JOURNAL 1950

JAMES W. BEE

JWB
1950

500224-1

museum of Natural History, Lawrence, Douglas County, Kansas

Feb. 24, 1950 [this is the year the field number system was changed. now-year, month, day-consecutive number]

Concluded observations of the Great Horned Owl at the museum today. See notes of Jan 4, 1950 for first appearance of ♂ and ♀ at museum. In reconstructing the history of these owl the following is recorded from previous notes.

a. First egg found the morning of Jan 18, 1950. Egg placed on protected ledge of window at N. E corner of upper section of building, some 12 feet higher and approx 30 from nest of previous year. This nest placed on east exposure where sun covered during the earlier part of the morning. Last year the N. exposure did not allow sun at any time. The site was a precarious one in that no nest was constructed and the eggs were placed directly upon the stone ledge. The eggs were kept from rolling off by an accumulation of dirt and debris which had collected at the outer limit of the ledge.

b. Second egg found the morning of Jan 21, 1950. During the time of the first and second egg the bird was undergoing adjustment to interference and as a result was spending nearly all day away from the nest ~~and~~ but near (150 feet) the nesting area. Temperature during this period were occasionally near freezing or below. This relation may be a normal one until the setting impulse takes affect. From that day (Jan 21) until about the 23rd and 24th, she was pronged to frequently leave the nest upon being disturbed. However from that time on until the desertion of nest, was continually at the nest.

c. The third egg was deposited at a later date but exact day unknown. It was observed in the nest on Feb. 3, 1950. At this date, if she were forced from her nest, would reappear in about 4 or 5 minutes after making three or four approaches. When resettling on eggs would adjust each one by placing it into proper position with her bill. Only one bird observed to date except at night when two bird were heard calling practically every night after dark. The incubating bird appeared to be the same one whenever observed.

d. Eggs found deserted Feb. 19, 1950. but probably actual date of desertion Feb 18, 1950 in late afternoon or nite. If the bird was killed, it would have been a logical date because most of the hunting by boy is done during Saturday afternoon. The eggs were found one foot below the nest upon a secondary plateform. The eggs were apparently blown from ledge. From this date of desertion to the 24th Feb neither of the owls were heard or observed in the campus area by either myself or the night watchman who covers the entire area several times during the night. He reports just previously to desertion, - three owls at Fraser, Library, Strong and other buildings on the campus realm and appear a black away. He has not observed or heard these owls since the date of desertion.

e. Placed eggs back on ledge the same day as found displaced to see if owl would react to the egg stimulus and also see to what

Jan Dec
1950

extent these unprotected eggs would stand up under the frequent visit of fox squirrels on these same ledges. They remained intact up to 24 Feb at which date they were removed from the ledge. The fox squirrels were observed to remain within a foot or two of the bird during period of incubation. At one time, one passed by within 1 foot of owl and was apparently taken by surprise at it jumped down to the lower ledge with an instantaneous yelp. On date of removal of these eggs, they presented evidence of being shifted slightly, presumably by wind. An artificial elevated ledge of debris kept them from being dislodged to the ledge below.

f No attempt at nest construction except a few feathers of the bird which were intentionally pulled from her body. These feathers were in compact groups which would indicate removal by intention. First ones extracted on second day of laying. They were removed as soon as deposited by the circulating winds.

g. The following weights and measurements taken from these set of eggs on this date: Collection number (500224-1)

Sequence of egg Laying	Weight of egg (grams)	Size of egg (m.m.)	Weight of emb. (grams) (without yolk sac)	Weight of yolk sac. (grams)	Weight of egg minus weight of emb. & yolk sac (grams) (m.m.)	Yolk sac content (m.m.)	Percentage weight of embryo and yolk sac to egg wt.	Percentage of embryo and yolk sac to egg wt.	Percentage of embryo weight to egg weight.	Remarks.
1st egg Laid Late ~~Jan~~. 18, 1950	69.0	59.0 x 48.2	20.2	9.2	80.0	2.37	.42	.45	.29	
2nd egg Laid Late Jan. 20, 1950	64.8	57.4 x 46.4	20.4	11.3	82.0	2.46	.49	.55	.31	
3rd egg Laid ? (Probably Feb 1st)	60.7	56.8 x 49.2	14.6	10.9	65.0	1.88	.38	.93	.18	

Museum Natural History, Lawrence, Douglas County, Kansas

Feb 25, 1950

Have not observed or heard the Great Horned Owls at this date. It would appear even more likely that both the male and female were killed.

Museum Natural History, Lawrence, Douglas County, Kansas.

Feb 27, 1950

Night watchman reports 2 owls (Great Horned) on building across street south of Snow Hall. This is approx. 3 blocks west and south of the deserted museum nesting sight.

Museum of Natural History, University of Kansas. 500228-3

Kansas, Douglas Co.;

Feb 28, 1950

At apprat. 3:30 P.M. three flocks of Snow and Blue Geese flew over the Museum. The groups consisted of apprat. 86, 92, and 70, and were evenly spaced at about 3 minute intervals. They flew directly north across the Kaw River and valley without pausing to investigate their usual resting grounds near Lakeview. These groups performed in a manner that I have never witnessed before. They would frequently break lines into secondary groups but always reform into long continuous ones again. It would appear that the high winds were breaking up their usual formation and all energy was exerted to keep together. The line would whirl up and down and around like a snake body with the head held secure. One was impressed with the fact that certainly a leader had no control over the groups. All three groups reacted in the same way so it was not an individual group reaction. Another group of about 80 birds was observed to the east and flying in a more westerly direction. All flocks about 200 feet above the hill crest. Farm reports over 10,000 snows and blues in the river bordering fields near Lakeview, N. W of Lawrence, Sunday, Feb. 26, 1950. The ducks are mainly Mallards and Pintails.

3½ mile N. and 2½ miles west of P.O, Lawrence, Douglas County Kansas

Mar 2, 1950

Apprx 12,000 snow and blue geese in river and adjoining fields. not restless as generally found later in the seasonal migration. 40 canadian geese and 2 white fronted geese. Mallard and pintails common with about 5-8,000 pintails. Lesser Scamp, Redheads, Canvas backs, Blue wing teal, 1 Shoveller, widgeon, Baldpate, Am. Merganser present. Canadian Geese not as restless of Snows or Blue Geese.

3½ miles N. and 2½ miles west of P.O. Lawrence, Douglas County Kansas

March 6, 1950

R. N. Fredrickson of museum reports 800 Blues and snow geese this A.M. at 4¾ miles N. and 3 mi. W. P.O., Lawrence. They were restless and loathe to return to the ground when disturbed. 80 Canadian Geese in same area. Also 2 White fronted Geese. Ducks present but in fewer numbers. Am. mergansers in Lakeview Lake. This P.M at sundown Checked the river at above captioned locality and did not see or hear the geese or ducks. About 300 ducks in Lakeviews Lake. Redwings establishing their territories

[insert 2 pages beyond]

museum natural History, Univ Kansas, Lawrence, Kansas

March 19, 1950

A second laying of the great horned owl on museum building being placed on bare ledge. Few feathers from adult lured near egg. (bunches of feathers V)

March 22, 1950

Great horned owl layed second egg. The adult has been off egg in daytime but incubates at night.

500307-4

Museum of Natural History, Lawrence, Douglas County, Kansas

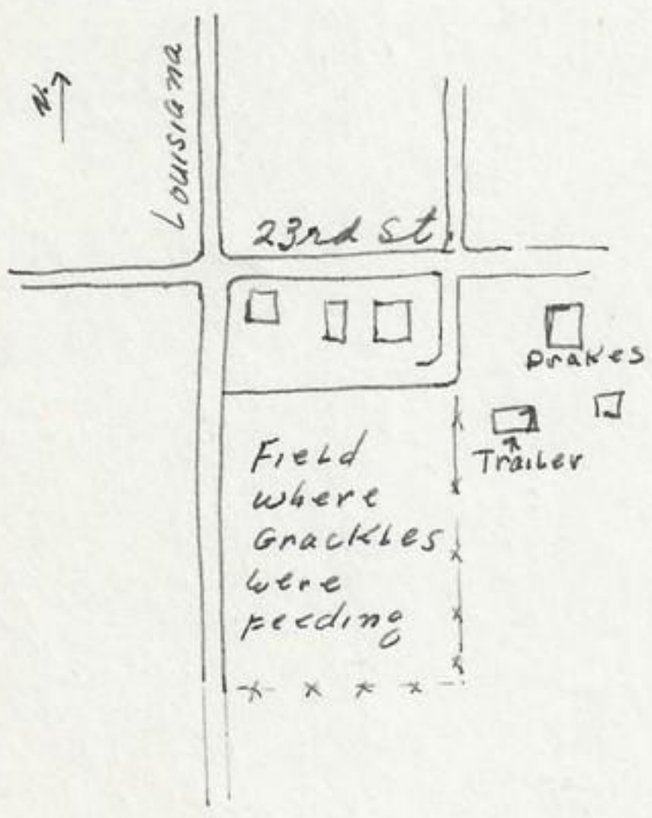
March 7, 1950

The last 4 or 5 days have been mild and spring-like. Today cold, with high winds ranging up to 50 mile per hour at airport, and short snow flurries. No snow deposit remaining. Winds continuous Forecast of high winds and 22°F tonight and with continual wind and lower lower temperatures tomorrow. This condition must have considerable effect upon migrating birds and local birds which have started their nesting cycle. Sunday march 5, 1950 O. King collected a few Peromyscus leucopus and a few Sigmodon hispidus from about 26th South on Louisiana in Lawrence, Dr. Fitch reports greater number of Microtus ochrogaster from Robinson Tom area (Mus. Nat. Hist Reservation).

307 W. 23rd, Lawrence, Douglas County, Kansas

March 9, 1950.

Made census count of Bronze Grackle from a color transparency. This photograph was taken Oct 15, 1949 from above address at the Drake residence. The field was approx 250 feet x 500 ft and consisted of grazed grance. From the photograph counted 13,400 birds from grid sections. This number is somewhat higher then the estimate of 1948 but at that time the fact was presented that the population might actually only represent 1/3 of the true number of birds. For small bird of this size one greatly underestimates the exact number of individuals. As these birds left the area they formed a long continuous line of approx 3/4 of a mile in length.



Museum of Natural History, Lawrence, Douglas County, Kansas

March 11, 1950

A flock of 12 Snow and Blue geese were observed flying north over the museum at about 9:00 A.M. Day cold (22°F) and slightly windy. Cloudy.

Museum of Natural History, Lawrence, Douglas County, Kansas

March 12, 1950

A large flock of geese, presumably Canadians, flew north across K.U. campus at approx. 7:00 A.M this morning. Day cloudy, sub freezing temperatures and slightly windy. Observed Scala visits (0 & 9) at 307 W. 23rd at about 6:30 A.M. There has been an noticeable increase in juncos, starling, chickadees, robins at this area. Probably migrating forms.

500317-5

307 W. 23rd St., Lawrence, Douglas County, Kansas

17 Mar. 1950

Brown Grackles at trailer but not as yet establishing their territories.

18 mar 1950

Grackles observed yesterday not in area today. They may have been migrating farms only. Mourning doves calling

← (see back of page 500228-3 for march 19 entry)

20 march, 1950

First purple martin observed this season at 307 W. 23rd St.

← (see back of page 500228-3 for march 22 entry)

museum of natural history, Univ. of Kansas, Lawrence, Kansas

23 march 1950

Flock of geese, (Branta canadensis ?) flying directly north over museum at 8:45 P.M. They were not flying much over 200 feet above the museum. Several times this evening a plane has been flying low of campus and am wondering just what would happen if one of the geese groups should collide with this plane.

museum of natural History, University of Kansas, Lawrence, Kansas.

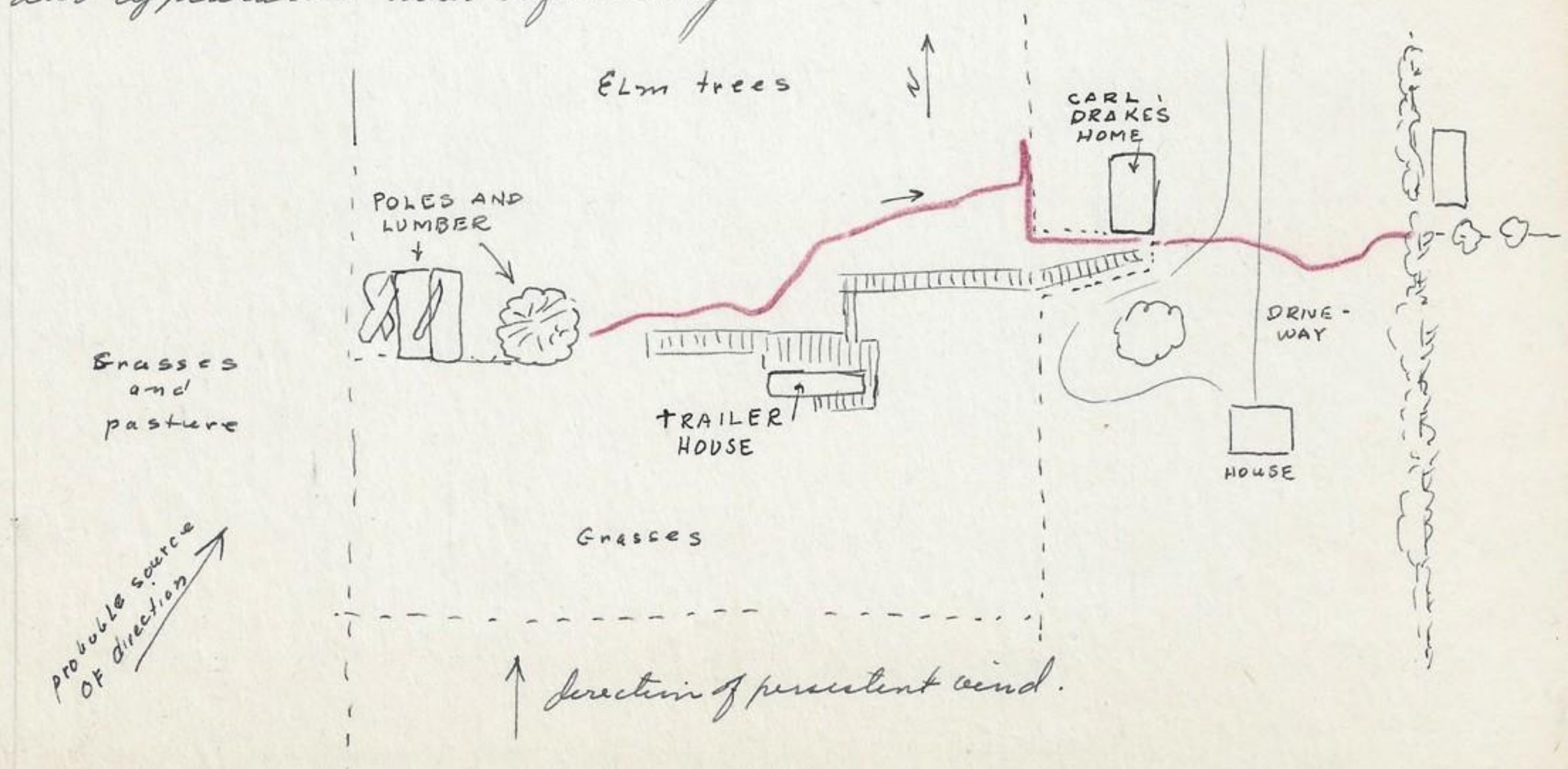
25 march 1950

Observed first Say Phoebe on campus today.

307 W. 23rd Lawrence, Douglas Co. Utah.

26 marche 1950

all day with strong winds. These winds from the south were about the hardest and persistence winds that I have ever observed in Lawrence since 1948. It was almost impossible for certain birds to remain in the trees. during this condition observed a (mature) Marmalo. v. bunkeri at the trailer for the first time. Its actions and appearance was definitely associated with the wind condition.



500319-7

Museum of Natural History, Lawrence, Douglas Co. Kansas

29 March 1950

Observed a flock of 8 Bombycilla cedorum on the campus this A.M. Gene Hrum reports 2 birds at 1000 St. and Mississippi in Lawrence the day before.

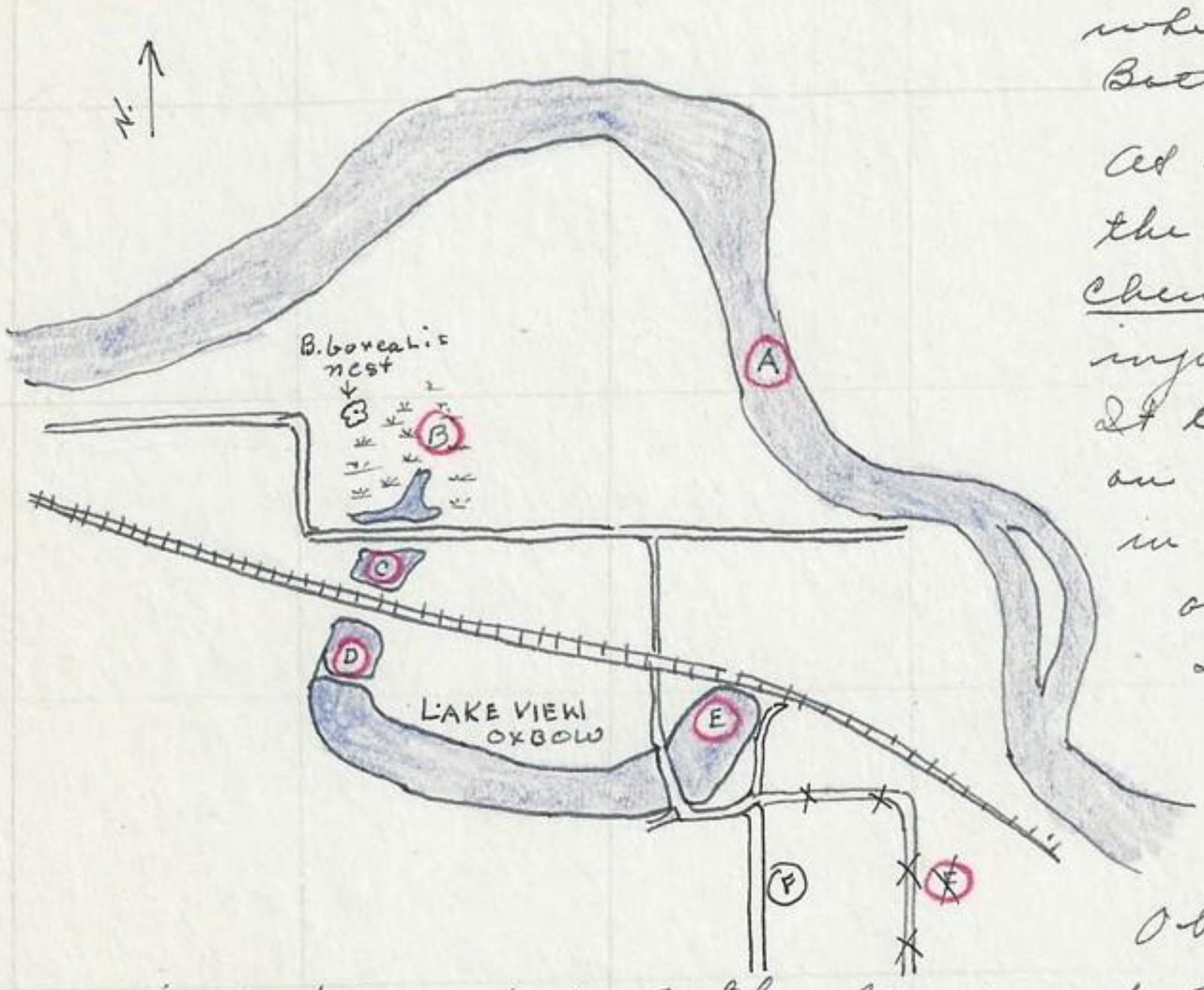
Lake View, 2 mi N. and 3 mi. W. Lawrence, Douglas Co. Kansas

30 March, 1950

Mrs and Mr Bert Chewning and myself made the following observations at the oxbow lake between 4:30 P.M and 6:00 P.M Day clear, warm and with slight wind. En route from Lawrence observed two Buteo borealis, 3 Lanius ludovicianus, 8 Sturnella magna, 2 Zenaidura macroura, 2 Icteria virens, no grackles observed in this area while in the Kaskell Bottom area are common.

At the lake area made the following observations.

Chen hyperborea: One injured bird in area D. It raced swim and stand on left foot only. Remained in area while 45 minute observation was made. It was not associating with the shovelers, pintails and other ducks in this area.



Observed what I considered a significant reaction of the snow and blue geese. They were first observed flying in area A. They were at that time in a mixed flock of 21 snows and 27 blues. (No hybrids at least in flock of 7 pure snows) The arrangement was much on the order of probability distribution. From point A. they flew ~~south~~ west 2 miles and then return to ½ mi east of area A and line back to river area at point A. During the first part of this flight there was considerable miping of the two species but by the time they had worked west and back again were segregated into 100% blue and 100% snow and while they were in a more or less compact flock the blues were about 150' higher in flight line. As they made their landing in one or two wheels the flocks became mixed again with segments of 2 snow & 3 blues, 4 blues and 2 snow etc. This situation would suggest at least a psychological if not a structural difference of flight pattern between

Its movements would definitely suggest an animal on a long range movement and in a definite direction. It was first obtained by Annette near the pile of fence posts where it was running and walking from tree to tree. It turned twice in front of the track and not over 15' away. It continued thru the elm trees both running and crawling according to the degree of open exposure. It was checked at fence line where it cautiously followed along and then reversed course as indicated. Across the clearing beyond it ran to osage orange fence row. It was last observed continuing east along the south bordering fence line. From an acquaintance of the conditions at trailer would say that it would not receive sanctuary at any point to the north along the general line of its travel between 620 west and east beyond the Haskell Institution some 1 mile beyond. To have arrived at the trailer it would have had to travel at least 3 blocks across fields and along fence lines from any point to the south that could be considered a point where it could have lived. In general it was at least 3 blocks away from likely animal denning and was going purposefully in a straight direction that would have been formidable for at least a mile. It is possible that the high winds could have "blown" it off its course by confusing or destroying all ordinary trail odors or is it likely that it is a normal spring local form of migration. It was traveling at 90° degrees to the movement of the wind.

307 W. 23rd St., Lawrence, Douglas Co. Kansas

29 March 1950

Grackles still in small groups and without signs of establishing territories as yet. They are commonly found congregating at 1/2 mi east and 4 1/2 mi. S P.O. Lawrence, in the evening where the remain during the night. In this area is an impenetrable 4 or 5 acres of thorny osageorange bushes and now high enough to give them safe roosting protection. The development of this area might have been the reason for the change of roosting in trees at the above address. (trailer woods).

Museum of Natural History, University of Kansas, Lawrence, Douglas County, Kansas

29 march 1950

The night watchman for the university reports two Great Horned owls, one from Snow Hall and one some 200 feet away at Strong Building. They were observed and heard late 28 march 1950 and were calling back and forth between these two buildings. They could be heard from the museum some 1/4 mile away.

these two closely related forms. In area F observed a flock of 65 Spatula clypeata and 152 mareca americana. and 2 Anas p. platyrhynchos feeding thru an unplanted last year corn field. The bald pate continually offered their call. They left the ground upon our arrival but return after making 2 or three circular flights overhead. There were no shorebirds or ducks in river below area 4. At area B found the marsh drained and soils dry. Approx 18 muskrat houses were left high and dry. The Spizella arborea, Melospiza melodia were in the dry bent rushes. Mrs Chenoweth panted out a nest of Buteo borealis used succesfully last year. In area C found the waters low with an unusual concentration of frogs (?) They were arranged apprx every 3 feet apart. and calling in a most subdued and agreeable call. on the muddy shore line when algae was generally distributed forward 2 Tatanus flavipes, 5 Pisobia melanotos, 3 Pisobia baindi (?) The birds may be questionable. These birds, boucaca, came close to being Baird's than Semipalmated. 4 Oxyechus vociferus were also feeding along with the other birds. On two occasions 8 Querquedula discors alighted twice and then left. In area D observed the one blue goose mentioned above and also. 12 Spatula clypeata, 4 Dafila acuta, 4 Nettion carolinensis, 3 Tolanus flavipes, 2 Pisobia melanotus and 5 Pisobia baindi. These sandpipers were feeding at the extreme south end of this segment of the lake where the seepage waters were coming into this cut off section. The low waters have created a dry barrier across the lake at this point. 5 Oxyechus vociferus line the muddy shoreline. A Ardea herodias was observed by the Chenowny 3 days previous. Several sparrow and 1 Centurus carolinus in woods at point where observations were made 30 x scope used. In area E found six species of ducks. represented in 28 birds. They are as follows. 5 Charitonetta albeola at the extreme north end (2 females and 3 males); 2 Dafila acuta, 2 Anas p. platy; 8 Spatula clypeata, 3 Nyroca americana and 2 Frelica americana. They were separated into four groups. The Agelaeus phoeceus were in territories, mainly males but occasionally a female present. Returned to Lawrence. Mrs Chenowny reports a Accipiter velox taking an English Sparrow at their home in Lawrence. It fed on this bird for 20 minutes.

3 1/2 mi. N and 2 2/5 mi. W. P.O., Lawrence, Douglas Co., Kansas

2 April, 1950

Fredrickson reports 1 Grus canadensis (tabida?) in field near edge of the Kaw River. This bird left and flew west up the river. It did not returned. He observed red head and well qualified to identify. Day cloudy, windy. Apprx 2:30 P.M.

From: Miller, R. F., and Ivan L Boyd.
1947 Migration Records of Birds in Eastern-Central Kansas. Transactions Kansas Academy of Science, vol 50, no 1, 1947

500402-9

For reference to indicate maximum period of spring migration in this area. It is deposed to explain the absence of a high during the fall migration.

307 W. 23rd, Lawrence, Douglas Co., Kansas 500406-10

April 6, 1950

at trailer observed a ♀ Turdus migratorius test out the suitability of a nesting site in an elm tree. The bird would momentarily sit in crotch of tree and then get up and after turning around would sit again in a new position. At each time she would turn from one direction to another as if actually forming the cup of the future nest. After 2½ minutes left. 9:00 A.M.

April 7, 1950

Robin of about testing another nesting site 18 feet from where observed yesterday 9:00 A.M. Grackles still in flocks The birds showing interesting in area a week ago seem to be present one day a gone the next.

April 15, 1950

Observed the robin and Bronze Grackle carrying dried grass to nesting trees at 307 W. 23rd, Lawrence, Kansas.

April 16, 1950

Chimney Swift flying over area today. Cardinal copulating

Museum of Natural History, University of Kansas, Lawrence, Kansas

April 16, 1950

Night watchman reports 2 Great Horned Owls, one on the museum building (Dyche) and one 150' away on the museum of art across the street They were calling back and forth at 1:00 A.M.

307 W. 23rd Street, Lawrence, Douglas Co., Kansas

April 21, 1950

Brown trasher building nest in bush at Carl Drakes residence.

307 W. 23rd Street, Lawrence, Douglas Co., Kansas.

April 24. 1950.

Robin starling to bring nesting material to nest site (see notes April 7, 1950). This final site was chosen just in front of trailer. a mocking bird passed thru the area.

307 W. 23rd Street, Lawrence, Douglas Co., Kansas.

April 28, 1950.

Robin still building nest this a.m at 8:00. (see notes April 7, 1950 and April 24, 1950. They appear to work mainly in the morning from day. break to about 9:00 A.M. On 4 occasions in one hours observation of this nest, four Bronzed grackle and 1 English Sparrow robbed this robin nest of a mouth full of dried grasses. The sparrow took only a feather. First large groups of Myrtle warbler passing thru the area.

aspect of their nesting activity. This may be governed by an established reaction factor. Those on the extreme peripheral edges may represent unincompatible or young individuals. The row of juniper trees generally supported one nest per tree. Two trees did not have nests. It was observed that those birds on the W and S side of the edge were poorly constructed. The closet spaced nests were 10 feet apart. The farest nest from its neighbors was 88 feet apart. The average distance in community groups would be apprat 30-40 feet apart. Many of them were 20 feet apart. The average area required for territory works out to be approximately 750 sq feet in the elm grove. Those in the juniper trees averaged 333 feet per territory. The minimum requirement as represented by the pair of nests 10 feet apart would would be, theoreically 25 sq. feet. The area per nest in the 49,226 sq foot area would be apprax. 1640 sq feet per nest.

307 W. 23rd Street, Lawrence, Douglas County, Kansas.

May 4, 1950

Winds starting this afternoon. They are predicted to reach high velocity tonite and to morrow. Activity in elm grove normal.

307 W. 23rd Street, Lawrence, Douglas County, Kansas.

May 5, 1950

Winds increased to maximum velocity at about 11:00 A.M. from S.W and W. Air Port reports gusts of 78 miles per hour. Winds subsided at about 5:00 P.M and at sundown nearly Calm. It was interesting to observed the effects of this wind upon the activities of the birds. The robin remained upon the ground but in the general area, within 40' of base of tree, practically all day. Several attempts at setting upon the nest was proben too difficult. All the grackles were on the ground throughout the day during the high winds. They were observed to be gathering in the lee of the trailer and on feeding at the windward edges of the grove. Many other grackles in adjoing areas were observed feeding upon the ground on lawns. The robbin were not in evidence during the day. One tree that supported a grackle nest at 85 feet down lane between 51 and 69 foot markers fell down during the night and at 4:30 P.M a grackle was tearing down the nest and carrying the material to another, new, nesting site. Have observed considerable nest mortality but will wait until Sunday to recheck the entire area. This will give time to show new nesting progress.

500430-12

307 W. 23rd Street, Lawrence, Douglas Co., Kansas

April 30, 1950

A cottontain is favoring a certain area in grass 15 feet SW of trailer. this a.m.

307 W. 23rd Street, Lawrence, Douglas Co., Kansas

April 30, 1950

This evening the cottontail has dug a 5 inch hole into the ground and has lined it with grass. The lining material is taken by the mouth from a dried grass area 4 feet from the hole and carried to the nest where it is placed, without visable external movement into the hole. At one moment it stood upon its back legs and pressed the grasses down over the hole to help camouflage its whereabouts. The top of the nest was covered with a thin layer of dry grass. During the afternoon the rabbit is observed about 100 feet to the north among a stand of elm trees. Their activity is mainly performed in the morning hours. The Grackes in the elm grove are still actively gathering material. Robins nest mainly finished and birds in general area. Their activity for nest building is mainly during the earlier morning hours of the day. The trees are now showing considerable green but one can see the grackle nest throughout the elm grove area (from one point). In a few days I expect that they will be hidden by the new developing leaves.

307 W. 23rd Street, Lawrence, Douglas Co., Utah

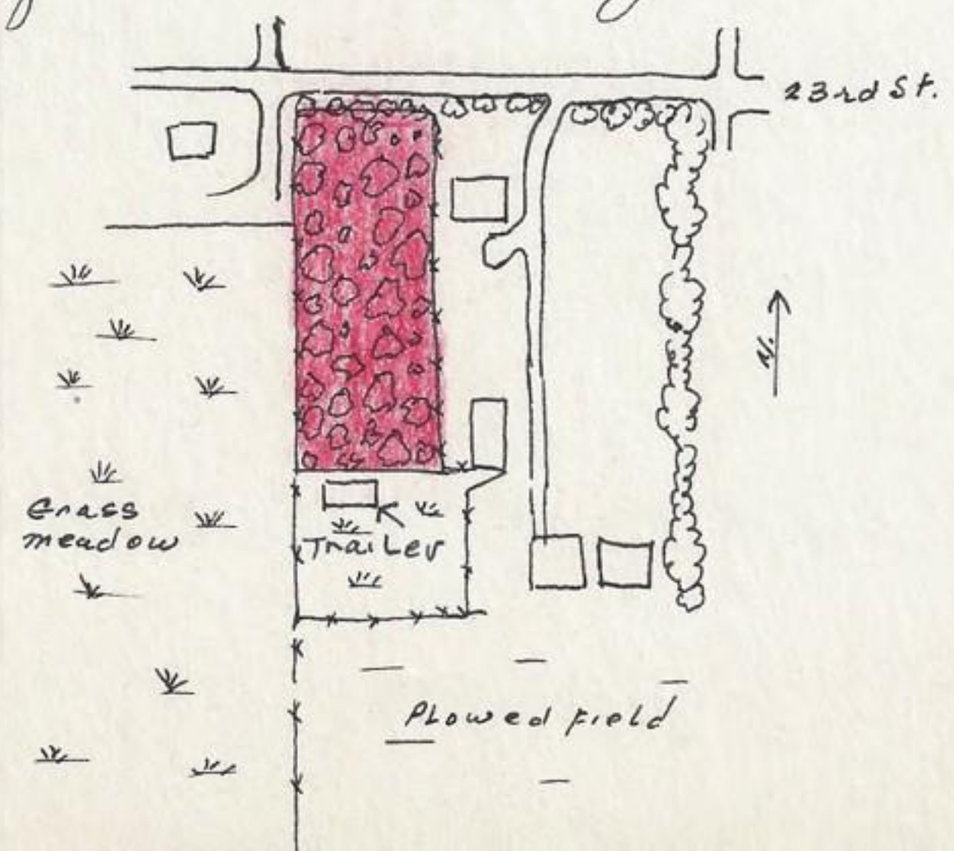
May 2, 1950.

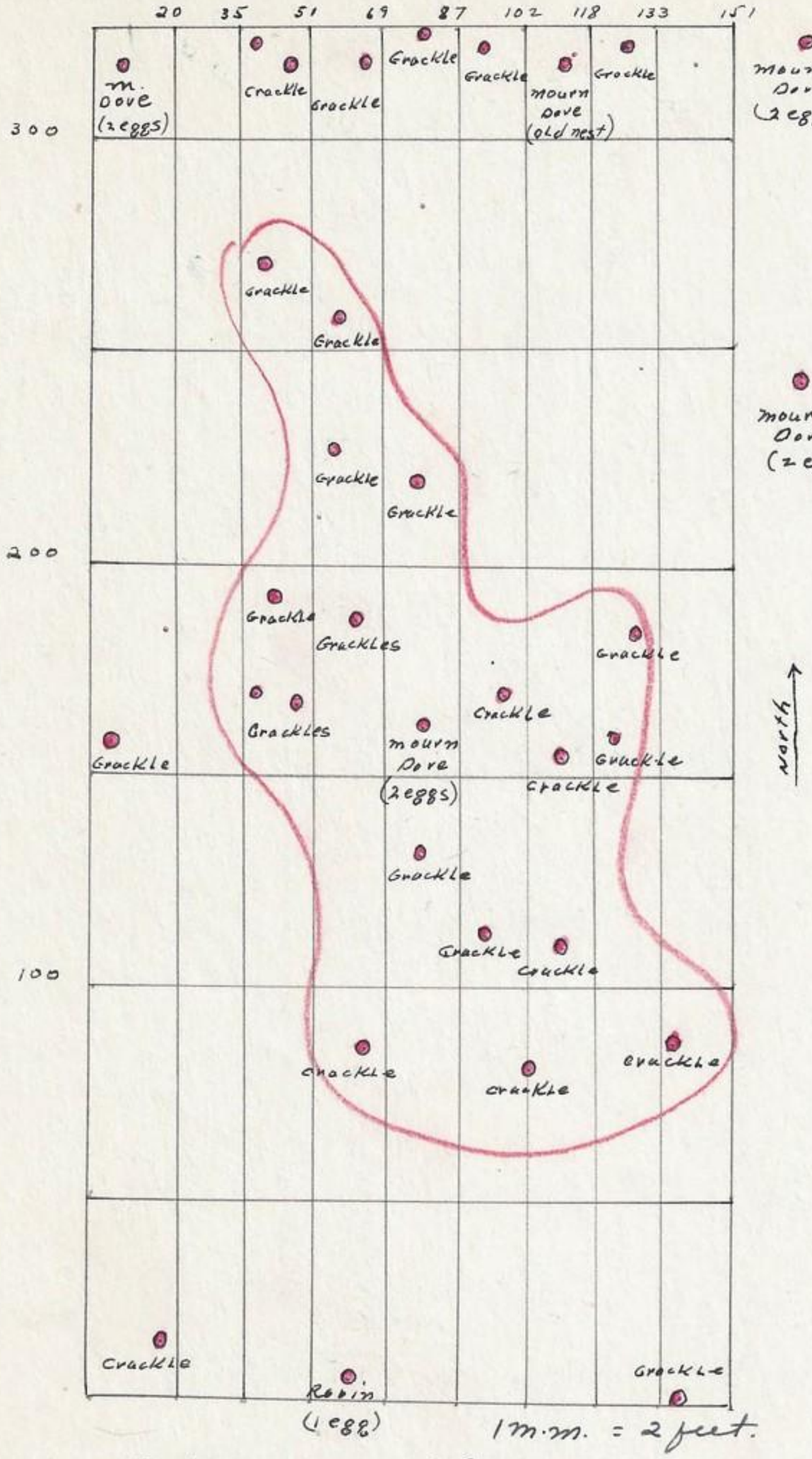
Male and female robin (see notes April 7, 1950) copulating this morning at 9:00 at 2 feet from nest.

307 W. 23rd Street, Lawrence, Douglas Co., Utah.

May 4, 1950

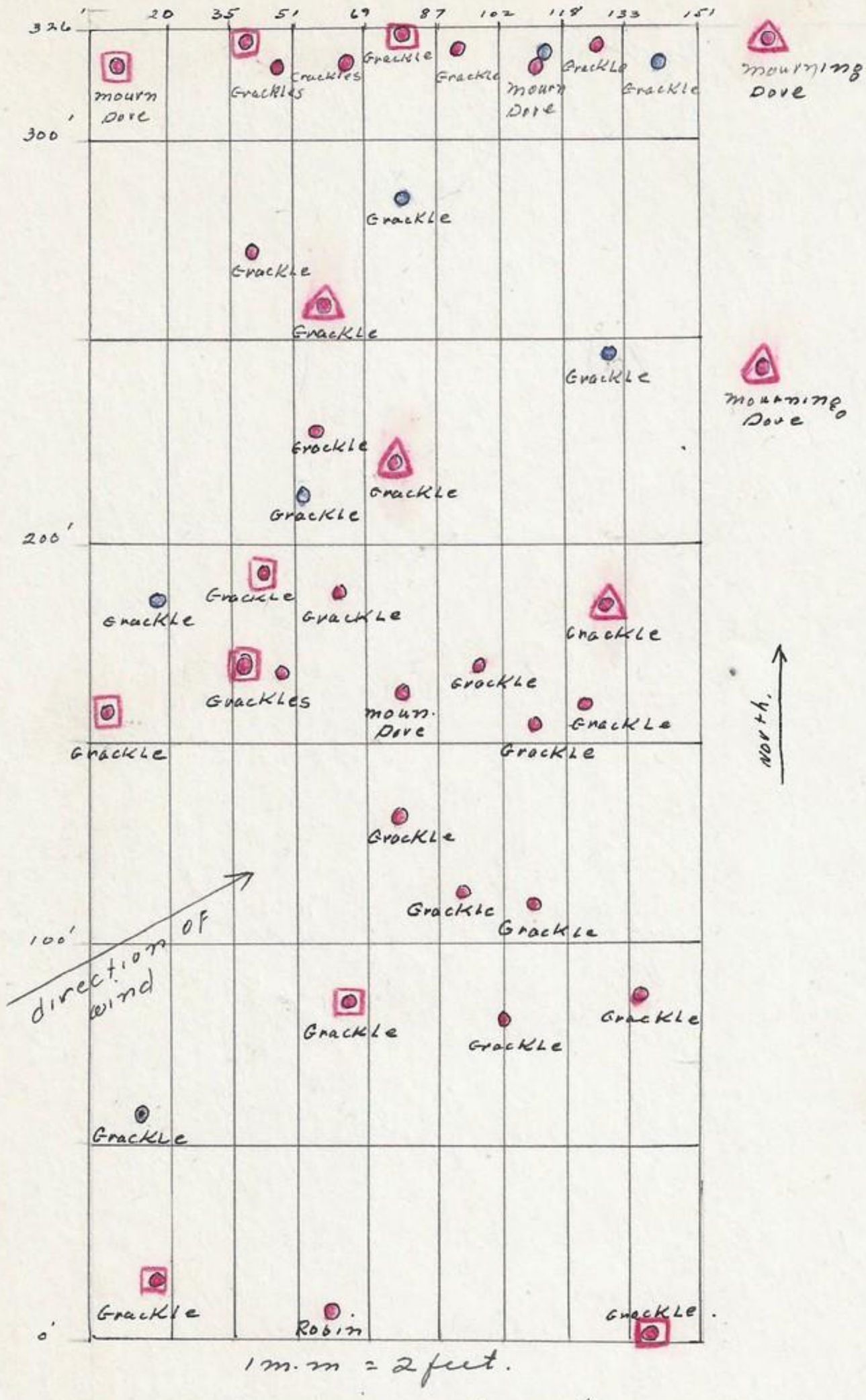
Robin nest with 1 egg in this a.m. at 8:30 A.M. At 9:30 the ♂ attempted copulation while the ♀ robin was on the nest. They both left immediately after with the ♂ robin chasing the ♀. At 10:00 A.M made a census of nests in the elm grove in the Carl Drake residence area. The section mark in red the research area. South and SW of this area is marked by open fields and and without wind brakes. This section extends to the Wakarusa River. Occasional habitation. The area to the north and east type of sub-urban. There is a sharp break at the Drake residence between the city and country sections. The grove consists of ah old wind ~~break~~





break established at a time when such lands were exempt from taxes if used for such purposes. Apparently they were planted in rows at approx 15 feet apart as the orignal rows still are plainly visible and are governing the growth pattern of the grove. They are approx. 25' high. This grove of elms was section off and the number of nest recorded. It is interesting to observe that the morning doves prefer to nest at the peripheral edges of the elm grove with the following exception in which case the bird chose a nesting site in the center of the grove. These nest were placed in such a way that they received the greatest protection from the severe winds from the south and west. The nests of the Grackles also show a factor of selectivity for wind protection. The nests at the upper end of the tract are closely spaced and are governed by a row of juniper trees across the grove. The area in the N. E. section show the effect of trimming of trees in this area 2 years ago. For all tense and purposes this area appeared as the rest of the grove but differed only in slightly sparser aggregation. The main groups of the nesting grackles appear to have selection a compact section of the area and may represent a community aspect

500507-14



307 W. 23rd Street, Lawrence, Douglas County, Kansas

May. 7, 1950

Rechecked the elmgrove area at 9:0 A.M. for casualty of nesting sites. The following observations and comparisons were made. Prevailing winds at the time of the destruction of nests (see notes may 5, 1950) were from the S.W. and W. It is apparent that the areas of the greatest damage are those sections taking the brunt of the winds. All mourning doves nests, on the peripheral area of the grove, whether on the lee side or not, were either blown from the trees or nest dislodged and eggs blown to the ground. The one exception was a nest placed in the center of the elmgrove. This bird continued to incubate eggs. It is interesting to note that the mourning doves general choose a peripheral spot for nesting and that the only nest saved was that one placed within the center of the grove. Three and 4 dove nests were destroyed or 75% nest casuality. The one robin nest continued in place and with resumed incubation after high wind. Eleven grackle nests were disrupted, 8 of which were completely blown from the trees. The remaining 4 were dislodge but still remaing in the trees. Six new nests were completed since the wind of may 5th, 1950. Only half of the destroyed nests of the grackle can be

accounted for in deciding that they have not started the reconstruction work or they have deserted the area. One new nest seems to be separated from its nearest neighbor by more than the usual territorial limits suggesting the development of a nest in a new territory. Most of the other new nests can be associated with already established territories. In no instance have the mourning doves rebuild nest except one bird. This bird however probably represents a birds that had just started building after the wind. It is interesting to note that it chose an area 3 feet from a last year M. dove nest in the jumpers. It was incubating eggs. The fallow figure show casuality rates.

Grackle nest blown from trees: 8
" " dislodged and nest building interupted: 3
new grackle nest since May 4, 1950: 6
Grackle nest remaing undisturbed: 17
Mourning nests blown from trees. 1
" " dislodged: 2
" " undisturbed 1

Museum of Natural History, Univ. of Kansas, Lawrence, Kansas.

May 15, 1950

W. G. Frum, graduate student at Univ of Kansas acquired a specimen of Microtus ochrogaster ohionsis (Subspecies ?) from miss nell Rose Hale (her number #37) collected at Spring Valley Golf Course, Wayne Co. (near Huntington, Cabell Co.), west Virginia, collected mar. 12, 1950. This dark specimen lacked the usual ochraceous color of the specimens from Mammoth Cave, Kentucky. Miss Hale had collected several other specimens from this same area. Frum no. 1142. Mr Frum also suggests writing a Dr. Roger Barbour at Ogleby Park, Wheeling, West Virginia. This individual has done considerable trapping in West Virginia and Kentucky.

May 16, 1950

Letter from Olin Webb (may 1, 1950) states the following:
Microtus pennsylvanicus found in Nebraska. (I personally examined skulls)

1. Sweet-water Lake, Cherry Co, Nebraska collected mar 5, 1949. (1 complete skull from undetermined owl pellet.
2. 2 mi nw Clarks, Merrick Co., Nebraska (G.F.P.C. 244, one complete skeleton)
3. 9 mi Prairie, Lancaster Co., Nebraska nov 2, 1947 (6 incomplete skulls from long eared owl pellets.)
4. Dixon County, Nebraska, april 3, 1949. (1 incomplete skull from Dr. Horned owl pellet and 2 incomplete skulls from undetermined owl pellets.)

Microtus ochrogaster from:

1. Valley County, Nebraska
2. 8 mi nw Lincoln, Neb mar 5, 1950
3. G.F.P.C. Holding Plant, Lincoln, Lancaster Co., Neb Aug 15, 1947 (see letter following)
4. Lincoln, 23 June, 1949
5. Niobrara State Park, Knox Co., Nebraska. 12 July, 1949
6. west side of Niobrara State Park, Knox Co., 12 July 1949

500613-16

museum of natural History, Univ of Kansas, ↘ Lawrence ↗ Kansas

13 June, 1950

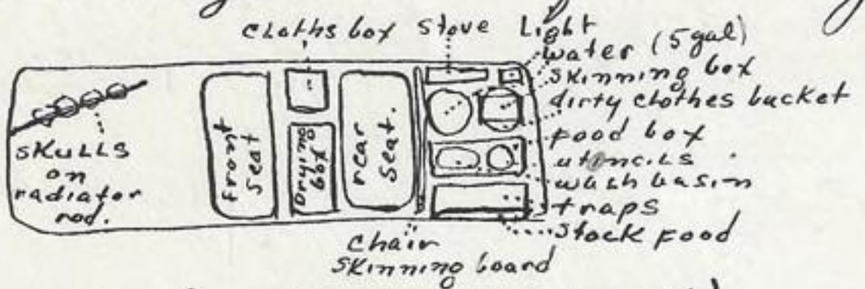
Six white pelicans were observed in river near Lakeview some 2 mi. n and 3 mi. w Lawrence, Douglas Co., Kansas.

3 July, 1950 [see Sept. 8, 1948 for letter and catalogue of grassed of July 3, 1950]

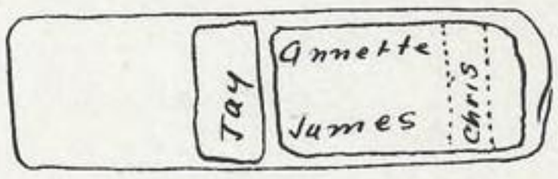
museum of natural History, University of Kansas, Douglas Co., Kansas

14 July 1950

Annette, Jay, Chris and I departed 6:30 P.M for two week trapping trip. including Kansas, Missouri, Iowa, Minnesota, north Dakota, South Dakota, Nebraska. The objective was to get a series of Microtus ochrogaster haydeni from the type locality of Fort Pierre, South Dakota, and to run a transect between the range of haydeni and minor. A series of M. o. minor were to be acquired at Bottineau, north Dakota, its type locality. The usual equipment was carried and arranged in the following manner:

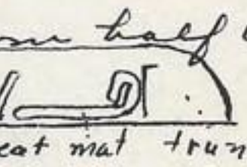


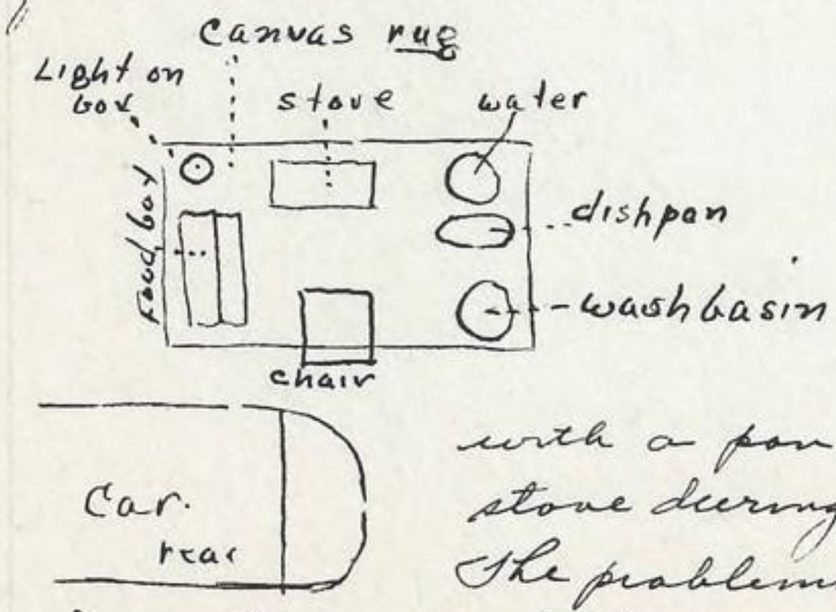
(and back of front seat)



Sleeping arrangement.

The partition between the trunk compartment and the rear seat was removed thus allowing continuous room from front seat to the trunk compartment. A standard mattress was placed over drying box - cloths box, rear seat, three rear of seat and into trunk compartment thus making a continuous sleeping area for the two adults. Jay slept on front seat and Chris on a wide board placed between windows and forming the rear platform above the rear seat back. The mattress & bed remained in tact while traveling except bottom half was removed from trunk compartment where it rested this This fact of permanent sleeping quarters for Annette & myself and Chris was an important feature of convenience in that the beds were more & less ready for use when camp was being set up or while riding in the car. To make or break camp was only a matter of 5 or 10 minutes as compared to an hour or so when tents are used and all equipment must be shifted around to set up a camp. Preparation for meals like thus:





The canvas section made a very useful rug on which to operate, eliminating dirt and another foreign material from interfering with the cooking. The dishes were usually washed in the dish pan in cold but soapy water and then after the water was poured off, they were scalded with a pan of hot water which was heating on the stove during the time the food was being served. The problems on a trip of this sort are, in order of importance, as follows: 1. Protection of mosquitos during the sleeping hours (particularly for children), 2. adequate clothe protection both for sleeping & during the day. 3. adequate water (8 gals per day per 4 persons).

500714-17

CANADA

4 3/10 mi n Battineau, 2100 ft., Battineau Co., north Dakota.
3 5/10 mi. n Battineau, 1920 ft., Battineau Co., north Dakota
2 1/10 mi. n Battineau, 1900 ft., Battineau Co., north Dakota
22 July, 1950

22
21
Rugby
Towner
minot
24
23
4 mi. w Leeds, 1400 ft.,
Benson Co., north Dakota
21 July, 1950
20
19
18
Devils Lake
2 mi. w Fort Totten, 1400 ft.
Benson Co., north Dakota
20 July, 1950
9/10 mi. S Mad
2090 ft., Mc Lean Co.,
north Dakota
23 July, 1950
Carrington
17
NORTH DAKOTA
washburn
25
26
Wilton
16
James town
15
4/10 mi n moffit
1640 ft., Burleigh Co.,
north Dakota.
23 July, 1950
14
13 verona
3 mi. w cayuga
1000 ft., Sargent Co.,
north Dakota
18 July, 1950
Edgeley
Oaks
12
11
10
9
8
7
Jerous Falls
Fairmount
6
5
4
4 mi. n w Ashley
1420 ft., Ottertail Co.,
minnesota
17 July, 1950
Sauk Center
7 3/10 mi. E and 1 2/10 mi S Oakes
1000 ft., Sargent Co., north Dakota
19 July, 1950
Missouri River
Linton
27
mound city
28
Swan Creek, 13 mi
S Selby, 1600 ft.,
Walworth Co., north Dakota
24 July, 1950
SOUTH DAKOTA
3/4 mi n and 3/4 mi w Pierre, 1440 ft,
Hughes Co., South Dakota (E side river)
26 July, 1950
Redwood Falls
3
2
Sanborn
1
windom
9 mi n. Jackson,
1492 ft., Jackson Co.,
minnesota
16 July, 1950
Jackson
2 mi S and 1 mi w Fort Pierre
1200 ft., Stanley Co.
1 mi. n Fort Pierre, 1437 ft.
Stanley Co.,
1 1/2 mi. S and 1 mi. w Fort Pierre,
1456 ft., Stanley Co.
1 3/10 mi. S and 4/10 mi. w Fort Pierre,
1484 ft., Stanley Co.
2 mi. S and 4/10 mi w Fort Pierre,
1484 ft., Stanley Co.,
2 6/10 mi. w. and 2 4/10 mi S Fort Pierre,
1500 ft., Stanley Co., (mouth Willow Creek)
25 July 1950 to 27 July, 1950
1 1/2 mi S and 1/2 mi W Fort Pierre,
1448 ft., Stanley Co., S. Dakota
IOWA
NEBRASKA
omaha
To Topeka
To Kansas City

= night stop with full complement of traps

= areas examined for microtus ochrogaster mirus consisting of a 100 foot transect of ground inspection on hands and knees and 1000 feet transect of walking three likely plant associations.

= route covered on trip.

500714-18

Collecting Localities

9 mi. n Jackson, 1492 ft., Jackson Co., Minnesota - 16 July, 1950
4 mi. nw Ashby, 1420 ft., Ottertail Co., Minnesota - 17 July, 1950
3 mi. w Cayuga, 1000 ft., Sargent Co., North Dakota - 18 July, 1950
7 2/10 mi E and 1 2/10 mi. S Oaks, 1000 ft., Sargent Co., North Dakota - 19 July, 1950
2 mi. w Fort Totten, 1400 ft., Benson Co., North Dakota - 20 July, 1950
4 mi. w Leeds, 1400 ft., Benson Co., North Dakota - 21 July, 1950
4 3/10 mi. n Bottineau, 2100 ft., Bottineau Co., North Dakota - 22 July, 1950
3 5/10 mi. n Bottineau, 1920 ft., Bottineau Co., North Dakota - 22 July, 1950
2 1/10 mi. n Botineau, 1900 ft., Bottineau Co., North Dakota - 22 July, 1950
4/10 mi. n Bottineau 1890 ft., Bottineau Co., North Dakota - 22 July, 1950
9/10 mi. S Max, 2090 ft., McLean Co., North Dakota - 23 July, 1950
4/10 mi. n Moffit, 1640 ft., Burleigh Co., North Dakota - 23 July, 1950
Swan Creek, 13 mi. S Selby, 1600 ft., Walworth Co., North Dakota - 24 July, 1950
2 mi S and 1 mi. w Fort Pierre, 1200 ft., Stanley Co., South Dakota - 25 July, 1950
3/4 mi n and 3/4 mi w Pierre, 1440 ft., Hughes Co., South Dakota - 26 July, 1950
1 mi. n Fort Pierre, 1437 ft., Stanley Co., South Dakota - 26 July, 1950
1 1/2 mi. S and 1 mi. w Fort Pierre, 1456 ft., Stanley Co., South Dakota - 26 July, 1950
1 2/10 mi. S and 4/10 mi. w Fort Pierre, 1484 ft., Stanley Co., South Dakota - 26 July, 1950
2 mi. S and 4/10 mi. w Fort Pierre, 1484 ft., Stanley Co., South Dakota - 26 July 1950
2 6/10 mi. w and 2 6/10 mi. S Fort Pierre, 1500 ft., Stanley Co., South Dakota - 27 July, 1950

Test Plots

1. 10 mi. n Windom, Cotonwood Co., Minnesota
2. 3 mi. n Sanborn, Redwood Co., Minnesota
3. 6 mi. S Redwood Falls, Redwood Co., Minnesota
4. 3 mi. n.w Sauk Center, Stearns Co., Minnesota
5. 20 mi. S E Ashby, Douglas Co., Minnesota
6. 4 mi. S. E Ashby, Douglas Co., Minnesota
7. 10 mi. n.w Ashby, Ottertail Co., Minnesota
8. 2 mi. w Fergus Falls, Ottertail Co., Minnesota
9. 18 mi. w Fergus Falls, Wilkin Co., Minnesota
10. 3 mi. w Fairmount, Richland Co., North Dakota
11. 19 mi. W Fairmount, Richland Co., North Dakota
12. 21 mi. E Oaks, Sargent Co., North Dakota
13. 3 mi. w. Verona, Lamoure Co., North Dakota
14. 3 mi. n Edgeley, Lamoure Co., North Dakota
15. 4 mi. S Jamestown, Stutsman Co., North Dakota
16. 20 mi. n.w Jamestown, Stutsman Co., North Dakota
17. 8 mi. S.E Carrington, Foster Co., North Dakota
18. 3 mi. n w Devils Lake, Ramsey Co., North Dakota
19. 12 mi. n w Devil Lake, Ramsey Co., North Dakota
20. 22 mi. n w Devils Lake, Benson Co., North Dakota
21 4 mi. n Rugby, Pierce Co., North Dakota
22 20 mi n Rugby, Rolette Co., North Dakota
23 18 mi. E minot, McHenry Co., North Dakota
24 4 mi. E minot, Ward Co., North Dakota
25 2 mi S E Washburn, McLean Co., North Dakota
26 1 mi n w Wilton, Burleigh Co., North Dakota
27 2 mi. S Linton, Emmons Co., North Dakota
28. 4 mi S Mound City, Campbell Co., North Dakota

mileage at Lawrence, 30364.3

St. Joseph, missouri

July 15, 1950

Camp last night a few miles beyond here. Left at 6:30 A.M. at mileage 30471.5. Microtus ochrogaster runways here.

In S Iowa country undulating and covered with prairie land. At Jackson, Minnesota noted a yellow-shafted flicker. Three Iowa rom see how M. ochro caught extend geographical range to E. Citellus tridecemlineatus along entire route across Iowa to Jackson, Minnesota becoming more abundant (4 per mile) as we approached Minnesota. At the Minnesota border (see itinerary) the grassland became more Canadian-like. At 9 miles N of Jackson set 60 traps (museum specials) at 5:00 P.M. At sun down examined these traps and collected the following:

500715-1 Sorex palustris navigator 122-30-17-20gms
500715-2 " " " 120-26-16.5-18 gms.

9 mi. N Jackson, 1492 ft., Jackson Co., Minnesota

July 16, 1950

Last night caught 4 Sorex p. N ♀♀, 7 Sorex p. N ♂♂, 3 Microtus pennsylvanicus and 1 Mus musculus in 60 traps and were prepared as follows:

			gms	
500716-1	Sorex palustris	128-26-17-28	↓	♀ suckling
500716-2	"	"	124-26-17-28	♀ no emb.
500716-3	"	"	127-26-17-26	♂
500716-4	"	"	121-25-17-32	♂
500716-5	"	"	128-26-17-28 gms	♂
500716-6	"	"	129-27-17-31 gms	♂
500716-7	Microtus pennsyl.	160-55-20-32 gms		♂

Left Jackson and continued N. At 6½ mi. S Redwood Falls, Minn. observed a striped skunk road kill. Another one at 1 mi. N of Green Lake, Minn. A third one at 5 mi N of New London, Minn and a fourth one at 4 mi. S Elrosa (city name ?), Minn.

This afternoon set 140 traps at 4 mi. NW Ashley, 1420 ft., Ottertail Co., Minnesota. Camped here tonight.

4 mi. NW Ashley, 1420 ft., Ottertail Co., Minnesota

July 17, 1950

This A.M inspected trap line set last evening of 140 traps.

Caught: 4 Zapus, 2 M. pennsyl, 9 Sorex p.n, 4 Rana pipiens. Plant Community like typical canadian field of herbs, grasses & flowers. Prepared these mammals from this trapline:

500717-1	Zapus hudsonicus	223-131-31-11.5-25gms	♀
500717-2	" "	194-126-31-11-11gms	♂
500717-3	Sorex p. navigator	127-26-17-30gms	♀
500717-4	" " "	134-27-17-32gms	♀
500717-5	" " "	126-28-17-28gms	♀
500717-6	microtus pennsyl.	150-44-19-11-36gms	♂

Left here and continued W. noted that area beyond Fergus Falls is flatter and drier than ~~general~~. the country to the E we have just passed through. This evening camped 3 miles W of Cayuga. Set 150 traps.

3 mi. W Cayuga, 1000 ft., Sargent Co., North Dakota

July 18, 1950

From trapline which was set yesterday evening. Collected 10 microtus penn, 1 Onychomys, 1 Peromyscus Maniculatus and 5 Zapus hudsonius from grasses and vegetation at edge of a pond. A salamander died in upland plover in area. One nest of 8 pheasant eggs, nest of 4 eggs of and 2 young + one cowbird egg in meadowlark nest, all along trapline. White tailed jackrabbits in area. Prepared the following mammals:

500718-1	Microtus pennsyl	160-46-20-12-47gms	♀	
500718-2	" "	155-44-19.5-12-38gm	♂	testes 14 mm
500718-3	" "	150-43-19.5-11.5-36gm	♂	
500718-4	" "	153-46-20-12-45gms	♀	
500718-5	" "	142-44-19.5-11.5-30gms	♂	
500718-6	" "	136-36-19-11-30gms	♀	
500718-7	Onychomys	136-40-22-15-37gms	♂	
500718-8	Zapus hudsonicus	210-121-27-11-23gms	♀	
500718-9	" "	208-125-28-11-18gms	♂	

noted the following birds in this area: burrowing owl, mallard, eastern kingbird, blue-wing teal, mourning dove, red-wing blackbird, upland plover, pheasant, meadowlark. This evening set traps at Oaks

7 2/10 mi E and 17/10 mi S Oaks, 1200 ft.; Sargent Co., N. Dakota

July 19, 1950

This morning inspected ~~evening set~~ traps on upland prairie on hillside set yesterday evening and collected the following mammals and birds:

14 Peromyscus maniculatus, 2 microtus pennsylvanicus,
14 Zapus hudsonicus:

500719-1	Zapus hudsonicus	"	215-125-28-13-22 gms ♀
500719-2	"	"	215-125-29-14-22 gms ♂
500719-3	"	"	205-118-27-12-20 gms ♂
500719-4	"	"	210-120-28-13-22 gms ♀
500719-5	"	"	204-120-28-13-20 gms ♀
500719-6	"	"	220-130-28-13-22 gms ♀
500719-7	microtus pennsyl.		154-46-19-11-34 gms ♂
500719-8	"	"	142-43-18.5-11-26 gms ♀
500719-9	Zapus hudsonicus		111-51-16-6-9 gms ♂
500719-10	Peromyscus maniculatus		150-61-19-14-20 gms ♂
500719-11	dominant shrub where Zapus most common		
500719-12	sub-dominant plant		
500719-13	dominant grass for runways & is matted.		
500719-14	sub-dominant.		

Left camp and continued on trip. at 10 mi beyond Verona, N. Dakota noted a striped skunk road kill.

2 mi W Fort Totten, 1400 ft, Benson Co., North Dakota

July 20, 1950

This evenng set 220 traps on hillside prairie.

July 20, 1950

Inspected trap (220) set last evenng and caught 1 Sorex, 16 Peromyscus maniculatus, 4 microtus pennsyl, 3 Perognathus, 21 Zapus hudsonicus, 1 gopher, 2 Cleithrionomys and prepared as follows;

500720-1	Zapus hudsonicus	"	205-130-29-12-13 gms ♂
500720-2	"	"	225-130-30-14-19 gms ♂
500720-3	"	"	210-125-29-13-18 gms ♂
500720-4	"	"	220-130-29-12-21 gms ♂
500720-5	"	"	225-130-29-12-20 gms ♀
500720-6	"	"	230-131-29-12-18 gms ♀
500720-7	"	"	225-135-30-13-23 gms ♀
500720-8	Sorex vagrans		90-30-10-6 gms ♂
500720-9	microtus pennsyl.		150-42-19-13-30 gms ♂
500720-10	"	"	140-40-18-12-26 gms ♂
500720-11	Clethrionomys		125-32-18-12-20 gms ♂
500720-12	"		120-31-18-12-18 gms ♂
500720-13	Perognathus		125-61-17-6-9 gms ♂

500720-14 Perognathus 130-62-17-6-10 gms ♀
500720-15 " 128-62-19-6-9 gms ♂
500720-16 " 129-62-17-6-10 gms ♂
500720-17 Thomomys 170-95-27-60 gms ♂
500720-18 Zapus hud. 220-130-27-12-19 gms ♂
500720-19 " " 205-120-27-12-24 gms ♀
500720-20 " " 195-120-27-12-18 gms ♂
500720-21 " " 210-128-27-12-19 gms ♂
500720-22 " " 210-127-27-12-30 gms ♀
500720-23 " " 215-124-27-12-18 gms ♂
500720-24 " " 214-123-26-12-19 gms ♂

Visited with Mr. Parker of Lucky Mound Wild Life Refuge. Continued on to Leeds and set 180 traps.

4 mi. w Leeds, 1400 ft., Benson Co., North Dakota
July 21, 1950

Examined 180 traps set yesterday evening along a railroad grade among grasses, some traps in upland grasses, some around rocks and others in wet meadows. Prepared the mammals caught in these traps:

500721-1 Microtus pennsylvanicus 150-40-18-1 2/40-28 gms ♂
500721-2 " " 154-44-19-13-38 gms ♂
500721-3 " " 154-43-18-12-36 gms ♂
500721-4 " " 160-47-20-13-44 gms ♂
500721-5 " " 141-41-19-12-35 gms ♂
500721-6 " 170-51-19-14-43 gms ♂
500721-7 Zapus hudsonicus 225-140-30-14-30 gms ♀
500721-8 " " 226-140-29-14-32 gms ♀

In all caught 12 Peromyscus maniculatus, 13 microtus pennsylvanicus, 5 Zapus hudsonicus. Continued on to Bottineau where a transect will be run to north. Bottineau is the type locality of microtus ochrogaster minor. From the center of Bottineau established 3 trapping localities, 2 1/10, 3 5/10 and 4 3/10 miles N of Bottineau. Mileage of Bottineau 315 42.5. Made camp at 4.3 miles N of Bottineau at 2100 ft., Bottineau Co., N. Dakota.

4 3/10 mi N Bottineau (center of town), Bottineau Co, N. Dakota
July 22, 1950

From 30 traps collected 2 Zapus.

500722-1 Zapus hudsonius 230-140-30-14-30 gms ♂
500722-2 " " 210-130-30-13 gms ♂

3.5 mi N Bottineau, 1920 ft., Bottineau Co., North Dakota

July 22, 1950

From second site of transect collected:

500722-3 Zapus hudsonius 195-122-29-12-11 gms ♂
500722-4 Clethrionomys 110-29-17-12-14 gms ♂
500722-5 Zapus hudsonius 230-134-30-18-29 gms ♀
Temp at 10:00 AM = 50°F. 15 trap fr above catch.

2.1 mi N Bottineau, 1800 ft., Bottineau Co., North Dakota

July 22, 1950

From third locality of transect of 25 traps, caught:

500722-6 Zapus hudsonius 235-140-30-14-26 gms ♀
500722-7 " " 185-115-29-11-9 gms ♂
500722-8 " " 231-141-30-14-31 gms ♀
500722-9 Microtus pennsylvanicus 144-45-19-12-26 gms ♂
500722-10 " " 142-43-19-12-30 gms ♀
500722-11 " " [140]-[30]-19-12-36 gms ♂
500722-12 " " 160-50-19-12-35 gms ♀
500722-13 Microtus longicaudus 165-52-20-12-35 gms ♀
500722-14 " pennsyl. [140]-[26]-19-12-36 gms ♂

At 4/10 mi. N Bottineau, 1890 ft., did not catch anything in traps although traps were set in good runways. Continued on to Mat and set 200 traps around a lake that, on its banks, were undisturbed plant community. Surrounding areas of cultivated grasses on undulating topography.

9/10 mi. S Mat, 2090 ft., McLean Co., North Dakota.

July 23, 1950

From the 200 traps set yesterday evening caught 12 Peromyscus maniculatus, 1 adult Microtus pennsylvanicus, 3 immature Microtus pennsylvanicus. Prepared the following from catch:

500723-1 Microtus pennsylvanicus 160-45-19-13-43 gms ♂
500723-2 " " 128-38-19-12-26 gms ♀
500723-3 " " 128-33-19-12-20 gms ♀
500723-4 Peromyscus maniculatus 129-34-19-12-22 gms ♂
500723-5 " " 160-70-20-15-25 gms ♂
500723-6 " " 150-63-17-15-20 gms ♂
500723-7 " " 149-64-19-15-26 gms ♀
500723-8 " " 154-66-19-15-29 gms ♀
500723-9 " " 154-64-20-14-30 gms ♀

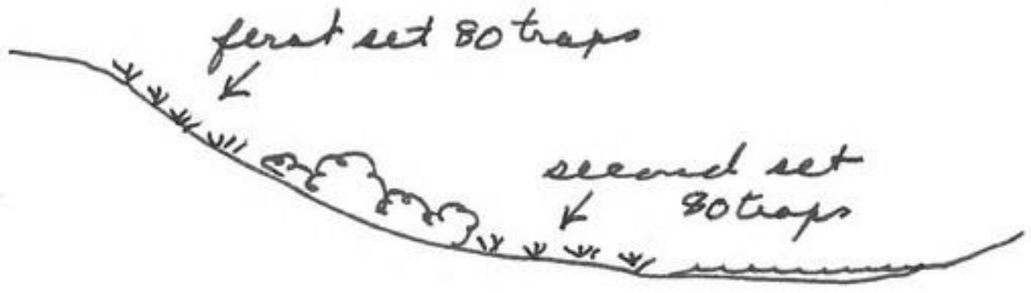
500723-10 microtus pennsylvanicus. 129-33-19-12-19 gms ♂

Birds in area of trapline are: black tern, coot, yellowlegs, ducks. Was surprised to have caught such few mammals in the above line. Left area and continued on trip. At 4 mi S of Moffet noted a lark bunting. At 4/10 mi N of Moffet, 1640 ft., Burleigh Co., N. Dakota collected a Citellus tridecemlineatus no 500723-12 which measured 256-100-38-8-130 gms ♂. This evening set ~~80~~ 160 traps at Swan Creek.

Swan Creek, 13 mi. S Selby, 1600 ft., Walworth Co., South Dakota

July 24, 1950

From the ~~80~~ 160 traps set yesterday evening collected several mammals. This set was divided between an upper slope of hill and the base of the hill. The upper set of 80 traps on a 30° slope in grass on a dry surface. This area was above the Symphoricarpos and melanocarpa at base of hill. There were many runway and they looked like those of Microtus ochrogaster. The second set was in tall, lush grasses and sedges + Sagittaria by a pond. It was surmized that the upper area was used in winter and spring because of presence of old droppings there, and then moved down to pond area in tallgrasses for summer, as green fecal pellets were associated with trails there. In upper set caught 9 Peromyscus maniculatus, 2 Perognathus and 1 mus musculus. In lower set caught 14 Peromyscus maniculatus, 3 mus musculus and 10 microtus pennsylvanicus. Birds noted in this area were eastern kingbird, mourning dove, killdeer, redwings, upland plover, meadowlarks, cliff swallows, nighthawk, yellow warbler and lark bunting.



Prepared the following mammals from above trap line.

500724-1	Microtus	pennsylvanicus	145-41-20-13-30 gms ♀
500724-2	"	"	160-48-20-13-60 gms ♀
500724-3	"	"	158-46-19-12-41 gms ♀
500724-4	"	"	144-42-19-13-34 gms ♂
500724-5	"	"	154-44-19-13-40 gms ♂
500724-6	"	"	141-41-19-12-35 gms ♂
500724-7	"	"	141-42-19-12-32 gms ♂
500724-8	"	"	178-51-19-13-61 gms ♂
500724-9	Perognathus		125-60-16-6-10 gms ♀
500724-10	"		186-88-25-12-47 gms ♀

From a rancher in this area the following was recorded:

citellus have decreased in last 4 years (Citellus tridecemlineatus)
10 years ago one would see 8 or 9 Coyotes in 4 sections of cattle grazing land in Swan Creek area. Now one rarely sees them and then only 1 during an inspection trip. These animals have disappeared in the last 4 year because of hunting by planes. The red fox, badger and skunk have increased in the last four years. The badger has increased to the point where it is a problem today.
The railroad grade was built in 1907 and abandoned in 1937 Wild wheat grass now covers. Gramma grass on hills in early days but now replaced with blueah grass and only 75% as productive as in old days when native grasses covered the land. Canyon valleys support a different grass than in old days. Buffalo, antelope, wolf, bobcats, and all the other kinds of animals of prairieland inhabited these slopes in early days. Continued S to Fort Pierre. It is quite evident that Microtus ochrogaster is limited to the east by the Missouri River. At Fort Pierre will test populations of mammals of the west side of the river. and also to see if Microtus crosses bridge to gain east side of river. At 2 mi. S and 1 mi. W Fort Pierre, set 160 traps. and then camped N of town.

2 mi. S and 1 mi. W Fort Pierre, 1,200 ft., Stanley Co., South Dakota

July 25, 1950

From 160 traps set last evening caught 5 microtus ochrogaster, 1 Peromyscus maniculatus. These traps were set in runways along a railroad right-of-way in successional grasses and weeds. These places are not always profitable because they are periodically burned or poisoned but they are about the only places that are not overgrazed. There are no grasshoppers, few mosquitoes, numerous ants, some following mammal runways. 20' apart In one line of 80 traps of above 160 traps and set in a continuous system of runways caught only one immature ♂. Mammals from above line are:

500725-1	Peromyscus maniculatus	137-53-18-15-17 gms ♂	
500725-2	Microtus ochrogaster haydeni	120-32-19-12-18 gms ♂	testes 8 mm
500725-3	"	"	"	161-44-21-12-45 gms ♂	testes 12 mm
500725-4	"	"	"	159-39-20-11-44 gms ♂	testes 14 mm
500725-5	"	"	"	142-35-21-11-32 gms ♂	testes 9 mm
500725-6	"	"	"	160-36-20-12-50 gms ♀	

Birds in area of trapline include mourning dove, house finch, eastern Kingbird, flicker, red-headed woodpecker, night hawk.
Examined many fields that supported runways of M. ochrogaster

but most of these were abandoned. It appears that M. ochrogaster has either been at a much lighter population level or that the runways I have been observing are used only during the the winter and early spring.

This afternoon set several series of traps in the Fort Pierre area and returned to camp N of Fort Pierre.

3/4 mi. N and 3/4 mi. W Pierre, 1440 ft., Hughes Co., South Dakota

July 26, 1950

This locality is on the east side of the missouri River just beyond a bridge that crosses the river to determine if M. ochrogaster might pass over bridge to gain access to this area. From 24 traps set in runways along railroad grade and associated barrow pits collected 2 microtus ochrogaster. Three traps were snapped.

500726-3 Microtus ochrogaster 142-38-19-12-30 gms ♂ testes 3 mm.

500726-4 " " 146-36-19-12-46 gms ♀ no embryos.

1 mi. N of Fort Pierre, 1437 ft., Stanley Co., S. Dakota

July 26, 1950

From the second set of traps set last night in a feed of grasses and weeds in successional stage and in well established runways collected:

500726-5 microtus ochrogaster 140-44-19.5-12-47 gms ♂ testes 14 mm

500726-6 " " 155-38-19-12-41 gms ♂ testes 11 mm.

1 1/2 mi. S and 1/2 mi W Fort Pierre, 1448 ft., Stanley Co., S. Dakota

July 26, 1950

From a 3 set of 15 traps at this locality, did not catch any mammals From another set of 15 traps 2/10 miles to N of this locality, also did not catch anything.

1 1/2 mi. S and 1 mi. W Fort Pierre, 1456 ft., Stanley Co., S. Dakota

July 26, 1950

From a fifth set of 100 traps set yesterday evening along a railroad grade and each trap in a runway. Caught:

500726-7 Microtus ochrogaster haydeni 149-37-20-12-43 gms ♀ no embryos

500726-8 " " " 170-49-21-13-57 gms ♂ testes 12 mm

500726-9 " " " 160-42-20-12-52 gms ♂ testes 14 mm

500726-10 " " " 165-42-20-12-54 gms ♀ no emb.

500726-11 " " " 121-34-20-12-33 gms ♂ testes 5 mm

500726-12 " " " 164-44-21-13-53 gms (2 x 2 emb 12 mm)

interpretation — 2 embryos in right uterus — 2 emb in left uterus — crown rump length

500726-13 Perognathus [152]-[55]-26-11-30 gms. ♀ This female had a vaginal plug.

500726-14 Perognathus 195-105-28-11-36 gms.

It is of interest to note that there were no Peromyscus from this trapline. Returned to camp. In afternoon made 4 more sets in vicenity of Fort Pierre, and returned to comp N of town.

1 2/10 mi. S and 4 mi. W Fort Pierre, 1484 ft., Stanley Co., S Dakota

July 27, 1950

Inspected this first set of 65 traps set last evening and all traps in runways except no. 4. From this line caught 3 microtus ochrogaster, 2 Perognathus, 1 Leithrodontomys and these were prepared as follows:

500727-1 Microtus ochrogaster haydeni 148-38-20-13-42 gms ♀
500727-2 " " " 141-38-20-13-60 gms ♂
500727-3 " " " 154-39-21-12-44 gms ♂ testes 12 mm
500727-4 Perognathus 172-78-26-9-24 gms ♀
500727-5 " 177-80-26-10-26 gms ♂ skull only
500727-6 Leithrodontomys 130-58-18-12-11 gms

2 mi. S and 4/10 mi W Fort Pierre, 1484 ft., Stanley Co., S. Dakota

July 27, 1950

Inspected second set of 45 traps, all set in runways, set last evening. Caught 4 microtus ochrogaster and one Onchyomys. These measured:

500727-7 Microtus ochrogaster 133-36-20-13-26 gms ♂ testes 7 mm.
500727-8 " " 161-37-21-13-59 gms ♀ no emb.
500727-9 " " 133-39-20-12-30 gms ♂ testes 8 mm
500727-10 " " 134-37-20-12-31 gms ♂ testes 6 mm
500727-11 Onychomys 120-40-21-15-19 gms ♂

2 2/10 mi. S and 1/2 mile W Fort Pierre, 1486 ft., Stanley Co., S. Dakota

July 27, 1950

Out of 10 traps set last evening did not ~~catch~~ catch a single mammal. One mourning dove nest of 2 eggs and 2 young here.

2 6/10 mi. W and 2 6/10 mi S Fort Pierre, 1500 ft., Stanley Co., S Dakota

July 27, 1950

This set of 35 traps was set at above locality at mouth of Willow Creek. Caught 3 microtus ochrogaster and 1 Peromyscus maniculatus. These were prepared as follows:

500727-12 Microtus ochrogaster 160-41-21.5-12-48 gms.

500727-13 microtus ochrogaster 134-36-20-12-26 gms
500727-14 " " 142-36-21-12-37 gms ♂ Testes 10 mm.

Returned to camp 77 of Fort Pierre and organized to leave for Lawrence, Kansas.

Fort Pierre, Stanley Co., S Dakota
July 28, 1950

Departed early today and drove directly to Lawrence in Kansas. There are a few generalities that can be stated about the trip and its objectives. It was notice that, although Iowa and S part of Minn are not two much diff-erent than Kansas, the number of Insectivora is immeasurably greater in numbers of individuals per, than in Kansas. It is true, there is more surface water and is more permanent.

The Canadian influence plant community reaches down into the plains for a considerable distance especially in the Minnesota region and that as one passes w into the Dakotas, except the extreme north part of N. Dakota, the plant community changes from good canadian type meadow to parse vegetation in a rather dry enviroment.

It is not understood why there is an apparent lack of microtus ochrogaster between the Missouri River and middle Minnesota. Old records show this form in the area but they seemed to have disappeared or made themselves extremly rarely and inconspicuous at Bottineau, the type locality of microtus ochrogaster minor, the animal does not seem, at present, to be in the area. With microtus ochrogaster haydeni apparently confined to the west side of the Missouri, at least in N+S Dakota or the northern part of S. Dakota, it is very unlikely that this form of haydeni and minor do not come in contact at any point unless at the extreme S E limits of M. o. minor farther east. The difference between the community of microtus ochrogaster and M. o. minor is one of sparse vegetation + dry-ness for haydeni and Canadian type grass + shrub meadows for minor. It would almost seem like M. o. haydeni developed in dry areas below the Pleistocene glaciers while M. o. minor developed in the glacial refugia of Canadian communities of the Pleistocene. It would be advisable, first, to subject M. o. minor serological tests, comparing this species with M. o. haydeni and then by checking chromosomes of hybrid offspring between the two species or (sub-species). This could be followed by regular systematic studies.

500829-29

Lake View, Douglas County, Kansas.

29 Aug. 1950

Observed birds at N.W end of lake between 4:00 P.M & 6:00 P.M. Mr and Mrs. Chewning stopped by and met the family for the first time.

Lanius ludovicianus migrans 3
Passer domesticus
Progne subis subis – 4 flying over lake in company of barn swallows.
Zenaidura macroura carolinensis.
Hirundo erythrogaster
Megaceryle alcyon alcyon
Chlidonias nigra surinamensis. 4 flying over cultivated field feeding on insects.
Spinus tristis tristis
Megaceryle alcyon alcyon.
Melanerpes erythrocephalus.
Coccyzus americanus americanus
Egretta thula thula – 55 resting in trees on side hills above lake at the west end in company of the american egrets.
Agelaius phoeniceus. group of 125 mixed birds of all ages & sex.
Corvus brachyrhynchos.
Nycticorax nycticorax noevius 2
Ardea herodias herodias 6 feeding along shore. General movement toward evening from river to lake.
Tyrannus tyrannus. One tailless bird.
Iridoprocne bicolor.
Humming birds sp?.
Oxyechus vociferus vociferus
Falco sparverius
Turdus migratorius
Sturnella magna
Casmerodius albus egretta. 15 of these birds flying in general area of the lake and finally coming to rest in tree tops at west end of lake with Snowy Egrets.

On return found a medium size bat flying at 1 mi. S. and 1 mi west of Lawrence. It is approx 10 mile from trailer to the Lake View Lake.

3 mi. S. Lawrence, Douglas Co. Kansas.

1 Sept. 1950

Observed the following birds still in area.

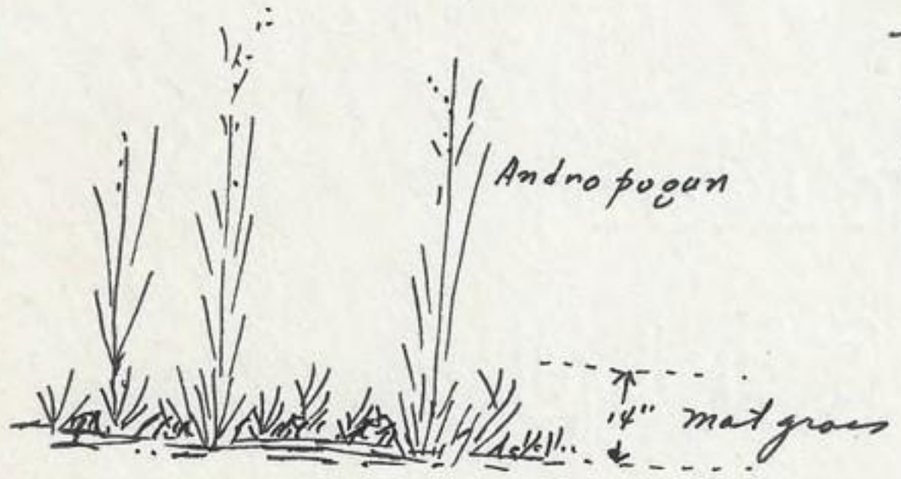
Hirundo erythrogaster
Chaetura pelagica
Agelaius phoeniceus.
Turdus migratorius
Zenaidura macroura carolinensis

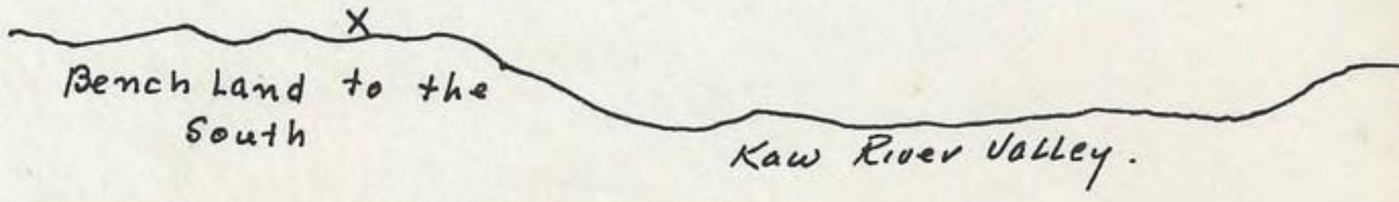
500904-30

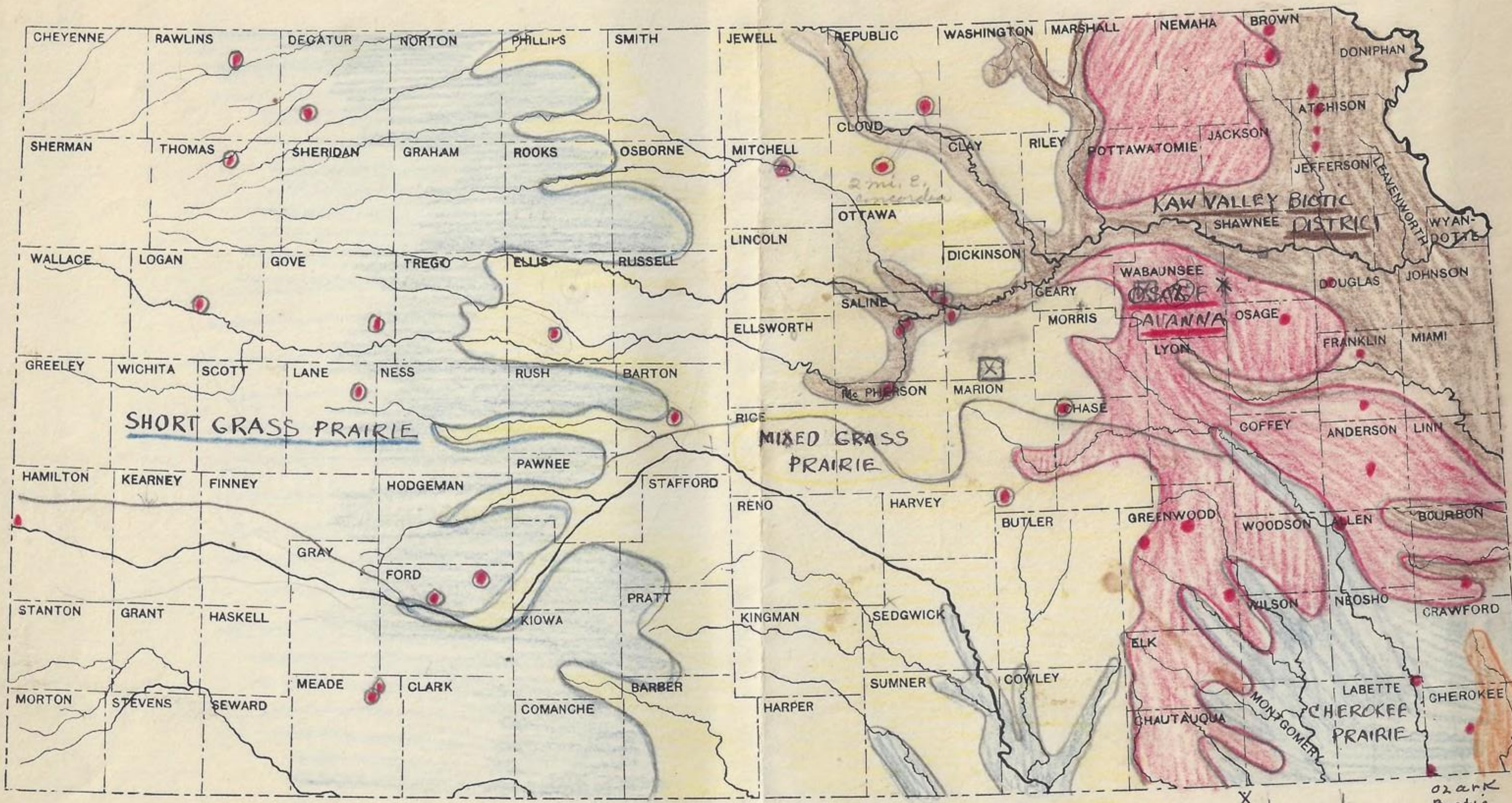
8 4/10 mi. W and 3 3/10 mi. S Topeka, 1000 ft., Shawnee Co., Kansas

4 September, 1950

The following two days spent in establishing part of a transect across the Microtus o. haydenii – microtus o. ochrogaster zone of intergradation with Lawrence, Kansas adequately represented established first collecting station at 8 4/10 mi. W and 3 3/10 mi. S Topeka, Shawnee Co., Kansas. This area is on the upland bench land south of the broad valley of Kaw River. The area is in the savanna-prairie zone but mainly cultivated prairie with the trees confined to the more favorable areas. The field chosen was one of about 5 fields examined in this area and represents about one out of perhaps 20 fields that could be used by these Microtus. In otherwords there are very few places outside of fence rows that these mammals can perpetuate themselves from year to year. In addition to requiring an undisturbed vegetation they require the community to be in a particular seasonsonal stage. The best areas are those of native grass in an unplowed virgin field which has been subjected to a moderate degree of grazing. If grazing is not permitted the climax vegetation condition is reached which becomes too dense and thus excludes the mammal. An ideal vegetation is an andropogon or any other type of plant that is properly placed and which adds overhead protection to the understory mat grass. The mat grass can be dense but must not be too high, say from not less than 7 inches and not more than 14 inches. If one or the other grass is excluded it must be the the andropogon but not the matt grass. also the matgrass must be of the type that will offer green food for the period during the winter when the snows cover the ground. If the field is too closely grazed beyond the 7 inch heighth or thru the physical action of trampling the mice will not inhabit it. Again if the field is allowed to grow without grazing the vegetation will soon choke out the Microtus. Set 200 traps at 8 4/10 mi. W and 3 3/10 miles S Topeka, approx 1000 ft., Shawnee Co., Kansas. The field is situated in the following relative positions in respect to the Kaw River Valley. It is above the river valley but near the edge. The general area is supported by approx 95% cultivations with just an occasional field that is suitable for Microtus ochrogaster. The topography is undulating and soils indicate a part of the glacial tillate complex.







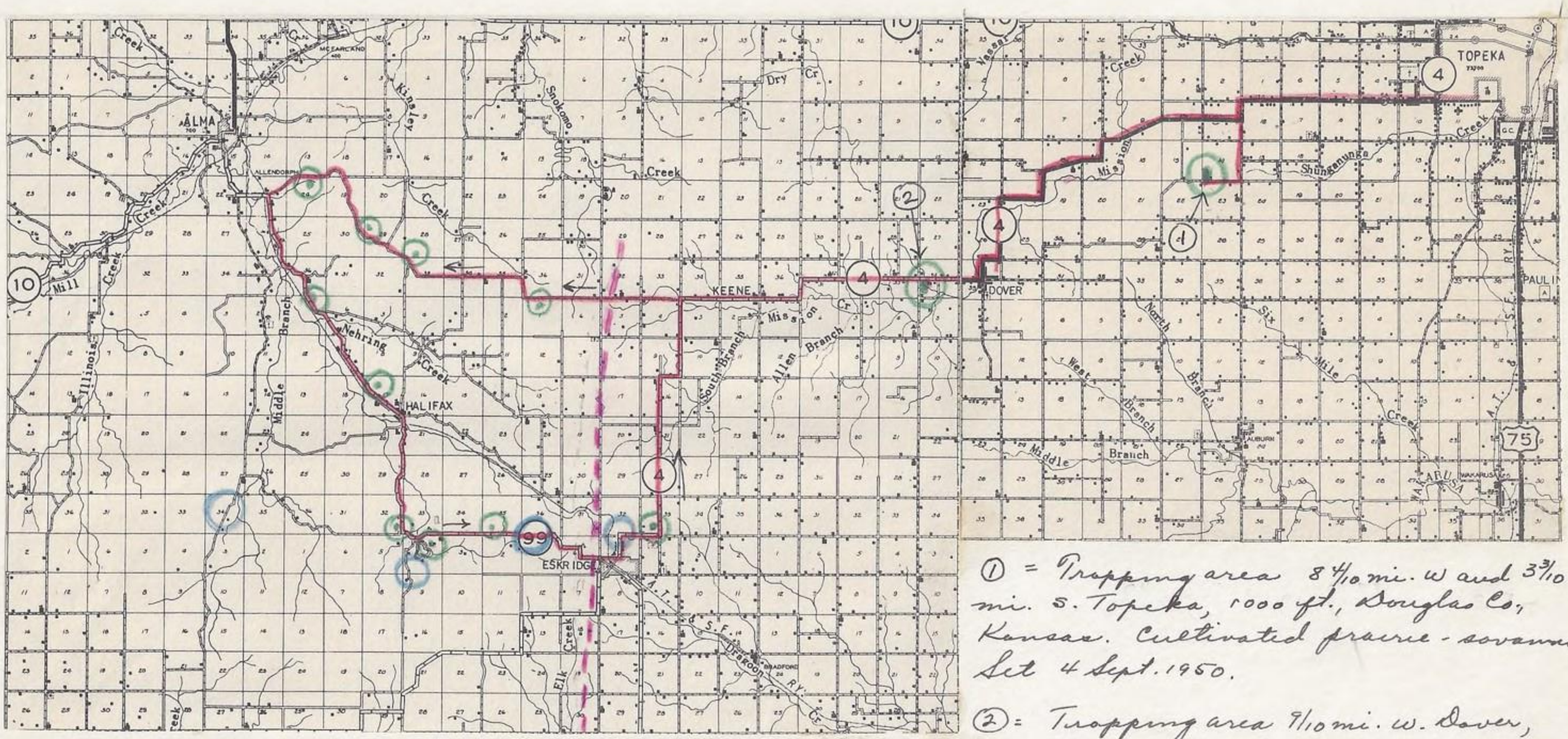
Ozark Biotic District. Kroo

500904-31

Flint Hills --- pebbles and hand rocks

East of Flint --- matted grass between individual stocks of Andropogon.

Difference between flint Hills and plaine - savanna east of Eskridge.



① = Trapping area 8 4/10 mi. W and 3 3/10 mi. S. Topeka, 1000 ft., Douglas Co, Kansas. Cultivated prairie - savanna. Set 4 Sept. 1950.

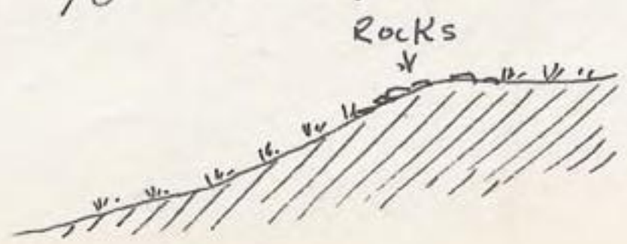
② = Trapping area 9/10 mi. W. Dover, approx 1300 ft., Wabaunsee Co., Kansas. Set 5 Sept. 1950.

- - - - - - Purple line = zone between to the west the flint hill prairie, and the prairie savanna to the east.

⊙ - checking plots for Microtus ochrogaster activity.

○ = Proposed sites from future trapping

In area ① set 100 traps along a fence line bordering the ungrazed field and 100 traps among the grasses of the field proper. Traps set 15 feet apart at random unless runway happened to be found at the 15 foot interval, thus a more normal picture of the community will be obtained. According to Mr. Price, this plot of ground some 1/4 mi long and 500 feet wide had never been plowed and only moderately grazed by cattle and horses. along the top of the hill there was a zone of rock outcrop of limey sandstone but practically sealed by grasses. Several traps were set by these rocks



500904-32

clumps of Andropogan. Instead of a mat grass the intervening area is barren soil either baked or cracked on the surface or covered with a layer of small rock and soil. The topography is more deeply bisected with valley and canyons than is the gently rolling country to the east of Eskridge. At a point about a mile east of Eskridge found Microtus o. runways. Established research area at 9/10 mi. W Dover, 1300 ft., in Wabaunsee Co., Kansas. This field is on the south side of highway 4 and represents a field that apparently had not been plowed for many years. The vegetation was mainly a thick matted grass with a weed protection overhead. Several patches of Symphoricarpos (?) invaded from the side. Sumac covered a great deal of the area but had been burned off at one time. Among the grass was found the Ophimia in greater concentration than I had witnessed in the long-grass prairie of this region. Cattle were grazing in the field but had produced only limited trampling effect. Set 300 traps at 10 foot intervals at random and in runways wherever found at these 10 foot intervals. One Lepus californicus melanotis left the field. Surrounding lands reconnoitered. Completed set at late twilight and returned to Topeka for overnite. Night hawks observed at the trapping area.

9/10 mi. W Dover, (Wabaunsee Co.), 1300 ft., Shawnee Co., Kansas.

6 Sept., 1950

Inspected research area of last evenings setting and collected the following mammals.

500906-1	Microtus ochrogaster	♀	144-35-19-11-43 gms	(no. embs)
500906-2	"	♀	162-42-20-12-60 gms	(3 x 0 embs, 13 m.m)
500906-3	"	♂	153-37-19-12-56 gms	(testes 13 m.m)
500906-4	"	♀	158-35-21-12-66 gms	(2 x 2 embs., 16 m.m.)
500906-5	"	♂	166-46-21-12-58 gms	(testes 15 m.m)
500906-6	"	♂	148-37-18.9-11-44 gms	(testes 12 m.m)
500906-7	"	♂	156-39-20-11-50 gms	(testis 12 m.m)
500906-8	"	♀	160-41-21-11-49 gms	(no embs.)
500906-9	Sigmodon hispidus			
500906-10	"	"		
500906-11	"	"		
500906-12	"	"	To Tordoff	
500906-13	"	"		

500906-34

Returned to Topeka where we remained overnite with mel v cully.

8 4/10 mi. W and 3 3/10 mi. S Topeka, 1000 ft., Shawnee Co. Kansas

5 Sept. 1950

Inspected trap line set yesterday afternoon and collected the following.

500905-1	microtus ochrogaster	♂	142-35-19-12-44 gms (testes 11 m.m.)
500905-2	microtus ochrogaster	♂	144-39-20-12-51 gms. (testis 16 m.m.)
500905-3	microtus ochrogaster	♂	160-44-19-11-50 gms (testis 8 m.m.)
500905-4	microtus ochrogaster	♂	150-35-20-12-44 gms (testis 9 m.m.)
500905-5	microtus ochrogaster	♂	158-40-21-12-60 gms (testis 15 m.m.
500905-6	microtus ochrogaster	♂	151-38-20-11-46 gms (testis 11 m.m.)
500905-7	microtus ochrogaster	♀	147-34-20-12-53 gms (3 x 0 emb. 12 m.m.)
500905-8	microtus ochrogaster	♂	149-37-18-11-40 gms (testis 12 m.m.)
500905-9	microtus ochrogaster	♀	148-35-18-12-45 gms (no emb.)
500905-10	microtus ochrogaster	♀	154-39-20-12-50 gms (3 x 2 emb. 6 m.m.)

The greater number of mammals taken along fence row. The two Blarina were taken also from this set. Placed mammals in refrigeration until I returned to Topeka where they were deep frozen by one of the locker companys. after lunch mrs Cuberton and I drove out to the flint hills area to check for microtus ochrogaster activity and to establish another trapping line along the proposed east west transect. (see map of 4 Sept., 1950). An examination of the eastern part of the flint hills, as indicated on the map, did not produce evidence of microtus ochrogaster. It was not until we reached Eskridge that we found them runways. It is assumed that M. ochrogaster inhabits the fields and prairie land from east to west to a point at Eskridge beyond this point it stops abruptly as the flint hill take over the country. The main difference between the prairie-savanna east of Eskridge and the praire west of Eskridge is in both soil and vegetation. The soil is extremely shallow, hard, and generally covered with small pebbles whereas the soil to the east of Eskridge is moderately deep, showing the influence of the glacial tillite. The vegetation west of Eskridge lacks the matted grasses which generally grow between the individual

500910-35

museum of natural History, Douglas Co., Kansas.

10 Sept., 1950

Six Chaetura pelagica in air over the museum. Flying against a shower from the west. This rain is the first in about a week of rainless weather.

13 Sept., 1950

Estimated 130 Chaetura pelagica in air over museum area of the Campus at 6:00 P.M. They were flying higher than usual but all remaining in the same general area.

Lake View, Douglas Co., Kansas.

16 Sept 1950

Check on birds of the Lake area. Usual picture of the resident birds. One Casmerodius albus egretta and no Egretta thula thula. The continual high water condition of this area has produced a condition that is not suitable for shore birds in that there are no mud flats as yet. Two small sandpipers observed in the Kaw river near Lake View. Observed one Bubo virginianus on telephone pole about ½ mi. S of Lake View. There were no other birds molesting this owl. Observed about 6:00 P.M. Harrison & Tordoff of the museum collected an eastern pigeon hawk, Falco columbarius from this area near lakeview on Sept. 12, 1950.

Museum of natural History, Univ. of Kansas., douglas Co., Kansas

21 Sept 1950

Chaetura pelagica still in area in great numbers, probably family groups have added to the population. Cyanocitta cristata with family groups and are more evident than anytime during the year. Their calls are more frequently heard due to the young being active in following the parent birds.

21 Sept. 1950

Heard Dr Victor E Shelford at K.U this afternoon. He made the following statements: 'I have no reason to give up idea of the biome concept of plant and animal communities.' 'A continuous population is not generally valid.' 'Plants alone are not the biological environment.' 'Eastern deciduous climax to approximately the 100 meridian.' 'Islands of prairie as far of ohio.' 'mammals and birds responsible for fluctuating prairie - forest contacts in the Lawrence area.' 'Prairie and forest contact fluctuates according to wet or dry years.' 'Sumac and Symphoricarpos act as plants for this changing condition.' 'Grass enters forest as a result of root systems in competition for moisture, while forests enter prairie as a result of bird and mammal reaction.'

27 Sept. 1950

Cicadas singing in full volume at 5:30 P.M. Chaetura pelagica still present in useful numbers. They should leave sometime in October around the middle of the month.

30 Sept 1950

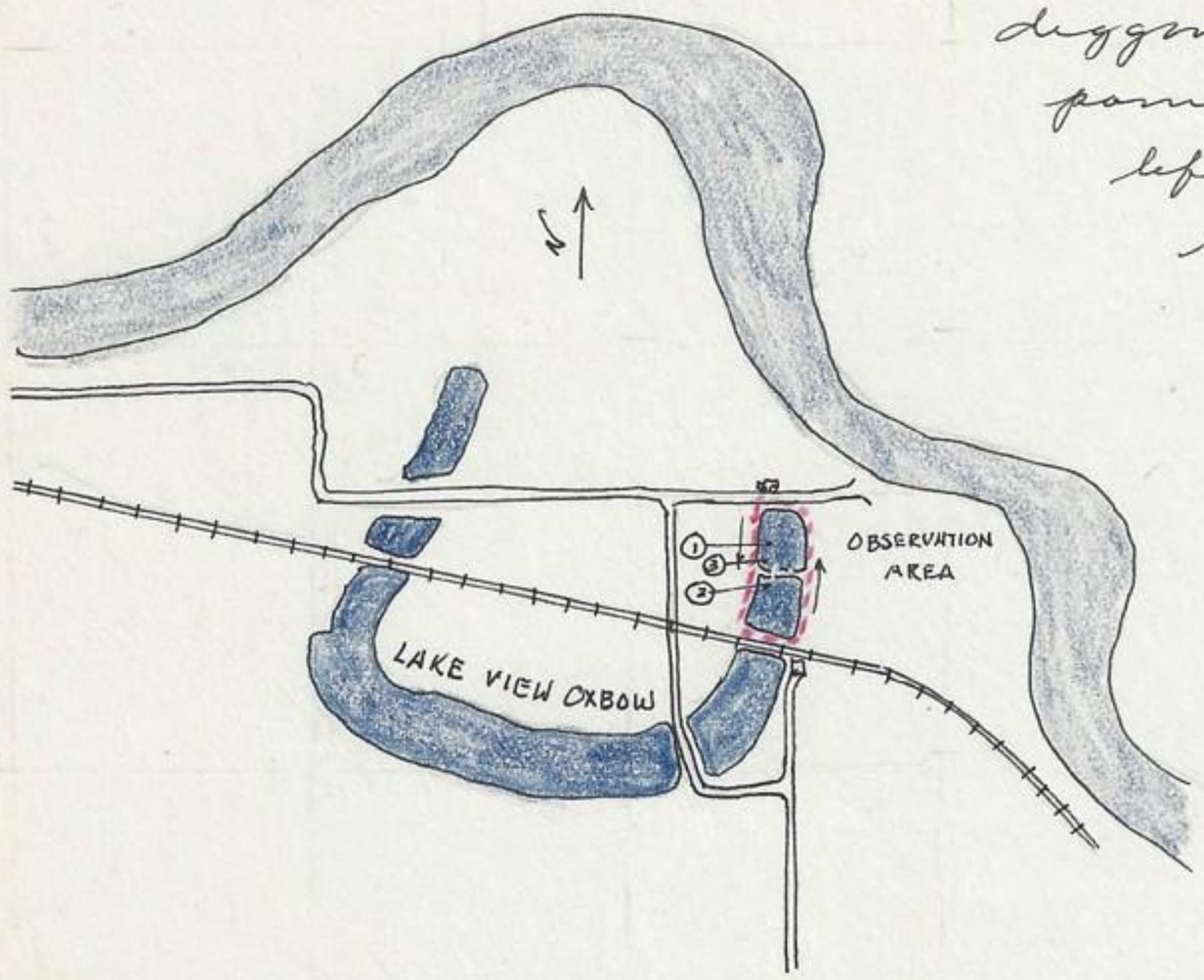
Chaetura pelagica still in area in usual numbers.

501001 - 36

2 3/10 mi. n. and 3 mi w Lawrence (P.O) → Douglas Co., Kansas

1 Oct., 1950

Family and 2 checked on birds and mammals at Lakeview between 1:00 P.M and 2:30 P.M. day cloudy. Met Mr Carson and Nelson from Topeka. Left car at dike and circumnavigated the lake as defined on map. Recorded the following. Coyote active in sandy field just north of observation area. It had been digging out moles at the point where the moles had left the dike and encroached upon the plowed field. Approx 40 diggings were recorded in 4/10 mile. The birds all remained in area except 2 am. Egret which left on approach. The other birds flushed merely rearranged themselves in the same pond area. This area



undergoes water level fluctuation from dry to high. The water level at this time well above fall condition of previous years. The following birds observed:

Casmerodius albus egretta. 2 in area. 1 observed in adjacent river (Kaw)
Sturnella neglecta. fied to west.
Turdus migratorius.
Otyzechus vociferous. 3 in area. 18 in flock appral 2 mi. N & 2 mi. W Lawrence.
Iridoprogne bicolor. with barn swallows.
Ardea herodias herodias. one left area.
Corvus b. brachyrhynchos. flew over area.
Agelaius phoeniceus. flock 82 in area
Melanerpes erythrocephalus. in trees bordering
Meg aceryle alcyon alcyon. one in area at all times.
Hirundo erythrogaster. 24 flying over water.
Zenaidura macroura carolinensis. 4 flew west
Passer domesticus - few at south end of ponds near school building (?)
Chaetura pelagica - few in air at all times.
Bubo virginianus. one across tracks to south
Podilymbus podiceps podiceps - 24 in pond
Fulica americana. - 28 birds keeping in close formation.
Butorides virescens virescens. - 2 flushed as indicated in diagram (3)
Botaurus lentiginosus - one flush at area 1. It flew 100 and then dropped into vegetation again.

501001-37

Istabrychus ephilis ephilis. one flushed at point 3 on map. It left very clumsily and after flying approx 60 dropping into vegetation again.

Anas discors . 5 in pond. Did not make themselves conspicuous.

merganza meladoa.

Colaptes auratus.

Nuttallornis mesoleucus. one bird in tree n.e part of area.

Cyanocitta C. cristata. 7 lack of 46 birds flying south over pond.

Parus atricapillus. Few in trees on east side.

Totanus flavipes. 1

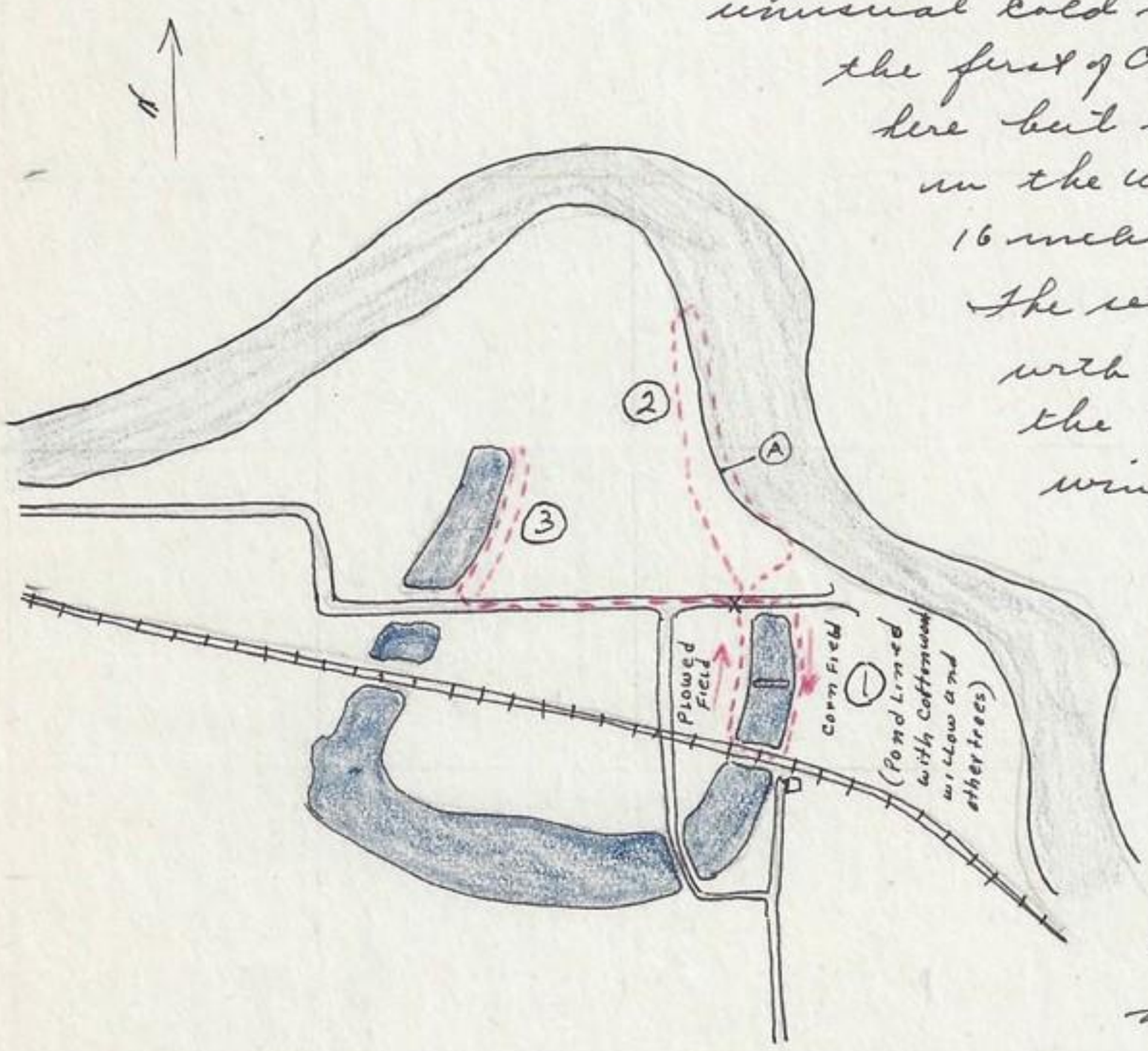
micropalama himantopus. 1 (?)

Actia sialis

3 3/10 mi. n and 3 mi. w Lawrence (P.O), Douglas Co., Kansas.

30 Oct., 1950

In field this morning from 9:00 A.M to 12:00 A.M. Made check in some area as of 10 Oct., 1950 for the purpose of showing migration influx as a result of the unusual cold weather. The weather on the first of Oct was typical late summer here but signs of a cold wave sticking in the west and northern states with 16 inches of snow in the Rockymountains. The second of Oct was cold, windy here with a letup in wind velocity by the 3rd of Oct. Today skies overcast, windy and cool. Left car at point x and circumnavigated the lake by traversing the east side first in order to take advantage of the light angle. Recorded the following birds and mammals, to be compared with observations made in the same area ① of two days ago. A quick reconnaisance was made in area ② and ③ to get a general picture. The following from area ①;



Casmerodius albus egretta. One bird left area upon approach.

Podilymbus p. podiceps. 18 birds in area. Observed 5 of these birds with fish in their bills, each fish approx 8 cm in length. They would carry them thru the water for about 100 feet at which point they would stop and then orient the fish for swallowing. They probably carried the fish this distance out of water, to either kill it or evade the other grebes during the period of consumption. Frequently they would release the fish and allow it to rest in the water, after each time, however, they would again regain it. Another interesting observation was the

fact that whenever a grebe or a coot were found swimming in among the pond weeds which covered most of the water surface in the south end of the pond, they would always fly out to open water, rather than attempt to escape by swimming.

Spizella pallida. One bird on cross dike in center of pond. Observed several times at 20 feet with a 7 x binocular.

Anas discors. 240 birds at N end of pond upon arrival; 60 in river in area (2) and 75 in area (3). These birds did not leave the area.

Anas acuta tzitzihoa: Upon arrival 5 birds were in pond but during the course of the morning 18 others had arrived. Two of the birds had extremely reddish necks and heads. These birds were the first to leave the pond when disturbed and showed signs of excessive alertness for these birds.

Anas p. platyrhynchos. 3 birds in pond upon arrival all ♀. Later 4 more arrived among which was 1 ♂. The mallards were second in order to leaving the pond upon provocation.

Mareca americana. One bird in with flock when first observed. Later in morning another arrived with some pintails. When this bird lit on water the other baldpate which had been there all morning swam directly over to it. There about 10 other pintails and mallards. The mallard, pintail, baldpate kept together while the spoonbill fed with the teal.

Spatula clypeata. 1 bird arrived with a group of pintails & baldpate.

Megaceryle alcyon one bird on dike between ponds. It remain in area most of the morning.

Tringa solitaria solitaria. One bird with injured leg. It chose to stay in pond just north across road from area (1). It was flushed from this small pond 4 times but always returned.

Totanus flavipes. One bird came in from the north and flew the full length of the pond and then turned around and made its exit from the same direction of his arrival. It called continually in the air.

Charadrius v. vociferous. one bird in area

Sciurus niger one at south end of pond on N. side

Corvus b. brachyrhynchos Birds in area throughout the morning. Calling continually.

Agelaius phoeneu Great number all over the county, generally resting and calling in tops of the larger trees. They constitute the greater number in a mixed flock of redwings, starling, cowbirds & grackles. all ages of birds represented.

Molothrus ater. in flocks of redwings.

Quiscalus quiscula. Large numbers in flocking formation. Mixed with redwings

no evidence of Chaetura pelagica but many 2 days ago. It may represent their last days in the area.

Ardea herodias. 1 left pond and one observed flying overhead later in the morning.

Calaptes auratus. 3 in area

Centurus carolinensis. 1 at S. E end of pond.

Dendrocopos villosus one bird

Parus. atricapillus 12 birds in area

Fulica americana 28 in pond area, 12 in main Lakevew lake. at N. E. end and 32 in area (3).

Hirundo erythrogaster. 284 in area between S end of pond and Lake view proper. Resting & flying over water.

Iridoprocne bicolor 5 bird in with barn swallows.

Stelgidopteryx ruficollis serripensis. One bird with above swallows.

The barn swallows found this bird & the tree swallows a curiosity in that they would hover above them while they rested upon the wires.

Zenaidura macroura. 1 bird flew across pond.

Bubo virginianus. One bird left ~~south~~ west side of pond and flew across to the East side where it alighted in a high cottonwood tree. As it flew across all the duck momentarily left the water until the owl has passed.

Cyanocitta cristata. Flock of 4 birds flew by, high, from north to S.

Capella gallinago delicata. One bird left N. end of pond but settled again about 150 from where it was flushed.

Melospiza lincolni 2 bird in brush East side.

Sayornis phoebe 5 birds in area spending most of their time on insects near the ground.

Sturnella magna. 1 In adjacent field.

Spinis tristis several flew over pond

Richmondena cardinalis. One in area.

Thryothorus ludovicianus ludovicianus. 1 in area.

Circus hudsonius. One flew over area to east, high.

Buteo jamaicensis. 2 birds soaring high from east to west.

Passerina cyanea. 1 bird in area

Actitis macularia One bird. More frequently found along river course about 1 block away.

Procyon lotor. Considerable evidence of this animal in the area. along the entire water edge found a well beaten trail, generally above the zone of supervaluation. In the open mud flats of the north end of the lake found the tracks covering the entire area and appro. 1 at least per 4 feet. Several dens on dike to W. and middle dike barrier

501003-40

Ondatra zibethica. evidence of used runway channels.
Butorides virescens virescens 1 bird on west side
Balaenus lentiginosus. 1 bird on west side
Ikobrychus exilis exilis. 1 bird. on west side.
Eralia pusillus. 5 birds

area ② along Kaw River course disclosed 42 Anas discors resting on mud bank on S. side river. Actitis macularia along river edge. River shows considerable evidence of lateral erosion with large live cottonwood tree dislodged from the edge. At point ④ found a tree (8" in diameter) felled by beaver (Castor canadensis) of early or middle summer period. Dry leaves still on branches. No evidence of shore birds on mud flat or along river course. Area ③ almost completed overgrown with aquatic vegetation. Approx 80 Anas discors and 38 Fulica americana in this area. no heron along entire east side water - land contact. Frog numerous in all areas examined. Ave Rana catesbeiana at S. end of pond area no ①

Museum of Natural History, Univ. of Kansas, Douglas Co., Kansas.

Oct 4, 1950

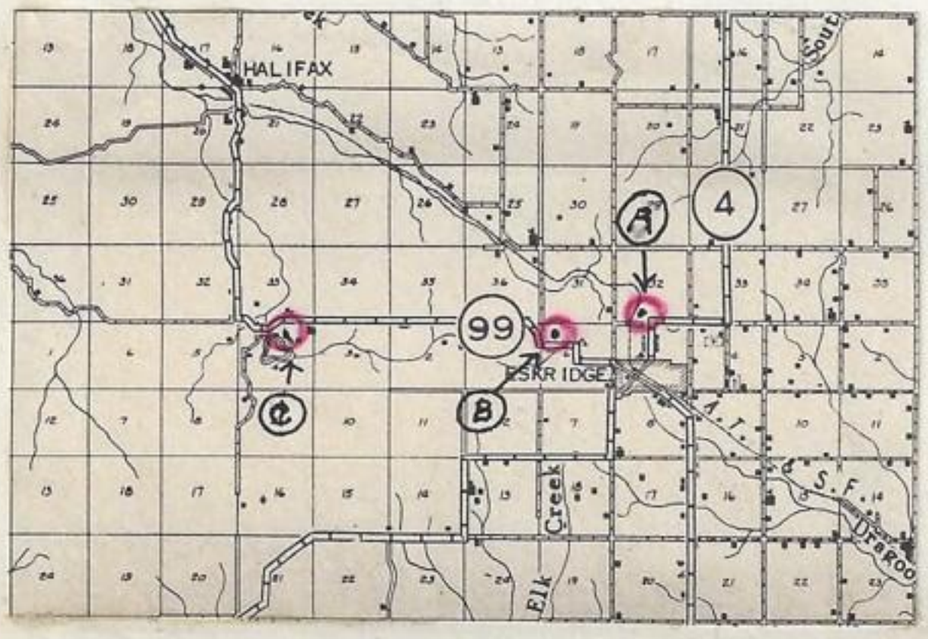
Chaetura pelagica still in area on Campus but in slightly decreased numbers. Night watchman at K.U. reports the Great Horned Owl at Frazer and Blake Building but not at museum building. They (2) have been seen all summer on the campus. It suggests a condition in which these 2 birds are using area away from their nesting building (see previous note) but still close by. At least they do not make themselves known in their nesting territory. Greatest congregation of Red wing blackbirds to date. They appear very restless as if it were the prelude to southern movements. Practically every tree from 13th to 23rd on the south end of town had hundred of birds with continual calling along the entire course. These flocks have been gathering for about a month.

Oct 5, 1950

First day that I did not see Chaetura pelagica in the air. and probably day of their departure

Lake Wabaunsee, Wabaunsee Co., 1,200 approx. feet, Kansas.

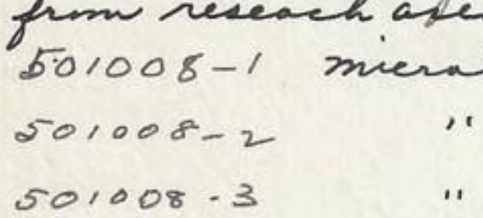
Oct 7, 1950



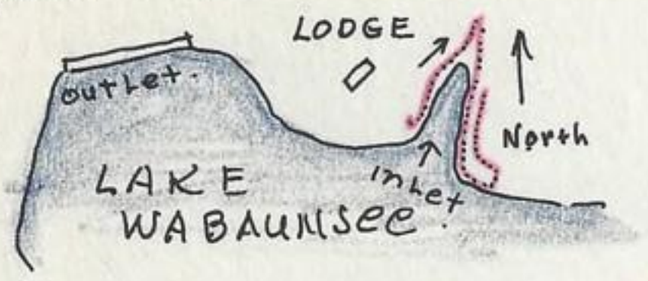
Continued Microtus ochrogaster transect (see notes of 4 Sept., 1950) by establishing three research areas as follows: 501007-A at 3/4 mi. N. Eskridge, 1409 feet., Wabaunsee Co., Kansas; research area 501007-B at 1 mi W and 1/2 mi. N Eskridge (P.O), approx. 1485 ft., Wabaunsee Co., Kansas and research area 501007-C at Wabaunsee Lake, approx 1200 ft., Wabaunsee Co., Kansas

Research area 501007-A in what appeared to be a native field of Andropogon. withaut grazing. 50 traps (museum specials) were placed along a fence row bordering the field, 20 of the 50 traps were placed out in the field proper. It was quite evident that Blarina and micrates were using the same fence line with two different sets of runways. They undoubt shared, at least the Blarina with micrates. many old foraging runways were in evidence. Traps apprax 15' apart.

Research area 501007-B just beyond contact of the osage + prairie savanna and the flint hill prairie Lideonic research area 501007-A was the last field used by micrates before the beginny of the flint hills



This abrupt contact zone was being tested with two sets of trap and not separated by more than apprax 1 mile. The change in vegetation and ground condition are very noticeable with the deep soils of the savanna abruptly changing into the shallow soils and treeless prairie to the west. This contact carries south & north as far as the eye can see. The property owners report M. ochrogaster numerous at Eskridge feed but nothing beyond on the upland prairies. Research area 501007-C at Lake Wabaunsee at apprax 1/3 mi. E of the outlet of the lake. Undisturbed area of Andropogon & other native grasses & plants.



Typical aquatic plants and grasses immediately adjoining lake. Traps (150) set apprax 10 to 2 feet from edge of lake except about 40 on rock outcrops on east side of inlet. Traps 10' apart.

Lake Wabaunsee, apprax 1200 ft., Wabaunsee Co., Kansas
Oct 8, 1950. (Continued)

made the fallow mammals collections from sets of last nite.

Collected the following mammals at 3/4 mi. N. Eskridge, 1409 ft., Wabaunsee Co., Kansas from research area 501007-A. 12 traps sprung but no mammals.

501008-1	micrates ochrogaster	153-36-19-13-53 gms ♂	To mus. nat. Hist Univ of Kansas.
501008-2	" "	152-36-20-13-48 gms ♀	"
501008-3	" "	151-42-20-13-50 gms ♂	"
501008-4	" "	154-36-20,5-13-58 gms ♂	"
501008-5	Blarina brevicauda.	110-25-14-16 gms ♀	"
501008-6	" "	109-26-15-14 gms ♂	"
501008-7	" "	108-24-13-14 gms ♀	"
501008-8	Peromyscus maniculatus	140-51-20-13-18 gms ♂	"
501008-9	Reithrodontomys	130-60-18-12-10 gms ♂	"
501008-10	Sigmodon hispidus.	225-115-31-16-95 gms ♀	"
501008-11	micratus ochrogaster	110-24-18-10-16 gms ♂	measurement only
501008-12	Peromyscus maniculatus	135-54-19-14-15 gms ♂	"
501008-13	" "	132-53-19-14-16 gms ♂	"
501008-14	" "	134-54-19-14-15 gms ♂	"
501008-15	mus musculus	154-75-19-13-13 gms ♂	"
501008-16	" "	153-74-19-13-12 gms ♂	"
501008-17	" "	150-72-19-13-12 gms ♀	"
501008-18	" "	120-58-17-11-7 gms ♂	"
501008-19	Blarina brevicauda.	108-23-14-13 gms ♂	"

501008-42

501008-20 *Blarina brevicauda.* 109-23-14-12 gms ♂ measurement only
501008-21 " " 101-22-14-11 gms ♀ "
501008-22 " " 94-21-13-10 gms ♂ "

and 1/2 mi N Eskridge (P.O)

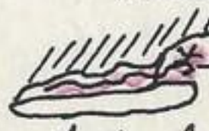
From second set at 1 mi. W ~~Wabaunsee~~ approx 1485 ft., Wabaunsee Co., collected the following from 35 traps in research area 501007-B.

501008-23 *Peromyscus maniculatus* 144-60-20-15-23 gms. ♂ To Univ of Kans mus nat Hist
501008-24 *Reithrodontomys* 123-60-16.5-11-9 gms ♂ "
501008-25 *Reithrodontomys* 120-51-15.5-11-9 gms ♂ "

From Wabaunsee Lake, Wabaunsee Co., approx 1200 ft., Kansas collected the following from 150 traps in research area 501007-C.

501008-26 *Blarina brev.cauda* 100-23-14-15 gms ♀ To Univ of Kans mus nat Hist
501008-27 *Peromyscus leucopus* 188-90-22-16-30 gms ♂ "
501008-28 *Peromyscus maniculatus* 154-65-19-15-23 gms ♀ "
501008-29 *Reithrodontomys* 132-68-18-12-11 gms ♂ "
501008-30 *Peromyscus* ~~maniculatus~~ 150-68-22-15-20 gms. ♀ "
501008-31 " 135-60-21-14-15 gms ♂ "
501008-32 *Sigmodon hispidus* 142-61-22-13-20 gms ♀ measurements only
501008-33 " " 143-58-22.5-13-22 gms ♀ "
501008-34 " " 140-57-22-13-21 gms ♀ "
501008-35 " " 138-56-22-13-20 gms ♂ "
501008-36 " " 142-59-22-14-24 gms ♂ "
501008-37 " " 144-63-22-14-26 gms ♀ "
501008-38 " " 143-60-22-14-24 gms ♀ "
501008-39 " " 140-59-22-14-22 gms ♂ "
501008-40 " " 139-58-22-13-21 gms ♂ "
501008-41 *Peromyscus* (like no 501008-27) partially eaten and destroyed. (dest)
501008-42 " (" " " " ") " " " " (dest)
501008-42 *Peromyscus maniculatus*. Partially eaten. Destroyed. (dest)

Out of 150 traps 63 were sprung in addition to those holding mammals. This large number of sprung traps was due to an apparently tame *Procyon lotor*. This animal was first observed at 20 minutes before sunrise and was feeding on the east side of the inlet along the edge of the water about 2 feet from shore. His position now some 2 block from the nearest camp. When it saw us it swam across the inlet and after examining us at 10 feet from the waters edge for about 2 minutes. It decided to give us a closer scrutiny. From that time on for 143 traps it was continually with us and preceding or trailing us at about 2 or 3 foot distances. On many occasions it would have its nose in the trap before we could reach down to pick up the trap. Even a gentle tap on the head with a stick or the trap bag would not discourage it from its persistent desire to follow us and check each trap. Fed three *Sigmodon* & 3 *Peromyscus* to this raccoon. This act kept up for 35 minutes. Found a *Natrix*? holding a frog there:

under the bank  It called feebly and when I tried to pick up it did not budge but as I pulled harder it came forth but with a snake firmly holding on to the posterior

part of the frog. The back of the frog was → bleeding. The snake was completely submerged in the water. After returning to the lodge I was informed by the proprietor that the water moksem was common in the lake at on the west side some fishermen would not use a particular section of the rocks shore line because of the great numbers of these snake. It is extremely unlikely that the water moksem Agkistrodon piscivorus would be found here and I presume that they are usually being frightened by one of the Natrix. The owner of the lodge says the rattlesnakes are generally found to the west of this area. His dog was apparently bitten by a poisonous snake and he thought it was one of these water moksems. Probably a Crotalus was actually the snake responsible. or possible the copperhead Agkistrodon contortix, however, I doubt whether even this snake is in the area. He claims that every morning his dog follows along the lake in the water about a foot from the bank and catches the water moksem. He says his dog developed immunity after his first serious bite. This show dog of his killed a young Canis latrans about 200' from his lodge. He says lake always clear. no trash fish. Pelican, Canada geese, sandhill crane have been seen in area. Enroute to stopping here this morning observed a Canis latrans on main highway 1 mile east of lake Wabaunsee. It was in creek bed whose bank was surround by high grass. It remained while car stopped but ran after about 30 seconds. Birds in area at lake were:

Fulica americana 150
Larus franklinii 31
Anas discors 3
Sturnella magna. numerous. (typical eastern call)
Anas acuta tzitzihoa. 3

Was rather disapointed in the duck representation in both numbers and species. According to the proprietor a flock of red-head ducks were there two days ago but left the same day. did not have the opportunity to check on smaller bird life. Left the lake at 8:30 A.M. Annette, Jay. Chris, Mil, Curly and myself made the trip Cabins at $4.00 double bed 1 or 3 double beds in one cabin for $6.00. Accommodations can be made for any month of the year.

Lakeview, Douglas Co., Kansas

Oct 8, 1950

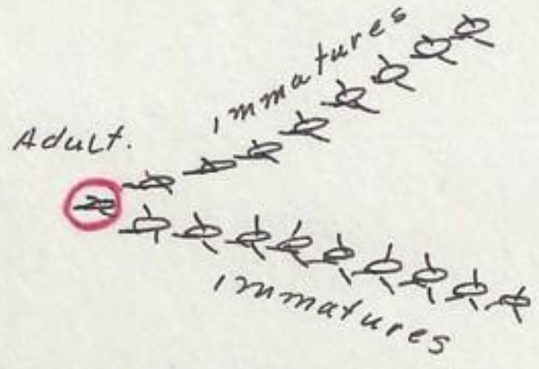
Mr and Mrs Bert Chewning reports 5 Recurvirostra americana at Lakeview for Oct 7, 1950 (Report given by W. B. Tordoff.)

501015-44

307 W. 23rd St., Lawrence, Douglas Co., Kansas

15 Oct. 1950

Groups of *Chen hyperborea* passed over trailer at appx 4:00 A.M. (from N. to S)
Waved estimate about 50 in this flock. At 7:50 A.M another group passed by from N. to S and about 300' above the ground. They called continually and flew directly south. At the moment these birds flew by observed the flock formation. There were 26 *Chen caerulescens* and 74 *Chen hyperborea*. Could not determine whether hybrids were among them. The assumed the following order; One group of 18 *Chen caerulescens* formed a wedge about 100 feet from the main group and would indicate a psychological separation of the two geese. They were led by a mature bird with white to shoulders. The remaining birds were immatures.



The main flock in a long string formation with all snows except 8 blues which were partly segregated but in different parts of the flock.
The snows were leading the flock, 74 in all with 8 blues, all of which appeared to be immatures. I have observed that many flock of snow & blues have passed directly over the trailer and the museum of Natural History on the Univ of Kansas Campus, both in the northern and southern migrations. Have followed certain groups which travel directly N. and South without deviating by the influence of the Kaw River, and Lawrence. The only reason that I can explain this use of a narrow lane is indicated on the above map which shows a convergence as a result of the river. Birds going north, however, would not be influenced by this river. The hill that now is used for the Univ may have been a land mark at one time, coming as it does at the convergence of the Kaw & Wakarusa River drainage systems.

501015-45

Lake View, Douglas Co., Kansas
15 Oct 1950

At 4 1/2 mi. N and 3 1/2 W Lawrence (P.O.) found apprx 243 Chen hyperborea and Chen caerulescens apprx 1/5 of the grasp were of the later species. They were mixed in as heterogenous grasp with slight tendency for Chen caerulescens to be segregated. They were resting on the sand and mud river coarse with apprx 300 feet distance between the birds + the side of the river channel where vegetable growth interupted an otherwise barren sand rock bottom. when first approached they (9) swam out into the river but soon all left after gradually becoming alerted. They flew in one grasp to the west, flying in the general direction of the river course. At the area marked (B) observed 283 Fulica americana, 15 ~~Glaux~~ Marca americanus, 37 Podilymbus podiceps, 8 Anas acuta tzitzihoa, 2 Anas discors and 1 Anas platyrhynchos. 18 Oxyurus vociferans. no Egretta in sit. Above from casual observation and not systematic inspection.

Lake View, Douglas Co., Kansas
18 Oct.

Fredrickson and N. B Tordoff report following from area as in above. apprx 200 Chen hyperborea and few Chen caerulescens, 10,000 Agelaius phoeniceus, one wounded Pluvialis d. dominica, few Erolia mauri, one Tringa solitaria solitaria. Tordoff also reports a flock of Chen hyperborea + Chen caerulescens flying south over Museum of Natural History on the campus at Lawrence, apprx at 6:00 P.M. I have not personally heard any geese flying south since 15 Oct, 1950

Museum of Natural History, Univ of Kansas, Lawrence, Kansas
21 Oct

Flock of apprx 80 Blue + snow geese flew south over museum at relatively low elevation at 3:00 P.M. Day clear and only slight breze. Temperature expected to go down in 2 or three days however, today has been one of the warmest days we have had this summer

501023-46

207 W. 23rd, Lawrence, Douglas Co., Kansas

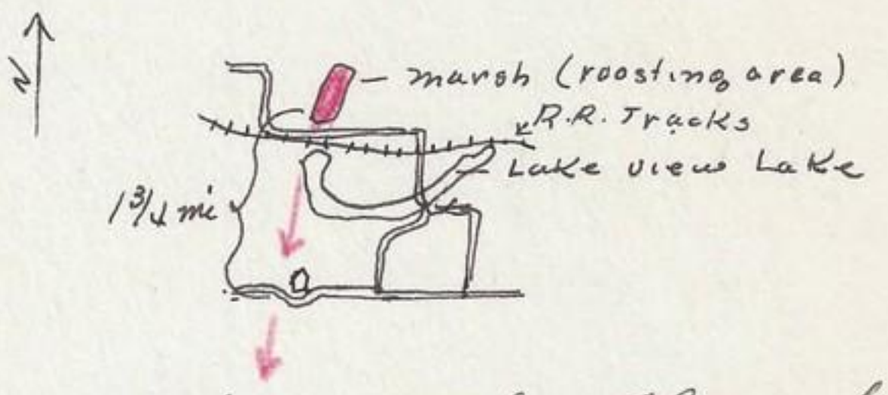
23 Oct, 1950

Flock of Snow and Blue geese passed south over trailer at 5:50 A.M., calling.

Lake View, Douglas Co., Kansas

25 Oct 1950

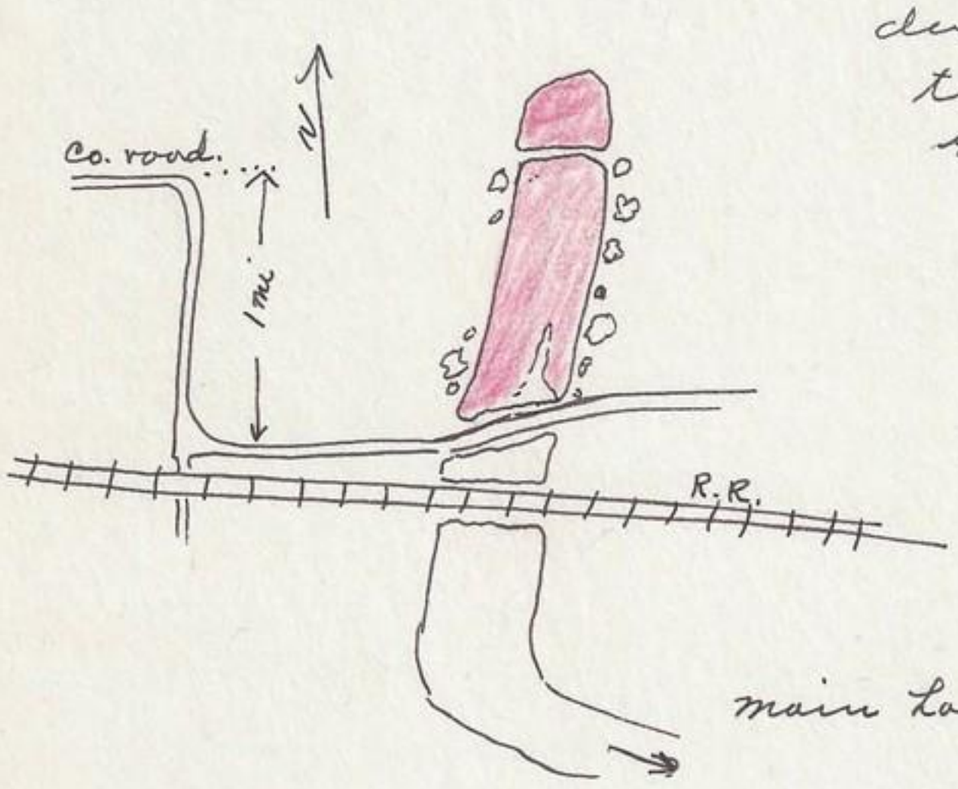
James Finley, graduate student at K.U reports great numbers of grackles & Redwings flying over his home between 6:15 A.M and 7:00 A.M. Day slightly overcast. Finley residence is directly south of the area where the birds roost during the night. The direction of the flight would indicate a southern movement from the marsh. These birds are assumed to return to the marsh area but arrived on a more general direction than when departing.



Lake view, Douglas Co., Kansas

29 Oct. 1950 Storms overgain 3%

made census count of a flock of Quiscula quiscula 80%; Molothrus ater 2%; and Agelaeus phoeniceus 15%; at the slough area north of the west end of the lake. The birds arrive at this slough in the afternoon from about 4:30 P.M to 5:30 P.M coming in from all directions. Between 5:00 & 5:30 they are uneasy and are continually readjusting themselves. The ~~entire~~ groups form black masses when arising from the slough. Many were resting in the tall trees bordering the water. This slough is an ox-bow of the Kaw and is now a shallow lake which has completely grown over with vegetation that can grow in standing water. Estimation made on the following basis. Area of lake (in red) approx. 1/6 of a mile x 5/10 of a mile, or 880 feet x 2640 or 2,323,200 sq feet or 258,132 sq yards. Approx 5 birds per sq. yard = 1,290,600 birds. On the basis of area used and being conservative would say that 1/2 of it was open water or too near shore for protection. On this basis the area would support 645,300 birds in the aggregate.



501101-47

1800 Kentucky Ave, Lawrence, Dougla Co., Kansas

1 nov. 1950

Flock geese (probably Snows & Blues) reported flying south at 6:30 A.M. These geese were flying appox 3 blocks east of their usual flight lane. at 8:30 A.M temperature changed to cold with considerable wind. It has been windy the last 2 days.

museum Natural Hestory, Lawrence, Douglas Co. Kansas

2 nov. 1950

Harrison B. Tordoff of Museum received a Lopia curvirostra taken on campus near Snow Hall. Poor condition. and probably rode-out the storm of the last few days. This crossbill was the N.W form.

26 nov. 1950

72 Canadian geese flying south over campus area.

28 Dec 1950

Loxia curvirostra, of probably 3 subspicies rather common in Lawrence area this winter.

end. 1950