

JOURNAL 1971

JAMES W. BEE

JOURNAL-1971

Lawrence, Douglas Co., Kansas

Jan. 3, 1971

Left Lawrence for Oklahoma City at mileage 51920.0 at approx. 11:00 A.M. Annette, Chris and I made trip. Will keep list of birds. Left West Gate of Turnpike at 51926.3. 51927.0 Redtail hawk. 51944 8 crows and 1 redtail. 51953 just south of Topeka where turnpike turns south. 51981 more typical prairie. 51987 2 crows. except for occasional juncos, small birds are rare. Temp. 14°F. strong winds from NW. 1 inch snow on ground and trees covered with ice, sky clear. 51005, Highway 50 at Emporia. Less snow than in Lawrence, and especially less snow on road. 51003, roughleg. The prairie on typical Flint Hill topography. 51004 redtail. 51022 Cattle Pens. 51035 marsh hawk. 51045 4 crows, 51047 crow. 51049 marsh hawk. 51054 redtail. 51157 redtail. 51061 2 redtails. 51065 El Dorado Interchange. Temp. 15°F. 51068 redtail. 51073 marsh hawk, 51078 sparrow hawk. No meadowlarks so far. 51079 4 crows 51080 2 crows. 51082 roughleg and marsh hawk, 2 crows. only a trace of snow in area. 51085 2 meadowlarks and first ones observed since Lawrence. 51086 roughleg. 51090 meadowlark. 51096 Wichita. 5 meadowlarks in urban area. 51106 crow. 51108 6 crows. 51111 crow, 5 meadowlarks. 51120 4 crows & 1 sparrow hawk. 51137 meadowlark. Ponds partly open and of a muddy color. Ponds in Topeka-Lawrence area are frozen. Large rivers in Wichita are mostly open and small creeks are frozen. 51148 3 meadowlarks, 51155 marsh hawk at Hubbard Rd. 51163 crow. 51167 5 meadowlarks, 51178 8 meadowlarks. 51177 meadowlark. 51173 32 meadowlarks. (Will record the last 3 figure of mileage only from here on). Water in all creeks a chocolate brown color. Great horn owl road kill. 180 10 meadowlark. 181 12 meadowlarks. 186 2 meadowlarks. at Black Bear Creek. 189 2 meadowlarks, 1 crow. 192 Perry. 194 4 meadowlarks. 195 3 meadowlarks. 196 sparrow hawk. Considerable evidence of badger digging. 200 sparrow hawk. Area of reddish soils of Permian. 200 Payne Co. line, 3 meadowlarks. 205 10 meadowlarks. 208 3 meadowlarks. 208 4 meadowlarks. 209 5 meadowlarks.

210 12 meadowlarks. 212 32 meadowlarks, 213 Cimarron River. 5 Herring gulls. Sides of river grown to juniper, especially S side where the junipers continue on uplands to S. These junipers make a rather abrupt appearance on the landscape and form a striking community contrast. 5 meadowlarks, sparrow hawk. 215 6 meadowlarks. Junipers now common on uplands. 218 meadowlark. 219 meadowlark. 220 14 meadowlark. 220 marsh hawk. Oak patches are part of the landscape now and the community is definitely more scrubby. 225 6 meadowlarks. 228 13 meadowlarks. 231 12 meadowlarks, 1 crow. Oak groves have increased in size. 233 Oklahoma line, Temp 25°F. 234 2 meadowlarks. 235 7 meadowlarks. 236 8 meadowlarks. 237 14 meadowlarks. 238 Edmund Turnoff. 3 meadowlarks. 244 Harrison Creek. and end of census. 4:30 P.M. General observations of note are: meadowlarks increase from N to S. Redtails & roughlegs are mainly a prairie inhabiting form. Arrived Norman Oklahoma at 5:00 P.M. and visited Grace. Stayed at Gillie on Lee Ann Street.

Norman, Oklahoma.

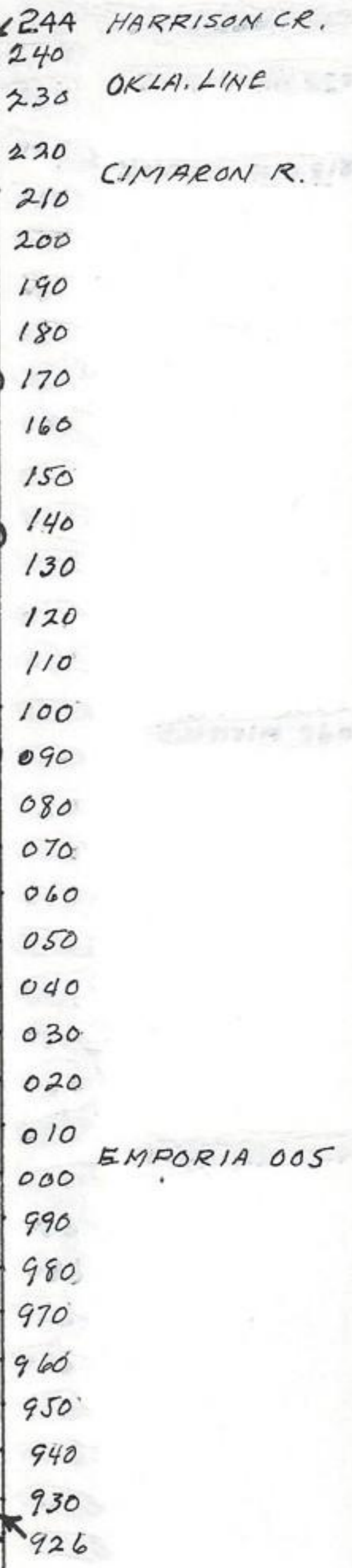
Jan 4, 1971

Left Norman this A.M. and drove to Fort Lawton where we visited our old army quarters and the Wichita mountains to the west. The Fort Lawton Reservation has grown many times in size over the conditions of 1944. From the top of Wichita mountain collected 2 specimens of granite nos 710104-1 and 710104-2. The Permian red soils come directly up to edge of outcrops. Several birds in area including Bachman's sparrow, bluejay, cardinal, junco, yellow-shafted flicker, ducks on lake. On return to Oklahoma City noted redtails and marsh hawks in usual numbers. There is an unusual high population of gophers between these two areas with the median strip and sides of highway completely covered with their mounds. These mounds are associated with the highway but are also found, in lesser numbers in field beyond the highway. The soils are red and the streams and lakes are likewise red from the red Permian soils that are found throughout the area. The red and the complementary green of winter wheat produces a very pleasant view.

KANSAS
DISTRIBUTION OF BIRDS ALONG TURNPIKE BETWEEN LAWRENCE AND HARRISON CREEK, OKLAHOMA

JAN. 3, 1971 11:00 AM TO 4:30 P.M.

<i>G. Horned owl.</i>			
<i>Herring gull.</i>	5		
<i>Crow</i>	8	2	1
<i>marsh hawk</i>	2 4 2	4-1	1 1
<i>Sparrow hawk</i>		1	
<i>roughleg hawk</i>			
<i>redtail hawk</i>			
<i>Meadowlark</i>			



Perry Reservoir, Jefferson Co., Kansas

Jan. 6, 1971

made census of birds in reservoir area. Left Lawrence at 9:48 at junction 59 and 24 at mileage 52858. Complete census of birds to reservoir. yellow-shafted flicker, Sky clear, no wind and temp 11° F. 59.7 12 starling. 60.7 Meadowlark, 2 meadowlarks. 61.6 8 meadowlarks. 63.2 Sparrow hawk. 65.0 8 horned larks. 65.9 2 Eng. sparrows. 66.8 2 Eng. sparrows. 67.2 Wellenreuther. 68.1 4 meadowlarks. 69.4 18 horned larks. 70.7 Perry turnoff. 70.8 2 juncos, 1 Cardinal. 71.0 18 tree sparrows. 71.4 50 tree sparrows. 71.8 6 tree sparrows. 72.2 loggerhead shrike. 72.7 4 meadowlarks. 73.4 18 tree sparrows. 73.5 SE corner of reservoir area. 74.0 2 tree sparrows 74.6 E end of dam (on top). As far as I can see, the entire lake is covered with ice, the southern end showing a mass of compacted ice and then refreezing of lake. Most of ice is covered with snow of 2 days ago, some blue areas of more recent ice. 75.4 gate Can see two small open areas maintained by ducks, one about ²⁰⁰ 300' from shore at point across from E end of dam and one between this open water and the gate and some 400' from open water nearer the land. 76.2 E end dam. 77.3 all boats in marina in ice. This condition ^{of ice} in spring will pay horse to this boat dock. 77.9 marsh hawk feeding along brushy side of hill. 78.5 main road and rd to 47, 79.1 Big Slough Road. 79.6 8 juncos. 79.7 12 juncos. 80.3 Big Slough Creek bridge. 32 juncos at bridge. all water in ice. 81.0 redtail in tree on branch 1/2 way up tree. 81.4 30 tree sparrows, 8 juncos. 81.7 Short-cut road to Slough Creek Area road. 81.9 main road to S. redtail. 82.3 10 Eng. sparrows. 82.5 Country Store. 82.9 drainage creek (lowest point in road as road turns to W). open but ice on edges. 83.3 23 bobwhite. 83.5 left to boat ramp. 84.3 passing road to boat ramp. 4 juncos. redtail. 84.7 20 tree sparrows, 11 juncos, 4 Cardinals. 84.6 at point where road gains W side of ridge, estimated 15,000 mallards in open water reforest land. They left as car became visible at point of ridge. They flew to larger open pond ^{7,000} or 5 over dam ⁸⁰⁰⁰. The birds that remain included 1 Canada goose, 2 pied billed grebs, 1 coot, 4 wounded mallards, ^{3 hooded mergansers} just as the ducks

left, a marsh hawk alighted at the edge of the open water and started to feed on a dead duck (mallard). As the marsh hawk left the first duck and flew to a second duck, a crow, which had alighted 4 feet from the marsh hawk, moved on to the dead duck and started to feed. The marsh hawk on the second duck (mallard) pulled feathers ^(for 5 minutes) from the duck and then ate the flesh. After feeding on the duck for another 5 minutes, the hawk left and the crow moved in. The second pond supported approx 30,000 (plus 7000 from first pond). They rested on ice surrounding the pond and all faced the sun. About 200 were swimming and chasing each other in the water. Both the geese and ducks are conditioned to the noise created by ice fracturing in the lake, some noise of several seconds duration. At point noted 1 mockingbird, 5 cardinals, 35 tree sparrows and 15 juncos. Marsh hawk flew over ear. In the first or nearer pond the hooded mergansers normally carry the crest of head down but when the marsh hawks flew over the crest was fully extended. The long tail and long bill are diagnostic of the merganser. One mallard with wing extending out 45° on ice or in water. The mallards in second pond are moving out over down to S and at 11:40 50% had left. In no case has a mallard flew N up lake. Left point at 11:45. 8.4.7 20 juncos and 40 tree sparrows. 84.9 2 marsh hawks hunting together. 85.7 7 juncos. New road at Gap Point, old road still above water. 86.4 Gap Point. 2 cardinals, 20 tree sparrows. Ice of water splash higher on bank than previous year. yellow-shafted flicker, 2 blue jays. Left 12:00² redtail. Near top of hill a 2 great horned owls, one on each side of road. 86.6 top of hill. 80 tree sparrows, 18 juncos. 87.8 drainage, 3 cardinals, 13 juncos. 88.3 3 horned larks. 89.0 main road. 89.2 2 cardinals. 90.0 yellow-shafted flicker. 90.8 4 deer (white-tails), one adult, one subadult + 2 young. Tail like a fan. 92.1 Longview area turnoff to W. 93.0 Crow. 93.2 12 Eng sparrow, 3 cardinals, 18 tree sparrows. 93.4 Cardinal, 2 tree sparrows. 93.8 now to S to Longview area. 94.5 Entrance to Park. 95.4 Point, 2 cardinals. 95.7 5 cardinals, 18 juncos + 35 tree sparrows. 96.0 6 juncos + 20 tree sparrows. Returning at base of hill because of ice and snow on road of hill. no census on return of area

Covered in Longview area. 98.4 Lake wood Hills turnoff
 and now to E. Loggerhead shrike & blue jay. 00.1
 meadowlark. 00.8 yellowthroated flicker. 01.6 Little Slough
 creek bridge, water in creek frozen. 01.9 now to left, 03.0
 30 tree sparrows. 03.4 Old Ozawie. 53 mallards on ice
 (no water) west of point at about old river channel. Time 1:10 P.M.
 2 meadowlarks, 2 blue jays & 1 cardinal. 04.0 main highway
 now to E. 05.1 now to N. 05.8 12 tree sparrows & 5
 juncos. 30 tree sparrows & 14 juncos in 2/10 mile of road
 side. 06.1 25 tree sparrow, 4 cardinals. 06.7 loggerhead
 shrike. 06.8 Pleasant View Grange, 8 tree sparrows, 5 juncos.
 07.4 now W to Paradise Point. 08.9 at point just before
 park area noted open body of water about 2/10 mile SW from
 picnic area on lowlands (intersects Ozawie water tower
 and picnic area) Approx 5,000 mallards, 400 Canadian geese.
 The geese and ducks were both splashing water with wings
 and body in water. There were periods of frenzy of splashing.
 Water greenish in open area. Marsh hawk. In 10 minutes
 observation, only 10 mallards left open water & flew S. Left
 2:10 and at 09.9 back on main upland road. 11.6 west
 end of Paradise Point. Roads with ice & snow. 12.4 old
 camp site after inspecting area to N. 12.9 9 meadowlarks,
 1 blue jay, 13 bobwhite, 40 tree sparrow & 8 juncos. 13.0
 2 cardinals, 8 juncos. 13.2 main crest road. Marsh hawk
 darted into groups of ducks in open pond. The ducks and
 geese left ice & water for about 10-15 feet and then settled
 right back again. 8 Canadians left main group & flew
 200 feet, alighted, faced the sun & then settled down. Ducks
 flopping wings at a rate of about 2 per second. There is one
 area of contention & a group of 8 geese have moved away
 about 20 feet. 2 crows at pond. After watching these
 geese & ducks for 1 hour, did not see birds leaving or arriving.
 13.7 3 juncos. 14.3 leaving penneaux area. 16.0 main
 road to S. 3 cardinals, 4 tree sparrows, 2 juncos. Trees
 covered with ice. 16.6 Pleasant View Grange 8 juncos, 1
 cardinal, 5 tree sparrows. 17.1 red tail, 2 cardinals, 7 juncos
 17.3 8 Harris sparrows, 14 juncos, 2 cardinals. 17.7 blue
 jay, meadowlark, 8 juncos. At main road concluded
 census and returned to Lawrence via Astolassa, midland.
 The following map will indicate the relative position of
 the 3 open bodies of water on the Perry Reservoir of this date.


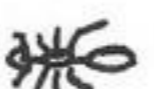
SSSS BBSB SSSS BBSBBS S S BSSBSSSSS BBSBBS SSSSSS BSS
 SSSSSSSSSBSSSS = 212 snow geese and 154 blue geese
 (73%) (27%)

Associated with the snow and blue geese were 221 Canada geese, confined mainly to one side of open water. Of 33 American mergansers, 3 left and flew to S. The only other kinds of ducks were 3 buffle heads and 5 mallards. From vantage point drove down to turn-around nearer lake (22.0) 2 black capped chickadees and 35 tree sparrows here. From here can see individual ducks & geese. One snow goose left a group of Canadian geese ^{on ice} and flew over to main group of snows & blues. ♂ & ♀ mallard in courtship. Left and travelled to W end of Paradise Peninsula. Will count coyote tracks along road. In all 15 sets of trails and these generally distributed. 2 groups of deer tracks, one on first hill and the other at end of peninsula. At top of first hill 20 tracks of cottontail crossed road. At 22.8 12 goldfinch. 23.8 meadowlark. 24.0 end of peninsula. Deer tracks around edge of peninsula rather than on open fields. At end noted 2 bluejay, 23 tree sparrows ^{8 narrow sparrows} and 8 juncos. Rabbit tracks about 1 every 20 feet along road on S side peninsula. Deer & coyote tracks always present here. 25.0 now back to main E-W road. All water closed N of peninsula. 26.2 10:10 A.M. at east gate Paradise Peninsula area, and end of census except unusual observations until Ozaukee highway. 30.2 main Ozaukee road. now to W. 30.6 12 juncos. 31.1 3 yellow-shafted flickers on shoulder of road. 32.0 bridge on return from Ozaukee. 22 goldeneye ducks in open water just S of bridge. Water steaming. Continued E to 32.3 turning off to Old Town area. Some ice thrust on shore S of Old Town. 34.9 redtail and crow. 35.3 now main N-S road. and continuing E along old road to check coyote tracks. 36.4 bridge at end of road, will count tracks on return. 5 sets coyote, 3 sets deer (crossing open field), 8 sets Peromyscus. No rabbit tracks. 37.3 back to main road. 37.6 Little Slough Creek bridge. Water ice and covered with snow. 38.6 2 crow, 39.2 Lake Hills turnoff. Bluejay. 2 juncos, 40.1 4 crows, 35 tree sparrows, 10 juncos. 40.6 20 juncos. 40.9 30 tree sparrows & 20 juncos. 41.5 Big Slough Area turnoff. 3 tree sparrows. 43.2 5 juncos. 43.4 entering ⁸ Slough Creek area. 43.6 crossing drainage and

snow to edge of water. 44.2 to boat ramp. Coyote ran
 across road about 200 feet to S. Its behaviorism suggested
 previous harassment by man & dogs. 45.3 at point of
 ridge observed that the old open pond near shore is now
 confluent with pond farther out in lake in a broad corridor.
 nearest shore are 23 Canadian geese and 75 mallards.
 45.6 redtail, 2 downy woodpecker, 50 tree sparrows & 20 juncos.
 46.0 head of bay, redtail, 20 juncos, 2 cardinals, 5 Harris
 sparrows, 2 chickadees. Lake completely frozen to N and
 covered with snow. Ice compaction along shore. 46.7 Gap
 Point at boat ramp. no birds to N and lake all ice.
 Left 11:30 A.M. Cannot make grade to east because of snow
 so will return same way. Will not keep census on return of
 area previously covered. 51.6 back to main road now to S.
 Will continue census. 52.5 directly east along W edge of
 Big Slough are 2 trees with great blue heron nests. Will check
 it out on the spot. The largest colony ^{100' from land} is in a sycamore
 tree and consists of 20 nests, one of which is almost completely
 dismantled, and the second tree (elm) some 200 feet down
 shore supports 2 nests. ^{a red-headed woodpecker in this tree} In both trees the water (now ice)
 isolates them from land. On land adjacent to trees were
 3 sets of coyote tracks. Fox squirrel tracks about one every
 15 feet. Only one rabbit track. 2 sets deer tracks, 1 red-
 breasted nuthatch. Returned to car and continued to Slough
 Creek bridge arriving at 12:35 P.M. Wind from N and temp &
 clouds as this morning. 54.5 County road at Y. 55.1 now
 W toward marina. 8 juncos, loggerhead shrike, 56.4 mixed
 flock of 100 tree sparrows, 30 juncos, 2 meadowlarks and 1
 starling. 57.2 East end dam. 9 American mergansers
 flew into open water. Water open below dam. 58.7 W end
 dam. Fracture system in lake similar to those of last year.
 59.8 30 tree sparrows, 10 juncos, 2 meadowlark 4 Cardinals.
 60.6 main road east end Thompsonville. now going
 along base of dam. 100 mallards in Delaware below dam.
 These mallards were organized and pursuing and catching small
 fish. 2 ♀♀ and 3 ♂♂ pintail only other kind of ducks. 5 Crows
 fed on fish left by mallards. 62.9 headquarter turnoff.
 63.7 SE end park area at 1:35 P.M. and end of census. 67.6
 roughleg hawk and 67.9 redtail on highway 24. At
 Lawrence bridge across Kaw, ice above and a single narrow
 channel below dam.

Lawrence, Douglas Co., Kansas

Feb. 8, 1971

yesterday split a railroad tie and found approx 60 black ants dormant. They occupied a lenslike cavity approx. 50 x 10 mm and adjacent corridors. Three inches of wood separated the ants from winter temperatures. When placed in a jar at room temperature they remained motionless for 8 hours. Today, 15 hours later they are active. There were three sizes represented: two winged forms , a small one , and an intermediate size.

Elk Creek area, Wakarusa Valley, Douglas Co., Kansas

Feb. 28, 1971

Dennis Dailey and I made census of birds and mammals on S side of Wakarusa east of Elk Creek. Route covered 8 1/2 miles, half of which was hillside grasslands and half in deciduous forests (see map). The return trip was in area of Wakarusa Valley destined to Clinton Reservoir. Birds observed enroute were typical winter residents. Major county roads open but secondary road muddy & impassible. Left Elk Creek at point where valley ridge intercepts Elk Valley (at 11:48 A.M.) Sky overcast and without sun, slight wind from NW and temp. 35°F. Snow only on protected exposure and field supersaturated. The first half mile along contact between upland fields of native Andropogon (cut) and deciduous forests. The first field of grass had been plowed for the first time in my memory. Along ecotone noted several sets of deer tracks and coyote trails. The only birds observed in this area were 3 blue jays. 12:16 fence-line on ridge. Some cutting of trees at this point. A redtail, 2 black-capped chickadees and a crow in this area. On traverse into next drainage noted considerable change in succession with young trees on slope that years ago were small shrubs and previous to that time, grasses. Overgrazing throughout the area was noted. 12:27 drainage and water flowing 1/2 gal per second. 12:31 confluence of 2 major streams with water capacity of 1 gal each per second. Water clear. On slope beyond found microtine runway with fecal pellets of *Synaptomyia cooperi*. A cottontail was the only other mammal noted. 12:45 point of ridge. all slopes heavily grazed. 12:50 pond. on both ends of earth dam were diggings of badger. Drainage on east side

FEB 28, 1971

SCALE
1/10 mi

ROUTE 8.5 mi



of pond with seepage only, and this water on matted grass instead of
 formed channel. Water of pond open. Noted 2 meadowlarks
 and 4 robins. 12:55 point of ridge. Redtail circling above.
 one eastern bluebird flew by. 1:00 pond Creek with water
 running 1 gal per second. 1:05 drainage, 1 gal per second. All
 water clear. Yellow-shafted flicker. 1:08 creek with 1 gal per
 second. Most of these drainage support about the same amount
 of water. 20 horned larks left ridge. Estimate the dis-
 tribution of cow dung as 15 feet separation. The amount
 within a single drainage system would make a substantial
 amount of energy returned to the soil, Chickadee here.
 1:16 top ridge at point. On these traverses the microtine
 runways were uncommon to rare where in previous years they
 were common. The lack of microtine activity is associated
 with overgrazing and destruction of overhead protection. Run-
 ways were most common where shrubs and fallen tree had
 protected the grass from grazing by cattle. On top noted
 1 downy woodpecker, 1 cottontail. Isolated trees had been cut
 to promote growing of grass. 1:20 pond. The outlet from
 pond had eroded to deep channel and had deposited a red tail
 over grass of drainage below. The riparian trees along this
 drainage have been cut down. 1:25 redtail. 1:30 juniper
 tree at fence-line. A great horned owl left this tree on our
 approach. Mammal bone were on ground under tree from owl
 pellets and feeding. ^{got drunk} Lunch here. Left 1:50 red-bellied woodpecker,
 Chickadee & crow in area. Redtail just beyond. 2:10 crossing
 of solid bedrock creek bed. Water 1 gal per second. 15 crows in
 on flock on ridge to E. 2:10 edge of forest trail. Along this
 trail, still in snow, were tracks of deer, coyote, opossum and dog.
 Fox squirrel tracks about 1 per 50'. Only 3 rabbit tracks. 2:30
 base of hill. Cardinal and titmouse. Returned via base of
 hill at edge of valley, mainly deciduous forest. Lunch at old
 elm tree. Some raccoon tracks near tree. Left 3:10 Birds
 observed in forest to next opening were 7 chickadees, 1 crow,
 1 bluejay, 4 chickadees, redtail, chickadee, downy, 4 chickadees,
 1 great horned owl (on nest in slender dead tree). ^{Engelhardt} ~~Entered~~
 across ^{meander} 2 drainages, thence thru forest trail to open field of relat-
 ively ungrazed *Andropogon* arriving at 4:00. The *Synaptomyza* marsh
 had been completely trampled by cattle and no microtine activity present.
 The Wakarusa had been up to upper slopes of channel but now 1/2 level.
 Birds observed from 4:00 to 4:37 are: ♂ ♀ bluebird, group 8 cardinals

1 bluebird, downy, redtail, 25 juncos, 3 tree sparrows, 15 bobwhite, 3 chickadees. Cottontail rabbits had eaten bark from limbs of locust trees felled last fall. All bark consumed as high as rabbits could reach by upright position. 4:37 point (outlier). 1 redwing, 2 crows, 8 juncos. Road at 4:45. Along edge of field at base of ridge followed along drifted snow. Observed 18 bobwhite, downy, 4 tree sparrows. Arrive car 5:10. Lost 1/2 hr of light snow.

Summary of birds & mammals:

deer tracks. occasional sets of tracks, groups 1 to 3.

Coyote tracks. more numerous than deer. and generally distributed. Dog tracks most commonly found.

blue jay 3-1-

redtail 1-1-1-1-1-

black-capped chickadee 2-1-1-7-4-1-4-3-

crow 1-1-15-1-1-2-

Synaptornis. pellets only

cottontail 1-1-

badger - diggings only.

meadowlark 2-

robin 4-

yellow-shafted flicker 1-

horned larks 20

downy woodpecker 1-1-1-

great horned owl 1-1-

red-bellied woodpecker 1-

opossum. tracks only. Some deep in forest.

raccoon. tracks only and more common than opossum

fox squirrel. tracks common in forested area.

cardinal 1-8-

titmouse 1

eastern bluebird 3-2-1

slate-colored junco 25-8-

tree sparrow 3-4

bobwhite 15-18- considerable sign and population must be high.

redwing 1-

The distribution of birds today is characterized by few in number (165 individuals) and an interval of approx 6 miles without occurrence of either junco or tree sparrows. The entire area has been severely overgrazed and as a result the microtine population is at an extremely low level.

Lawrence, Douglas Co., Kansas

March 10, 1971

modified winter tent by extending hood and revising door. Tent now stands 7 1/2 feet high with entrance hood 46" high and 87 inches wide. Will fit mosquito netting later in season. Tent now provides space for 2 sleeping bags, stove, front entrance for wet step in area, storage of gear. Guy ropes out of range of stove pipe. Side guy ropes of hood adjustable for moving door flaps to upper surface of hood.

Lawrence, Douglas Co., Kansas

March 12, 1971

Observed a sparrow hawk prey upon an English sparrow by forcefully striking the sparrow on snaw and holding the bird for approx 5 seconds after which the sparrow escaped and flew into a low tree with the hawk in close pursuit. The sparrow moved thru the tree and then continued to another tree some 200' beyond. By the time the hawk moved thru the tree the sparrow had covered about 1/2 the distance between trees before the hawk left the first tree. but by the time the sparrow reached the second tree the hawk had closed the attack gap to almost contact. The sparrow darted thru the second tree & flew to a third tree and then a fourth with the hawk not quite able to catch up because of the hawk's inability to move thru the tree branches as rapidly as the sparrow.

After the fourth tree the sparrow moved into the backyard of a house without tree protection and the bird was captured. On three occasions other sparrows were more available to the hawk than the sparrow being pursued.

Perry Reservoir, Jefferson Co., Kansas

March 13, 1971

Annette and I made trip to Perry Reservoir to check on winter population of birds. Started census at Lake View at 10:18 at mileage 91.4. Will keep list of birds to Perry Res via Leecompton, Perry. Slight wind from SW. No clouds and temp 68°F. 92.7 redwing, meadowlark. 93.2 meadowlark. 93.5² sparrow hawks. 93.5 flock 20 redwings. 94.2 4 starling. 95.1 start of hillside road. 96.0 chickadee, 96.6 red-bellied woodpecker, crow. 97.0 flock 40 starling & 5 crows. 97.3 starling, robin, bluejay. 97.9 13 robins, meadowlark, 8 Harris sparrows. 18 juncos. 98.4 main Leecompton Road. 91.1 bridge at Kaw.

99.9 2 crows, ² meadowlark, 00.7 2 meadowlarks. 00.9 railroad tracks. 01.4 40 starling on lawns in 2 flocks. 02.1 Perry. 04.4 8 snow geese and 15 mallards in field at side of road. 04.6 leaving highway 24 on road to N. 06.0 Thompsonville turnoff. road to W. 2 bluejay. 06.9 1/2 up grade to reservoir area. 2 meadowlarks. 07.1 12 redheads (4 ♀♀, 8 ♂♂), 2 ♂♂ and 1 ♀ ring-billed duck. 7.8 observation point. Downy woodpecker. 2 titmice, morning clock butterfly. 08.5 W end dam. 4 Herring gulls only birds in lake to N. The gulls were diving into water. 10.0 east end dam. 2 meadowlarks, meadowlark, meadowlark, ² meadowlark checked merma. Considerable damage to steel structure and floatation blocks from ice & wind. at 12.3 main road to N. 13.4 meadowlark, redtail, 14.7 Big Slough bridge. no ice in area. 15.8 Rd to Slough Creek area. northern shrike, meadowlark, 16.7 drainage about twice as much water as in winter flow. 17.5 2 meadowlarks. 18.5 point 2 juncos, downy, 4 juncos, 19.0 bay, east, 2 bluebirds. 19.6 Gap Point ⁶ east, 2 killdeer, 19.8 3 gulls, no ducks. 20.9 crow, redtail, meadowlark 22.1 meadowlark. 22.9 meadowlark. 25.0 meadowlark. 25.8 turnoff to Longview, meadowlark, meadowlark, 26.6 2 killdeer, meadowlark. 26.7 meadowlark. 31.1 leaving Lake Wood Hills after checking new housing development. 4 bluebirds, 2 titmice and 2 meadowlarks. 31.6 yellow-shafted flicker. 32.7 main road, now N. 34.3 Little Slough Creek bridge. water about twice volume as normal for summer. From the upper end of bay to old town the bay is 85% ice of winter. Area at extreme head of bay open (30 ducks) and beyond Old Town water is all open. Cow hear 4 redwings. 63 Herring gulls on ice or flying over open water. 36.4 yellow-shafted flicker and killdeer. 36.7 main road at Ozaukee. thence W to Ozaukee (N end) to check on gulls and merganser but could not properly count number so returned to Ozaukee, then E to main road N to Paradise Point area. at 44.5 to N. 46.6 2 meadowlarks. 46.8 now W to Paradise Point. 47.4 2 crows. 50.2 W end peninsula. Ice extending west from peninsula to opposite side.



On this sheet of winter ice counted 1632 Herring gulls, most of them resting in isolated groups near S side of ice and others feeding on fish or flying back and forth in general area. In area of greatest concentration of gulls counted 43 gulls flying back and forth overhead (field of approx 40x scope). ^{Some} The gulls were feeding on fish

on ice ⁱⁿ some cases ^{3 dead gulls were on ice,} 300' from water. The greatest aggregation of gulls was in this area of the lake. Left area and drove to east end of peninsula and at 53.1 estimated 6 thousand American mergansers in middle of bay S of peninsula. They stretched almost the width of the lake and were generally distributed. There were other ducks associated (1/2 the number of mergansers) but could not identify because of interference of sun. Left area and continued E. 53.7 12 ♂ redwings. 53.9 Left east end of park area. 55.3 3 male and 2 female ring-necked ducks in farm pond. End of ^{complete} census. 59.4 redtail. 59.9 loggerhead shrike. 73.4 5 male + 3 female baldpate in farm pond. on midland-Oskaloosa rd. Continued to Lawrence.

Lawrence, Douglas Co., Kansas

Mar. 16, 1971

Have heard geese pass over house at 402 Yorkshire on the following days. Mar. 12 noon; Mar 9 both day & night; Mar 8, middle of day. Last night about 8:00 P.M. These are snows & ^{blue} geese with snows predominating when bird could be view in day for certainty.

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
BALL IDEAL										X						
1/2 pint, round										X						
1 pint, square, U.S.A.										X			X			
1 pint, square				X												
1 pint, round, Pat. X		X			X	X										
1 qt., square, U.S.A.								X								
1 qt., square, Pat. on bottom		X														
1 qt square, Small no. on bottom				X												
1 qt square, large no. on bottom					X											
1 qt round	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
1 qt round, Pat. X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
2 qt, green	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
2 qt., square	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
2 qt., round, P. dir. b. no no. on neck	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
2 qt., round, P. dir. b. X				X												
2 qt., round, Pat. base					X											
2 qt., round, (no bail huc)	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
1 pt clear	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
1 qt clear	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
PRESTO																
1 pt.	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
2 qt.	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
1 qt.	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
ATLAS WHOLE FRUIT JAR																
1 pt.	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
1 qt.	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
2 qt. ATLAS E-Z SEAL	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
1/2 pt.	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
1 pt, nos. centered	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
1 pt, nos. wide	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
1 qt, nos centered bottom	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
1 qt. nos wide on bottom	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
1 qt. nos on edge bottom	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
1 qt. nos. wide on ^{edge} bottom	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
2 qt.	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
2 qt, old, no nos. ?																
2 qt, single large no ?	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
BALL ECLIPSE																
1 pt	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
1 qt	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
2 qt	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X

Classification Atlas?

Lawrence, Douglas Co., Kansas

march 17, 1971

In five blocks of residential area immediately west of the University of Kansas, heard ^{old established} 13 cardinals singing. Time 9:00 A.M. Other birds heard were robins, Eng sparrow, blue jay, juncos. Sky overcast lightly and temp. 40°F. From Snow Hall on campus and viewing valley to north, do not see color change in trees, except slight increase in reddish brown. No green or yellows as yet. Some green in grass.

march 18, 1971

From Snow Hall on the campus of the Univ. of Kansas recorded the meteorological and temperature changes of a cold front expected today from the N.W. Observations to N:

9:00 AM	50°F	no clouds
9:30	50°F	"
10:00	50°F	"
10:30	50°F	"
11:00	50°F	few clouds on horizon to N
11:30	52°F	" " " " " " and increasing
12:00	53°F	more light clouds and now overhead
12:30	52°F	clouds 60° and moving from S
12:55	51°F	Increase clouds, darker, dust to N, no sun, wind strong & gusty
1:00	52°F	Same as above but more sun & winds shifting more to SW.
1:05	50°F	Ibid
1:10	51°F	Ibid but more blue
1:20	51°F	Ibid
1:30	50°F	more clouds again
2:30	48°F	Sky overcast, no sun, slightly less wind but from some direction
2:45	46°F	ibid
3:00	44°F	Increasing cloud cover and darker illumination on ground. Wind same
3:30	42°F	Overcast becoming uniform. Some amount wind & direction.
4:00	41½°F	Ibid but more character in clouds, less wind.
4:30	46°F	Sky clearing, less wind (50% reduction).
5:00	47.5°F	low rainlike cloud passing by and getting darker with slight increase of wind.

From 5:00 to 9:00 temp dropped to 32°F and accompanied with high^{NW} winds (50-60 M.P.H) at midnight, in high wind, heard a flock of geese (snows and blues) flying north. Temperature ^{28°F} and light snow ^{from ground} last night.

march 19, 1971

day cold and windy, snow at 1:30 for few minutes but disappeared ¹/₂ hour later.

Lawrence, Douglas Co., Kansas

march 19, 1971

First observation of grackles was march 16. Small flocks also march 17-18 and today. These flocks ^{approx 50-50} were ^{redwing} of bluebirds and and grackles. Redwings preceded grackles by about 1 week (see previous notes). In contrast to numbers of singing Cardinals (see march 17) in 5 blocks of ^{old} established residential area, did not hear Cardinals in 5 blocks of new residential area between 23 street & the University where trees were small. noted considerable inflorescence of elm on ground from normal budding and perhaps high winds of last night. There is considerable old limb debris on ground from trees as result of wind. Conae bent from hitting tree at home.

Lawrence, Douglas Co., Kansas

710321-19

March 21, 1971

area between Peterum Rd and Turnpike to N & from Iowa to first major wooded drainage to W. Birds in order of observation. Left 9:30 A.M.

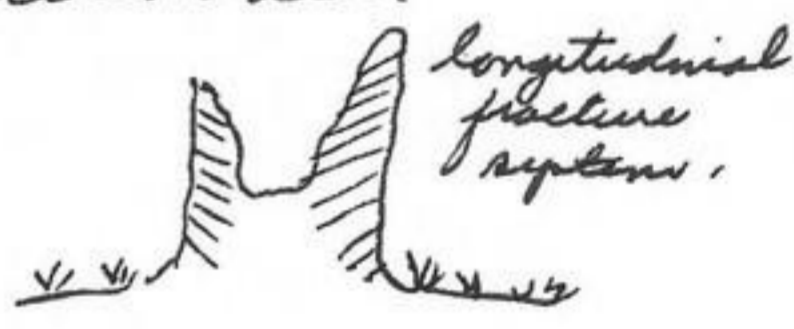
- | | | |
|----------------------------------|----------------------|-------------------------------------|
| Robin 60 mounds in small groups. | tree sparrow 3 | High census, slight wind, temp 36°F |
| Meadowlark 30 | goldfinch 12 | gray squirrel 1 |
| Eng. sparrow 2 | bobwhite 13-8-12 | great horned owl 1 |
| Blue jay 6 | fresh deer tracks | red-bellied woodpecker 1 |
| Harris sparrow 30 | sharp-shinned hawk 1 | sparrow hawk 1 |
| slate-colored juncos 35 | crow 2 | Carolina wren 1 |
| downy woodpecker 2 | Cottontail 4 | grackle } group 60 flew over |
| | fox sparrow 1 | red-wing } area. |

- | | |
|--------------------------|----------------------------|
| purple finch 1 ♀ | black-capped chickadee 6 |
| song sparrow 6 | Titmouse 3 |
| shoveller duck 7 ♀ 3 ♂ | goldfinch |
| cardinal 7 | field sparrow 1 |
| hillbilly 2 | morning clover butterfly 1 |
| yellow-shafted flicker 2 | bluebird 3 |

numbers are approximations only and they do not indicate flock grouping. numbers recorded after trip.

all gopher mounds are from inactive corridors
song sparrow in a mixed flock can be identified by running on ground.
purple finch uses understory to travel thru forest
♀ Harris sparrows chasing each other & singing a plaintive song.
Shoveller sleeping in sparse vegetation at head of Peterum pond. ♂ & ♀ left to open water not disturbed by dogs.

bobwhite all leave in union when first flushed. On second flush they leave in singles or combination of numbers but not all at once.
Elm with angled lines on exposed wood from fracture.
In 1/2 hour (12:00-12:30) while waiting for great horned owl to return to nest, observed 2 ♂ cardinals, 1 slate colored junco and 2 chickadees pass thru area.



Lawrence, Douglas Co., Kansas

March 23, 1971

at 402 Yorkshire at 9:00 P.M., heard geese (snow & blue) pass N over house.

March 25, 1971

Snowed (3-4 inches) all day yesterday and today.

March 26, 1971

In residential area immediately W of the Univ. of Kansas, heard the kingfisherlike call of the hairy woodpecker. Four of these calls were given in approx. 4 minutes. No other variation was offered.

Lawrence, Douglas Co., Kansas

March 27, 1971

at Avalon St and 8th St. W. noted a robin with white feathers in tail. Outer tail feathers black and central 1/3 feathers pure white. As far as I could tell there were no white thumb marks of white in outer tail feathers. Bird in association with other robins and appear normal in plumage & behavior otherwise.



Wakarusa River, Douglas Co., Kansas

March 27, 1971

Took Mary to bridge N of Clinton. Temp 50°F, sky cloudy, 35 mi wind from S. She left at 9:30 A.M. Arrived at second bridge above highway 59 at 12:45 and at Lawrence at Louisiana St bridge at 3:00 P.M. Will keep list of birds from this bridge N of Clinton to the Peterson Road area, to Petersons, thence S to Wakarusa Valley road, thence E toward Sigel School (N end proposed dam). At bridge ^{49.0 mile} noted and heard Eastern phoebe at bridge, redbellied woodpecker. 49.1 2 redwings, 49.2 crow, 2 redwing blackbirds flying east overhead, yellow-shafted woodpecker, 49.3 redtail, bluejay. 49.5 2 meadowlarks, horned lark. 49.7 2 meadowlarks. 50.0 Coon Creek bridge, 8 English sparrows, water clear in creek, 50.2 2 meadowlarks singing. 50.3 sparrow hawk, 50.5 meadowlark singing, redtail. 51.0 cardinal + meadowlark singing. 51.4 loggerhead shrike. 51.5 bluebird. 51.7 now to S. flock 25 redwings and 4 robins. Fields heavily grazed E of Peterson's place. 52.4 Top Rattlesnake Hill, 2 yellow shafted flickers, one meadowlark, 52.7 2 meadowlarks singing, redwing. 52.8 ♂ redwing. meadowlark singing 53.1 now to E. 53.3 small frog (cricket) calling in roadside pond. 54.0 2 ♂ redwings. 54.1 redwing, 54.4 Creek with clear water. 54.7 28 robins in field, 1 redtail and 2 yellow shafted woodpeckers and a bluejay. 54.9 second creek with less water but clear. Cardinal singing, 55.1 Y in road. 8 Eng sparrows. 55.8 now E, 3 robins. 56.1 24 robins in field and generally distributed, 1 loggerhead shrike. 56.2 Sigel School and end of census. Will keep track of different kinds of birds between here and Lawrence. Crow, Eng. Sparrow, starling, meadowlark, 18 meadowlarks in one flock. It is of some note that there were no grackles observed today.

Lawrence, Douglas Co., Kansas

March 28, 1971

Listed birds observed in area N of Peterson Road in open fields and riparian communities between 20 minutes before sunset to late twilight. Slate colored juncos, Harris sparrows, 10,000 grackles, redwings, starling, 3 cottontails, yellow-shafted woodpecker, meadowlarks, robin. The grackles started to moving across area ^{from NW} at about 25 minutes before sundown + up to 10 minutes after sundown.

Lawrence, Douglas Co., Kansas

March 29, 1971

Checked birds in area n. of Peterson Road from pond to first major wooded drainage to w. Time 20 minutes before sundown to sundown. Slate colored juncos, robin, meadowlark, Harris sparrow, grackles (as on previous days, thousands of grackles, almost pure stands, arrive from nw and alight in tops of tall trees, ^{starting} at about 20 minutes before sundown, where they remain for several minutes calling and then at near sundown or shortly after move on to the SE beyond. This maneuver is to allow the birds to reach their roosting areas at low intensity lighting so they will be least conspicuous in entering their roosting area. Birds leaving one tree take approx. 1 minute for all birds to clear) redwing.

March 30, 1971

List of birds of above area at about same time. Meadowlark, robin, grackles, redwings, bobwhites, Harris sparrows, juncos, yellow-shafted flicker, Killdeer, Cardinals, fox sparrow, great horned owl, black-capped chickadee. Grackles arriving at about same time as yesterday. 4 Cottontails. Gopher active in area for first time.

Lawrence, Douglas Co., Kansas

March 31, 1971

At 402 Yorkshire noted the arrival of the purple martin. Did not observe these birds today prior to 3:00 P.M. Their arrival was correlated with strong winds (30-60 M.P.H) from the south. These winds started yesterday and blew continuously yesterday & today. The birds observed today occurred as singles but 2 or 3 could be seen in the sky at one time. They did not seem to be migrating but remained in some general area.

Lawrence, Douglas Co., Kansas

March 31, 1971

Summation of winter bird feeding at 402 Yorkshire. General area recently developed and trees small 8-20 feet and minimum shrub growth. English sparrow dominant with average flock of 20 (10-50) birds and these present most of the day, either feeding or resting in shrubs near the house. The second most numerous bird was the starling and they

averaged 5 (2-20) birds. They were not as regular in occurrence as the English sparrows, but could be observed most any time of the day. Later in the season they were less numerous than in the early part of winter. Their main diet was suet. All other birds could be considered rare. Slate-colored juncos observed as one or two individuals on an average of once a week. Black-capped chickadees observed as individuals on only 4 occasions. Downy woodpecker visited suet approx. every other day. One tree sparrow only. 2 Harris sparrows in entire season. Pair bluejay occurred once. Only one tree sparrow visited feeder. Mockingbirds visited area three times. In other words this area regularly supported English sparrows and starlings only. Across the street to the W some 100 feet away at the Dennis Dailey residence where a feeding station was conducted, the winter bird population was considerably different. This area borders a drainage now cleared but larger trees remain as a discontinuous riparian community to typical creek side communities to the N. Birds common at their feeder included cardinals (as many as 8 at one time), numerous slate colored ^{juncos} chickadees, Harris sparrow (during periods of old weather and new snow), ^{tree sparrows} downy woodpeckers, red-bellied woodpecker, ^{yellow-shafted flickers} hairy woodpecker, bluejay, mockingbird on occasions, as well as the Eng. sparrows & starling. The increase numbers and kinds of birds at the Dailey residence is associated with ^{large} tree and drainage system. Their occurrence would suggest that they do not move far from the riparian or tree community. The greatest factor is probably the presence of ^{large} trees.

Lawrence, Douglas Co., Kansas

April 1, 1971

At 402 Yorkshire, purple martin were noticed for the first time this season at 3:00 P.M. This may be the actual time of the first arrivals. After this time they were commonly seen in the air above the houses. Three or four could be seen at one time but these ^{were} generally distributed. There was no localization as is true later in the season.

April 2, 1971

Group of approx 10 purple martin flew above Patten's Lake on the campus of the University of Kansas. They seldom

flew above the height of the trees but flew back and forth just above the water and occasionally contacted the surface of the water. This group arrived at about 11:30 A.M. and left 20 minutes later. Their behavior was more erratic and flight more forceful than the activity of these birds later in the season when they drink water in the evening. The two days preceding the arrival of the martins was characterized by winds of 30-60 miles per hour and blowing continuously ^{from the south.} It is speculated that these strong winds carried the birds north.

Lawrence, Douglas Co., Kansas

April 4, 1971

At 1:00 P.M. placed a martin house in back yard of 402 Yorkshire.
 At 1:20 a single martin alighted on entrance rest of the upper left (S) hand entrance and inspected both the entrance platform and the nesting cavity by entering. After approx. 1/2 minutes it left (E) and gave a sharp call. It flew to utility line some 30' away and remain silent but preened its feathers. Two minutes later it returned to box and entered the north upper left hole and then inspected the upper right (S) hole and then returned to wire. At this time a second martin arrived and they both inspected the upper holes. These two birds then left together and flew E. This initial inspection lasted 8 minutes. Five minutes later two English sparrows became interested in the martin house. Their approach was entirely different from that of the martin, which was direct and unhesitating. The sparrow would fly up toward the house and then quickly change direction and dart down to the bushes nearby. Approx. 8 such attempts were made before the sparrows finally alighted on the house and then with caution. For the rest of the day there were only about 5 additional inspections made by sparrows.

April 5, 1971

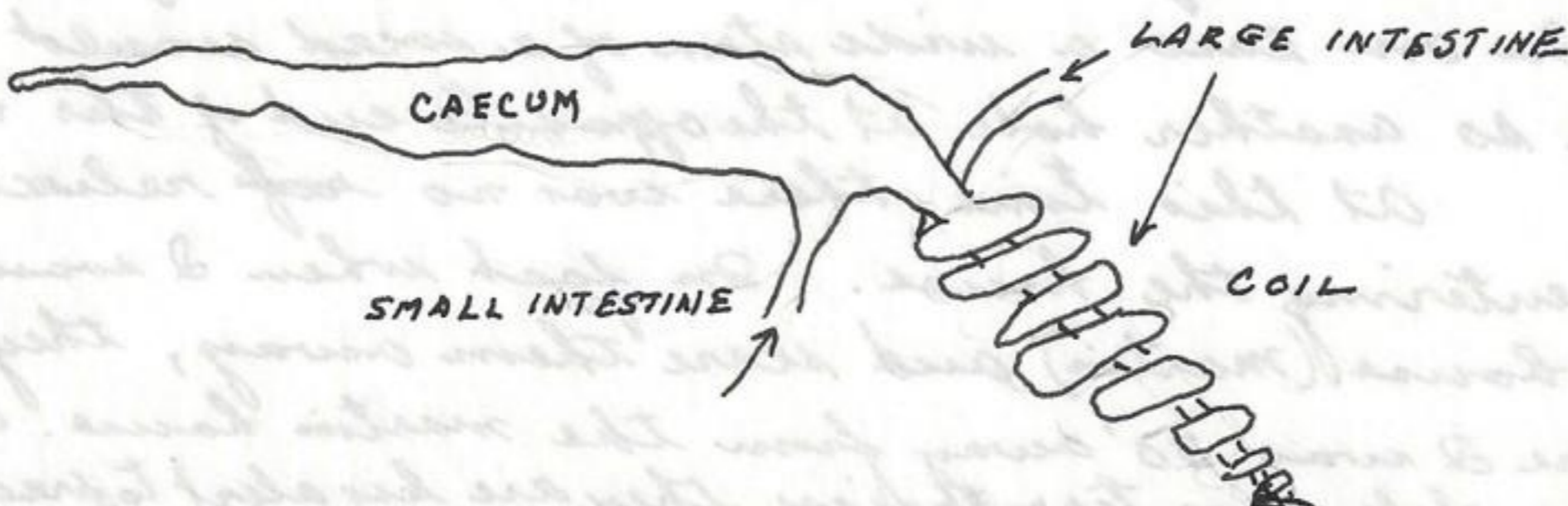
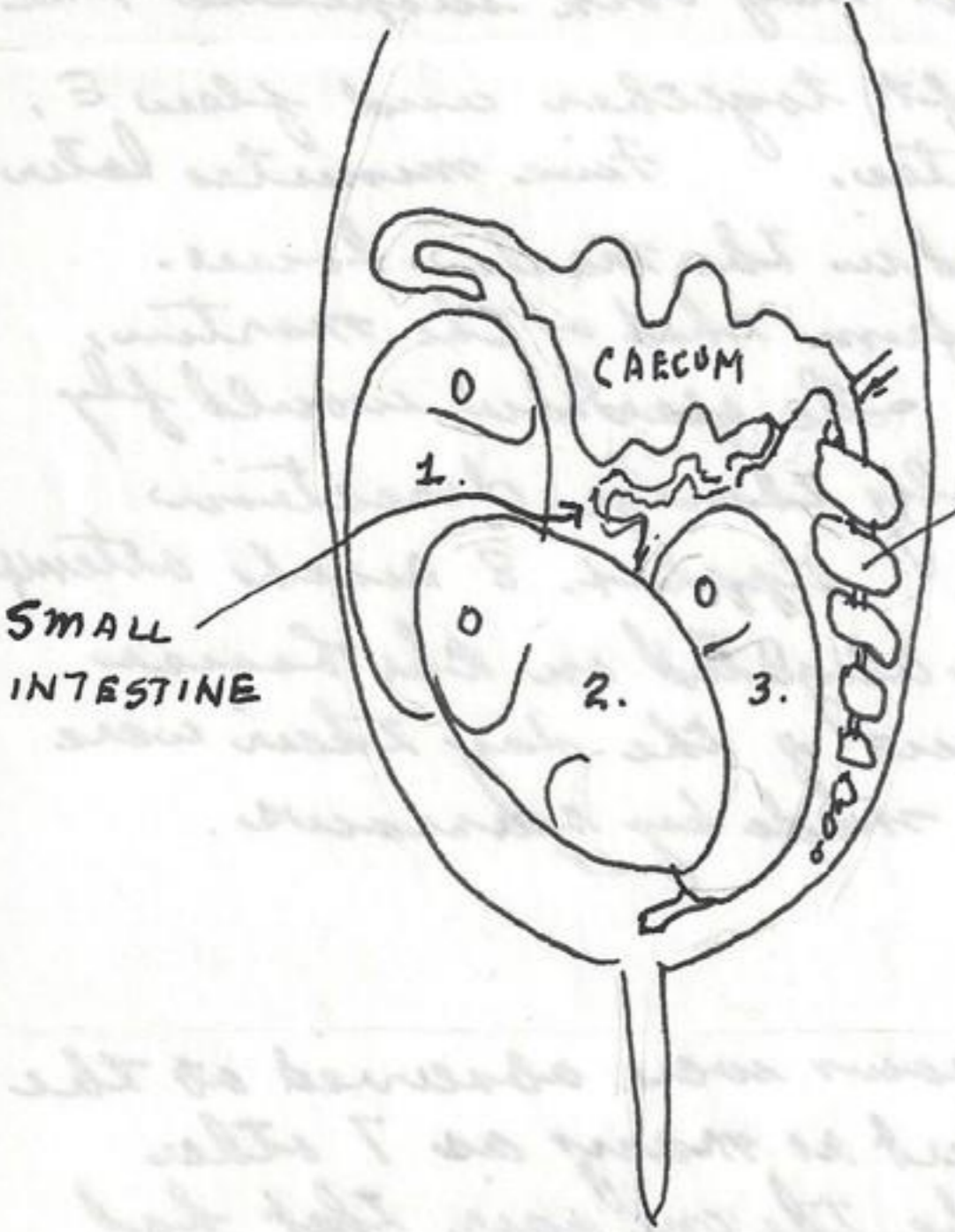
At shortly after sunrise, English sparrows were observed at the martin house, one pair dominating but as many as 7 other birds challenging what appeared to be the one pair that had established a territory. Nest material was being placed in all holes. In one case a wide stem of a weed would not go into a hole so another hole at the opposite end of the house was used. At this time there was no real reluctance of sparrows entering the house. In fact when I would go over to the house (martin) and scare them away, they would return before I was 30' away from the martin house. At the time they are defending territories, they are less alert to predation.

flaw shows the height of the trees but from back and
 first part shows the water and measurement of water level
 surface of the water. This group arrived at about 11:30 A.M.
 and left 20 minutes later. Their behavior was more
 erratic and they were frequent that the activity of these
 birds later in the season when they drink water in the
 morning. The two days preceding the arrival of the water
 was characterized by winds of 20-30 miles per hour and
 heavy rain. It is reported that these birds
 wintered in the Lake area.

Guernsey, Douglas Co., Kansas
 April 4, 1911

At 1:00 P.M. passed a water hole in back part of the prairie.
 At 1:20 a single water hole appeared on eastern end of the upper left (S)
 and water was visible but the entrance flat from and
 the water level was very low. After about 1/2 hour the water
 and was a shallow one. It was to be seen that the water level
 and remained about the same but the water level was low and
 it seemed to be low and entered the water upon left side and
 then passed the upper right (S) side and then returned to water.
 At 1:40 a single water hole appeared on eastern end of the upper left (S)
 and water was visible but the entrance flat from and
 the water level was very low. After about 1/2 hour the water
 and was a shallow one. It was to be seen that the water level
 and remained about the same but the water level was low and
 it seemed to be low and entered the water upon left side and
 then passed the upper right (S) side and then returned to water.

Position of embryos in right uterus
 of female *Synaptomys cooperi* no.
 710421-1 (see opposite page). Also
 relative position of caecum and
 absorption coil of large intestine.



Lawrence, Douglas Co., Kansas

April 5, 1971

on April 4

at approx. 4 mi. E of Richmond, Franklin Co., 4 great blue heron were observed near a heronery^(1 nest). They called vigorously. A bittern was also observed here. Also a single great blue heron was observed in a pond near the Douglas - Franklin Co. line on highway 59. On March 28 a great blue heron was observed at Olpe, Lyon Co.

Lawrence, Douglas Co., Kansas (402 Yorkshire Dr.)

April 12, 1971

2 purple martin showed signs of interest in the martin house. This is the second time (see previous notes) since the house was erected. This group of martins occurred with association of high winds from the south and may represent the local summer population. Since the first arrival in spring, to this date, there have not been active martins in the area. There is on this date considerable activity of a martin colony approx 1/10 mile away. The first starling visited the martin house.

April 14, 1971

A fox squirrel crossed yard at 402 Yorkshire and is the first one observed since living in this area. This squirrel appeared at about the same time as squirrels in other parts of the city were causing electric line shortages. ♂ Wren appeared at nesting box today.

Lawrence, Douglas Co., Kansas

April 15, 1971

noted a *Citellus tridecemlineatus* on campus on slope S of the stadium.

Lawrence, Kansas

April 16, 1971

A pied billed grebe has been observed on Patters Lake since April 13.

1 7/10 mi. N and 1 8/10 mi. W Lawrence (P.O. new), Lawrence, Douglas Co., Kansas

April 21, 1971

collected the following mammals from 50 traps set last night at approx. 1/2 hour before sundown. Area of 1 1/2' elevated ridges along K. Power and Light Co transmission right-of-way. Grasses undisturbed, bordered by a field of alfalfa to W and cut grass to E.

710421-1	<i>Synaptomys cooperi</i>	137-17-19-10-63 gms ♀	3x0 emb 26 mm.
710421-2	<i>Peromyscus leucopus</i>	153-71-22-16-22 gms ♂	m. only (from under board in green)
SHU 710421-3	<i>Blarina brevicauda</i>	112-22-14-7-19 gms ♀	testis 9 mm. Sk. only
710421-4	<i>Synaptomys cooperi</i>	96-16-19-9-17 gms ♂	m. only
710421-5	<i>Microtus ochrogaster</i>	150-32-19-13-56 gms ♀	2x2 emb. 17 mm.
SHU 710421-6	<i>Synaptomys cooperi</i>	133-18-20-12-48 gms ♂	testis 6 mm, hip glands 10x5 mm.
710421-7	<i>Microtus ochrogaster</i>	147-36-21-12-38 gms ♂	testis 11 mm
710421-8	"	151-35-20-11-40 gms ♂	testis 12 mm
710421-9	"	152-34-20-12-38 gms ♂	testis 12 mm
710421-10	"	142-31-17-12-42 gms ♂	3x2 plac. scars
710421-11	"	143-36-19-11-44 gms ♀	3x2 plac. scars.
710421-12	"	145-34-18-11-35 gms ♀	2x2 plac. scars.

710421-13 *Microtus ochrogaster* 153-32-20-12-39gms ♂ testis 11mm
 710421-14 *Peromyscus maniculatus* ^{leucopus} 165-72-22-16-22gms ♀ suckling
 SKI 710421-15 *Synaptomys cooperi* 133-20-19-11-39gms ♀ 1x1 emb 17mm
 SKI 710421-16 " " 125-18-19-11-32gms ♂ testis 4mm

This area can be identified more exactly as (starting point of trapline at 5/10 mi. E and 2/10 mi. N of SW corner of Sec. 23, R 19E, T12S and ending at a point approx. 2/10 mi N near turnpike.

Lawrence, Douglas Co., Kansas

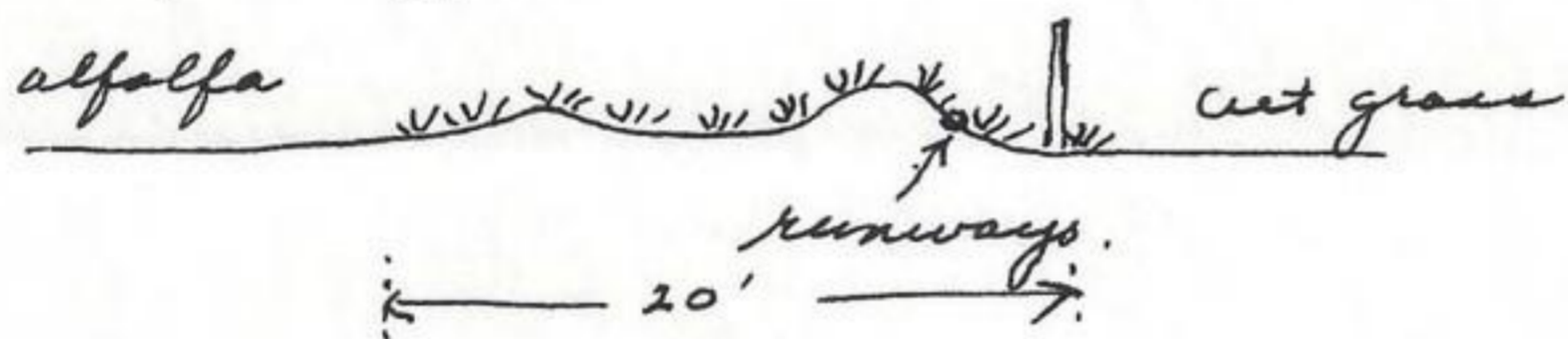
April 22, 1971

Annette C was bitten by a black kissing bug (*Melanoolestes peripes* (H.S.)), a hemiptera of the family Reduviidae. The back of her neck developed a welt approx. 1/2 inches in diameter and remained for 2 days.

1 2/10 mi. N and 1 8/10 mi. W Lawrence (P.O), Douglas Co., Kansas

April 25, 1971

Live trapped the same area as of April 21 (see above), of 12 traps at approx. 80 feet apart, and along same line as was snap trapped. This area has a profile thus:



The parallel ridges supported grasses which have not been cut and are densely matted and

completely covering the surface of the ground. The best trail system was on E exposure of highest ridge (1 1/2 - 2' high). There are no trail in field to W but some to N where patches of higher grass gives overhead protection.

mammals collected this A.M. from traps set last night.

710425-1 *Synaptomys cooperi* 115-20-20-11-27gms ♂ testis 5mm
 710425-2 " " 111-19-20-11-20gms ♀ ut. marginal Three

large ticks were fastened on the posterior neck.

710425-3 *Microtus ochrogaster* 133-30-17-12-28gms, ♂ testis 11

The three above were dead in traps from rain of last night. The rest were alive and were placed in cages for further observation.

710425-4 *Synaptomys cooperi*

710425-5 " "

710425-6 " "

(wt after giving birth to 3)

148-17-19-11-43gms ♀ This ♀ gave birth to three young which measured:

length 41, tail 6, wt 3.7gms

length 40, tail 6, wt 3.7gms

length 43, tail 6, wt 4.1gms

141-19-20-10-33gms ♀ 1x1 emb 10mm

This evening at 1/2 hr before sundown collected the following mammals from trap line (12 live traps) which was in same position and set for day captures.

SKI 710425-7	<i>Synaptomys cooperi</i>	101-16-19-7-11 gms. ♂ testes 2 mm
710425-8	<i>Microtus ochrogaster</i>	135-30-19-10-20 gms. wt normal.
710425-9	" "	134-31-20-10-28 gms ♂ testes 9 mm
710425-10	" "	129-30-18-10-22 gms ♂ testes 9 mm
SKI 710425-11	<i>Synaptomys cooperi</i>	121-18-19-11-26 gms ♂ testes 5. extremely fat

The above were small subadults and were placed in a cage ^{between fascia and integument and had to be scraped with a knife.} ^{fat. animal sacrificed May 14, 1971.} All lab animals and are indicated in notes as extremely fat ^{fat. animal.}

1 2/10 mi. N and 18/10 mi. W Lawrence (P.O.), Douglas Co., Kansas

April 26, 1971

Checked the 12 live traps set April 24 and last checked last night.

This A.M. caught 2 subadults and 1 adult

710426-1 *Synaptomys cooperi* 102-16-19-8-18 gms. ♂ testes 2 mm

710426-2 " " 104-19-19-9-15 gms ♀ wt normal

710426-3 " " 128-20-19-10-38 gms ♀ 1x1 emb 32 mm

Large *Synaptomys* are caught at night and smaller one in the day.

From the 2/10 mi (overaging 20' wide) trapline started April 20 have captured the following:

Blarina brevicauda 1

Synaptomys cooperi 11

Microtus ochrogaster 9

Peromyscus maniculatus 2 (from under board in trees, separate from right-of-way transect).

total - 23

Birds in area include, Mockingbird (singing), meadowlarks, brown thrashers (singing), Harris sparrows (singing), mourning doves, grackles, field sparrow, robins,

1 2/10 mi. N and 18/10 mi. W Lawrence (P.O.), Douglas Co., Kansas

April 28

Set 12 live traps in field to E of transmission line, in 1 1/2 foot high grasses forming isolated patches in low grasses of general area. Traps associated with old (winter) trails of *Microtus*.

Heard male dickcissel singing at sundown. Song not the usual song.

April 29

From trap line caught:

710429-1 *Peromyscus maniculatus* 139-54-18-13-14 gms ♀ wt normal

710429-2 " " 161-70-21-15-22 gms ♂ testes 9 mm

These fields may be used as overflow from right-of-way strip.

Univ. Kansas, Lawrence, Douglas Co., Kansas

April 29, 1971

noted a ♂ rose-breasted grosbeak at 15th & Shattford Rd.

1²/₁₀ mi. N and 1⁸/₁₀ mi. W Lawrence (P.O), Douglas Co., Kansas

April 29, 1971

Set 12 live traps along fence between turnpike right-of-way and field just east of K.P. and L. Trounstein lines. Traps 70' apart.

April 30, 1971

On way to trapping area noted a Wilson snipe in drainage ditch. From line caught:

710430-1	<i>Blarina brevicauda</i>	108-24-15-5-24gms, ♀ ut normal
710430-2	<i>Microtus ochrogaster</i>	129-31-18-10-19gms testes 10mm
710430-3	" "	141-30-20-11-28gms ♂ testes 10mm
710430-4	<i>Synaptomys cooperi</i>	129-22-19-9-27gms ♀ 3x0 emb 11mm (one plac scar on left uterus)

April 30, 1971

In evening checked trap line of mammals caught during day:

710430-5	<i>Microtus ochrogaster</i>	110-25-17-10-12gms ♀ ut normal
710430-6	" "	128-30-18-10-22gms ♀ ut normal
710430-7	<i>Synaptomys cooperi</i>	133-20-20-10-40gms ♀ ut uterus a fine Lab. animal held captive line encased in April 30, 1971 until May 15, 1971 excessive fat.

Inspected nest of meadowlark, 5 eggs in trapping field.

May 1, 1971

Checked live traps this A.M.:

710501-1	<i>Blarina brevicauda</i>	122-25-15-6-21gms ♂ testes 9mm
710501-2	<i>Microtus ochrogaster</i>	150-37-20-11-31gms ♀ ut normal
710501-3	" "	135-32-19-11-21gms ♀ "
710501-4	<i>Synaptomys cooperi</i>	134-20-20-10- 44 gms ♂ testes 6mm
710501-5	" "	135-20-21-10-42gms ♀ p. scar.
710501-6	" "	128-19-20-10-30gms ♀ plac. scars right leg gone from above ankle.

This area is adjacent to turnpike right-of-way of cut grass but dense enough for microtines. This area along turnpikes produce a permanent and continuous community for microtines, especially favorable for *Synaptomys*. I would expect an increase in numbers of this species. For this mammal and others, these turnpikes produce excellent avenues for dispersal.

This evening checked live traps and collected.

710501-7	<i>Synaptomys cooperi</i>	held captive until May 15, 1971 135-21-19.5-10-42 gms ♂ testes 6 mm
710501-8	<i>Microtus ochrogaster</i>	138-29-19.5-11-27 gms ut. normal
710501-9	"	149-34-18.5-11-29 gms ♀ normal ut.

From a gopher trap set in alfalfa field collected:

SKU 710501-10	<i>Geomys bursarius mogzuculus</i>	302-100-36-7-374 gms ♂ testes 16 mm
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May 2, 1971

check trapline along fence line as above this A.M. as follows:

710502-1	<i>Synaptomys cooperi</i>	125-17-19-10-48 gms ♀ 2x1 emb 18 mm
710502-2	"	"
710502-3	"	lab. animal killed May 15 125-18-19-8-27 gms ♀ 2x2 emb 16 mm
710502-4	"	122-20-20-9-26 gms ♂ testes 6 mm
710502-5	"	128-18-19-10-35 gms ♀ (no emb; uterus in fat)
SKU 710502-6	<i>Microtus ochrogaster</i>	123-18-17-10-31 gms ♂ testes 4 mm (lab fat)
710502-7	"	144-32-20-11-36 gms ♂ 12 mm testes
710502-8	"	155-38-20-11-35 gms ♂ 12 mm "
710502-9	"	146-36-20-11-39 gms ♂ 10 mm "
710502-10	<i>Reithrodontomys</i>	134-31-20-10-28 gms ♂ 9 mm "
710502-11	<i>Signadon hispidus</i>	261-101-32-19-106 gms ♂ 19 mm testes.
710502-12	<i>Signadon hispidus</i>	129-52-17-18-13 gms ♂ testes 7 mm

Birds in field and forested area to west are: Lincoln sparrow 1; cowbird 3; redwing 3; meadowlark 14; dickcissel 2; cardinal 4; grackle 4; bluebird 5; redbellied woodpecker 2; chickadee 2; Baltimore oriole 2; martin 8; bluejay 6; Carolina wren 1; myrtle warbler 2; downy 1; brown thrasher 6; catbird 2; goldfinch 8; robin 6; flicker 2; Harris sparrow 3; great horned owl 1; titmouse 1; chipping sparrow 2; bobwhite 2; fox squirrel 2; *Rana pepiens*.

This afternoon from the above trapline collected:

710502-12	<i>Microtus ochrogaster</i>	152-33-20-11-36 gms ♀ 3x4 plac. scars
710502-13	"	128-30-18-11-22 gms ♂ testes 10 mm.

May 3, 1971

From above trapline this A.M. collected:

710503-1	<i>Synaptomys cooperi</i>	held captive until May 15, 1971 119-19-20-10-30 gms ♂ testes 4, excess fat
710503-2	"	lab. animal killed May 15 130-21-20-10-31 gms ♂ testes 5, excess fat
710503-3	"	137-19-19.5-11-47 gms ♀ fat encasing uterus. extremely fat.
710503-4	<i>Microtus ochrogaster</i>	142-35-19-11-43 gms ♀ post parturition.
710503-5	<i>Signadon hispidus</i>	288-110-33-20-136 gms, ♂ testes 20 mm

When this ♂ was placed in cage with ♀ of *Signadon* no 710502-11 the larger killed the smaller and consumed the area of the eye, head muscles of the neck & face of one side only but not the brain, a section of the gut was pulled out of body cavity but not eaten. Pulled this line of 12 live traps this A.M. From this line which was set continuously from evening of April 29 to morning of May 3 and examined each day at 8:00 A.M. and 6:00 P.M. Collected.

<i>Blarina brevicauda</i>	2
<i>Microtus ochrogaster</i>	15
<i>Synaptomys cooperi</i>	14
<i>Cryptotis</i>	+
<i>Reithrodontomys megalotis</i>	1
<i>Signadon hispidus</i>	2

TOTAL 34

These were all from a single runway along fence with traps set 70 feet apart (840 linear feet) Turnpike grass to N + cut grass field to S.

town of Kansas, Lawrence, Douglas Co., Kansas

May 4, 1971

The following mammals have been accumulated from 12/10 mi N, 18/10 mi W Lawrence (P.O.), Douglas Co., Kansas and are in an aquarium with wire top (15 gal). The aggregate include *Synaptomys*, *Peromyscus leucopus*, *Reithrodontomys megalotis*, *Microtus ochrogaster*.

Some of the casual observations are as follows:

In transferring mammals from one cage to another for cleaning purposes, the subadults are more difficult to capture than are the adults.

At the drinking tube, *Microtus ochrogaster* dominates all other animals and fights other *ochrogaster*. *M. ochrogaster* ^{uses} hands in manipulating position at water tube ^{and squeaks}. *Pero. leucopus* does not fight.

Both *M. ochrogaster* and *Synaptomys* push debris to side as they form trails ^{and tunnels} in the juniper shavings, especially as they follow along edge of aquarium. Front feet are used but sometimes back.

Peromyscus leucopus searches for food by clearing surface with front feet.

Peromyscus & *M. ochrogaster* search hair of *Synaptomys* while resting at close quarters.

Both *Peromyscus* & *Reithro* interested in outlet screen on top of cage.

Both *Microtus* & *Synaptomys* use tail as prop while at drinking fountain; ^{Microtus on toes, Syn on feet.} All mammals participate at drinking tube at one time, together. *Microtus* & *Synaptomys* force each other away as well as the other kinds but *Pero* & *Reithro* do not show aggressiveness. *Pero* however can dominate, mainly with feet and with ears back. Use of water controlled by degree of dominance - ^{Microtus} *Syn* - *Pero* - *Reithro*. Tail also used as prop in *Pero* & *Reithro*.

All sleep together in one mass but *Pero* & *Reithro* last to be accepted. Sometimes there will be 2-3 layers of animals.

The *Blarina* when placed in cage plays *lovie* and will kill any animal it comes into contact. The rodents panic. When in separate cage it feeds on neonatal young of *Synaptomys*. Can consume either from front to rear or rear to front, moving the embryos from one side of the mouth to the other side for shearing the skin. Starts with eye, then brain and around ear. Regurgitates bone if caught in throat. Nose used to hold or inspect *Covites*. Uses feet to hold & thrust against bite. Lower jaw for penetration. Cleans after eating by moving both feet towards nose. Builds nest and rests by ducking head under body and lies upright or slightly on one side. Can fall in this position when asleep.

May 4, 1971

Conducted a field trip for 32 students (Mrs. Johansen). Previous nite set 50 traps along W border golf course, this A.M. inspected line with students. *Peromyscus maniculatus* dominant. 1 hr 15 min trip.

May 5, 1971

Conducted field trip of 32 students (Mrs. McMullen). Last night set 50 traps at field-forest Contact 5 of School. ^(1hr 15 min) Measured the following selected mammals.

710505-1	<i>Peromyscus leucopus</i>	150-68-22-15-16 gms ♂	Testis 5mm
710505-2	" "	158-71-22-15-16 gms ♀	ut normal
710505-3	" "	169-75-22-15-26 gms ♂	testis 9mm
710505-4	" "	176-81-23-16-25 gms ♀	1x1 12mm emb.
710505-5	" "	170-72-21-15-27 gms ♂	testis 10mm
710505-6	<i>Peromyscus maniculatus</i>	135-51-17-13-14 gms ♀	plac. scars.
710505-7	<i>Mus musculus</i>	167-71-18-15-21 gms ♀	ut normal, fat.

Sacrificed the Blarina no 710501-1 today. Its reaction to Chloroform was fast breathing, rapid fluttering, slow regular beat and finally six labored respirations before final heart failure. Care for this shrew requires water and at least one dead mouse per day for 3 or four feedings. Two new born ~~neonatal~~ neonatal *Synaptomyia cooperi* were fed the shrew and both were consumed, one by starting at the posterior end, the other at the anterior end. In both cases the entire new born was consumed without interruption. The lower jaw of the shrew is kept under the integument while the upper mandible is kept on the surface. For hard parts the head is turned either to right or left and the tissue is cut by side teeth. For the front teeth there is a up and down movement, at times a vigorous thrust forward. Legs are eaten from distal to proximal as they occur in the consuming of the new born. There is no bolting of food! At one time the parietal bones or some bone of the skull caught in the esophagus and was expelled by forceful muscle movement of the abdominal region accompanied with audible noise. Not only the bone was regurgitated but the food which had been eaten. The shrew consumed the regurgitated material before continuing the feeding on the new born. Mice of the laboratory size are consumed by first eating the eye on one side. The area and muscle surrounding the eye is then consumed and finally the brain cavity is entered. This area plus some neck muscles is a meal. At a later feeding the neck, on one side is completed and the pleural cavity entered, then finally the abdominal cavity, especially the liver. Immediately after eating it will curl in a near perpendicular repose, close front and back feet by running them distally along side of mouth & then rest in the same curled position. When placed with other small mammals will cause havoc, generally grabbing the nose of the first victim it can attack, in one case a *Microtus ochrogaster*.

1710 mi N and 18110 mi W Lawrence (P.O.), Douglas Co., Kansas

May 15, 1971

Set 12 live traps this P.M. Observed following birds: meadowlark, purple martin, cowbird, grackle, Chim. swift, B. oriole, redwing, robin, g.c. flycatcher, cardinal, bluejay, ~~red~~ red-shouldered hawk, brown thrasher, dickcissel, bobwhite, mourning dove, Indigo bunting, b.c. chickadee, goldfinch, swainson thrush, red-bellied woodpecker, hairy woodpecker, downy, Kentucky warb. Carolina wren, eastern wood pewee, eastern kingbird. The Baltimore oriole was building a nest (3/4 complete) by female.

12/10 mi. n and 18/10 mi w Lawrence (Po), Douglas Co., Kansas

May 16, 1971

mammals from 12 live traps along powerline right-of-way:

<u>710516-1</u>	<i>Synaptomys cooperi</i>	132-18-21-11-36gms ♂ testis 7mm
<u>710516-2</u>	" "	129-19-19-10-37gms ♂ testis 6mm
<u>710516-3</u>	" "	127-18-19-9-46gms ♀ 1x1 emb 27mm
<u>710516-4</u>	<i>Microtus ochrogaster</i>	130-33-20-11-21gms ♀ ut normal
<u>710516-5</u>	" "	165-40-20-11-46gms ♂ testis 11mm
<u>710516-6</u>	" "	143-35-19-11-32gms ♂ testis 10mm
<u>710516-7</u>	<i>Peromyscus maniculatus</i>	121-45-18-13-8gms ♂ testis 2.5mm
<u>710516-8</u>	<i>Sigmodon hispidus</i>	261-102-31-19-154gms ♂ testis 22mm
<u>710516-9</u>	<i>Synaptomys cooperi</i>	111-17-18-9-29gms ♀ ut. enlarged

From under board among trees:

<u>710516-10</u>	<i>Peromyscus leucopus</i>	184-77-23-15-27gms ♂ testis 11mm
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embryos of no
7105-16-3

Birds observed in open fields and woodlands to w: robin, Eng. sparrows, dickcissel, green heron, cardinal, meadowlark, redhead woodpecker, purple martin, chimney swift, bobwhite (calling), catbird, mourning dove, swanna sparrow, killedeer, brown thrasher, B. oriole, black-capped chickadee, cowbird, red-bellied woodpecker, starling, grackle, bluejay, pewee, house wren, titmouse, hairy woodpecker, downy woodpecker.

May 17, 1971

collected the following mammals from 12 live traps in above area:

	<u>710517-1</u>	<i>Synaptomys Cooperi</i>	132-18-18-10-33gms ♀ ut enlarged
SK. only	<u>710517-2</u>	<i>Sigmodon hispidus</i>	265-98-30-20-169gms ♂ testis 20mm
SK. only	<u>710517-3</u>	" "	256-101-30-20-109gms ♂ testis 19mm
	<u>710517-4</u>	<i>Microtus ochrogaster</i>	130-31-20-11-19gms ♀ ut normal.
	<u>710517-5</u>	" "	141-34-19-11-29gms ♂ 12 testis.

Birds observed in open field + woodlands are: robin, killedeer, meadowlark, dickcissel, purple martin, starling, grackle, bob-white, bluejay, lowbird, Baltimore oriole, indigo bunting, mourning dove, Swamson thrush, eastern woodpecker, cardinal, red-bellied woodpecker, black-capped chickadee, red-eyed vireo, Kentucky warbler, warbling vireo, Carolina wren, Tennessee warbler, Bell's vireo, young of great horned owl, titmouse,

chuck-wills-widow (among conspecifics of young elon, flew to horizontal branch of large tree) this bird was approx 12 inches in length as measured by comparative measurements from a distance of 20 feet, fox squirrel, bobwhite in tree, redhead digging hole and calling, chimney swift, eastern kingbird,

At 482 yorkshire an eastern kingbird alighted on top of a purple martin house without being contested by the martin, two of them less than 1 foot away. Photos 710517-1 to 4 of Annette C Bee and graduation holes.

May 18, 1971

From 12 live trap set as above collected the following mammals:

710518-1 *Microtus ochrogaster* 137-36-19-10-21 gms. ♂ testis 10 mm
710518-2 " " " 122-30-19-10-19 gms. ♀ ut. normal.

This trapline has been in some position for several days. Birds observed in open fields & wooded area are: bronze grackle, meadowlark, dickcissel, Baltimore oriole, purple martin, chimney swift, robin, cowbird, b.c. chickadee, redhead woodpecker, eastern kingbird, redwing, bluejay, red-bellied woodpecker, cardinal, swainson thrush, E. pewee, indigo bunting, rose-breasted grosbeak, titmouse, Kentucky warbler, yellow warbler, Bell's vireo, ruby-throated hummingbird, brown thrasher, warbling vireo, bobwhite, goldfinch, mourning dove.

May 19, 1971

Made photographic record of trapping area and adjacent wooded area to W (see locality above). Day with bold clouds, rained hard yesterday, day cool.

710519-1 Eastern meadowlark nest and young. Home followed this nest since 4 egg stage. Nest placed in field of grass not cut last year. Photo 710519-2 close up of bird on top of 4 other birds. All birds faced N to outside entrance of nest. Adult rarely around when nest is visited.

Photo 710519-3 of utility line right of way where *Synaptomys* was found. Ridge of grass adjacent to fence line main community of this animal and because of contour cannot be cut with mowers. The permanency of this strip of land accounts for the perpetuation of the *Synaptomys* population. Fence line diverging from this right-of-way extends the population of *Synaptomys*. Photo to SE 710519-4 photo of 2 dead elm trees at edge of creek in woodlands W of *Synaptomys* field. Photo 710519-5 of red oak which blew over last year. Old leaves still on downed tree. Woodrat nest

insect hollow base. This tree has unusual repair of old scar.



This tree measured 147 inches in circumference at breast height. Photo 710519-6 old oak tree in late stages of deterioration. Photo 710519-7

of hickory leaves and general forest and drainage creek in background. 710519-8 effect of root system of tree on erosion of creek. 710519-9 elm with pathological surface & bark.

710519-10 old house along w side of drainage. X 710519-11 elm with sky and clouds as background, just n of residence on Peterson road. & 710519-11a cross-section of elm where chuck-will widow inhabits and 710519-12a


710519-12 Elm tree used by redheaded woodpecker. Birds observed today in field and wooded area are: purple martin, meadowlark, dickcissel, catbird, grackle, cardinal, warbling vireo, bobwhite, eastern kingbird, English sparrow, Baltimore oriole, brown thrasher, indigo bunting, great crested flycatcher, titmouse, Kentucky warbler, red-bellied woodpecker, red-eyed vireo, bluebird, eastern wood pewee, black capped chickadee, mourning dove, Carolina wren, Swainson thrush, western kingbird. Set 12 line traps along fence line between turnpike & field to w of K.P. Right-of-way.

1 2/10 mi. n and 1 8/10 mi. w Lawrence (P.O.), Douglas Co., Kansas

May 20, 1971

Collected mammals from trapline (12) set as above:

	<u>710520-1</u>	<i>Synaptornys cooperi</i>	115-16-18-9-28 gms ♀ wt. normal
	<u>710520-2</u>	" "	122-19-20-11-29 gms ♂ testes 6 mm
m. only	<u>710520-3</u>	<i>Peromyscus maniculatus</i>	132-54-19-13-10 gms testes 7 mm
s. ow	<u>710520-4</u>	<i>Sigmodon hispidus</i>	233-92-31-17-120 gms ♂ testes 19 mm
	<u>710520-5</u>	<i>Sigmodon hispidus</i>	262-112-31-18-139 gms ♂ testes 19 mm
	<u>710520-6</u>	<i>Microtus ochrogaster</i>	142-33-19-12-28 gms ♂ testes 11 mm

Hip gland of 710520-2 is 10x7 black and 6x4 white 

Birds in field and wooded area: Bell's vireo, brown thrasher, dickcissel, meadowlark, robin, purple martin, bronze grackle, cowbird, catbird, red-bellied woodpecker, cardinal, mockingbird, bluejay, mourning dove, bobwhite, great crested flycatcher, indigo bunting, b.c. chickadee, eastern wood pewee, red-eyed vireo, rose-breasted grosbeak, house wren, starling, eastern kingbird, chimney swift, warbling vireo, Kentucky warbler, English sparrow, Baltimore oriole, titmouse, hairy woodpecker, redhead. Observed a female cowbird at a newly constructed Baltimore oriole nest (in sycamore approx 80' high, that is the nest height). The bird nervously moved back and forth in front of the nest at about 1 foot away. It did not enter the nest nor did the orioles defend the nest.

1 2/10 mi. n and 1 8/10 mi w Lawrence (P.O.), Douglas Co., Kansas

May 21, 1971

Collected the following mammals from trapline of 12 live traps set as of previous days:

<u>710521-1</u>	<i>Synaptomys cooperi</i>	135-23-21-10-35 gms ♀	2x1 plac. scars
<u>710521-2</u>	<i>Microtus ochrogaster</i>	154-34-19-11-36 gms ♀	2x2 plac scars
<u>710521-3</u>	"	126-28-19-10-21 gms ♂	testis 7.5 mm

Birds in open field and woodlands: (11:30 A.M.) robin, meadowlark, dickcissel, purple martin, Bell's vireo, redhead, catbird, chimney swift, starling, downy, grackle, cardinal, Eng sparrow, redwing, bobwhite, red-eyed vireo, Baltimore oriole, eastern pewee, titmouse, black-capped chickadee, bluejay, Swainson thrush, great crested flycatcher, red-bellied woodpecker, oven bird, mourning dove.

The oven bird is similar to Swainson thrush but when on limb moves more from side to side (body movement) than the S. thrush which remains motionless. Both gray squirrel & fox squirrel present. The day being dark and occasional rain, there was not much singing, for instance the Tennessee warbler, Kentucky warbler, warbling vireo were not singing. The Baltimore oriole only occasionally. Examined meadowlark nest with 3 young measuring 87 mm in total length. There are two red or black oak of large size which have broken at base in a similar fashion and both blown over in same direction (SE). The leaves of last year are still on tree.

May 22, 1971

checked 12 live traps at late P.M about equivalent to sundown but sky cloudy and occasional rain. No mammals since the 3 mammals collected yesterday. Birds observed: purple martin, dickcissel, meadowlark, mourning dove, brown thrasher, bobwhite, e. kingbird, robin, chimney swift, redhead woodpecker, grackle, Eng. sparrow, cardinal, eastern wood pewee, nighthawk, Swainson thrush, black-capped chickadee, Baltimore oriole. The lateness of the evening accounted for fewer birds observed than on previous days.

May 23, 1971

From trapline of 12 live traps (see above) Collected:

710523-1 *Reithrodontomys* 142-70-18-13-11 gms ♂ testis 8 mm

Birds observed in area of open fields and wooded area:

Pell's vireo
 Purple martin, dickcissel, meadowlark, robin, brown thrasher,
 bobwhite, indigo bunting, lowbud, mourning dove, black-capped
 chickadee, grackle, Eng. sparrow, eastern kingbird, e. wood pewee,
 red-eyed vireo, Balt. Oriole, cardinal, Titmouse, red-bellied wood-
 pecker, blue jay, starling downy woodpecker, hairy woodpecker,
 g. h. owl, yellowthroat, g. crested flycatcher, house wren, chimney
 swift, Kentucky warbler, redhead woodpecker, Swainson thrush.

Noted a brown thrasher nest of 4 eggs place 4' high in a
 wild rose bush on fence line of turnpike right-of-way. This
 bush was isolated by 1/10 mi from forested areas.

A indigo bunting nest of 2 eggs and 1 lowbud egg in *Symphoricarpos*
 bush (nest 8' high) made of wool. Female on nest.

A eastern wood pewee just building nest. 4.5' high in locust tree.
 Nest on horizontal surface of limb

Noted that light intensity in a
 consociation of young elm changed as wind disturbed upper story of leaves.

May 24, 1971

From trap line of 12 live traps Collected (see above):

710524-1	<i>Peromyscus maniculatus</i>	140-51-18-13-13gms	♂ testes 6mm
710524-2	<i>Peromyscus maniculatus</i>	131-51-18-13-11gms	♀ ut normal
710524-3	<i>Microtus ochrogaster</i>	148-35-19-12-32gms	♂ testes 7mm

Birds in area of field & woods (low clouds, occasional rain):
 Brown thrasher, dickcissel, meadowlark, b.c. chickadee,
 w. kingbird, Eng sparrow, cardinal, eastern wood pewee, Balt.
 oriole, indigo bunting, Carolina wren, red-eyed vireo,
 titmouse, g. crested flycatcher, red-bellied woodpecker,
 eastern bluebird & young, robin, grackle, crow, cowbird, purple
 martin, bluejay, starling, Swainson thrush, bobwhite

Robin nest of 3 young measuring 106 mm total length. Noted
 another young in road just able to fly.

May 25, 1971

checked trapline as above and collected:

710525-1	<i>Microtus ochrogaster</i>	154-37-19-11-23gms	♀ 1x3 emb 3mm
710525-2	"	128-31-18-10-19gms	♀ ut normal
710525-3	<i>Peromyscus maniculatus</i>	147-56-19-13-14gms	♀ ut normal

Birds observed in field and wooded area: robin, dickcissel, meadowlark,
 brown thrasher, Pell's vireo, cardinal, purple martin, Eng sparrow,
 killdeer, bobwhite, redwing, Baltimore Oriole, indigo bunting, goldfinch,
 house wren, field sparrow, Acadian flycatcher, Swainson thrush,
 warbling vireo, Carolina wren, red-eyed vireo, titmouse, bluejay

rose-breasted grosbeak, great crested flycatcher, eastern wood pewee, red-bellied woodpecker, chimney swift, grackle, chipping sparrow, red-bladed woodpecker, night hawk.

One meadowlark nest of 5 eggs, entrance facing south, when on exposed limbs, the chipping sparrow is more nervous than the field sparrow.

1 3/10 mi. n and 2 1/10 mi. w Lawrence (P.O), Douglas Co., Kansas

May 25, 1971

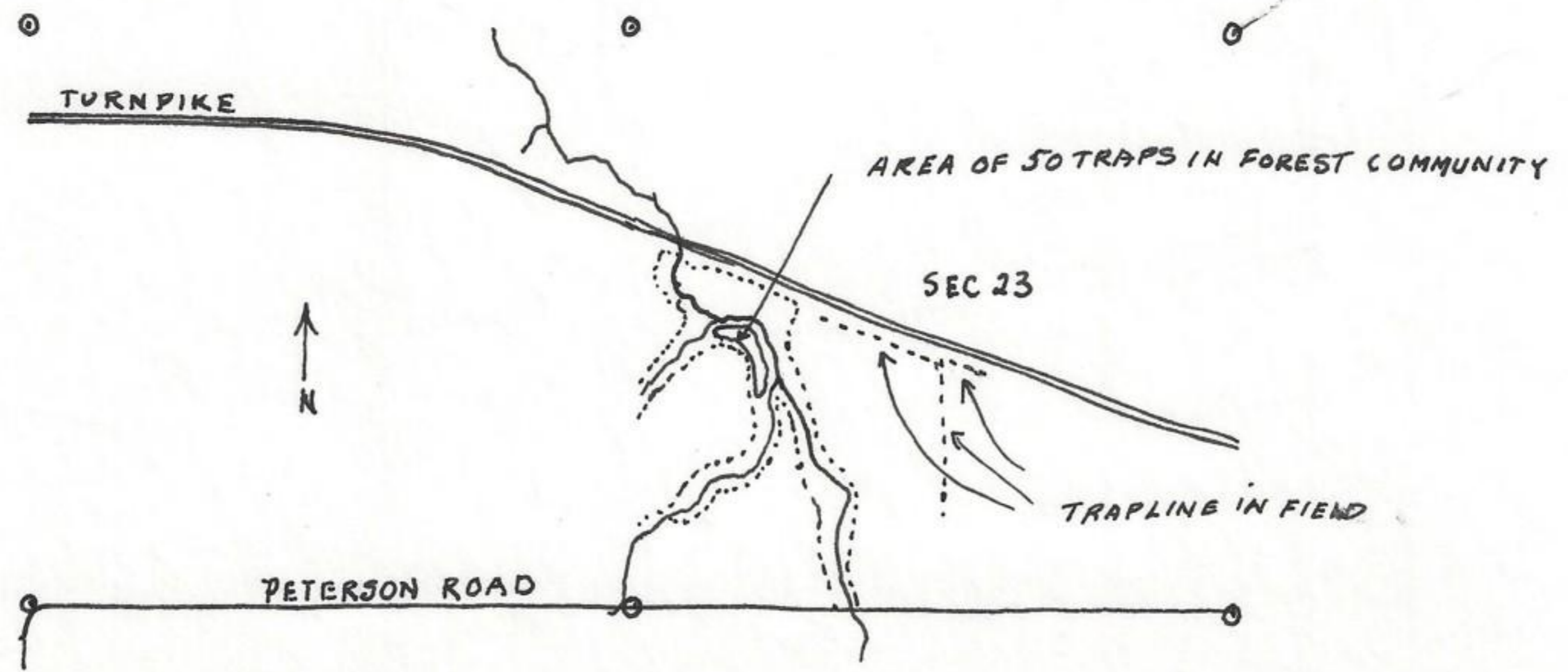
In addition to checking live traps (area to E) set 50 snap traps in forested area. The above locality is center of best developed forest, just S of the deep meanders. Traps set at base of large trees. (western 1/3 of sec 23 south of turnpike, R19E, T12S.)

1 3/10 mi. n and 2 1/10 mi. w Lawrence (P.O), Douglas Co., Kansas

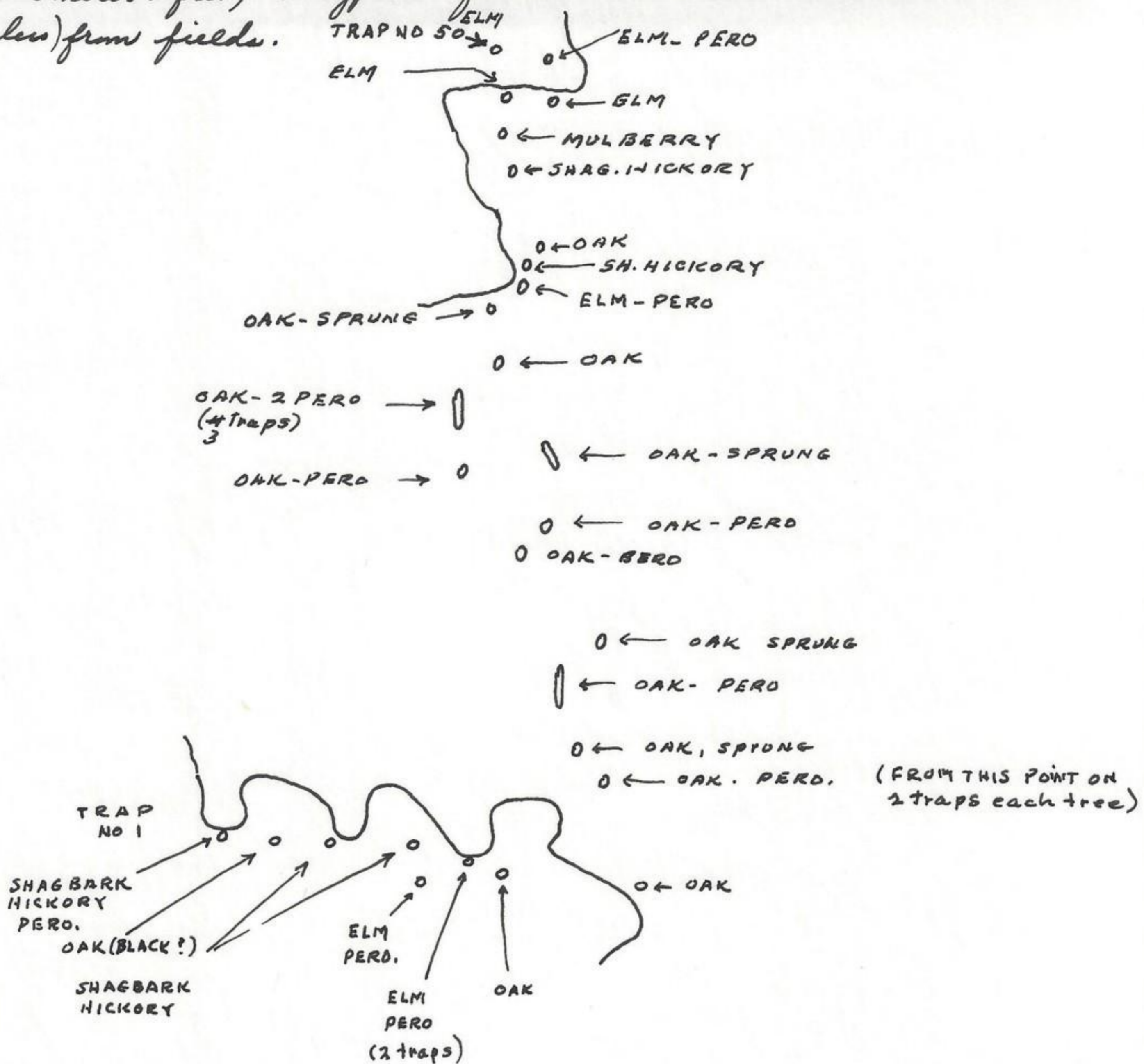
May 26, 1971

From 50 traps set last night, collected:

Trap #	Species	Weight	Sex	Reproductive Data
710526-1	Peromyscus leucopus	191-90-22-15-42 gms	♀	1x3 emb 23 mm
710526-2	"	186-84-23-16-33 gms	♂	testis 12 mm
710526-3	"	180-76-23-15-29 gms	♂	testis 12 mm
710526-4	"	170-73-22-16-27 gms	♂	testis 12 mm
710526-5	"	171-76-22-15-27 gms	♂	testis 12 mm
710526-6	"	173-74-22-15-27 gms	♀	plac. scars ?
710526-7	"	169-75-23-15-21 gms	♀	plac. scars ?
710526-8	"	173-76-23-15-27 gms	♂	testis 12 mm
710526-9	"	155-67-22-15-19 gms	♀	2x1 emb 8 mm
710526-10	"	168-73-22-15-25 gms	♀	3x2 emb 4 mm
710526-11	"	160-75-21-15-19 gms	♀	ut enlarged
710526-12	"	148-65-22-15-17 gms	♂	testis 9 mm



The 50 traps were placed at the base of the large trees (average diameter 3 feet) in typical forested area and at least 200 (some less) from fields.



The large oaks were black oaks. Birds observed this morning in field and forested area are (those marked with asterisks were observed along above trapline): Bell's vireo, robin, warbling vireo, mockingbird, dickcissel, meadowlark, purple martin, Eng sparrow, redheaded woodpecker, cowbird*, catbird*, black capped chickadee*, m dove, common grackle, barn swallow, brown thrasher, acadian flycatcher*, bluejay*, bobwhite, field sparrow, chipping sparrow, swainson thrush*, Baltimore oriole*, goldfinch*, redwing blackbird, eastern ^{wood} pewee*, great crested flycatcher*, indigo bunting*, chimney swift, downy woodpecker*, hairy woodpecker*, Kentucky warbler*, parula warbler*, carolina wren*, starling.

The set of 12 live traps produced:

710526-13 *Peromyscus maniculatus* 141-52-19-14-16 gms.

Of three meadowlark nests examined, one faced E, one to the W and one to the S.

The brown thrasher nest held 4 eggs. One can approach within 3 feet before bird leaves nest. It remains within 4 or less feet from nest while nest is being examined. One call is a catbirdlike mew call. The mate of this bird was 10 feet away in short grass. It flew to nesting bush (wild rose in blossom).

The mulberry trees show reddish color of fruit.

This evening checked live traps and surveyed wooded area. Sun about 15 minutes from sundown. Birds observed were fewer than other times of the day and included: Chimney swift, starling, dickcissel, meadowlark, cardinal, robin, grackle, indigo bunting, eastern wood pewee, redwing, Swainson thrush, night hawk.

1²/₁₀ mi. N and 1⁸/₁₀ mi. W Lawrence (P.O), Douglas Co., Kansas

May 27, 1971

Checked trap line of 12 live traps:

710527-6 *Peromyscus maniculatus* 142-60-18-13-11 gms ♂ testes 8 mm
Birds in field and forest are: mockingbird, purple martin, dickcissel, meadowlark, Bell's vireo, chimney swift, cowbird, field sparrow, mourning dove, eastern kingbird, western kingbird, brown thrasher, redwing blackbird, cardinal, indigo bunting, bluejay, Swainson thrush, downy woodpecker, yellow-shafted flicker, Baltimore oriole, great horned owl, black-capped chickadee, red-eyed vireo, great crested flycatcher, eastern wood pewee, hobwhite, goldfinch, yellow throat, Kentucky warbler, starling, catbird, field sparrow, barn swallow,

Took the following photographs:

710526-7 nest of meadowlark and 5 eggs.

710526-8 Eggs of brown thrasher in wild rose bush (white flowers)

710526-9 Indigo bunting nest of 2 cowbird eggs. On May 19 nest completed. May 20 1 bunting egg, May 23 2 bunting eggs and one cowbird egg, May 24 1 bunting egg and 2 cowbird eggs, May 25 same as 24th, May 26 2 cowbird eggs, May 27 2 cowbird eggs. The nest was deserted May 24 by the bunting.

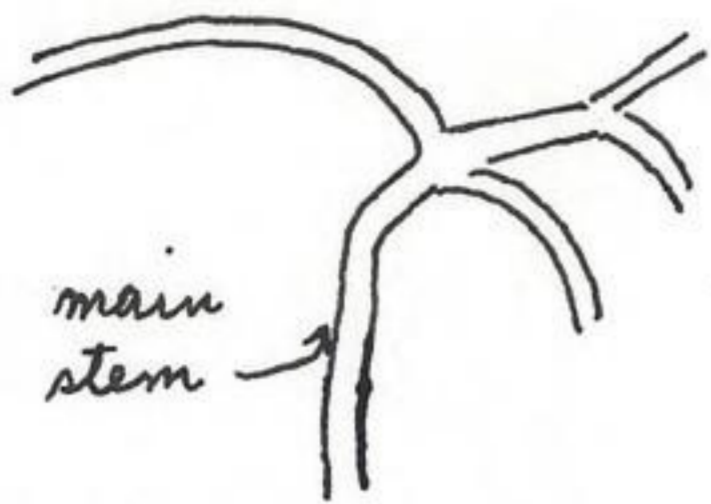
710526-10 nest of indigo bunting with 2 cowbird eggs (as above).

This nest was placed in a *Symphoricarpos* bush at edge and was 3' above ground. Conspicuous nest of white sheep wool from a carcass 40' away.

a pewee nest completed this date.

Cardinals are feeding young out of nests.

In open field small elms (3 feet) are used as perching sites for dickcissels. The tops of the elms are malformed from effect of perching of dickcissels thus:



The uppermost growth of central stalk is bent and deformed. This deformation can be traced back for at least 3 years of growth. Leave beneath perch are caused from 20 to 90% by white specklement.

The use of perches of meadowlarks and dickcissels could dwarf or change the life form of trees growing in grasslands. One male dickcissel called with a single scold note.

There is one western kingbird without center tail feathers that has been observed at 4 or 5 localities separated by as much as 5/10 of a mile. This bird usually occurs with its mate.

2 fox squirrels & 1 gray squirrel observed in wooded area.

1 2/10 mi N and 1 8/10 mi W Lawrence (P.O.), Douglas Co., Kansas

May 28, 1971

Checked 12 live traps as following:

	710528-1	Microtus ochrogaster	156-36-19-11-25 gms ♀	2 x 1 emb 17 mm
	710528-2	Peromyscus maniculatus	137-54-18-13-17 gms ♂	testis 9 mm
M.O.	710528-3	"	133-54-18-13-15 gms ♂	testis 9 mm
	710528-4	"	148-56-19-15-20 gms ♂	testis 9 mm

Birds observed in field & forest are: Bell's vireo, dickcissel, meadowlark, common grackle, purple martin, chimney swift, robin, goldfinch, eastern kingbird, western kingbird, redwing blackbird, orchard oriole, red-eyed vireo, Baltimore oriole, eastern wood pewee, Carolina wren, Titmouse, parula warbler, oven-bird, downy woodpecker, red-bellied woodpecker, bluejay, Swainson thrush, indigo bunting, cardinal, ^{Eng. sparrow} goldfinch, hairy woodpecker, mourning dove, cowbird, red-headed woodpecker, brown thrasher. Noted a cardinal feeding a young cowbird.

4 1/2 mi. E and 2 mi. S Lawrence (P.O.), Douglas Co., Kansas.

May 28, 1971

Examined a road kill badger on Highway 10 between Lawrence and Eudora. The total length was 730 mm, the tail alone 110 mm. This was a large female.

1⁷/₁₀ mi N and 1⁸/₁₀ mi. W Lawrence (P.O.), Douglas Co., Kansas

May 29, 1971

Checked 12 live traps (1 hr before sundown to sundown):

710529-1 *Peromyscus maniculatus* 140-55-19-14-14 gms ♀ ut normal
710529-2 " " " 142-57-19-14-15 gms ♂ testes 10 mm

Birds observed in field & forest: purple martin, chimney swift, Eng sparrow, dickcissel, meadowlark, grackle, starling, robin, meadowlark, mockingbird, field sparrow, indigo bunting, Baltimore Oriole, Eastern wood pewee, Carolina wren, red-eyed vireo, red-bellied woodpecker, bobwhite, Swainson thrush, hairy woodpecker, yellow-billed cuckoo, black-capped chickadee, bluejay, goldfinch, redwing, western kingbird, eastern kingbird, orchard oriole, cowbird, redhead.

One redwing had a single egg in nest.

There is a high pitched trill (frog) that lasts for 9 seconds.

Some mulberry trees are supporting black berries. Gooseberries are near mature size.

May 30, 1971

From trapline of 12 live traps collected:

710530-1 *Reithrodontomys* 141-68-18-13-10 gms ♂ testes 7 mm
710530-2 *Peromyscus maniculatus* 146-58-19-13-15 gms ♀ ut normal
710530-3 " " 140-52-18-13-13 gms ♀ ut normal.
710530-4 " " 137-51-19-15-18 gms ♂ testes 8 mm

No record of birds kept this trip.

May 31, 1971

From trapline of 12 live traps collected: (traps pulled this date)

710531-1 *Peromyscus maniculatus* 139-58-19-13-12 gms ♂ testes 6 mm
710531-2 " " 130-48-19-13-11 gms ♀ ut normal
710531-3 " " 122-47-18-13-9 gms ♀ ut normal.

Birds observed in forest and field: purple martin, Bell's vireo, common grackle, dickcissel, meadowlark, indigo bunting, robin, mockingbird, redheaded woodpecker, cowbird, mourning dove, brown thrasher, cardinal, Baltimore Oriole, titmouse, pewee, bluejay, catbird, b.c. chickadee, red-bellied woodpecker, purple warbler, Swainson thrush, bobwhite, red-eyed vireo, Acadian flycatcher, Carolina wren, downy, g. h. owl, eastern bluebird, goldfinch, yellow-billed cuckoo, redwing blackbird.

The brown thrasher listed in previous notes now has 3 young and one egg.

Observed two instances of female cardinals, ^{each} feeding the young of cowbirds. In each case there was only a single young being fed and these young were aggressive. The male cardinal also contributed to the feeding activity.

The song of the parula warbler can be characterized by two base notes and then a gradual rising thrill of notes

The song of the Carolina wren is accented on the higher notes : : : : and the song is repeated every six or so seconds. Song variable.

A ♀ red-bellied woodpecker carried insects into nesting cavity. At one time another female with insect in mouth alighted 4 feet above the occupied nest and after investigating two other holes a foot or so from the nest started to enter and was immediately repelled by the female ^{already} in the nest.

Grackles have been observed in the deep part of forest and they appear to be resting rather than feeding.

Two bluejays called vigorously at a pilot black snake ^{and gopherberry} which was climbing ^{3 feet high} three Symphoricarpos bushes at base of old dead tree. These jays attracted 6 black-capped chickadees, 3 robins, 2 titmice, a red-bellied woodpecker, a Swainson thrush and a parula warbler. The chickadee approached the snake to within 2 feet. The snake measured 61 inches in total length. It is surprising how many birds there are in a limited area of forest and their presence go unnoticed until called together by some intruder or predator.

At edge of forest a chipping sparrow called and a field sparrow had young out of the nest.

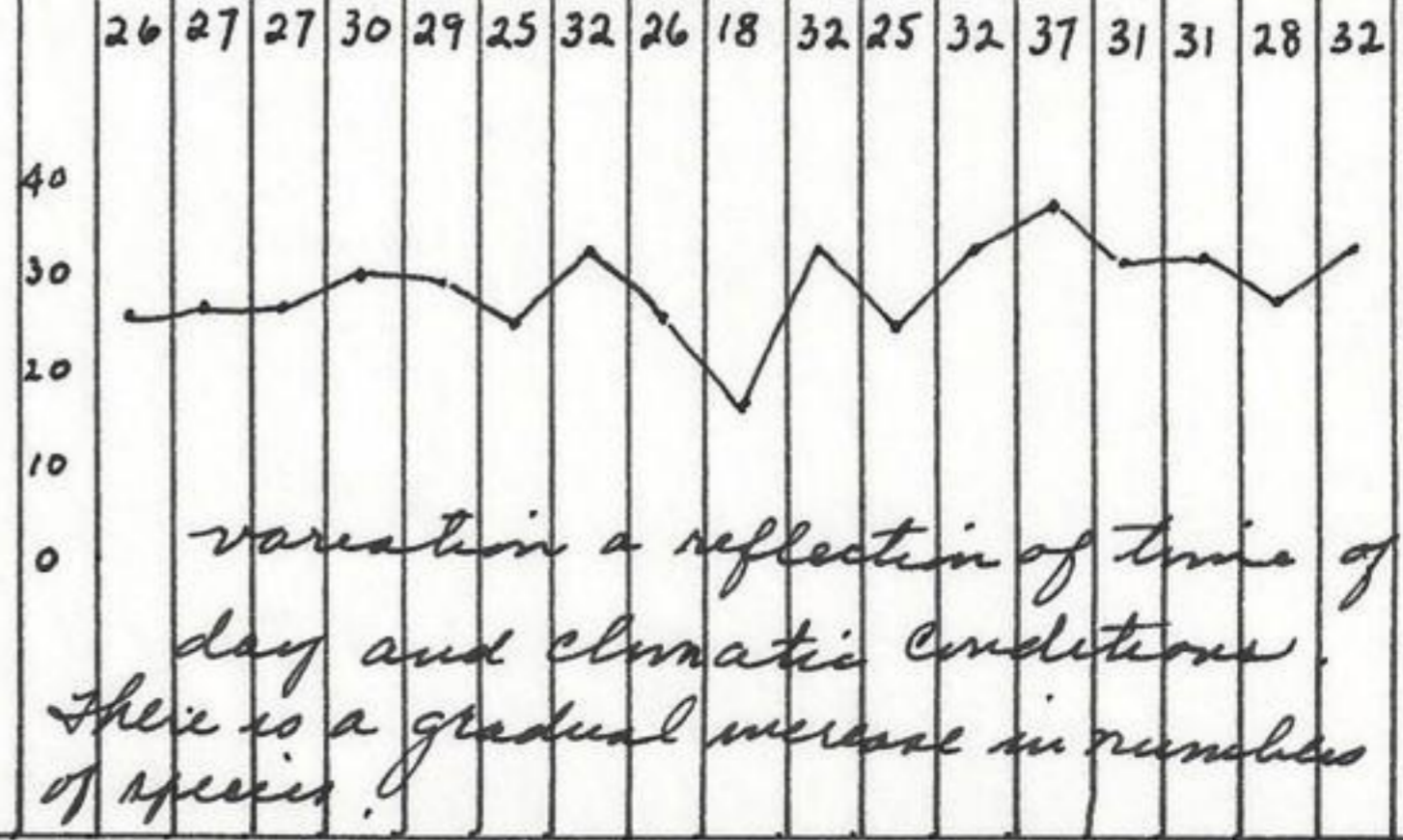
The following is a summation of observations of birds in trapping area (field & forest) for essentially the last half of May including 1 day (May 2) earlier in the month. As censuses were taken under variable times of the day and weather conditions (morning, noon, evening, clear, raining, windy etc.) The average ^{numbers} indicates averages of a day. Ordinarily early mornings produce greater activity and song. Late afternoon near sundown is least productive. High windy days inhibit identification. The average number of kinds of birds is representative of the local area supporting deciduous forests and prairie. The last occurrence of Harris sparrow was May 2. The first arrival of the dickcissel in area was April 28 in the evening.

APRIL 26 " 28 " 29 MAY 2 " 15 " 16 " 17 " 18 " 19 " 20 " 21 " 22 " 23 " 24 " 25 " 26 " 27 " 28 " 29 " 31

indigo bunting	x			x	x	x	x			x	x	x	x	x	x	x	x	x	x	13	
Swainson thrush	x			x	x	x		x	x	x	x	x	x	x	x	x	x	x	x	x	14
hairy woodpecker	x	x					x			x			x		x		x				7
Kentucky warbler	x			x	x	x	x			x			x	x							8
eastern wood pewee	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	16
eastern kingbird	x			x	x	x	x			x	x			x	x	x					10
Eng. sparrow		x				x	x	x	x	x	x	x	x			x	x				11
green heron		x																			1
savanna sparrow		x																			1
killdeer		x	x									x									3
starling		x	x				x	x		x	x		x	x					x		9
house wren		x					x			x		x									4
red-eyed vireo				x		x	x	x		x	x	x		x	x	x	x	x	x	x	11
warbling vireo				x	x	x	x					x	x								6
Tennessee warbler				x																	1
Bells vireo				x	x		x	x		x		x	x	x	x				x		10
chuck-wills-widow				x																	1
yellow warbler						x															1
ruby-throated hummingbird						x															1
western kingbird								x				x			x	x	x				5
oven bird									x								x				2
night hawk										x			x	x							3
yellowthroat											x					x					2
Crow												x									1
Acadian flycatcher													x	x						x	3
barn swallow														x	x						2
Parula warbler														x		x				x	3
orchard oriole																	x	x			2
yellow-billed cuckoo																			x	x	2

62 species

(average number of species per visit = $\frac{28(18-37)}{}$.)



1 2/10 mi N and 1 8/10 mi. W Lawrence (P.O.), Douglas Co., Kansas

June 15, 1971

checks birds in open field and wooded area to W. The alfalfa field W of the above locality was cut today. I was impressed with the complete destruction of the remainder of the closely cut bases of the alfalfa by the vehicles used in the cutting operation. The ground was almost completely trampled by the tractor, cutter, carrying cart, truck receiving the alfalfa. Nothing could have survived this treatment. In the interest of the birds nesting in the field and with young on the ground, a mowing machine with wide track base incorporating all processes of cutting alfalfa, would eliminate 95% of the trampling. To regulate the height of the cut would save many young and ground nests. A certain amount of overhead protection is necessary for the survival of the young & adults. I would estimate that in this field the following birds were affected

12 prs. meadowlarks (young, nests and eggs)
 15 prs. dickcissels and nests
 4 prs. redwing blackbirds, and others.

The first birds to invade the field were grackles (groups of 2 to 10 and 8 such groups; robins 15 and generally distributed; 2 yellow-shafted flickers and 5 dickcissels.

Birds heard or seen in wooded area W of field are: martin, Baltimore Oriole, bobwhite, redwing, Killdeer, cowbird, E Kingbird, field sparrow, mockingbird, yellow-billed cuckoo, cardinal, rose-breasted grosbeak, indigo bunting, red-bellied woodpecker, black-capped chickadee, hairy woodpecker, g. c. flycatcher, starling, mourning dove. The nest of the brown thrasher along the turnpike right-of-way was empty.

Kasald Road (between Peterson Road to N and top of valley to S), Douglas Co., Kansas

June 17, 1971

made census along road which has been constructed thru native hillside community. Road now about 9/10 completed as far as grading is concerned. Work has been in progress for at least the last 2 months with high-power road equipment of various kinds. Census made at 1/2 hr before sundown Day clear and warm. All birds were listed in 150' width

on either (both) sides of the road as the sight record was made.
 Peterson Road start: meadowlark, 4 cowbirds, killdeer (2),
 mockingbird (singing), meadowlark, mockingbird, 4
 grackles, robin, mockingbird (all members of same family)
 3 cowbirds, field sparrow, meadowlark, mourning dove,
 cowbird, b.c. chickadee, great crested flycatcher. now at
 first drainage to S (windmill drainage). meadowlark,
 yellow-billed cuckoo, cardinal, indigo bunting, b.c.
 chickadee, bluejay (2), yellow-billed cuckoo, bluejay,
 indigo bunting, cardinal, downy woodpecker, red-
 bellied woodpecker, cardinal. Top of hill at bend.

Summary.

meadowlark 1-1-1-1	cardinal 1-1-1
cowbird 4-3-1-	indigo bunting 1-1
killdeer 2-	bluejay 2-1-
mockingbird 1-1-1-	downy woodpecker 1
grackles 4	red-bellied woodpecker 1
robin 1	
field sparrow 1	
mourning dove 1	
b.c. chickadee 1-1-	
great crested flycatcher 1	
yellow-billed cuckoo 1-1-	

From ^{new} road slope on W side
 of Kasold Road 150' S of Peterson
 Road collected a large fat
 scraper no 710617-1. It was
 surface material or near surface
 and had migrated down road
 slope.

Univ. Kansas, Lawrence, Douglas Co., Kansas.

June 20, 1971

Noted Coopers hawk on campus chased by grackles, robins &
 a cowbird.

Kivawood Camp, W of Ottawa, Kansas

June 20, 1971

Five Polar photos of Annette C at camp. She was the camp
 nurse.

- 710620-1 Annette and her mother on road in camp.
- 710620-2 Nurses quarter.
- 710620-3 Annette C in front of her quarters (infirmary)
- 710620-4 2 Annettes near infirmary.
- 710620-5 general view of pond.

This date is approximate but was in summer of 1971.

Lawrence, Douglas Co., Kansas

July 15, 1971

Prepared for vacation:

Trailer.

- ✓ washers for spare tire bracket, also cover
- ✓ 2 new windows
- ✓ detachable screens (get screws)
- ✓ decipher battery terminals and mark (clean paint from terminals)
- ✓ new non-corrosion chains
- ✓ extend shower hose & insert top
- ✓ gaskets on toilet
- ✓ fire extinguisher bracket
- ✓ new rugs
- ✓ paint top
- ✓ paint top trailer
- ✓ panel at stove
- ✓ waterproof tent plumbing.

Car

- ✓ fender repair rug & tool kit
- ✓ paint
- ✓ repair altimeter
- ✓ replace snow tires

Equipment.

tags prepare mammals
wire, small
cotton
trap bag
journal paper

Personal

- ✓ equip for museum
- ✓ contact personnel
- ✓ library

Misc.

- 5 gal. can
- car reg.
- elect shower
- oat + cornmeal
- snawry lounge memo
- ✓ paper for journal
- rain gear

Camera

1.4 lens
exposure meter

House

- ✓ paint woodwork in Pelly's
- ✓ finish 2 screen doors
- ✓ outside sliding door

Lawrence, Douglas Co., Kansas

July 26, 1971

Left for vacation at 2:00 P.M., mileage 57996.0. Will keep selected records for first day out. Temp cool, sky 10% clouds (yesterday 2 1/2 inches rain & high wind). Birds unusually scarce to Topeka and includes cardinal, blue jay, Cowbird, redheaded blackbird, grackle, dickcissel, Eng. sparrow, yellow-shafted flicker, robin, chimney swift, purple martin. Birds increased in numbers toward evening and in the Salina area noted Eastern Kingbird, western kingbird, meadowlark, cowbird, redwing, 4 crows, killdeer, night hawk, and others. Even though there was an increase in kinds, there were relatively few individuals, for example so far: approx 12 meadowlarks, 18 W. Kingbirds, 2 eastern Kingbirds, 3 small flocks (15-20) redwings, 1 pied-billed grebe, no ducks, 7 night hawks. ^(one chased a horned owl) Some species records are: 065.0 badger road kill and redtail, 159.0 badger road kill, 162.0 redtail hawk, 164.0 first night hawk, 266.0 badger road kill. In the area beyond Salina, there is more marshlands associated with draws and drainage systems. Country as green as spring. Ponds higher in eastern part of Kansas than central Kansas arrived Cedar Bluff Reservoir (N side shore area) at 9:15 P.M. at mileage 58288. Tomorrow will travel to Castle Rock.

Cedar Bluff Reservoir, North Shore Area, Trege Co., Kansas

July 27, 1971

Wind strong from S all night and some velocity averaging 18 MPH but gusts to 25 MPH. Temp this morning 66°F. at about dawn, redwing blackbirds moved S into lake area.

Other birds in lake area area 2 great blue heron, 2 Herring gulls, 3 western sandpipers?, 5 killdeer, Eng. sparrows.

Will keep record of birds from here N on 147 to jog in road, thence W to Trege Center, thence W to Castle Rock. Left 7:35 A.M.

Birds to jog (147) meadowlarks 1-1-4-1, pheasant 8-5, mourning dove 1-2-1, barn swallow 1-5, road kill jack rabbit, sparrow hawk, 13 lined ground squirrel 1. W from 147 (295.0 mileage)

shrike 1-1-1-1-1-1-1-1-1, mourning dove 1-3-6-2-1-1-2, barn swallow 1-5-1-2, eastern kingbird 2-5, meadowlark 1-2-2-1-5, horned lark 4, western kingbird 4-1-1-2-1, killdeer 4, redwing 2-2-1-3, vesper sparrow 1, bobwhite 1, pheasant 1, Eng sparrow usual and same distance from habitation.

Trego Center (mil 305), Baltimore Oriole, mourning doves 1-2-1-1-1-1-1
 3-2-1-1-1-2-1-1-1-1-1, Cowbirds 12-8-4, meadowlark 1-1-1-1-1-1,
 shrike 1-1, brown thrasher 1, western kingbird 2-1-2-1-1-2-3
 vesper sparrow 1, barn swallow 1-4-2-1, redwing 5-1-1,
 lark bunting 2-1-8, Crossing N-5 highway at mileage 313.
 western kingbird 1-1-2-1-1-1-1, meadowlark 1-1-1-1-2-1-1-1-2-1-1-2-1,
 lark bunting 1-2-1-3, barn swallow 1-2-1-1-4-1-1-2, Cowbirds
 15, mourning dove 1-2-1, Swainson hawk 1, sparrow hawk 1,
 magpie 8, yellow-shafted flicker 1, lark sparrow 3, end census
 at highway 523 at mileage 318. Some selective observations
 Swainson hawk 336, sparrow hawk 340, lark bunting one flock
 approx 80 birds mixed in nest and age, grouse 2, 13 lined ground
 squirrel 344, Swainson hawk 348, red headed woodpecker 349,
 Quinter 352 at 10:50 A.M. On this route visited Castle Rock.
 8 mourning doves among cliff as was tree some 15 years or so ago.
 road same. On interstate 70 noted red tail at 354, burrowing
 owl at 366, first and only ducks 382 near Qabley, Swainson
 hawk 412,

at Brewster turnoff 431 will make census of meadowlark & w.
 kingbird to Edson 441

meadowlark

not a single bird except a roven at 438.
 w kingbird. This area mainly corn or plowed
 field, There is a definite dearth of birds of any
 description thru this low crop area.

Continued w to Denver. Everywhere green. Two
 red-tailed hawks, one marsh hawk & 2 sparrow hawks
 were observed between the Kansas State line and Denver.
 Camped N of Denver on Interstate 25 at lakes (barrow pits)
 at Longmount turnoff. Birds observed in area N of Denver
 to here are: avocet, California ^{great blue heron} gull, yellowheaded blackbird,
 white-faced glossy ibis, redwing, ^{w. yellowthroat} killdeer. Strong
 wind and rain this evening. Done

Interstate 25, Longmount turnoff, N Denver, Colorado.

July 28, 1971

Temp this A.M. at 7:00 56° F. main early morning flight of
 birds, mainly blackbirds, to S across area. Left at mileage
 58695. One group of approx. 400 Calif. gulls moved SE in
 one flock. Continued N to Cheyenne & visited Norman
 Spear, thence W on 80 to top of mt at Lincoln Memorial.

enroute at mileage 805 noted a golden eagle on ridge to E. At about 3:00 P.M. made 3 hour trip to ridge N of Upper Tie Camp and continued E to Centennial. Traveled on upper ridge most of the way. Birds and mammals observed were: robin 3, Steller's jay 2, chipmunks 6, marmots 5, white cr. sparrow 4, pine siskin 3, horned lark 4, raven 8, ^{audubon warbler + 2 young,} mule deer 2 ♂ (they were standing under a lone ponderosa pine in plain view and separated from other conifers by 1/10 mile, rock wren 1, badger digging 12, gophers common, black gray headed juncos 12 in one group. Frequent rain on trip & wind. This evening fog in camp from E. Ponderosa pine & limber pine dominant.

Upper Tie Camp, Wyoming
July 29, 1971

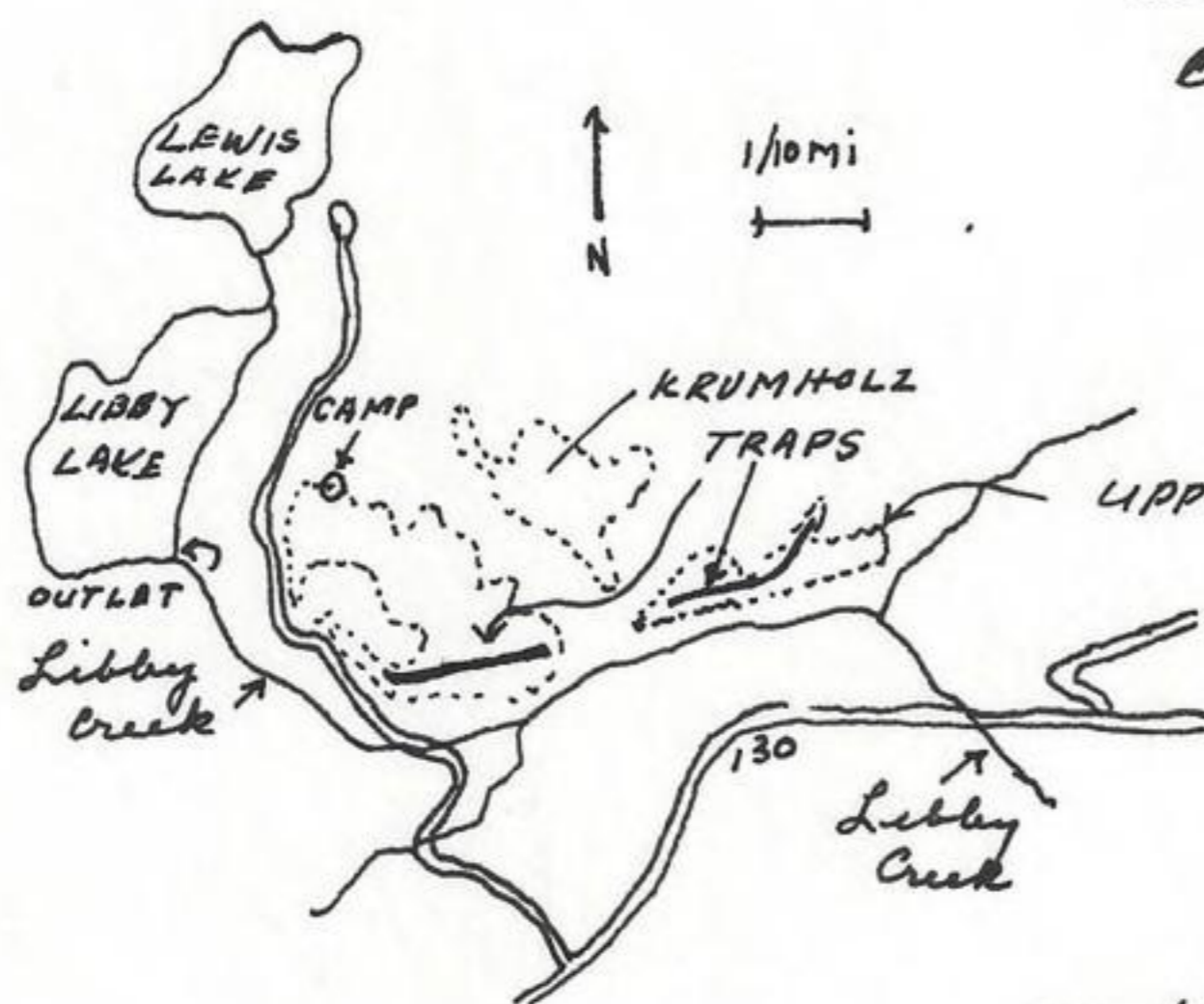
Min temp last night 38°F. Temp 9:00 A.M. 42°F. Left at mileage 588 35. Continued to Laramie, thence W to Snowy Range on route 130. At junction 80 and 130 at 11:35 at 855 mileage. At 857 at airport started complete census to Centennial. lark bunting, 3 swallows, 3 horned larks, 4 swallows, 2 antelope, mileage past to Centennial 22 miles, lark bunting, 4 horned larks, 3 horned larks, 3 horned larks, horned lark, horned lark, 7 horned larks, swallow, 2 swallows, 5 swallows, horned lark, horned lark, horned lark, road killed jackrabbit, lark bunting, redtail like hawk, horned lark, mileage 877 Jacks Place at lake noted 32 swallows, family mallard ducks, 3 killdeer & Forster tern, Citellus, 879 Little Laramie River, 4 cowbirds, sparrow hawk, 886 Centennial and end of census, Continued to Mirror Lake (upper half thru fog) at 900 mileage.

Hydraulic steering hose defective so drove to Saratoga for repairs. At point where road leaves canyon and enters slopes to N Platte River, a grouse (blue?) started to cross the road and ~~hit~~ the car ran over the bird but did not touch it. From the mouth of this canyon to N Platte River counted the following birds & mammals: 1 redtail, magpie, 5 sparrow hawks, 1 sage hen, 8 Citellus, 1 robin, 3 mourning doves. On West side of river to main highway 4 1/2 miles to N observed 8 prairie dogs in areas where previously, ¹⁹⁴⁸ there were colonies of 50 or so. On return noted 5 antelope between Saratoga and the above noted area where highway 130 enters fork canyon. mule deer noted at 1/2 mi. down road from Silver Lake turnoff.

Birds in area of ^{Libby} ~~Lewis~~ Composite are: Clark's Crow, Canada jay, Cassin's purple finch, robin, white-crowned sparrow.

Informants in camp report golden eagle nest NE of Glacis Lakes about 100' down from ridge of Browns Peak. They also observed a Wilson phalarope near Lauder. By evening most clouds & fog left area. Photo ~~710723-1~~ 710723-1 of Annette at table at camp.

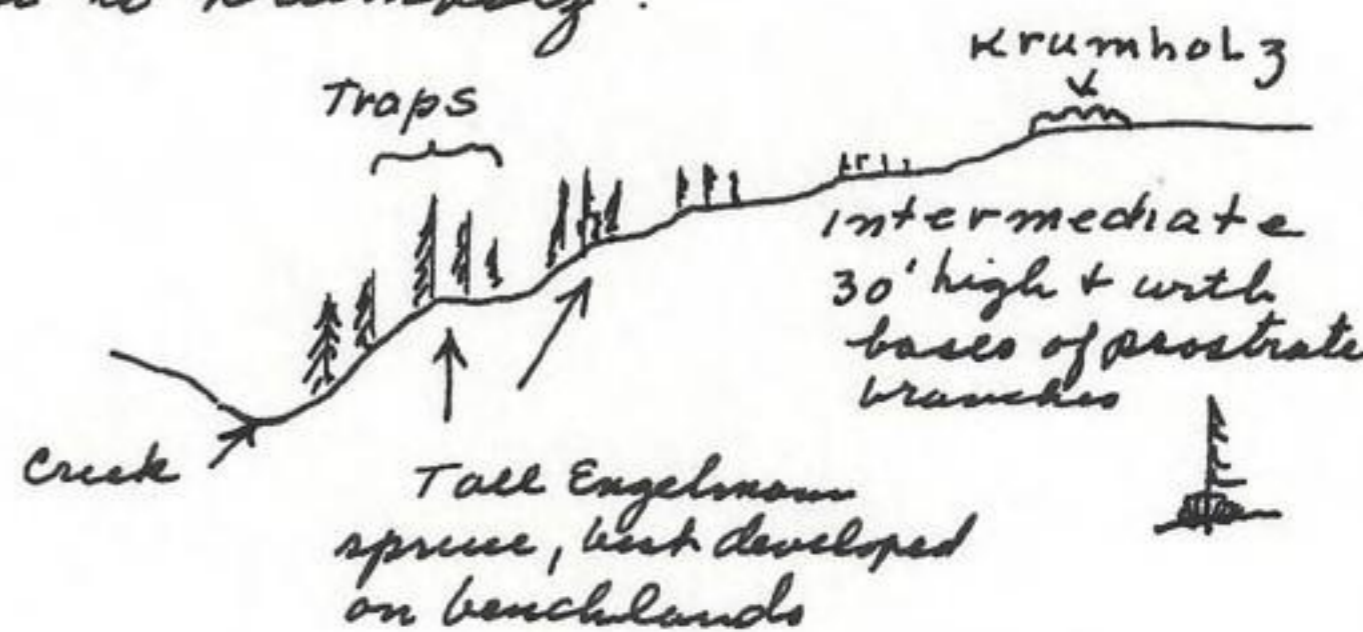
At approx 2:00 P.M. at Libby Lake Camp (trapping locality designated as Libby Lake, 4/10 mi. E and 1/10 mi. S of outlet, Snowy Range, 10680 ft., Albany Co., Wyoming) set 100 traps, 20' apart, in a linear and nearly horizontal line thru the Upper Hudsonian zone. The locality represents the center of the line. The area is as follows: (traced from U.S.E.S. map)



Upper most Upper Hudsonian or montane. The area is protected topographically by canyon and as a result is better developed than the surrounding flatter areas which are trees that are sparse with open savannas or are krumholz. The trees are Engelmann spruce, and in the trapping area are 80-100 feet high. To the north the trees become 30' high and then to krumholz.

The trees on trapline are the dominant Engelmann spruce. A former period produced large dead trees, some 15 ft in circumference, the later growth now considerably smaller but some approx

12 feet in circumference. There has apparently be a period more favorable for spruce growth. The density is irregular because of topography, being most favorable on or just over the brink of the benchlands. Considerable down timber & dense local growth produces a ground cover that is not usually found in Climax spruce. This partial open condition is drier with more light and wind than is the climax. It is this condition that could probably be considered an ecotone between the Climax spruce and krumholz. At this time of year, which proves to be an exceptionally wet year, the ground is covered with approx 3% or more of snow. Collected animals from ^{among trees} trapline in evening 1/2 hr before sundown.



Libby Lake, 4 1/10 mi. E and 1/10 mi S of outlet, Snowy Range, 10 ~~580~~⁶⁸⁰ ft.,
Albany Co., Wyoming

July 29, 1971

710829-1	<i>Phenacomys intermedius</i>	149-34-18-15-44 gms ♀ ^{suckling} 2x4 emb, 17 mm
710829-2	" "	146-34-18-14-39 gms ♂ Testis 9 mm
SK. ON 710829-3	<i>Clethrionomys</i>	148-48-18.5-14-25 gms ♂ testis 12 mm
m 710829-4	"	133-35-18-13-20 gms ♀ ut normal
m 710829-5	"	143-37-18.5-14-32 gms ♀ 3x2 emb 14 mm
m 710829-6	"	125-35-17-13-20 gms ♂ testis 11 mm
m 710829-7	"	128-36-18-12-17 gms ♂ testis 10 mm
710829-8	<i>Eutamias minimus</i>	193-81-30-15-45 gms ♂ testis 5 mm
710829-9	" "	202-92-31-14-44 gms ♀ ut normal.
710829-10	" "	206-93-31-16-45 gms ♂ testis 5 mm
710829-11	" "	197-88-30.5-16-45 gms ♀ ut. normal
710829-12	" "	185-71-30-13-55 gms ♀ 3x2 plac scars
710829-13	" "	198-89-32-15-45 gms ♀ ut normal
710829-14	" "	198-87-30-15-41 gms ♂ testis 5 mm
710829-15	" "	196-86-30-15-44 gms ♂ testis 5 mm
710829-16	" "	197-88-31-15-42 gms ♀ ut. normal
710829-17	" "	198-89-30-16-56 gms ♀ 3x2 plac scars
710829-18	" "	195-82-31-15-44 gms ♂ testis 5 mm

The above mammals were collected from the Engelmann spruce community between the time of setting of traps, ^{2:00 P.M.} and the time the sun was just starting to set behind the high Snowy Range to the west. Sunlight was still in the area. The *Phenacomys* and *Clethrionomys* were freshly caught, the *Eutamias* in various condition of trap capture. The chipmunks were generally distributed along the line. The *Phenacomys* showed association with the chipmunks and were from drier more exposed situations than *Clethrionomys*. Birds observed along trapline (original setting and evening inspection) are: 3 robins, 2 ruby kinglets, 3 Canada jays, 2 pine grosbeaks, 2 golden mantled ground squirrels, 8 gray-headed juncos, 15 pine siskin, 1 Solitaire, 5 white crowned sparrows, 2 Cassin's purple finch, 2 Audubon warblers, humming bird, flycatcher (eye-ring, no bars, long heavy bill), 3 bluebirds. The mule deer use the trapping area for daytime resting and thourfare, spending the early morning & evenings in open parks adjacent to area. The open park swales are 30% in snow and are melting, producing dead areas with gradual transition into spring? flora. In fact the season is so late this year that the Forest Service is not going to officially open camps. min temp last night 30°F. 44° at 8:00 A.M. Temp at 6:50 = 48°F

Left Libby Lake Camp at 4:20, mileage 59023. At point where a deep canyon enters side of valley at 59045, made census across sloping valley to North Platte River, thence N to Saratoga and the return. 5 barn swallows, cowbird, it is evident that swallows will complicate census so will record as estimate only at end of census. Cowbird, 3 redwings, Citellus road kill, Citellus rd. kill, 5 redwings, cowbird, sparrowhawk, sparrowhawk, magpie, sparrowhawk, one of the irrigated grass pastures has now developed into willow from 3'-5' high. Elk Hollow, duck in pond, redwing, 59054 North Platte River, 4 crows, magpie, 3 mourning doves, 4 mourning doves, junction 230-130, approx 80 mourning doves in compact group on fence line, along side of road, no prairie dog active, night hawk. Continued N to Saratoga and on return at 8 mi. S of Saratoga not one adult and 2 juvenile redtail together on telephone poles, in same area noted ♀ and 2 juvenile antelope and another group of 2 adults and 1 juvenile. At junction of 230-130 noted redtail over prairie dog town. 59073 North Platte River. Across sloping valley recorded 2 adults and 1 juvenile antelope and 8 at mouth of canyon.

At a point at beginning of open valley E of front ridge, noted a road kill mink. This animal was between dry sagebrush plains and valley of willows and beaver dams. Five magpies fed on this animal. The ponds and open fields have changed considerably since first photographed years ago. The ponds are crowded with vegetation and willows are invading. The entire valley is developed into willow from beaver activity. Apparently the beaver are at a high because of the complete utilization of roadside drainages, there being dams every 20-30 feet. It is surprising that the large ponds are not being kept open by these beaver populations. The presence of adult and young ducks would indicate a breeding population of these birds. Continued up canyon. Because of the new road there is not the numbers of small mammals observed. Continued to Libby Lake Camp and set traps among Engelmann spruce below camp as of the setting of July 29, 1971.

Libby Lake, 4/10 mi E and 1/10 mi S of outlet, Snowy Range, 10680 ft.,
Albany Co., Wyoming.

July 30, 1971

Collected the following mammals from trapline set July 29 ^{night}

	<u>710730-1</u>	<i>Phenacomys intermed.</i>	150-38-19.5-14-47gms ♀ 4x2 emb 14mm
	<u>710730-2</u>	"	154-37-19-14-46gms ♀ 2x2 emb 19mm
	<u>710730-3</u>	"	145-35-18-15-40gms ♀ 3x2 emb 16mm
	<u>710730-4</u>	"	107-25-17-13-16gms ♀ wt normal
mostly	<u>710730-5</u>	"	102-24-17-13-11gms ♂
	<u>710730-6</u>	"	101-23-17-13-12gms ♂ testes 5mm
SKU	<u>710730-7</u>	<i>Clethrionomys</i>	150-45-19-15-28gms ♂ testes 12mm
	<u>710730-8</u>	"	145-43-19-14-28gms ♂ testes 11mm
SK. only	<u>710730-9</u>	"	146-45-19-13-25gms ♂ testes 11mm
SK1	<u>710730-10</u>	"	138-38-18-14-23gms ♂ testes 12mm
	<u>710730-11</u>	"	147-49-19-14-28gms ♂ testes 12mm
SK. only	<u>710730-12</u>	"	152-46-18-14-28gms ♂ testes 12mm
	<u>710730-13</u>	<i>Sorex</i>	101-43-13-8-5gms ♀ wt normal
	<u>710730-14</u>	"	105-43-13-8-5gms ♀ wt. normal
	<u>710730-15</u>	<i>Eutamias minimus</i>	211-93-31-16-62gms ♀ suckling
	<u>710730-16</u>	"	209-96-31-15-59gms ♀ lactating scars ^{3x2 plac.}
	<u>710730-17</u>	<i>Peromyscus maniculatus</i>	144-64-20-18-15gms ♂ testes 8mm
m. only	<u>710730-18</u>	"	148-64-20-17-16gms ♂ testes 8mm
	<u>710730-19</u>	<i>Eutamias minimus</i>	201-87-31-14-62gms ♀ 4x3 plac scars ^{it}
	<u>710730-20</u>	<i>Eutamias minimus</i>	210-92-32-14-50gms ♀ 4x2 plac scars
	<u>710730-21</u>	"	192-89-31-13-40gms ♂ testes 5mm
	<u>710730-22</u>	"	202-91-31-15-45gms ♂ testes 5mm
	<u>710730-23</u>	"	193-87-30-14-39gms ♂ testes 5mm
	<u>710730-24</u>	"	194-88-31-15-44gms ♂ testes 6mm
	<u>710730-25</u>	"	202-92-31.5-15-43gms ♀ wt normal mammary not developed.

This chipmunk had 10gms of mammary tissue and, completely covered ventral area of animal.

The traps will remain in same position for another day & night. Mammals 710730-20 to 710730-25 were captured during the daytime of this date (July 30), all others are night catches, late twilight to sunrise.

The *Phenacomys* were captured among tall Engelmann spruce on ground associated with down timber such as along fallen trees, bases of roots or among dense growth of dwarflike spruce. One was captured at the base of a rock cliff (20' high) and some 30' from trees but forming a connecting lane between groups of trees. The *Phenacomys* preferred drier and more open situations than *Clethrionomys* and their preference

of community is correlated with *Eutamias* but perhaps selecting less exposed situations.

At noon made reconnaissance from camp to base of Brown Peak and then return. Will record all birds and mammals and take certain color photographs of various communities. Observations are consecutive. White crown sparrow of 2 adults + 3 young of adult size. *Eutamias m*, *Eutamias m*, parnassian butterfly common. Photo 710730-31 of Sugar Loaf mountain showing Sugar Loaf quartzite and Medicine Peak quartzite of arid remnant of range. Dwarf spruce in foreground. Fresh badger? digging with hole 200 mm in diameter and 3 bushels of excavated soil. Photo 710730-32

same as above but with quartzite erratics in foreground. These boulders have been transported from range in background and are lying on the Nash formation, Krumholz in background. White crowned sparrow singing, robin, white crown sparrow. Arrived at 2 connected lakes. Water flowing between them at 1 quart per 2 seconds.

Photo 710730-33 of the first lake and of ice on north-East end. Water in stream above has been 1 1/2 feet higher and on vegetation than at present. White crown sparrow, robin, white crown sparrow, robin, 3 mt bluebirds.

Base of talus slopes of Brown Peak at point where ridge connects with mt. Sugar Loaf Peak in full panorama

Photo 710730-34 of snow field and Medicine Peak in background.

Photo 710730-35 of ~~Sugar Loaf Peak in full panorama~~ ^{Medicine Bay Peak and snow fields} In crossing rock slide to next ridge to W noted: 2 marmot, 4 pika, robin,

3 leucosticte, 7 pipit, 2 Rocky mt. grosbeaks feeding among rocks,

On ridge to W noted 3 leucosticte, 4 pipit, 3 pika, marmot. The

dwarf willows & vegetation is lush at base of talus slopes. From this vantage ridge, ^{photo 710730-36 to S.} dropped down to trail. At next lake made photo 710730-37

of ice receding from NE shore, lake 1/2 open. 2 white crown sparrow here. Photo 710730-38 to 40 are of ice crevasses at point where lake

waters drop to next lake in chain. Photo 710730-41^{NE} of South Hop

Lake and ridge to W. Photo 710730-42 of snow field lake & ridge of

above. Photo 710730-43 of S. Gap Lake & snow patterns. Photo

710730-44 and 45 are of iceberg at outlet of lake. 3 pipits in area.

At pass S of Gap Lake were 5 pipits. Most pipits are calling and concerned of the area. Photo 710730-46 and 47 of Gap Lake & mts to N from

ridge. From this pass down to lower lake noted 13 white crown sparrows, 2 robins, 4 pipits, marmot. One pipit fed young from insects taken from ice. A Herring gull on lake. Photo 710730-48 toward

SW gap of Gap Lake Pass. On this lower lake ice completely blocking S end. The snow profile indicates

snow blowing off lake to landward.

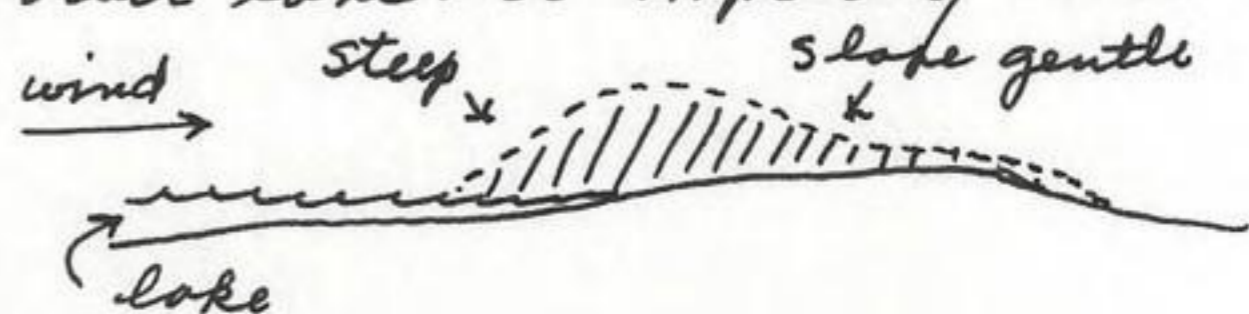
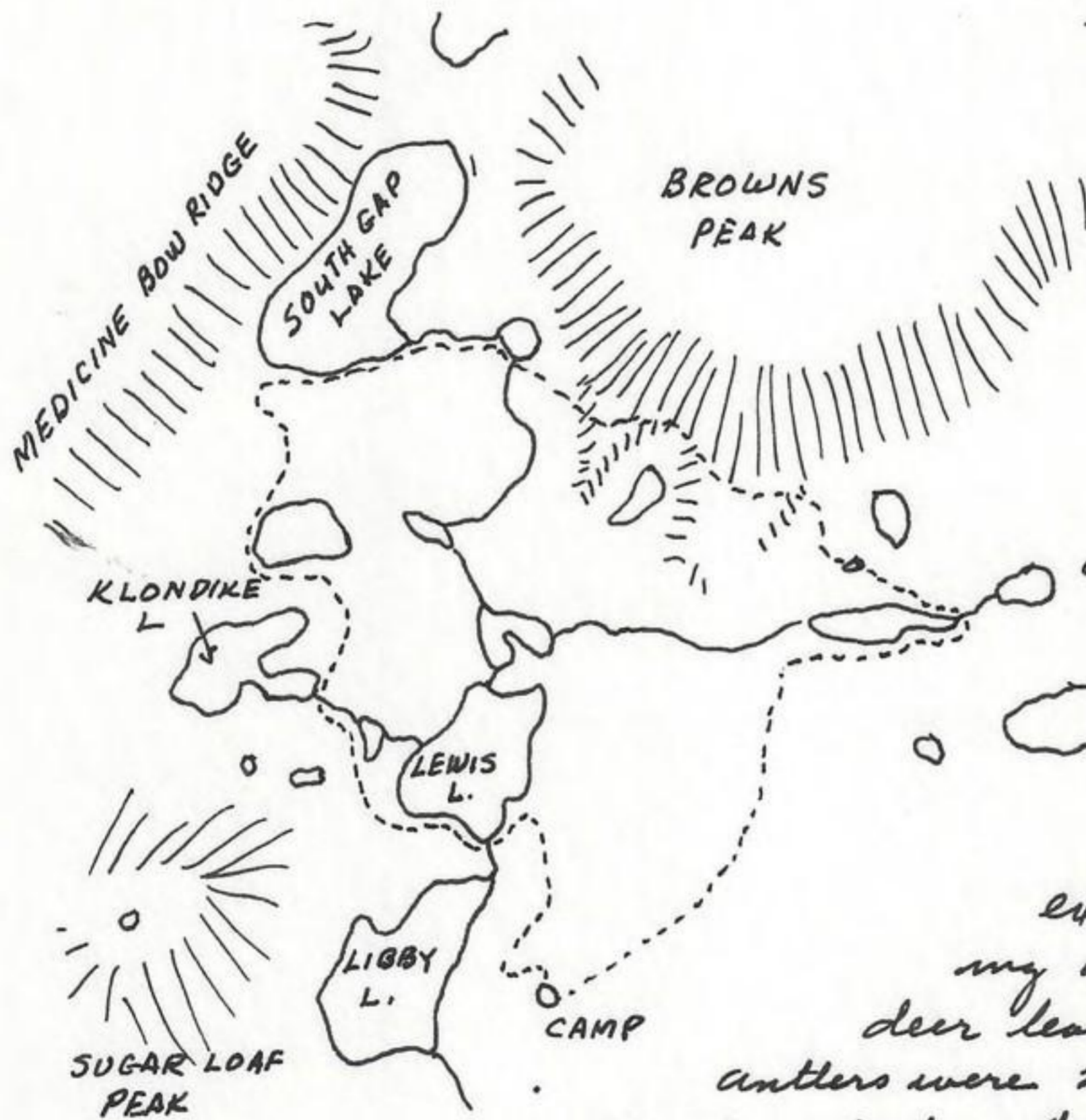


Photo 710730-49 showing this profile of snow distribution. Photos of ice crevasses show initial break through of ice and then secondary crevasse formation. Photo 710730-50 of ice on edge of lake with columbines in foreground. N end of Medicine Bow Peak ridge in background. 2 white crown sparrows. Photo 710730-51 of ice crevasses on Lewis Lake. 2 white crowned sparrows, + 2 robins. Photo 710730-52 of Lewis Lake + Medicine Bow Peak from outlet area. Photo 710730-53 of Libby Lake with Sugar Loaf Peak in background. Photo 710730-54⁵⁶ of Nash Formation at camp.



In summary the principle bird in Krumholz + conifers is the white crowned sparrow, on open exposure, especially pass, the pipit. The leucosticte are high on rock slides. Robins seem to be common and are generally distributed. Snow + ice masses are distributed according to wind and catchment basins or slopes. marmots + pika are found in certain select areas and absence elsewhere. For July + near August this country is exceptionally late. This evening on the trapline noted 3 mule deer leave area along trapline. The antlers were 2 point, 3 point + 4 points and

were in velvet. The measurement of imprints of the three deer were 62 mm, 71 mm and 86 mm. The 3 year old used the initiative in forced curiosity and leading the other two away. The 4 year old always followed. There are many resting or bedding areas along the trapline. Raven flew over area and called.

Noted this morning's preparation of mammals that the *Peromyscus* held large rectums with capacity to store from 10-15 fecal pellets, each pellet averaging 4x2 mm. no 710830-3 held 15 pellets. The chipmunks seemed to have very small uteri for such an animal so reproductively active. no 710830-16 had uteri measuring 14 mm long.

The additional photos were taken later this afternoon

- 710730-50 Annette at camp table, snow to top. min temp last night 36°F
~~710730-51 gopher diggings~~ 710730-61 Annette near camp. rained last night
~~710730-52 Nash Formation~~ 710730-62 Camp at Libby Lake
~~710730-53 ibid~~ 710730-63 Libby Creek thru snow.
 710730-54 ice on creek at camp
 710730-55 Nash Formation + flowers Engelmann spruce and receding snow.
~~710730-56 Annette, snow + lake at camp.~~ 710730-66 gopher diggings at camp at Libby Lake
 710730-57 Phlox.
 710730-58 flower elephantella.

Libby Lake, 4 1/2 mi. E and 1 1/2 mi. S of outlet, Snowy Range, 10680 ft.,
Albany Co., Wyoming

July 31, 1971

Collected the following mammals from original trapline at 6:00 A.M.

	<u>710731-1</u>	<i>Phenacomys intermedius</i>	136-29-18-15-32 gms ♂ testes 9 mm
	<u>710731-2</u>	"	153-34-19-16-40 gms ♀ 1x3 plac. scars
	<u>710731-3</u>	"	156-36-19-16-41 gms ♀ 6x2 emb 5 mm
	<u>710731-4</u>	"	101-22-17-12-12 gms ♂ testes 4.5 mm
	<u>710731-5</u>	"	99-22-17-12-12 gms ♀ ut. normal
SK. only	<u>710731-6</u>	"	98-23-17-12-11 gms ♀ ut normal
	<u>710731-7</u>	<i>Clethrionomys</i>	149-42-19-15-27 gms ♂ testes 12 mm
	<u>710731-8</u>	"	132-37-18-13-20 gms ♂ testes 10 mm
m. only	<u>710731-9</u>	<i>Peromyscus maniculatus</i>	148-61-20-15-16 gms ♂ testes 8 mm
m. only	<u>710731-10</u>	"	147-60-20-15-15 gms ♀ ut. normal
SK. only	<u>710731-11</u>	<i>Sorex</i>	95-35-11.5-7-3.5 gms ♂ test 5 mm.

The above mammals from trapline set July 29 and left in same position. In addition to usual birds observed a Hammond flycatcher. Pine siskins were feeding on surface of snow. The gophers have been extremely active under the snow of winter but at present are not very active with only occasionally a fresh pile of dirt. It is a general observation that gophers use overhead protection of snow masses for winter protection as most diggings are in areas just recently freed of snow. The most active gophers now are in areas of usual snow cover and not in areas of snow accumulation from wind. Winter snow cores vary in diameter and distribution, some long and linear while others with short tunnels radiating from central core of dirt. Some tunnels have followed along base of rocks and ledges, some along side of fallen trees where additional open space under logs have been used to place dirt. Smaller rocks & logs are crossed without deviation. Most cores are in open areas but some occasionally penetrate stands of spruce for short distances. Badger holes are frequently walled off by gophers. Erosional channels from gopher tunnels are common, some used by microtines. Did not see evidence of snow being brought to surface thru snow. One hole in snow (140 mm in diameter) may have been made by pine marten.

Libby Lake, Snowy Range, Albany Co., Wyoming
Aug 1, 1971

drove to Centennial for gas - 33 miles. This evening set 50 traps east of camp. Observed the 4 & 3 pointer deer on top of ridge. min temp this last night 39°F

Libby Lake, 4 1/10 mi E and 1 1/10 mi S of outlet, Snowy Range,
10680 ft., Albany Co., Wyoming

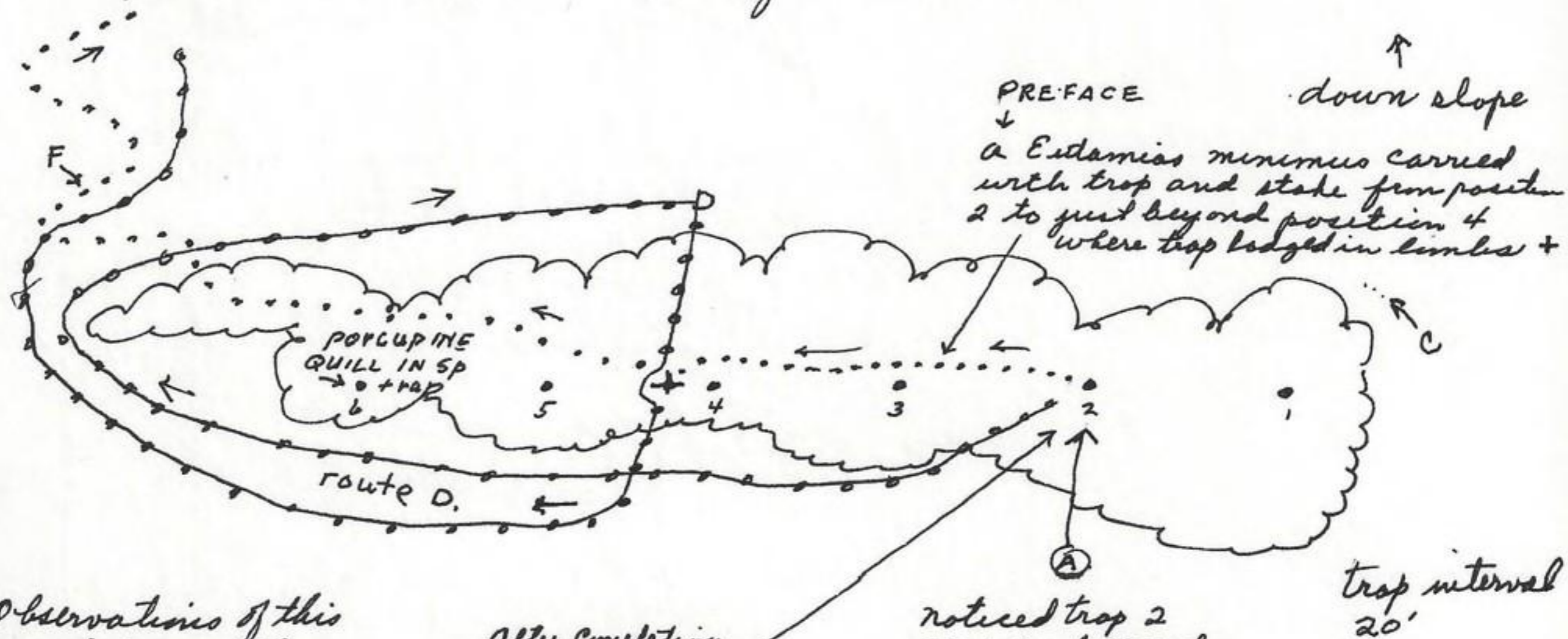
Aug 2, 1971

Specimen ID	Species	Measurements	Sex	Notes
710802-1	<i>Phenacomys intermedius</i>	150-49-18-14-46 gms	♀	2x5 emb 22 mm wt of emb = 16 gms
710802-2	Sorex	105-46-14-8-4.5 gms	♀	wt. normal
710802-3	<i>Phenacomys intermedius</i>	105-24-16-12-13 gms	♂	testis 5 mm
710802-4	<i>micratus</i>	152-50-20-12-24 gms	♀	wt. enlarged
710802-5	<i>Eutamias minimus</i>	[]-84-32-[]-[]	♀	suckling

This specimen was partially eaten by a pine marten, which consumed the anterior part of the chipmunk. The tail, hindfeet and pelvic parts were not consumed or mutilated but all parts of the animal would have been consumed if the activity of the marten had not been interrupted.

The above mammals were from 50 traps set among Engelmann spruce, sparsely distributed on benchland. The conditions were intermediate between the large spruce directly below and the dwarf Krumholz above. Extensive snow field on this exposure.

The circumstances of the encounter of the pine marten mentioned under specimen 710802-5 is as follows:



Observations of this animal were at close as 15' and usually at 40'. It was defensive about its prey, returned to its bell in spite of my presence. It showed considerable curiosity about of my presence, too.

at point F
it urinated
on a rock with
4 leg stance.

after completion of trapline (B) returned to trap position 2 to recheck last trap and noticed the pine marten for the first time at position C, running across snow. In order to intercept the marten moved along route D to position D where I saw the marten with chipmunk in mouth at point marked +. It left without remains of chipmunk and moved East. I moved to position + and examined remains of chipmunk which had been removed from trap and then immediately gave chase for closer examination of the marten.

min temp last night 44°F

East slope of Sugar Loaf Peak, 11080 ft., Snowy Range, Albany Co., Wyoming
Aug 3, 1971

Collected the following mammals and birds from trapline set yesterday afternoon: (min temp last night 39°F).

710803-1	<i>Chlorura chlorura</i>	12 ex. culmen. 180+L, 80 tail, 73 wing, 26 tarsus ♂ im.
710803-2	<i>Phenacomys intermedius</i>	121-26-18-13-18 gms ♀ ut. enlarged
710803-3	<i>Sorex</i>	110-45-13-8-5 gms ♀ ut. normal
710803-4	"	111-44-13.5-8-4.5 gms ♀ ut. normal
710803-5	<i>Clethrionomys</i>	143-43-18-13-23 gms ♂ testes 11 mm
710803-6	"	128-35-19-13-20 gms ♂ testes 10 mm
710803-7	"	146-43-17-13-23 gms ♂ testes 11 mm
710803-8	<i>Peromyscus maniculatus</i>	158-46-20-17-23 gms ♂ testes 8 mm
710803-9	"	148-66-21-16-18 gms ♂ testes 7 mm
710803-10	"	148-62-20-16-18 gms ♀ 5x3 emb 4 mm
710803-11	"	149-61-20-16-19 gms ♂ testes 10 mm
710803-12	<i>micratus</i>	173-61-20-13-39 gms ♀ 2x4 emb 8 mm
710803-13	"	166-54-20-12-35 gms ♀ 3x4 emb 15 mm
710803-14	"	172-61-21-13-36 gms ♂ testes 11 mm
710803-15	"	146-48-20-12-23 gms ♀ 6x0 emb 5 mm

Late yesterday afternoon set 100 traps in krumholz on east face of Sugarloaf Peak in the highest growth. There is some isolated patches of very low growth beyond but this is mainly on the SE slope. The traps were set around the periphery of the krumholz from pass on left side to top of community, then across top and down right side. The second set of traps were thru areas in center of krumholz between the previous defined areas. Traps were placed 20' apart. The left side of this patch supports upright trunks of Dwarf Engelmann spruce whereas the areas to the right are all prostrate spruce. To the left of this patch is supplied with more moisture than is the area to the right which is rock slide. This krumholz is one of the highest in the Snowy Range. The best example of dwarf spruce in on bench below talus of the peak. In both areas the droppings of the pika were numerous. They were winter accumulations and were removed from rock slides by as much as 200 feet. These droppings were of this size \circ . It is evident that pika use dwarf spruce which are adjacent but not directly associated with rock slide. The soil beneath the dwarf spruce is dry and without vegetation. Birds in area are:

pipit - most common bird & feeding young. They are in open areas adjacent dwarf spruce, especially on pass below. They called continuously and frequently visited the intruder.

robins - 4 observed walking beneath Krumholz. One adult was with ^a young one.

pine siskin - group of 9 feeding on snow.

white crowned sparrow - observed 2 groups of 3 each.

Eutamias. 2 noted at highest point. Three others on ridge leading up to area from Lewis Lake.

mule deer - tracks common, especially on benchland below.

marmot - only 2 observed

pika - 8 observed. Both the marmot & pika are quiet and inconspicuous.

As a general statement, and with the exception of the pupet, birds are uncommon in area. The green-tailed towhee (juvenile) was caught in a trap, and otherwise not observed active. This is a record for altitude of juvenile green-tailed towhees.

On way up to trapping area this morning (7:00 AM) observed the tracks of the pine marten crossing (upward) a snow field.

^{not size} The hind foot was of this size. The four feet were grouped together and the distance between groups was approx 2³ feet showing the weasel like pattern of navigation.

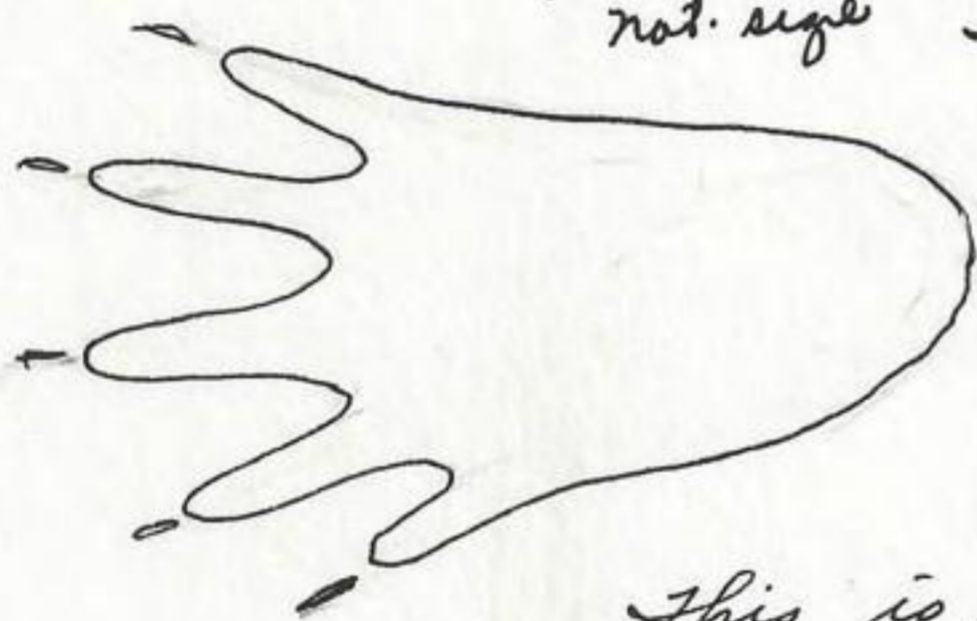
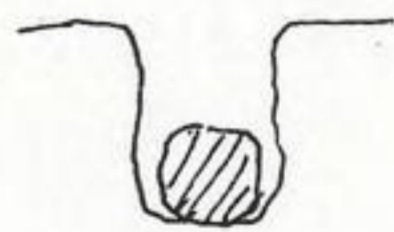


Photo 710803-16 was of this set of tracks.

This is the second piece of evidence that pine marten are in the area. Birdlife leading to trapping area are scarce. An adult & juvenile ^(2nd year) Herring gull circled the lake (Lewis). One excavation hole approx 10 feet deep support snow in bottom thus: whereas snow on the surface had been cleared by melting.



On a short trip on horizontal benchlands east of camp at Libby Lake in evening noted a hummingbird. The pine siskin are in groups of 3 to as many as 18. They feed on snowbanks, especially at base and sides. A family of six mountain bluebirds were among Krumholz near top of ridge. ^{Two} A male ~~blue~~ mule deer were in dwarf spruce near top and left by crossing open divide or ridge. These are the deer that spend the day among larger Engelmann spruce along Libby Creek to the S.

This evening set 50 traps in Engelmann spruce which were intermediate between the upper montane and Krumholz. Patches of spruce were more isolated than in trapping area below. Placed 25 traps in one isolated group of Engelmann spruce 30' diameter.

2/10 mi. E Libby Lake (outlet), 10800 ft., Snowy Range, Albany Co., Wyoming
 Aug. 4, 1971

Collected the following mammals from Engelmann spruce. These spruce are in more isolated groups with intervening open areas: 50 traps

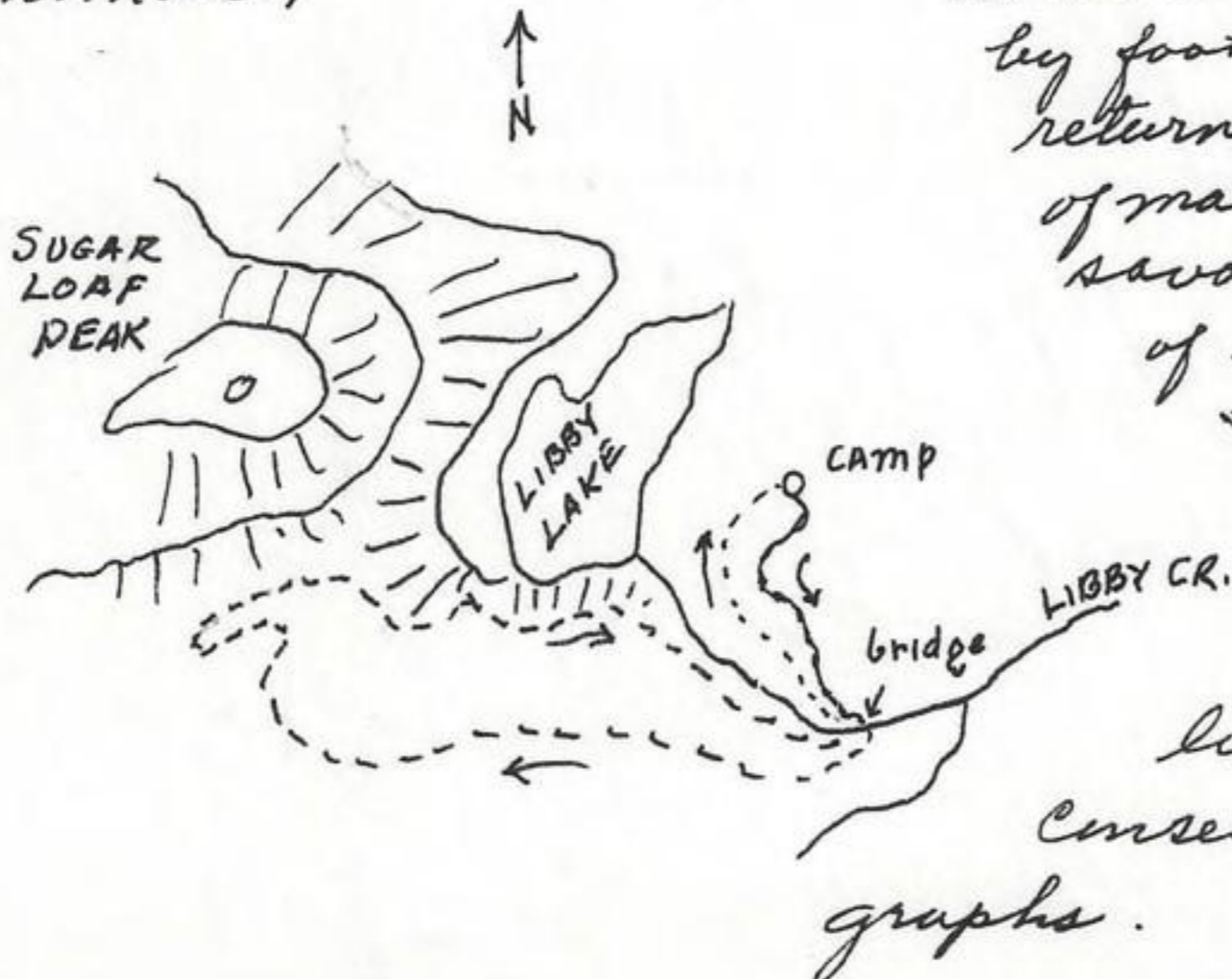
	710804-1	<i>Phenacomys intermedius</i>	135-31-19-14-28gms ♂ testes 8mm
	710804-2	" "	94-22-16-11-10gms ♀ wt. normal
SKU	710804-3	<i>Clethrionomys gapperi</i>	140-41-18-16-31gms ♀ 4x2 emb 3mm
	710804-4	<i>Eutamias minimus</i>	215-96-32-16-55gms ♀ 2x3 plac. scars

The isolated patch of spruce with saturated trapping (25), did not produce mammals.

The two *phenacomys* were 40' apart.

Noted 2 *Eutamias minimus* feeding in open fields (30' from trees) on the seeds of grasses which had been covered by winter snows and now being reexposed. The *Thomomys* are more numerous on S exposures than north-exposures and are associated with open field now been exposed from receding snow banks. It is difficult to appraise the population of gophers but I would say that practically every ^{usable} ~~usable~~ ground surface is being used and that in the course of 1/10 mile, one would see 30 centers of activity. I would judge these animals to be at a population high. It is not known where the snow is placed in the excavation of winter runways, and one wonders how these animals are adapted to withstand the low temperature of snow excavation, if, for instance, the snow is carved by the teeth and carried in pouches. What is the mechanics in making a 50' core of dirt.

Examined a porcupine skull from above area that measured: 125mm greatest length, nasal - occipital crest 120mm, zygomatic breadth 90mm, alveolar tooth row 29mm, ^{weight} weight of skull 101gms. There is considerable evidence of the presence of these animals.



at 11:00 A.M. Annette and I made trip by foot to S face of Sugarloaf Peak and return. Route thru isolated patches of mature Engelmann spruce and open savannas; close group spruce trees of smaller size and krumholz. The objective was to photograph the several communities and to check on percent frequency of birds and mammals. A list of all forms are recorded in consecutive order as are the photographs.

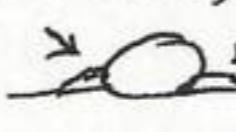

Census started from camp. 5 hermit thrushes. The birds are found in more open exposures than in other communities, feeding some distance from trees; 2 gray-headed junco, 4 pine siskin, 12 pine siskin, 2 gray headed junco, 2 robin. Examined a deer track 60 mm in length. Photo 710804-6 ^{below} bridge on Lehigh Creek showing stream thru snow channel. On slopes beyond bridge found a dry flattened specimen of pine siskin. gophers active and common on these extensive and flat exposures. 4 pine siskin, 3 gray-headed junco, gopher core into hollow log and along sides filling in the edges , *Tamiasciurus hudsonicus*. This is the first squirrel observed or heard but their activity is common in spruce forests. Photo 710804-7 of snow field and Krumholz; Photo 710804-8 of winter gopher activity with cores leading into lower level of spruce tree. One core set deeper than other. These gophers use such  places for deposit of dirt as it is an opening under snow. Chipmunk. Photos 710804-9 and 710804-10 of old spruce tree. Measured one of the largest deer track observed so far - 92 mm. Photo 710804-11 of old tree and dead branches inside forest. Photo 710804-12 of uprooted Engelmann spruce with exposed roots. 8 pine siskin on snow. mule deer, 8 pine siskin, 7 grayheaded junco, 2 hermit thrushes, 2 robins, Photo 710804-13 of root system of Engelmann spruce with rock enclosed. Elk track (old), 2 robin, 7 grayheaded junco, 2 mountain chickadees Photo 710804-14 of branches of dead Engelmann spruce. Robin, 2 chickadees, Photo 710804-15 and 16 of ponds and Snowy Lunge in background. These ponds are being fed by springs. Photo 710804-17 ^{and 18} of close-up of marsh marigolds. 6 siskin, 2 robins. Photo 710804-18 yellow ^{withering} flower. Photo 710804-19 asterlike yellow flower. Audubon warbler. Heard pika. At 12:45 cliffs fell on face of Snowy Lunge near Mirror Lake. Photo 710804-20 Snow field and Browns Peak. Granite outcrop can be seen. 2 chickadees, 4 siskin, 12 siskin, 8 grayheaded junco. Photo 710804-21 of *Chlamydomonas nivalis* on snow. Photo 710804-22 of same algae on rock and mass under water but near snow field. This red algae occurs from as high as there is snow to at least the snow on the glacial platforms along the Snowy Range, generally in isolated areas of the snow field. 2 robins, 4 junco, 12 siskins, 3 robins, 15 siskin Photo 710804-23 + 24 of Annette & ^{in one} me. Photos 710804-25 and 26 of Browns Peak & Annette in foreground. Photo 710804-27 of Browns Peak with toothpick log broken on rock. Photo 710804-28 of old Engelmann spruce. Photo 710804-29 ibid. 710804-28a of dead Eng sp. and young.

photo 710804-30 of Leby Lake 5 of Leby Lake. Photo 710804-31 and 32 of continuous gopher digging 55' long originating from local activity to terminal of 4 branches. It is interesting to speculate as to how this core is produced. There is no evidence of cores being directed upward thru snow to the surface. 8 siskin, 6 juncos. Photos 710804-33 ^{of dead spruce trees.} ~~34 and 35~~ of Leby Lake. 18 710804-34 Annette and Leby Creek outlet. 710804-35 outlet Leby Lake to NW. siskin, 2 Audubon warblers, 2 juncos, 8 pine siskin, 3 robins, 2 hermit thrushes. Back to ledge at 2:00 P.M. A marmot skull collected on bench at S end of Leby Lake measured: greatest length 85 mm, tooth row 20 mm, post-orbital width 16 mm, width tooth row 24. At camp Photo 710804-37 of Annette at table to be compared with 710729-1 of Annette at table when snow covered most of the table and campsite. The weight of winter snow (20') broke this table. 710804-38 Bee fly or dandelion at Leby Lake Camp.

Summary of birds and mammals in area.

clarks Crow	elk (tracks)
Canada jay	porcupine (skull)
pipit	marmota
leucosticte	pika
Herring gull	microtus
Cassins purple finch	pine martin
robin	badger
white-crowned sparrow	coyote
ruby-crowned kinglet	Thomomys
pine grosbeak	mule deer
gray headed junco	Peromyscus
Audubon warbler	Eutamias
humming bird	Peromyscus maniculatus
flycatcher	Sorex
mt. bluebird	Clethrionomys
green-tailed towhee	Tamiasciurus
pine siskin	
hermit thrush	
mt. chickadee	
solitaire	
raven	

Left camp at Libby Lake at mileage _____ and continued west toward Rawlins. From Silver Lake area to Brush Creek area noted 3 golden mantled ground squirrels and 4 Eutamias minimus. The area of long slope from mouth of canyon to N Platte River produced 13 magpie, 3 crow, 5 antelope as well as other kinds of birds. At the junction of 230 & 130 there were approx 200 mourning doves on fence line 300' long. There were many more than observed here a few days ago. ^{300 Wilson phalarope, ducks & Canada geese in ponds of Seratoga.} From 15 miles out of junction with Interstate 80, ^{to Highway 80} noted 25 jack rabbit road kills. Continued west on interstate to Sinclair where we camped.

Sinclair, Wyoming

Aug. 5, 1971

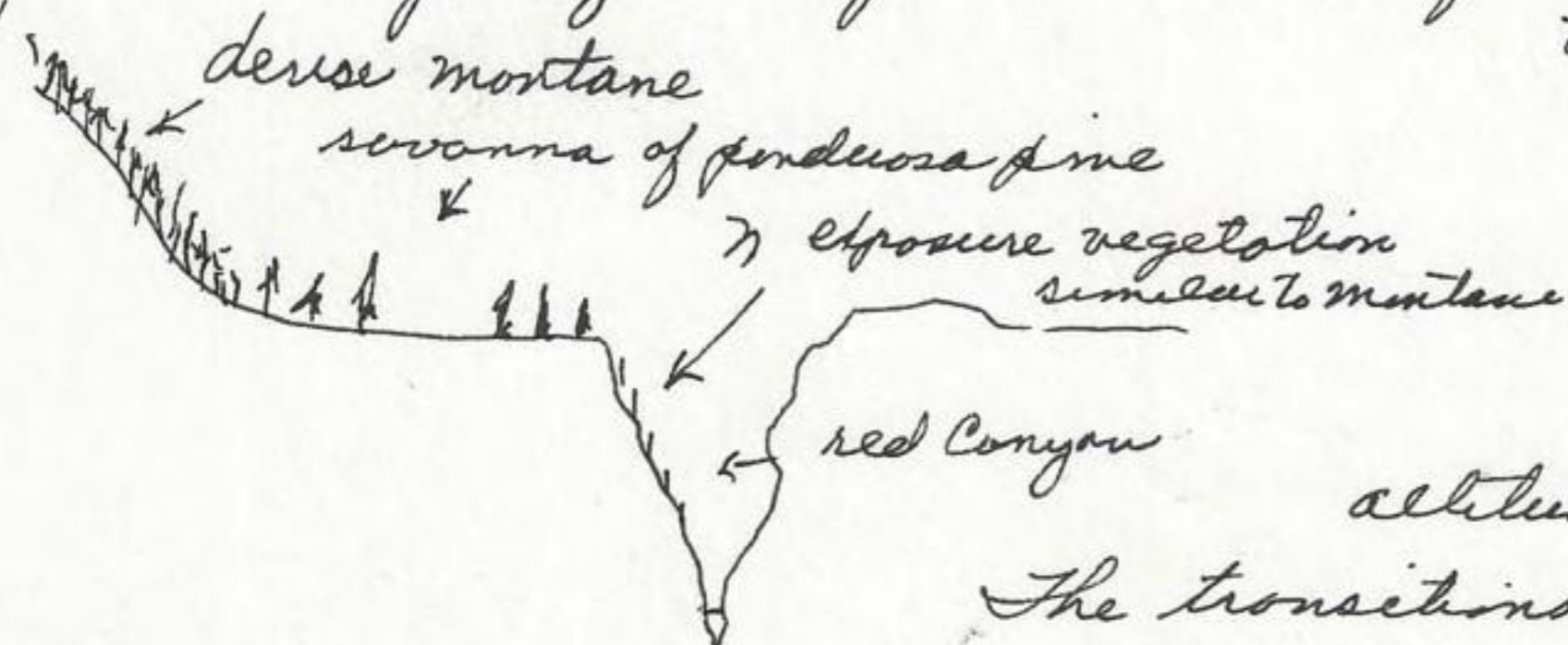
Continued W. at lake ^{1 mi} east of Rawlins noted 2000 Wilson phalarope in localized group in lake. Mallards, pintails with young. Arvicul & killdeer present. Continued W to Green River. At mileage ⁵⁹ 200 a badger road kill. 209 badger road kill. mileage 211 Sweet Water Co. line. 220 marsh hawk. Approx. 45 antelope between Rawlins and Boggs. 290 badger road kill. 328 Green River. Will keep census of rabbits (both jack & cottontails as difficult to determine) to Manila. 24 from Green River to Black Fork River at 342 mileage. Also 2 antelope and only 2 small birds in that 24 miles. 8 rabbits & no birds to Mc Kemmer junction at mileage 349. at 352 prairie dog town & prairie dogs. 14 rabbits to Buckboard at 354. red in sage flats for last 10 miles and closed area for desert plants. 11 rabbits to Squaw Hollow at 361. 23 rabbit to Anvil Hollow at 366. prairie dogs here. From 370 to 374 good prairie dog towns and continuous. ^{fresh} 18 prairie dog road kills associated with towns. This area is correlated with first occurrence of junipers on ridges. 7 Antelope road kills so far. 375 Hennip Fork. Eastern Kingbird. 375 Utah State line. 376 prairie dog rd kill. Manila 378. The rabbits are mainly on uplands. Continued to Flaming Gorge and enroute photographed Sheep Creek from new road 710805-1. At 398 5 mallard at a divide lake just before Cub Creek. Continued to Red Canyon Visitor Center and photographed 710805-2 of Red Canyon with rocks in foreground. 710805-3 same. Photo 710805-4 and 710805-5 of Canyon with ponderosa pine as foreground. In area were 40 pinyon jay in loose flock, 1 flicker, 3 Eutamias minimus and 1 marmot. ^{1 small lizard} Bird rare. Ronger reports 4 osprey nesting in canyon, Golden Eagle present & nesting. Bald eagle winter here & nest higher. Antelope confined to flat areas at base of mt. Deer, Elk, mt lion & bear in area. 14 elk observed at _____ at _____ at _____

Green Lake Red Canyon, 7420 ft., Daggett County, Utah,
Aug 6, 1971

Collected the following *Peromyscus* from 50 traps set among *Ponderosa* pine:

710806-1 *Peromyscus maniculatus* 160-71-21-17-16gms ♂ testis 8mm

Both mammals and birds are relatively scarce in this *ponderosa* community. This morning took two photos 710806-2 and 3 of trailer in *ponderosa* pines at our camp at entrance to Green Lake. min temp last night 51°F. This area is well adapted for investigating daily or seasonal fluctuations of birds.



Within a short distance of 2-3 miles the vegetation changes from a dense montane to *ponderosa* pine to low altitude vegetation in canyon.

The transitions are abrupt and it would be easy to check daily movements, both altitudinally and laterally within each vegetation type community.

Later this morning we drove over to Flaming Gorge Dam, leaving Green Lake Camp at 59418. At trail creek vantage point at 59420 noted 2 turkey vultures, 1 Clark's crow and 4 magpies in fields far below. This ranch is a *Shangrila*. Continued on and at turnoff at 59422 dropped down toward dam. There are songbirds here but not as good as at Green Lake. At dam visited the generator section of dam. at bottom at outlet are great numbers of 5-10 lbs trout. An exposed shelf half way up dam were 18 northern green swallows dusting in dry dirt and sunning on rocks. This dam makes an impressive barrier for mammal, bird and insect movement up and down the canyon. The water seeping thru rocks on either side of dam is also a new community of damp rocks and drainage systems that could be investigated. Just to check the kinds, direction and numbers of birds crossing the dam would be of value. Continued to base of dam and thence down river for approx 4/10 mile where trail starts and rafts are placed in the river. At this point met Mr. Alvin Harwood of 243 W 12th, Orem, Utah. He, his wife and 3 of his children were just putting their 9 man raft into the river and invited us along for the 7 mile trip to Little Hole. The Greene River flows thru a steep-walled canyon cut thru the pre-combrion rocks of

The Santa Mountain group of red quartzites. The hue of these canyon walls are in direct contrast or complementary to the greens of the conifers that grow on its steep walls. The river occupies the canyon floor and as a result there is little room remaining for riparian growth. A trail on the left hand side, occasionally is forced to leave the edge of the river and wind thru river bordering cliffs. The water is crystal clear and approx $42^{\circ} F$ or 10° above freezing. The level is controlled by the dam and its 3 generators. Depending on the combination of generators used, the level of the river will fluctuate. A chart is made that predicts the level of the water at any point along the river at any particular time of day or night. Today the water is higher in the afternoon than in the morning. As a result of the constancy of the water capacity, one can predict the condition and character of the various rapids. Because floods are eliminated, the rapids remain about the same from year to year. As a result there is a high degree of success in navigation of this stretch of the Green River. Trout are common all along the way and can be seen swimming along the bottom. There is considerable moss along the edge and on bottom of river. The most profitable places to fish are (during day):



edge of turbulent water, toward turbulence



smooth water rapids above the \uparrow just before rapids begin.

in evening & night the fish would feed in slower moving water and in areas below deep pools. The trout are cold to the touch and firm - moreso than I have ever experience elsewhere.

Birds observed along the way were:

- Canyon wren. 4 and most of them singing.
- Rock wren. 1 observed on talus entering river.
- Northern violet green swallow. Less than a dozen and I am surprised at the few numbers.
- white-throated swift. 4 individuals
- water ouzel. 2 individuals at widely separated points.
- clark crow. 2 at about middle of canyon and in trees at water edge and 3 at mouth of canyon at Little Hole.
- Lewis woodpecker. 1 in dead tree along side of river.
- sparrow hawk. 1 in canyon.
- maggie. 2 in middle canyon and group of 8 at Little Hole

As evidence of water on side of river would judge the water, at one time, to have been at least 5 feet above the present water level. Photo 710806-18 of the pull-out point at Little Hole. Returned to dam and thence back to Green Lakes Camp. At dam there was considerable debris at w end of dam and this accumulation should be clean up as it accumulates.

Green Lake Camp, Red Canyon, 7420 ft., Daguerre Co., Utah
Aug. 7, 1971

At Camp recorded the following photographs:

710807-1 An old and young tree of ponderosa pine. Morning lights intensifies the red bark.

710807-2 Ponderosa pine and cones. In some cases the accumulation of cones is 3 cones deep and covering the complete area under the tree, especially in those places where grass grows.

710807-3 Cones of ^{up to} 4 years of age from green cones to those in which ^{only} the central column remains. Relative percentages might be a clue to climatic changes.

710807-4 ponderosa pine cones, one from tree and one (this year) from the ground.

710807-5 Cone of ponderosa pine showing pointed projection of scale.

710807-6 a seed of maturity of undergrowth vegetation

~~710807-7~~

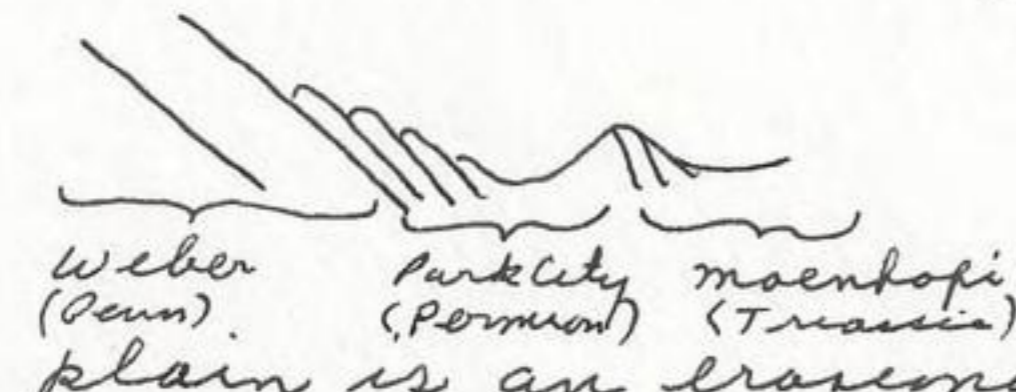
Left Green Lakes at 10:45, mileage 59457. Followed regular route to Vernal. Enroute photo 710807-11 of dusky grouse. It was loathe to leave the ground and was herded in circles for 5 or so minutes. This grouse was approx. 3 mi beyond road turnoff to dam. at 59471 at summit at 8428 ft. The road thru savannas and forests beautiful, as is the distant view of Utah basin to S. at 59479 noted a golden eagle circling to W. Photo 710807- of a non-conformity between the moenkopi and Shinarump ^(or Chinle - Navajo) at first main drainage to S. at 59490 2 prairie dogs. at 59491 photo 710807-14 of Cretaceous formations near Steinsaker Lake. at the lake noted 2 great blue heron, 18 mallards, 2 pintails, 4 gulls, 2 killdeer, 3 avocet and 8 Brewers blackbirds. Arrived Vernal at 59602. The strata dip to S on S side of Utah basin and considerably less so than on the N side and as a result the individual formations are more widely separated.

continued E and thence to mouth of Split Canyon where the Green River exits onto the Uintah Basin. Enroute and within the Snoscar National Monument made photo 710807-15 of hogback of Shinarump along road just west of camp. The yellow staurolite material is characteristic. Photo 710807-16 at mouth of Split Canyon showing massive cliff of Weber formation of Pennsylvanian age. This is an erosional face produced by the Green River. Photos 710807-17 to 710807-21 of the arrival of a group of girl scouts. These scouts and 4 Western River Boats had been on the river for 4 days. On arrival it is the tradition that all members of the crews be soaked with water. The group seem to have thoroughly enjoyed themselves. The cost for 4 days in such a group is \$87⁰⁰. The minimum boat is 7 and the preferred number is 10. The boats are pontoon rafts converted by suspending a wooden floor and securing a super-structure for oarlocks and equipment. The guides say that the yampa can only be run in spring & autumn when waters are high. The rafts carry ice boxes, water, waterproof containers for food etc. Trips can be arranged for 1 day to indefinite number of days. One of the daily trips is thru Split Mountain at \$15⁰⁰ per person. All rivers are navigated, the Colorado in the Grand Canyon being the last run of the season. The rafts are run 90° to the flow of water. In this way the raft can be directed back and forth across the river to avoid exposed rocks.

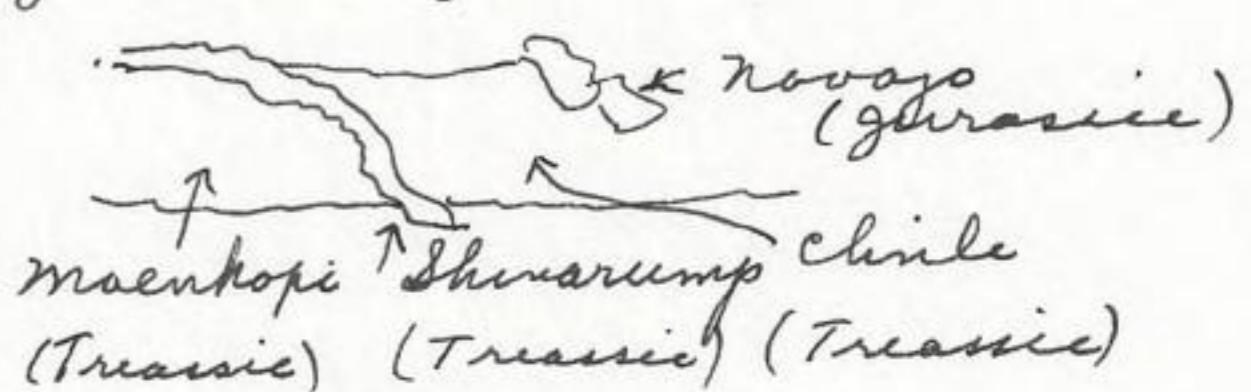
Photo 710807-22 from Split mt camp to NE at Weber formation at mouth of canyon. Photo 710807-23 of a telephoto shooting across the river at the Park City formation overlying the Weber. The strata dip steeply to the S. At camp found the golden mottled ground squirrel to be unusually common, there being one or two at nearly every camp site. It would be interesting to determine the population number. In the evening fished (flies) the river but without success. Had 3 strikes. The water fluctuates approx 6 inches in 12 hours, drove down to alternate camp down river and found the topography both deeply canyonned and in other areas flattened by outwash plains of elevated benchlands. This part of the Green River thru the basin could be navigated.

Left Split Mountain Camp at mileage 59548. ^{at 9:40} Before departure followed Nature Trail. Noted 2 cottontail, group of Chukar partridge calling, 2 mourning doves, 2 species of lizards. ^{1 Eutamias} At Split Mountain the golden-mantled ground squirrels inhabit practically every camp site (one per camp) and would estimate 20 animals. Above camp took 2 photographs 710808-2 of east face of mouth of Split Mt. Canyon showing massive Weber sandstone of Pennsylvanian age, Park City formation (Permian), Moenkopi, Shinarump, in part. photo 710808-3 is the area immediately to

right or down stream and shows Moenkopi, Shinarump (projecting into Green River) Chinle and to right Navajo. The flat



plain is an erosional level above present river channel. At 59551 photo 710808-4 of pitted flat surface of Glen Canyon (Navajo) formation.



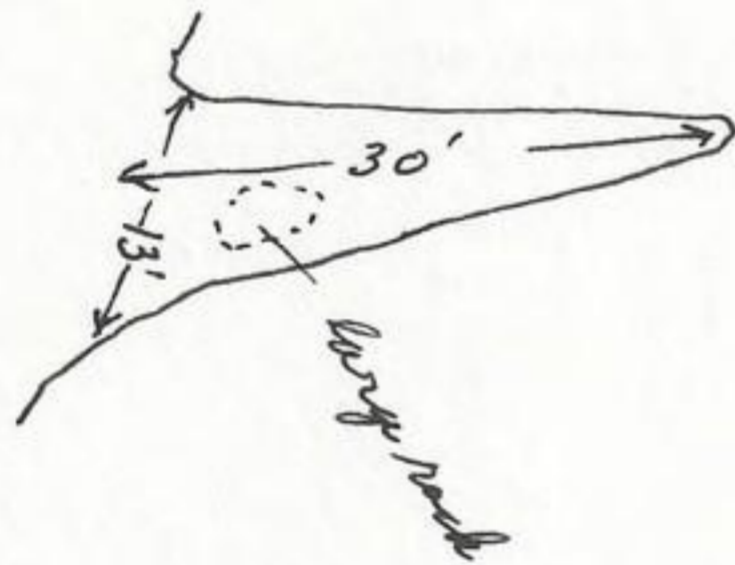
at 59552 prairie dog colony. 2 prairie dogs feeding along side of road. Up to 552 would estimate 10 live prairie dogs along side of road. At 59552 photo 710808-5 of cross-section at Visitors center, showing Morrison, Dakota (ridge) mowry, Frontier (ridge bordering valley and monas shale at base. At 59554 photo 710808-6 of contact of Monas shale and Frontier formation. Have observed magpie and 5 golden-mantled ground squirrels along route. 59555 leaving Anasazi Nat'l Monument. Have not seen the Douglas Cabin that I camped in years ago. From here will list all the kinds of birds

across the Uintah Basin in an area of closely cultivated lands. Magpie, barn swallow, Eng. sparrow, mourning dove, 59559 jensen. sparrow hawk, 59569 Naples. Brewer blackbird. 59573 Vernal. 582 first chipmunk since Vernal. Sage thrasher, meadowlark (first observed so far) 59593 night-hawk. 59595 Gopher. 59598 badger road kill, 59605 Roosevelt. redwing, yellowheaded blackbird, cowbird. 59611 myton. western Kingbird. 59627 badger road kill, turkey vulture, jack rabbit road kill. These animals seem to be confined to upper benchlands of sagebrush. Valley principally greasewood + rabbit brush and alkaline soil. Very little sagebrush in valley. Have not seen any significant change in farming since dam placed on Green River. 59635 Duckwee 59656 badger road kill. Now dropping down from plateau of pygmy forests

Only 2 mourning doves across these forests but approx 30
 rabbit road kills (gopher & cottontail). 657 35 rabbit
 road kills in 2 miles. 661 island? will keep
 track of rabbit rd kills for a few miles. ^{+ end of census} Canceled census.
 Arrived Vivian Park in Provo Canyon at 725. and end of
 note taking.

Cliffs on
north side Provo Canyon at Telluride, Utah Co., Utah
 Aug 14, 1971

Annette C and I investigated Cliffs on east side of spring
 drainage above the Utah Power & Light Co installations. This
 area is down canyon about a mile from Bridal Veil Falls.
 These cliffs support a cave that could have been used by
 Indians, and is associated with the petroglyph site and a
 good supply of water. We examined one of the caves which
 we believed was the one visible from the bottom of Canyon
 but which proved to be not the right one. It was just to
 w of the one we intended to check. The uppermost one we
 inspected measured



aerial



This is a shallow cave and judged to be
 too small for permanent human habitation.

Took several photographs here: no. 710814-2 and 710814-3
 from cave and showing stratification of carboniferous rocks
 on S side of Canyon (Cascade Range). Returned to canyon
 floor and made photo 710814-3 showing the caves in cliffs.
 The main cave is 50' east of the one we examined. This area
 should be critically examined, especially area associated with
 the spring area. Photo 710814-5 just to E showing
 stratification of rocks. The ledge support good Carboniferous
 aged fossils. ^{best area for fossils.} From cave collected
 the remains of porcupine and Neotoma.

From here we drove to Vivian Park and checked the old
 cabin we used to own. There is a remarkable change in trees.
 at the time I lived here the dominant trees were large
 cottonwoods (40 years ago). These trees are gone and boxelders
 have replaced them. The thick maples & vines in the back yard
 are now in boxelder. From here we drove to mouth of the Provo

River and photographed a boat 710814-6. There has been considerable change in this area and is highly used by campers and boaters.

Y mountain, E of Provo, Utah Co., Utah
 Aug 15, 1971

Annette C and I made ^{trip} to bat caves in Slide Canyon below Maple Flat Mountain. (see records of previous years for this bat cave). Left Bonneville level at 9:00 A.M. and traversed the mountain side by Y trail arriving at the Y at 10:10 A.M. Continued to Devils Gate arriving there at 10:35. Some of the birds and mammals are: deer tracks of mule deer (largest measured 78 mm), 2 Steller jays, 5 robins, mourning dove, 3 turkey vultures, 5 lizards. A blow snake had been killed at Devils Gate. Continued up the trail and thence to right across canyon to old Clarks Crow nesting tree, thence up drainage to set of cliffs that had recently broken away from their attachment. Photo 710815-1 shows the rock slide, a large section of the cliff abutting against a Douglas fir. Other large cliff segments had cascaded down the hillside and on each impact excavated a hole large enough to use as a basement. The cliffs tend to disintegrate before they travel too far. Photo 710815-2 of cliff where section had broken ^{from} basal attachment. This action probably occurred in spring when soils were saturated from winter snow melt. This area can be seen from valley and is a major displacement. Continued to bat cave to left and found no bats. Temp. in side cave 71°F and 74°F outside cave. There is a movement of air from ^{outside of} cave to ~~outside~~ ^{inside cave} which suggests other corridors connecting to the main cave. These have not been located. At 10 inches excavation found bat bones in guano. Continued to top of Maple Flat at highest point, thence S to point overlooking Slide Canyon. Trails overgrown but best approach on W side of ridge. From the vantage point made photo 710815-3 of Annette and Utah Valley with Utah Lake in background. Photo 710815-4 of Maple Flat Point and Provo Bay in background. Photo 710815-5 same as above. Photo 710815-6 of canyon walls and valley beyond. Photo 710815-7 of Provo Bay. Photo 710815-8 of Springville, Mt Loafer + Nebs beyond. From here returned to S end of Maple Flat at spring. Flow of water here and microtine trails in rank grasses & sedges associated with spring.

710815-7.1



PROVO BAY (MUD LAKE)

PHOTOS 710815-4 (RIGHT), 710815-5 (LEFT)

AUG. 15, 1971

Continued N on Maple Flat. There is considerably more grass and flowers in this area than during my earlier day as a young kid when the dominant plant was the riggerhead. Apparently this area is not used much as trails are poorly developed. Spring on N side along trail flowing as usual. Many bees and wasps. Continued to Bear Flat. A family of goshawks ^{the young are widely distributed in canyon but keep in touch with parents by calling} in this area. The old nesting site is only about 1/2 mile up Slide Canyon from here. Continued down Slide and at Cove on S side of canyon just above the valley floor measured the entrance as 5' x 3' deep and 2' anteroom. This cone ^{area} drops abruptly down at edge of perpendicular cliff. This base of this cliff could profitably be sifted for artifacts. At present the cove is used by hikers as a place to cook. Continued on down trail to Bonneville level, ^{Buejensen} thence to Mary's home on Apple Street.

Provo, Utah Co., Utah

Aug. 16, 1971

Left Provo at mileage 59872 at 2:00 P.M. for Flaming Gorge Dam. At rock-mud slide at Vivian Park area made photo 710816-1. This slide has been photographed on nearly every time I have visited Utah and there does not seem to be much evidence of invasion of pioneer plants. Continued to E side Strawberry Lake where we camped and caught several rainbow trout for breakfast. Mileage 59927

Strawberry Reservoir, Utah

Aug 17, 1971

Min. temp last night 48°F. Pintail, Cinnamon teal, Brewer's blackbird, 3 roven and 60 Calif. gulls common birds at lake. One redtail in hills to E. Left camp and continued E. At divide out of valley where vegetation changes (59933) observed 2 redtail hawks. At 59953 photo 710817-1 of juniper-pinyon forest which is claimed to be the largest most continuous forest in the country. Birds observed in this area are mountain chickadee, white-breasted nuthatch, a flycatcher, bluebird, C. t. amicus and lizards. Continued to Split Mountain Camp at mouth of canyon.

Split Mountain Camp, Amasa National Monument, Utah

Aug 18, 1971

Left camp with Western Rivers Expedition for Rainbow Park.

at approach to Rambow Park photo 710818-1 of petroglyphs on south wall of canyon. Others reported on N side. At Rambow Park the Western Rivers Expedition served lunch before boarding rafts. Photo 710818-2 up river and 710818-3 down river showing point where river enters split mt. Photo 710818-4 rapids along the way. 710818-5 Annette C, Annette P & me on raft, 710818-6 and 710818-7 rapids. At near Ingelby Falls group stopped for snacks of watermelon and drinks. Photo 710818-8 of front of boat. 710818-9 a Japanese student on sands. 710818-10 moving sands from up canyon sands. 710818-11 Tamarisk along edge of river. Continued down river. 710818-12 of ^{golden} eagle nest in hole in cliffs. Bird in picture flying but cannot find on picture. The site has been used for many years. 710818-13 end of trip at Split Mt Camp. Six individual spotted sandpipers were observed along edge or flying across the river. Left the camp site and travelled N to Red Springs near the Flaming Gorge Dam where we camped. Drove to dam and made photo 710813-14 of Green River below the dam.

Red Springs, Flaming Gorge Rec. Area, Uinta Mts., Utah

Aug 19, 1971

Made general survey of area. Annette C walked along Green River from dam to Little Hole.

Aug 20, 1971

Made rubber raft trip down Green River from Flaming Gorge Dam to Little Hole. The following photographs were taken:

- 710820-2 small rapids at put-in below dam, water cold & clear.
- 710820-3 and 710820-4 rapids
- 710820-5 Annette at stop for trout fishing. Trout cold & firm. Best fishing at edge of rapids and at smooth water just before rapids. It is no trouble in getting trout.
- 710820-6 The two Annettes.
- 710820-7 Rapids at lunch stop.
- 710820-8 Haul-out for rerun of one especially good set of rapids.
- 710820-9 Annette C on one of the rerun rapids.
- 710820-10 rapids
- 710820-11 rapids and first run
- 710820-12 rapids
- 710820-13 second run by Annette
- 710820-14 leaving rapid area
- 710820-15 old pine tree barrier at edge of river.

- 710820-16 near Little Hole.
 710820-17 near Little Hole
 710820-18 End of trip at Little Hole.
~~710820-19 general area~~
~~710820-20 general area~~

Birds observed in Canyon proper on raft trip are;

Clark Crows 10 in 3 groups.	Lewis woodpecker 1
Steller jays 6 individuals	marmot 1
Canyon wren 3	chipmunk 7
rock wren 1	magpie 5
water ouzel 5	kingfisher 3
red-shafted flicker 1	pinon jays 24 in one group.
white-throated swift	hummingbird.

In comparison to the raft trip thru Split mt by professional guide I would say the self conducted raft (9 men) on the Green below the dam is superior in thrills and scenic values. Left this evening from area and travelled N with mileage at Greene Lakes 60245. Photo 710820-19 of the actual Flaming Gorge. No 710820-20 of Sheep Creek. Photo 710820-21 of carpuscular rays on mts N of Sheep Creek. Continued north to Buckboard Camp where we spent the night. Along the way counted 13 prairie dog road kills and 2 antelope kill. At Camp noted 2 small flocks of sagehens.

Buckboard Camp along Flaming Gorge Reservoir, Wyoming
 Aug 21, 1971

Left camp at mileage 60301, and travelled N toward Green River. At 60361 a badger road kill. 60372 a coyote & badger road kill. Point of Rocks at 60373. Continental Divide at 60431 and beginning of complete census of antelope by groups. 4 antelope 14 antelope. Boggs 1 antelope, 2 antelope, 1 antelope. Carbon County line Barnes Road end of antelope census. Between here & Rowlings there were no birds. Some antelope and rabbit road kills. From junction to Saratoga were 27 rabbit (mainly jacks) and these mainly on first 1/3 of the route. From Saratoga to junction of 130-230 were 6 rabbit road kills. From this junction to mouth of canyon beyond valley slopes made complete census by totals. At 1/10 mi. W of N Platt River a red fox road kill. At 1/10 mi. E of N. Platt River bridge a coyote road kill. Other birds & mammals to canyon are; 3 rabbit road kills, melanistic redtail hawk, 4 magpies,

3 sparrow hawks, 5 antelope, 2 pairs mourning doves, shrike, 2 bluebirds, 8 bluewing teal, approx 140 barn? swallows, 2 redwings, C. t. amias, 2 prairie dogs. Continued to beyond first range of mountains at the first service station at Brush Creek discovered car had irreparable hydraulic steering and transmission problem so returned to Saratoga and had repairs made and then continued to Walcott. The new cutoff road did not support many birds but 48 antelope. Arrived Laramie & camped in parking lot of creamery.

Laramie, Wyoming

Aug. 22, 1971

Continued to Denver. At Mus. Nat. History recorded 14 color photos of grasses. nos. 710822-1 to 710822-14. Continued to Goodland, Kansas

Goodland, Kansas

Aug. 22, 1971

Continued to Lawrence. arriving in afternoon.

Lawrence, Kansas

Aug. 25, 1971

Photo 710825-1a of James Robert Bee.

Lawrence, Kansas

Aug. 25, 1971

Organized and numbered paintings and other items of art that Annette and I acquired, especially paintings of W. Charles Adams, ⁽¹⁹³⁰⁾ and Paul Salisbury (1904-1976) given to us by my father and mother Robert George Bee and Mary Culbertson Bee of 255 E 1st S, Provo, Utah. The format includes name of item, description, when painted or made, materials, size, frame, criticisms or constructive remarks, value appraisal, documentation by photographs etc.

My information on the Adams and Salisbury painting is principally recollections when living at home. As I remember the Salisbury paintings were purchased about 1933 which was later than the Adams. As factual information is acquired these recollections may have to be modified.

This present distribution of the original 15 Adams paintings are: 6 in home of Don and Mary B Jensen, Provo, Utah including valley and road with mountains in the distance, valley with stream and large cottonwood trees, valley and cottonwoods, mountain trail thru forest, mountain meadow with lake and conifers, hillside aspen glade; 6 in home of James W and Annette P. Bee, Lawrence, Kansas; 1 in the Bee hardware owned by Cal. Bee of Provo, Utah; 1 presented to Max C. Bee of Port Townsend, Washington, subsequently lost; and 1 present in 1934 to Vasco M Tanner of Provo, Utah that hung in his office in the Drumhall Building, B.Y.U. The Honorable Judge Willis Kitter, U.S. Supreme Court in Salt Lake City, Utah who is a nephew of W. Charles Adams currently owns the greater number of the Adams collection. My father was a business associate of Judge Kitter and a close friend of both Adams & Salisbury.

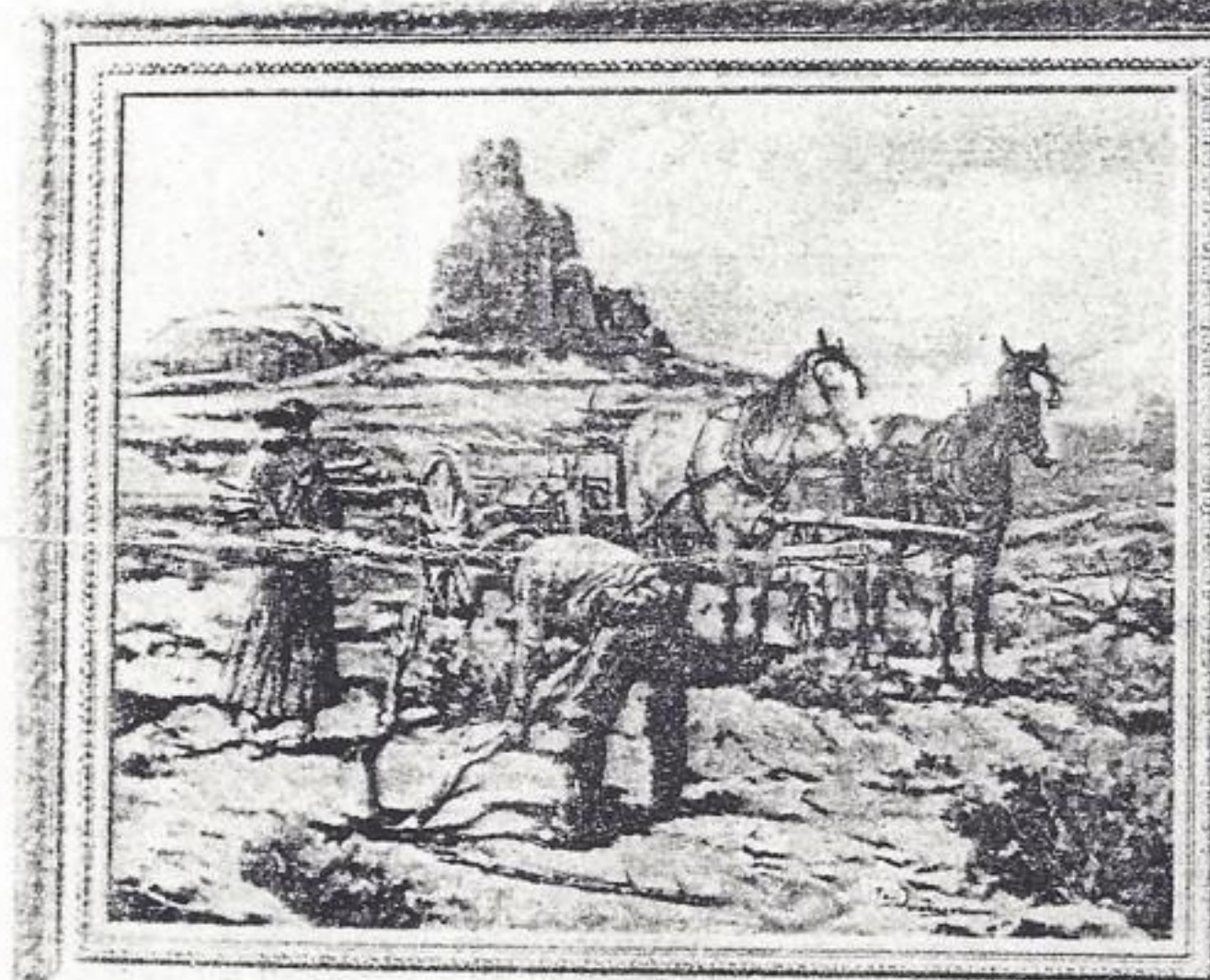
Paul Salisbury was a native Utah artist from Springville Utah and later moved to 388 W 3rd N, Provo, Utah. He specialized in Indian, cowboy, horses and western landscapes. A bank in Springville, Utah houses the Salisbury art collection. Some are of his current paintings, ^(Judge Kitter and Charles Adams) [see Aug 6, 1983 and Aug. 7, 1973 for additional information of Salisbury & Charles Adams] also April 12, 1981 for appraisal of Salisbury's art by Attorney Rulen Morgan of Provo.

710825-77

From:

The Cowboy in Art.
 By Ed. Ainsworth
 Published by
 Bonanza Books
 N.Y.

p. 211 and 212



Paul Salisbury with
 one of his paintings

One of the paintings of Paul Salisbury is entitled "The Strays," yet the artist has never strayed from his objective of portraying the West as it really is.

Paul Salisbury was born in Richfield, Utah, on November 21, 1904, and he now lives in Provo, not far from his birthplace. In

the meantime, though, he has traveled in the wild country of his native state and the surrounding regions, talked with Indians, pioneers and cowboys, and absorbed the meaning of the life they lead. In his studio today he depicts the whole scope of the Western scene from this intimate knowledge gained over many decades.

He began riding horses and trying to draw them when he was only six or seven on his father's ranch near Kanosh Indian Reservation in southern Utah.

He says that he was greatly influenced by the paintings of Frank Tenney Johnson. Salisbury began doing jacket paintings for the *Western Horseman* and the *Desert Magazine* and other publications, and also for banks and libraries and universities. He has held exhibits from Reno, Nevada, to Boston, Massachusetts, and from San Francisco, California, to Atlanta, Georgia. One notable outlet is the Kachina Gallery of Dwight Roberts in Santa Fe. The breadth of his interest is indicated by the titles of some of his paintings: "The Nesters," "Rivers to Cross," "Buffalo Hunters," "Taking a Breather," "Water Hole Conference," "Bringing in the Chuck Wagon," and "The Strays."



Original oil paintings by Charles Adams exclusive of Mt. Nebo oil by Edith Bee Stimpson. All in home of Mary Bee Jensen in Provo, Utah. (see Aug 6, 1973 for information about Adams)



oil mural in home of Mary, covers entire wall of one side of room.



Original oil paintings by Charles Adams exclusive
of Mt. Nebo oil by Edith Bee Stimpson.^{*} ALL in home
of Mary Bee Jensen in Provo, Utah. (see Aug 6, 1973
for information about Adams)



oil mural in home of mary, covers entire wall of one side of room.

Catalogue of art collection: (combined numbers)

620827-1	W. Charles Adams	[Snyderville]	oil
710825-1	" " "	[Hunter, dogs & bear]	"
710825-3	" " "	[Horse, rider, bear]	"
710825-4	" " "	[Fishermen in canoe]	"
710825-6	" " "	[Hunter, canoe, moose]	"
710825-7	Paul Salisbury	"Destiny"	"
710825-8	" "	"The Harvester"	watercolor
710825-10	Edith Maguire	[Utah Lake?]	"
710825-11	" "	[Utah Lake]	"
710825-12	Rudolph Pistor	"Pauline"	oil
710825-13	" "	[Court yard, Italy]	"
710825-14	Jennie Baker (Bee) Jones	moonlight (pearl) on water.	
710825-15	W. Charles Adams	[Snyderville]	photo
710825-16	Paul Salisbury	[Timpanogas]	photo of oil
710825-17	W. L. Steward	[Eek]	oil
710825-18	" " "	[Traut]	"
710825-19			
751209-1	Don Secondine	Gardian of the Game	Tempera
600629-1	Salwit Lepogul	Summer at Potlerr's Grove	oil print (oil)
710825-20	Paul Salisbury	"Bing in the Chuck Wagon"	print (oil)
710825-21	" "		

Paul
Salesburg
30" x 37³/₄"
oil
board



"Destiny"

no. 710825-7 JWB

Paerl
Salisbury
30" x 37 3/4"
oil
board



"Destiny"

no. 710825-7 JWB

710825-7 Original oil painting "Destiny" of 2 Navajo Indians each on a horse in Southern Utah by Paul Salisbury (1904-1976) 30" x 37³/₄", frame 2¹/₈" wide, cream, board. Purchased from Salisbury of Provo, Utah (1904-1976) by Robert G. Bee (255 E 1st So., Provo, Utah) for \$300.00. Present owners James W and Annette P. Bee (402 Yorkshire Dr., Lawrence, Kansas, 66044), Acquired as gift Aug. 25, 1971. Photo of this oil is from Kodacolor, 35mm, no 771010-7a. Other Kodacolor prints are nos 771010-7b, 771010-7c, 771010-7d, 771010-7e. Kodachrome transparencies (35mm) are 771010-7, 771010-8 and 771010-10 JWB. A label on back:

Committee on Art Exhibits

University of Utah. Return to 388 W 3rd N., Provo.



"The Harvester"

no. 710825-8 JWB

Paul Salisbury.

1931/4" x 15"

water color



"The Harvester"

710825-8 gWB Original watercolor "The Harvester" by Paul Salisbury of a farmer, three farm horses and a harvester. 19 3/4" x 15" (mat aperture), mat 4", original frame 1 1/2" wide, gold and antique white. Purchased from Salisbury by Robert G. Bee (255 E 1st So., Provo, Utah). Received by present owners James W and Annette P. Bee (402 Yorkshire Dr., Lawrence, Kansas 66044) as a gift. Print from Kodacolor, 35 mm, no 771010-11a gWB. Other Kodachromes are 771010-11, 771010-12, 771010-13 gWB. A label on back: Hesper Community Gallery, \$35⁰⁰ Salisbury born 1904, died 1976.

84
Klypl.

Paul
Salisbury

24" x 18"

oil
Canvas



"Taking a Breather"

770911-1 JWB.



"Taking a Breather"

770911-1 gwb Original oil painting "Taking a Breather",
 by Paul Salisbury (1904-1976) of Provo, Utah. 24" x 18"
 (horizontal), original frame 3 1/2" wide, gold and antique
 white. Purchased Sept. 11, 1977 (\$11,000) by present owners
 James W and Annette P. Bee (402 Yorkshire Dr., Lawrence,
 Kansas 66044) from Trailside Galleries, 20 Center Street,
 Jackson, Wyoming 83001, manager Florence Petrovic.
 Their control number is J 77-122, 18-20. An original
 number 0140 is in ink on back of canvas. This painting
 was acquired by Trailside Galleries from a client in
 Texas. According to bank in Springville, Utah where
 Mrs Salisbury has 2 or 3 dozen oils of Paul Salisbury,
 this oil would sell for \$12,000 (1977) with annual increase
 of 15 per cent annually. The print is from Kodacolor,
 35 mm, no 771010-1a gwb. A Kodachrome ^{series from} 771010-1 to
 771010-6 gwb.

By
Paul Solesbury
Print (reduced
in size) of oil



710825-16 gwb
[Timpanogas]



710825-16 gwb
[Timpanogas]



no. 620827-1 jwb

W. C. Adams

18 1/2" x 11 1/2"

board

oil



620827-1 jwB Original oil painting of an autumn scene near Snyderville, Summit Co., Utah by W. C. Adams of Park City, Utah. Painted in 1922 18 1/2" x 11 1/2" (horizontal) on "Best" Academy Board (Devoe and Reynolds Co., Inc., frame dark gold, 3" wide. Original frame order 9092. View probably W into Wasatch Range. native maple (red) in foreground. Purchased from Adams by Robert G. Bee (255 E 1st So.) Provo, Utah. Present owners James W and Annette P. Bee (402 Yorkshire Dr., Lawrence, Kansas, 66044). Acquired as gift Aug. 27, 1962. Print of this painting is no 771010-14a jwB, Kodachlor. Other prints are from 35mm Kodachrome nos 771010-14 and Kodacolor (35mm) nos. 710825-2a, 710825-2b, 710825-2c.

W. C. Adams
17 7/8" x 15 1/4"
oil
board



710825-1 gw B



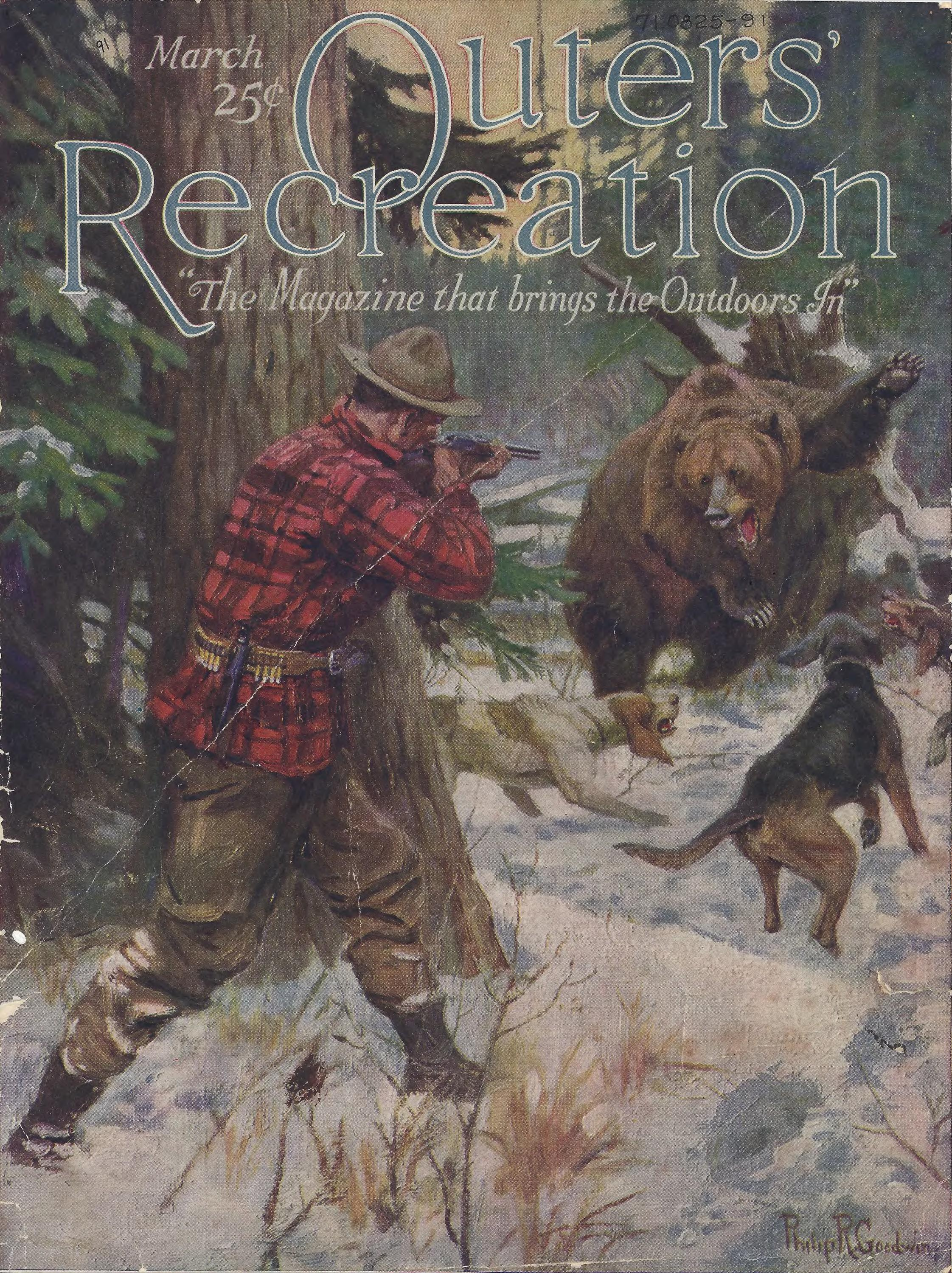
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91

March
25¢

Outdoors' Recreation

"The Magazine that brings the Outdoors In"



Philip R. Goodwin

710825-1 Oil painting copy of a color print from an original oil of a hunter, 2 dogs and a grizzly bear by W. C. Adams of Park City, Utah. 11 7/8 x 15 1/4 (vertical), Academy Board, F. Weber Co., original frame order no. 2177, frame brown, 3" wide. Contracted and purchased by Robert G. Bee (255 E 1st So., Provo, Utah), prior to 1930. Present owner James W and Annette P. Bee (402 Yorkshire Dr., Lawrence, Kansas 66044). As with copied paintings, Adams did not sign his name. Presented to owners as a gift. The original painting is a cover page of March issue of Outer's Recreation. The artist Philip R. Goodwin. The print on previous page is from a Kodacolor no 771010-17a. Kodachrome Transparencies are 771010-17, 71825-5a JWB

W. C. Adams

12" x 15 1/2"
board
oil



no. 710825-3 gwb



710825-3 gWB. Original oil painting by W.C. Adams of Park City, Utah of a print of an oil painting of a hunter, horse and grizzly bear on a ledge. 12" x 15 1/2" (vertical), board, original frame brown. From order on back no. 338. Contracted and purchased by Robert G. Bee (255 E 1st So., Provo, Utah). Present owners James W and Annette P. Bee of 402 Yorkshire Dr., Lawrence, Kansas, 66044. Acquired by present owner's by gift in 1971. Print of this painting is ^{35mm} from Kodacolor no. 771010-16a gWB. Other Kodachromes, ^{35mm} are 771010-16, 710825-3 & gWB. as with copied paintings. Adams did not sign his name.

W. C. Adams
12" x 18"
board
oil



710825-4 J.W.B.



710825-4 Original oil painting from a print of an oil painting of two fishermen in a canoe at base of waterfall by W. C. Adams of Park City, Utah. Copied prior to 1933. 12" x 18" (vertical), board, original frame 3" wide, gold and blue. Frame order no. 10542, contracted and purchased by Robert G. Bee (255 E 1st So., Provo, Utah) from Adams. Present owners James W and Annette P. Bee (402 Yorkshire Dr., Lawrence, Kansas, 66044). Acquired as gift Aug. 25, 1971. The print is from a Kodacolor, 35 mm, no 771010-18a & WB. Other Kodacolor negatives are 771010-18a. Other Kodochrome transparencies are 710825-4a, 710825-4b, 771010-18. The copy is not signed by Adams as is customary.

W. C. Adams

12" x 8"
board
oil

"Big Game"
no 710825-6 gWB

710825-6 JWB. Original oil painting by W. C. Adams of Park City, Utah of a print of an oil painting produced prior to 1930 titled "Big Game" of a hunter in a canoe and a moose in the background. 12" x 8" (horizontal),
 pressed board, frame dark gold, frame 2" wide. ^{Contracted and} Purchased from Adams by Robert G. Bee (255 E. 1st So., Provo, Utah). Present owner James W and Annette P. Bee (402 Yorkshire Dr., Lawrence, Kansas). Acquired by present owner 1971 as with copied paintings Adams did not sign his name. Print of this painting from a Kodachrome negative no. 771010-19a JWB. Other Kodachromes include no. 771010-19 JWB.



BIG GAME

MADE IN U.S.A.



710825-15 JWB.

W. Charles Adams
4" x 6 3/8"
photo, sepia



710825-15 gwB. Photo in *opia* of Snyderville, Utah from Foot
hills of Park City. From collection of Robert Bee Photographs. Adams
was a photographer at Park City, Utah and photographed many
scenes in the Park City area. Foreground and background
resemble setting of oil painting no. 620827-1 of Adams.
Mr Robert George Bee, my father presented this photograph to me
on Aug. 27, 1962.

710825-10

By Edith Maguire

17 1/2" x 6 1/4"

watercolor

710825-10

710825-10 This painting (watercolor) by Edith Maguire has a steam ship in distant so may be a coastal theme and not an inland lake. A note written on back of watercolor is a statement by dad (Robert H. Bee); "This is A-1 quality worth framing. Given to me as a prize in art class of Edith Mc Guire [Maguire] about 1900".

710825-11 gwb
Utah Lake
11" x 5 1/4"
water color

710825-11 a water color by Edith Maguire and background
is Nebo mt with Utah Lake in foreground. Acquire by Dad
(Robert G. Bee) when a student of Edith Maguire. Now owned
by James W and Annette P. Bee

25 1/2 x 13"
original oil
by
Rudolph Pistor
c.a 1870



"Pauline" Pistor Sainsbury
710825-12 JWB



101
710825-12 of Pauline Pistor (later Sainsbury) in France (?)
background, circa 1870's. Present owner James W and Annette
P. Bee. Kodochrome 771010-22 of this painting. Oil on
board. Top cut down for framing.

By
Rudolph Pistor
8" x 10"
board

710825-13 gwb
Italian Courtyard

710825-13 Original oil painting of an Italian court yard
by Ludolph Pistor, circa 1870. Present owners James W and
Annette P. Bee. Kodochrome 771010-21 of this oil painting.

710825-14

[moonlight reflection]

Jennie Baker (Bee) Jones

8" x 10"

710825-14 no title but given name moonlight reflector.
Jennie Baker Jones was a sister of my grandfather Robert
Bee and married Joshua Jones. Born 10/25/1850 in
Southwick, Kent, England and died 9/14/1930 in
Provo, Utah

By Don Seemndine
Tempera
on board
22" x 24"



751209-1 JWB
Guardian of the Game.



751209-1 Guardian of the Game by Don Secundine, 1973
Purchase Dec. 9, 1975 for \$50. Don was a Delaware
Indian and married a Wichita wife. He attended Haswell
College at Lawrence and attended Univ. Kansas where
he worked at the museum of Natural History. He had
paintings exhibited at many museums around the country.
This painting no 751209-1 is of an Indian who is
guardian of animals & birds. The guardian is always
riding a white elk and carries a stick and bag of
snakes. The characters associated are symbols of
the Delaware tribes when they lived in the eastern part
of the country and include: deer, whale, crow, track,
turtle, snake, wolf, ankings & beaver. Secundine had
Indian names for the symbols and guardian and its
methodology.

By W. L. Steward
oil on board
9" x 12"
1904

710825-17

[ELL]

710825-17 Oil of elk by W. L. Steward. Purchased
by Robert G. Bee in 1904 at the World's Fair. Below
signature in painting is World's Fair.

By W. L. Steward
9" x 12"
oil on board.

710825-18

Traut

710825-18 Trout by W. L. Steward, oil on board,
Purchased by Robert G. Bee in 1904 at worlds Fair,
neither date or world Fair notation is on the painting
as in the case of number 710825-17.

By Solvit Lepagul.

10" x 14"

oil
(impressionism.)

600629-1

Summer at Potters Grove

600629-1 Oil impressionism of a scene at Univ. of
Kansas. Received 1st place in student Competition at L.U.
His method is to recreate impression of light on leaves.
Salwit was a student of mine & painted his own town of
Bangkok in Thailand. Father a doctor and influential
in conservation of mammals & birds in Thailand.

Paul Salisbury

[Faint, illegible text]

710825-20

Paul Salisbury.
"Bringing in the
Chuck Wagon"
710825-21

Lawrence, Douglas Co., Kansas

Sept. 16, 1971

English sparrows at 402 Yorkshire Dr. are showing flocking tendencies.

Sept. 23, 1971

Some evidence of color changes in tree leaves in city.

Sept. 28, 1971

Conspicuous change in color of leaves, ~~but~~ Blackbirds and grackles leave roost in Deerfield area SW of here at daybreak and return in evening, feeding in milo fields before flying to roost.

Sept. 30, 1971

Blackbirds and grackles leaving roost 20 min before sun up.

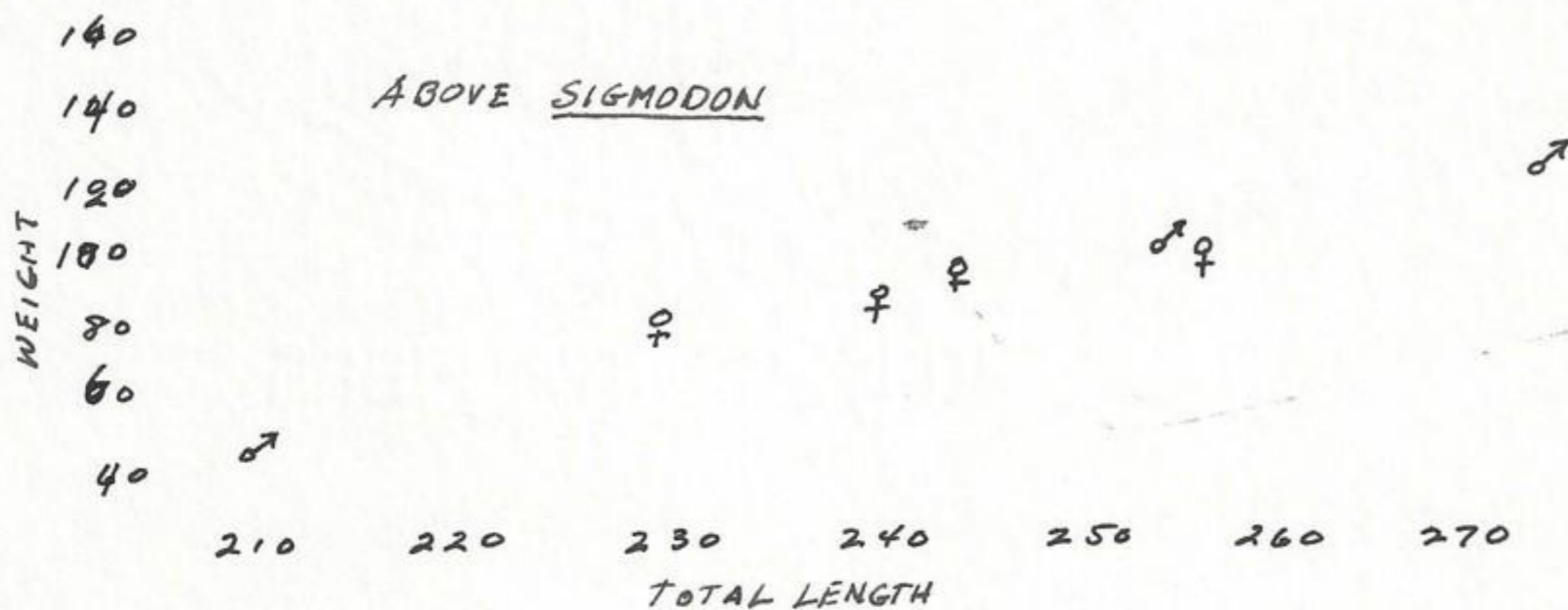
17/10 mi N and 18/10 mi W Lawrence (P.O), Douglas Co., Kansas

Sept. 30, 1971

From ten live traps set in trails captured the following:

710930-1	<i>Sigmodon hispidus</i>	259-103-31-17.5-101gms ♀ (1x3 plac scars)
710930-2	" "	230-93-30-16 ⁸⁰ gms ♀ (2x1 emb 18mm)
710930-3	" "	256-106-31.5-17.9 ¹⁰⁶ gms ♂ (testis 21mm)
710930-4	" "	209-86-29-15-49gms ♂ (testis 12mm)
710930-5	" "	276-115-31.5-16-127gms ♂ (testis 22mm)
710930-6	" "	245-96-30-17-101gms ♀ (3x3 emb 10mm)
710930-7	" "	240-98-30-17-98gms ♀ (3x2 emb 14mm)
SKU 710930-8	<i>Didelphus</i>	no measurements, skull only, road kill. ♀

This area is maintained as uncut grass because of fence-line and an elevated 1 1/2' dike-like structure so that combines cannot approach. The fields that are cut, especially when planted to clover are cut to the ground level and the equipment practically destroys all surface features of the field so runways are obliterated. There does not seem to be a movement of mice from these fields back to the uncut areas after harvesting of the crops.



17/10 mi N and 18/10 mi. W Lawrence (P.O), Douglas Co., Kansas

Sept. 30, 1971

From pond area approx 2/10 mi SW of above area collected in 10 live traps:

- 710930-8 *Peromyscus leucopus*
710930-9 *Sigmodon hispidus*
710930-10 *Synaptomys*

This area is a pond (ephemeral) with hummocks of soils surrounding from piles of discarded soils, now surface regrown to grasses & sedges.

1 8/10 mi. W and 1/2 mi. N Lawrence (P.O.), Douglas Co., Kansas

Oct. 5, 1971

At approx. the center of sec. 26, R19E and T12S, examined a grackle, cowbird, starling roosting site. The isolated grove of trees lies between two paved city roads, the west one having considerable traffic during the day.

The area used is 588' x 210' and is dominated by elm overaging 30' high.

Osage orange trees approx every 50'. Small understory of dogwood. Ground of dry leaves and no vegetation or brush. The total area of roosting space is 11760 sq. ft. The number of individual excreta ^{on} ground averages 576 per sq. foot or every 1/2 inch. Some areas are whitewashed, some 1 to 1 1/2 inches apart but on the average are 1/2 inch apart.

On the basis of 11760 sq. feet and 576 droppings per sq. feet, the number is

$$\begin{array}{r}
 11760 \\
 \times 576 \\
 \hline
 70560 \\
 82320 \\
 58800 \\
 \hline
 6,773,760 \text{ individual droppings}
 \end{array}$$

If birds have used this area for two week (or a conservative time of three weeks) the number birds contributing to the total biomass of excreta is →

This on the basis of one evacuation per night.

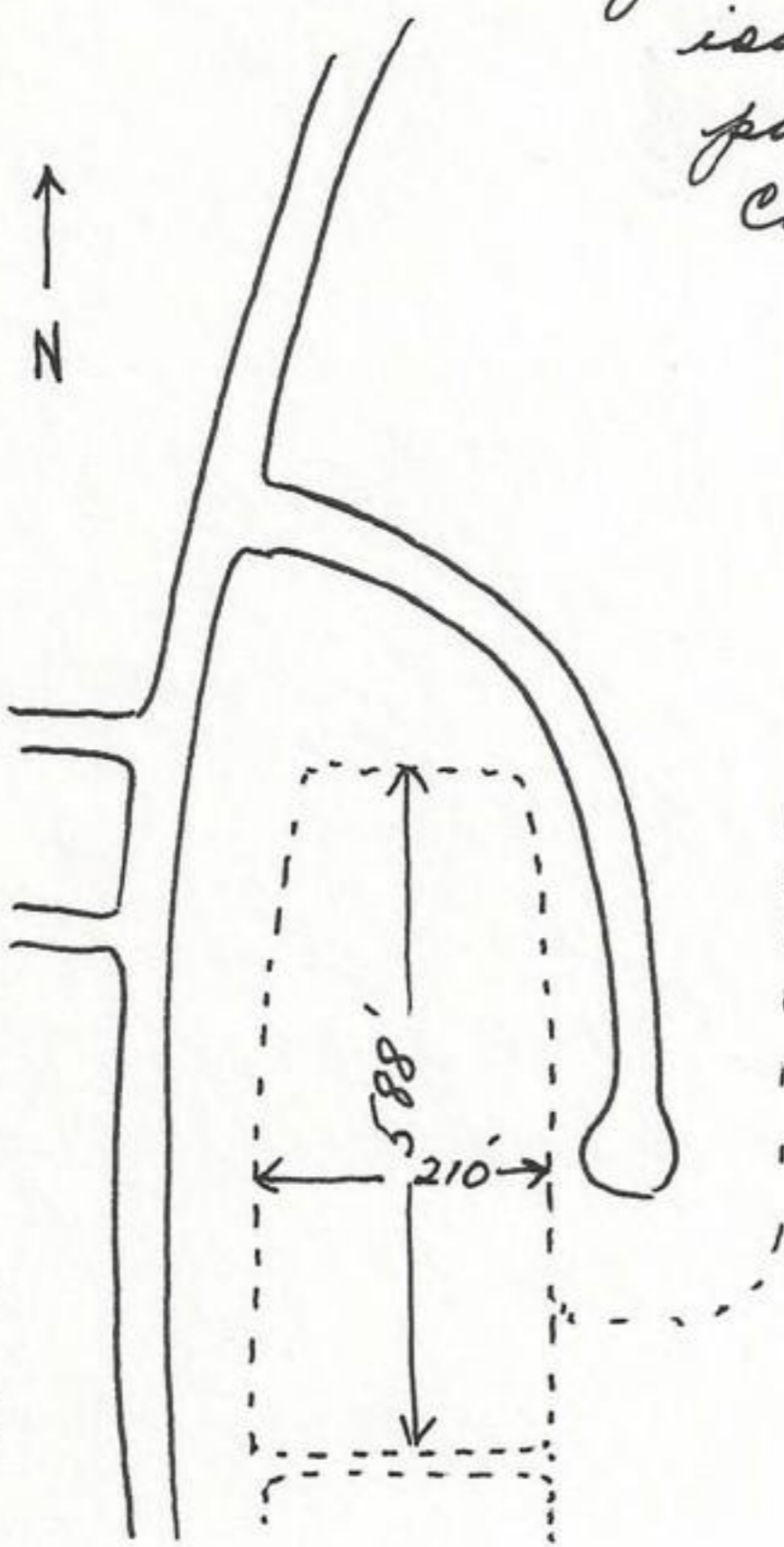
On the basis of estimate of percentages of the flock of birds from previous estimates the numbers of birds are as follows.


80% grackles = 258,009
 15% starling = 48,376
 5% cowbirds = 16,125

Some of the variations of partial flock composition are: 98% grackles, 2 percent starling; 5% grackles, 70% starling, 20 percent cowbirds. Variation of flock composition and arrival time would be a significant observation.

$$\begin{array}{r}
 322,512 \text{ birds per day} \\
 21 \overline{) 6,773,760} \\
 \underline{63} \\
 47 \\
 \underline{42} \\
 53 \\
 \underline{42} \\
 117 \\
 \underline{105} \\
 26 \\
 \underline{21} \\
 50 \\
 \underline{42} \\
 8
 \end{array}$$

If two evacuation per night the number would be 161256.

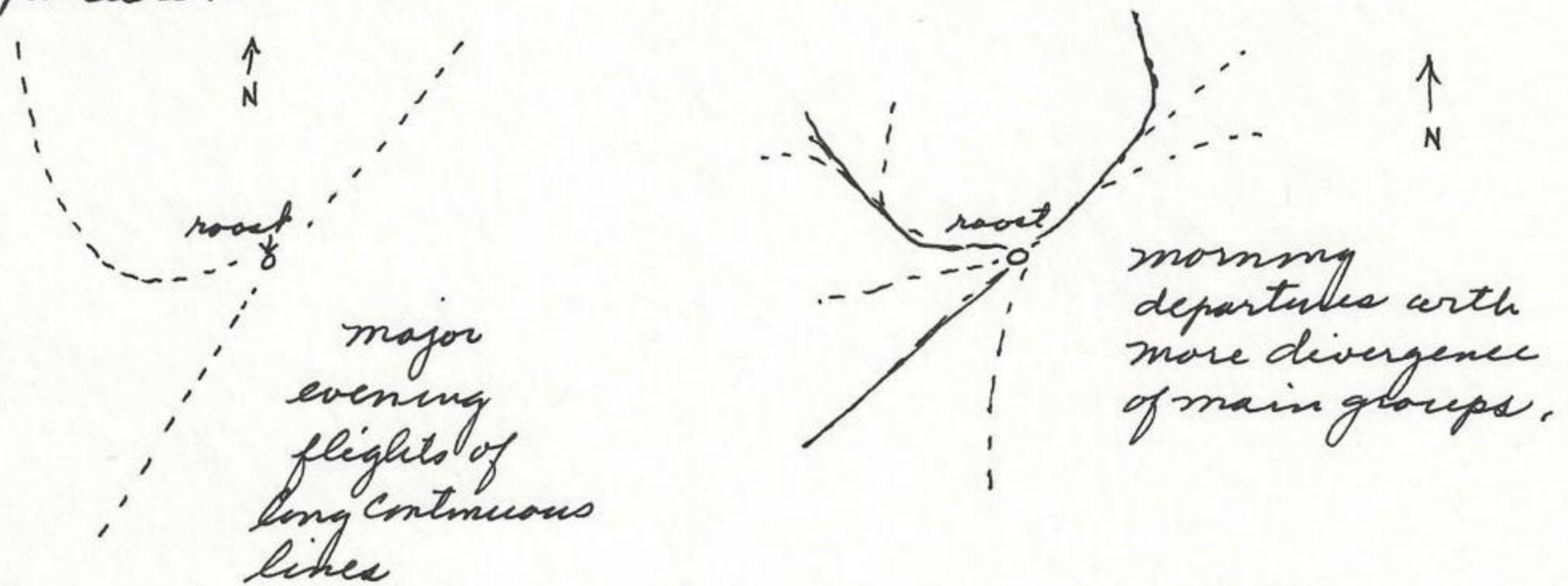


Birds at roost occupy a stratum of 15 feet and in this stratum  are approx 1 foot apart so in reality the number of birds would be equivalent to the square feet of the area occupied 11760 sq feet

$$\begin{array}{r} 15 \\ \hline 68800 \\ 11760 \\ \hline 186,400 \end{array}$$

birds, which is not significantly different from the estimate by droppings.

The usual procedure of arrival of birds is flocks from all direction begin to arrive approx 45 to 30 min. before sundown. Some go directly to roost, others feed on golf course before about 1/10 mi or less away from roost and at about 10 minutes to sundown fly to the roost. Other birds arrive for the nest 20 mins. and at late twilight the last bird has arrived. There is local shuffling within the roosting area and song until dark. In the morning the flocks leave ^{in all directions} just before sun up & shortly after. The arrival & departure is correlated with sundown and sunrise.



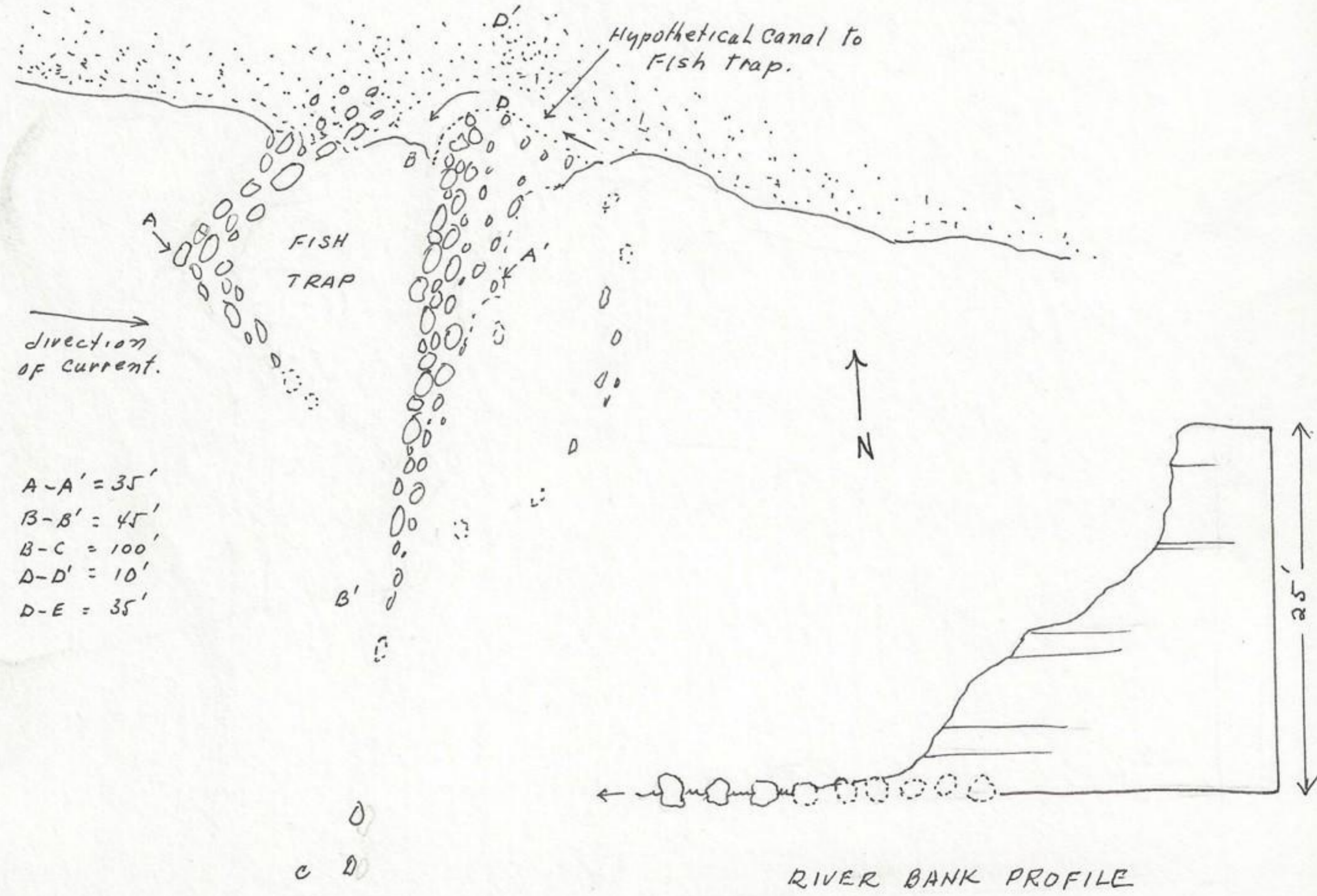
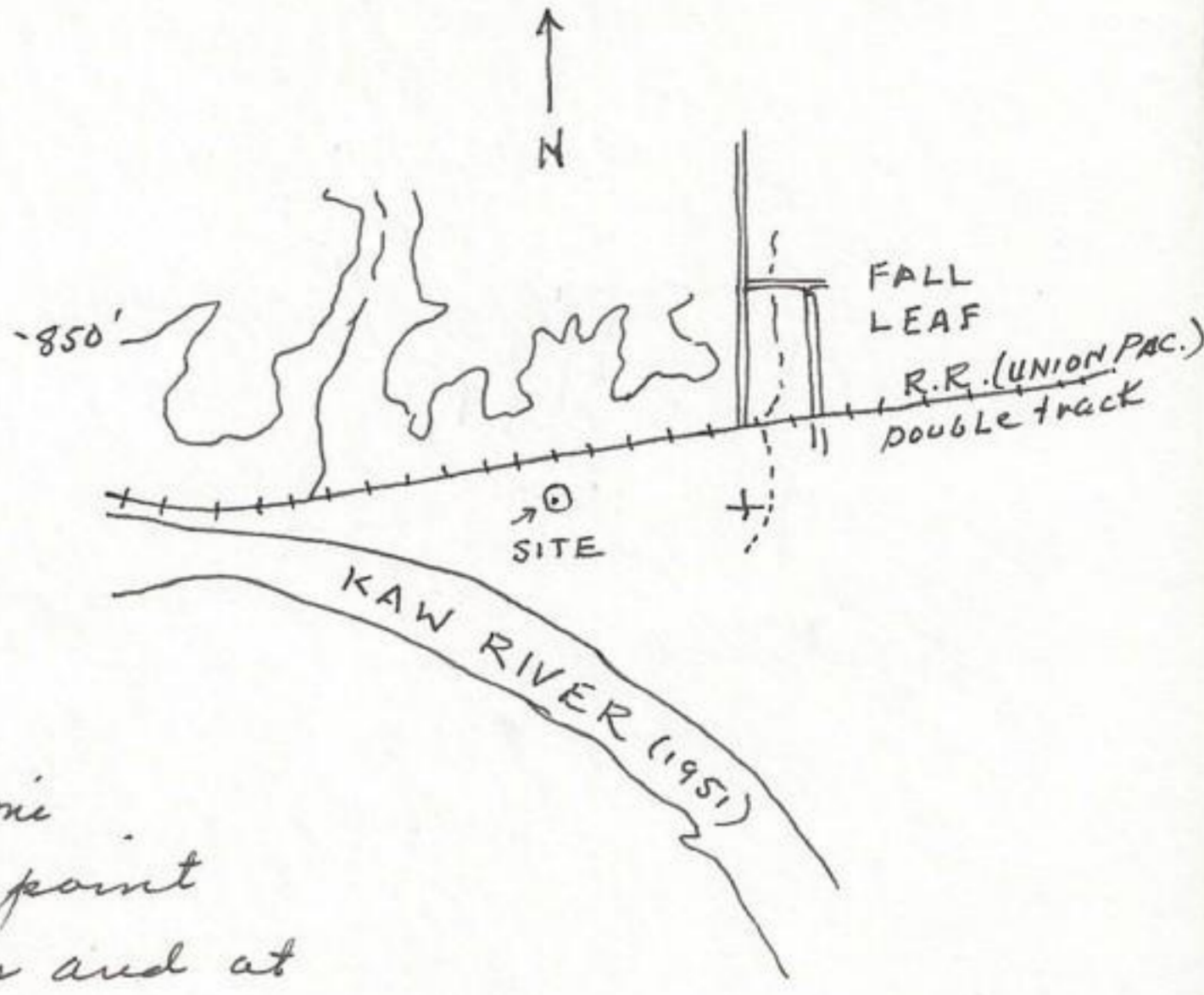
Occasionally on both the evening ^{arrivals} & morning departures, the birds will feed in milo field near roost before going to roost or leaving for distant fields.

When on golf course the flocks move progressively in one direction, the birds on advancing front move considerably faster than birds in the main flock. When starting and low birds occupy the same area, the low birds take a peripheral position in the flock. In greatest concentration on the golf course the closely compact birds would occupy an area of equivalent to three acres.

Fall Leaf, 1100ft. W and 90ft. N of SE corner Sec 30, T.12 S., R.21 E., Leavenworth Co., Kansas.

Oct. 10, 1971

Defined the locality of river boulder site observed from canoe yesterday. From service road immediately N of Union Pacific Railroad at 90° to site, measured distances E as follows: Site O, 1/20 mi to first small drainage, 2 1/20 mi. to main drainage at Fall Leaf, 3/10 mi. to first road E of drainage, 1.3 mi to main road to Eudora. From a point in center of the two sets of R.R. tracks and at 90° to site measured the distance to site as: 9' to southernmost rail, 24' to telephone pole (numbered 13), 20ft to fence, 125' across field to edge of river bank, 35' to edge of water. (total of 204' to N point of exposed rocks at edge of water. Since 1951 the water of the Kaw River has eroded the bank 610' to the NE.



The rock dikes are of well rounded river worn boulders of limestone and granite erratics, ranging in size from 3 or 4 inches to 1 1/2 feet in diameter. There are remarkably few boulders that are angular and if so are of recent fracture. Preliminary elevation shows that there are 2 or 3 layers ^{which} of the larger boulders which rest on and to some extent, at least basally, in a coarse gravel which in turn rests upon a grayish clay. The fish trap is lined with a pavement of smaller boulders with a greater percentage of flat rocks than is found on dikes. There are a few isolated ^E boulders W and NW of curved dike and a basal layer of boulders ^E of straight dike, some of which are exposed. The main dike extends S for equivalent distance of the exposed boulders, as a submerged dike. It was ascertained that these dikes extend uninterruptedly to the N under the undisturbed stratification of the bank, at least for 13' beyond the last exposed surface rock on the beach. It was on the basis of this fact that the dikes were not of modern age but archaic in level. The figure in previous page shows the reconstruction of a hypothetical channel that would direct up-stream migrating fish to the fish trap. The long straight dike would act as a barrier to fish moving up stream. As the dikes now stand, there is an active trap-effect on E side of main dike and many fish are found there. On every occasion that I have approached the bank there has been a great blue heron feeding there. Several photographs were taken at this site and are as follows:

711010-2 from top of bank to SE showing the general alignment of the dikes.

711010-3 same as above with Mr. Dennis ^{and Lisa} Doiley, at water level.

711010-4 main dike showing abrupt W edge. Submerged boulders to E end abruptly there. Submerged boulders extend beyond end of main dike for approx. 50'.

711010-5 From top of bank to SW. Starley on water level.

711010-6 same as above. The climat Cottonwood community on S side of river is being eroded away.

711010-7 Closer view of above.

711010-8 N end of main dike as it contacts bank. These boulders continue uninterruptedly under the sediments of the bank.

711010-9 main dike riverward, showing eroded boulders.

711010-10 main dike at contact with bank.

711010-11 excavated bank 10 feet bankward from last exposed rock on beach, showing one granitelike white rock and a reddish glacial erratic. These kinds of boulders are continuous from main dike and are below uninterrupted stratification. The greatest distance excavated was 13'.

711010-12 excavation showing some detail of stratification of clay beds, foreset beds of sand etc.

711010-13 general area of excavation showing exposed boulders on beach and excavation beyond. Dr. Bailey and Lisa in foreground.

711010-14 W dike showing largest boulder.

711010-15 river from upstream at first rock barrier.

711010-16 man made rock barrier showing angular rocks

Later in afternoon returned to site and searched for evidence of human association with dikes, looking for any kind of artefact that might be associated with a fish trap such as a skinning knife or fish bones. By searching with hands in 6-10 inches of water, found the following items, none of which are convincing as human associated and all from floor of the fish-trap basin.

711010-17 hand hammer - edges greatly eroded.

711010-18 chert or flint mass with flaked edges.

711010-19 edged stone.

711010-20 grooved rock.

711010-21 Sigillaria fragment x (Pennsylvanian)

This last item was on floor of fish trap basin.

The above items are ~~the~~ ^{the} kinds of rocks that can be found in any stream bed and as stated above are unlikely associated with Archaic man. The Sigillaria fossil tree could have had some utility as an artefact.

Fall Leaf, 1100 feet W and 90 ft N of SE corner of Sec 30, T12S, R21E, approx 778 ft., Leavenworth Co., Kansas

Oct. 11, 1971

Returned today to site of boulder dikes with screening equipment, and from center of fish trap area screened approx. 5 cubic feet of material. Did not find anything that I would consider Archaic. The sample was small and from general observation would consider the dikes as more likely glacial deposits or more likely creek channels from valley slopes to N. Still, the configuration of the dikes ~~is~~ ^{is}

in favor of a man-made structure. These dikes are being exposed for the first time in my 24 years of working on the Kaw and I know of no other such example between LeCompton and De Soto. This year there has been ^{also a greater} ~~the greatest~~ change in the configuration of the river channel than I have witnessed in the last 24 years, especially in the amounts and distribution of sand bars.

From the site made the following photographs

711011-1 Largest boulder and flat on top with smooth edges.

711011-2 general view downstream. Cottonwoods occupy an old channel of the intermediate cross-sectional level.

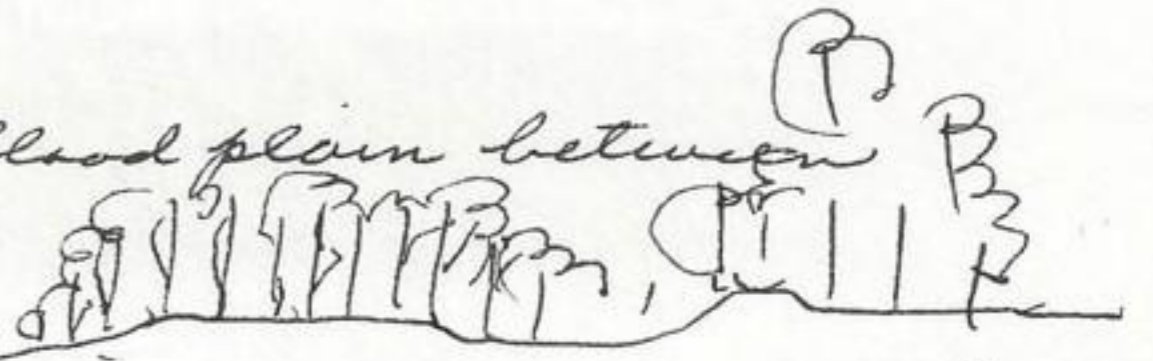
711011-3 2 flat top stones on upstream dike of site

711011-4 main dike to SE

711011-5 main dike to S.

Oct 24, 1971

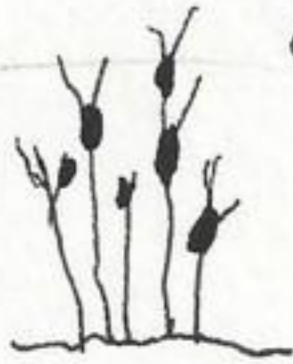
Mary and I collected plants on active flood plain between stabilized willows and edge of water



river sands beetles old channel young willow and cottonwood mature cottonwood

The following plants were collected:

On four stems, 3 feet high on black willow on sands (see above), collected the entire population of ^{blue} beetles. They were in six aggregates averaging 2 1/2' above the sands. The six groups contained individuals. No 711024-1
Family Chrysomelidae



Flock 88 blues and 20 snows flew N over area and called. Approx 12 killdeers fed along edge of sand in shallow water which was polluted with skum and oils. Fresh great blue heron tracks and seven turtle tracks (2" wide) were in mud and sands. The old channel along N edge of river is now sealed with sand. The beavers which used this area have been displaced. In open fields 1/2 mile N observed 1 am. roughleg + 2 sparrow hawks.

Mouth mud Creek, Leavenworth Co., Kansas
Nov. 7, 1971

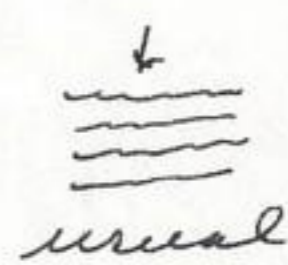
Annette and I checked same areas as of Oct 24. Day cold and windy. The river had risen over sands and had again receded to same level as of Oct 24, leaving the sand bars damp and in many places muddy. Sand ripples were exceedingly variable, some formations contrary to usual ripples which are usually 90° to flow of water. In other words

the ripple effect was 90° to flow of water thus:

These sand sculperings are marks of unusual beauty.

8 killdeer and one knifefish in area. 26 crows

flew SW across river in downstream formation



usual



contrary

1 mi N, 1 1/2 mi W Fall Leaf, Leavenworth Co., Kansas
Nov 7, 1971

at a drainage crossing on E-W road observed a leucote on side of road. It immediately ran into brush and stopped 15' away from car and remained 20 seconds.

Fall Leaf, 1100ft W and 90ft N of SE corner 711107-133
Approx 778ft., Leavenworth Co., Kansas. See 30, T125, R21E.
Nov. 7, 1971

Fish trap site (see Oct 10, 1971) completely covered with water and absolutely no evidence of rock structures even though only covered with approx. 2 feet of water. Visibility thru water 5-6 inches.

Lawrence, Douglas Co., Kansas
Nov. 23, 1971

Snow for first time this season. Autumn colors extending over longer period of time and were as subnormal in color this season as was intensity of color last year (the brightest colors in at least 25 years). The oaks maintained their subdued reds & brown throughout the latter part of the season up to the very time the leaves of other kinds of trees lost their color & leaves. This date the landscape looks like winter conditions except with last remnants of oaks & some yellows of other trees showing thru. Noted fox squirrel feeding on elm buds of elm during snow when all branches were covered. At this time squirrels are very conspicuous.

Lawrence, 402 Yorkshire Dr., Douglas Co., Kansas
Nov. 26, 1971

Last night at 12:30 A.M. a great horned owl called three times from top of utility pole in backyard. It faced S. On

Nov 20, a horned owl called from same pole at 12:40 A.M. and called 4 times.

Nov. 27, 1971

Two great horned owls called this A.M. at 5:30.

Nov 28, 1971

Horned owl called 12:30 A.M.

Univ Kansas, Lawrence, Kansas.
Dec. 2, 1971

Noted 8 cedar waxwing in elm trees E of museum, a group of approx. 80 robins have been on campus for the last three days. They sing in evening (5:00 P.M.) even though temps are below freezing.

Dec. 6, 1971

Approx. 60 cedar waxwings, 4 robins & 2 starlings feeding together in top elm tree out from 7th floor office of mus. nat. hist.

Turnpike, approx. 15 mi. SW Emporia, Chase Co. Kansas
Dec 6, 1971

Mr. Steven Peckham reported a bobcat road kill at this locality on Dec. 4, 1971. From a river valley or swale between 2 ridges. Killed in evening. He stated that in the Augusta area the bobcat is common and frequently taken by dogs. The dogs react differently when chasing bobcats than other kinds of animals

Perry Reservoir, Jefferson Co., Kansas

Dec 11, 1971

Annette P and I made trip in Perry Reservoir area starting from dam and thence to west side, Ozawie and back. Left Lawrence at 10:20. Sky clear in early morning but clouds coming in from north. Temp approx 32°F. Ice on ponds along side of road. Will list kinds of birds between here and Perry. Meadowlark, starling, shrike, Eng sparrow, sparrow hawk. 08.0 Perry turnoff. tree sparrow, redtail. 10.6 SE corner of reservoir area. 10.9 Crow 11.4 east end of dam. Lake open, 4 goldeneye ducks feeding near shore of dam at east end. Common loon about 1/10 mi beyond. 12.7 west end of dam (1.3 miles down). Now on Thompsonville road. Redheaded woodpecker. From vantage point can see 12 ringbilled gulls and some ducks flying over lake. Red-billed grebe, bluejay, redtail. 18.9 on road W of lake noted approx. 300,000 starling in one flock. This group extended for almost a mile with local concentrations. At N end of Jefferson State Park noted redtail hawk, 4 ♂♂ and 7 ♀♀ goldeneye ducks, 2 ringbilled gulls associated. Beyond on a point were approx 50 ringbilled gulls. Hairy woodpecker, redtail. Counted 137 ringbilled gulls resting on a point of land east of New Ozawie. 33.2 Ozawie area. Redtail hunting on slopes of bridge approach. At Old Ozawie counted 137 goldeneye, 64 ringbilled gulls and 2 Herring gulls (one an immature). Red-bellied woodpecker, redtail. 45.6 Longview Point. 46.2 first group of tree sparrow observed so far. about 25. Birds unusually rare today. Big Slough Creek a redtail. 10 slate colored juncos. bluebird (eastern), red-headed woodpecker road kill, 2 crows, 65.0 NE end of reservoir. Cardinal, redheaded woodpecker yellow-shafted flicker. This day has seen very few birds and is frequently associated with the time of day and if the day is windy. The roads are now in good condition and are all good for rain. Snow is a limiting factor later in season when drifts stop ones progress. It would be interesting to establish a station on dam and check birds moving across this barrier and then see reaction to meeting body of water. The rock slope of dam on N side is a unique habitat for birds and mammals and would be a good area to check mammals from time to time. The S side, now in grasses would also be an interesting area to observe successional progress of vegetation and mammal buds.

NW of Peterson Road and Yorkshire Dr., Lawrence, Douglas Co., Kansas
 Dec 12, 1971

Made bird census in wooded area of above, thence across open field W to wooded drainage (Gleerfield drainage). made trip after fresh snow.

Forested area associated with fence rows.

12 tree sparrows
 2 blue jays
 redtail
 5 slate colored juncos
 2 black capped chickadees
 12 bobwhite
 8 bobwhites

Open fields (windy in open exposed but considerably less in forest)
 no birds
 Coyote eating dead sheep

Forested area (major drainage)

5 cottontails in one patch
 ♂ + ♀ cardinal
 red-headed woodpecker
 winter wren
 3 mourning doves
 towhee

5 tree sparrows
 4 cardinals

7 slate colored juncos

12 tree sparrows

fox squirrel eating large curled pods (8")

redtail

black-capped chickadee

many tracks of fox & gray squirrels but no animals observed

yellow-shafted flicker

followed fox squirrel tracks for 200', actually digging

red-bellied woodpecker

120 snow geese flew 5 occasionally calling

good look of *Symphoricarpos*.

2 titmice (not calling)

cardinal

downy

3 slate colored juncos

yellow-shafted flicker

2 blue jays

8 slate colored juncos

mole trails under but in snow

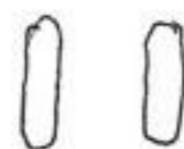
D. H. owl

blue-jay chased owl

downy

2 cardinals

tracks of cottontail versus fox squirrel



cottontail
 back feet parallel
 front feet offset
 separated to 8"



jumps to 8'
 back feet drag in deep snow



fox squirrel
 back feet divergent
 front feet close to back
 and parallel
 trails commonly tree to tree

Lawrence, Douglas Co., Kansas

Dec. 28, 1971

Trip to Mexico. Left Lawrence at noon at mileage 44700, car & trailer, temp below freezing, sky clear, no snow on ground and trees & grasses coated with frost. Will go on turnpike to Topeka, thence S on Interstate 35 to Laredo, Texas. Besides regular equipment in trailer, included watch, recorder, cassettes, bird books, binoculars, telescope (adapter & tripod), camera, film, etc. meter etc, note books, journal & field paper, life jackets, 12 volt rogan, pack, blow torch, thermometer, altimeter, pocket knife, batteries, glasses, radio, water jug, ear reg., certificate of birth etc. Will keep record of all hawks, eagles, owls by mileage and first occurrence of other species plus special observations.

44701 redtail, ponds & creeks frozen.
 44706.4 redtail, meadowlark, starling, mourning dove.
 44710.6 redtail, 44712.0 redtail, crow, 44716.3 redtail,
 44720.0 now turning S at Topeka. 44725.4 redtail,
 44726.8 redtail, 44732.2 redtail, 44732.9 redtail, bluejay,
 44734.1 redtail, 44736.7 sparrow hawk, 44740.1 redtail,
 44742.0 redtail, 44742.4 redtail, 44754.0 redtail, 44754.3
 redtail, 44745.8 redtail, 44746.7 marsh hawk, redtail, (open)
 44749.9 sparrow hawk, redtail, 44748.4 first major river
 2 redtails, 44749.8 redtail, 44752.3 redtail. All hawks
 in trees & facing sun. 44753.3 redtail, 44755.8 sparrow
 hawk, 44757.9 20 meadowlarks in one group, up to this
 point have seen 5 other singles, 44759.5 redtail, 44761.2
 redtail, 44761.9 redtail, 44763.3 redtail [will keep
 record by last 3 figures + indicate chance of larger mileage
 figure]. 63.9 Emporia service area on turnpike, red-
 tail, time 1:30 P.M. 65.0 redtail, 66.1 sparrow hawk &
 redtail, 66.7 Neosho River, redtail, 68.1 redtail,
 69.8 redtail, 70.5 redtail, 71.1 Cottonwood River, 72.3
 redtail, 74.2 redtail, 75.9 sparrow hawk, 84.6
 Cattle Pens, 89.6 redtail in river valley, 92.4 redtail,
 92.8 redtail, 94.9 redtail, 98.1 Matfield Green service
 area, 44800.5 roughleg hawk, 01.8 roughleg hawk,
 02.4 sparrow hawk, 027 center of Caidy, 10.3 redtail,
 15.3 redtail, 17.4 roughleg hawk, 18.5 roughleg,
 21.3 marsh hawk, 23.8 Eldorado, 27.1 roughleg.

27.3 roughleg, 27.5 roughleg, 28.1 redtail, 30.7 white water River, redtail, 34.2 roughleg, 39.4 roughleg, 34.9 roughleg, 44.4 wachita Wichita (center) at E Interstate Road at 3:15 P.M. Water in pond more partly open & less frost on trees, 49.2 Arkansas River, open, 54.1 sparrow hawk, 57.9 Clearwater road, 2 redtails, 62.3 redtail, 62.9 sparrow hawk. In last 30 miles conditions are slightly warmer than Lawrence, 65.6 redtail, 66.3 Neeshah River, redtail, skies clearing from overcast condition at Emporia 67.7 Wellington service area, redtail at 3:50. Temp 5°C. 73.4 redtail, 73.7 Wellington traffic gate. 74.0 marsh hawk, 78.5 roughleg, 78.9 redtail, 79.6 redtail, 81.4 first flock of horned larks (2,000), 84.4 area of good winter wheat, redtail, ponds open, 92.5 Oklahoma line, at 4:20 P.M. sky overcast, 92.9 redtail, 96.5 Braham, 98.7 Chickasha River, ~~44 90⁰~~^{41.8} 2 redtail 1 1/2 foot apart, 05.0 Blackwell, 14.2 Salt Fork Arkansas River at 4:45 P.M. Red sail start at about Oklahoma border, temp 47°F, 6°C. redtail, 19.7 Noble Co., 23.5 Billings 5:00 P.M. and end of census. Will keep check of hawks until dark. 37.5 redtail, darkness ensued and continued S to Oklahoma City, thence to Norman and Gaylord Gillies arriving at 7:00 P.M. at mileage 45019.0. In summary: meadowlarks not in flocks and the few observed were generally distributed. Small birds rare, no large starling flocks, crows uncommon and not in flocks.

Norman, Oklahoma

Dec 29, 1971

Left 8:50 A.M. at mileage 45019.0. Will keep record of hawks. Rain (mist) most of night but temp above freezing. Visibility 1/10 mile, temp 9°C. 32.9 redtail, 38.6 meadow in area and spanish moss reported at Norman. 49.5 redtail and first large flock of blackbirds (not starling), 53.8 wachita River, 67.3 spanish moss, 74.7 striped skunk road hill (rds rare), crows since border of Oklahoma in small group of 2-5, none in large winter flocks, but population gradually increasing to 5, 77.1 hills and deciduous forests like Arkansas. 80.3 near crest of Arkuchle mts, strata to N are perpendicular - to S dip to S., 81.6 skunk rd. hill. 86.6 first ducks in pond,

88.7 large lake on right and approx 200 ducks, 92.3
 redtail, fog 1/10 mile & less visibility, 45117.3 redtail, 27.8
 Red River, at 11:15, 76.1 Armadilla road kill, 78.9 redtail,
 The fog has been severe and censuses of redtails are ob-
 viously those near the road. 45200.00 Ft Worth, 2:15,
 Fog lifting for first time since Norman, Oklahoma.
 29.8 marsh hawk, 31.2 first turkey vulture, 53.6 first
 cottonfield, 65.5 redtail, ^{45221.9}~~21.9~~ Temple, first grackles
 and then 4 large group (approx 200 each), 36.8 sparrow
 hawk, 38.2 first boat-tail lark at 5:00. From here to
 Austin the lights were fading and no censuses made.
 Sunset 5:35 P.M. Arrived 3 miles S of Colorado River that
 runs thru Austin at 6:30 at mileage 45391.0. In
 summary - birds rare but more common than in Kansas
 and Oklahoma. Meadowlarks more numerous in Texas
 but not in winter flocks, generally groups of 2-12, and
 generally distributed. Only one vulture observed.
 Hawks decidedly in lesser numbers. Road remarkably
 free of road kills.

3 mi. S Austin (Colorado River) on Interstate 35, Texas
 Dec 30, 1971

Left Austin 10:00, mileage 45392. This morning
 temp approx 68°F and skies about 30 per cent in clouds. Wind
 had subsided from yesterday. This temperature is perfect for
 human activity. Area a combination of cultivated
 fields, native grasses and shrubby growth. The live
 oak a dominant tree and when found constitutes the
 green tree of the deciduous community. Birds scarce in
 area. On Interstate 35 to S at 45403.6 noted a turkey
 vulture. Forests range from 100% ^(live oak) green to those in which
 all leaves are gone. Tamarisk present. Most fields green
 but uncut grasses are brown. Except for a few meadow-
 larks, birds are rare along highway. 10.4 boat-tail grackle
 at San Marcos. 15.9 San Marcos River. 66.2 San Antonio
 at 12:00. Visited army medical installations (Brooks General)
 at Fort Sam Houston where Annette received training during
 World War II. In afternoon visited the Hemispheric Hemispher,
 ascended needle etc, ^{photo 711230-6 of city from here} and then revisited the Paseo del Rio
 and ate at the Casa Rio on the Paseo del Rio. (Guacamole
 salad, Tostados, Enchilada, rice, beans, Queso, Tortilla & Coffee)

Continued S. As one travels S the country becomes more flat, the trees larger in savannalike formation and at about Eagle Pass turnoff the entire area is now solid low trees and shrubs. Birds still uncommon. Arrived at Dilley (1 mi. S) at 6:00 P.M. at mileage 45544.

1 mi. S Dilley, Texas

Dec. 31, 1971

Left at 45544 at 8:30. Sky overcast & winds from N. 59.3 redtaillike hawk. 64.1 redtail. other birds, although uncommon are meadowlarks, mourning doves and 6 small birds per mile. 66.4 2 roughleg? Encinal temp 15°C. 96.4 redtail. 99.2 first oranges. 45604.2 redtail?, 99.5 first crow. 45635.0 Nuevo Laredo 4:15 35.7 first egrets and associated with cattle, a localized group in this country, redtail, meadowlarks regular along way. ~~42+~~ Entrance into Mexico should be pre-arranged. Arrived Hidalgo and camped at 45716 just south of the City some 10 miles or so.