARROW: *Melospiza melodia juddi*

Common winter resident throughout the main part of the state.

Specimens: 12 have been identified—Adair Co.—\*†Apr. 7, '97 (L); Tulsa—3 in \*†Feb. (K<sup>3</sup>); Cleveland Co.—4 from \*†Oct. 21.—\*†Nov. 4 (U. O. M. Z.); Arbuckles—\*†Jan. '14 (C<sup>5</sup>); Wichitas—\*†Dec. '14 (C<sup>5</sup>); 2 others in state (C<sup>5</sup>).

Migration: Cleveland Co.—Oct. 13, '26: Oct. 19:: Apr. 9: Apr. 24, '23, most abundant from December to January (N); Gate—common (L<sup>2</sup>).

Song Sparrows do not winter in flocks but each in more or less independence lives in his or her special thickets or weed patches. They do not sing much with us in Oklahoma; I have more records for November and March than for any of the other months. The migration records in eastern and central Oklahoma refer to the species, since both *beata* and *juddi* occur and are indistinguishable in the field.

(581b) MOUNTAIN SONG SPARROW: *Melospiza melodia fallax*

Winter resident in central Oklahoma.

Specimen: Canadian Co.—1 \*†Dec. 25, '13 (C<sup>5</sup>, 25a).

There is only one record in the state of this greyish subspecies from the Rocky Mountains, but it probably occurs to some extent in western Oklahoma.

(583) LINCOLN SPARROW: *Melospiza lincolni lincolni*

Common transient, rare winter visitant throughout the main part of the state; most common in October and April.

Migration: Ottawa Co.—\*Apr. 8, '11 (P<sup>4</sup>); Copan—Sept. 29—May 14 '17 (K<sup>1</sup>); Cherokee—several seen May 5-7, '23 (N); Tulsa—common, Bird Creek Apr. 14, '22 (L<sup>3</sup>);—\*†Feb. 2, '27 (K<sup>3</sup>);—Nov. -May 6, '28 (F); Bryan Co.—rare throughout winter, common Mar. 15 but most left in a few days (C<sup>4</sup>); Kingfisher—May 8, '26 (N); Oklahoma City—Oct. 6 '25 (S<sup>1</sup>); Cleveland Co.—Oct. 5 '26: Oct. 12:: Nov. 17: Nov. 28 '21; Apr. 2 '22: Apr. 4:: May 12: May 17, '22; one seen June 4, '27; wintered in small numbers 1921-1922, but rather rare in winter since then (N); Gate—regular transient (L<sup>2</sup>).

Food: ragweed, polygonum, grasses; ants, flies, beetles, bugs.

The Lincoln Sparrow with us is seldom the shy, skulking creature we read about in the books; in general it is fearless, sometimes strikingly so. It is a more slender bird than the Song Sparrow, with narrow black streaks on the breast across which there is a buffy band, and a conspicuous orange line on the cheek. It is rather inclined to be quarrelsome with its fellows and other small sparrows. I have seen two individuals with albinistic crowns.

On our Christmas censuses Lincoln Sparrows have been recorded as follows: 1 in 1921, 1925 and 1926, 2 in 1923, and none in the other three years. The height of the spring migration falls between Apr. 8 and 28. Singing has been heard in Cleveland County Apr. 29, 1921, Apr. 17-28, 1922, Apr. 24, 1923, Apr. 11, 1924, Apr. 24, 1926, Apr. 28 and May 14, 1927. The song is loud and clear, reminding one of a House Wren, the first part ascending, the second descending.

(584) SWAMP SPARROW: *Melospiza georgiana*

Uncommon transient and winter visitant in eastern and central Oklahoma.

Migration: Tulsa—\*†Apr. 16, '24 (K<sup>3</sup>);—1 Dec. 24, '27 (F),—2 seen Jan. 29- Feb. 14, '15 (G<sup>2</sup>); Sapulpa—common winter visitant (B<sup>3</sup>); Oklahoma Co.—\*Oct. 24, '27. A few during winter along Deep Fork Creek (S<sup>1</sup>); Cleveland Co.—1 Feb. 26, '20; 1 Feb. 9, 15, '22; 3 Apr. 5 '23, 1 Feb. 1, '26; 1 Nov. 22, '20, 6 Oct. 14, 1 Oct. 15, '26 (N).

Food: giant ragweed, polygonum; grasshoppers, ants, weevils.

The Swamp Sparrow is a stocky bird the size of a Song Sparrow, with unstreaked breast, a square whitish throat-patch, (much less conspicuous than that of the White-throated Sparrow), and reddish brown wings without white bars; its crown in spring is rich reddish brown, in winter streaked with black and reddish brown. It has been recorded on only two Christmas censuses—one in Sapulpa, the other in Tulsa.

(539) MCCOWN LONGSPUR: *Rhynchophanes mccowni*

Rare summer resident in Cimarron County, winter visitant in western Oklahoma.

Migration: Bryan Co.—40 or 50 seen Feb. 19, '84 (C<sup>4</sup>); Comanche Co.—immense flocks Nov. 21-28, '04 (L<sup>1</sup>); Washita Co.—flocks seen nearly all winter. '95 (B<sup>4</sup>); Camp Supply—2 \*Mar. 8, '78 (K<sup>2</sup>); Woods Co.—“common winter bird” (C<sup>2</sup> & T<sup>2</sup>); Gate—common migrant (L<sup>2</sup>); Teaxs Co.—24 taken on Teepee Creek and Beaver River \*Oct. \*Nov. '89 (R<sup>2</sup>); Cimarron Co.—uncommon in winter (T<sup>1</sup>).

Nesting: Cimarron Co.—nest with 5 eggs July 3, '11, nest with 6 eggs on Marselus Bros. ranch July 1, '14 (T<sup>1</sup>).

Food: weevils, grasshoppers; foxtail, pigweed, ragweed, sunflower seeds.

This longspur may be distinguished by the large amount of white in the tail, all of it being white except the middle feathers and a terminal bar, giving the effect of a black T.

(538) CHESTNUT-COLLARED LONGSPUR: *Calcarius ornatus*

Winter visitant throughout the state.

Migration: Copan—Nov. 11, '16-Mar. 24 (K<sup>1</sup>); Bryan Co.—a few Feb. 16-18, '84 (C<sup>4</sup>); Cleveland Co.—\*Jan. 16, '21, \*Feb. 19, '27, large flocks Feb. 10-20, '27 (N); Camp Supply—\*Mar. 10, '78 (K<sup>2</sup>); Woods Co.—common winter visitant (C<sup>2</sup> & T<sup>2</sup>); Gate—common migrant, unusual numbers in spring of 1923, flocks of 500 in early April (L<sup>2</sup>); Oklahoma Co.—abundant on barren uplands and short grass prairies Dec. '30 (S<sup>1</sup>).

Food: grasshoppers, crickets, weevils, beetles; weed seed.

One February day west of Norman I was slowly walking towards the place where a flock of these smallest of the longspurs had alighted in a corn field; at last I saw a slight movement and discovered a male Chestnut-collared Longspur, but could not see a single other bird. Suddenly the whole flock of 200 burst up and off they dashed to a field of cotton. A small flock disappeared in a patch of grass, where it seemed impossible that birds could conceal themselves. The largest flock of all had been busily gathering seeds when all at once they rose and flew madly about like swarms of gnats; they would nearly settle down in the corn, and then changing their minds, up and around and about they darted in their fantastic manner calling *pee* and *chilliwit*.

(536) LAPLAND LONGSPUR: *Calcarius lapponicus lapponicus*

Winter visitant.

Migration: Bryan Co.—vast flocks Feb. 14-19, '84 (C<sup>4</sup>); Cleveland Co.—2 \*+Feb. 17, '03 (B<sup>0</sup>).

In Bryan County in 1884 Dr. Cooke ('14b: 485) wrote about this species: “None were seen until a sudden cold snap in February covered everything with frozen rain; then on February 13, three were seen; the next day they were present by hundreds if not by thousands. They swarmed everywhere for a week and then on the night of February 19, with a clear sky and a south wind, they disappeared as suddenly as they had come.”

(536a) ALASKA LONGSPUR: *Calcarius lapponicus alasensis*

Winter visitant.

Migration: Cleveland Co.—2 \*†Feb. 17, '03 (B<sup>8</sup>): Washita Co.—common in winter '95 (B<sup>4</sup>); Gate—very common winter resident (L<sup>2</sup>).

Food: weevils, grasshoppers; pigeon grass, crab grass, lamb's quarters, pigweed, ragweed.

It is a question as to which form is the more common in Oklahoma. Lapland and Alaska Longspurs are more stocky than the other longspurs and never so evenly buffy as the Smith Longspur. The white under parts make a good field character.

(537) SMITH LONGSPUR: *Calcarius pictus*

Transient and winter visitant.

Migration: Copan—fairly common migrant (K<sup>1</sup>); Tulsa—1 \*†Dec. 1, '28 (G<sup>3</sup>); Creek Co.—1 Dec. 26, '23 (B<sup>3</sup>); Pittsburg Co.—\*Mar. 21, '14 (C<sup>5</sup>); Bryan Co.—Nov. 17 -Feb. 26, '84 (C<sup>4</sup>); Oklahoma Co.—a few seen Dec. '30 (S<sup>1</sup>); Cleveland Co.—1 Apr. 1, '23 (N); Gate—common in migration (L<sup>2</sup>).

Food: foxtail, witchgrass, ragweed, crabgrass.

The Smith or Painted Longspur is the most buffy of all the longspurs and one of the largest. Dr. Cooke wrote about it as follows: "Came November 17, when there was hardly a sign of approaching winter and the leaves had not all fallen from the trees. They became common November 26, when the second norther of the season brought many birds from the north, and they stayed through heat and cold, ice, snow, and rain, until the bulk left February 19 and the last February 26. They did not increase in numbers the second week in February, when the Lapland Longspurs became so abundant, but were still common on February 19 and the next day not one was to be found. The only birds seen after this date were a few flying north on February 26." ('14b: 485).