

## An Annotated Check List of the Vertebrates of Lyon County, Kansas

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A list of the vertebrates of Lyon County, Kansas, has not been compiled previously; however, lists have been published for the amphibians and reptiles (Breukelman and Downs, 1936; Breukelman and Clarke, 1951) and for the birds (Downs and Breukelman, 1941). This list was prepared in order to present the vertebrate fauna in its contemporary taxonomic status, so that students or other interested persons could have a convenient reference to the forms known to occur in the county. This list is not exhaustive, yet it is a base upon which further studies and additions can be made. It is hoped that this paper will prove a stimulus to study by both professional and interested lay persons. In the past, important contributions have been made by sportsmen, farmers, and others not professionally engaged in biological studies. These lay persons are encouraged to report or bring any unusual specimens to the Biology Department, Kansas State Teachers College, Emporia.

In the present account, taxonomic allocation is given to species. In most cases, the subspecies represented in Lyon County are widespread over adjacent areas. However, where the edge of distribution of two subspecies closely approaches the county, the subspecies within the county is given.

Relative abundance of each species is indicated by the terms defined below. It should be understood that these terms apply only within the limits of the habitat of the species and during the season when individuals are expected to be present.

*Abundant*—Individuals can be expected to be found in large numbers on almost any visit to the habitat.

*Common*—Individuals can be expected to be found regularly and in small numbers on visits to the habitat.

*Occasional*—Individuals can be expected to be found irregularly; on most visits to the habitat specimens will not be observed.

*Scarce*—Only a few individuals have been recorded. It is assumed, however, that Lyon County is within the natural range of the species.

*Rare*—Only one or two specimens recorded. These individuals may have been accidental strays or introduced. The natural range of the species may not include Lyon County.

This list was prepared from published accounts, preserved specimens, catalog records in the museum at Kansas State Teachers College, Emporia, unpublished Master's theses, and personal observations made by members of the Biology Department, Kansas State Teachers College, Emporia. The authors are indebted to the following persons for criticisms, suggestions, and help in numerous other ways: Drs. Rollin Baker, Frank Cross, Henry Fitch, Harrison B. Tordoff, now or formerly at the University of Kansas, Lawrence, and graduate students and Biology Department faculty at Kansas State Teachers College, Emporia.

### Fishes

The fishes of Lyon County have been studied intensively by John Breukelman since 1930, during which time specimens were collected from all parts of the county. Series of specimens are preserved in the college's museum.

Two major watersheds occur in Lyon County. The northern portion of the county drains into the Marais des Cygnes River, which flows eastward into Missouri, emptying into the Missouri River (Mississippi River Basin). The southern part of the county drains into the Neosho River, which flows southeastward into Oklahoma, joining the Arkansas River and, ultimately, the Mississippi River. It is not surprising, therefore, that many fishes from northern Lyon County differ from those taken in the southern part.

In the following list of fishes, the arrangement is patterned after a private mimeographed list of Kansas fishes prepared by Dr. Frank Cross. Mr. Claire Schelske was of particular assistance in the preparation of the present account.

#### CLASS OSTEICHTHYES

##### ORDER LEPISOSTEIFORMES

##### Family Lepisosteidae

*Lepisosteus osseus* (Linnaeus), Longnose Gar. Occasional. Ponds, and pools in streams.

*Lepisosteus platostomus* Rafinesque, Shortnose Gar. Scarce.

##### ORDER CLUPEIFORMES

##### Family Clupeidae

*Dorosoma cepedianum* (Le Sueur), Gizzard Shad. Common; abundant locally in ponds and lakes.

## ORDER CYPRINIFORMES

## Family Catostomidae

- Cycleptus elongatus* (Le Sueur), Blue Sucker. Only in the Cottonwood R. and in the Neosho R. below the junction with the Cottonwood R.
- Ictiobus cyprinella* (Valenciennes), Bigmouth Buffalo. Common in Cottonwood R.; scarce elsewhere.
- Ictiobus niger* (Rafinesque), Black Buffalo. Common.
- Ictiobus bubalus* (Rafinesque), Smallmouth Buffalo. Common.
- Catostomus commersoni* (Lacepede), Common White Sucker. Occasional.
- Carpiodes carpio* (Rafinesque), River Carpsucker. Occasional.
- Carpiodes velifer* (Rafinesque), Highfin Sucker. Only in Cottonwood R.
- Moxostoma erythrurum* (Rafinesque) Golden Redhorse. Common.
- Moxostoma aureolum* (Le Sueur), Pealip Shorthead Redhorse. Occasional.
- Apparently all specimens taken in Lyon County belong to the subspecies *M. a. pisolabrum* Trautman.
- Moxostoma carinatum* (Cope), River Redhorse. Only in Cottonwood R.

## Family Cyprinidae

- Camptostoma anomalum* (Rafinesque), Stoneroller. Common; abundant locally in riffles and in smaller streams.
- Carassius auratus* (Linnaeus), Goldfish. Occasional; sometimes abundant locally.
- Chrosomus erythrogaster* (Rafinesque), Redbelly Dace. Occasional.
- Cyprinus carpio* Linnaeus, Carp. Common to abundant.
- Hybopsis biguttata* (Kirtland), Hornyhead Chub. Common; abundant locally.
- Hybopsis x-punctata* Hubbs and Crowe, Gravel Chub. Occasional; common locally.
- Notemigonus crysoleucas* (Mitchill), Golden Shiner. Common; abundant locally in lakes and pools.
- Notropis percobromus* (Cope), Plains Shiner. Scarce.
- Notropis buchmanii* Meek, Ghost Shiner. Common in main streams, occasional in smaller streams and in pools.
- Notropis camura* (Jordan and Meek), Bluntnose Minnow. Occasional in Neosho R.
- Notropis cornuta* (Mitchill), Common Shiner. Common; abundant locally.
- Notropis deliciosa* (Girard), Sand Shiner. Abundant.
- Notropis lutrensis* (Baird and Girard), Red Shiner. Abundant; taken in more collections and in more localities than any other Lyon County fish.

- Notropis rubella* (Agassiz), Rosyface Shiner. Scarce.
- Notropis spilopterus* (Cope), Spotfin Shiner. Scarce.
- Notropis topeka* (Gilbert), Topeka Shiner. Scarce; only in tributaries of the Neosho R.
- Notropis umbratilis* (Girard), Redfin Shiner. Common; abundant locally.
- Notropis volucella* (Cope), Mimic Shiner. Common in larger creeks and tributaries; rare to occasional in the main streams.
- Notropis zonata* (Agassiz), Striped Shiner. Infrequently taken, but abundant in the localities where it is present; usually in riffles in smaller streams. All specimens are the subspecies *N. z. pilsbryi* Fowler, the Arkansas Striped Shiner.
- Phenacobius mirabilis* (Girard), Plains Suckermouth Minnow. Common; abundant locally.
- Pimephales notatus* (Rafinesque), Bluntnose Minnow. Common; abundant locally.
- Pimephales promelas* Rafinesque, Fathead Minnow. Common to abundant; second only to *Notropis lutrensis* in number of times taken in Lyon County. Most specimens appear to be intermediate between *P. promelas* and *P. confertus* (Girard). Taylor (1954) discussed the relationship of these forms.
- Pimephales vigilax* (Girard), Bullhead Minnow. Common to abundant.
- Pimephales tenellus* (Girard), Mountain Minnow. Common to abundant.
- Semotilus atromaculatus* (Mitchill), Creek Chub. Common in Neosho R.; occasional elsewhere.

#### Family Ictaluridae

- Ictalurus melas* (Rafinesque), Black Bullhead. Abundant.
- Ictalurus natalis* (Le Sueur), Yellow Bullhead. Common.
- Ictalurus punctatus* (Rafinesque), Channel Catfish. Common.
- Noturus flavus* Rafinesque, Stonecat. Common; abundant locally in riffles.
- Noturus exilis* Nelson, Slender Madtom. Occasional.
- Noturus nocturnus* Jordan and Gilbert, Freckled Madtom. Occasional.
- Noturus* species, a still-undescribed form related to *eleutherus*. Occasional; sometimes common to abundant in riffles.
- Pylodictis olivaris* (Rafinesque), Flathead Catfish. Common.

#### ORDER ANGUILLIFORMES

##### Family Anguillidae

- Anguilla rostrata* (Le Sueur), American Eel. Scarce; only a few specimens from the Cottonwood R.

## ORDER CYPRINODONTIFORMES

## Family Cyprinodontidae

*Fundulus notatus* (Rafinesque), Blackband Topminnow. Common; abundant locally.

## Family Poeciliidae

*Gambusia affinis* (Baird and Girard), Mosquitofish. No records from Lyon County except where it is known to have been introduced. Common in Lake Wooster, on the campus of the Kansas State Teachers College of Emporia, since its introduction in 1954.

## ORDER MUGILIFORMES

## Family Atherinidae

*Labidesthes sicculus* (Cope), Brook Silversides. Scarce.

## ORDER PERCIFORMES

## Family Centrarchidae

*Ambloplites rupestris* (Rafinesque), Rock Bass. Scarce.

*Chaenobryttus gulosus* (Cuvier), Warmouth. Scarce.

*Lepomis cyanellus* Rafinesque, Green Sunfish. Abundant.

*Lepomis humilis* (Girard), Orange-spotted Sunfish. Abundant.

*Lepomis macrochirus* Rafinesque, Bluegill. Common.

*Lepomis megalotis* (Rafinesque), Longear Sunfish. Common in the Neosho R.; occasional elsewhere.

*Micropterus punctulatus* (Rafinesque), Spotted Bass. Common.

*Micropterus salmoides* (Lacepede), Largemouth Bass. Common.

*Pomoxis annularis* Rafinesque, White Crappie. Common.

*Pomoxis nigromaculatus* (Le Sueur), Black Crappie. Scarce.

## Family Percidae

*Etheostoma flabellare* Rafinesque, Fantail Darter. Only from Jacob's Creek, but taken in large numbers there.

*Etheostoma nigrum* Rafinesque, Johnny Darter. Only from Bluff Creek, and taken only occasionally there.

*Etheostoma spectabile* (Agassiz), Orangethroat Darter. Common; often abundant, especially in the smaller riffles.

*Percina copelandi* (Jordan), Channel Darter. Only from Rock and Camp creeks, and scarce there.

*Percina maculata* (Girard), Blacksided Darter. Scarce.

*Percina phoxocephala* (Nelson), Slenderhead Darter. Common, especially in the riffles of the larger streams.

*Percina caprodes* (Rafinesque), Logperch. Common.

*Perca flavescens* (Mitchill), Yellow Perch. Common in lakes.

Family Sciaenidae

*Aplodinotus grunniens* Rafinesque, Freshwater Drum. Common.

**Amphibians**

The order in which the species are listed is patterned after Schmidt (1953). The common names of the forms present are those recommended in *Copeia*, No. 3, 1956.

CLASS AMPHIBIA

ORDER CAUDATA

Family Proteidae

*Necturus maculosus* (Rafinesque), Mudpuppy. Occasional. Rivers and creeks with muddy bottoms; scarce in ditches and ponds .

Family Ambystomidae

*Ambystoma texanum* (Matthes), Small-mouthed Salamander. Common. Adults in wells, basements, moist woods; breed in sloughs and rocky prairie streams.

*Ambystoma tigrinum* (Green), Barred Tiger Salamander. Common. Adults in basements and moist places; breed in farm ponds.

ORDER SALIENTIA

Family Bufonidae

*Bufo americanus* Holbrook, American Toad. Occasional. Wooded areas, urban situations, gardens.

*Bufo woodhousei* Girard, Rocky Mountain Toad. Common. Open grassy areas, urban situations.

Family Hylidae

*Acris gryllus* (Le Conte), Northern Cricket Frog. Abundant. Any aquatic situation, either temporary or permanent.

*Hyla versicolor* Le Conte, Eastern Gray Treefrog. Occasional. Wooded areas, urban. Calls only in hot weather, usually in high humidity.

*Pseudacris clarki* (Baird), Spotted Chorus Frog. Only one record—Emporia. Temporary grassy pools and ditches. Calls in early spring and after rains until early summer.

*Pseudacris nigrata* (Le Conte), Western Chorus Frog. Abundant. Temporary grassy pools and ditches. Calls from March to July; after late spring calls only after rains.

## Family Microhylidae

*Microhyla carolinensis* Holbrook, Great Plains Narrow-mouthed Toad. Common. Under rocks on prairie hillsides or near temporary or semi-permanent grassy pools. The subspecies in Lyon County is *M. c. olivacea* (Hallowell).

## Family Ranidae

*Rana areolata* Baird and Girard, Crayfish Frog. Scarce. One individual collected 12 miles northeast of Emporia by Stan Roth on June 13, 1958.

*Rana catesbeiana* Shaw, Bullfrog. Common. Permanent water of creeks, rivers, and sloughs; less frequent at lakes, small streams, and farm ponds.

*Rana sylvatica* Le Conte, Northern Wood Frog. One specimen from Lyon County, K. U. Mus. Nat. Hist. 23149. This is the only Kansas record. See Breukelman and Smith (1946) for taxonomic and distributional status.

*Rana pipiens* Schreber, Western Leopard Frog. Abundant. Almost any aquatic situation. The subspecies in Lyon County is *R. p. brachycephala* Cope.

**Reptiles**

The order in which the species are listed is patterned after Schmidt (1953), except that the map turtles follow Cagle (1954). The common names of the forms present are those recommended in *Copeia*, No. 3, 1956.

## CLASS REPTILIA

## ORDER CHELONIA

## Family Chelydridae

*Chelydra serpentina* Linnaeus, Common Snapping Turtle. Common. Any permanent or semi-permanent aquatic situation; scarce in farm ponds.

## Family Kinosternidae

*Kinosternon flavescens* (Agassiz), Yellow Mud Turtle. Rare. Usually in muddy ditches, streams, creeks, rivers.

## Family Emydidae

*Terrapene ornata* (Agassiz), Ornate Box Turtle. Common. Anywhere, but most frequent in fields and prairie.

*Graptemys kobni* Baur, Mississippi Map Turtle. Occasional in Cottonwood and Neosho rivers.

*Graptemys pseudogeographica* Gray, Ouachita Map Turtle. Occasional in Cottonwood and Neosho rivers and Emporia Country Club Lake. The subspecies in Lyon County is *G. p. ouachitensis* Cagle.

*Chrysemys picta* (Schneider), Western Painted Turtle. Common. Rivers, creeks, sloughs, and lakes.

*Pseudemys floridana* (Le Conte), Missouri Slider. Common in Emporia Country Club Lake; has not been taken elsewhere in Lyon County.

*Pseudemys scripta* (Schoepff), Red-eared Turtle. Common. Rivers, creeks, sloughs, and lakes.

#### Family Trionychidae

*Trionyx ferox* Schneider, Western Spiny Softshell. Occasional. Rivers, creeks, and Emporia Country Club Lake.

#### ORDER SAURIA

##### Family Iguanidae

*Crotaphytus collaris* (Say), Eastern Collared Lizard. Common in southwestern part of county. Rocky prairie hillsides.

*Holbrookia maculata* Girard, Northern Earless Lizard. Common in southwestern part of county. Prairie areas where little vegetation exists.

*Phrynosoma cornutum* (Harlan), Texas Horned Lizard. Common in southwestern part of county. Rocky prairie hillsides and open fields.

##### Family Anguidae

*Ophisaurus attenuatus* Baird, Western Slender Glass Lizard. Scarce. Six specimens from Emporia area. Moist fields and wooded ledges.

##### Family Teiidae

*Cnemidophorus sexlineatus* (Linnaeus), Six-lined Racerunner. Occasional. Rocky open areas, cultivated fields, railroad rights-of-way.

##### Family Scincidae

*Lygosoma laterale* Say, Ground Skink. Occasional in northeastern part of county. Oak woods under rocks and litter.

*Eumeces fasciatus* (Linnaeus), Five-lined Skink. Common. Rocky and wooded areas.

*Eumeces obsoletus* (Baird and Girard), Great Plains Skink. Common in western part of county. Rocky open areas, particularly prairie hillsides.



*Eumeces septentrionalis* (Baird), Northern Prairie Skink. Occasional. Rocky grassy open areas; also found in urban Emporia. The subspecies in Lyon County is *E. s. septentrionalis* (Baird).

## ORDER SERPENTES

## Family Colubridae

*Natrix grabami* (Baird and Girard), Graham's Water Snake. Common. Any permanent or semi-permanent aquatic situation.

*Natrix erythrogaster* (Forster), Blotched Water Snake. Abundant. Any aquatic situation other than temporary.

*Natrix rhombifera* Hallowell, Diamond-backed Water Snake. Common. Permanent water: rivers, sloughs, lakes, creeks.

*Natrix sipedon* (Linnaeus), Northern Water Snake. Abundant. Any aquatic situation other than temporary.

*Storeria dekayi* (Holbrook), Texas Brown Snake. Common in north-eastern part of county; occasional elsewhere. Rocky wooded areas.

*Thamnophis radix* (Baird and Girard), Western Plains Garter Snake. Common locally. It has been found only in Emporia.

*Thamnophis sauritus* (Linnaeus), Western Ribbon Snake. Common. Grassy moist areas, particularly near water.

*Thamnophis sirtalis* (Linnaeus), Red-sided Garter Snake. Abundant. All types of habitats.

*Tropidoclonion lineatum* (Hallowell), Lined Snake. Common. Open grassy areas, usually rocky, and urban situations. Subspecific status uncertain.

*Heterodon platyrhinos* Latreille, Common Hog-nosed Snake. One record, 14 miles northeast of Emporia. Sandy soil habitat.

*Diadophis punctatus* (Linnaeus), Prairie Ring-necked Snake. Common. Rocky areas, either in prairies or woods.

*Carpophis amoenus* (Say), Western Worm Snake. Common. Moist, rocky, wooded areas.

*Coluber constrictor* Linnaeus, Eastern Yellow-bellied Racer. Abundant. All localities, mostly in cultivated and overgrown fields.

*Elaphe guttata* (Linnaeus), Great Plains Rat Snake. Occasional. Rocky grassy areas and overgrown fields.

*Elaphe obsoleta* (Say), Black Rat Snake. Common. Wooded areas and fields.

*Pituophis catenifer* (Blainville), Bullsnake. Common. Open fields and prairies.

*Lampropeltis calligaster* (Harlan), Prairie Kingsnake. Occasional. Open areas: fields and prairies.

*Lampropeltis getulus* Linnaeus, Speckled Kingsnake. Occasional. Fields and prairies, usually under piles of rock.

*Lampropeltis doliata* (Linnaeus), Red Milk Snake. Occasional. Rocky areas, either wooded or open. Specimens from Lyon County show intergradient characteristics between *L. d. sypila* (Cope) and *gentilis* (Baird and Girard).

*Tantilla gracilis* Baird and Girard, Northern Flat-headed Snake. Occasional in southwestern part of county. Under rocks on prairie hillsides.

#### Family Crotalidae

*Ancistrodon contortrix* (Linnaeus), Northern Copperhead. Occasional, mostly in northeastern part of county. Rocky wooded areas or nearby fields or rocky spots.

*Sistrurus catenatus* (Rafinesque), Western Massasauga. Common in southwestern part of county; occasional elsewhere. Moist fields, cultivated fields, and particularly, rocky prairie hillsides. The subspecies in Lyon County is *S. c. tergeminus* (Say).

#### Birds

We have listed species of birds observed and in some cases collected; we have not listed subspecies. Downs and Breukelman (1941) listed 248 species, 22 of which were of doubtful occurrence. All species of doubtful occurrence have been omitted from this report.

The following terms are used in describing the occurrence of species: transient, summer resident, winter resident, and resident. Special comments are made, if in the opinions of the writers, the information given might be useful to other observers.

An asterisk before the scientific name indicates that we have evidence of the species breeding in Lyon County. Either nests or immature birds were observed by the writers or were reported by reliable observers. The listing of species is patterned after Tordoff (1956).

#### CLASS AVES

##### ORDER GAVIIFORMES

##### Family Gaviidae

*Gavia immer* (Brunnich), Common Loon. Scarce transient. Individuals observed at Lyon County State Lake in spring; never in flocks.

##### ORDER COLYMBIFORMES

##### Family Colymbidae

*Colymbus auritus* Gmelin, Horned Grebe. Scarce transient.

*Colymbus caspicus* (Heermann), Eared Grebe. Common transient.

*Aechmophorus occidentalis* (Lawrence), Western Grebe. Rare transient.

Observed only once by Andrews at Lyon County State Lake.

*Podilymbus podiceps* (Linnaeus), Pied-billed Grebe. Abundant transient.

Observed commonly on lakes, ponds, and rivers.

#### ORDER PELECANIFORMES

##### Family Pelecanidae

*Pelecanus erythrorhynchos* Gmelin, White Pelican. Common transient.

Large flocks regularly observed on Lyon County State Lake.

##### Family Phalacrocoracidae

*Phalacrocorax auritus* (Lesson), Double-crested Cormorant. Common

transient. Observed as singles or in small flocks on lakes and large ponds.

#### ORDER CICONIIFORMES

##### Family Ardeidae

\**Ardea herodias* Linnaeus, Great Blue Heron. Common summer resident. At least 8 colonies with about 100 active nests. An occasional one may be observed during the winter.

*Casmerodius albus* (Gmelin), American Egret. Occasional transient.

Individuals found around farm ponds in spring. Extremely scarce in fall.

*Leucophoyx ibula* (Molina), Snowy Egret. Rare transient.

*Florida caerulea* (Linnaeus), Little Blue Heron. Rare transient.

\**Butorides virescens* (Linnaeus), Green Heron. Common resident. Several nests are found within or near the Emporia city limits each year. Observed along Neosho and Cottonwood rivers.

*Nycticorax nycticorax* (Gmelin), Black-crowned Night Heron. Occasional transient in spring at Lyon County State Lake. Scarce in fall.

*Nyctanassa violacea* (Linnaeus), Yellow-crowned Night Heron. Scarce transient.

*Botaurus lentiginosus* (Rackett), American Bittern. Common transient.

An occasional one may be observed during summer around Lyon County State Lake.

#### ORDER ANSERIFORMES

##### Family Anatidae

*Branta canadensis* (Linnaeus), Canada Goose. Common transient. Large flocks feed in wheat fields and rest on lakes and large ponds. Most abundant in fall.

- Anser albifrons* Baird, White-fronted Goose. Common transient in fall.
- Chen hyperborea* (Pallas), Snow Goose. Common transient in fall.
- Chen caerulescens* (Linnaeus), Blue Goose. Common transient in fall.
- Anas platyrhynchos* Linnaeus, Mallard. Abundant transient; occasional winter residents on riffles of Neosho and Cottonwood rivers.
- Anas strepera* Linnaeus, Gadwall. Common transient Lyon County State Lake.
- Anas acuta* Linnaeus, Pintail. Abundant transient Lyon County State Lake. Commonly observed on Cottonwood and Neosho rivers.
- Anas carolinensis* Gmelin, Green-winged Teal. Common transient in fall at Lyon County State Lake.
- Anas discors* Linnaeus, Blue-winged Teal. Abundant transient in Neosho and Cottonwood rivers, and in ponds and lakes.
- Anas cyanoptera* Snyder and Lumsden, Cinnamon Teal. Scarce transient.
- Spatula clypeata* (Linnaeus), Shoveller. Common transient. Observed on lakes, ponds, creeks, and in roadside marshy areas in spring. Less common in fall.
- Mareca americana* (Gmelin), Baldpate. Common transient Lyon County State Lake.
- Aix sponsa* (Linnaeus), Wood Duck. Common transient. Occasional summer resident on Neosho and Cottonwood rivers.
- Aythya americana* (Eyton), Redhead. Common transient.
- Aythya collaris* (Donovan), Ring-necked Duck. Common transient. Often mistaken for Lesser Scaup by the layman.
- Aythya valisineria* (Wilson), Canvas-back. Common transient.
- Aythya affinis* (Eyton), Lesser Scaup Duck. Abundant transient. Often summer resident at Lyon County State Lake.
- Bucephala clangula* (Bonaparte), Golden-eye. Occasional transient in small flocks at Lyon County State Lake.
- Bucephala albeola* (Linnaeus), Buffle-head. Common transient. Usually observed as individuals or very small flocks.
- Melanitta deglandi* (Bonaparte), White-winged Scoter. Rare transient. Reported twice at Lyon County State Lake since 1948.
- Oxyura jamaicensis* (Wilson), Ruddy Duck. Common transient. Occasional summer resident.
- Lophodytes cucullatus* (Linnaeus), Hooded Merganser. Scarce transient. An occasional individual observed with other ducks at Lyon County State Lake.
- Mergus merganser* Cassin, American Merganser. Common transient. Large flocks at Lyon County State Lake.

*Mergus serrator* Linnaeus, Red-breasted Merganser. Scarce transient. An occasional individual mixed in with American Mergansers.

## ORDER FALCONIFORMES

## Family Cathartidae

*Cathartes aura* Friedmann, Turkey Vulture. Common transient. Common summer resident in valleys of both the Neosho and Cottonwood rivers.

## Family Accipitridae

*Ictinia mississippiensis* (Wilson), Mississippi Kite. Scarce summer resident in southern Lyon County. Observed only once in northern Lyon County.

\**Accipiter striatus* (Wilson), Sharp-shinned Hawk. Occasional transient and winter resident. Observed along woodland borders of rivers and creeks.

\**Accipiter cooperii* (Bonaparte), Cooper Hawk. Occasional resident. Not frequently observed. Occasionally noted in timber areas bordered by prairies.

\**Buteo jamaicensis* (Gmelin), Eastern Red-tailed Hawk. Common resident. Most abundant buteo. Nests commonly in Cottonwood and Sycamore trees.

*Buteo lineatus* (Gmelin), Red-shouldered Hawk. Scarce transient in eastern Lyon County.

*Buteo platypterus* (Vieillot), Broad-winged Hawk. Scarce transient.

\**Buteo swainsoni* Bonaparte, Swainson's Hawk. Common transient and summer resident in southwest Lyon County. Observed occasionally in winter throughout county.

*Buteo lagopus* (Gmelin), Rough-legged Hawk. Common winter resident in eastern Lyon County where timber-prairie areas adjoin.

*Aquila chrysaetos* (Linnaeus), Golden Eagle. Scarce transient. Occasionally observed in winter.

*Haliaeetus leucocephalus* Townsend, Bald Eagle. Scarce transient. Occasionally observed in winter and summer.

\**Circus cyaneus* (Linnaeus), Marsh Hawk. Common resident. Nests regularly in Lyon County State Park.

## Family Pandionidae

*Pandion haliaetus* (Gmelin), Osprey. Occasional transient. Individuals observed each spring, summer, and fall at Lyon County State Lake.

## Family Falconidae

*Falco mexicanus* Schlegel, Prairie Falcon. Scarce transient.

*Falco columbarius* Linnaeus, Pigeon Hawk. Rare transient .

\**Falco sparverius* Linnaeus, Sparrow Hawk. Abundant transient. Common resident. Most commonly observed hawk on telephone poles and wires.

#### ORDER GALLIFORMES

##### Family Tetraonidae

\**Tympanuchus cupido* (Brewster), Greater Prairie Chicken. Abundant resident in local areas of pasture land. Increased greatly in last decade.

##### Family Phasianidae

\**Colinus virginianus* (Linnaeus), Bob-white. Abundant resident in all parts of county.

*Phasianus colchicus* Linnaeus, Ring-necked Pheasant. Introduced in county several times. Rare resident. Doubtful nesting reports. Not established in Lyon County.

#### ORDER GRUIFORMES

##### Family Rallidae

*Rallus elegans* Audubon, King Rail. Rare transient.

*Rallus limicola* Vieillot, Virginia Rail. Rare transient. Observed most recently on October 3, 1950.

*Porzana carolina* (Linnaeus), Sora Rail. Scarce transient.

*Porphyryla martinica* (Linnaeus), Purple Gallinule. Scarce transient.

*Gallinula chloropus* Bangs, Florida Gallinule. Rare transient.

*Fulica americana* Gmelin, American Coot. Abundant transient. Fairly common summer resident. Reported nesting unverified.

#### ORDER CHARADRIIFORMES

##### Family Charadriidae

*Charadrius hiaticula* Bonaparte, Semipalmated Plover. Occasional transient.

*Charadrius melodus* (Ridgway), Piping Plover. Occasional transient. Observed as individuals on mud flats of Lyon County State Lake.

\**Charadrius vociferus* Linnaeus, Killdeer. Common transient and abundant summer resident.

*Pluvialis dominica* (Muller), Golden Plover. Scarce transient. More often observed in spring than fall.

*Squatarola squatarola* (Linnaeus), Black-bellied Plover. Scarce transient. More often observed in spring than fall.

## Family Scolopacidae

- Philobelia minor* (Gmelin), American Woodcock. Rare transient.
- Capella gallinago* (Ord), Wilson Snipe. Common transient. Often observed around ponds and marshy areas in spring. Infrequently observed in fall.
- Numenius americanus* Bechstein, Long-billed Curlew. Scarce transient.
- \**Bartramia longicauda* (Bechstein), Upland Plover. Common transient and locally abundant summer resident in upland pastures.
- Actitis macularia* (Linnaeus), Spotted Sandpiper. Common to abundant transient. Occasional summer resident along Neosho and Cottonwood rivers.
- Tringa solitaria* Wilson, Solitary Sandpiper. Common transient at Lyon County State Lake.
- Catoptrophorus semipalmatus* (Brewster), Willet. Scarce transient.
- Totanus melanoleucus* (Gmelin), Greater Yellow-legs. Common transient.
- Totanus flavipes* (Gmelin), Lesser Yellow-legs. Common transient. Less often observed than Greater Yellow-legs.
- Erolia melanotos* (Vieillot), Pectoral Sandpiper. Common to abundant transient. Most frequently observed sandpiper at Lyon County State Lake.
- Erolia fuscicollis* (Vieillot), White-rumped Sandpiper. Occasional transient; sporadic in occurrence.
- Erolia bairdii* (Coues), Baird Sandpiper. Common to abundant transient. Most frequently observed small sandpiper; usually found with Pectoral Sandpiper.
- Erolia minutilla* (Vieillot), Least Sandpiper. Occasional to common transient; sporadic in occurrence.
- Limnodromus scolopaceus* (Say), Long-billed Dowitcher. Occasional transient.
- Micropalama himantopus* (Bonaparte), Stilt Sandpiper. Scarce transient.
- Ereunetes pusillus* (Linnaeus), Semipalmated Sandpiper. Occasional transient.
- Ereunetes mauri* Cabanis, Western Sandpiper. Scarce transient. One specimen collected in Emporia on April 30, 1958.
- Limosa fedoa* (Linnaeus), Marbled Godwit. Scarce transient.
- Limosa haemastica* (Linnaeus), Hudsonian Godwit. Occasional to common transient.

## Family Recurvirostridae

- Recurvirostra americana* Gmelin, Avocet. Scarce transient.

## Family Phalaropodidae

*Steganopus tricolor* Vieillot, Wilson Phalarope. Occasional to common transient in small flocks at Lyon County State Lake.

## Family Laridae

*Larus argentatus* Coues, Herring Gull. Rare transient. One first year immature individual observed by Andrews, Lyon County State Lake, January 5, 1958.

*Larus delawarensis* Ord, Ring-billed Gull. Occasional to common transient. Usually one or two individuals are observed, but occasionally flocks are seen.

*Larus pipixcan* Wagler, Franklin Gull. Common to abundant transient. Flocks occasionally are seen in freshly cultivated fields in spring.

*Larus philadelphia* (Ord), Bonaparte Gull. Scarce transient.

*Sterna forsteri* Nuttall, Forster Tern. Scarce transient.

*Sterna hirundo* Linnaeus, Common Tern. Scarce transient.

*Sterna albifrons* Burleigh and Lowery, Least Tern. Scarce transient.

*Chlidonias niger* (Gmelin), Black Tern. Common transient. Small flocks observed about lakes and ponds each spring. Scarce in the fall.

## ORDER COLUMBIFORMES

## Family Columbidae

\**Columba livia* (Gmelin), Rock Dove. Abundant resident in farm yards and towns.

\**Zenaidura macroura* (Linnaeus), Mourning Dove. Abundant transient and summer resident. Regularly observed in small flocks in timber along creeks in winter.

## ORDER PSITTACIFORMES

## Family Psittacidae

*Conuropsis carolinensis* (Gmelin), Carolina Paroquet. Extinct. One specimen from Lyon County in 1890. In museum of Kansas State Teachers College of Emporia.

## ORDER CUCULIFORMES

## Family Cuculidae

\**Coccyzus americanus* (Linnaeus), Yellow-billed Cuckoo. Common transient and nesting summer resident in hedge rows and scattered trees of open pastures.

\**Coccyzus erythrophthalmus* (Wilson), Black-billed Cuckoo. Occasional to common transient. Occasional nesting summer resident.



*Crotophaga sulcirostris* Swainson, Groove-billed Ani. Rare. One specimen from near Emporia taken in 1904. In museum of Kansas State Teachers College of Emporia.

## ORDER STRIGIFORMES

## Family Tytonidae

\**Tyto alba* (Bonaparte), Barn Owl. Occasional to common transient and occasional nesting summer resident.

## Family Strigidae

\**Otus asio* (Gmelin), Screech Owl. Common transient. Common nesting summer resident.

\**Bubo virginianus* (Gmelin), Horned Owl. Common resident.

*Speotyto cunicularia* (Bonaparte), Burrowing Owl. Scarce transient.

\**Strix varia* Barton, Barred Owl. Occasional resident. Commonly mistaken for Great Horned Owl by the layman.

*Asio otus* (Lesson), Long-eared Owl. Occasional transient and resident. Observed more often in late fall and winter.

*Asio flammeus* (Pontoppidan), Short-eared Owl. Occasional resident. Observed in fall and winter in prairie areas.

## ORDER CAPRIMULGIFORMES

## Family Caprimulgidae

*Caprimulgus carolinensis* Gmelin, Chuck-will's-widow. Scarce transient. Observed in timber along Cottonwood and Neosho rivers in summer.

*Phalaenoptilus nuttallii* (Audubon), Poor-will. Occasional to common transient. Locally common in summer in restricted areas.

\**Chordeiles minor* (Forster), Nighthawk. Abundant transient and summer resident. Commonly nests on ground in Flint Hills areas and on roof tops in cities.

## ORDER APODIFORMES

## Family Apodidae

\**Chaetura pelagica* (Linnaeus), Chimney Swift. Abundant migrant and summer resident.

## Family Trochilidae

\**Archilochus colubris* (Linnaeus), Ruby-throated Hummingbird. Common migrant and summer resident.

## ORDER CORACIIFORMES

## Family Alcedinidae

\**Megaceryle alcyon* (Linnaeus), Belted Kingfisher. Common resident. More common in summer than in winter along creeks and rivers.

## ORDER PICIFORMES

## Family Picidae

- \**Colaptes auratus* Bangs, Yellow-shafted Flicker. Common transient and resident. Hybrids of Yellow and Red-shafted Flickers are occasionally taken.
- \**Colaptes cafer* Vigors, Red-shafted Flicker. Common transient and summer resident. Most commonly observed in northern part of county.
- \**Centurus carolinus* (Boddaert), Red-bellied Woodpecker. Common resident. Abundant in summer.
- \**Melanerpes erythrocephalus* (Linnaeus), Red-headed Woodpecker. Common summer resident. Occasionally a winter resident along wooded areas of rivers.
- Sphyrapicus varius* (Linnaeus), Yellow-bellied Sapsucker. Occasional transient and summer resident.
- \**Dendrocopos villosus* (Linnaeus), Hairy Woodpecker. Common transient and resident.
- \**Dendrocopos pubescens* (Linnaeus), Downy Woodpecker. Abundant transient and resident. Our most abundant woodpecker.

## ORDER PASSERIFORMES

## Family Tyrannidae

- \**Tyrannus tyrannus* (Linnaeus), Eastern Kingbird. Abundant transient and summer resident.
- \**Tyrannus verticalis* Say, Western Kingbird. Common transient and summer resident.
- \**Muscivora forficata* (Gmelin), Scissor-tailed Flycatcher. Common transient and summer resident. Increased in abundance during last decade.
- \**Myiarchus crinitus* Bangs, Crested Flycatcher. Common transient and summer resident in timbered areas. Commonly nests within city limits of Emporia.
- \**Sayornis phoebe* (Latham), Eastern Phoebe. Common transient and summer resident. Commonly nests on concrete culvert walls. Cow birds' eggs frequently found in nests of phoebe.
- Sayornis saya*, Say Phoebe. Scarce transient. Observed only once in Peter Pan Park, Emporia.
- Empidonax traillii* (Audubon), Alder Flycatcher. Rare transient.
- Empidonax minimus* (Baird and Baird), Least Flycatcher. Common transient and occasional summer resident.

- \**Contopus virens* (Linnaeus), Eastern Wood Pewee. Common transient and summer resident.

Family Alaudidae

- \**Eremophila alpestris* (Linnaeus), Horned Lark. Common transient and resident. Abundant in large flocks in open fields in winter.

Family Hirundinidae

*Iridoprocne bicolor* (Vieillot), Tree Swallow. Occasional transient.

*Riparia riparia* (Linnaeus), Bank Swallow. Occasional transient and summer resident.

*Stelgidopteryx ruficollis* (Audubon), Rough-winged Swallow. Common transient and summer resident.

\**Hirundo rustica* Boddaert, Barn Swallow. Common transient and summer resident.

*Petrochelidon pyrrhonota* (Vieillot), Cliff Swallow. Common transient and resident. Nests in counties adjacent. No nesting record in Lyon County.

\**Progne subis* (Linnaeus), Purple Martin. Common transient and abundant summer resident.

Family Corvidae

\**Cyanocitta cristata* Oberholser, Blue Jay. Abundant transient and common resident.

\**Corvus brachyrhynchos* Brehm, Crow. Abundant resident.

Family Paridae

\**Parus atricapillus* Linnaeus, Black-capped Chickadee. Abundant resident.

\**Parus bicolor* Linnaeus, Tufted Titmouse. Common transient, abundant summer resident, and common winter resident.

Family Sittidae

*Sitta carolinensis* Latham, White-breasted Nuthatch. Common transient and occasional resident.

*Sitta canadensis* Linnaeus, Red-breasted Nuthatch. Occasional transient and resident.

Family Certhiidae

*Certhia familiaris* Bonaparte, Brown Creeper. Common transient and winter resident.

Family Troglodytidae

\**Troglodytes aedon* Audubon, House Wren. Abundant summer resident.

- Troglodytes troglodytes* Vieillot, Winter Wren. Occasional transient and winter resident along Cottonwood and Neosho rivers.
- Thryomanes bewickii* Oberholser, Bewick Wren. Occasional transient and resident.
- \**Thryomanes ludovicianus* (Latham), Carolina Wren. Common resident along wooded areas of streams.
- Telmatodytes palustris* (Bangs), Long-billed Marsh Wren. Scarce transient and summer resident.
- Cistothorus platensis* (Latham), Short-billed Marsh Wren. Scarce transient and summer resident.

## Family Mimidae

- \**Mimus polyglottos* (Linnaeus), Mockingbird. Abundant summer resident and occasional winter resident.
- \**Dumetella carolinensis* (Linnaeus), Catbird. Abundant summer resident.
- \**Toxostoma rufum* (Linnaeus), Brown Thrasher. Abundant summer resident.

## Family Turdidae

- \**Turdus migratorius* Linnaeus, Eastern Robin. Abundant transient and summer resident. Common winter resident.
- \**Hylocichla mustelina* (Gmelin), Wood Thrush. Common summer resident. Nests occasionally within city limits of Emporia.
- Hylocichla guttata* Bangs and Penard, Hermit Thrush. Occasional transient, scarce summer resident.
- Hylocichla ustulata* (Tschudi), Olive-backed Thrush. Abundant transient and scarce summer resident.
- Hylocichla minima* (Lafresnaye), Gray-cheeked Thrush. Common transient.
- Hylocichla fuscescens* (Stephens), Veery. Scarce transient.
- \**Sialia sialis* (Linnaeus), Eastern Bluebird. Common transient and resident.
- Sialia currucoides* (Bechstein), Mountain Bluebird. Scarce transient.
- Myadestes townsendi* (Audubon), Townsend Solitaire. Scarce transient and winter resident. Observed more frequently in last 5 years.

## Family Sylviidae

- \**Poliioptila caerulea* (Linnaeus), Blue-gray Gnatcatcher. Common transient and summer resident.
- Regulus satrapa* Lichtenstein, Golden-crowned Kinglet. Common transient and scarce winter resident.
- Regulus calendula* (Linnaeus), Ruby-crowned Kinglet. Common tran-

sient and winter resident. Abundant in flocks for brief periods during spring and fall migration.

Family Motacillidae

*Anthus spinoletta* (Tunstall), Water Pipit. Occasional transient.

*Anthus spragueii* (Audubon), Sprague Pipit. Common transient.

Family Bombycillidae

*Bombycilla cedrorum* Vieillot, Cedar Waxwing. Common transient and scarce winter resident.

Family Laniidae

*Lanius excubitor* Vieillot, Northern Shrike. Scarce resident.

\**Lanius ludovicianus* Palmer, Loggerhead Shrike. Common resident.

Family Sturnidae

\**Sturnus vulgaris* Linnaeus, Starling. Abundant resident. Has increased during the last decade until it is a genuine nuisance.

Family Vireonidae

\**Vireo bellii* Audubon, Bell Vireo. Common summer resident.

\**Vireo olivaceus* (Linnaeus), Red-eyed Vireo. Common transient and summer resident.

*Vireo philadelphicus* (Cassin), Philadelphia Vireo. Occasional transient.

\**Vireo gilvus* (Vieillot), Warbling Vireo. Common transient and summer resident.

Family Parulidae

*Mniotilta varia* (Linnaeus), Black and White Warbler. Occasional transient.

\**Protonotaria citrea* (Boddaert), Prothonotary Warbler. Common summer resident. Most regularly observed in southern Lyon County along rivers.

*Helmitheros vermivorus* (Gmelin), Worm Eating Warbler. Scarce transient, observed on two occasions on Kansas State Teachers College campus.

*Vermivora peregrina* (Wilson), Tennessee Warbler. Common transient. During spring migration it is sometimes abundant.

*Vermivora celata* (Say), Orange-crowned Warbler. Common transient.

*Vermivora ruficapilla* (Wilson), Nashville Warbler. Abundant transient, but sporadic in its occurrence.

*Parula americana* (Linnaeus), Parula Warbler. Occasional transient.

\**Dendroica petechia* (Gmelin), Yellow Warbler. Abundant transient and common summer resident.

- Dendroica magnolia* (Wilson), Magnolia Warbler. Scarce transient.
- Dendroica coronata* (Linnaeus), Myrtle Warbler. Abundant transient.
- Dendroica virens* (Gmelin), Black-throated Green Warbler. Scarce transient.
- Dendroica cerulea* (Wilson), Cerulean Warbler. Scarce transient.
- Dendroica striata* (Forster), Black-poll Warbler. Occasional transient.
- Dendroica palmarum* (Gmelin), Palm Warbler. Rare transient. One specimen collected in Emporia on April 28, 1958.
- Seiurus aurocapillus* (Linnaeus), Oven-bird. Scarce transient.
- Seiurus noveboracensis* Ridgway, Northern Water-thrush. Occasional transient in spring; scarce in fall.
- Seiurus motacilla* (Vieillot), Louisiana Water-thrush. Occasional transient along Cottonwood and Neosho rivers.
- Oporornis formosus* (Wilson), Kentucky Warbler. Scarce transient.
- Oporornis philadelphia* (Wilson), Mourning Warbler. Scarce transient.
- \**Geothlypis trichas* (Swainson), Yellow-throat. Abundant transient and summer resident along railroad rights-of-way and low, marshy areas.
- Icteria virens* (Linnaeus), Yellow-breasted Chat. Scarce transient. Most often recorded in southeastern Lyon County.
- Wilsonia pusilla* (Wilson), Wilson Warbler. Occasional transient.
- Setophaga ruticilla* (Linnaeus), American Redstart. Common transient and occasional summer resident.

## Family Ploceidae

- \**Passer domesticus* (Linnaeus), English Sparrow. Abundant resident.

## Family Icteridae

- Dolichonyx oryzivorus* (Linnaeus), Bobolink. Occasional transient.
- \**Sturnella magna* (Linnaeus), Eastern Meadowlark. Abundant resident.
- \**Sturnella neglecta* Audubon, Western Meadowlark. Occasional resident in certain areas around Emporia.
- Xanthocephalus xanthocephalus* (Bonaparte), Yellow-headed Blackbird. Common transient in spring. Scarce in fall.
- \**Agelaius phoeniceus* (Linnaeus), Eastern Red-wing. Abundant transient and summer resident. Some are winter residents.
- \**Icterus spurius* (Linnaeus), Orchard Oriole. Abundant transient and summer resident.
- \**Icterus galbula* (Linnaeus), Baltimore Oriole. Abundant transient and summer resident.
- \**Icterus bullockii* (Swainson), Bullock Oriole. Scarce transient and scarce summer resident. John Breukelman has nesting records within Emporia city limits.

*Euphagus carolinus* (Muller), Rusty Blackbird. Common transient and occasional winter resident.

*Euphagus cyanocephalus* (Wagler), Brewer Blackbird. Common transient and occasional winter resident.

\**Quiscalus quiscula* Vieillot, Grackle. Abundant transient, common summer resident and occasional winter resident.

\**Molothrus ater* (Boddaert), Eastern Cowbird. Common transient and summer resident. Common winter resident of farm feed lots.

#### Family Thraupidae

*Piranga olivacea* (Gmelin), Scarlet Tanager. Occasional transient and scarce summer resident.

*Piranga rubra* (Linnaeus), Summer Tanager. Scarce transient. Reported as summer resident in southern part of county.

#### Family Fringillidae

\**Richmondia cardinalis* (Linnaeus), Cardinal. Common resident.

*Pheucticus ludovicianus* (Linnaeus), Rose-breasted Grosbeak. Common transient and occasional summer resident.

*Guiraca caerulea* (Linnaeus), Blue Grosbeak. Occasional transient.

\**Passerina cyanea* (Linnaeus), Indigo Bunting. Common transient and summer resident along wooded areas of streams and roadsides.

*Passerina ciris* (Mearns), Painted Bunting. Scarce transient.

\**Spiza americana* (Gmelin), Dickcissel. Abundant transient and summer resident of roadside trees and shrubs.

*Spinus pinus* (Wilson), Pine Siskin. Common transient.

\**Spinus tristis* (Linnaeus), Eastern Goldfinch. Common transient and summer resident.

*Loxia curvirostra* (Linnaeus), Red Crossbill. Scarce winter resident.

*Pipilo erythrophthalmus* (Linnaeus), Red-eyed Towhee. Common transient and winter resident in heavily wooded areas of river bottoms.

*Calamospiza melanocorys* Stejneger, Lark Bunting. Scarce transient.

*Passerculus sandwichensis* (Wilson), Savannah Sparrow. Common transient in spring. Scarce in fall.

\**Ammodramus savannarum* (Coues), Grasshopper Sparrow. Common transient and locally common summer resident in upland pastures.

*Passerherbulus caudacutus* (Latham), Leconte Sparrow. Occasional transient.

*Passerherbulus henslowii* (Audubon), Henslow Sparrow. Occasional transient.

*Pooecetes gramineus* (Gmelin), Vesper Sparrow. Common transient in spring.

- \**Chondestes grammacus* (Say), Lark Sparrow. Common transient and summer resident.
- Junco hyemalis* (Linnaeus), Slate-colored Junco. Common transient and winter resident.
- Junco oreganus* Ridgway, Oregon Junco. Occasional transient and winter resident.
- Spizella arborea* (Wilson), Tree Sparrow. Common transient and abundant winter resident. Most common small sparrow of the hedge rows and thickets.
- Spizella passerina* (Bechstein), Chipping Sparrow. Common transient and occasional summer resident. There are unconfirmed reports of its nesting in Lyon County.
- Spizella pallida* (Swainson), Clay-colored Sparrow. Common transient.
- \**Spizella pusilla* (Wilson), Field Sparrow. Common transient and summer resident.
- Zonotrichia querula* (Nuttall), Harris Sparrow. Abundant winter resident. Occurs in large flocks in hedge rows and thickets.
- Zonotrichia leucophrys* (Forster), White-crowned Sparrow. Common transient and scarce winter resident in eastern Lyon County.
- Zonotrichia albicollis* (Gmelin), White-throated Sparrow. Common transient.
- Passerella iliaca* (Merrem), Fox Sparrow. Occasional transient.
- Melospiza lincolni* (Audubon), Lincoln Sparrow. Common transient and occasional winter resident.
- Melospiza georgiana* (Latham), Swamp Sparrow. Scarce transient.
- Melospiza melodia* Wetmore, Song Sparrow. Common transient and winter resident along rivers.
- Calcarius lapponicus* (Linnaeus), Lapland Longspur. Common transient and winter resident. Occurs in large flocks in open, cultivated fields.
- Calcarius pictus* (Swainson), Smith Longspur. Occasional transient and winter resident.
- Calcarius ornatus* (Townsend), Chestnut-collared Longspur. Occasional transient and winter resident. Mixed flocks of Lapland Longspur and Chestnut-collared Longspur occur together in open, cultivated fields.

#### Mammals

Intensive mammal collecting has not been attempted in Lyon County. Incidental records are numerous, however, and most of the species expected to occur have been recorded, with the exception of the bats. Because of the probability that the unrecorded, but expected, species do occur in



Lyon County, these names have been included in this list. These hypothetical species are differentiated from the recorded species by the names being indented and placed in brackets. They appear in assumed phylogenetic sequence.

In the following mammal list, the species appear in the order given by Hall (1955).

CLASS MAMMALIA

ORDER MARSUPIALIA

Family Didelphidae

*Didelphis marsupialis* Linnaeus, Opossum. Common.

ORDER INSECTIVORA

Family Soricidae

*Blarina brevicauda* (Say), Short-tailed Shrew. Common.

*Cryptotis parva* (Say), Least Shrew. Occasional.

Family Talpidae

*Scalopus aquaticus* (Linnaeus), Eastern Mole. Common.

ORDER CHIROPTERA

Family Vespertilionidae

[*Myotis lucifugus* (Le Conte), Little Brown Myotis.]

[*Myotis keeni* (Merriam), Keen's Myotis.]

[*Pipistrellus subflavus* (Cuvier), Eastern Pipistrelle.]

*Eptesicus fuscus* (Beauvois), Big Brown Bat. Common.

[*Nycticeius humeralis* (Rafinesque), Evening Bat.]

[*Lasionycteris noctivagans* (Le Conte), Silver-haired Bat.]

*Lasiurus cinereus* (Beauvois), Hoary Bat. Occasional.

*Lasiurus borealis* (Muller), Red Bat. Common.

Family Molossidae

[*Tadarida brasiliensis* (I. Geoffroy), Brazilian Free-tailed Bat.]

ORDER EDENTATA

Family Dasypodidae

[*Dasypus novemcinctus* Linnaeus, Nine-banded Armadillo.

Has been taken in adjacent Chase, Coffey, and Osage counties.]

## ORDER LAGOMORPHA

## Family Leporidae

*Sylvilagus floridanus* (J. A. Allen), Eastern Cottontail. Abundant. The subspecies in Lyon County is *S. f. mearsii* (J. A. Allen).

*Lepus californicus* Gray, Black-tailed Jack Rabbit. Occasional during last two years, but scarce during previous ten years.

## ORDER RODENTIA

## Family Sciuridae

*Sciurus carolinensis* Gmelin, Gray Squirrel. Occasional.

*Sciurus niger* Linnaeus, Fox Squirrel. Common.

*Marmota monax* (Linnaeus), Woodchuck. Occasional.

*Spermophilus tridecemlineatus* (Mitchill), Thirteen-lined Ground Squirrel. Common. The subspecies in Lyon County is *S. t. tridecemlineatus* (Mitchill).

*Spermophilus franklinii* (Sabine), Franklin's Ground Squirrel. Scarce. Specimens were taken from Lyon County State Park in January, 1951. Fishermen and other sportsmen frequently report seeing "large ground squirrels" in the park.

## Family Geomyidae

*Geomys bursarius* (Shaw), Plains Pocket Gopher. Occasional. The subspecies in Lyon County is *G. b. majusculus* Swenk.

## Family Heteromyidae

*Perognathus hispidus* Baird, Coarse-haired Pocket Mouse. Scarce.

## Family Castoridae

*Castor canadensis* Kuhl, Beaver. Occasional.

## Family Cricetidae

*Reithrodontomys megalotis* (Baird), Western Harvest Mouse. Scarce.

[*Reithrodontomys montanus* (Baird), Plains Harvest Mouse.]

*Peromyscus maniculatus* (Wagner), Deer Mouse. Abundant.

*Peromyscus leucopus* (Rafinesque), White-footed Mouse. Occasional.

*Sigmodon hispidus* Say and Ord, Coarse-haired Cotton Rat. Abundant.

*Neotoma floridana* (Ord), Eastern Wood Rat. Occasional. One known colony near Chase County line 4 miles north of U. S. Highway 50-S. Occasional nests are found in the southwestern portion of the county.

[*Synaptomys cooperi* Baird, Southern Bog Lemming. Has been taken in adjacent Woodson and Shawnee counties.]

*Ondatra zibethicus* (Linnaeus), Muskrat. Common. The subspecies in

Lyon County is *O. z. cinnamominus* Hollister.

*Microtus ochrogaster* (Wagner), Prairie Vole. Occasional.

Family Muridae

*Rattus norvegicus* (Berkenhout), Norway Rat. Common.

*Mus musculus* Linnaeus, House Mouse. Common.

Family Zapodidae

[*Zapus hudsonius* (Zimmermann), Meadow Jumping Mouse.

Has been taken in Greenwood County.]

Family Erethizontidae

*Erethizon dorsatum* (Linnaeus), Porcupine. Rare. One specimen from 10 miles north and 8 miles east of Emporia. A specimen reportedly taken in Lyon County adjacent to Chase County near Saffordville in 1957.

ORDER CARNIVORA

Family Canidae

*Canis latrans* Say, Coyote. Abundant. The subspecies in Lyon County is *C. l. frustror* Woodhouse.

*Vulpes fulva* (Desmarest), Red Fox. Occasional.

*Urocyon cinereoargenteus* (Schreber), Gray Fox. One adult female taken February 7, 1958, eight miles southeast of Emporia. This fox was traveling in company with an adult male red fox in a timbered area.

Family Procyonidae

*Procyon lotor* (Linnaeus), Raccoon. Abundant.

Family Bassariscidae

*Bassariscus astutus* (Lichtenstein), Ring-tailed Cat. Rare. One specimen taken at Badger Creek near old U. S. Highway 50-S on January 5, 1956.

Family Mustelidae

*Mustela vison* Schreber, Mink. Scarce.

[*Mustella frenata* Lichtenstein, Long-tailed Weasel. Has been taken in adjacent Greenwood County.]

*Taxidea taxus* (Schreber), Badger. Scarce. A colony was present 4 miles west of Olpe in 1955, and two adult specimens were collected in November, 1957, on the Kansas turnpike, southwest of Emporia.

*Mephitis mephitis* (Schreber), Striped Skunk. Common. The subspecies in Lyon County is *M. m. avia* Bangs.

*Spilogale putorius* (Linnaeus), Eastern Spotted Skunk. Scarce. One specimen taken in Emporia in 1956.

Family Felidae

*Lynx rufus* (Schreber), Bobcat. Scarce.

#### ORDER ARTIODACTYLA

Family Cervidae

*Odocoileus virginianus* (Boddaert), White-tailed Deer. Occasional. The farmers along the Cottonwood and Neosho rivers report seeing deer frequently.

#### Summary

1. Sixty-nine species of fishes, representing 12 families, are recorded for Lyon County, including introduced forms which are known to be breeding populations.
2. Fourteen species of amphibians are reported. These represent six families, and consist of three salamanders, two toads, and nine frogs.
3. Forty species of reptiles, representing 10 families, are listed. Of these, nine are turtles, nine are lizards, and 22 are snakes. Two poisonous snakes are represented.
4. The list of 248 species of birds that have been observed or collected in Lyon County includes 76 that are known to nest in the county. Forty-nine families are represented.
5. Thirty-seven species of mammals, representing 21 families, known to occur in the county are given. In addition, a hypothetical list of 12 species not yet recorded, but assumed to be present, is included.

#### References

##### GENERAL

BLAIR, W. FRANK, et al. 1957. Vertebrates of the United States. McGraw-Hill, New York. 819 pp.

##### Fishes

BREUKELMAN, JOHN. 1947. What Have I Caught? Kansas Forestry, Fish, and Game Commission. 36 pp.

CROSS, FRANK B. 1954. Fishes of Cedar Creek and South Fork of Cottonwood River, Chase County, Kansas. Trans. Kansas Acad. Sci., 57(3):303-314.

———. 1954. Records of little-known Kansas fishes. Trans. Kansas Acad. Sci., 57(4):473-479.

———. 1955. Partial classification of fishes and list of fishes reported from Kansas. Mimeographed private list.

- HARLAN, JAMES R., and EVERETT B. SPEAKER. 1956. Iowa fish and fishing, 3rd. ed. Iowa State Conservation Commission, Des Moines. 377 pp.
- HUBBS, CARL L., and KARL F. LAGLER. 1947. Fishes of the Great Lakes region. Cranbrook Institute Science Bulletin 26, rev. ed. 186 pp.
- TAYLOR, RALPH. 1954. Records of fishes in the John N. Lowe collection from the upper peninsular of Michigan. Mics. Publ. Mus. Zool., Univ. Michigan, 87:1-50.
- TRAUTMAN, MILTON B. 1957. The fishes of Ohio. Ohio State Univ. Press. 683 pp.

## AMPHIBIANS AND REPTILES

- BISHOP, S. C. 1943. Handbook of salamanders. Comstock Publ. Co., Ithaca, N. Y. 569 pp.
- BREUKELMAN, JOHN, and ROBERT F. CLARKE. 1951. A revised list of amphibia and reptiles of Chase and Lyon counties, Kansas. Trans. Kansas Acad. Sci., 54:542-545.
- , and ALLEN DOWNS. 1936. A list of amphibia and reptiles of Chase and Lyon counties, Kansas. Trans. Kansas Acad. Sci., 39:267-268.
- , and HOBART M. SMITH. 1946. Selected records of reptiles and amphibians from Kansas. Univ. Kansas Publ. Mus. Nat. Hist., 1:101-112.
- CAGLE, FRED R. 1954. Two new species of the genus *Graptemys*. Tulane Stud. Zool., 1(11):167-186.
- CARR, A. F., JR. 1952. Handbook of turtles of the United States, Canada, and Baja California. Cornell Univ. Press. 542 pp.
- CLARKE, ROBERT F. 1956. Distributional notes on some amphibians and reptiles of Kansas. Trans. Kansas Acad. Sci., 59:213-219.
- SCHMIDT, KARL P. 1953. A check list of North American amphibians and reptiles. Amer. Soc. Ich. and Herp. 208 pp.
- , and D. D. DAVIS. 1941. Field book of snakes of the United States and Canada. Putnam's, N. Y. 378 pp.
- SMITH, HOBART M. 1934. The amphibians of Kansas. Amer. Midl. Nat., 15(4):377-528.
- . 1946. Handbook of lizards: lizards of the United States and Canada. Comstock Publ. Co., Ithaca, N. Y. 557 pp.
- . 1956. Handbook of amphibians and reptiles of Kansas. Univ. Kansas Publ. Mus. Nat. Hist., Misc. Publ. No. 9. 356 pp.
- WRIGHT, A. H. and A. A. WRIGHT. 1949. Handbook of frogs and toads. Comstock Publ. Co., Ithaca, N. Y. 640 pp.
- . 1957. Handbook of snakes of the United States and Canada. Comstock Publ. Assoc., Ithaca, N. Y. 1105 pp.

## BIRDS

- ANDREWS, TED F., and H. A. STEPHENS. 1956. Colonies of great blue heron (*Ardea herodias*) in Kansas. Trans. Kansas Acad. Sci. 59(3):279-308.
- DOWNS, THEODORE, and JOHN BREUKELMAN. 1941. Birds of Lyon County and Vicinity. Trans. Kansas Acad. Sci., 44:389-399.
- GOODRICH, A. L., JR. 1946. Birds in Kansas. Report of the Kansas State Board of Agriculture, 64(267):1-340.
- PEARSON, T. GILBERT, *et al.* 1936. Birds of America. Garden City Publ. Co., Inc., Garden City, N. Y. pp. 1-289.
- PETERSON, ROGER T. 1941. A field guide to western birds. Houghton Mifflin Co., Boston. pp. 1-240.

- . 1947. A field guide to the birds. Houghton Mifflin Co., Boston. pp. 1-290.
- POUGH, RICHARD H. 1949. Audubon bird guide (small land birds). Doubleday & Co., Inc., Garden City, N. Y. pp. 1-312.
- . 1951. Audubon water bird guide (water, game and large land birds). Doubleday & Co., Inc., Garden City, N. Y. pp. 1-352.
- TORDOFF, HARRISON B. 1956. Check-list of the birds of Kansas. Univ. Kansas Publ. Mus. Nat. Hist., 8(5):307-359.

## MAMMALS

- ALLEN, PAUL. 1937. Kansas mammals. Unpublished Master's thesis, Kansas State Teachers College of Emporia. pp. 1-77.
- BLACK, J. D. 1938. Mammals of Kansas. Thirteenth Biennial Report, Kansas State Board of Agriculture. pp. 1-217.
- BOATWRIGHT, VIRGIL E. 1953. Seasonal variations of small mammal populations in Lyon County State Park. Unpublished Master's thesis, Kansas State Teachers College of Emporia. 67 pp.
- CLAYTON, KENNETH. 1952. Some phases of the winter ecology of some small mammals in a blue-stem, blue-grass meadow of Lyon County, Kansas. Unpublished Master's thesis, Kansas State Teachers College of Emporia. 147 pp.
- COCKRUM, E. LENDELL. 1952. Mammals of Kansas. Univ. Kansas Publ., Mus. Nat. Hist., 7(1):1-303.
- GIER, H. T. and G. V. R. BRADSHAW. 1957. Five-year report on the Kansas small mammal census. Trans. Kans. Acad. Sci., 60(3):259-272.
- HALL, E. RAYMOND. 1955. Handbook of mammals of Kansas. Univ. Kansas Mus. Nat. Hist. Publ. No. 7. pp. 1-303.