

JOURNAL 1960

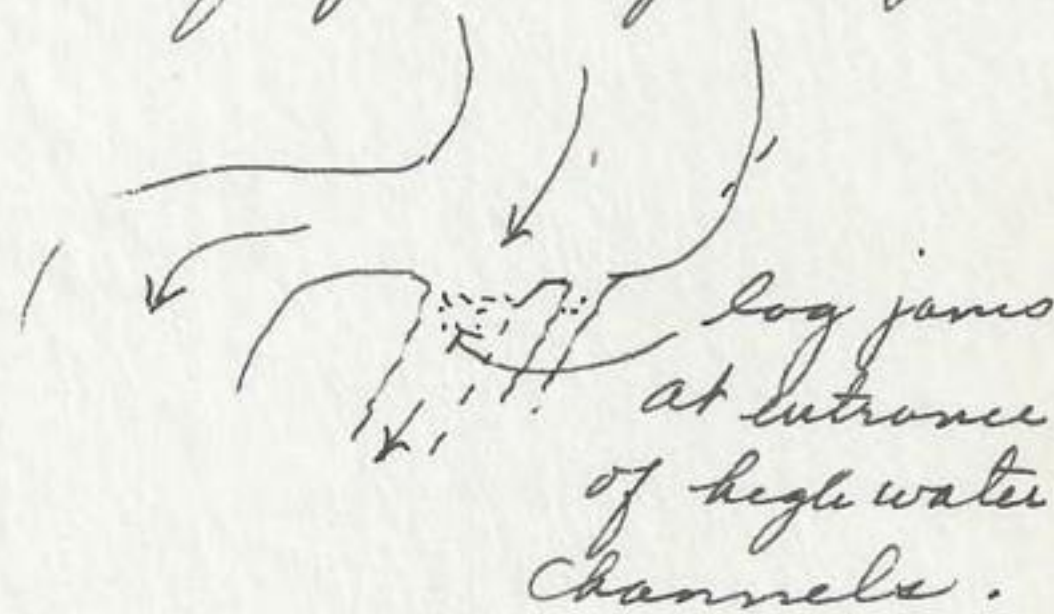
JAMES W. BEE

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

Jan. 3, 1960

Lon Jay and I checked area along Kaw River. Area of cottonwood trees in both stable growth of higher ground and extensive secondary growth on overflow plain and old river channels. Beaver active along edge of river, mainly near bank den where several large trees were submerged at entrance. Several stripped branches marked the entrance to the den. While small trees were cut along the entire edge of the river, most of the large tree cutting, slides etc. were associated with the den area. White-tailed deer in area and also red-fox and coyote. Horned larks in the open fields. Gophers active, one of which had recently extended its burrows along the side of a dike, some 100 feet in 15 large mounds. Photos of James Robert as follows:

(600103-1) J. Robert with new 16 gauge sitting among drift logs at edge of river. The logs are more frequently lodged where high water channels force the logs beyond the edge of the river where they would normally be dislodged. Photo 60 sec x 22 into sun with Super-Ancoro-Chrome.



(600103-2) James Robert at edge of ice packed Kaw River. Ice flowing in main current and making brushing noise as the flows crash into obstacles or on the bank. 100 x 22 with sun at back. Rock placed for erosion control.

(600103-3) James Robert among large cottonwood trees in stable area along river. This area floods in high waters but not of such impact as to dislodge the trees. These trees give protection to red-fox & white-tailed deer & great horned owl.

(600103-4) James Robert at edge of Kaw with ice flows flowing by. Although day cold & windy, this sun-lit spot was protected and warm.

(600103-5) James Robert among grass in river bottom.

University of Kansas, Lawrence, Kansas

Jan 4, 1960

Skaters on Potter's Lake for first time this season.

Jan 23, 1960

measured length of larva placed in vial Dec. 8, 1959 for growth determinations. One of the still living larva is 6 mm in length or an increase of 5 mm since Dec 8. Of the two larvae, one died or escaped after the 6th molt. The one living is 6 mm long and has passed through 8 molts since Dec 8, 1959. The food eaten (fecal pellets) when formed into a loose cube measured $3 \times 3 \times 3$. On the basis of the regular molting (8 in 45 days) it can be stated that they molt approximately once every 5 or 6 days. The few remaining adults in regular jar do not show signs of active movement as they did during the breeding period. Of the 3 or four which survived the high temp that killed most of them, they seldom move about but remain below among food.

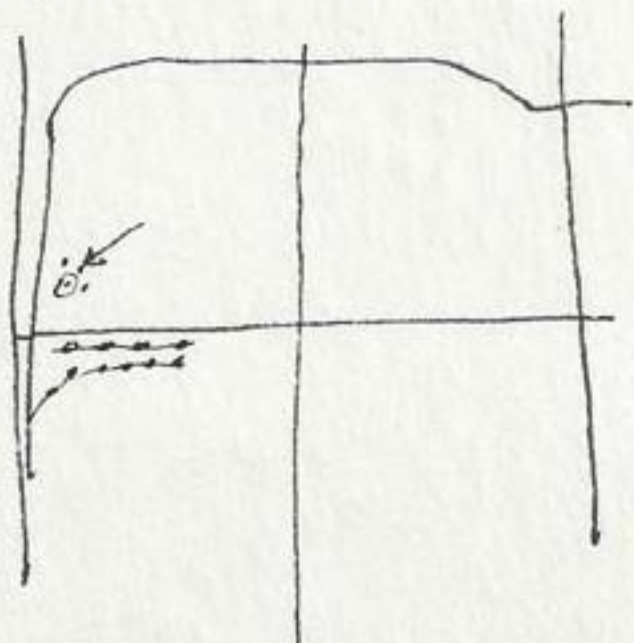
Jan 31, 1960

At the front entrance to Snow Hall on the campus of the University of Kansas approximately 40 cedar waxwings ^{high} (30') Bombus cedrorum fed on the round seeds of the juniper trees. The American robin, Turdus migratorius also fed upon these seeds but spent most of their time challenging the waxwings by chasing them from one part of the tree to the other. I could approach these waxwings within 5 feet, one within 2 feet. At one time a pigeon flew over the tree and the waxwings ^{all} left the tree at one moment and nearly flew into Chris, Pally and myself who were by the tree.

Haskell Bottoms, Lawrence, Kansas

Feb. 16, 1960

This A.M. collected 4 Scapanus hispidus, 1 Microtus ochrogaster and 1 Peromyscus maniculatus from 12 live traps set in SW part of Haskell Bottoms.



Scapanus lacking in areas of main field where great numbers were living before cattle were introduced. Only forms in evidence are Microtus ochrogaster where hummocks of grass supply some degree of protection. Runways in ground ^{sparse, flat} with vegetation overhead.

Lawrence, Kansas

Feb 21, 1960

Snowed yesterday and last night. This A.M. photographed several snow scenes at home and on the Univ of Kansas Campus. Snow about 6 inches deep and remained on trees all day because of low temperatures and lack of wind. Ektachrome - 50 rating

(600221-1) from front porch at 1620 Tennessee shooting across street. Polly & Chris in foreground. about 9:00 A.M. 50 sec x 22 opening. 800 rating

(600221-2) across street from home with Chris & Polly in foreground. Most of the photographs were on basis of 800 to 850 rating and from 50 to 120 of second and 22 aperture.

(600221-3) Edgewood road and on front yard of one of the fraternity housing. Polly sitting in snow and Chris in background.

(600221-4) Same area as above but shooting into the snow under tree. Polly & Chris on the bench.

(600221-5) Great House of Chancellor Murphy on the Campus.

(600221-6) Front of Chancellor Murphy Home on Campus, University valley to the south.

(600221-7) Tree west of Snow Hall show Potter's Lake area to north.

(600221-8) From Campanile to east.

(600221-9) Old tree just east of Campanile on campus.

(600221-10) Tree at south end of Potter's Lake.

Most of these shots were spoiled by improper developing. Red light streaks, green row, and dark blotches irregularly placed on negative.

This season has been characterized by prolonged cold temperatures and gradual accumulation of snows without melting. It has been one of the best years for skiing that we have had in the last 12 or 20 years. James R. has been on skis nearly every day. According to Dr. Hungerford, the entomologist, this year has been an exceptional one. The last year he recalls, to be compared, was 1912. Other individuals remember the years 1912 and 1918 as being years of heavy snow and prolonged cold.

March 9, 1960

600309-4

at 1:00 P.M. tested 22 seeds for possible poison. These seeds were from the ventriculi of six quail (see previous note) which were dead from virus pneumonia. At 3:00 P.M. 8 seeds had been eaten and the mouse was normal.

March 9, 1960

Placed skull of no 600307-5, Colinus, in dermestid jar. The dermestids have increased in size to almost adult stage and have burrowed into the prepared blocks of feed. In the last week they have appeared above the level of the food. Many cast skin in jar. Water in alcohol lamp, used for humidifier, about $\frac{3}{5}$ gone.

March 14, 1960

Skull (above) of Colinus cleaned.

March 14, 1960

Removed books from display case. They are:

The zoology of the voyage of H.M.S. Beagle under the command of Captain Fitzroy, R.N., during the years 1832-1836. By Chas. Darwin published 1839-43. Part III Birds by John Gould.

Narrative of a journey to the shores of the Polar Sea in the years 1819, 20, 21 and 22. by John Franklin, Captain R.N., F.R.S., and Commander of the expedition with an appendix on various subjects relating to science and natural history. Illustrated by numerous plates and maps. Published by authority of the right honourable the Earl Bathurst. London: John Murray, Albemarle Street. MDCCC XXIII [1823]

No. V. Zoological appendix by Joseph Sabine, ESO.

No. VI. Notices of the fishes by John Richardson, M.D.

No. VII. Botanical appendix by John Richardson

Ornithologists of the United States Army Medical Corps by Edgar Osborne Hume.

A reference guide to the literature of travel. Edward Bodfrey Carl

A voyage around the world by Louis de Bougainville 1772

The natural & moral history of the east & west indies. Joseph de Costa '604

Boundary Survey - S. F. Baird 1859.

The principal navigations Voyages Duffique & discovery of the English Nation - Richard Hakluyt. 1903-05

Travels to discover the source of the Nile in the years 1768, 69, 70, 71, 72 & 73

James Bruce. 1805

Voyage de decouvertes L'Australasie - Gaimard

Reise durch die La Plata - Staaten - Burmeister.

March 14, 1960

Summary of material sent to Dr. Taylor in Thailand; APO 146, San Francisco.

Box 1. sent Feb 19; 1-69 bags; inventory sheets 1-8; postage \$6.00.

Box 2. sent Feb 29; 70-143 bags; " " 9-11; postage \$5.87

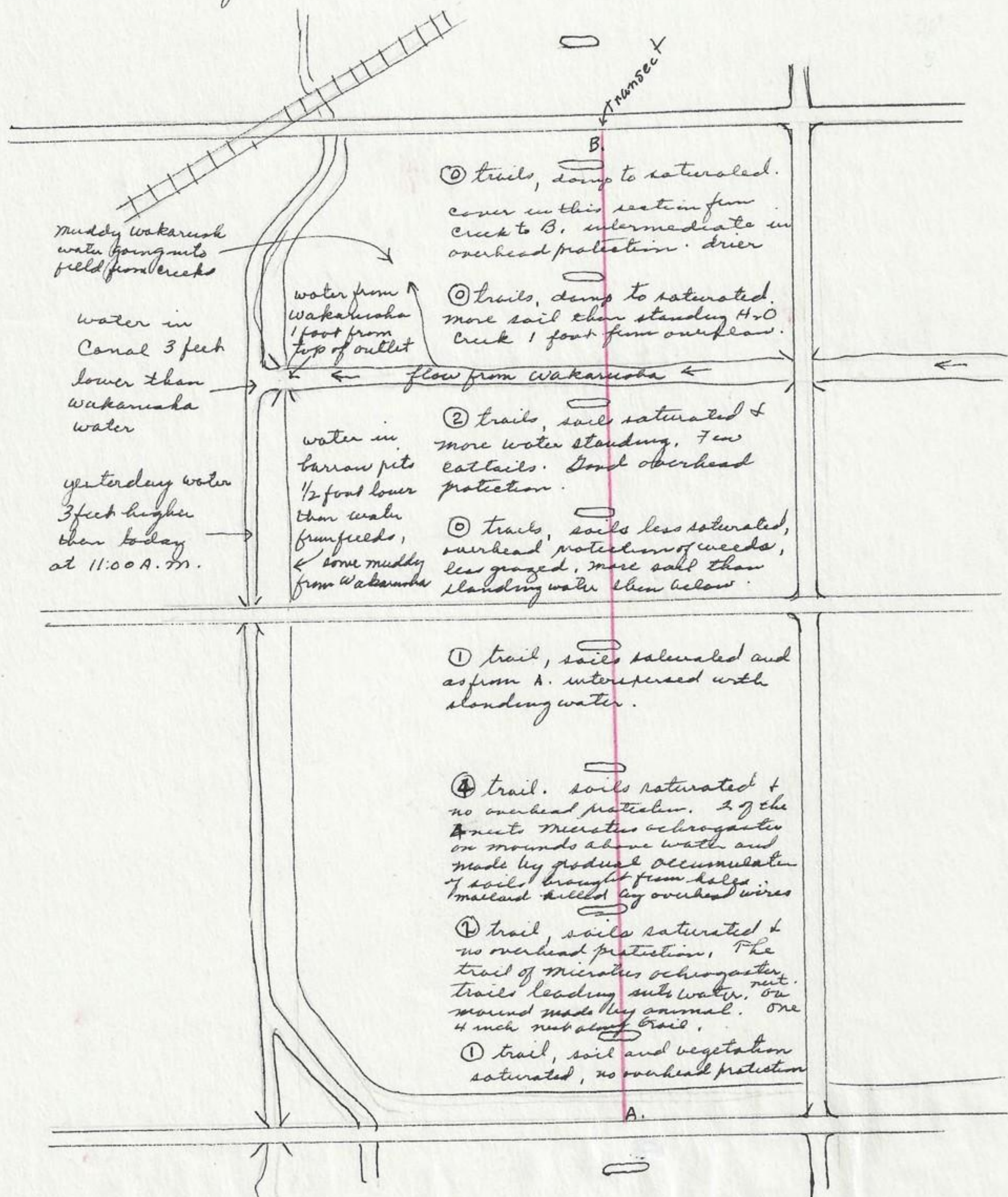
Box 3. sent March 12; 144-221 bags; " " 12-13; postage \$5.61

Additional costs \$8.29 for lumber and nails. Total bill \$25.79.

Haskell Bottoms, Lawrence, Kansas

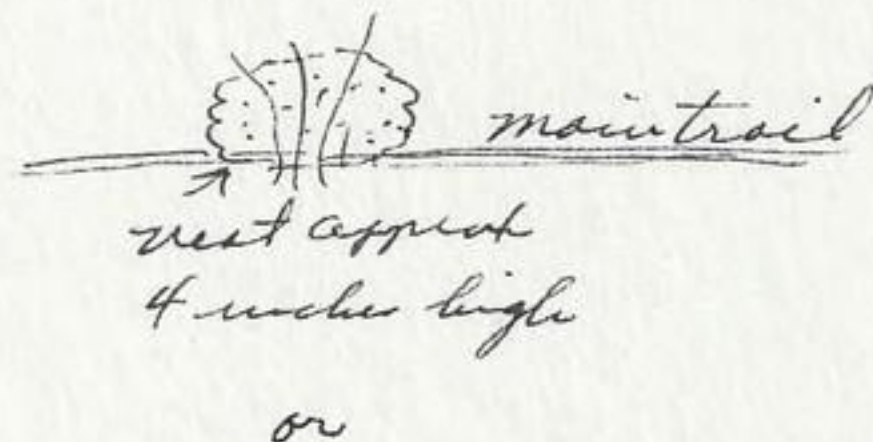
March 27, 1960 (see notes March 9, 1959)

made census of Sigmodon hispidus in same area as surveyed March 9, 1959. The season is considerably later this year (1960) than in 1959. The advance of season and disappearance of snow of the two dates above were the same with snows just having disappeared and the bottoms supersaturated with water. Snow remain in only isolated spot, especially old ^{drifted} snow banks

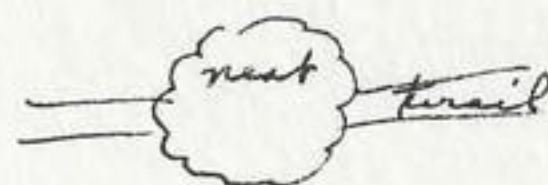


10 used runways and all typically of the Microtus ochrogaster type trail, as compared to 108 trail as of March 9, 1959. Estimate
 0 Sigmodon hispidus and 56 Microtus ochrogaster, 23 Peromyscus mice.

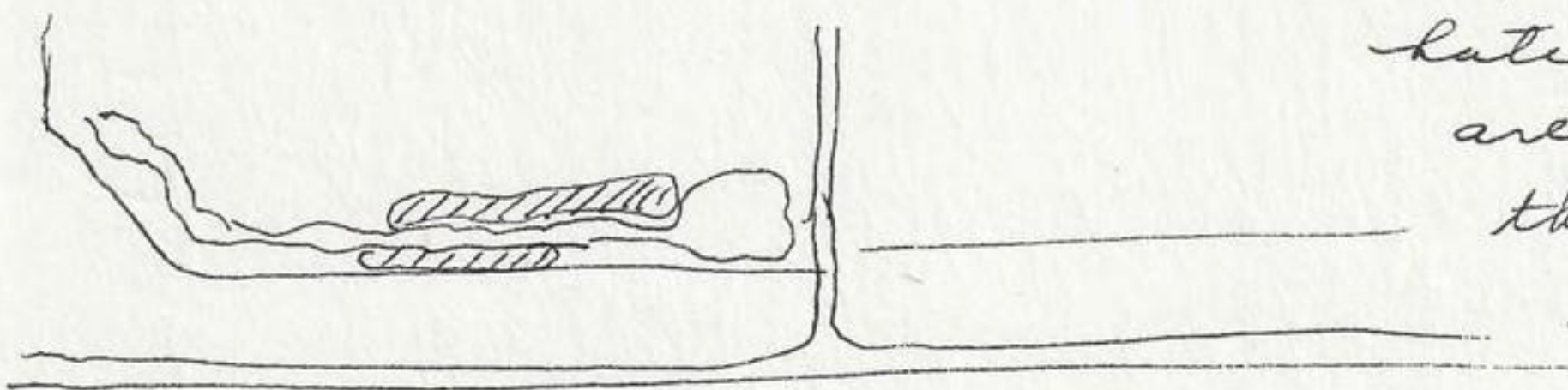
The trails of Microtus ochrogaster were deeply entrenched and led to areas that are now in standing water. Considerable evidence of digging under the snow with excavations shallow and dirt excavated extending 6 or so inches from diggings, probably digging for roots. The mounds used by M. ochrogaster were slightly higher than the surround surface and were built by gradual accumulation of soil. 5 to ten holes were associated with each mound. The bottom of the trails were mud but still used in preference for drier soils adjoining. The depressed trails and nocturnal movement of M. ochrogaster probably accounts for their survival in contrast to Sigmodon. One nest of M. ochrogaster was placed among



stems of weeds and along main trail. Along dike from gates where Waparusha water entered the canal to the road at SW corner count 8 dead and eaten cottontails probably killed in the winter. The greatest concentration of small rodent activity was along the dike (east side) and on east side of barrow pit as indicated in



hatched lines. This area supported more activity than the entire area surveyed this A.M., consisting of approximately 12



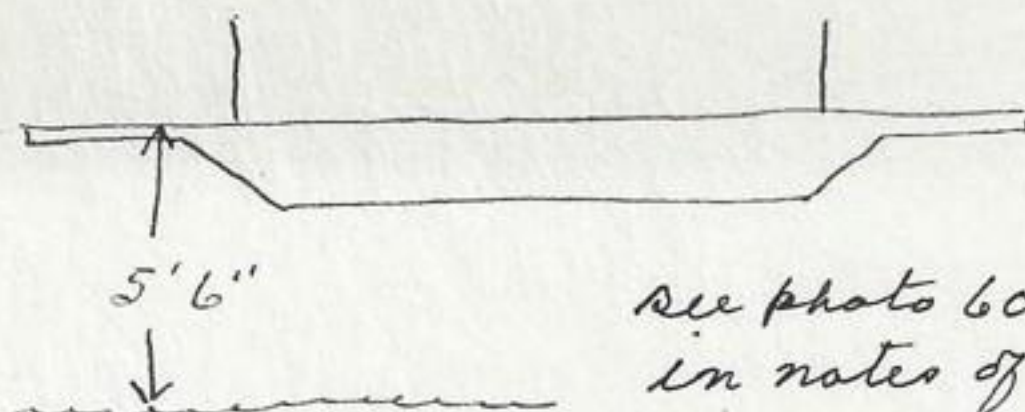
individual groups of digging, presumably Microtus ochrogaster.

I cannot say with confidence that there was evidence of Sigmodon hispidus, except that in 8 owl (G. Horned) pellets at base of utility pole line there were Sigmodon ^{and Microtus} skulls. Following

birds observed: 2 red-tailed hawks; 6 marsh hawks; 8 crows; 15 meadowlarks, plus 2 dead ones found along dike; 2 shrikes; 8 shorebirds; 200 green-winged teal; 50 blue-wing teal; 30 mallards; 2 hilldeer; 12 redwing blackbirds; 18 grackles. No live rabbits, 6 Peromyscus maniculatus (under boards

in groups of 3-2-1; many singing cricket frogs & large Rana pipiens; 2 yellow-shafted flickers. (see calculations for numbers at end of account) In the larger or deeper ponds noted 12 dead Rana pipiens (partially bleached) which probably died in early spring.

At 12:00 A.M. the Wakarusa River bridge on Louisiana Street was 5'6" below the level of the bridge. at this time (12:00 A.M.) the Wakarusa was



see photo 600327-1
in notes of March 29,
1960

backing up the drainage channel into the Hasbell Bottoms. The water was flowing north and was within 1 foot from the top of the two drainage culverts leading through the north dike. Water was just beginning to overflow into the fields in the N.E. side of the Hasbell Bottoms. The waters were brown and muddy in contrast to the clear waters from the melting snows. Comparison of numbers of mammals of March 9, 1959 and March 27, 1960 which are two dates representing equivalents in seasonal advancement is as follows: (March 9, 1959)

108 used trails (units) on transect A-B (1 mile) from west to east directly under the line of the south utility pole:

~~108~~ 54 assumed number of trail units 90° to transect.

433	
540	
5833	trails in 1/2 square mile (exclusive of N. dike)
140	trails on N dike
5973	
6	Sigmodon per trail unit
35,838	
2389	1/15 population of <i>Microtus ochrogaster</i> (based on 1 m.o. to every 15 <i>Sigmodon</i> caught in live traps set in runway)
38227	
3583	1/10 population of <i>Peromyscus maniculatus</i>
41,810	total population of three forms. M.O., S., and Per.

(March 27, 1960)

10	used trails (units) on same transect as above.
5	assumed number of trails at 90° to transect.
50	trail units in 1/2 square miles (exclusive of N. dike)
6	trails on north dike
56	
1	<i>Microtus</i> per trail unit or system
56	<i>Microtus ochro</i> per 1/2 square mile
23	1/2 population <i>Peromyscus maniculatus</i>
79	total population of M. ochro. and Per. manic.

I did not find evidence of *Sigmodon* but no doubt there are a few isolated examples remaining. Old winter used trails of *Sigmodon* were present, indicating that there were a few present in the winter but did not live until spring.

8. *Peromyscus maniculatus* were living in some burrow systems as *M. ochro*. a few were found under boards. In no instance did I see, in the field, a live *Sigmodon* or *M. ochro*.

Of the 10 trail units a live trap and 4 snap traps were placed in the trail system and burrows associated with the trail system. These were left all night and examined the following morning as: (the following evening)

First trail unit of area 1 produced. (area = between sets of utility poles)
 1 *Microtus ochrogaster* ♀, 175-44-20-38gms, 2x3 emb. just starting.
 (600329-4) liver white and fumes of red hemorrhaging blood.

2nd trail unit of area 2 produced:

1 *Microtus ochrogaster* (600329-5) ♂, 143-36-19-10-23gms, testes 8mm

The first trail unit was abandoned but recently used.

First trail of unit 3 produced:

1 *Microtus ochrogaster* (600329-7) ♀ 162-35-20-12-44gms 2x3 emb 4mm

2nd trail of unit 3 produced:

1 *Peromyscus maniculatus* (600329-6) ♂ 149-56-18-14-20gms testes 11mm

3rd & fourth trail systems abandoned but recently (with last week) used.

First trail of unit 4 produced:

1 *Microtus ochro* (600329-8) ♂ 145-30-20-11-33gms. testes 14mm

1 *Per. maniculatus* (600329-9) ♂ 150-56-18-14-19gms testes 11mm

First trail of unit 6 produced:

1 *Microtus ochrogaster* (600329-10) ♂ 148-31-20-11-32gms testes 13mm

all other trail ~~units~~ systems on transect were abandoned, probably in the last few days.

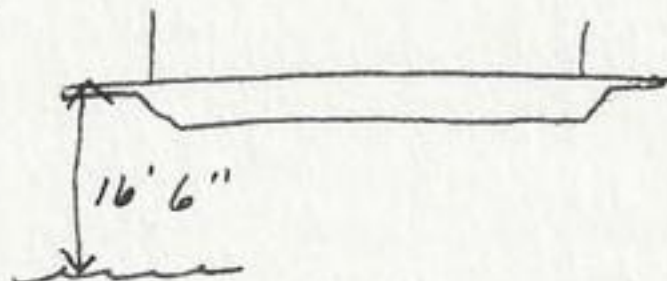
The evidence is that *Microtus* is capable of existing under adverse effects such as trampling and overgrazing by cattle and removal of overhead protection. The nocturnal habits and depressed trail units accounts for their ability to evade hawks by day & owls by night. *Peromyscus* may profit by living with *Microtus*. Last year there were many grass surface nests. This year there were only a few. One interesting observation was the presence of large angle worms under the droppings of cattle & horses, as many as 5 or six under each pile. Yesterday, the water of the Wakarusa was (a guess) 11 feet below the bridge (measured as before). At 3:00 P.M. this date (March 27) was 5 feet from bridge, an increase of 1/2 foot since noon. At this time made photo (600327-1) from middle of bridge to east showing high waters. From here went to Lone Star Lake which is 80% covered with ice. One morning glow butterfly (5:00 P.M.) resting on rock exposed to sun. High water overflowing. One sculp on lake. At Lawrence counted 1640 snow geese & blues flying about 1500ft from east to west.

The geese were in two flocks, one above 23rd street and the other about 19th street.

Wakarusa River, Douglas Co., Kansas

March 28, 1960

Measured water level of Wakarusa River at 6:00 P.M. It was 11 ft 6 in below the bridge (on Louisiana Street.) as measured from top of girder support



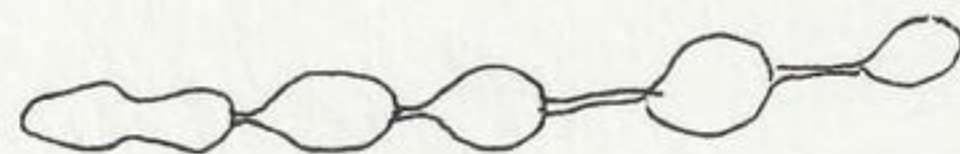
March 29, 1960

Water on Wakarusa 18 feet below bridge as measured above.

University of Kansas, Lawrence, Douglas Co., Kansas

April 1, 1960

Identified tree immediately north of the Chancellor's home as being Sophora japonica. This tree has been the source of food since the first of January, of a small flock of cedar-waxwing and occasionally robins. The seeds of this tree are similar to a bean in shape and are approx. this size . They are harder than one can break with ones teeth and are enclosed in a fleshy capsule which might actually be the source of nutrition for the birds.

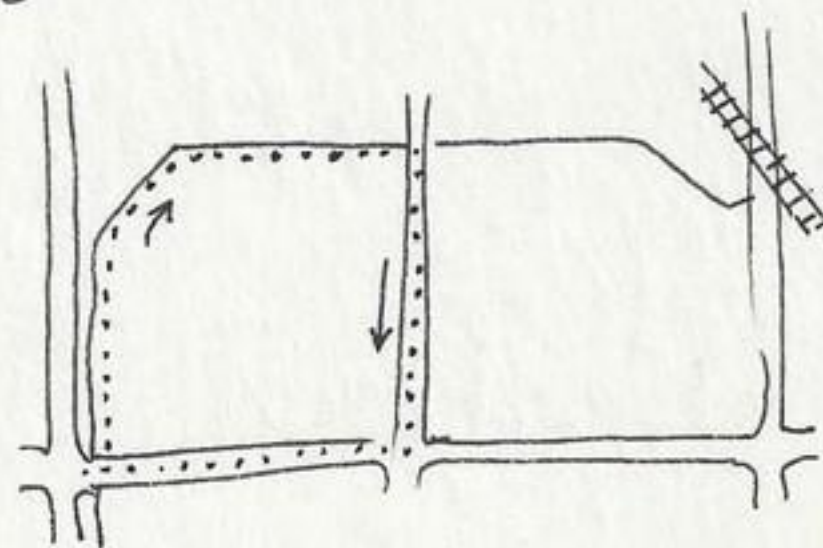


slightly smaller than natural size.

Haskell Bottoms, Lawrence, Douglas Co., Kansas

April 3, 1960

Annette and I walked around dike and road in Haskell Bottoms. Dike dry but field still saturated and at least 1/4 in standing water. Did not see a



living Sigmodon nor evidence of trails currently used by Sigmodon. many abandoned tunnels of the mole, several of them having been used by small animals as winter runways, probably Thomomys maniculator. The partly collapsed tunnels connected to some trails used by Microtus ochrogaster. Only three fresh diggings of the mole were noted. Ordinarily there are several hawks, mainly marsh hawks, in the area but we did not see any hawk except one redtail which flew over the area. Three Wilson Snipe were

jumped along the dike but no other water bird was noted. Approx. 20 meadowlarks were noted, mainly singles or pairs. Three male redwings had established territories along the dike. Small sparrows were feeding along dike but not the native ones such as the song sparrow. The frogs were calling in localized areas along the dike and generally distributed in the field. It is believed that these frogs were Acris crepitans. Only one group of Rana pipiens were calling although many were noted. Two crows were feeding in area.

April 7, 1960

At 5:30 P.M., checked area (nw corner) to collect frogs. Although I heard many, I was unable to collect one. Noted several Rana pipiens and one small frog (Pseudacris or Acris). It is interesting that while the entire field is aloud with frog calls, that there is not more ^{visible} activity. At this time of year, although numerous egg masses were noted, they are secretive in habit. 13 Wilson snipes feeding and flying as one group. Killdeer are paired. 3 mi. S and 7/10 mi. E Lawrence (Marip Lake), Douglas Co., Kansas

April 9, 1960

Collected the following Acris crepitans from the edge of Marip Lake:

<u>600409-1</u>	<u>Acris crepitans</u>
<u>600409-2</u>	" "
<u>600409-3</u>	" "
<u>600409-4</u>	" "
<u>600409-5</u>	" "
<u>600409-6</u>	" "
<u>600409-7</u>	" "
<u>600409-8</u>	" "
<u>600409-9</u>	" "
<u>600409-10</u>	" "
<u>600409-11</u>	" "
<u>600409-12</u>	" "
<u>600409-13</u>	" "
<u>600409-14</u>	" "
<u>600409-15</u>	" "
<u>600409-16</u>	" "

These frogs were resting along the shore of the lake and when approached to within 5 or 6 feet would jump into the shallow water and either disappear into the vegetation of the lake or swim immediately back to the edge of the shore where they would come to rest on stems of old weeds or aquatic debris until captured. There were probably 4 times the number collected around the edge of the lake.

Bull frogs were at the north end of the lake among dense thicket growths and not around the more open part of lake. (2 with eggs) Photo 600409-17 and 600409-18 of a large 18" bass and bullhead catfish. One channel catfish was also caught. These fish were biting well. 18 blue-wing teal were on lake & 9 American Coot. From here to Haskell Bottoms where I search for 1 hour in areas where many eggs of Rana pipiens and small frog were deposited but no sign of frogs. 36 Wilson Snipe noted

University of Kansas, Douglas Co., Kansas 600409-11
April 9, 1960

Catalogued several herps and amphibians this a.m. from a miscellaneous collection:

600409-19	♂ <i>Eumeces obsoletus</i>	3 mi. S Lawrence, Kansas
600409-20	♂ <i>Bufo terrestris</i>	" " April 10, 1959 April 18, 1958
600409-21	♂ <i>Hyla versicolor</i>	April 18, 1958, 8 mi. N Lawrence, Kansas
600409-22	<i>Eumeces fasciatus</i>	April 15, 1958, Lone Star Lake, Kansas
600409-24	" "	May 5, 1958, 7 mi. SE Ottawa, Kansas
600409-25	<i>Lygosoma laterale</i>	May 5, 1958, " " "
600409-26	<i>Carphophis amoenus</i>	May 5, 1958, " " "
600409-27	" "	" " "
600409-28	♀ <i>Bufo woodhousii</i>	May 5, 1958, Univ. Kansas, Lawrence, Kansas
600409-29	♀ <i>Crotaphytus collaris</i>	May 5, 1958, 12 mi. N Pittsburg, Kansas
600409-30	♂ " "	" " " "
600409-31	" "	" " " "
600409-32	<i>Thamnophis sauritus</i>	" " " "
600409-33	<i>Bufo terrestris</i>	May 5, 1958 Crestline, Cherokee Co., Kans.
600409-34	" "	" " " "
600409-35	" <i>woodhousii</i>	May 10, 1958 Lake View, Douglas Co., Kans.
600409-36	<i>Hyla versicolor</i>	May 10, 1958 8 mi. N Lawrence, Kansas
600409-37	<i>Eurycea longicauda</i>	June 28, 1958 2 1/2 mi. E Carbondale,
600409-38	<i>Eumeces laticeps</i>	" " " Jackson Co., Illinois
600409-39	<i>Rana clamitans</i>	" " " "
600409-40	<i>Rana sylvatica</i>	" " " "
600409-41	<i>Rana clamitans</i>	" " " "
600409-42	<i>Ambystoma</i>	
600409-43	<i>Hyla versicolor</i>	May 10, 1958, 8 mi N Lawrence, Douglas Co., to 7 mi. W Lawrence, Douglas Co., Kansas

April 16, 1960

at 8/10 mi. W of Highway 40 at point where the highway makes its first 90° angle turn west of Lawrence, observed one scissor-tailed flycatcher sitting on the wires of a fence line.

University of Kansas, Lawrence, Kansas

April 16, 1960

A.B.
Prof. Leonard, associate Chairman of the Dept of Zoology, presented me with a ^{mounted} tarpon, *Tarpon atlanticus*, measuring 54 inches (standard measurement) or 65 1/4 inches greatest length. This fish had been given to him by Dr. Mitchener of the Entom. Dept. This tarpon is given catalogue no. (600416-1). Mounted by Roberts and Brundrett, Port Aransas, Texas.

7 mi. W Lawrence, Douglas Co., Kansas 600417-12

April 17, 1960

within 1 block of farm where I noted a scissortail flycatcher yesterday I saw one today. It remained on the fence wire even though I had stopped and honked the horn three times. When it left it flew along the fence line and lit again to be approached without fear. This bird is too confident in man to last long in Kansas where most of the country is divided into square mile sections and every part of the area is easily accessible by man.

1925 Medford Ave., Topeka, Kansas

April 18, 1960

While at funeral of Cully Culbertson I took the following photos;

600418-1 Mildred Wakefield Culbertson, ^{Wakefield} Frankie McMillen, Gladys Wakefield, and Robert Wakefield.

600418-2 Dave and Thomas Evans.

600418-3 Jimmie Robert Jensen in tree.

600418-4 Floral display at Culbertson home

2 mi. N Garnett, Anderson Co., Kansas

April 18, 1960

Collect the following snake from the above locality:

600418-5 *Diadophis punctatus armyi*

600418-6 " " "

600418-7 " " "

600418-8 " " "

600418-9 " " "

600418-10 " " "

600418-11 " " "

600418-12 " " "

600418-13 " " "

600418-14 " " "

600418-15 " " "

Univ. Kansas Lawrence, Kansas

April 19, 1960

Received info on a field recorder (records and plays back): This

Dictaphone Corporation

708 W Sixth

Topeka, Kansas

Call CE 2-6720

Don Drubey

dictaphone would be an excellent one for field use. (This recorder can not be used for hi-fidelity but good for voice recording)

Haskell Bottoms, 3 1/2 mi S and 3/10 mi.

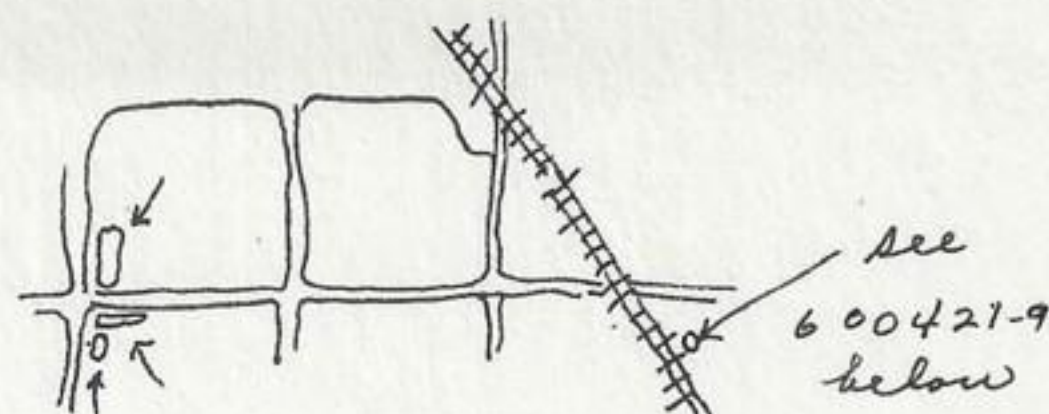
600421-13

April 21, 1960

W Lawrence, Douglas Co., Kansas

6:00 P.M.

Collected the following from the west side of the Haskell Bottoms from borrow pits (now established ponds) and along the side of the road:



600421-1 *Acris crepitans*

600421-2 " "

600421-3 " "

600421-4 " "

600421-5 " "

600421-6 " "

600421-7 " "

600421-8 *Bufo*

The *Acris* were the only frogs calling. When leaving the bank or side of the water, they would dive into pond and, if no overhead protection would swim until they reached cover or until they were able to plow under the floor debris. Examined several ponds that appeared to be suitable for these frogs but no evidence of them inhabiting them. In deep ponds on the south side of the E.W. dike, noted 15 dead *Rana pipiens* which were intact but had been dead long enough to have bleached clear the dorsal spots. One live *pipiens* had been partly chewed on the right leg and had other scars. Several yellowlegs in area.

Haskell Bottoms, 3 1/2 mi. S and 3/4 mi. E Lawrence, Douglas Co., Kan.

April 21, 1960

Collected the following from railroad rightaway:

600421-9 *Natrix* length 690 mm; tail 220 mm. Found under a log near ponds supporting great numbers of frogs including *Acris crepitans*, *Gastrophryne olivacea*, *Rana pipiens* and *Pseudacris nigrita*.

600421-10 sp.?

The order of dominance of calls at 6:00 P.M. was

Acris crepitans

Gastrophryne olivacea } equal in numbers

Pseudacris nigrita

Rana pipiens, rare

At 11:00 P.M. the order of calling was

Acris crepitans } equal in intensity

Gastrophryne

Pseudacris

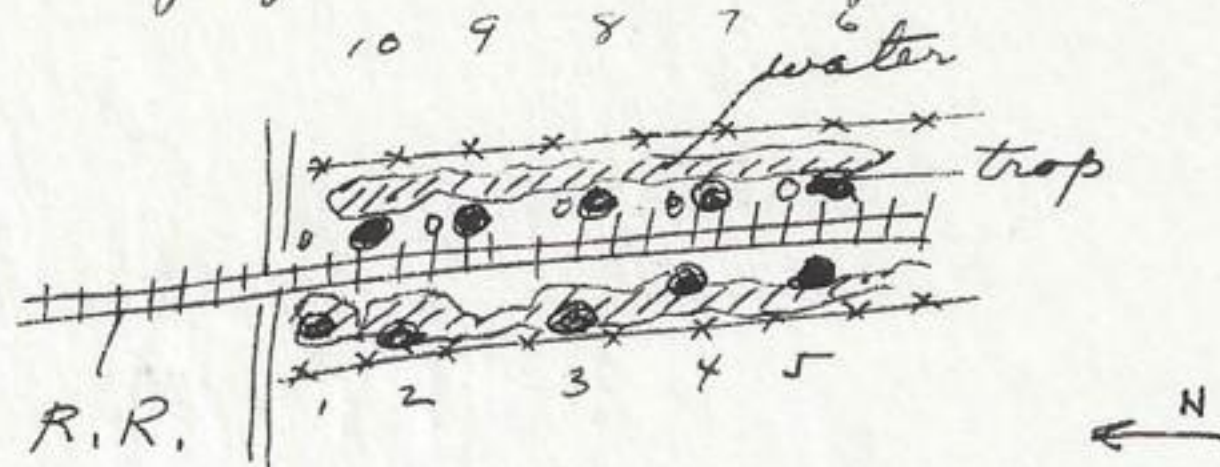
no *Rana pipiens*

3 1/2 mi. S and 3/4 mi. E Lawrence (P.O) 600422-14

April 22, 1960

Douglas Co., Kansas

This evening set 10 traps (9 gallon jugs & one 5 gal jug) along railway rightaway. These bottles (wide mouth approx 4") were placed flush with ground near the edge of the water. Bittern in area.



April 23, 1960

Checked above area ^{this A.M.} and found only one Microtus rhizogaster in trap no 2. Collected one snake near no. 1 trap:

600423-1 Thamnophis, length 660; tail. 160 mm.

From general area caught three frogs:

600423-2 Acris crepitans

600423-3 "

600423-4 "

April 24, 1960

Checked above area and there were no amphibians in grass yet; only one crawfish. Noted 1 Wilson snipe; 1 sora rail, 4 bluewing teal; 2 red wing blackbirds; 1 yellowlegs (lesser).

Collected the following:

600424-1 Acris crepitans

600424-2 "

600424-3 "

600424-4 "

600424-5 "

600424-6 "

600424-7 "

600424-8 "

600424-9 "

600424-10 "

Two small turtles (flat) on log in water.

This evening near same locality as April 22, found a Lampropeltis calligaster calligaster, Prairie Kingsnake, ~~Thamnophis~~ (road kill, fresh) (600424-11). Measured

870 mm snout-anal plate; 143 mm anal plate-end tail. Examined one pond (same area as April 22) and found 18 Bufo woodhousii calling. The Kingsnake was a recently killed (still warm) by car as the snake was crossing from one side of the road to the other side.

5 mi. S and 1 mi E Denison, Jackson Co., Kansas

April 29, 1960

Craig Nelson of the ^{K.U.} Zoology Dept presented me with a Crotalus horridus horridus taken 2 days previously from near Denison. This rattler was one of 5 taken at a cliff denning site. All five were within 20 feet of the hibernation den. Nelson believes that it is too early in the spring for the greater number of snakes to be out and foraging at greater distances from the den. Ammonium hydroxide was poured down the denning hole but without success. This snake catalogued as follows:

(600429-1) Crotalus h. horridus ♂; body-head, 815 mm; tail (to beginning of button), 55 mm; buttons, 31 mm; total length, 901 mm.

Temperature at Lawrence at 11:00 P.M., 46° F. 1/2 inch snow the following morning.

Clinton, Douglas Co., Kansas

April 30, 1960

Collected the following from under rocks. The greater number are larger than average:

600430-1	<u>Sceloporus punctatus</u>	h + b, 230 mm; tail 57 mm
600430-2	"	h + b, 262 " ; 47 "
600430-3	"	" 260 " ; 56 "
600430-4	"	" 136 " ; 55 "
600430-5	"	" 154 " ; 60 "
600430-6	"	" 230 " ; 55 "
600430-7	"	" 263 " ; 59 "
600430-8	"	" 243 " ; 45 "
600430-9	"	" 256 " ; 60 "
600430-10	"	" 270 " ; 56 "
600430-11	"	" 265 " ; 61 "
600430-12	"	" 262 " ; 52 "
600430-13	"	" 114 " ; 23 "
600430-14	"	" 112 " ; 19 "
600430-15	<u>Carpophis amoenus</u>	" 253 " ; 56 "
600430-16	"	" 233 " ; 42 "
600430-17	"	" 125 " ; 16 "
600430-18	"	" 255 " ; 36 "

3 1/2 mi. S and 3/4 mi. E. Lawrence, Douglas Co., Kansas
May 1, 1960

600501-1 Rana pipiens
600501-2 " "

The two previous Ranas were from areas recently excavated for worm digging and were the same color as the soil. Ranas from clear ponds were light colored.

600501-3 Hyla versicolor

46 mm head-body length.

This frog was resting on the dried (last year's) stem of a large weed near a stand of willows. The stem was inclined at 10°. Standing water adjoining. The 10 or 15 individual stems of willows were without leaf and some 200 feet from tree thickets. The only frogs calling were Pseudacris triseriata from among thick stand of orange-orange trees recently inundated by rains. Lana pipiens also calling. Photograph

600501-4 of blue-wing teal which had been shot by someone and left. No 600501-5 also of this bird. ~~Two~~ Twelve lesser yellowlegs, 1 Wilson snipe, 1 virginia rail and 5 blue-winged teal also in area. All except one glass jug were filled with water. From under a log found 1 Microtus and ochrogaster ♀ with 2 suckling young (63 mm total length), one black salamander only 6 inches away. The salamander retreated into a crayfish ~~for~~ hole also under the log. The log was within 4 feet of the pond. At 1620 Tennessee street in Lawrence, photographed Christ Pally, 600501-6

Clinton, Douglas Co., Kansas

May 6, 1960

Collected the following:

600506-1	<u>Diadophis punctatus</u>	} disposed
600506-2	" "	
600506-3	" "	
600506-4	" "	
600506-5	" "	
600506-6	<u>Crotaphytus amoenus</u>	
600506-7	" "	
600506-8	" "	

3 1/2 mi. S and 3/4 mi. E Lawrence, Douglas Co., Kansas

May 8, 1960

Collected the following:

600508-1 Pituophis catenifer, 1630 total length; head & body 1445; 185 tail; 3 1/4 lbs. This snake was just beginning to shed skin 1 inch behind head. Removed head skin after fixation. Body has several body scars. Another bull snake noted about 200 feet away. It was

just beginning to forage and about 3 inch of tail was still in a hole that was about the size of the snake. Another hole of similar size was 4 feet away. After the snake was disturbed it tried to find the latter hole by thrusting its head into the grass & dirt. It finally found the hole and disappeared underground. Eight Diodophis punctatus were collected under rocks, near top of railroad grade:

600508-2 Diodophis punctatus
600508-3 " "
600508-4 " "
600508-5 " "
600508-6 " "
600508-7 " "
600508-8 " "
600508-9 " "
600508-10 Salamander - from jar trap along side of pond.

May 15, 1960

Collected one small snake approx. 5 feet from water.

600515-1 Thamnophis sauritus. head & body 240 mm; tail 97 mm.
 One red-winged blackbird nest of 4 eggs placed 4 feet above ground in willow bordering pond. Six blue-winged teal in area.

Lawrence, Douglas Co., Kansas

May 16, 1960

Gave lecture and slides of Virgin Island National Park to Science Club of High School. Introduced by Fitch. Before giving slides must in dark room and screen with wide angle viewing.

1 mi. W and 1/2 mi. S Lawrence (P.O.), Douglas Co., Kansas

June 2, 1960

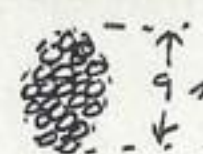
Three students gave me a E. leple aberti 600602-1 taken from edge of road above pond and wooded area surrounded by residential homes. This pilot black snake measured: head and body 1326 mm and tail 220 mm.

Lawrence, Douglas Co., Kansas.

June 3, 1960

Received the following mammals from student:
 midland, Douglas Co., Kansas, Oct 20, 1957, 571020-1 ♂ Sigmodon hispidus
 265-113-33-20-129 gms., testes 20 mm.
 midland, Douglas Co., Kansas, Oct. 12, 1957, 571012-1 ♂ (imm), testis, 260-108-37-25-133 gms.
 midland, Douglas Co., Kansas, Oct. 19, 1957, 571019-1 ♂ (testes 22 mm), Sigmodon hispidus, 250-102-42-20-103 gms.

June 13, 1960

measured an eastern Kingbird which had been killed by a car as: ♀, 46 gms; 215 total length; egg mass  mm.

Lawrence, Douglas Co., Kansas

June 18, 1960

Collected a female *Lasurus borealis* (600618-1) and 2 young (600618-2) and (600618-3) attached to mother bat. These three bats were on the ground as a result of heavy rain and cool weather. After the female became chilled, she is unable to manage young crawling all over her body. The adult female measured:

105 mm total length
49 tail
9 hind foot
13 ear.
12 grams.

The young measured:

(600618-2)

48 mm total length
115 wing spread
2.6 gms weight.

This is the lighter, more silvered colored

(600618-3)

49 mm total length
105 wing spread
2.2 grams weight

This young is the darker one.

The adult died late in the afternoon. The young, while the adult was alive, crawled all over the adult, one etc head, neck, lower body - so completely that it immobilized the adult. It is easy to understand why the adult is unable to regain flight once the adult is on the ground. Young are being fed regular milk.

Jefferson Brabler left a male & a 13-lined ground squirrel while he is on vacation. The male was taken from a swimming pool drain one week ago. It now weighs 65.6 gram. The *Spermophilus tridecemlineatus* is an adult and was trapped on the Lawrence Country Golf Course.

June 19, 1960

Observed a male robin to alight upon a dead limb ($3/4" \times 8"$) on a tree and the small limb broke and fell to the ground. This is an interesting reaction between a living organism & a non-living entity. It is possible that birds and animals help to trim trees of their dead wood in this manner.

Lawrence, Douglas Co., Kansas
June 29, 1960

Sent a note to Editor of Life magazine as follows: On page 72 (Life, June 27, Unspoiled Wonders of a living wilderness) is a panorama of mountain peaks labelled "still unnamed". The prominent peak, mirrored in Lake Schrader, was named Mount Mary in 1952. The Arctic of Northern Alaska, so beautifully illustrated in Life, is being changed rapidly by modern white man. To save this unique living wilderness, the government must immediately set aside a number of areas within the Brooks Range and on the tundra to the north which should be absolutely inviolate to man and to exclude hunting and excessive visitation from all other areas there. See page 295 of accompanying publication for documentation for name of Mount Mary.

Lawrence, Douglas Co., Kansas
June 29, 1960

Salvit Lekagul, a student and friend of mine presented me a painting no 600629-1 of a scene on The University of Kansas. This oil painting received first place in student competition at K.U. It is a style of painting developed in the last third of the 19th Century, characterized by short strokes of bright colors used to create the impression of light on leaves. It is a good example of impressionism. Salvit has painted many scenes of his native home in Bangkok, Thailand. His father is a surgeon and is a conservationist and student of mammals & birds.

Lawrence, Douglas Co., Kansas

Aug. 11, 1960

Chris, Pally, Jay, Annette and I left this date for northern Minnesota for vacation. The following equipment was taken.

2 duffle bags	soap
1 car rack	toothpaste
1 17' canoe	Compass
5 paddles	first aid
2 chairs (= pack racks)	mirror
2 pup tents	lotion
1 forster tent, poles, pegs, ropes	3 flashlights
1 hatchet	wash basin
5 sleeping bags, 2 air mattresses	scouring pads
1 canvas ground cloth	detergent soap
2 plastic " "	watch
1 poncho	mm ruler
4 raincoats	fishing tackle
5 hats	Camera
2 umbrellas	film etc
1 heavy pants each	binoculars
1 light " each	P. bird book
1 heavy shirt (sleeve + collar) each	mops
1 light shirt each	candles
2 shoes each	sponges
3 pro socks each	large fry pan
2 pro underpants each	water heating pan (handle)
1 swimming suit each	mixing pan (handle)
1 banderchief each	reflector oven
1 wind proof jacket each	plates
tooth brushes	Cups
razor - soap - blades	knives
5 towels	spatula
knife	dish cloth
mosquito repellent	plastic bags
life preserver	cloth bags
intertube	butter jar
sunglasses	pencil notebook
whistle	bulb syringe for air mattresses
toilet paper	food for 10 days.
bug bomb.	

Departed Lawrence at 9:00 A.M. with mileage at 77450. Followed 71 from K.C., Kansas except a 32 mile detour. Arrived Black Hawk Lake Iowa at Lake View at 7:00 P.M. and camped on the north shore of the lake. a slight breeze kept mosquitoes down. Mileage here 77789 or 339 miles minus 32 or 307 miles this first day.

Black Hawk Lake, Sac Co., Iowa

Aug 12, 1960

Left 6:40 A.M. and continued N on highway 71 to Windom, Minnesota, thence 60 to Madelia, thence N on 15 to St. Cloud, thence 10 to Little Falls, thence 371 to Brainerd, thence 210 to Atkin, thence 169 to Grand Rapids, Hibbing, and then on 169 to 2 miles west of Calumet where we made our second camp in an old gravel pit surrounded by birch & aspen. Mileage here 78247. Arrived about 7:00 P.M. Distance covered today 458 miles.

2 mi. W Calumet, Tasea Co., Minnesota

Aug 13, 1960

This A.M. continued 169 to Ely arriving at 11:20 A.M. at 78346 mi. or 864 miles from Lawrence (this figure 864 is mileage exclusive of 32 miles detour). Made final purchase in Ely and continued to The Voyageur Camp, ^{Farm Lake east of Ely} Mr. Charles Erdmann, director. (from De - Pauw University, head physical ed. dept.) where we picked up second canoe, (rented from Mr & Mrs James Coleman of Lawrence) and continued by canoe to Battleship Rock east of Farm Lake. Cold windy wind blew in today from the north. Photo (600813-1) of Jay and a 24 inch northern pike which he caught (his first one) from the SW corner of the island. Fair display of northern lights after dark.

Battleship Rock, Farm Lake, Minnesota

Aug 14, 1960

Remained at camp today. Air temp at 11:00 A.M. 59°F, water 72°F. Temp 4:30 P.M. = 66°F air and 74°F water. Jay caught 2 northern pike, both 24 inches in total length. Common loon called frequently, especially when disturbed by motor boats. Three were seen flying overhead and they called while in flight. One remained N of our island as if within territory. Few gulls in area. A sparrow and a group of warblers visited the island from shore. While resting on this island from several days of hurried preparation, shot a rook of 120 Professional Ektachrome.



all photos on Battleship Lock Island.

- (600814-1) Pally holding canoe
- (600814-2) Jay sitting in submerged canoe. It is impossible to sink these canoes as there are 2 air-light compartments at each end of the canoe. Jay rolled this canoe over several times.
- (600814-3) Chris & Pally swimming or better sitting in water at edge of island.
- (600814-4) Family swimming on south side of island
- (600814-5) Annette, Chris & Pally waving good-bye to Jay in canoe on east end of island
- (600814-6) Jay in canoe along island
- (600814-7) " " " " " (diagonal across picture)
- (600814-8) Jay with 24" long northern pike he caught from island
- (600814-9) Battleship Lock Island from west. Annette in front of canoe
- ~~600814-10 and 600814-11 Jay in canoe.~~
- (600814-12) Family bathing on Battleship Lock

Battleship Lock Island, Farm Lake, Minnesota
Aug 15, 1960

Temp at 6:30 A.M. 50°F. This A.M. with complete fog on lake. Photo (600815-1) as fog was almost disappearing from water, taken from east end of island. Other pictures taken are:

- (600815-2) east end of island and lake beyond.
- (600815-3) Common loon on east side of island. This bird completely circumnavigated the island.
- (600815-4) Pally washing dishes.
- (600815-5) Chris & Pally washing dishes on east end of island.

Departed Battleship Lock Island at 11:00 A.M. and continued east through several lakes and narrow passages to portage leading into Clear Lake arriving at the north end of portage at 12:40 P.M. By 5:00 P.M. we had reorganized on the south side of this 144th portage and had eaten our lunch. We left the portage at 5:00 P.M., photo (600815-6) showing the departure and in 1/2 hour were at Windswept Island in Clear Lake, where we made our second camp. The south half of this lake is relatively shallow with considerable vegetation in the main channel or arm of the lake.

Windswept Island, Clear Lake, Minnesota

Aug. 16, 1960

Temp. 9.00 A.M. 64°F, water 68°F. This lake is much higher than lake to north. Photo (600816-1) of family at Windswept Island. At 11:00 A.M. left for south end of Clear Lake. Arrived at north end of 70 rod portage at 11:40 A.M. Completed this portage and lunch by 1:15 P.M. This portage is flat and easy to cross. Continued south to rapids arriving at 3:30 P.M. This portage was made by pulling the canoes up the rapids by rope. Jay caught a large perchlike fish here. Photo (600816-2) of Chris and Polly with rapids in background. Continued south thru the wide lake of the South Kaurishivi River to north side of 120 $\frac{1}{2}$ rod portage arriving at 5:00 P.M. Made camp 20 rods on portage from lake. Hiked to south end of portage and fished in rapids there. We caught 2 walleyes and 1 small northern Pike in pools at end of surfwaters. Beaver & several spotted sandpepers here. (600816-3) Polly & Tent. (600816-4) Chris & biscuits. (600816-5) general camp.

South Kaurishivi River, 120 rd portage Camp, Minnesota

Aug 17, 1960

Carried 2 canoes and a lunch to south side of portage and visited Gabbro Lake. This area is outstanding in glacial sculptural effect and is the most interesting of the lakes visited so far. Wind too strong to visit Bald Eagle Lake. Photo (600817-1) and (600817-2) at ^{S.} channel leading into Gabbro Lake. This channel is impassible at present because of low waters. (600817-3) and (600817-3a) of canoes at channel opening into the large Gabbro Lake, broad expanses of glaciated granites in foreground. Chris found several pieces of flint chipped by Indians. Photo (600817-4) of Annette & Polly with old pine roots in foreground taken about a mile west of the previous picture. Returned to base camp at north end of 20 $\frac{1}{2}$ rod portage, broke camp and continued to rapids (19 rod portage) of S. Kaurishivi River.

Aug. 18, 1960

Nineteen Rod Portage, S Kaurishivi River, Minnesota

Camp on n side of river at base of rapids. Rained last night and high winds are subsiding. Took several photos

this date at camp:

- (600818-1) Chris & Pally in chairs. These chairs were used as pack boards.
- (600818-2) Comp from rock back of camp - poor light
- (600818-3) Reflector oven and coffee coke. (N.G.)
- (600818-4) Close-up of Pally (N.G.)
- (600818-5) " " " Chris (N.G.)
- (600818-6) General camp & family; raining & protection

Today we made canoe trip to second portage from camp to east and also to river which flows N from Gabbro Lake. Fishing has been excellent at all of our camps, having at least one meal per day.

Aug 19, 1960

at 10:00 A.M. temp 70°F, water 72°F. Today still cloudy, partially clear this P.M. Thunderstorms (isolated) east & west of us from 6:00 P.M. to 10:00 P.M. Took several photos at Camp today:

- (600819-1) Annette by edge of canoe, clowning
- (600819-2) Jay and fish jumping out of H₂O (N. pike)
- (600819-3) Chris on sleeping bags which were airing on rocks by camp.
- (600819-4) Lake and long log at edge
- (600819-5) Lichens, red berry etc.
- (600819-6) Birch, blue berry and a fern like plant.
- (600819-7) rapids with sunlight reflected.
- (600819-8) Annette washing dishes
- (600819-9) general camp area
- (600819-10) water lily pods were N. pike were caught.
- (600819-11) Birch & liverworts near camp
- (600819-12) Across lake & to the SSW. Annette in foreground.
- (600819-13) water lily in lake

Watched 2 mink near camp (30' from H₂O), one small one being chased by a larger one. There was squealing sounds as if animals were breeding or fighting. Animals noted in the evening.

(600819-14) Annette & Gafnes

Aug. 20, 1960

Temp 10:00 A.M. = 70°F water 72°F. Left camp at 11:00 A.M. ^{arrived} Completed 18th portage ^{and arrived} by 12:05 P.M. and completed by 12:50 P.M.

This portage is thru cedar trees. Photo (600820-1) of the lower end of this portage. 600820-1a between ^{2 portages at lunch} Arrived at 12th portage at

3:25 P.M. Canoeed thru rapids as waters were low. Photo (600820-2)

to west at portage with Annette, Chris & Pally. Arrived at the convergence of the N & S Kawishiki River and camped on the promontory on the south side. We visited the islands to the east enroute. At this camp photographed 600820-3 of channel to west of Camp from camp. & Pally 600820-4 about 100' west of Camp with Annette & Pally and spruce bough overhead.

600820-5 Camp with Chris at fire.

Aug 21, 1960

Fog this A.M., warm last night. At 9:30 A.M. air = 68°F, water 72°F. Jay caught Walleye measuring 16 1/2 inches in total length. A common loon passed camp this A.M. Photos this A.M. are:

600821-1 Camp with canoes in foreground. This camp is at the gateway to the N. Kawishiki.

600821-2 Annette combing Pally's hair at camp.

600821-3 same as no 1. But may be double exposure. (N.G.)

Left camp at 9:45 A.M. to west up N. Kawishiki.

Photo 600821-4 of Chris & Jay in canoe with black forest & rock background. Continued west to 214rd portage

arriving at 11:50 A.M. Photo 600821-5 of Chris at Murphy Portage sign. Made four portage to get material across

and completed haul & lunch by 5:00 P.M. The first trip of this portage with canoe took 45 minutes. Return trip 30 minutes.

Organized parties can make this portage in one trip in 30 minutes.

Water run east on east end of portage & west on west end of portage. 600821-6 Kawishiki River should not apply to the river running west. west end of 214th portage, Annette & Jay.

Continued west to 17th rd portage & lowered canoe over rapids. 600821-7 showing Annette & Chris lowering canoe. Continued west and were across 10th rd portage by 6:30 P.M.

Continued west to Battleship Rock arriving at 7:45 P.M.

Aug 22, 1960

Left Battleship Rock 10:50 arrived Voyageur Camp 11:50.

Left Voyageur Camp by car by 12:45 P.M. and with mileage at

78364 Continued east on highway ^{no. 1} to Superior Lake. Camped at 2 mi. N Gooseberry Falls.

Gooseberry Falls, Lake Superior, Minnesota

Aug 23, 1960

6:00 A.M.
 Left Camp, along lake and continued south along shoreline drive to Duluth. Photo (600823-1) of Superior Lake about 4 miles N of Duluth. From Duluth took highway no 61 to Hinchley, thence 23 to St Cloud, thence 15 to Armstrong thence 9 to Geried thence south on 169 to Ambrose A. Call State Park at Algona, Iowa, arriving at 7:30 P.M. - 78881
Algona, Iowa

Aug. 24, 1960

Left 7:12 A.M. and continued 169 to St. Joseph, thence 71 to Leavenworth, thence south to highway between Lawrence + K.C. arriving home at Lawrence at 5:00 P.M.

Photo (600824-1) of Conae and family at 1620 Tennessee.
 mileage summary:

864 miles to Ely via 71

883 miles from Ely to Lawrence via Duluth + route to east.

1796 total mileage to Ely and return.

Best route is 71 all the way as it by-passes the larger cities. Traveling time at 45 miles per hour approx. 23 hours from Ely. Most people make the trip in 16 hours.

Localities by Longitude + latitude (miles from Ely)

Voyageur Camp 6 mi. E + $2\frac{1}{10}$ mi. N Ely

Battleship Rock (Island) $7\frac{4}{10}$ mi. E and $3\frac{1}{10}$ mi. N Ely

S end 144 Portage $9\frac{9}{10}$ mi. E Ely.

Windswept Island in Clear Lake $10\frac{2}{10}$ mi. E and $2\frac{1}{10}$ mi. S Ely

Cascades 11 mi. E + $1\frac{7}{10}$ mi. S Ely

N end 120 rd Portage $11\frac{1}{10}$ mi. E and $2\frac{1}{2}$ mi. S Ely

S channel into Gabbro Lake 11 mi. E and $3\frac{1}{2}$ mi. S Ely

Entrance to main Gabbro Lake $11\frac{4}{10}$ mi. E and $3\frac{2}{10}$ mi. S Ely

Near above (picture with roots of pine) 11 mi. E + $3\frac{2}{10}$ mi. S Ely

Camp W end 17 rd portage (24 rd) $11\frac{1}{2}$ mi. E and $2\frac{7}{10}$ mi. S Ely

West side 18 rd portage of S Kawashuni R. $12\frac{2}{10}$ mi. E + $1\frac{7}{10}$ mi. S Ely

Lunch on S Kawashuni. $13\frac{2}{10}$ E Ely

W of 12' portage, $13\frac{4}{10}$ E Ely

Convergence N + S Kawashuni $13\frac{7}{10}$ mi. E and $\frac{1}{10}$ mi. N Ely

Murphy portage (E), $11\frac{8}{10}$ mi. E and 1 mi. N Ely

West end Murphy port (214 rd) $11\frac{7}{10}$ mi. E and $\frac{9}{10}$ mi. N Ely

* 17 rd portage, 10 mi. E and $\frac{7}{10}$ mi. N Ely

N Kawashuni (cones with dark background) $13\frac{2}{10}$ mi. E + $\frac{3}{10}$ mi. N Ely

Suggested menu

Breakfast

- fish or powdered eggs & dried potatoes
- crisco
- sourdough bread - baking powder or bisquick
- butter (in glass jar)
- powdered milk
- instant chocolate
- " Coffee
- Preme
- * dried fruit
- salt
- pepper
- * sliced peaches
- prunes
- applesauce
- apricots
- pears

Lunch

- ** Canned meat
- sourdough bread (baked in A.M.)
- butter
- jam or peanut butter
- milk
- chocolate
- raisins
- cheese
- Candy
- Tang
- ** ham
- vienna sausages
- sardines
- spam
- *** chicken noodle
- beef vegetable
- mulligan stew
- beef hash
- baked beans
- spaghetti - tomato sauce

Dinner

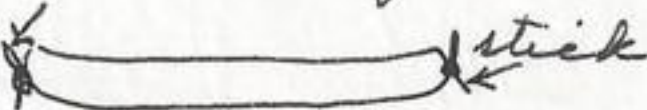
- *** soup
- sourdough bread
- butter
- milk
- Chocolate or coffee - tea, Preme
- dried fruit
- Cookies (baked in reflector oven)

General Suggestions

- ① When wind is prevailing and is strong, use small lakes and river courses which are oriented 90° to the wind, unless the wind is in your favor. A knowledge of prevailing wind direction is useful as well as a long range forecast of the weather. Have along a ^{U.S. Weather} summation of weather of the Ely area. Wind is one of the most difficult and tiring elements in canoeing.
- ② Choose route with least number of portages, especially long ones.
- ③ Restrict length of trip so that one has time to observe the country and note just try to see how far one can travel in the course of a week. One should cover about $\frac{1}{10}$ th the normal distance covered by the usual canoeist. A new technique in observation should be developed and in this connection a guide book should describe the route with certain vantage points described & labelled in detail. All permanent structures & roads should be removed N. & E. of Ely. Restrict lakes to canoes only. Signs should be inconspicuous and no conventional sign permitted. Confine camping to a camp area and do not permit destruction of vegetation or the gathering of fire wood in the immediate area of the camp site. At present, camp sites are completely trampled of vegetation and all trees are barren of dead branches or tent pole size trees. This is especially true of island camp sites when use has been concentrated. On islands all wood should be portaged from the mainland. These camp sites should be rotated so that vegetation can maintain a natural condition. Toilets should be placed at least 100 feet from camp and placed at least 6" below surface of ground. No toilet site should be with 100 ft of H_2O , which means that on small islands one should go to the mainland for toilet purposes. All refuse that cannot be burned (cans, tinfoil etc) should be carried on trip and returned to point of embarkation (Ely for example) where it can be properly disposed. Cooking with artificial fuel may eventually be the answer to natural fuel supply.

A non-detergent soap should be used for washing dishes and for bathing.

- (4) The following items not necessary
rubber knee boots, shovel, extra clothes except socks & shoes, aerosol bomb
- (5) Have good shoes for hiking, that is a durable pair that will not wear out in 10 days.
- (6) 3 bottles of mosquito repellent is adequate for 5 people 10 days
- (7) small flash lights instead of large ones (1 per tent)
- (8) allow 2 days from Lawrence to Ely.
- (9) hats are prerequisite
- (10) carry 2 axes
- (11) a ^{large} sponge is good for washing dishes & mopping out cones.
- (12) A reflector oven is worthwhile - avoid long baking cakes.
- (13) Cakes should be baked in large shallow pans for speed of baking
- (14) use dry milk (powdered & instant) only
- (15) one does not use much sugar (1 cup for 5 people in 10 days) except when Tang is used.
- (16) One could live on: fish, berries, bismack, grease & salt.
- (17) Foods requiring long cooking over fire are undesirable.
- (18) Eggs & potatoes (dried) a good substantial meal.
- (19) Carry a duplicate map & compass
- (20) Water-proof matches only. Do not make mistake of placing friction type match in water-proof container with the accompanying friction slip on side of match box.
- (21) Each individual should have a pocket knife & matches
- (22) A plastic tube is good for blowing up air mattress and keeping hot fire under pan as well as a good shower head when water is siphoned from a bucket of water.
- (23) Mattress valves should be fastened to mattress so it will not be lost.
- (24) Cloths should include: light-weight shirt (long sleeves), durable jeans, warm jacket, socks, poncho, hat.
- (25) Cooking equipment should include 1 large fry pan, one small fry pan, one large handled pot ^{and lid}, one small, one washing pan, 1 spatula,

- (26) Fishing gear: ^{+ spinning reels} 2 poles, 1 extra line, 6 spoons, 6 surface, steel leader, 12 swivels, 12 hooks, grease & oil, 1 net, 1 hook remover, 1 fish stringer.
- (27) tents should be light & high
- (28) sleeping bags should be lightweight.
- (29) misc. material in duffle bags
- (30) tarp to cover food
- (31) 2 SOS pads per day & protect from H₂O or powdered in food
- (32) Camera equipment in H₂O-proof container
- (33) cardboard boxes will disintegrate if wet.
- (34) 2 portage a day is sufficient, occasionally 2 days at same camp.
- (35) leave sleeping bags in tent when packing
- (36) air sleeping bags every 3rd day.
- (37) carry light-weight binoculars
- (38) retire at night before mosquitoes become too active.
- (39) Islands are better camping spots because of fewer mosquitoes, more breeze, better view in general.
- (40) Camp site should have good dock for loading equipment into canoes and a rock shelf at water edge for washing dishes
- (41) Get water from windward side of island or at center of lake
- (42) Carry canoe on yoke for 100' or until tired & then change with second individual or carry canoe at waist height with ropes & stick. 
- (43) Emergency equipment should include: wire, long nosed pliers, screwdriver (small for reels), hacksaw blade, small file, mirror, whistle, needles, thread, band-aids, pain reliever, thermometer.
- (44) soap should float
- (45) turn canoe over for table at camp.
- (46) carry strong rope for portaging.
- (47) use chairs for pack boards & carry equip in duffle bags
- (48) carry extra large plastic bags
- (49) Have a good water-proof watch & a thermometer
- (50) butter should be carried in a closed container like a glass jar.
- (51) 17' canoe handles better on water & in wind plus more room for carrying equipment.
- (52) keep water clean by properly excluding all human wastes (feces, urine, sputum) from ^{lake} water.
- (53) Chart all vegetation and recheck every 10 years. Stabilize level of water. Publish book on vegetation, birds, mammals, fish etc

Olympic Club, Lawrence, Douglas Co., Kansas
Sept. 5, 1960

Sept. 5, 1960

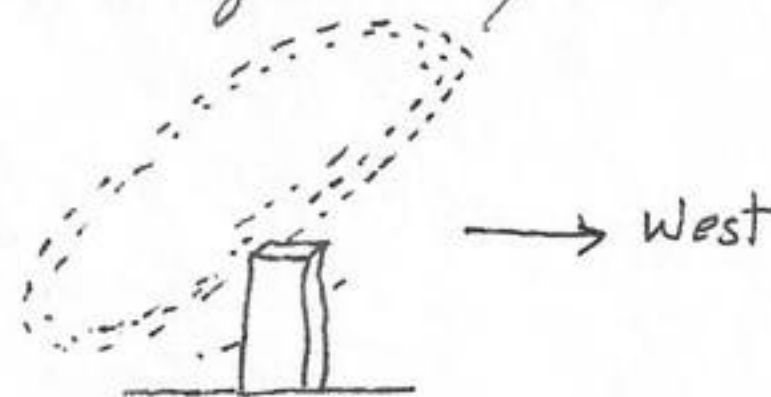
Photographed Chris, Polly & Jay diving.

600905-1 Mary Pauline Bee - 3 meter board
 600905-2 " " " " "
 600905-3 " " " 1 meter board
 600905-4 Annette Christine Bee - 3 meter
 600905-5 " " " "
 600905-6 " " " 1 "
 600905-7 James Labut Bee - 3 meter
 600905-8 " " " 1 meter
 600905-9 " " " 3 meter
 600905-10 Mary & Annette.

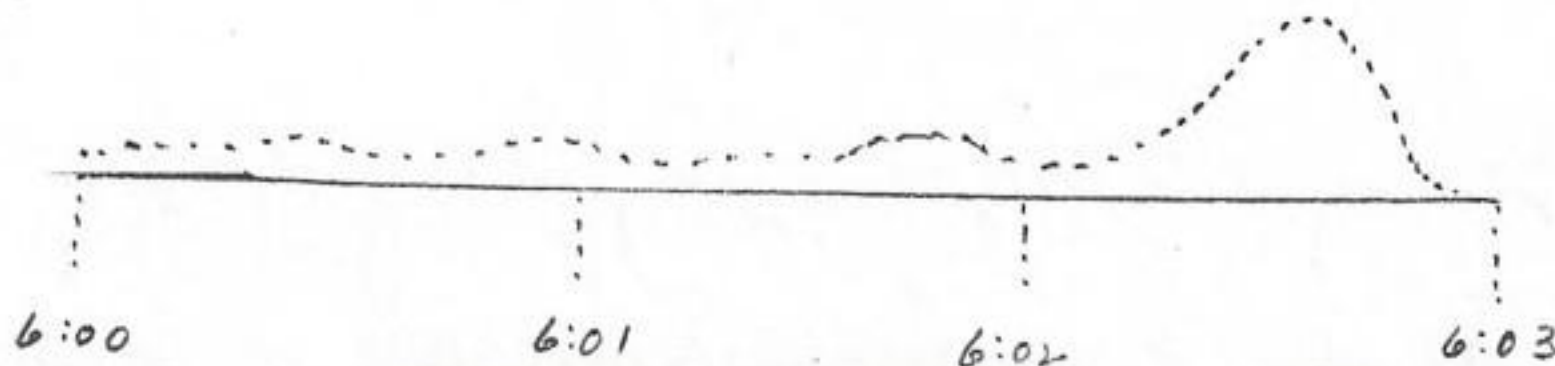
22nd and Louisiana St., Lawrence, Douglas Co., Kansas
(Centennial School).

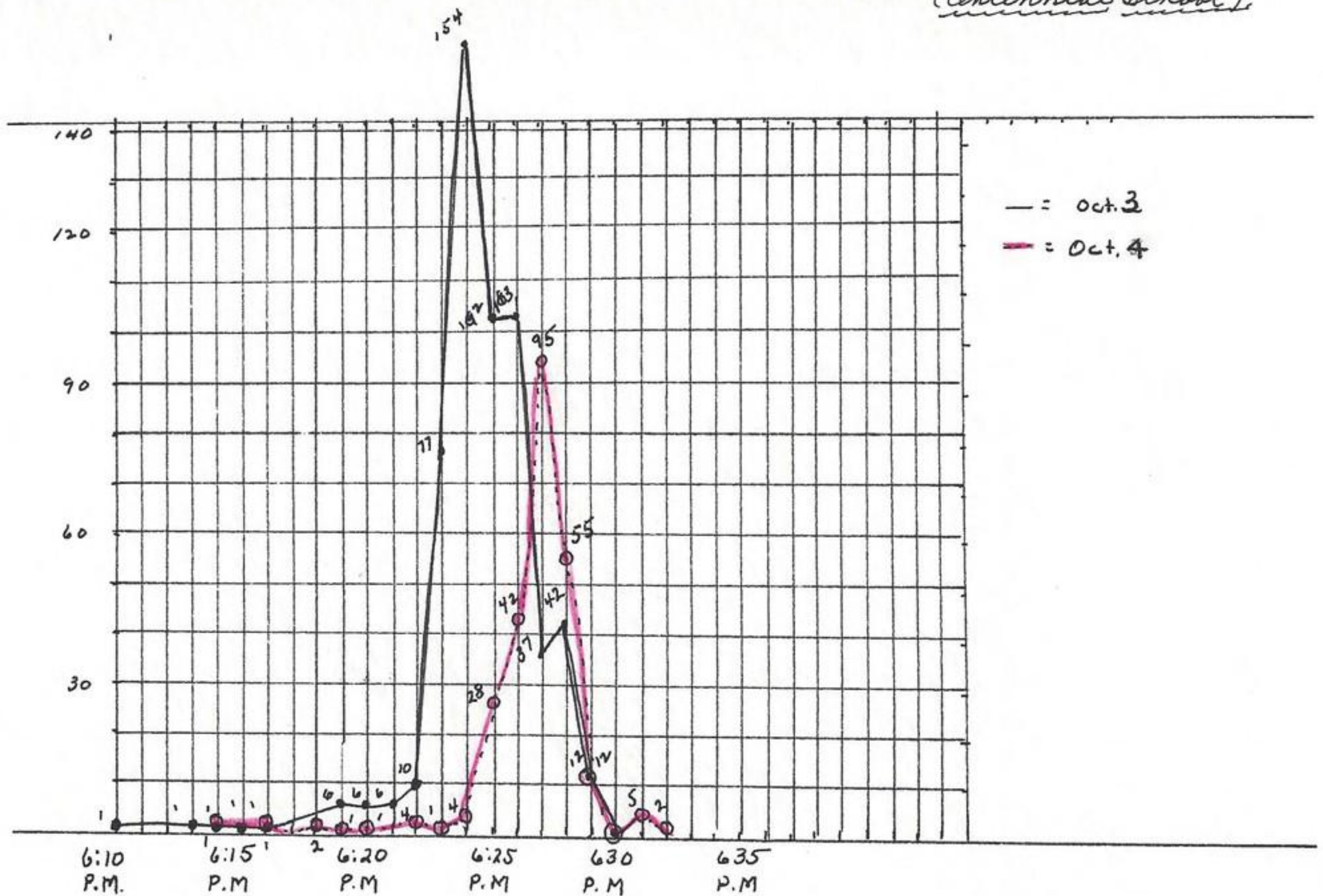
October 2, 1960

while driving past the Centennial School at 6:30 P.M. noted an unusual activity of the black swift. A flock of these birds were circling above the chimney in a clock-wise manner and at frequent intervals a few of the birds would ^{abruptly} drop as actually fly into the chimney. The frequency of birds flying into the chimney was as few as 1 to as many as 20 birds at one moment. The longest interval between birds entering was approximately 20 seconds. Of the 350 birds we counted, 80 per cent entered the chimney in approximately 1 minute. toward the end of our 3 minute observation. Three or 4 birds were noted to have left the chimney but probably returned. After the main group entered, three continued circling above until 20 seconds before entering. All birds were in the flock formation before entering the chimney. Calling was continuous ^{outside} until all birds entered. Movement of the galaxy changed position or rotation from clockwise to counterclockwise only once. Time was late twilight and sky with 80% cloud coverage. Day cool and one shower in the afternoon. Mrs Martin said that this chimney had been repaired only recently.



Frequency of birds
entering chimney.





checked activity of black swift entering roosting chimney at the Centennial School. Last night 350 or more birds entered the chimney. Tonight 561 birds entered the chimney as indicated above. Information correlated with Oct 3 observation is as follows:

- 6:03 P.M. 9 birds in area, some flying by chimney but not entering chimney.
- 6:06 P.M. 18 in area but generally dispersed - not over chimney.
- 6:09 P.M. 5 over chimney but passing by
- 6:10 P.M. 30 in area around chimney - first bird entered
- 6:11 P.M. 30 in loose groups away from chimney
- 6:12 P.M. 60 in area, numbers increasing
- 6:13 P.M. circular motion starting above chimney
- 6:15 P.M. 200 in area
- 6:17 P.M. all birds left area but returned 1/2 min later - few birds there when they left.
- 6:20 P.M. One planet has been visible
- 6:23 P.M. good circular motion
- 6:30 P.M. only one planet visible - no stars discernible.
- 6:33 P.M. few stars faintly visible.

Day clear, in evening a few clouds in west, full moon on horizon in east at time of observation. Birds always entered or approached chimney from the west.

22nd and Fairbairn St, Lawrence, Douglas Co., Kansas

Oct 4, 1960

Continued observation at Centennial School on time of entry of the black swift into chimney. Numbers and time of entry on graph of Oct. 3, 1960. Only 255 birds entered chimney tonight. General observations are:

6:11 P.M.	10 birds in area	(meaning in the general area + over chimney)
12	7 " " "	
13	10 " " "	
13	20 " " "	
14	first bird entered - 15 birds in air	
15	5 birds in air	
16	20 " " "	
17	10 " " "	
18	15 " " "	
19	1 bird in air	
20	20 " " in air	
22	40 birds in air	

It is noted that the entrance into chimney was later to day and that there were more stragglers after the main group entered. Heavy black clouds in west which obscured most of the evening light, local groups of thunderclouds above. Flight entrance ^{to chimney} from west. Another check will be made at a later date to see if there is any correlation with migration or differences of time of entry into the chimney. It would appear that the clouded skies of tonight, although normally darkening the skies, interfered with the arrival time of the swifts. No noise made by birds inside of chimney.

LeCompton, Kansas

Oct-8, 1960

approx 12 miles

James Robert and I made canoe trip, from LeCompton to Lawrence, Kansas on the Kaw River. Left LeCompton bridge at 11:15 A.M. and arrived Lawrence at 5:00 P.M. Stopped several places along the course. Only two areas where too shallow navigation without running on sand. Birds and animals observed.

Spotted sandpiper - 12 individuals evenly spaced along river. No other shorebird noted along the entire route.

Great-blue heron. 8 individuals, 4 of which were

singles and 2 pair. They were all resting in high cotton-wood trees.

Crow. Three groups of 4-5-6 individuals. One was on the sand bar in river.

There was a marked absence of ducks and even land birds. Only occasionally did we see or hear other birds except. 2 red-bellied woodpeckers, 6 yellowthroated flickers, one flock of red-winged blackbirds, 1 group of Icterids flying in flock formation, 10 scallows in one group, 5 bluejays, goldfinch + 1 chickadee.

Evidence of muskrat, beaver in area. Most of the beaver were on north side of river away from the railroad noises on south side of river.

Frogs, mainly *Rana pipiens* of all sizes, common at edge of water.

Water depth can be determined by surface agitation of water, generally boiling at edge of shallow water or on sand bars.

22nd and Lawrence St., Lawrence, Douglas Co., Kansas

Oct. 10, 1960

Checked ^{black} swift activity at Centennial School (see notes of Oct 2, 3 and 4). Arrived 5:50 P.M. - no activity. Between this time and 6:20 no pronounced flight. At 6:02 a flock of 18 passed by. Others passed by but only two arrived ^{and entered chimney} at 6:10 P.M. These left at 6:11 P.M. One other bird entered chimney at 6:18 and remained at least until 6:20 P.M. at which time we left. The chimney swift is still in Lawrence but the large number of birds that roosted in the chimney on Oct 2-3-4 have left or changed roosting sites.

1101 Massachusetts, Lawrence, Douglas Co., Kansas

Oct 13, 1960

Noted approx. 500 chimney swifts to enter chimney at the west end of the Rankin drug store (2 story building) at 6:15 P.M. The swifts gained entrance in approximately 4 minutes from the typical circle formation. Birds approached the chimney from the west. City lights were on and heavy traffic below.

Oct 15
Few chimney swifts still in area.

601016-36

Kaw River Bridge, Lawrence, Douglas Co., Kansas
Oct 16, 1960

James Robert and I left bridge at 9:22 A.M. and
Came to Eudora via. Kaw River. at 10:00 A.M. collect-
ed one spotted sandpiper 601016-1 (immature). at 10:30
collected a second one 601016-2 (immature). Peak of
first large bend to north at 11:00 A.M. Between the bridge
and this bend counted 18 monarch butterflies flying from
north to south across the river. No definite migratory
flocks but some seemed to be more congregated than others.
at 1:00 P.M. collected 1 killdeer 601016-3. The only
killdeer noted were here (5-male). The only other
shorebirds noted were 14 spotted sandpipers, all singles
and generally distributed except 2 pair. Most of them
(90%) were immature ones. Arrived Eudora bridge at 1:15 P.M.
Checked mouth of Wakarusa River and returned to bridge.
This part of the river from Lawrence to Eudora is easier to
navigate than from Leecompton to Lawrence because the
river is deeper and there are fewer sandbars to cross.

Great blue heron. 3 at mouth of Wakarusa R.
Spotted Sandpipers. 16 singles between L & E 4 of which were
2 pairs.

Canada Goose. One flew by and shot at by hunters.
no other waterfowl (ducks) noted.

as was the case on the Leecompton - Lawrence trip, there
was a decided lack of shorebirds except the spotted
sandpipers and the killdeer. Snakes and turtles still
active in water.

Did not see the chimney swift today nor swallows.

3 mi. S Lawrence (P.O.), Douglas Co., Kansas
Oct 19, 1960

James R. shot a Wilson Snipe at the pond on W side of
Hasell Bottoms on Louisiana St. It measured:

110 gms wt.
270 mm total length
67 expose culmen
122 wing
77 foot
440 wing spread
42 middle toe

The brain of this bird (601019-1)
was formalized and used
for the microscopical technique
course.

Lawrence, Douglas Co., Kansas

Oct 19, 1960

morning cold. Did not see chimney swifts today. First cold day this autumn. Leaves getting considerable yellow and red. Approx. 15% of trees in color.

Oct 20, 1960

Last night temp. to about 24°F . Thermometer at home registered 30°F at 7:30 A.M. It remains cold and windy all day. Leaving falling like a rain.

Oct 21, 1960

Cold wave is passing by. Day temps up to $50^{\circ}\text{--}60^{\circ}\text{F}$. This P.M. very comfortable outside. Leaves with considerable yellow but predominately greenish-yellow.

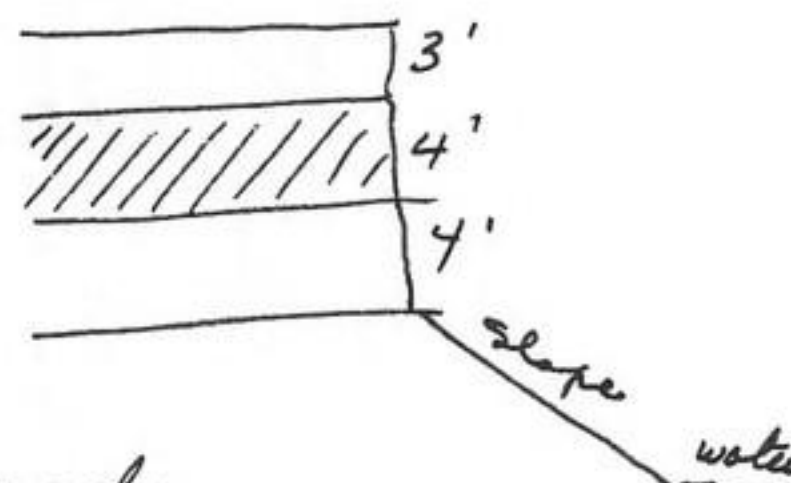
Lawrence, Douglas Co., Kansas

Oct 23, 1960

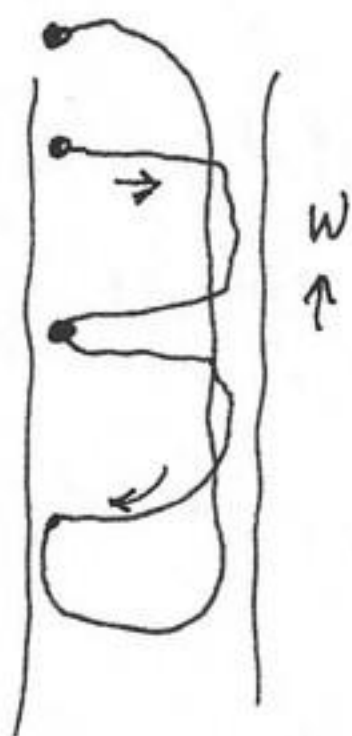
Canoe trip from Lawrence (Bridge) to Eudora (Bridge). James R and I made the trip. Left 8:25 A.M.; day clear, cool and no wind.

9:15 A.M. at first bend to N. 60 killdeer flew west up river. 1 spotted sandpiper along edge of river. at bend counted 900 holes in bank used by swallows for nesting.

Bank about 400' long but only nesting zone 270' used by swallows although other part of bank usable. There are



decidedly more birds along banks in trees and flying overhead, probably because of earlier time in morning than previous trips. Increase in chickadees, gold finches, blackbirds & grackles. Flickers & small sparrow population about the same. Up to this point approx 30 fish (carp?) have jumped out of the water - especially near shore.



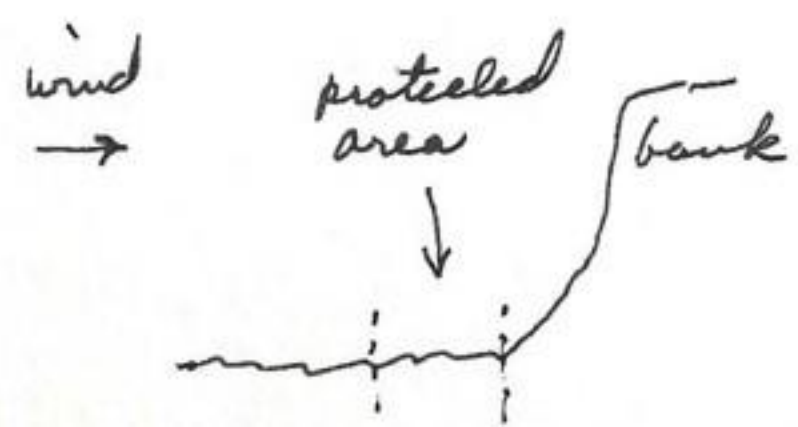
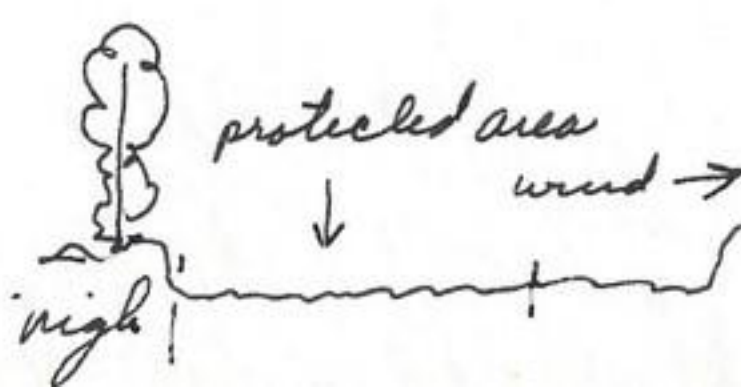
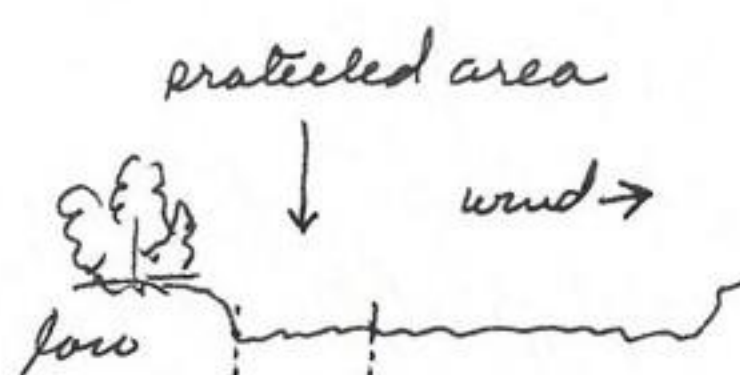
our
direction
and flow
of river

An immature great blue heron left ~~the~~ bank and flew N. across river toward trees, thence back to S side. when approached farther up the river it repeated its ^{previous} flight. When flushed again flew to opposite bank and then west to S side of river. It favored the south side of river (shadowed side)

- 9:35 1 monarch butterfly flew across river from N to S
1 blue jay calling
- 9:40 4 killdeer up river. Crow calling to S.
- 9:45 5 goldfinch & 2 sparrows.
- 9:50 4 " "
- 9:52 12 " "
- 9:50 2 killdeer, 1 kingfisher, 1 spotted sandpiper
- 10:00 1 spotted sandpiper
- 10:05 rough-legged hawk, crow calling to N.
- 10:10 river divided (took N route), 1 wren calling
- 10:25 Chickadee, Crows calling.
- 10:30 goldfinch, only 1/30 number of frog on bank then last week trip; blue jay calling.
- 11:05 1 killdeer
- 11:30 1 spotted sandpiper, 1 goldfinch
- 11:40 1 redtail & 1 jay
- 11:55 1 killdeer & 1 jay
- 12:00 1 kingfisher
- 12:08 8 killdeer
- 12:20 Arrived Eudora bridge (3 hrs & 55 min on river)
last trip 3 hrs and 53 min, Progress both by paddling (one man) and floating.

Lawrence, Douglas Co., Kansas
Oct 30, 1960

Canoe trip from bridge at Lawrence to Eudora bridge along the Kaw River. James R & I made trip. Departed 8:20 A.M., cold wind, low clouds, rained last night and rain in store today. One of those miserable days for travelling by canoe because of cold north wind. When wind was across river the N side of river offered protection; small willow for 20' or so and high trees for 150'. These large Cottonwood trees are certainly a factor in wind distribution on the water. On stretches where wind could develop waves, the surface was whitecapped & took 2 men to paddle the canoe en masse.



Temperatures all day between 40°-42° F.

8:45 James R. killed a crow, (601030-1) along side of river directly across river from City refuge area. It measured:

It was one of 2 crows and 400 starting. as the crow left the refuge area, the starling formed a close flock. Approx 40 of the starling left flock and accompanied the 2 crows across the river. While James R. was stalking the crows, one sparrow hawk arrived and harassed the birds. One blue jay also come to the area. When the crow was shot the calling stopped and a kingfisher then arrived to investigate. These crow certainly demand attention by a great variety of birds.

9:20 first flock of goldfinch flew by calling.

9:25 2 killdeer, crows calling

9:35 small sparrows along bank

9:35 1 kingfisher

10:00 fork of river (took N course), goldfinch & crows calling
nine crows flew west, high and calling. Crickets calling along river in grass above mud bank. These crickets called the entire trip wherever grasses found. Colors of autumn leaves: willows along river bank with yellow but predominantly green - some still all green - others with considerable yellow. Cottonwoods 60% yellow and some tree with most of leave gone or losing leaves.

11:00 yellow bellied cockoo collected in willows along bank (601030-2) save brain tissue only. When it fell into the water it called continuously and with head & back held upright, swam 15 feet to the edge of the river. When approached, it called vigorously but did not strike when picked up from the water.

11:05 started to rain - cold and windy, 2 killdeer, one *Peromyscus* caught in debris at water edge attempted to climb bank of river and failing 3 times took refuge in hole in the bank. One spruce goose which had been killed and drifted to edge of river.

12:30 Arrived at Eudora bridge, still raining. No ducks in last four trips.

Only three frogs observed this trip and these near water edge.
 Campus of the University of Kansas, Lawrence, Douglas Co
 Kansas.

Oct 31, 1960

On return from Snow Hall to home, especially in the protected area, noted several groups of mosquito-like insects in air about 6' from ground. These diptera (?) are characterized by moving up and down within the group. Considering our ^{and rainy} cold weather the last few days, these insects were certainly out of place today.

Lawrence, Douglas Co., Kansas

Nov. 7, 1960

Annette Christine and I started canoe trip from Lawrence Bridge (Kaw River) at 9:20 A.M. Two kingfishers flew across river to inspect us as we place canoe in water.

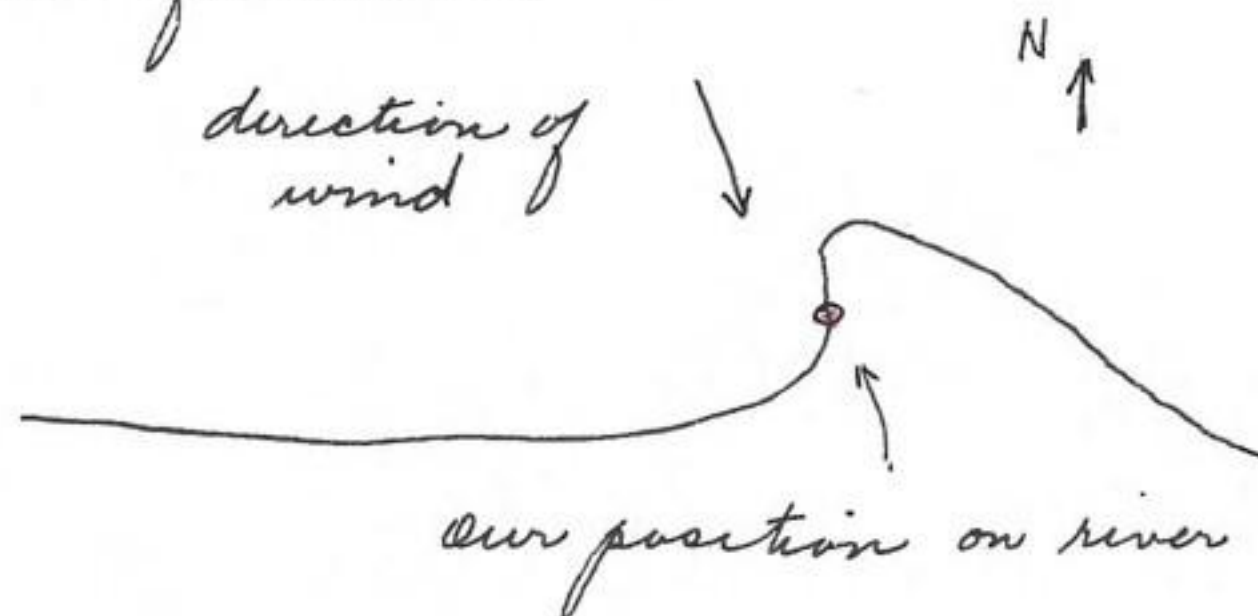
Day clear, cool (approx 49°F) and high wind. Few clouds just beginning to develop in an otherwise blue sky. Wind from the NNW and increasing.

9:45 1 killdeer, 2 juncos

10:10 swallow bank, Chris estimated 8000 by counting groups of ten. my estimate was 900.

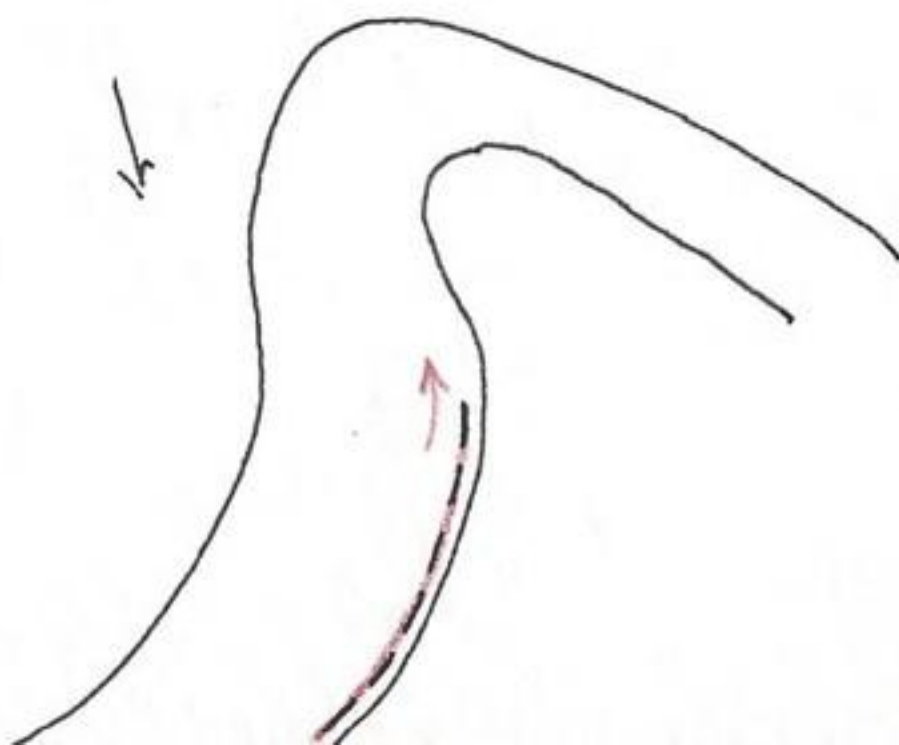
10:15 2 mallards were flying up river, saw us and reversed course, 1 spotted sandpiper.

11:30 canoe capsized. An analysis of the capsizing is as follows:



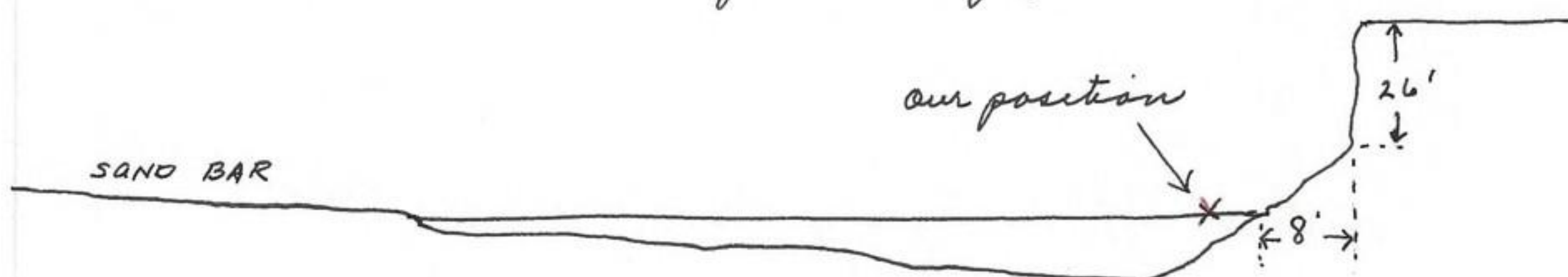
Course of river approaching direction of wind which now was blowing on a long expanse of water. at this time white caps were on water and sands were blowing from edge sand.

bars on N side of river. These sand clouds were being carried south across the river

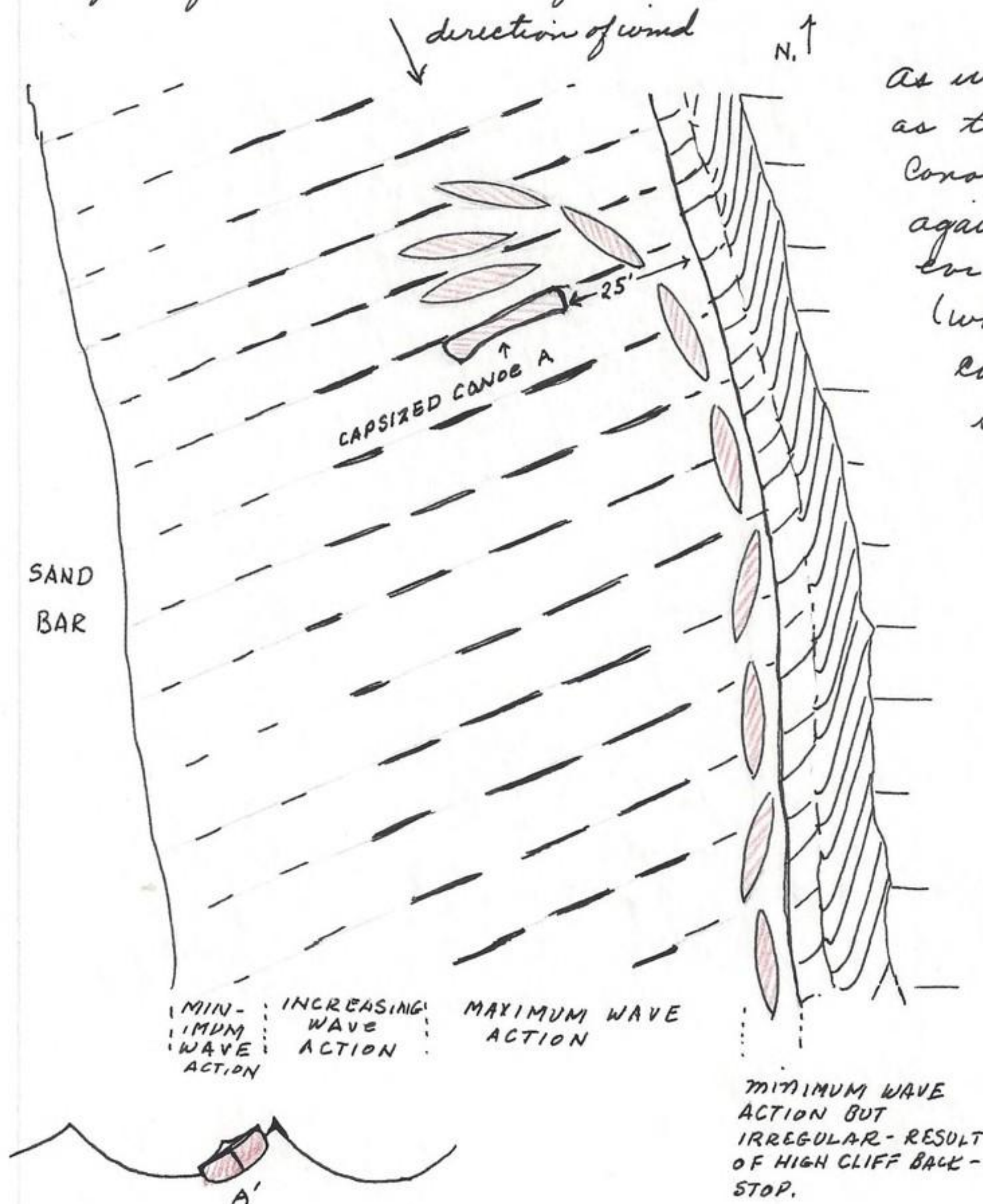


Our course had been along the edge of river, first because we were forced to the edge by strong winds, secondly because of safety and thirdly because it was undesirable to cross river at this time.

The opposite side of the river would have been the logical side to travel because the wave action was minimal there. The front end of our canoe continually was being forced against the bank.



Profile of river and bank from east to west showing point of capsizing



As wind increased and as the front end of the canoe was being forced against the bank, it was evident that Chris (who was in bottom of canoe behind front seat) would be required to paddle. As she took her position at the front there was a sudden increase in velocity of wind and within 2 minutes or less the waves had increased to about 3 feet high and swells to 5 feet in width. To get away from the bank we

both paddled on the right side and as we moved out into the large waves the wind pushed the the front end of the canoe and forced it parallel with the waves. At this moment Chris changed paddles from right to left just as we were floating to the crest of the oncoming wave. The tilt of the canoe, plus both of us paddling on the left side, tipped the canoe

into the water. This all happened quickly, gently and without forwarning. The canoe righted itself but was completely inundated except the two ends of the canoe. By the time I got to Chris we and the canoe had moved near enough to shore to touch bottom. After canoe was emptied of equipment and enough water to pull on shore, we climbed to top of bank. Chris lost one shoe. We were able to get all equipment to shore except one paddle which we retrieved farther down the bank of the river. The binoculars and case were full of water. After placing Chris on lee side of mound on top of the bank, I returned and secured the canoe. It was decided that we would both walk to nearest farm house to call Annette for transportation. Arrived at home of Mr & Mrs

approx $\frac{3}{4}$ miles way where we received some hot coffee and chocolate. Mrs. had been the Sunday School teacher for many Pauline about 2 years ago.

General observations and suggestions to prevent boat capsizes etc:

1. Always carry water-proof matches and have some attached to boat.
2. Waterproof special equipment - binoculars, camera, gun, shells, food, etc.
3. In cold weather carry wind-proof blanket in water-proof container
4. It is difficult to navigate and keep on course if the wind is not in your favor - wind is the major element in canoeing. Keep off large bodies of water when wind is erratic or is blowing strong - remember that a wind can develop swamping waves in matters of just a few minutes. Do not cross wide expanses of water unless the weather and wind is stabilized.
5. If waves are high and wind is strong, paddle directly into waves and float with wind. If canoe is forced parallel with waves, be conscious of the danger of a wave capsizing the boat and make necessary adjustments by kneeling in boat and leaning toward oncoming wave.
6. Always paddle on opposite sides of canoe and if man in front changes, let the one at rear be so informed. This is true in rough tricky water.
7. In windy weather, load canoe to help stabilize.
8. If canoe capsizes, catch side of canoe and hold on, or if thrown clear of canoe, swim immediately to canoe.

- 43
9. Do not have structures attached, ⁶⁰¹¹⁰⁹⁻⁴³ to cope so that if canoe capsize you will be caught and held.
10. When canal is being forced against bank by wind, it is difficult to lead canoe by rope.

Lawrence, Douglas Co., Kansas
Nov 9, 1960

Snowed last night. Announcement received that National Parks have let contract for improvements of the Virgin Islands National Park. \$714,316. At Cruz Bay:

1. boat basin;
2. concrete bulkhead;
3. administrative pier;
4. road & parking area;
5. three residences;
6. maintenance buildings;
7. utilities.

At Red Hook on St. Thomas Island:

1. buildings; utilities;
2. administrative pier;
3. parking area;
4. entrance road at Red Hook.

Lawrence, Douglas Co., Kansas
Nov. 9, 1960

A tiger salamander, Ambystoma tigrinum ⁽⁶⁰¹¹⁰⁹⁻¹⁾ was presented to me by an individual living at Midland, Douglas Co., Kansas. This salamander was taken from 1 mi. W and 1/2 mi. S Midland from a tulip bed. It was 4 inches below the surface in the soil. Measurements are:

115 mm. total length

12 gms weight.

Salamander placed in aquarium with rocks protruding above water.

Douglas County, Lawrence, 1620 Tennessee.
Nov. 10, 1960

Freezing last night. Leaves of large male mulberry tree started to fall at 9:00 A.M. and by 11:00 A.M. approx. 90% of the leaves had fallen. In 24 hours they were all gone.

1525 Crescent Road, Lawrence, Douglas Co., Kansas
Nov. 10, 1960

Jefferson Brabler presented me a small snake Coluber constrictor ⁽⁶⁰¹¹¹⁰⁻¹⁾

which he captured on November 3, 1960. The snake was taken from the edge of the wooded area at the top of the hill at the residence of Bob. Oyler. Measured: 287 length; 67 tail and weighed 17.5 gms (Nov. 10). This juvenile can be identified by 17 rows of scales which no other spotted juvenile has, large eyes and lack of spots on the venter.

[see p. 601129-51 for plate Nov 11, 1960]
[see p. 601129-51 for proper sequence of Nov. 12, 1960]

Lawrence, Douglas Co., Kansas

Nov 13, 1960

Jefferson Brodler caught a blue racer Coleuber Constructor this date. It measured, 533 mm body length, 132 mm tail, 62.5 weight.

Nov 13, 1960

James Robert and I made canoe trip from Lawrence to Eudora via Kaw River. Left 10:00 P.M. Calm, high clouds, general wind from south-east. About 1:00 P.M. wind started to blow and steadily increased. By the time the general overcast had broken and the sun was beginning to shine through, the wind had increased to a velocity that made navigation difficult. Earlier in the morning, we could hear carp jumping up and down the river, in moments of lull.

10:10 1 kingfisher and 1 sparrow hawk.

10:22 1 killdeer

10:30 a great horned owl rested on limb near trunk of cottonwood tree. As we approached it flew down river thru the trees along side of water. As we near the oak again it flew rapidly and straight back to where it was originally seen. After alighting it called several times. 3 killdeers along river

10:35 22 killdeer on sandbar. They were all bathing and feeding as if they had just dropped down to river from migration or long flight as they were more active than other groups that resided along the river.

10:50 mouth large stream - right. Heard 1 red-bellied woodpecker and several small birds.

11:00 Swallow cliffs

11:30 Point along river where we capsized Nov. 9, 1960. Found a cotton glove but not the shoe we lost.

11:45 fork of river

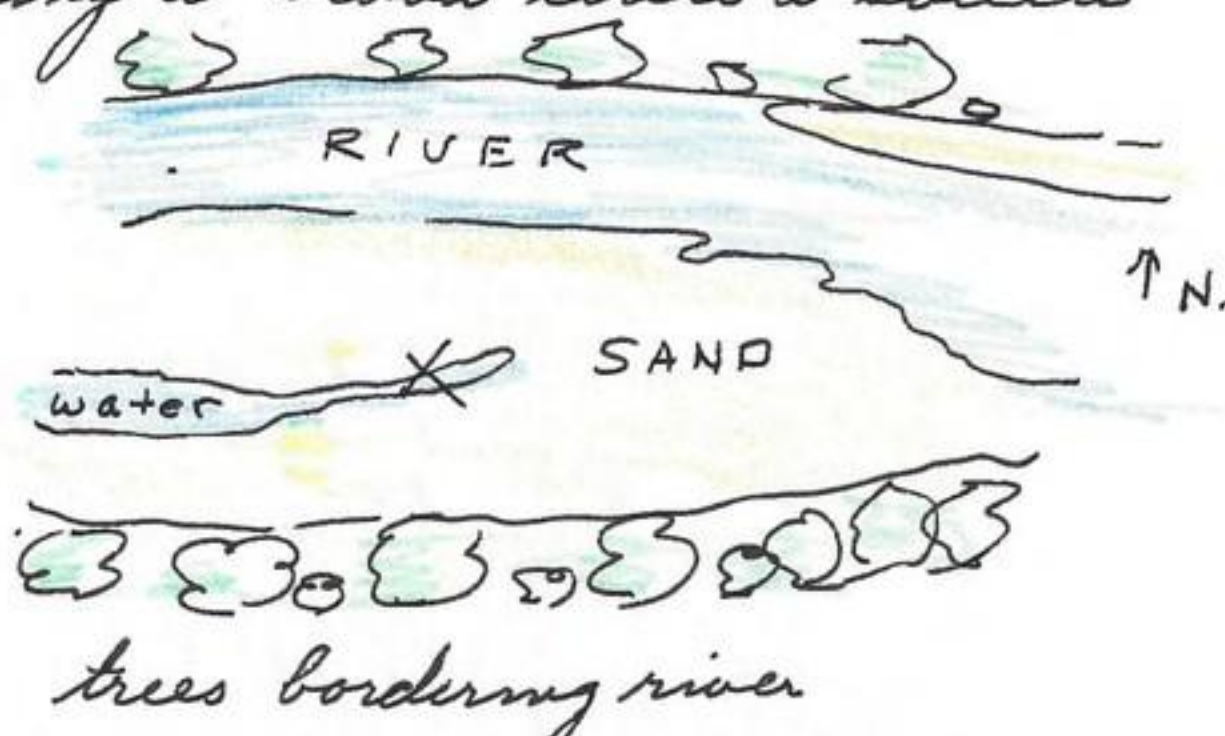
12:00 bend of river. Mud Creek to left at bend.

12:13 N end of river island. 2 crows left island. 2 jays & group of chickadees on mainland.

12:24 end of river island. River approx. 2 feet lower than

last week, as a result the island is large with considerable expanse of sand.

12:40. 9 Squatarola squatarola, black bellied plover were noted to be flying up river and after making a broad circle to south returned to the river bed and alighted along a shallow channel in broad expanse of exposed sand. They acted much like the killdeer noted earlier in that they immediately started to bath and feed.



This particular spot was recognized as appealing to the plovers at some distance and their deviation of their flight brought them to the shallow water. James R. stalked the birds and at gun ^{shot} range fired one shot and wounded 1 bird. The wounded bird and remaining 8 left the area and flew directly south out of the river bed area and out of sight. These birds called as they arrived but did not call thereafter. Continued on our way at 12:55 P.M.

1:15 Kent Creek. 2 redtails left south side of river and flew across to oak covered knolls on north side of river. These birds have been seen at this point on other occasions. Several juncos along edge of bank and 1 red-bellied woodpecker. There seemed to be fewer red-bellied woodpeckers in evidence than on previous trips.

1:40 4 killdeer

1:45 2 killdeer and 1 kingfisher.

2:00 A.M. Eudora bridge.

General observations:

Crickets still calling but few in number

no frogs except 1 possible

98% leaves off cottonwood trees. Willows still green but many without leaves and considerably more brown in addition to the green. Leave protection gradually exposing area beyond bank of river.

Univ. of Kansas Lawrence, Kansas

Nov 21, 1960

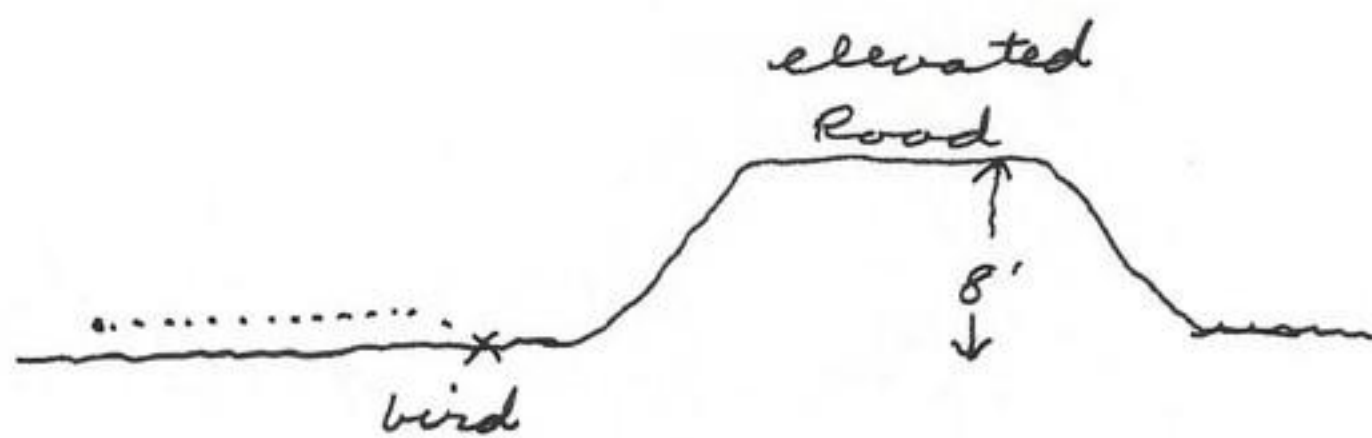
Thomas Adams presented to me a small Tropidoclonion ^{lined snake} lineatum, which was collected on the front steps of the Snow Hall building. This snake was sunning himself at

(601121-1)

the time of capture, even though hundreds of students were passing nearby. Dr. Henry Fitch borrowed this snake and made some measurements. My measurements are:
 body length 148 mm; tail 20; weight 1 gram; 147 ventral scales; caudal scales 37; sex ? number of ventral and caudals would place this specimen as Tripidonotus l. annexus
Lake View, Douglas Co., Kansas
 Nov. 24, 1960

Died Nov 28, 1960.

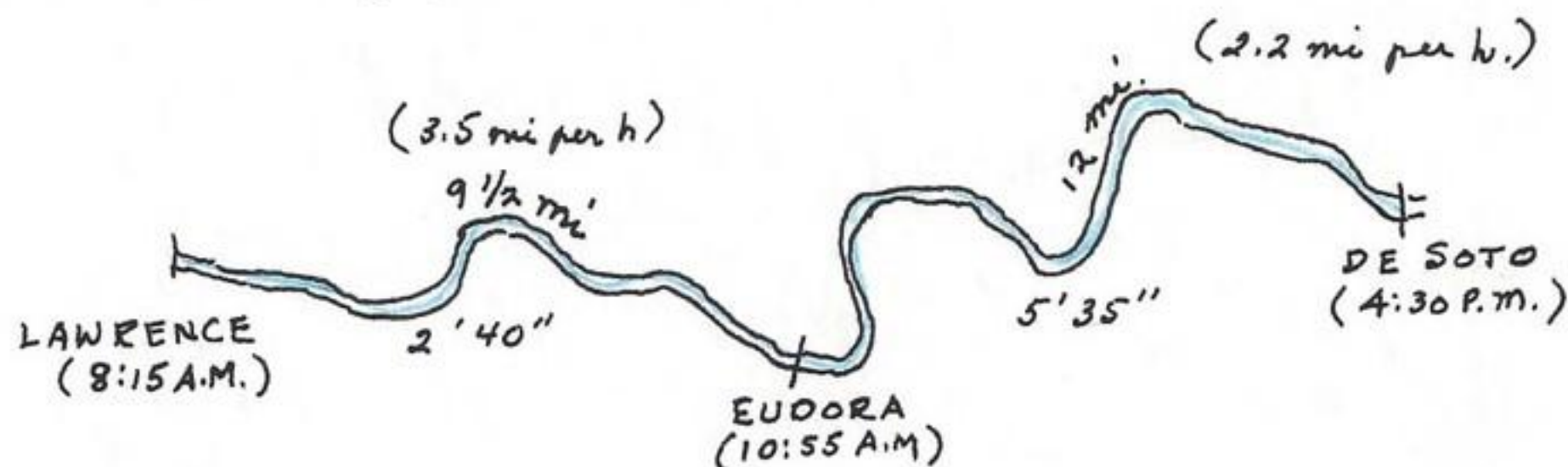
Observed a wilson snipe feeding approx. 2 feet from edge of lake. As the car was stopped (approx. 30' away) the snipe left the shallow water and ran onto land about 2 feet and stopped. As it was early twilight and the muddy shore was covered with dead leaves, it was almost impossible to detect the bird. It was only after I got out of the car and walked toward the bird did it leave and then by running over the beach. It did not



leave, even after throwing several small rocks at the bird. It was evident the the bird left its conspicuous position in the water to take refuge on land and from the overhead head position of the car, the new position was an excellent one for camouflage. Also 38 killdeer dispersed and feeding in 1 acre area.

Lawrence, Douglas Co., Kansas
 Nov 25, 1960

James R. and I made canoe trip from Lawrence (bridge) to De Soto (bridge) on Kaw River.



Left bridge 8:15 A.M. Temp 48°F (in shade); water, 2 inches below surface 44°F. Day calm, cloudless, occasionally slight breeze, landscape mirrored on surface of water. 98% of trees without leaves, especially cottonwoods and gray in color. Willows along stream now without leaves but bark and older dry leaves giving trees a yellowish

brown color. Only occasional green in weeds.

8:40 Kingfisher resting on dead tree at edge of water. The cottonwood trees support more birds than I have seen this season - hundreds per mile in contrast to almost total absence a month ago. These birds, at this point, include a great many starlings. Chickadees, cardinals, juncos, sparrows of indeterminate kind - some song sparrows, jays and other kinds. It is difficult to get these birds in the binoculars when canoe is travelling.

8:50 3 mourning doves, 1 kingfisher calling, 1 red-bellied woodpecker. The population of red-bellied woodpeckers must certainly remain the same but their numbers vary from trip to trip.

9:00 First drainage channel to left right, 3 jays, 1 crow.

9:06 Swallow bank

9:28 Capsize point. The extensive sand bar on north side of river with approx 80 horned larks, several calling and individuals flying back and forth.

9:35 left fork of river. Red-tail.

9:45 Creek to north. 1 beldeer. muskrat caught in trap. when frightened into water it returned and carried trap in teeth to regain land surface.

9:55 head island

10:00 bend to east.

10:25 Mouth Creek (Kent) to north. 1 kingfisher

10:45 Redtail hawk. Song Sparrow singing which is the first one I have heard this season.

10:55 Eudora Bridge. This 9 1/2 miles of river course was covered in 2'40", a trip which under more deliberate canoeing would take 4 hours. We paddling almost continuously.

11:00 15 beldeers on sand bars, most of them dispersed & feeding

11:10 Mouth Wakarusa River to left.

11:20 bend of river now trending NE and N.

11:25 lunch (turkey leftovers)

11:50 bend (now to NE). 1 kingfisher. One flock of horned lark on sandbars. There has been a decided increase in these birds since last time we were along the river. Erosion of river now to Stranger Creek.

12:00 Under utility lines that cross river. Temp. 60°F in shade; 44°F water 2 inches below surface; 72°F in sun.

12:03 Creek from N along R.R. tracks. Crickets have been calling, only a few but regularly along river course.

12:10 Bend to S.E. Collect 1 pine siskin out of a flock of 12 birds

12:20 Kingfisher, 5 Horned larks on sand bar - 4 others flying over - Lead.

12:50 beaver house on N side of river. Deeper side of river, current strong enough to make progress upstream difficult for one man paddling, high sandy bank above. A

large tree had previously fallen in water to make base for house. Except for beaver

cuttings place on bank at the head of the house,

there were no cutting on bank otherwise,

instead a water corridor separated

the house from the bank. Small

willows averaging

1 1/2 inches in thickness constituted the main supply of material for the house. Downriver from the house, about 100' or so were several trails leading up the bank to the source of willow above. As a general note of distribution of beaver between Lawrence and De Soto can say that they occur along the entire river course, at least as far as general beaver activity is concerned such as bank trails, wood cuttings along the edge of the river, fallen trees etc. In fact there is beaver evidence along the entire river course wherever proper bank slope and trees are available. Noted two instances of beavers having dug mud from the bank - 2 feet above the level of the water. On a later trip will survey beaver activity specifically.

1:05 bend - opposite arched bridge of R.R.

1:25 goldfinch group flew by.

1:35 angle of river - now directly north.

1:50 Kingfisher

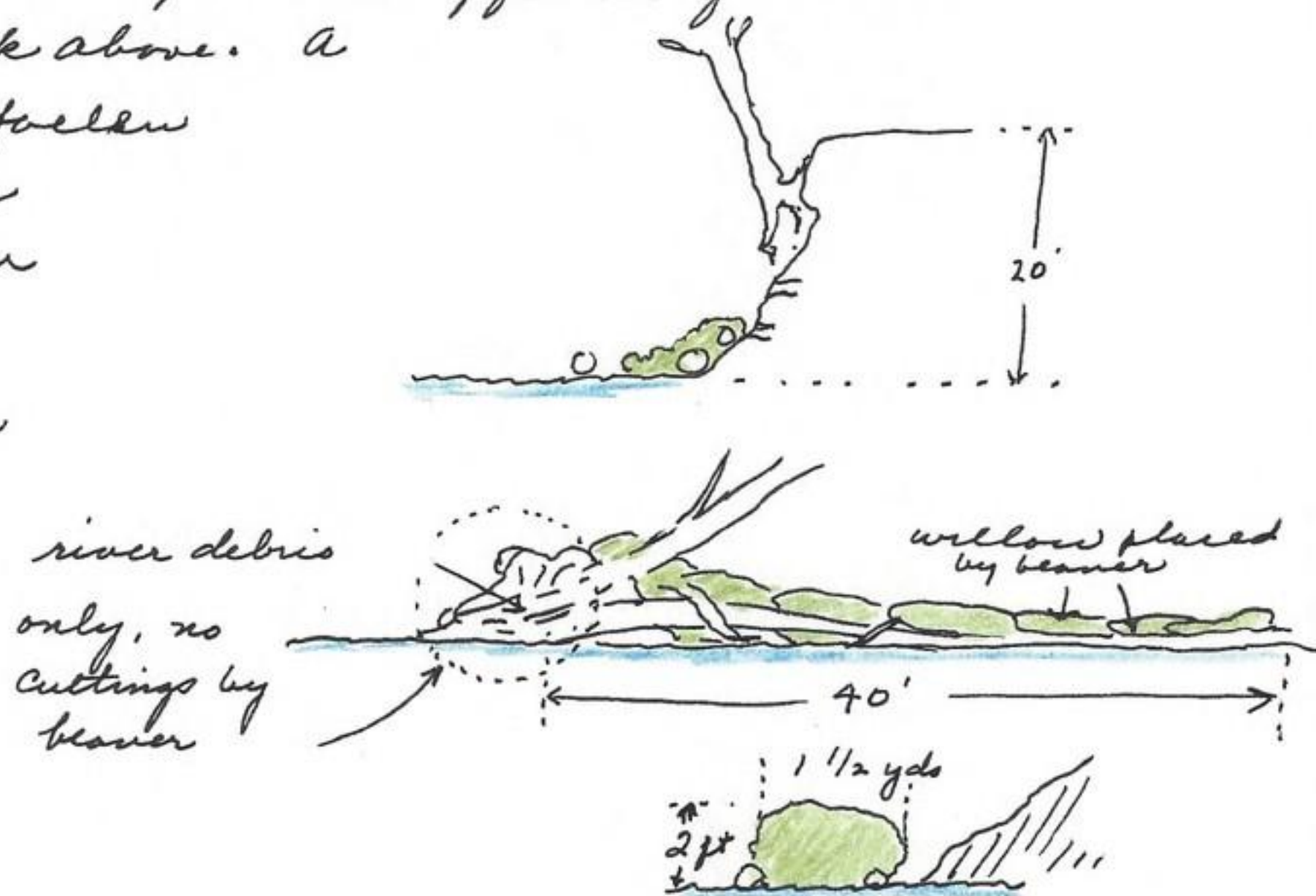
1:55 now NE

1:58 Stranger Creek. The river has eroded N to this creek which now opens at the bend of the river rather than to the east where it formerly opened. The N bank for several hundred feet is the old creek channel.

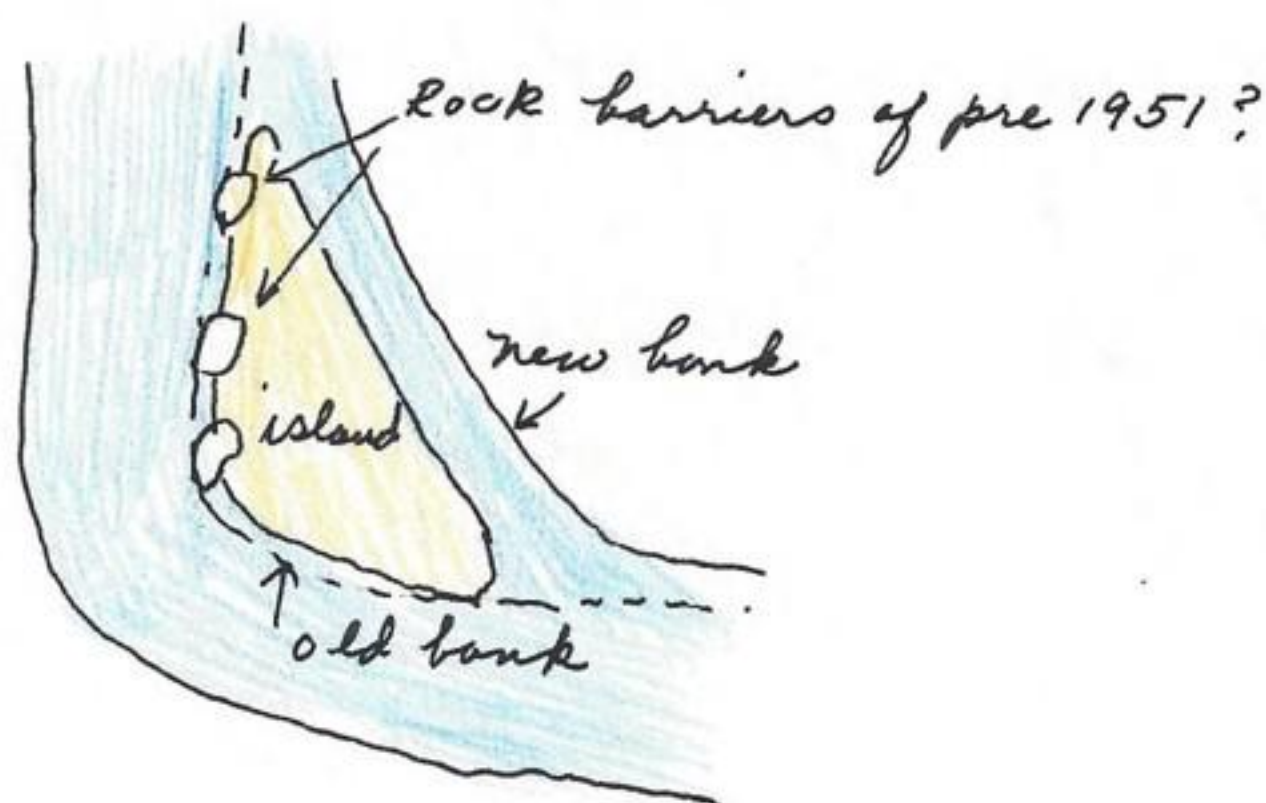
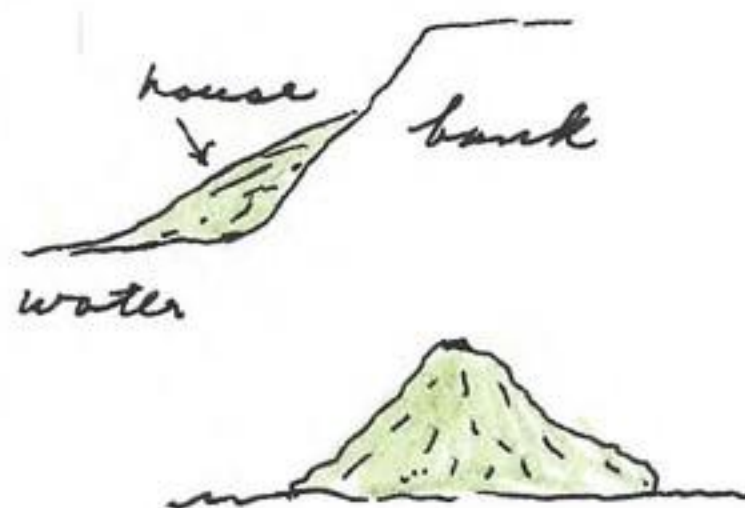
2:15 now S.E.

2:20 6 killdeer feeding in close group.

2:30 2 killdeer, 1 crow



- 235 Creek to left.
 240 Beaver house to north. Active bank trails within 50' each side of house. Material for house mainly willow.
 250 Left the beaver house.
 253 Sunflower Ordnance pump station on left bank.
 3:45 Stopped on island. Found Indian pottery and some rather old looking bones, probably buffalo.



The island was covered with small hard stone pebbles and crusted sand. The pebbles were probably from stones placed by glaciers. The pottery and bones were probably from old Indian sites that were originally on the

river bank before the flood eroded the area. These artifacts probably sifted down as the sands were undercut and washed away.

- 4:20 returned to canoe. Air temp in shade 62°F; sun 64°F; water 42°F.
 4:30 Arrived Ole Soto bridge

General observations:

Allow 2 miles per hour for leisure trip down Kaw. 4 miles per hour is a fast pace. (rate includes current also)

Horned Larks have arrived or increased in last week and are associated with the more expansive sand bars along river.

No frogs observed although excellent day for their temporary return.

Fewer crows and jays than previously noted

Increase in small birds

Squirrel tree nests generally distributed in trees along edge of river - mainly localized.

Carp? jumping about 1 per 300 ft. Some protected eddies which are shallow support many Carp? jumping about 1 per minute.

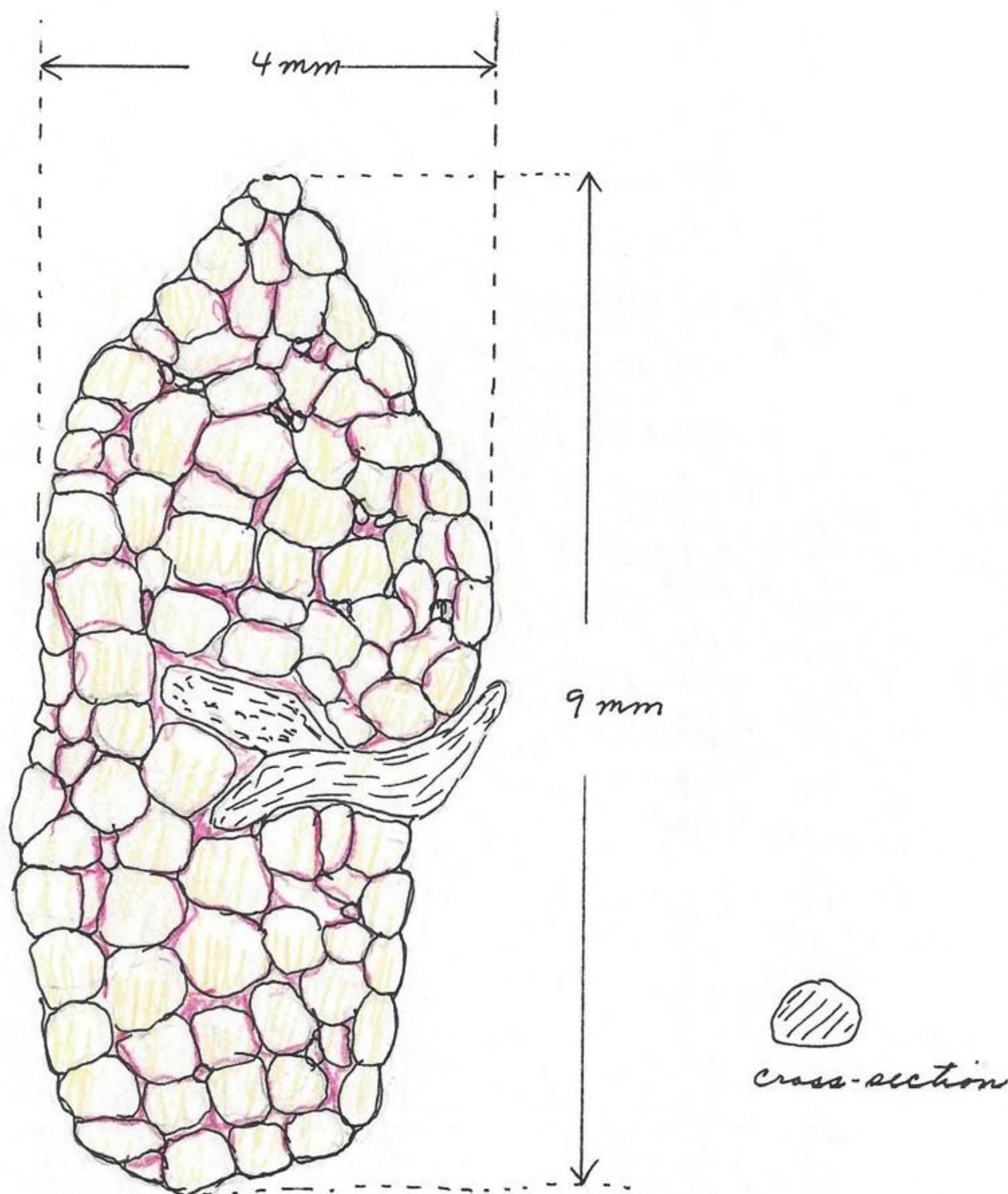
Considerable change of river topography since maps were printed in 1951.

nov. 26, 1960
 [see next page for proper sequence date nov. 27, 1960]
 Lawrence, Douglas Co., Kansas.

nov. 27, 1960

[see next page for proper ^{date} sequence]

James R. and Craig Estes found an Otus asio (601127-1) in middle of road at 1620 Tennessee. This owl was probably hit by a car last night as at 10:00 A.M. the bird was still fresh. Mounted as a museum specimen.



OTUS ASIO (left ovary - camera lucida)
 length 9 mm
 width 4 mm
 largest egg .8 mm

This owl measured 235 total length; and weighed 180 grams. Approx. 1 square inch of fat in the aggregate. Gray phase screech owls are rarely heard in this neighborhood. except during the spring breeding period.

Lawrence, Douglas Co., Kansas.

Nov 11, 1960

[see page 601110-44 for proper date sequence of Nov. 11, 1960]

At 3:00 A.M. snowed and by noon 4 1/2 inches had accumulated. Trees iced. Patter's Lake on K.D. Campus frozen. This snow was preceded by a cold rain which lasted all day Nov 10. Noted a Sphyrapicus varius, yellow-bellied sapsucker feeding in Austrian pine.

Nov 12, 1960 [see p. 601110-44 for this date]

Photographed iced trees on Univ. of Kansas Campus.

601212-1 Fraternity House on Louisiana

601212-2 Chancellors yard with junipers & elms edged with white

601212-3 Chancellors yard with large elms in foreground.

601212-4 Trees just W of Snow Hall

601212-5 Tree (Russian olive) at Campanile

601212-6 Tree on memorial drive from Campanile

601212-7

601212-8 new Snow Hall addition

[see preceding ^{insert} page for Nov. 27, 1960]

Nov. 28, 1960

Harold Murray presented me a Storeria dekayi taylori (601128-1) which he collected on Nov. 1, 1960 at 3 mi. S and 1/2 mi E Lawrence (P.O.), Douglas Co., Kansas. This area is known as Haskell Bottoms. This snake was at the edge of a pond and when Murray approached it, the snake moved into the water and started to swim away. Day clear, warm, sunny and after one of the first autumn rains. It was collected at about 3:00 P.M.

It measured:

head and body - 140 mm (when preserved Dec 26, 1960 it measured 142 body & head and 46 tail)

tail - 45 mm

weight - 2.5 gms (it lost 1 gram in 1 month although it had ^{mealy bugs} available at all times)

There were 17 rows of scales and 7 supralabials

Nov 29, 1960

At 1620 Tennessee, Lawrence, Kansas noted the order of command of four species of birds which fed on feeding platform: (from most aggressive to least aggressive).

red bellied woodpecker

starling

cardinal

English Sparrow

Other birds noted on feeder are: juncos, blue jay, downy woodpecker, and black-capped chickadee

Along Kaw River E of Lawrence, Douglas Co., Kansas
 Dec. 20, 1960 601220-52

Made trip along Union Pacific R.R. tracks from bridge over Mud Creek to bridge over Kent Creek a distance of 1.6 miles. Start at 3.65 mi. E and 1.95 N Lawrence (P.O.). Kansas River entirely free of ice, either floating or solid. Some ^{ice} in small bays at edge of river. Snow on banks (N. exposures). 18 mallards in area about 200' S of mouth of Mud Creek in area noted previously (Dec. 19) when 28 were noted. One beaver cutting on S side of river on snow. Along track noted the following birds:

Black-capped Chickadee.	2 along edge of river.
Marsh Hawk,	one bird.
Loggerhead Shrike,	one bird
Song sparrow	6
Tree sparrow	8
Cardinal	2
Hairy woodpecker	1
Downy woodpecker	1
	3 horned larks on pond
	2 crows
	3 Oregon juncos

Except at mouth of Kent Creek (bridge) when birds were coming in to roost (near sundown) there were very

few birds in the or along the tracks.

Haswell Bottoms east of Atchison, Topeka and Santa Fe R.R. tracks

Dec 21, 1960

Noted 28 crows in on flock. Also one Loggerhead shrike and several Horned Larks and one marsh hawk which the crows were chasing. 8 meadowlarks fed in green field. Birdlife uncommon in fields today. Haswell Bottoms have been grazed this autumn and vegetation trampled. Did not observe any hawks in 3 miles of bottoms examined. Wakarusa R ice except occasional stretch of open water in center of river.

Kaw River, Lawrence, Douglas Co., Kansas

Dec 21, 1960

Temp. of water in Kaw River at 3:30 P.M. 2 inches below surface in shade 34°F. Air temp in shade 12°F. Solid ice on river above dam. 95% of river open below dam. Ice mainly along edge of water and in shallow protected areas of slow moving water. At this stage one could use canoe for navigation but another cold night might make course impossible. Most of overflow water of dam in ice but few streams of running water.

5 1/2 mi. W Lawrence (P.O.), Douglas Co., Kansas

Dec 22, 1960

On Highway 10 noted one large flock of starling, approx. 800 birds, flying in a flock formation (tracking birds for about 1 block) wheeled and alighted in several groups in environs of a farm yard. One group of about 150 birds fled in a small bush of berries, one group of about 300 alighted on the top of a large tree and others alighted on the ground. This is the largest flock of these birds I have ever seen and from what I could see, they were all starling. Except for 3 crows we did not see any other kind of bird between Lawrence & Topeka in the outskirt regions.

Vicinity of Lakeview, Douglas Co., Kansas

Dec 23, 1960

Checked birds along Kaw River at Lakeview and west up river to near LeCompton. Observations in A.M. Day Cold (approx 36°F), sky with overcast except blue horizon to N and slight breeze. Birds observed: (Red squirrels unusually numerous)

Buteo jamaicensis 7

Buteo harlani 1

Spizella arborea, groups of 7-18-2-1

Spinus tristis 1 with group of pine siskin.

Spinus pinus 15 in one group along edge of Kaw in weeds.

Centurus carolinus 5 individuals

Colaptes auratus 7, one group of 8 which is an unusual aggregation

Dendrocopos villosus 6 individuals.

Dendrocopus pubescens 4 individuals

Junco hyemalis groups of 2-8-6-12-2

Richmondia cardinalis groups of 2-2-2-1-1-2-1

Sturnus vulgaris. several small group far removed from farm houses. One group of approx. 500 about 2 mi. west of Lawrence. I have never seen such large flocks of starling or so numerous.

Corvus brachyrhynchos. 1 group 8, several singles and groups of 2

Sialia sialia 1

Parus atricapillus small groups. even when they left and flew to tree they did not inspect their feet.

Cyanocitta cristata 2

Mimus polyglottos 1

Melospiza melodia 2

Turdus migratorius 6

Lanius ludovicianus

Aythya affinis 1 in Kaw. It come from south overland and alighted in river. When leaving flew N out of river course.

1 1/2 mi. S and 3 mi. W Lawrence (P.O.), 601226-54

Dec 26, 1960

Douglas Co., Kansas

noted one mirus polyglottus. It flew to top of fence post and then to ground and then return to top of fence post.

Haskell Bottoms, 3 mi. S Lawrence (P.O.), Douglas Co., Kansas

Dec 26, 1960

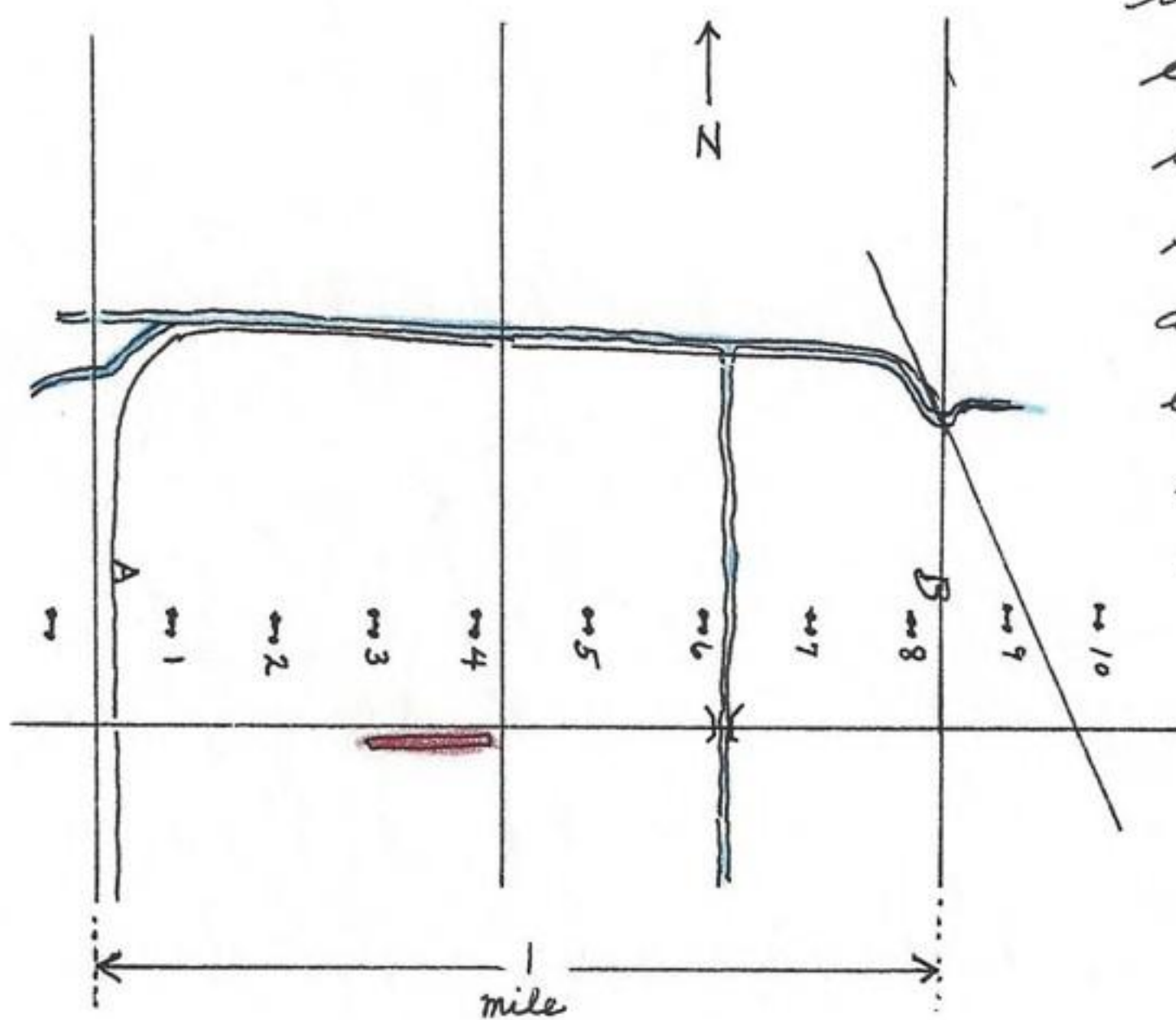
After cruising in outskirts of Lawrence for 1 1/2 hrs. noted only one hawk, a Circus cyaneus. It was flying over the bottom-lands.

3 1/2 mi. S Lawrence (P.O.), Douglas Co., Kansas.

Dec 28, 1960

made census of microtus ochrogaster - Sigmodon hispidus population in Haskell bottoms (See notes of)

Counted number of used runways on a line A to B along the utility lines that traverse the bottoms from east to west. (line along south pole of the 2 pole line.) Started from road to west and finish 1 mile east at edge of road. The cattle, some 150 had grazed the area this autumn but had not inflicted the severe damage of overgrazing and trampling of the previous year. I would estimate that the grazing was about one half the damage of the previous year. Day calm but cold and overcast.



From west road to poles no. 1: noted 2 used trails, probably of m. ochrogaster, in an area that has always been the most productive area.

From number 1 to number 2 pole: one microtus ochrogaster trail, deep and concealed overhead, in old drainage depression.

From number 2 to number 3 pole: 2 microtus ochrogaster trails + used.

From number 3 to number 4 pole: no trails (center road 20' beyond)

From number 4 to number 5 pole: 1 microtus ochrogaster trail. Stalks of old sunflower type weed 6' to 8' high and very little ground

protection. This runway seemed out of place for m.o. Two meadowlarks flew into area.

From no 5 to no. 6 pole: no runways. Least protected or grass coverage. No sunflowers except a few in shallow soil depressions or ditches. Few cattail in shallow depression. 1 ♀ sparrow hawk

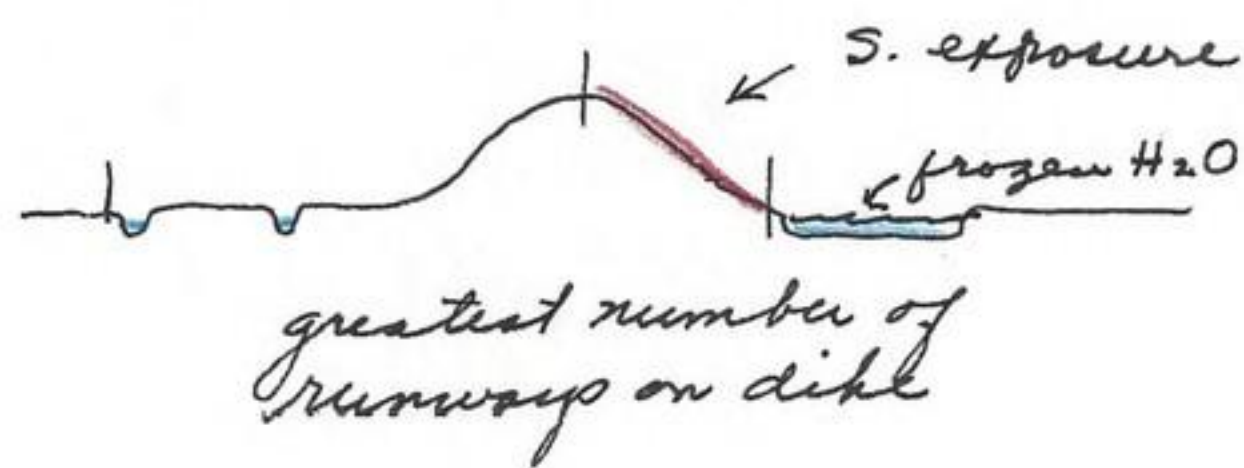
From no 6 to no 7 pole. no water in deep drainage ditch but considerable muskrat activity (previous) on banks. 2 runways of *Microtus ochrogaster* on east side of bank, on top. No sunflower stalks and grass intermediate in grazed condition between areas 1-4 and 5-6.

From no 7 to no 8 pole: no runways even in rank growth at between pole 8 and road.

General observations: Feces of cattle supported whole kernels of corn. Areas beneath feces barren of insect life. Only birds noted in area were 2 meadowlarks and 1 sparrow hawk mentioned above. Although many areas looked favorable for *Sigmodon* & *Microtus o.* only a few ^{trails} m.o. were noted. Did not see or hear microtine activity. At a point 3 1/2 mi S and (Lawrence P.O) to the crossroad to the east about 1/10 mi. on the south exposure of the dike that runs east & west just S. of the road, found runways of *Microtus o.* type at about every 5' to 10' along dike. This isolated area is definitely a focus of m.o. population. I will trap this area to determine kind and quantity of mammal.

The rest of the east west dike did not support the number of runways found here mainly because of the type of vegetation.

Most of the dike and especially the N exposure is covered with a thick high grass whereas the dike where the greatest number of runways was more open and without the ^{high} overhead protection.



Potter's Lake, Univ. Kansas, Lawrence, Kansas

Dec 29, 1960

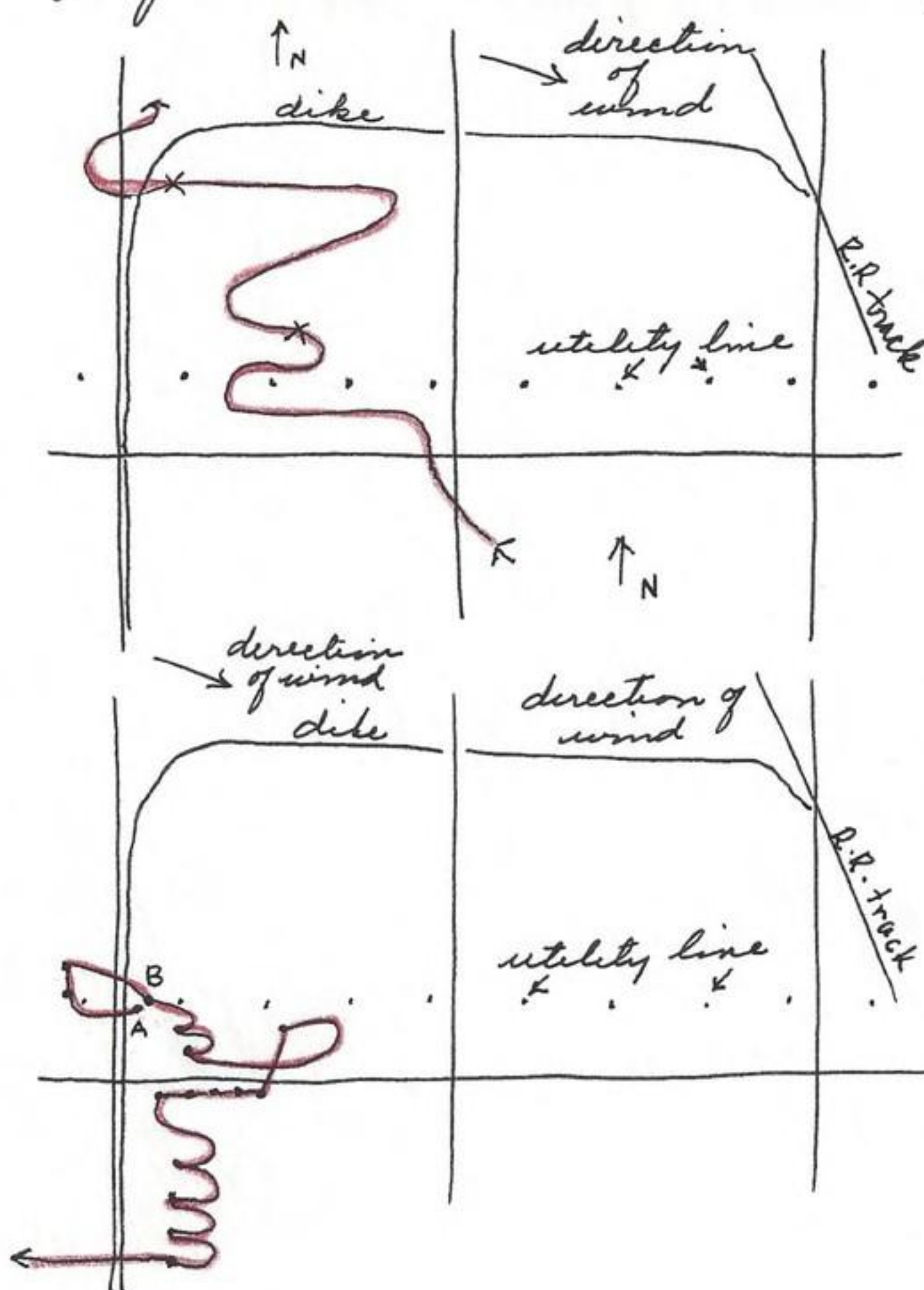
Ice on lake now measures 2 1/2 inches this A.M. Children are skating on lake and have been for the last 2 weeks.

Haskell Battams, Lawrence, Douglas Co., Kansas

Dec 29, 1960

Checked birds in field at about 3:00 P.M. Day with wind from

the NW and sky clear but cold being only a few degrees above freezing.



Flight of a marsh hawk. It first appeared at A and disappeared at B. Places marked x are point where the hawk dropped to the ground to catch a mouse, both attempts being unsuccessful. The hunting was always performed into wind from the N.W.

Flight and hunting activity of a ♀ sparrow hawk.

It was first observed sitting on the high line^(A) of the utility line running E-W.

In about 2 minutes it dropped head first down into the grass below. The fall was almost perpendicular and with apparent terminal

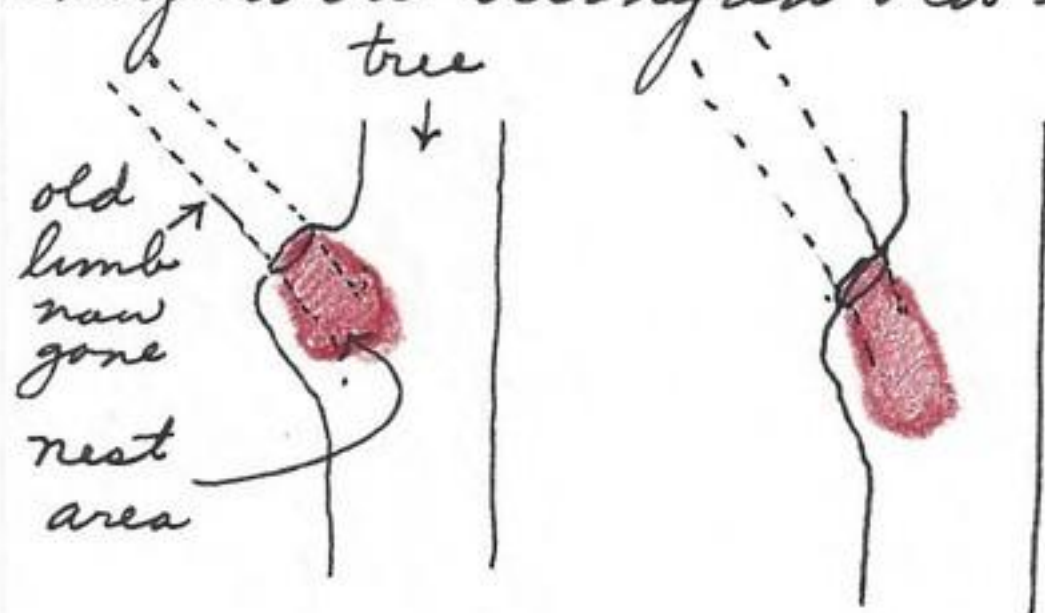
glide. It flew back to almost the same spot from where it was stationed before. It carried a Microtus ochrogaster, head up, and alighted upon the utility line. The sparrow hawk started on the head region and in about 40" the mouse was motionless. After feeding continuously for about 3 minutes and after consuming the head-neck region, the hawk flew W across road and lit in a plowed field where it deposited the mouse and returned to point B just a few inches from point A. From here the hawk dove down at 45° angle but apparently missed its prey & after 15 seconds returned to line at B. It remained here for 4 minutes and then flew to next point (dot on course) where it hovered for about 15 seconds and then to next point where it again hovered at about 60' above the ground. It hovered at next point & then flew to ^{low} telephone line and made 5 stops, at each point assumed hunting pose on line. From line it flew S and hovered 4 times before flying to the west. It flew fast and straight across a plowed field. The sun at this time made long shadows of the grass clump of the proportion of 1 height to 4 shadow length. The characteristic hunt-

profiles while perched on the utility lines are:



In each case the vision was monocular rather than by binocular as the head was turned so that only one eye was being used for acute vision.

A group of 9 crows alighted in a plowed field and fed progressively into the wood for approximately 400 feet. Progress was made by walking and short 10' flights. At end of feeding the original compact group was separated by as much as 200'. Pond at R.R. tracks $3\frac{1}{2}$ mi. S + $4\frac{1}{5}$ mi. E Lawrence (P.O.), was frozen except 2 feet on n. edge. 12 bobwhites at point where R.R. track crosses the highway at $3\frac{6}{10}$ mi. S + $6\frac{1}{10}$ mi. E Lawrence (P.O.). Examined two nests of the red squirrel at Wakarusa River bordering the Haskell Bottoms. In each case they were using an old limb hole in tree thus:



The aperture was just large enough for the body of the squirrel which actually had trouble gaining entrance. There is no direct overhead protection and rain or snow can enter.

When squirrels are approached unexpectedly they retreat to these holes. Wakarusa River still open in a few places. Noted one hawk which was either a large sharp-shin or a small cooper's. It remained in the dense tree growth on the side hill.

Lawrence to Eudora, Kansas

Dec 31, 1960

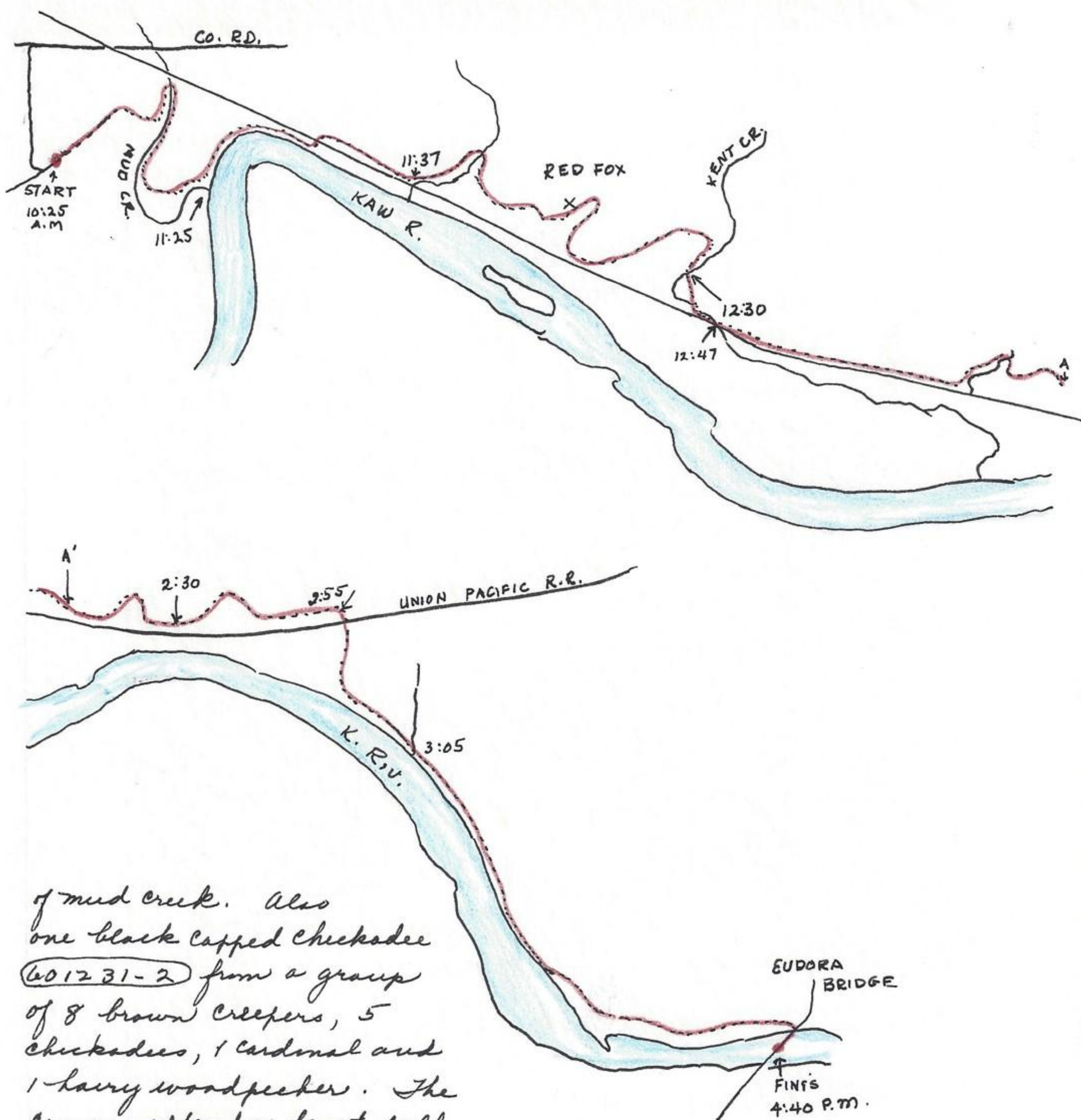
James R. and I made trip from Lawrence to Eudora via n. side of Kaw River. Start at 10:25 A.M. at approx $6\frac{1}{10}$ mi. N + $4\frac{1}{10}$ mi. E Lawrence. Walk from there to Eudora Bridge arriving at 4:40 P.M. (See map of route on next page). Made the following observations:

10:25 Sparrow hawk hunting from line of utility pole. Flew slowly down to embankment & returned. Crow calling to S.

10:30 Pond made by railway borrow pit. Ice on pond.

10:35 Red-tail hawk left tree & flew to another tree.

Collected one brown Creeper (601231-1) from trees along edge



of mud creek. Also
one black capped chickadee
(601231-2) from a group
of 8 brown creepers, 5
chickadees, 1 cardinal and
1 hairy woodpecker. The
creepers offered a faint call.

One brown creeper (601231-3) from
same group. At about 11:10 A.M. observed a group of birds
consisting of 1 song sparrow, 4 ^{slate colored} ~~slate~~ junco, 4 chickadees (B.C.)
1 downy woodpecker. These were in the dense willow & cottonwood
vegetation bordering Mud Creek. 11:15 one downy woodpecker.
12:25 mouth Mud Creek and Kaw. Fresh beaver cuttings.
no ducks on river. From here to R.R. tracks, thence to
field to north. 11:37 5 black capped chickadees, 1 crow, 5 slate
colored juncos, 1 cardinal & 1 song sparrow.

- Collected one slate colored junco (601231-4) associated with the above. Active gophers in sands above rock ledge.
- 11:55 Collected one red-bellied woodpecker (601231-5) from among 6 S.C. juncos & 3 chickadees.
- 12:05 Surprised a red fox at about 80'. It ran up canyon for about 300 ft and when pursued remained still until we passed & then it turned to west and gained top of ridge. At point where flushed were 7 Cardinals & 3 jays, neither one of the birds were calling. Several fox droppings in area. This area is round topped hills and oaks, many of the trees still supporting dry leaves. Open savanna type.
- 12:20 group of 2 brown creepers, 2 jays, 1 flicker, 8 slate colored juncos and 1 red-bellied woodpecker. 18 horned larks in open field (green vegetation 1 inch high).
- 12:30 Kent Creek. One great horned owl & 2 jays calling. 2 red-bellied woodpeckers.
- 12:47 where Kent Creek goes under R.R. tracks. Here were 2 Cardinals, 8 goldfinch, 1 marsh hawk. 1:00 6 black-capped chickadees, 1 cardinal and 1 hairy woodpecker. Ideal area for Leconte Sparrow but no evidence.
- Collected a black capped chickadee along R.R. grade (601231-6)
- 1:15 30 Eng. Sparrows about 2 flocks from habitation.
- 1:20 2 red tails flying together, one dark (even tail) and one normal. 2 yellow shafted flickers
- 1:30. 3 blue jay, 1 squirrel, 2 S.C. juncos. 1 crow calling, 2 brown creepers feeding in oaks. In on small drainage found 2 S.C. juncos (only ones in area)
- 1:45 near pond (large) found 2 red squirrels on S side beyond dike and 2 on N. side of pond. 2 flickers N side, 2 red headed woodpeckers S. side. 7 blue jays flew across pond in one group.
- Collected one red-headed woodpecker (601231-7). This bird was taken from area of ^{large} oaks and sycamores sparsely placed. The bird alighted upon a side branch of an oak with leaves and a red squirrel ran up tree from ground and almost knocked flicker from tree. This area of oaks from Mud Creek east for many miles may support Dipodomys. It is an area that is good for red-headed woodpeckers. Stopped for lunch at 2:30, left at 2:45. Shot a blue jay which measured 310 mm total len.
- 2:55 Sparrow hawk hunting. 1 good adult red headed woodpecker
- 3:05 mouth creek from Fall Leaf. Difficult to get down to creek and out again (at mouth). Gophers active in field to east.

3:10 Loggerhead shrike left perch on dead tree limb and flew low over plowed field to opposite side.

3:15 Beaver cuttings along river.

3:25 Collected 1 of 2 downy woodpeckers (601231-8) from dense tree growth (40' high) in river bottom. Few raccoon tracks. Gopher diggings in field.

4:10 yellow shafted flicker + 2 b.c. chickadees.

4:30 Collected one hairy woodpecker (601231-9) from edge of Kaw in dense tree growth.

4:40 Arrived at Eudora bridge. 4 starling in trees at edge and 6 English Sparrows + 4 pigeons on bridge. Kaw River is clear of ice the entire route from Lawrence to Eudora. Frozen above dam at Lawrence.

Measurements of birds collected today:

(601231-1) Certhia familiaris, t.L. 135 mm, 8.5 gms; ♀.

(601231-2) Parus atricapillus, t.L. 135 mm; 12 gms, testes 1 mm; ♂

(601231-3) Certhia familiaris, t.L. 145 mm, 9 gms, ♂

(601231-4) Junco hyemalis, t.L. 165 mm, 20 gms, ♂.

(601231-5) Centurus carolinus, t.L. 265 mm, 84 gms, ovary 7 mm, ♀

(601231-6) Parus atricapillus, t.L. 140 mm, 13 gms, testes 1 1/2 mm, ♂.

(601231-7) Melanerpes erythrocephalus, t.L. 252 mm, 82 gms, ♀
secondaries with 2 rows of dots and head with approx 30 small red feathers mixed in with darker feathers. Juvenile.

(601231-8) Dendrocopus pubescens, t.L. 117 mm, 26.5 gms, egg mass 1 mm.

(601231-9) Dendrocopus villosus, t.L. 235 mm, 71 gms, testes 2 3/4 mm.