

***JOURNAL 1963***

*JAMES W. BEE*

January 1, 1963

Inspection of trap-lines set last night: (see journal, 1962) (dike + ponds)

- |                                |                                |
|--------------------------------|--------------------------------|
| 1 <i>Microtus ochrogaster</i>  | 16 uneffected                  |
| 2 <i>Mus musculus</i>          | 17 uneffected                  |
| 3 <i>Peromyscus manic.</i>     | 18 <i>Microtus ochrogaster</i> |
| 4 uneffected                   | 19 <i>Microtus ochrogaster</i> |
| 5 <i>Microtus ochrogaster</i>  | 20 sprung                      |
| 6 " "                          | 21 sprung                      |
| 7 uneffected                   | 22 uneffected                  |
| 8 <i>Reithrodontomys</i>       | 23 uneffected                  |
| 9 uneffected                   | 24 <i>Microtus ochrogaster</i> |
| 10 " "                         | 25 <i>Microtus ochrogaster</i> |
| 11 sprung                      | 26 uneffected                  |
| 12 uneffected                  | 27 <i>Microtus ochrogaster</i> |
| 13 <i>Microtus ochrogaster</i> | 28 uneffected                  |
| 14 uneffected                  | 29 <i>Peromyscus</i>           |
| 15 " "                         | 30 uneffected                  |

last entry in (see journal, 1962)

Open fields (2 1/20 mi. S and 3/10 mi. W Lawrence P.O.).

- |                           |                                |                               |
|---------------------------|--------------------------------|-------------------------------|
| 31 uneffected             | 53 uneffected                  | 75 uneffected                 |
| 32 " "                    | 54 " "                         | 76 <i>Reithrodontomys</i>     |
| 33 " "                    | 55 " "                         | 77 sprung                     |
| 34 " "                    | 56 " "                         | 78 uneffected                 |
| 35 sprung                 | 57 " "                         | 79 <i>Peromyscus leucopus</i> |
| 36 uneffected             | 58 " "                         | 80 uneffected                 |
| 37 " "                    | 59 " "                         | 81 " "                        |
| 38 " "                    | 60 " "                         | 82 " "                        |
| 39 " "                    | 61 <i>Peromyscus</i>           | 83 <i>Peromyscus</i>          |
| 40 " "                    | 62 <i>Reithrodontomys</i>      | 84 sprung                     |
| 41 " "                    | 63 <i>Microtus ochrogaster</i> | 85 uneffected                 |
| 42 <i>Reithrodontomys</i> | 64 uneffected                  | 86 " "                        |
| 43 " "                    | 65 " "                         | 87 " "                        |
| 44 uneffected             | 66 sprung                      | 88 " "                        |
| 45 <i>Peromyscus</i>      | 67 <i>Peromyscus</i>           | 89 " "                        |
| 46 uneffected             | 68 uneffected                  | 90 " "                        |
| 47 sprung                 | 69 " "                         | 91 " "                        |
| 48 uneffected             | 70 sprung                      | 92 " "                        |
| 49 <i>Peromyscus</i>      | 71 uneffected                  | 93 " "                        |
| 50 uneffected             | 72 sprung                      | 94 " "                        |
| 51 " "                    | 73 uneffected                  | 95 " "                        |
| 52 " "                    | 74 <i>Peromyscus leucopus</i>  | 96 " "                        |
|                           |                                | 97 <i>Reithrodontomys</i>     |
|                           |                                | 98 <i>Reithrodontomys</i>     |
|                           |                                | 99 uneffected                 |
|                           |                                | 100 <i>Reithrodontomys</i>    |

Summary  
 10 *Microtus ochrogaster*  
 1 *Mus musculus*  
 6 *Peromyscus maniculatus*  
 2 *Reithrodontomys*  
 3 *Peromyscus leucopus*  
 28 total  
 10 traps sprung  
 62 not visited

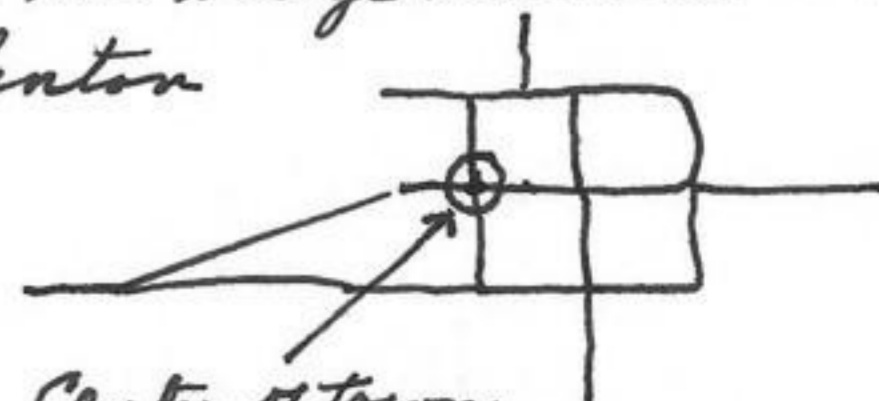
## Preparation of specimens from trapline.

	630101-1	<i>Microtus ochrogaster</i>	151-37-20-12-38gms ♀ ut. normal
(dest)	630101-2	<i>Mus musculus</i>	153-73-18-14-18gms ♂ testis 7mm
	630101-3	<i>Peromyscus maniculatus</i>	130-50-19-13-16gms.
(dest.)	630101-5	<i>Microtus ochrogaster</i>	150-32-21-12-40gms ♂ testis 11mm
	630101-6	" "	157-35-20-12-44gms
(dest.)	630101-8	<i>Reithrodontomys megalotis</i>	146-70-17-12-11gms ♀
	630101-13	<i>Microtus ochrogaster</i>	162-38-21.5-13-53gms ♀ 3x1 emb. 18mm were active
	630101-18	" "	141-34-21-12-32gms ♀ ut. normal
	630101-19	" "	159-38-20-12-48gms
	630101-24	" "	136-28-19-12-34gms
	630101-25	" "	139-31-18.5-12-34gms
	630101-27	" "	151-35-20-13-44gms
	630101-29	<i>Peromyscus maniculatus</i>	140-55-19-14-16gms ♂ testis 7mm
	630101-42	<i>Reithrodontomys megalotis</i>	122-55-17-13-9gms
	630101-45	<i>Peromyscus maniculatus</i>	153-59-20-14-19gms
SXU	630101-49	" "	149-57-18-14-21gms
(dest)	630101-61	" "	[130]-[38]-19-14-15gms ♂ testis 9mm
	630101-62	<i>Reithrodontomys</i>	120-57-17-12-10gms
	630101-63	<i>Microtus ochrogaster</i>	141-31-20-12-41gms
	630101-67	<i>Peromyscus maniculatus</i>	143-58-20-13-19gms ♂ testis 5mm
	630101-74	<i>Peromyscus leucopus</i>	[123]-[33]-22-16-22gms
	630101-76	<i>Reithrodontomys</i>	137-68-18-13-10gms
	630101-79	<i>Peromyscus leucopus</i>	162-71-22-16-25gms
	630101-83	" "	133-55-21-16-14gms
(dest.)	630101-97	<i>Reithrodontomys megalotis</i>	111-51-16-13-8gms ♂ testis 3.5mm
	630101-98	" "	115-50-17-12-7gms ♀ ut. normal
	630101-100	" "	112-51-16-12-9gms
*	630101-43	" "	125-56-17-13-10gms

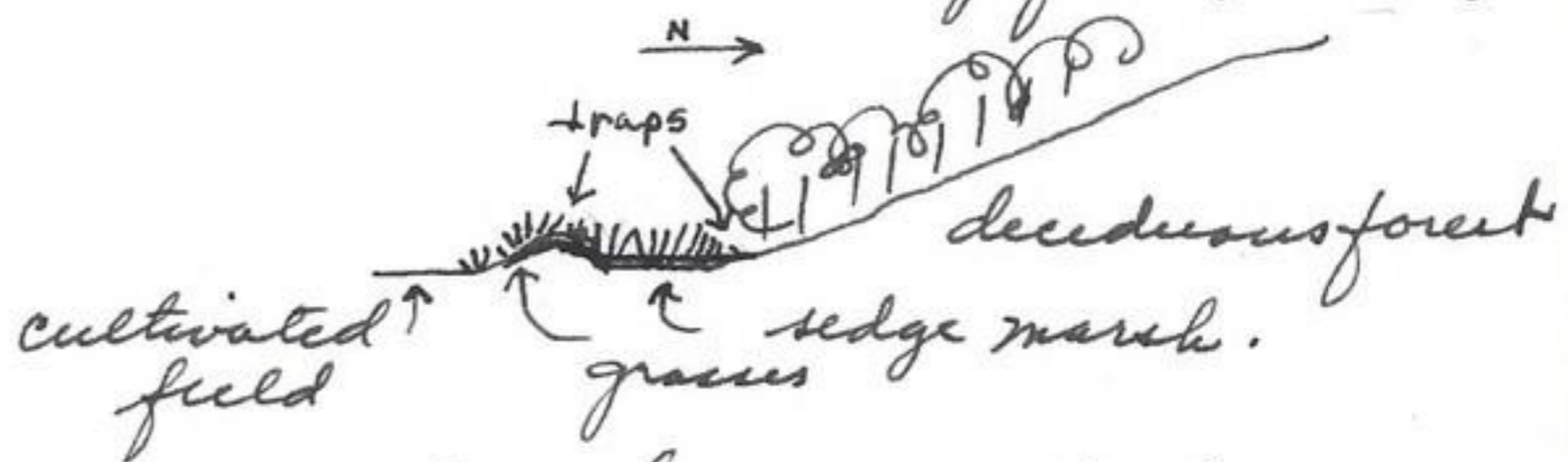
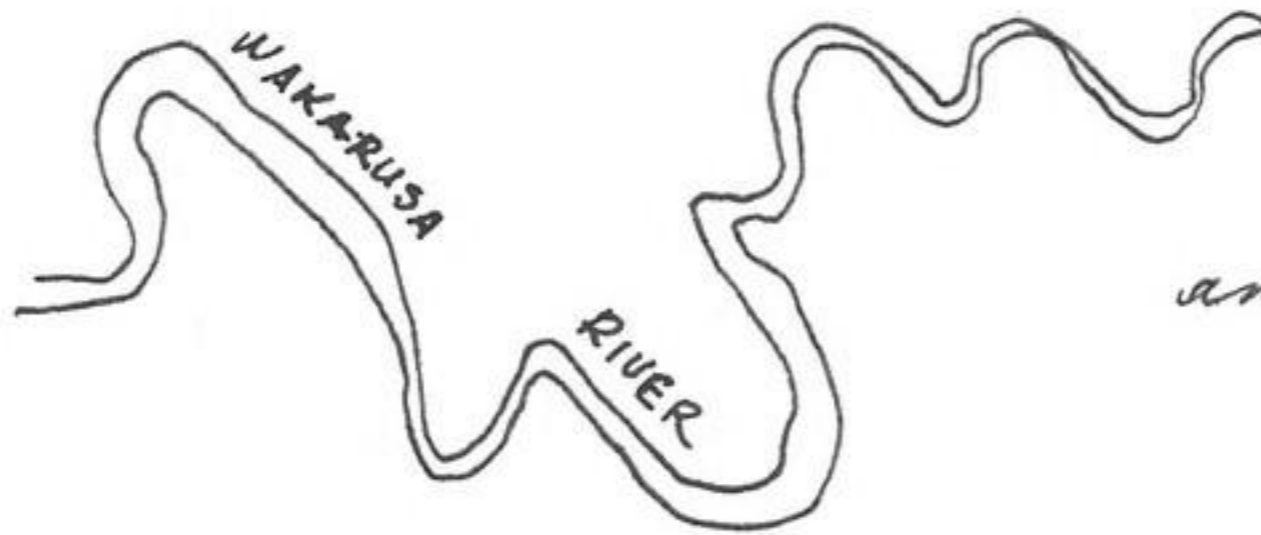
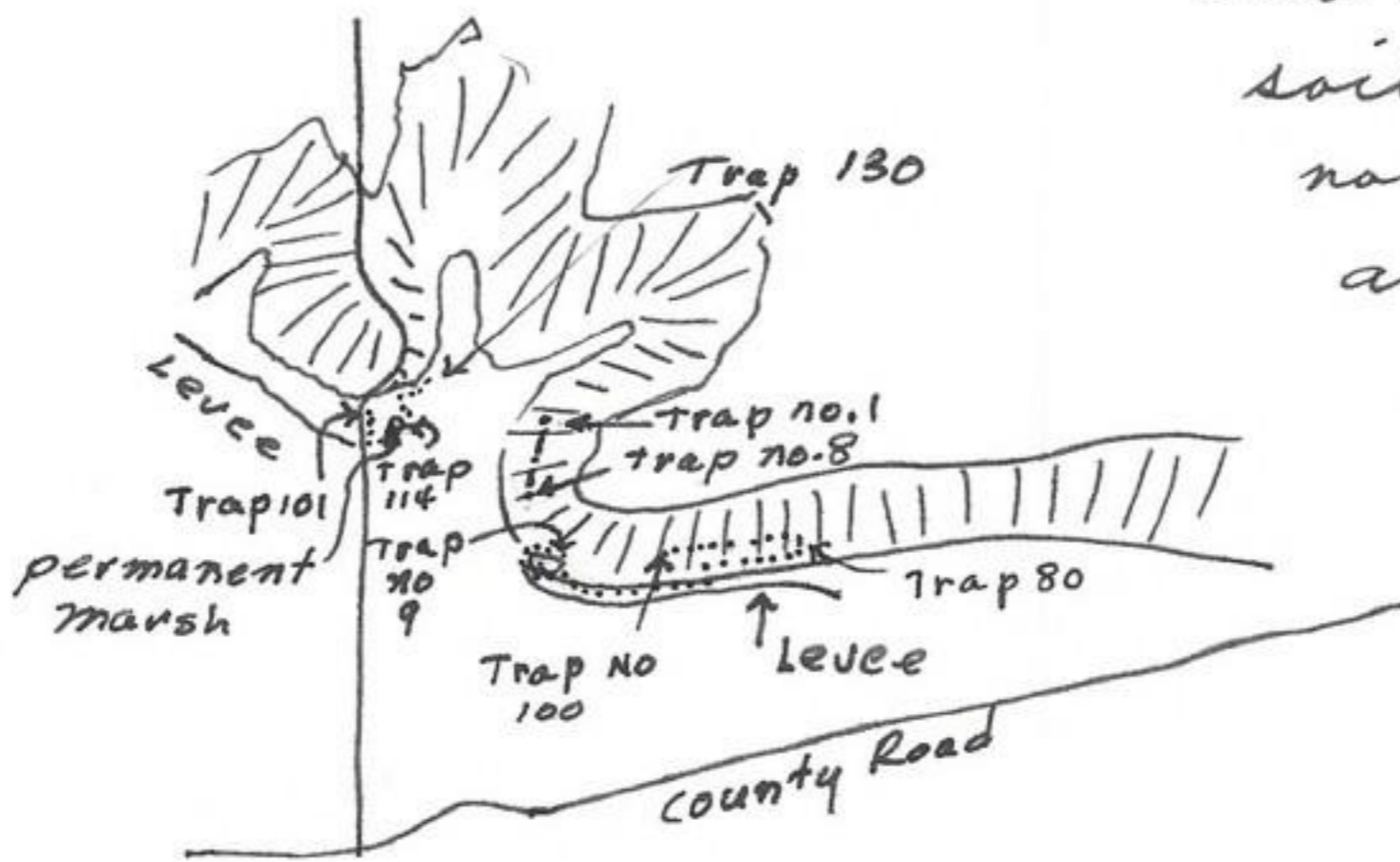
1 1/10 mi. N and 1 2/10 mi. E Clinton (center of town), Douglas Co., Kansas.

Jan. 2, 1963

Set traps in above area (exact position in sedge marsh at trap 9). Locality is from center of Clinton as will all other localities be so defined. Traps 1-100 in marsh or to N or to E. Traps 101-130 set NW across field at a permanent marsh located at 1 2/10 mi. N and 1 1/10 mi. E Clinton, (The center of the town, of Clinton is 22' - 200' W and 575' S of NE corner Sec. 22, R18E, T135). Traps set 20' apart for a linear distance of 2580 feet. Day cloudy all day and temp 32°F at 4:30 P.M. at time of trap setting. Completed trapline at 5:00 P.M.

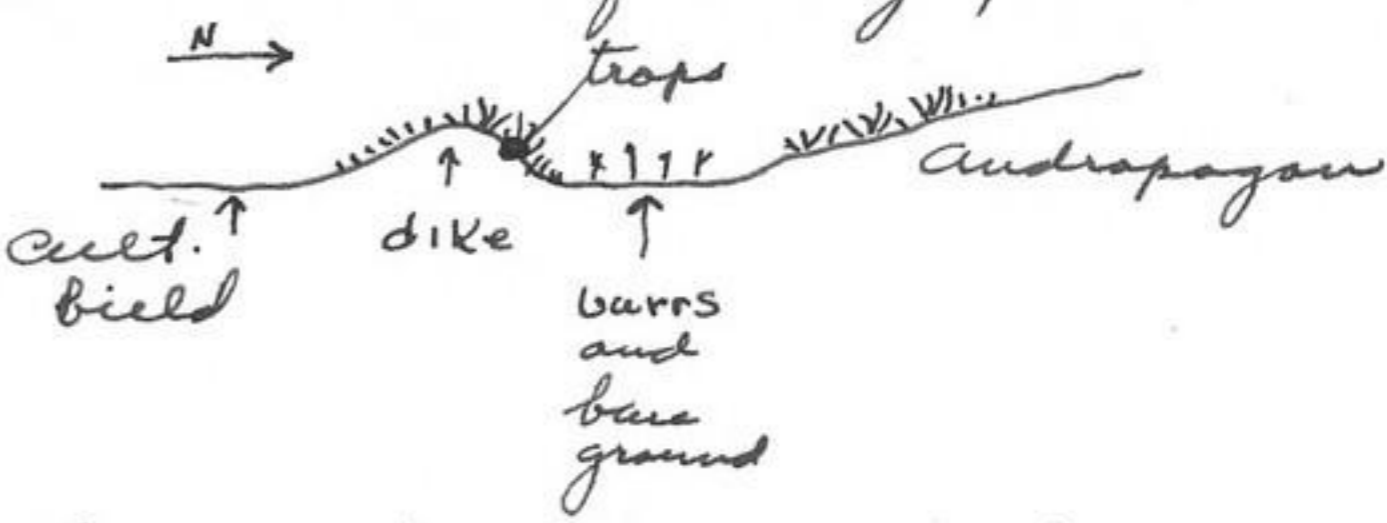


(See Sec 30 for area to west of this trapping area) The trap-line 1 to 8 on open slope at base of hill, actively in area of clover and soft black soils. The vegetation was not as mat as surrounding area. This area was an isolated spot of activity. Traps 9-24 surrounded a sedge patch which at one time might have supported a pond. Sedge high and solid matted vegetation below. Trails visible on peripheral margin. This appeared to be the most permanent and most likely for *Synaptomys*.

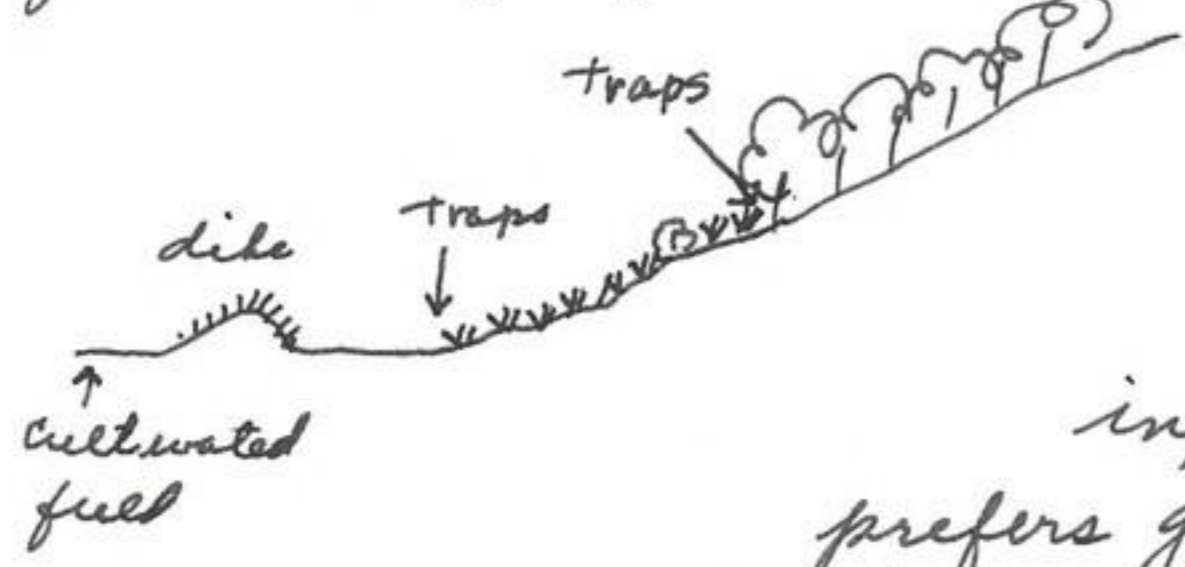


Traps 25 to 59 on n side of dike that traverses the base of the slope. The Andropogon is about 1 foot high, matted and not extensive laterally.

Traps 60 to 80 on n side of runoff channel. The Andropogon continues up slope to deciduous forests. High grasses were interspersed.

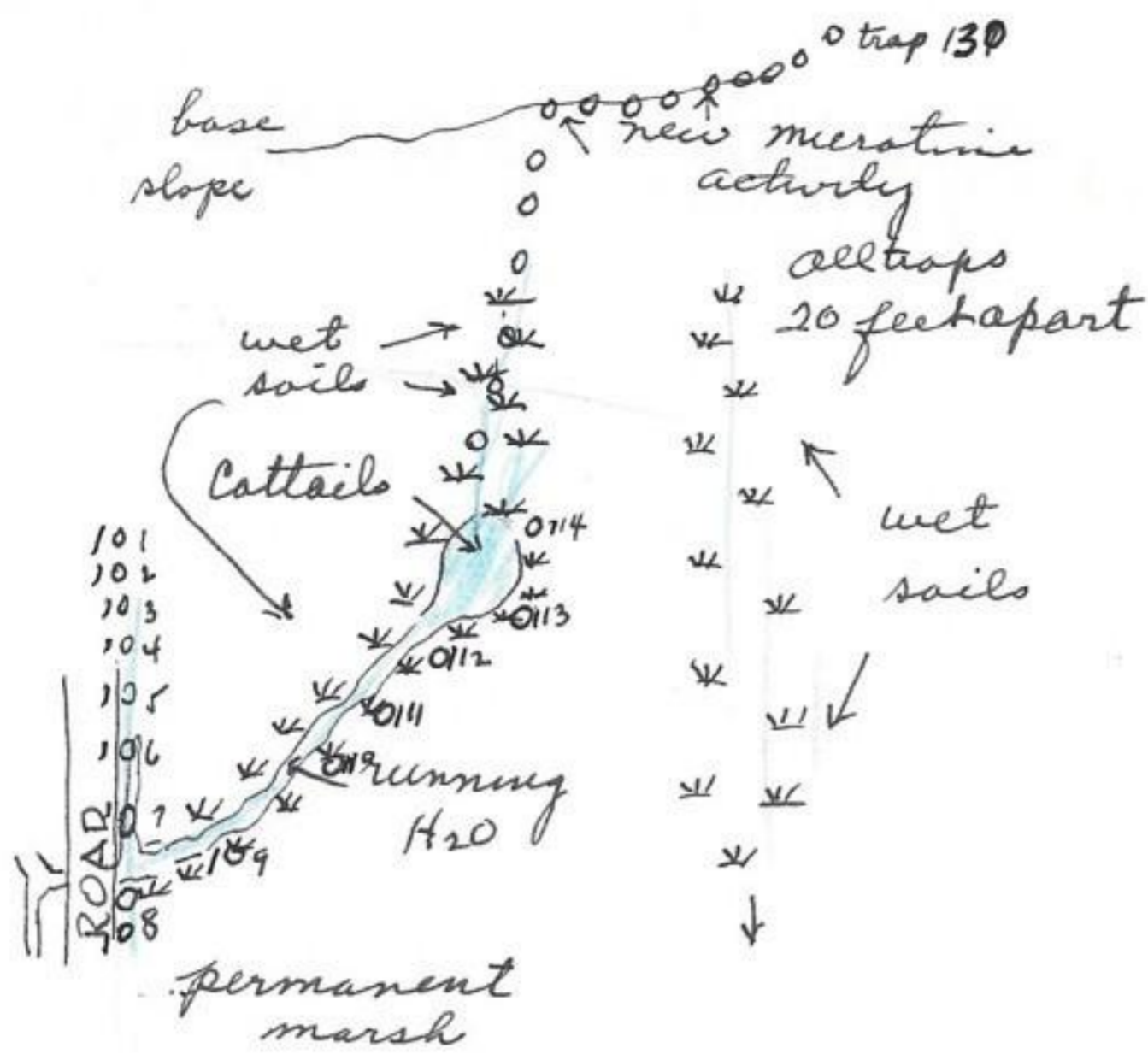


Traps 81 to 100 were placed at the upper extent of the grass at a few feet from the contact with the deciduous trees. Some areas of high grasses with almost impenetrable mat. *Microtus ochrogaster*



prefers grasses that are successional and with intermediate degree of matted grasses. At least a foot to a foot and 1/2 are best as this condition supplies adequate overhead protection. Observed considerable activity at points of contact between grasses and bare sidehill soils





The permanent marsh has standing water and cattails in center (6x10 feet). Wet soils continue up slope and running water down slope. The wet area to east is created by plowing of previous years. (N.S. trend). The entire field is now in short grass about 6 inches high and may not be more than a year or so in growth. If allowed to continue to advanced plant

community would be an excellent habitat for marsh loving birds and mammals. I would certainly recommend the preservation of this unusual area.

Jan. 3, 1962

Inspected. trap lines set last night as follows:

1 uneffected	23 Synaptomys c.	45 uneffected
2 "	24 Reithrodontomys	46 uneffected
3 m. ochro	25 Sigmodon h.	47 Reithrodontomys
4 " "	26 uneffected	48 uneffected
5 m. ochro	27 "	49 Peromyscus
6 m. ochro.	28 Reithrodontomys	50 uneffected
7 uneffected	29 sprung	51 sprung
8 "	30 m. ochro	52 uneffected
9 "	31 " "	53 "
10 "	32 Reithrodontomys	54 "
11 sprung	33 <del>Reithrodontomys</del> m. ochro	55 "
12 Sigmodon h.	34 Reithrodontomys	56 "
13 uneffected	35 sprung	57 "
14 m. ochro	36 uneffected	58 "
15 " "	37 sprung	59 "
16 m. ochro	38 sprung	60 "
17 " "	39. "	61 m. ochro
18 Sigmodon h.	40 Sigmodon h.	62 Sigmodon h.
19 sprung	41 m. ochro	63 uneffected
20 Sigmodon h.	42 m. ochro	64 m. ochro
21 uneffected	43 " "	65 uneffected
22 Sigmodon h.	44 uneffected	66 sprung

67 unaffected	88 <i>Pero. leucopus</i>	109 <i>m. ochrogaster</i>
68 "	89 unaffected	110 " "
69 "	90 "	111 <i>m. ochro</i>
70 "	91 "	112 <i>m. ochrogaster</i>
71 "	92 sprung	113 <i>m. ochrogaster</i>
72 <i>m. ochro</i>	93 unaffected	114 <i>m. ochrogaster</i>
73 sprung	94 <i>Reithrodontomys</i>	115 unaffected
74 <i>Reithrodontomys</i>	95 <i>Reithrodontomys</i>	116 "
75 sprung	96 sprung	117 <i>m. ochrogaster</i>
76 <i>Reithrodontomys</i>	97 sprung	118 unaffected
77 unaffected	98 unaffected	119 "
78 <i>m. ochro.</i>	99 "	120 <i>m. ochro</i>
79 <i>Synaptomys c.</i>	100 "	121 " "
80 <i>m. ochro</i>	101 <i>Sigmodon h.</i>	122 unaffected
81 <i>Reithrodontomys</i>	102 sprung	123 " "
82 <i>Synaptomys c.</i>	103 sprung	124 " "
83 unaffected	104 unaffected	125 " "
84 <i>Pero leucopus</i>	105 unaffected	126 " "
85 sprung	106 <i>Sigmodon h.</i>	127 " "
86 unaffected	107 " "	128 " "
87 "	108 " "	129 " "

Summary	
1	<i>Peromyscus maniculatus</i>
27	<i>Microtus ochrogaster</i>
11	<i>Sigmodon hispidus</i>
3	<i>Synaptomys cooperi</i>
10	<i>Reithrodontomys megalotis</i>
3	<i>Peromyscus leucopus</i>
<hr/>	
55	total
17	traps sprung
57	traps not visited

The bog lemming (630103-23) was associated with the sedge marsh. The predominate mammal was *Sigmodon* here. At 1120 feet to east two other *Synaptomys* were taken 630103-79 and 630103-82. This area had no water or damp soils and on slope. The previously two *Synaptomys* captured on Dec 31 were approximately 1000 feet from permanent water. From my experience with *Synaptomys* they are more frequently found in damp situations bordering water or at least standing water.

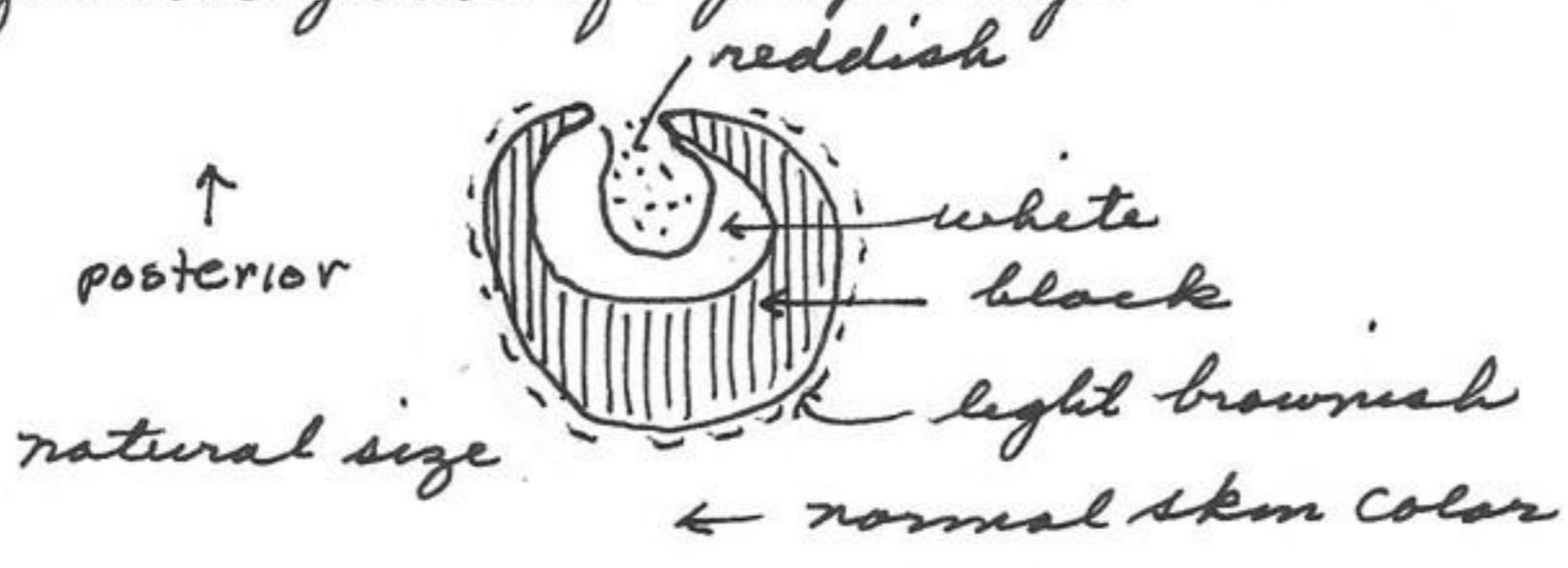
The greatest congregation of *Sigmodon* was in supersaturated soils and with <sup>high</sup> sparse overhead protection. although it was found in almost every variation of the community made-up. *Microtus ochrogaster* preferred a mixture of matted grass and slightly open vegetation. Grass that form solid mat or short mat grass are less frequently inhabited. *m. ochrogaster* uses trails quite consistently and some are deeply entrenched in the soil. High dense grasses are least used by *ochrogaster* but *Sigmodon* uses such places. *Peromyscus leucopus* is associated with <sup>proximity of</sup> forests when trapped in grasses.

Prepared the following mammals from this trap line

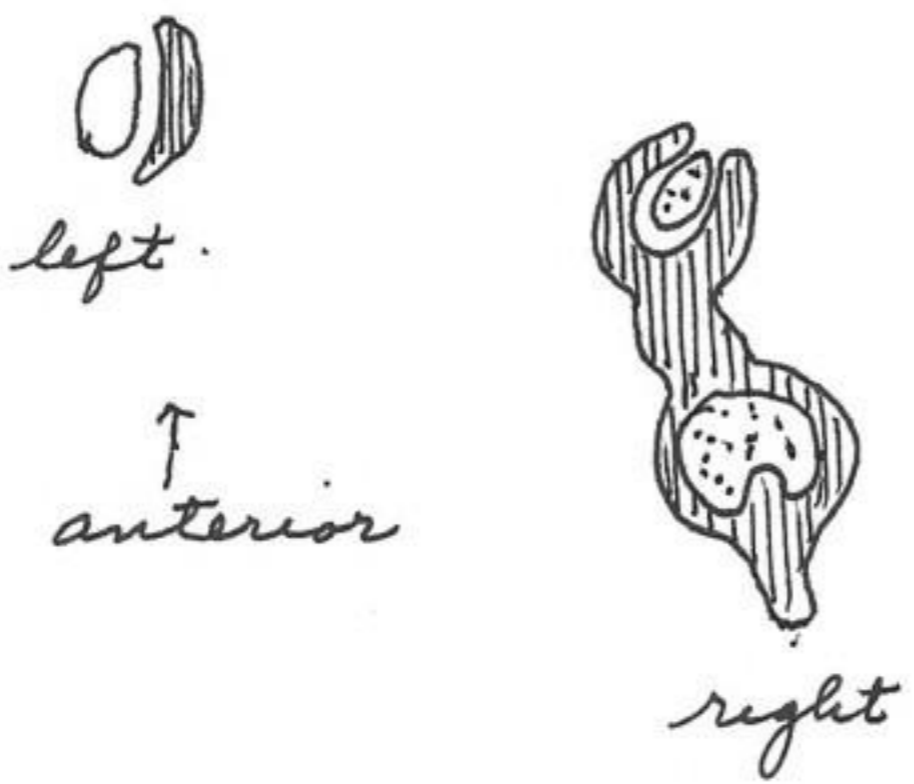
<u>630103-3</u>	<i>Microtus ochrogaster</i>	148-33-20-12-34gms ♂ testis 10mm
<u>630103-4</u>	<i>Microtus ochrogaster</i>	171-44-22-12-55gms
<u>630103-5</u>	" "	128-25-19-12-25gms ♀ ut normal
<u>630103-6</u>	<i>Microtus ochrogaster</i>	132-28-19-12-28gms ♀ ut. normal
<u>630103-12</u>	<i>Sigmodon hispidus</i>	202-82-29-16-42gms ♀ ut. normal
<u>630103-14</u>	<i>Microtus ochrogaster</i>	142-33-20-12-30gms
<u>630103-15</u>	<i>Microtus ochrogaster</i>	160-40-20-12-46gms ♂ testis 8mm
<u>630103-16</u>	" "	132-32-18.5-12-25gms
<u>630103-17</u>	" "	139-37-20-12-29gms
<u>630103-18</u>	<i>Sigmodon hispidus</i>	216-88-31-16-65gms ♂ testis 6mm
<u>630103-20</u>	" "	190-82-27-15-43gms ♂ testis 5mm
<u>630103-22</u>	<i>Sigmodon hispidus</i>	204-85-29-17-54gms ♂ testis 5mm
<u>630103-23</u>	<i>Synaptomys cooperi</i>	133-21-20-10-45gms ♂ testis 5mm
<u>630103-24</u>	<i>Reithrodontomys</i>	138-65-17-12-10gms ♂ testis 4mm
<u>630103-25</u>	<i>Sigmodon hispidus</i>	[184] [70]-29-16-50gms ♀ ut normal
<u>630103-28</u>	<i>Reithrodontomys</i>	118-56-17-12-7gms ♀ ut. normal
<u>630103-30</u>	<i>Microtus ochrogaster</i>	120-31-18.5-12- (dect.)
<u>630103-31</u>	<i>Microtus ochrogaster</i>	158-38-21.5-12-42gms ♂ testis 8mm
<u>630103-32</u>	<i>Reithrodontomys</i>	139-66-18-14-10gms ♂ testis 3mm
<u>630103-33</u>	<i>Microtus ochrogaster</i>	154-38-20-12-38gms ♀ ut. normal
<u>630103-34</u>	<i>Reithrodontomys</i>	143-65-18-12-14gms ♀ ut. normal
<u>630103-40</u>	<i>Sigmodon hispidus</i>	205-68-28-17-52gms ♀ ut normal
<u>630103-41</u>	<i>Microtus ochrogaster</i>	137-31-20-12-31gms ♂ testis 5mm
<u>630103-42</u>	" "	131-28-19-12-27gms
<u>630103-43</u>	" "	144-32-20-12-34gms ♂ testis 5mm
<u>630103-47</u>	<i>Reithrodontomys</i>	115-49-16-13-8gms ♀ ut normal
<u>630103-49</u>	<i>Peromyscus leucopus</i>	155-66-22-14-19gms ♂ testis 5mm
<u>630103-61</u>	<i>Microtus ochrogaster</i>	146-30-19-12-42gms ♀ 1x2 emb. 19mm
<u>630103-62</u>	<i>Sigmodon hispidus</i>	[235] - [94] - 31.5-18-81gms ♀ ut. normal
<u>630103-64</u>	<i>Microtus ochrogaster</i>	146-34-20-12-41gms ♂ testis 7mm
<u>630103-72</u>	" "	152-35-19-12-41gms ♀ ut. normal
<u>630103-74</u>	<i>Reithrodontomys</i>	133-64-18-13-10gms ♂ testis 3mm
<u>630103-76</u>	<i>Reithrodontomys</i>	115-50-15-12-7gms ♀ ut normal
<u>630103-78</u>	<i>Microtus ochrogaster</i>	133-30-20-12-27gms ♂ testis 10mm
<u>630103-79</u>	<i>Synaptomys cooperi</i>	133-22-20-10-40gms testis 5mm
<u>630103-80</u>	<i>Microtus ochrogaster</i>	158-41-21-12-51gms ♀ suckling
<u>630103-81</u>	<i>Reithrodontomys</i>	134-65-18-13-10gms ♀ ut. normal
<u>630103-82</u>	<i>Synaptomys cooperi</i>	127-23-20-10-32gms ut. normal
SKU <u>630103-84</u>	<i>Peromyscus leucopus</i>	175-74-22-16-26gms ♀ ut enlarged, 4 perforat
<u>630103-88</u>	<i>Peromyscus leucopus</i>	175-80-23-15-24gms ♂ testis 8mm

630103-94	<i>Reithrodontomys</i>	128-60-17-12-10gms ♂ testis 2.5mm
630103-95	"	126-58-18-12-8gms ♀ ut. normal
630103-101	<i>Sigmodon hispidus</i>	[191]-[64]-29-16-58gms ♀ ut. normal
630103-106	" "	246-104-31-17-90gms ♂ testis 7mm
630103-107	" "	224-94-30-15-69gms ♀ ut. normal
630103-108	" "	218-92-29-16-68gms ♀ ut. normal
630103-109	<i>Peromyscus maniculatus</i>	147-58-19.5-15-20gms ♀ ut. normal
630103-110	<i>Microtus ochrogaster</i>	141-68-19-12-38gms
630103-112	" "	143-32-20-12-35gms ♀ ut. normal
630103-113	" "	172-44-20-12-51gms
630103-114	" "	150-34-21-12-45gms
630103-117	" "	150-34-20-12-35gms ♀ ut. normal
630103-120	" "	146-35-19-12-32gms ♀ ut. normal
630103-121	" "	178-37-21-13-60gms ♀ 3x1 plac. scars, sucking
630103-111	" "	158-38-20-12-53gms <u>vag. imp.</u>

flank glands of *Synaptomys* 630103-23 ♂



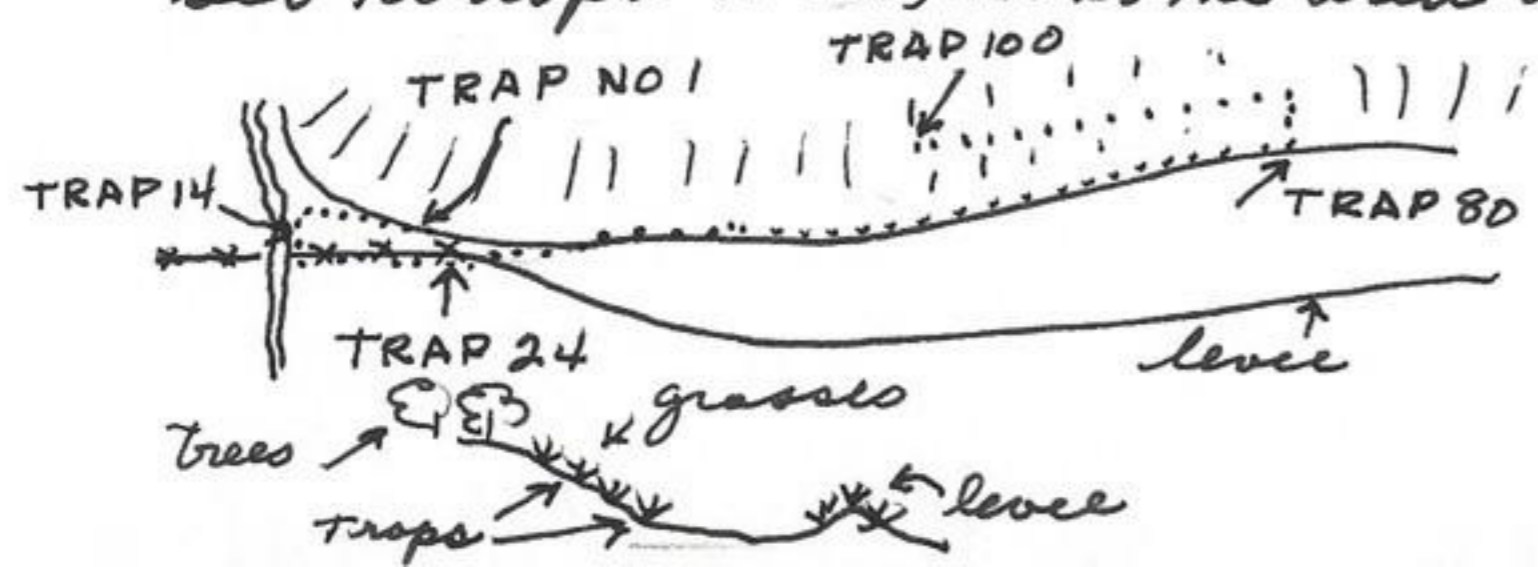
flank glands of *Synaptomys* 630103-79 ♂



The skin of *Synaptomys* is thin and tears easily and dries rapidly in comparison with *Microtus ochrogaster*.

1 1/10 mi. N and 1 7/10 mi. E Clinton (center of town), Douglas Co., Kansas  
Jan. 5, 1964

Set 100 traps (1-100) in same area as of Jan 2 (see map of that date).



Traps 1-24 around sedge marsh, 25-80 at base of slope (not on levee), 81-100 thru center of grass & sedges. Traps 101-120 at 15 2/10 mi. N & 1 mi. E Clinton Douglas Co., Kansas. which is approx 2 1/10 mi. NW of above locality.



Jan. 6, 1963

Jan, 6, 1963

630106-8

Checked trapline set last night as follows:

1 Sigmodon h.	41 sprung	81 m. ochro
2 uneffected	42 sprung	82 uneffected
3 "	43 lethro (deat)	83 "
4 "	44 sprung	84 Reithrodontomys
5 sprung	45 uneffected	85 uneffected
6 uneffected	46 sprung	86 "
7 "	47 uneffected	87 Pero leucopus
8 "	48 "	88 sprung
9 m. ochro	49 m. ochro	89 uneffected
10 Reithro	50 uneffected	90 "
11 uneffected	51 sprung	91 sprung
12 Pero. leucopus (deat.)	52 Synaptomys	92 uneffected
13 m. ochro	53 sprung	93 "
14 Synaptomys	54 uneffected	94 "
15 uneffected	55 "	95 "
16 "	56 "	96 "
17 Synaptomys	57 m. ochro	97 "
18 uneffected	58 microtus ochro	98 "
19 "	59 microtus ochro	99 "
20 sprung	60 sprung	100 "
21 sprung	61 sprung	101 "
22 sprung	62 uneffected	102 "
23 uneffected	63 "	103 Blarina
24 " ?	64 "	104 uneffected
25 sprung	65 "	105 "
26 sprung	66 "	106 Sigmodon h
27 uneffected	67 "	107 uneffected
28 "	68 "	108 "
29 "	69 m. ochro	109 "
30 "	70 uneffected	110 "
31 "	71 "	111 "
32 Sigmodon h.	72 "	112 sprung
33 uneffected	73 "	113 uneffected
34 "	74 sprung	114 "
35 sprung	75 uneffected	115 "
36 uneffected	76 "	116 "
37 sprung	77 "	117 "
38 m. ochro	78 "	118 Sigmodon h
39 sprung	79 "	119 uneffected
40 sprung	80 sprung	120 Reithrodontomys (deat.)

Summary: 4 Sigmodon hispidus 2 Peromyscus leucopus 3 Synaptomys cooperi  
 9 microtus ochrogaster 3 Reithrodontomys megalotis 1 Blarina brevicauda  
 1 Peromyscus maniculatus 23 Total 23 sprung 74 not visited

## Preparation of mammals from trapline set last night.

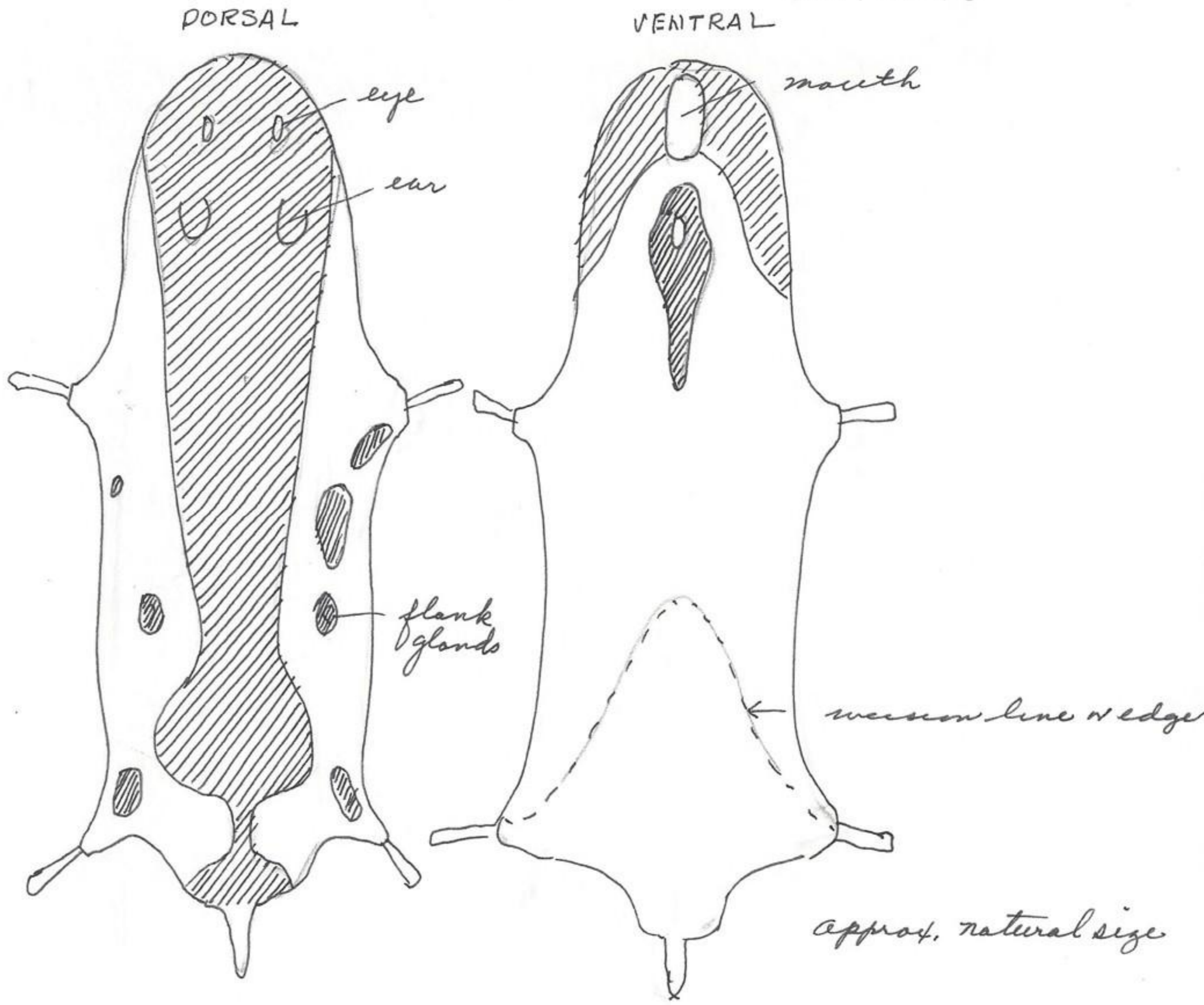
630106-1	<i>Sigmodon hisp</i>	246-101-29-19-82gms ♀ ut. normal
630106-9	<i>Microtus ochrogaster</i>	135-32-20-12-28gms ♂ testes 5mm
630106-10	<i>Reithrodontomys</i>	132-64-17-11-9gms ♀ ut normal
630106-12	<i>Peromyscus leucopus</i>	142-64-22-16-28gms ♀ ut. normal (destr.)
630106-13	<i>Microtus ochrogaster</i>	171-42-21-12-50gms ♀ ut. normal
630106-14	<i>Synaptomys cooperi</i>	128-21-20-10-35gms ♂ testes 5mm
630106-17	<i>Synaptomys cooperi</i>	138-23- <del>15</del> <sup>21</sup> -9-46gms ♂ testes 7mm
630106-32	<i>Sigmodon hispidus</i>	208-87-28-17-52gms ♀ ut. normal
630106-38	<i>Microtus ochrogaster</i>	155-38-20-12-42gms ♀ uterus normal (destr.)
630106-43	<i>Reithrodontomys megalotis</i>	122-60-16-12-18gms ♂ testes 2.5mm
630106-49	<i>Microtus ochrogaster</i>	130-32-19-20-29gms ♂ testes 5mm
630106-52	<i>Synaptomys cooperi</i>	133-22-20-11-47gms ♀
630106-57	<i>Microtus ochrogaster</i>	130-30-20-12-29gms ♀ ut. normal
630106-58	<i>Microtus ochrogaster</i>	148-34-20-12-38gms ♂ testes 8mm skull only.
630106-59	" "	165-42-20-13-48gms ♀ ut. normal
630106-69	<i>Microtus ochrogaster</i>	164-39-21-12-50gms ♀ ut. normal
630106-81	<i>Microtus ochrogaster</i>	160-39-21-12-53gms ♂ testes 10mm
630106-84	<i>Reithrodontomys megalotis</i>	140-66-18-12-10gms ♂ testes 4mm
SKU 630106-87	<i>Peromyscus leucopus</i>	160-70-23-16-22gms ♂ testes 7mm
630106-103	<i>Blarina brevicauda</i>	112-24-15-16gms ♀ ut. normal
630106-106	<i>Sigmodon hispidus</i>	200-85-28-15-50gms ♂ testes 4mm
630106-118	<i>Sigmodon hispidus</i>	192-81-27-15-45gms ♂ testes 4mm (destr.)
630106-120	<i>Peromyscus maniculatus</i>	119-42-18-14-21gms ♀ ut. normal

Mr. Robert Peterson, owner of the property, told me that in the 1930's (depression years), he purchased the land from other owners who had moved to California. The area between the mouth of the canyon south to Wakarusa River, was a marsh of slough grass as high as a horse. At about the same place as the water now accumulates <sup>sood</sup> there was a deep lake that was used for fishing and duck hunting. The levees and drainage canals now direct the runoff water to the Wakarusa and the land is dry an tellable except at mouth of canyon where it is still so wet that he has planted Brom grass instead of cultivating and plowing as he had at one time attempted to do. It is this area of marsh land between the mouth of canyon and the Wakarusa River that probably supported the relict population of *Synaptomys*, now confined to grasses on base of slope of the levees.

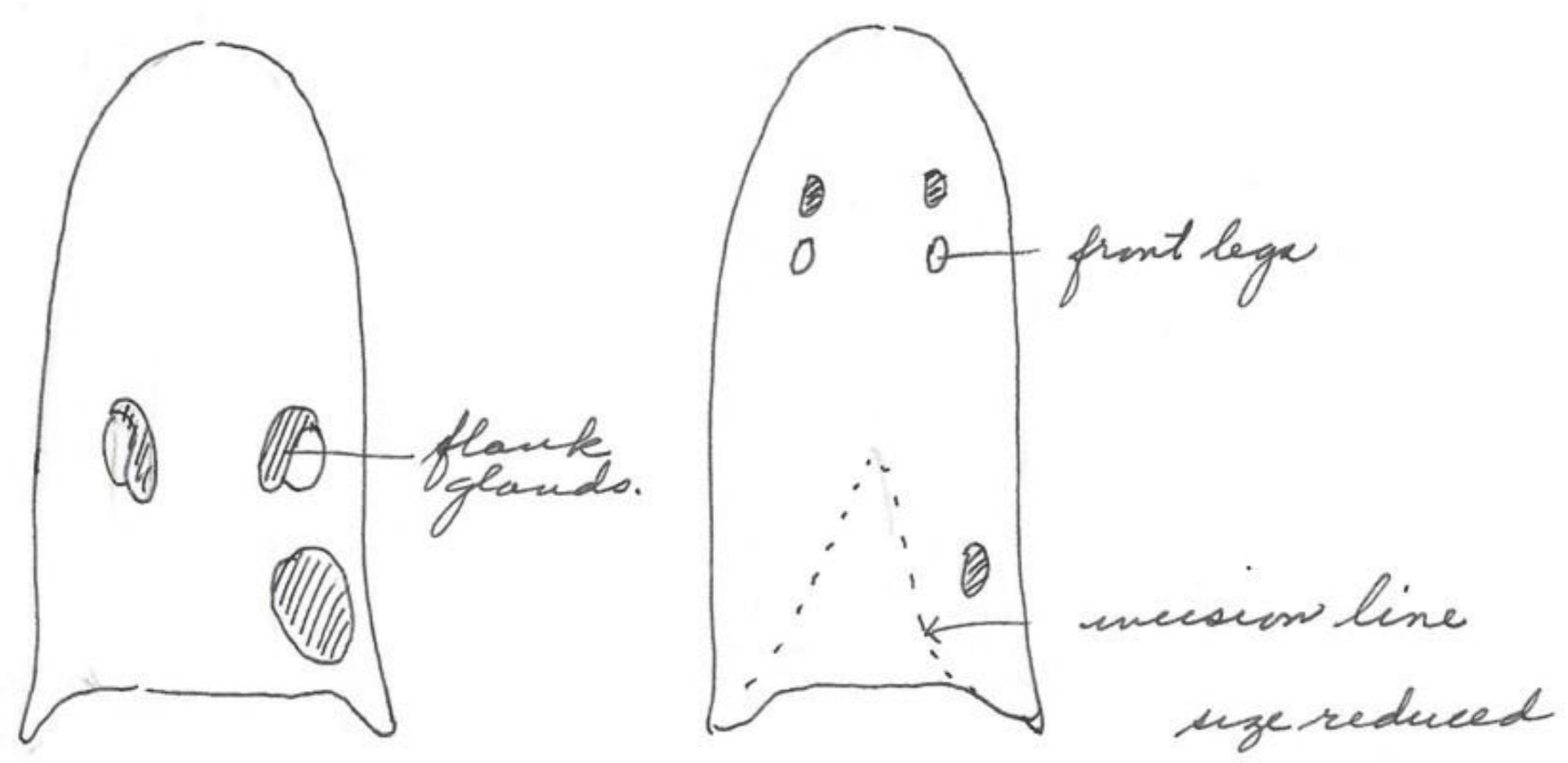
lake } ← Rd 77 to rattlesnake point  
N ↓

Jan. 6, 1963

630106-10



Specimen 630106-10 (*Synaptornis*) showing pelage (inside) advancement of molt. Hatched areas black and presumably wearing hair.



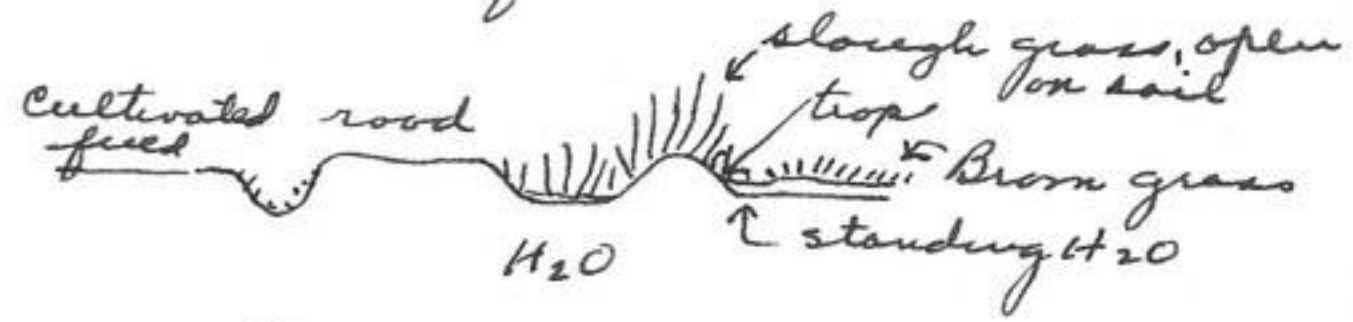
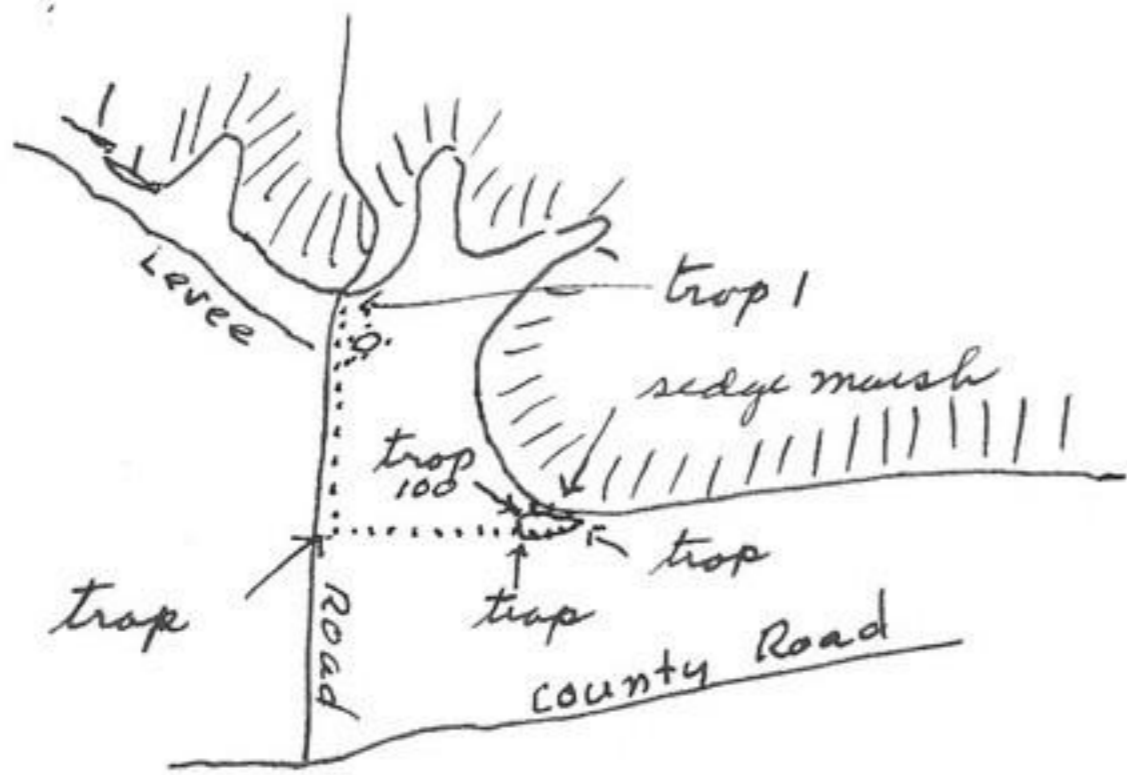
Specimen 630106-14 (*Synaptornis*) showing molting areas in black.  
 Specimen 630106-52 (*Synaptornis*) without pelage change.  
 Specimen 630106-17 had a coiled absorption structure in area of cecum, large & small intestine similar to Lemmus of the Arctic.

1 7/10 mi. N and 1 1/10 mi E Clinton, Douglas Co., Kansas.

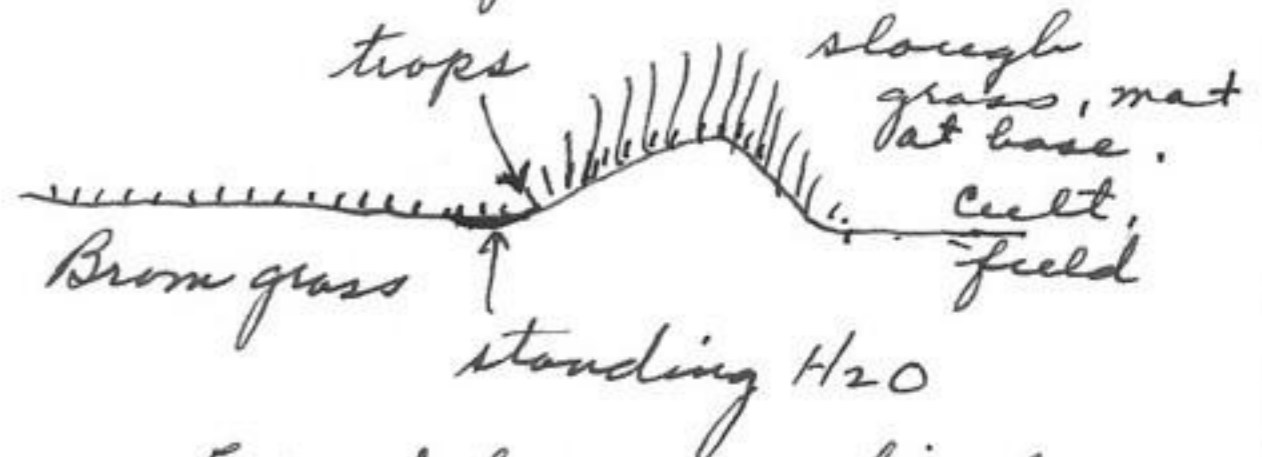
Jan 7, 1963

Locality measured from center of Clinton (see previous date for center designation). This locality is for the permanent marsh (other trapping areas included in this locality). Set 100 traps (1-100) at sundown (included) as follows:

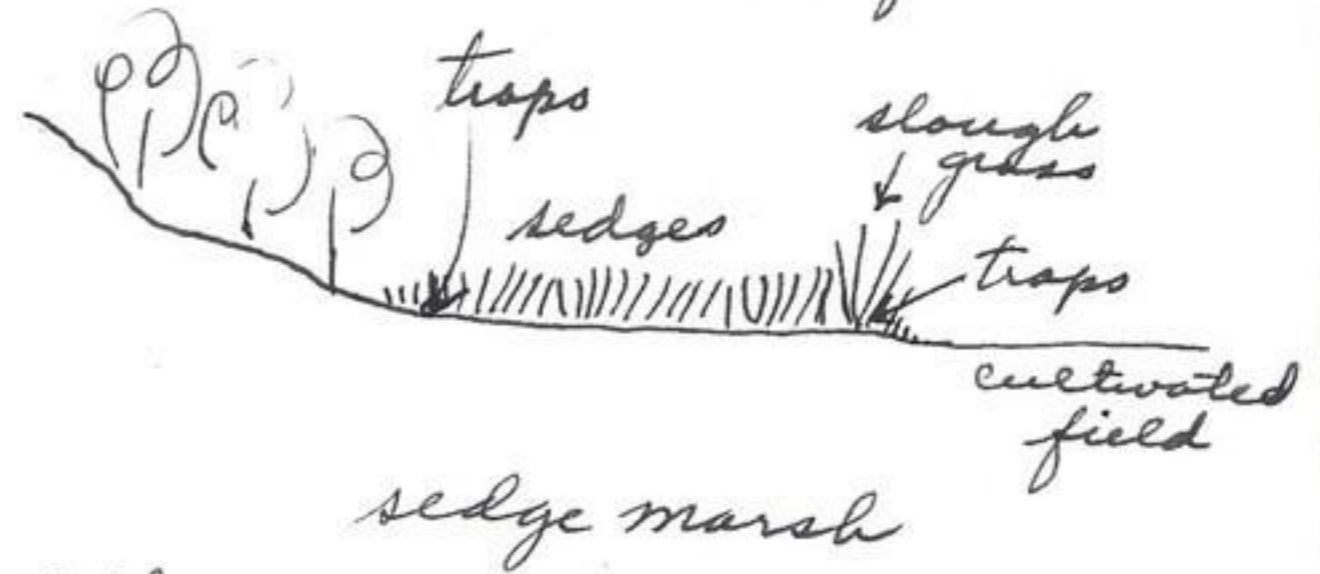
Jan. 7, 1963



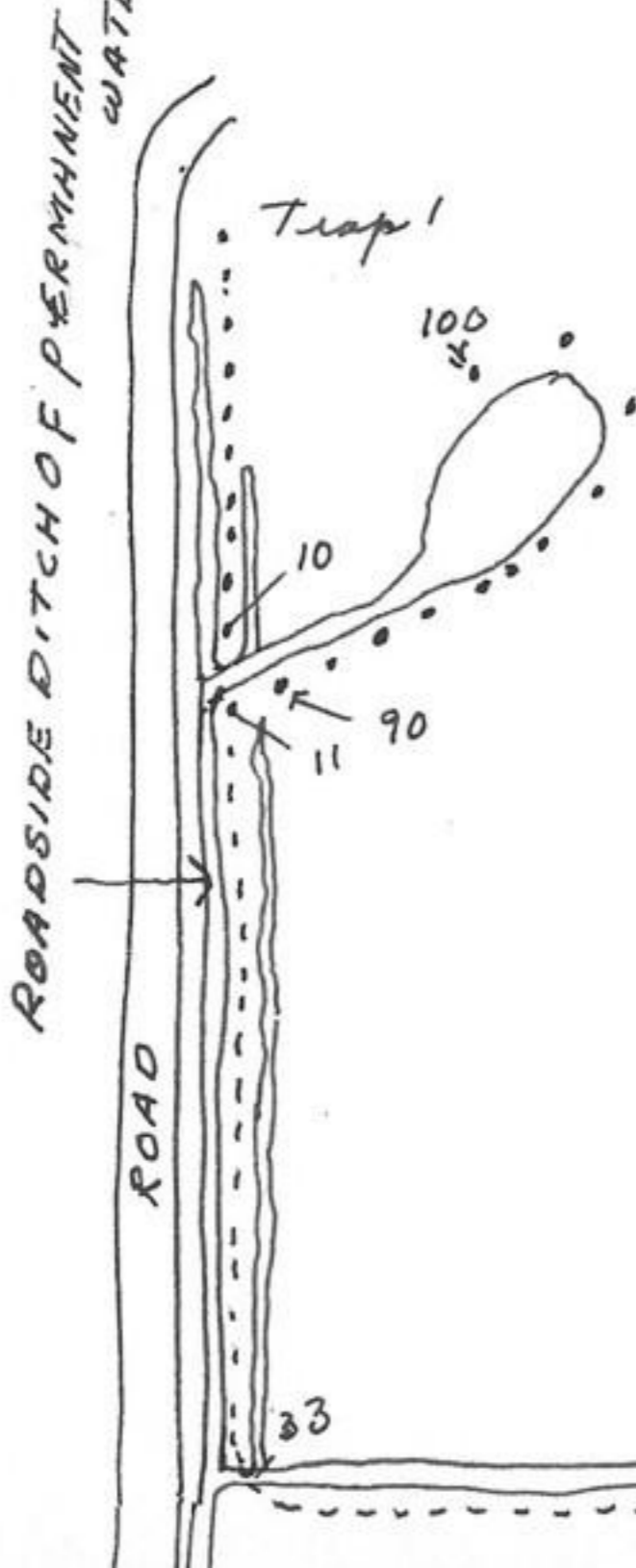
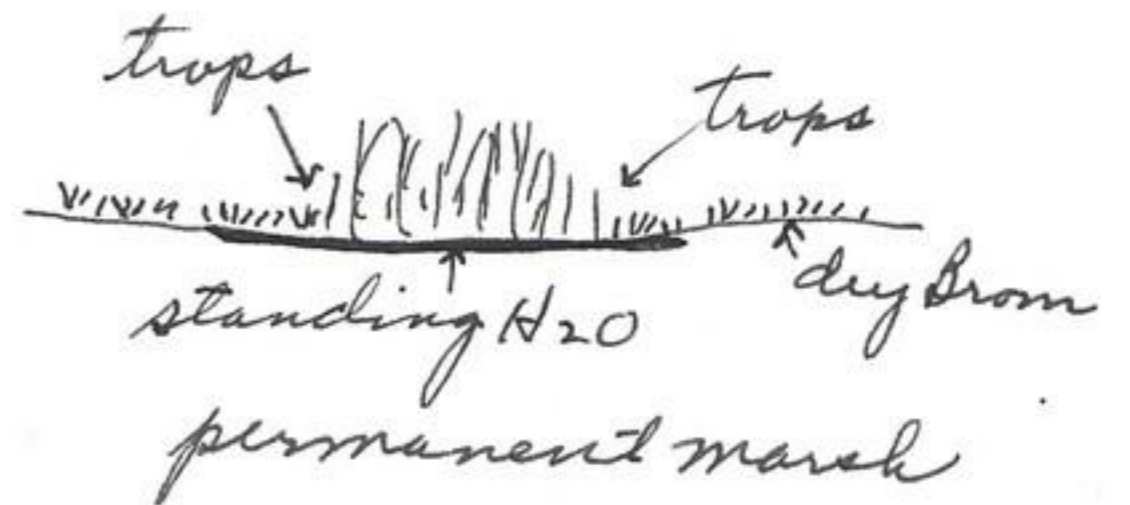
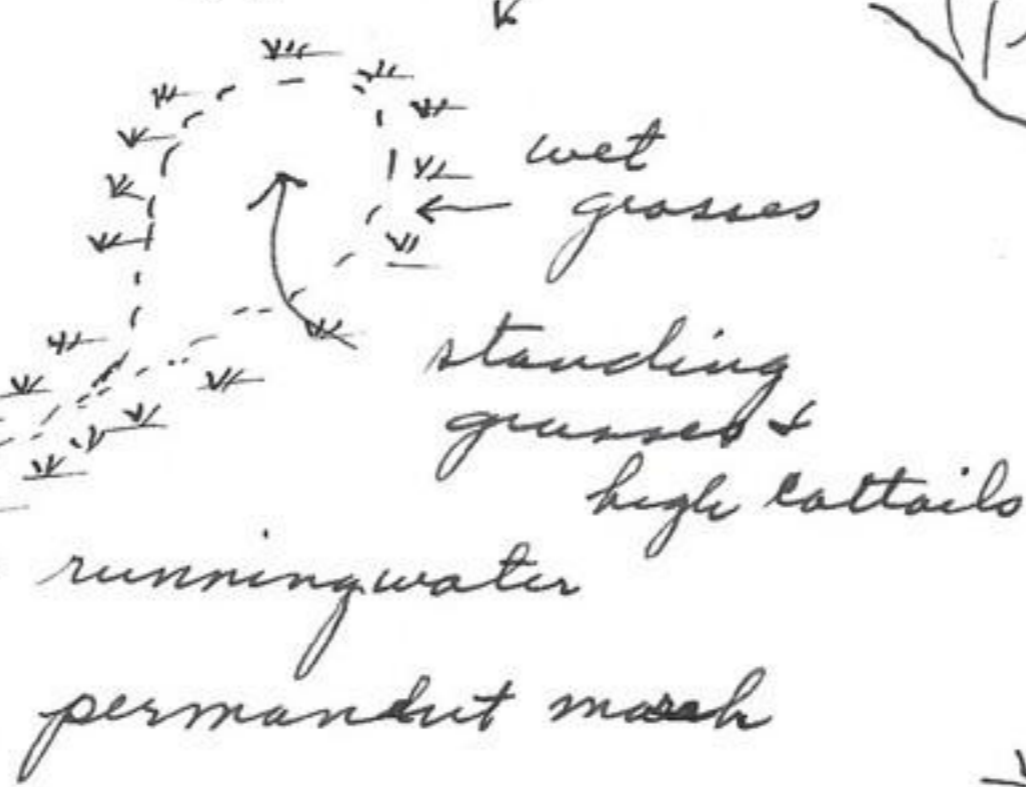
traps along road



E-W dike across field



dry grass (Brom)



Enlarged map of above of trapping area (1-100) (Traps 20-foot apart)

Inspection of trap line set last night: (Traps 1-100 set 20' apart)

1	uneffected	35 m. ochro	69	uneffected
2	"	36 m. ochro	70	"
3	"	37 uneffected	71	Reithro
4	"	38 Sigmodon	72	uneffected
5	"	39 sprung	73	sprung
6	"	40 sprung	74	sprung
7	"	41 microtus ochro	75	uneffected
8	sprung	42 uneffected	76	"
9	Sigmodon	43 "	77	"
10	Sigmodon	44 Sigmodon	78	"
11	Sigmodon	45 "	79	"
12	Sigmodon	46 m. ochro	80	Reithro
13	microtus ochro	47 m. ochro	81	uneffected
14	Sigmodon	48 uneffected	82	"
15	Pero manic	49 "	83	"
16	uneffected	50 m. ochro	84	"
17	"	51 uneffected	85	"
18	m. ochro	52 "	86	"
19	uneffected	53 sprung	87	"
20	m. ochro	54 uneffected	88	sprung
21	uneffected	55 "	89	sprung
22	"	56 "	90	uneffected
23	Sigmodon	57 "	91	"
24	uneffected	58 "	92	"
25	sprung	59 Pero manic.	93	microtus ochro
26	Sigmodon	60 sprung	94	uneffected
27	uneffected sprung	61 uneffected	95	microtus ochro
28	m. ochro	62 "	96	Sigmodon
29	uneffected sprung	63 m. ochro	97	uneffected
30	Sigmodon	64 uneffected	98	"
31	"	65 "	99	"
32	uneff sprung	66 "	100	microtus ochro
33	uneffected	67 "		
34	m. ochro	68 "		

Summary:  
 13 Sigmodon heupodus 13 sprung  
 15 microtus ochrogaster 55 not visited  
 2 Peromyscus maniculatus  
 2 Reithrodontomys megalotis  
 32 total

Mr. Robert Peterson Sr. informs me that the canyon leading N from where Wakarusa River strikes N side of valley was used for mining of coal. The pond now occupies area of mining operation. A spring, which is cemented over ducts water to this pond from its source at upper limits of canyon. This spring area could also have supported Synaptomys.

Prepared the following mammals from trap line this A.M.

630808-9	<i>Sigmodon hispidus</i>	230-88-30-17-77gms ♂ testes 6mm
630108-10	" "	210-82-29-16-65gms
630108-11	" "	222-85-30-17-76gms ♂ testes 5mm
630108-12	" "	212-88-29-16-68gms ♀ ut normal
630108-13	<i>Microtus ochrogaster</i>	150-33-21-12-46gms ♂ testes 11mm
SKIN 630108-14	<i>Sigmodon hispidus</i>	[218]-[78]-30-16-81gms ♂ testis 6mm
SKIN 630108-15	<i>Peromyscus maniculatus</i>	137-53-18-13-18gms ♂ testes 8mm (SK. only)
630108-18	<i>Microtus ochrogaster</i>	164-43-21-12-46gms ♀ 3x1 plac scars, lact.
630108-20	" "	111-26-18-10-16gms ♀ ut. normal
630108-23	<i>Sigmodon hispidus</i>	206-85-29-15-64gms ♀ ut normal
630108-26	" "	218-85-30-16-70gms ♀ ut. normal
630108-28	<i>Microtus ochrogaster</i>	158-41-20-12-43gms ♀ 2x3 plac scars
630108-30	<i>Sigmodon hispidus</i>	188-76-28-15-52gms
630108-31	" "	188-75-27-15-47gms
630108-34	<i>Microtus ochrogaster</i>	148-33-20-12-40gms ♂ testes 10mm
630108-35	" "	127-30-19.5-12-26gms ♂ testes 5mm
630108-36	" "	139-30-20-12-34gms ♀ ut. normal
630108-38	<i>Sigmodon hispidus</i>	213-87-30-16-57gms ♀ ut. normal
630108-41	<i>Microtus ochrogaster</i>	144-35-19-12-36gms ♀ ut. normal
630108-44	<i>Sigmodon hispidus</i>	227-89-31-17-78gms ♀ ut. normal
630108-45	" "	222-88-30-16-78gms ♂ testes 6mm
630108-46	<i>Microtus ochrogaster</i>	155-38-21-12-45gms ♀ ut. normal
630108-47	" "	162-38-20-12-49gms ♂ testes 14mm
630108-50	" "	142-39-20-12-40gms ♂ testes 10mm
630108-59	<i>Peromyscus maniculatus</i>	147-57-18-14-23gms ♂ testes 8mm
630108-63	<i>Microtus ochrogaster</i>	153-34-20-12-47gms ♂ testes 10mm
630108-71	<i>Reithrodontomys megalotis</i>	141-69-17-12-11gms ♀ ut <sup>normal</sup> (destr.)
630108-80	" "	122-54-17-12-9gms ♂ testes 3mm
630108-93	<i>Microtus ochrogaster</i>	128-31-19.5-12-27gms ♂ testes 5mm
630108-95	" "	133-35-19.5-12-31gms ♂ testes 8mm
630108-96	<i>Sigmodon hispidus</i>	215-88-30-16-70gms ♂ testes 5mm
630108-100	<i>Microtus ochrogaster</i>	166-40-22.5-12-60gms ♀ 3x2 <sup>plac scars</sup> <sub>only 4mm lactating</sub>

all female *Sigmodon hispidus* with fat surrounding uteri  
 There is a direct relationship between presence of water and presence of microtines. Trapping record shows this relationship. It is interesting to note that *Synaptomys* is most common in sedge patch (on basis of previous trapping) <sup>and</sup> is not present in fact neither it or other microtines <sup>(except 2 in 20 traps not associated with water)</sup> along levee continuing west from this sedge area, although it appeared as if it might possibly support microtines and even *Synaptomys*. (only 2 mammals in 20 traps)

Lawrence, Douglas Co., Kansas

Jan 9, 1963


This season has been, for all purposes, without snow. Temperatures high in last week, for example yesterday the temp was 64° F and today 60° F. In December the temperatures were low.

Jan. 9, 1963

1 mi. ~~SE~~ <sup>SE</sup> Leavenworth, Cove on Missouri River, Leavenworth County, Kansas

Jan 10, 1963

Lynn Hall presented me with an Eptesicus f. fuscus from cove at above locality. It measured:

630110-1 Eptesicus f. fuscus. 124-48-12.5-17 - 19.5 gms ♀   
Extremely fat, some areas 4mm thick.

He said that he judge there to be about 18 big brown bats in these coves and they captured 8. Some were flying about the cove, some in crevasses and one in a cuplike depression on side of cave. Some were on smooth surfaces of the supporting column.

Lawrence, Douglas Co., Kansas

Jan 11, 1963

Birds reported to U.S. Dept. Interior, Bureau Sports Fisheries & Wildlife, Albuquerque, New Mexico. (permit 2-496)

	on hand acquired total			on hand, acq. total		
killdeer	0	1	1	0	1	1
golden plover	3	0	3	0	1	1
wilson snipe	0	1	1	1	1	2
red-bellied woodpecker	0	2	2	0	1	1
williamson's sapsucker	0	1	1	0	2	2
plessor-tailed flycatcher	0	1	1	0	1	1
eastern phoebe	0	1	1	0	1	1
horned lark	2	0	2	0	2	2
house wren	0	1	1	0	2	2
eastern bluebird	0	1	1	0	2	2
golden-crowned Kinglet	0	2	2	0	1	1
cedar-waxwing	0	1	1	0	7	7
				loggerhead shrike	0	1
				eastern meadowlark	1	1
				common grackle	0	1
				cardinal	0	2
				am. goldfinch	0	1
				plate-colored juncos	0	1
				field sparrow	0	1
				white-crowned sparrow	0	2
				fox sparrow	0	2
				lincoln sparrow	0	1
				swamp sparrow	0	1
				song sparrow	0	7

Will send the above list to Mr. George C Moore, Kansas Forestry Fish & Game Dept, Topeka, Kansas (permit no 256, renewed) and the following

- 4 Franklin ground squirrels
- 8 Bog lemming
- 400 prairie voles
- 80 cottonrats
- 30 Peromyscus
- 40 harvest mice

- 2 shrews
- 2 bats
- misc. small mammals, none of which is a game species.

Lawrence, Douglas Co., Kansas

Jan 29, 1963

- made hawk survey of Clinton Reservoir area. Left 9:30 at  
 3642 mileage. at north end of proposed dam 3649.9 mileage, 10:00 A.M.  
 10:04 Corner NE 13. approx 80 meadowlarks at corner. 3 horned  
 larks. no to N. at rattlesnake point at about 900 level about  
 100 small birds, juncos, tree sparrow and one quail.  
 NE corner 12 - 52.5 - 10:10. few small bird  
 S ~~2~~<sup>3</sup> - 54.3 - 10:20 (to N.)  
 N 3 - 55.4 - 10:25 (good andropogon, cut about 1/4 mi. East on high hill.) to W.  
 55.7 200 tree sparrows, some juncos. Good fields to N for trapping  
 NW 3 - 55.9 - 10:30 (to S). one flock tree sparrows 80, and few juncos  
 SE 4 - 57.0 - 10:35 (to W) 57.5 4 horned larks  
 bridge (deer creek 57.6) 18 tree and few juncos, 2 yellow shafted flickers  
 S 5 - 58.6 - 10:45 (to N) Good native grass to NE of corner. water reservoir on top hill  
 N 32 - 60.6 - 10:55. (to W)  
 Still 61.8 - 10:58  
 Bridge to S 62.2. 11:00  
 S 6 (mound cemetery) 63.8 - 11:05 2 crows here (to east) usual birds 18 or so  
 at farms usually juncos, tree sp. Harris sp. 64.5 native grass but  
 grazed continuation of good fields to east  
 S 5<sup>5</sup> 64.8 - 11:10  
 middle 17 - 66.4 - 11:15 (to east)  
 W 16 67.1 (road to N along edge of valley) 67.7 redtail at edge of valley  
 resting in tree  
 68.0 end of road return to W 16 at 68.9. to W. at 11:28 A.M.  
 middle 17 - 69.5 - 11:30 to S. 69.5 1/2 1 marsh hawk on ground feeding on  
 head of cutthroat rabbit. It tried to fly and carry head but dropped  
 it at about 3 feet high and 8 feet from where it left ground. 2  
 crows in tree 100 feet away. Area of isolated grass native.  
 flock 50 tree sp.  
 middle 20 - 70.4 - 11:38 A.M (to SW) good grass S of road along valley  
 W 20 - 71.0 - 11:45 (to S) 12 meadowlarks in open flats  
 SW 20 - 71.4 - 11:46 good grass on hill to SSW. 2 crows flying over field  
 SW 19 72.4. excellent area of grass, extensive on hills S of valley.  
 middle 25 - 73.3 - 12:00 good grasses on valley level at base of  
 slopes, all along hills to S.  
 bridge 73.9 - 12:02 (to N) 74.6 200 tree sparrow etc.  
 W 24 - 74.9 - 12:06 (to east)  
 75.6 excellent native grass to S of rd. 1 crow  
 W 20 - 77.0 - 12:18 at 4 corners returned west.



W24 - 79.1 12:25

80.4 tree sparrow 100 &amp; cardinal etc.

80.8 good Audubon on point.

middle 21 - 81.8 - 12:30 excellent Audubon on hill around school  
to n of here. (now to S to Richland.) 83.1 Richland 83.6 west of  
Richland, now return. Richland 84.1 - 12:40 (now east.)

84.9 2 crows. 3 blue jays for first time today.

Cross roads 87.2 on Elk Creek - thence n to bridge 87.9 &amp; return.

Cross road n Elk Creek 88.5 (now to east) 12:56.

W31 - 89.7

E31. 90.7 (to S) 91.2 Crow

E6 91.8 one flock small birds 92.4 one of tree sparrow 150 - 92.7

W.8 92.8 (to east) 92.9 across river at cross road (now to east) 1:15

94.0 80 tree sparrows &amp; others associated with farm

94.8 1 red-tail, 3 crows

E9 - 95.0 - 1.25 P.M. (to n) 95.8 100 small sparrow, cardinal & Harris at  
farm.

93.5 - 96.0 - 1.28 (to n) turn west a block beyond Rock Creek Bridge

at 99.8 turned n. (this is at middle 28

middle 21 - 00.9 <sup>(base of hill)</sup> - 1:50 - good areas to east & west along edge of valley  
red tail screaming above. at 01.4 in valley floor 1 marsh hawk

Snows covering 80% ground and elsewhere where windblown. drifts across rd.

01.6 marsh hawk flying along base of ridge to east.

middle 16 - 01.9 - 2:00 (to east)

02.4 n. Bridge 03.5 (to E and then S to Clinton)

Clinton. 05.2 - 2.13 P.M. (to S)

05.6 red tail. 06.5 bridge across rock creek. back to bridge from  
side road 07.3 (to N) too much snow on hill

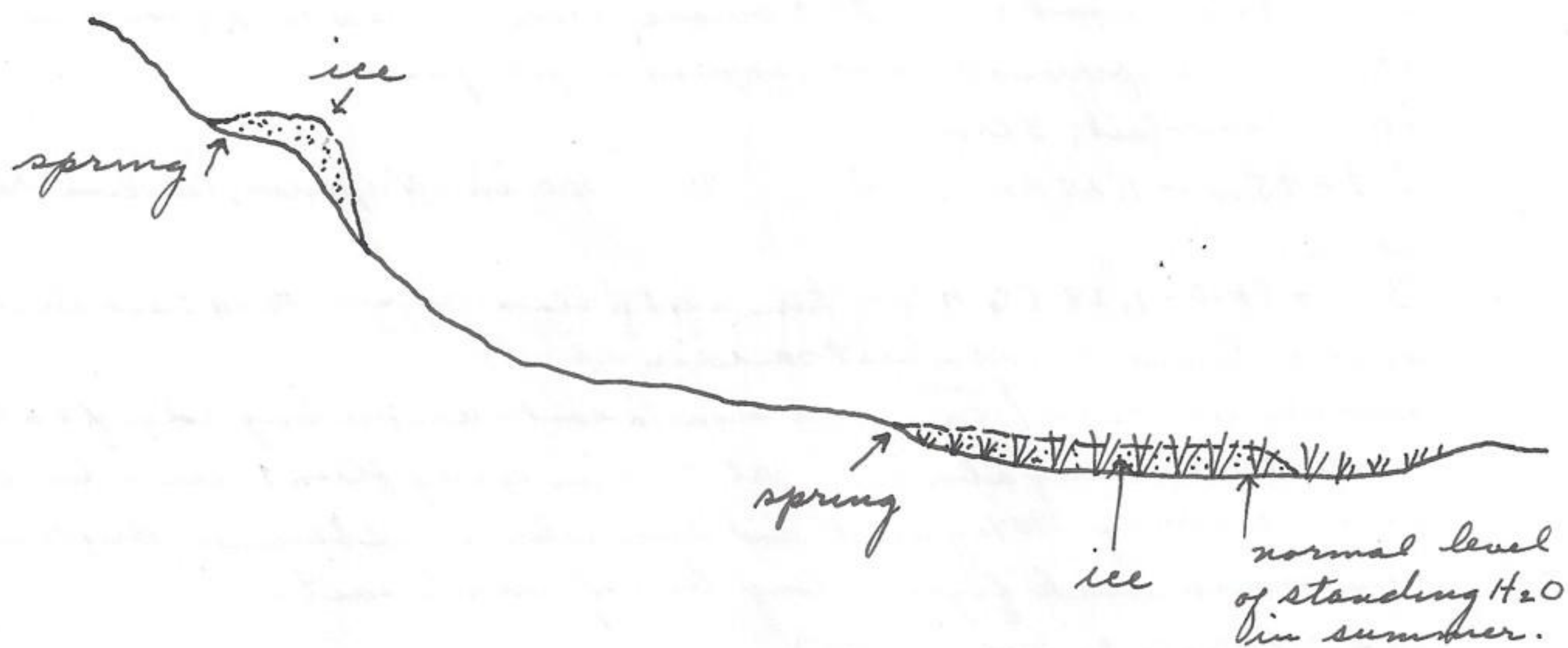
NE 23 - 09.7 (to S) 12:30 jay to east then S. Bridge across Rock Creek

at 10.9. On old road at 11.5 good area to W across small canyon

at mouth. up old road to 11.8 then return to highway east of  
Clinton (same road returned as initial route.), jay to E 3/4 mile. flock 80 tree <sup>sp.</sup>NE 24 at highway 14.4 - 2:53 (to n) 150 misc small birds in flock 15.6 <sup>mainly tree sp.</sup>

Bridge nNE 18 across Wakarusa River (end census). 15.8 mileage 3:00 P.M.

The hawk census did not show increase hawk population with high rodent population. The soil banks may permit increase in rodent population and an increase in hawks may follow. The most promising problem will be to investigate the native grasses and sedges associated with the natural springs and seepages at contact between valley and valley slopes. These areas are the least affected natural areas in the eastern part of Kansas. These populations will be displaced when water inundates the Wakarusa valley. Other animal forms and vegetation should be checked for relict populations.



This winter of prolong periods of below freezing weather produced ice masses covering bogs and spring vegetation. The ice builds up rather than outwards. On hillside the bog surrounding the spring or seep was completely covered with ice and dry below the spring in the usual runoff channels. This spring is at 1650' E and 3100 feet S of the NW corner of Sec 21, T. 18E, R. 13S. These ice masses effectively exclude all mammals from the bog area. These springs are flowing at this time in a channel about 2 inches wide.

Lawrence, Douglas Co., Kansas

Feb 2, 1963

made hawk survey of proposed Clinton Reservoir site. 9:00 A.M.  
 mileage 35.2 at Lawrence. Temp 26°F, Windy, overcast sky.  
 Starting at head of dam - 43.2 - 9:15 Bridge over Wakarusa  
 44.9 - 9:20. River frozen solid.

5-10 - (bridge) 46.3 - 9:26

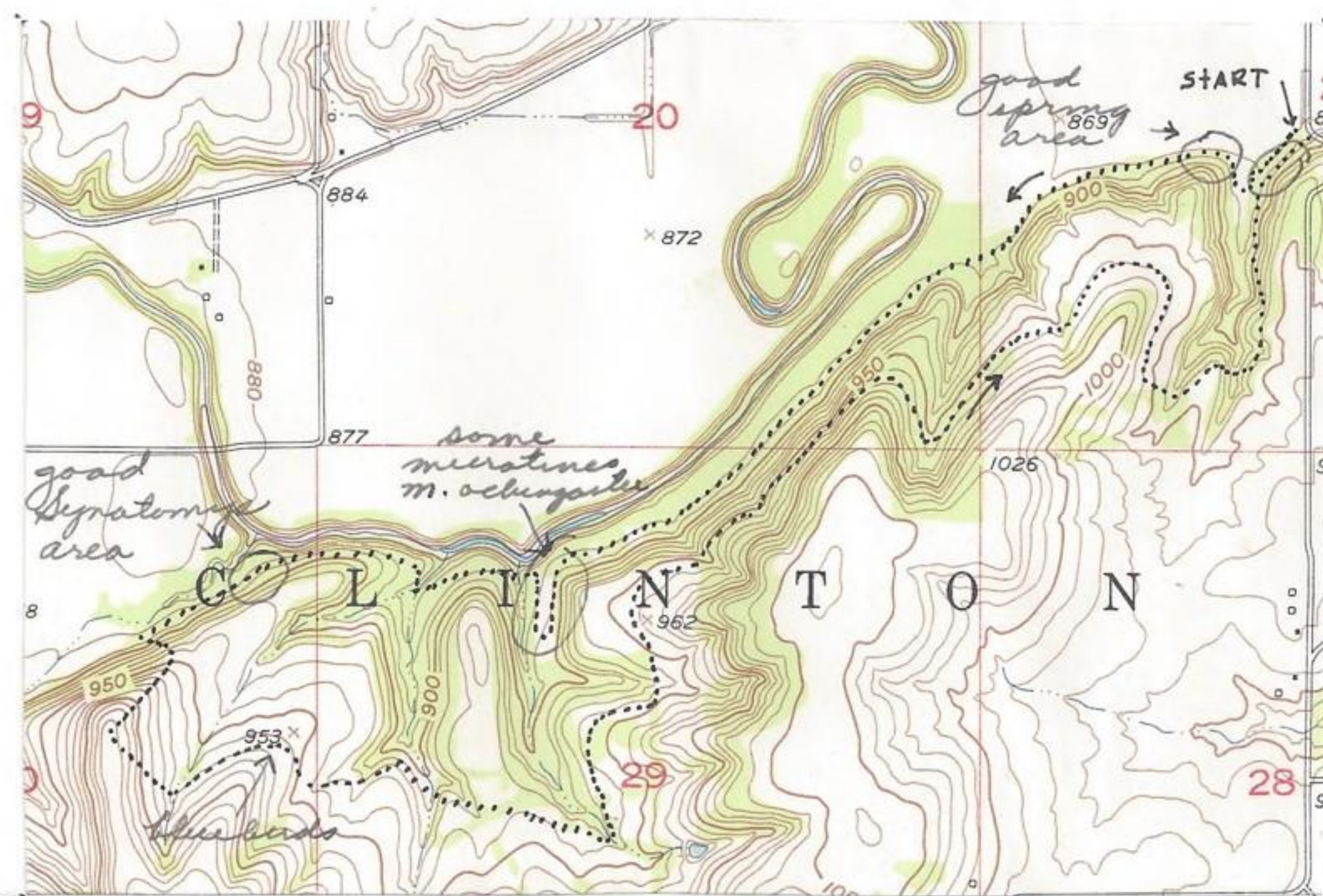
W-16 (bridge) 48.1 - 9:35 (now to N along W side of valley & return,

SW-9 - 49.1 - 9:40 turned around where road turn W up hill. One red tail  
 at this bend. one crow.

50.2 back to bridge. now south on first road to right.

Middle 16. 50.4 - 9:46

Middle 21 (base of hill) 51.5 - 10:00 A.M. (will check by foot the <sup>base of</sup> slope to W.  
 made the following general observations: microtine activity assoc-  
 iated with permanent water. Spring accumulating ice above <sup>usual</sup> water  
 level; some excluding small animals from the plant community sealed  
 in under ice. Areas marked in circles active bog or spring areas.



Four raccoons died natural death or from exhaustion by being chased by dogs  
 and then frozen. One redtail at point (most distant on map). Only one or two  
 groups of small birds (tree sparrows, juncos, chickadees). 8 bluebirds at point  
 marked 953. 1 frozen brown creeper, 7 cottontail rabbits, all at base of hill,  
 nothing on return trip, red-bellied woodpecker, downy, hair, and yellowhooped  
 noted, no squirrels. Crows flying E at point marked 872 about 2/10 mi  
 S of middle Sec 20. Deciduous forests separate upland & lowland microtine  
 populations. Returned to car at middle 21 Sec - mileage 51.5. Left N at 1:50 P.M.  
 middle 16 - 52.5 - 1:55 (to west); middle 17 - 53.7 - 2:00 Dood trapping area NW of corner  
 redtail soaring 300' to N. also 1 redtail at base of hill to N resting in tree. S. sec 5 - 55.2  
 2:10 (to east) 55.8 redtail soaring 2 black to N. 56.1 bridge, N 10 - 57.2 - 2:20 (S to  
 bridge. Bridge 58.2 - 2:25 to east. 59.5 bridge, 1 crow. N sec 13 redtail flying  
 over old trapping area to N. N. end of proposed dam site 61.2 - 2:35 redtail here. eud census  
 on way home noted 1 Harlow hawk & 1 sparrow hawk 2 mi. E + 1/2 mi. N of N end dam.

Lawrence, Douglas Co., Kansas

Feb. 3, 1963

Jim James Rabbit + I made survey of Clinton Reservoir site. From middle 21 to at this time an unknown point to west along south slope of Wakarusa valley.

Left 23rd + highway 10 at 11:43 A.M. at 3782.5 temp about 23°F

85.5 15 meadowlark. 88.4 Red tail, 1 black N. 88.8 shrike + 15 tree sparrows.

N end dam 88.5 - 12:00 AM. 90.7 3 crows 100 ft N in field

90.3 bridge - Creek frog, valid 91.8 3 yellow shuffed flickers. 1 cardinal.

91.6 - 92.6 main road 12:09

middle 16 - 93.1 - 12:10 P.M. (to S)

middle 21 at base of hill. 94.1 - 12:16. 2 red tails resting in trees here.

Left 12:25 from car at <sup>exactly</sup> middle section 21. (Range 18 east, township 13 south)

12:30 first permanent pond 12:34 2 rabbits

12:38 8 tree sp and 2 Cardinals, other sparrows

12:42 2 rabbits, 2 Cardinal

12:46 2 cardinal 4 passerines. 12:42 3 junco slate colored. 12:50 collared, 1 blue jay

12:45 2 chickadees 12:57 marsh hawk on top hill to south flying + 1 cottontail

1:06 - 3 chickadees, kinglets, creepers 1:16 racoon crossed creek + followed bank (upper)

to west. 2 cardinal, 8 juncos, 1 downy woodpecker -

1:28 open field with few runways. 138 point. field to S with few runway, hawk? flew by

139 opossum. 142 across meadow meanders on W side gulch (now to W).

146 8 tree sp. 1 hairy, 1 cardinal in group. 1 nuthatch (wh breasted) 1 downy and others

150 rept gulch, dead corn ~~820~~ 820 mu t.l. 2 sets meanders

156 other side meadow meander (to west) 5 juncos

2:00 B.H. Owl, 8 juncos, 2 chickadee, 3 titmouse. 2:01 Spring in trail - no vegetation

2:12 bog lemming habitat Fox tracks 2:12 other marsh area, some along entire area

2:13 2 Chickadee, 4 passerines. 2:16 rd up hill, red bellied woodpecker

2:21 last coverage of field with 20 runway from (2:13 to 2:21)

2:24 group 60 marsh hawk, tree sparrow, 2 cardinals, titmouse, chickadee etc. Mouth of

canyon good grass + mice but not met. begins to west grazed

2:30 slightly marshy but trampled by cattle. slough grass. mice activity

flicker + several passerines. Some wet areas to west but trampled

2:37 marsh hawk 200 feet to N. 2:39 titmouse + downy

2:40 spring pond + cattails. some actually, extensive weed patch N + W.

2:40 20 quail at cattle pens and 18 mourning doves which kept in close flock

2:48 shrike 2:52. from mouth canyon counted 12 runways.

2:55 9 runways since 2:52

Left point 99 elevation 3:00 P.M. to runrack up canyon

3:02 marsh hawk fly down canyon to east.

3:05 runrack. 5 meadow trails

3:08 - point (no runway)

3:10 - head runrack (no runway) good

3:15 along top runrack. (2 runway, one colony at point)

3:20 2 runways since last. 1 red tail over headwaters then to east.

3:28 24 runways (m. ochrogaster since 3:20) 2 tree sparrow 100 feet top. no other

birds. Windy + cold but sun full.

3:33 9 runways (m.o) since last 3:28)

3:35 no birds in lee of pond (down canyon) where yesterday there were over a hundred including tree sparrows, chickadee + downy woodpecker; very little wind here but high on ridge. From here will not make census of runways but drainage much better than previous beyond flat ridge. by 70 percent.

3:44 red tail to S fly down canyon, 2 crow

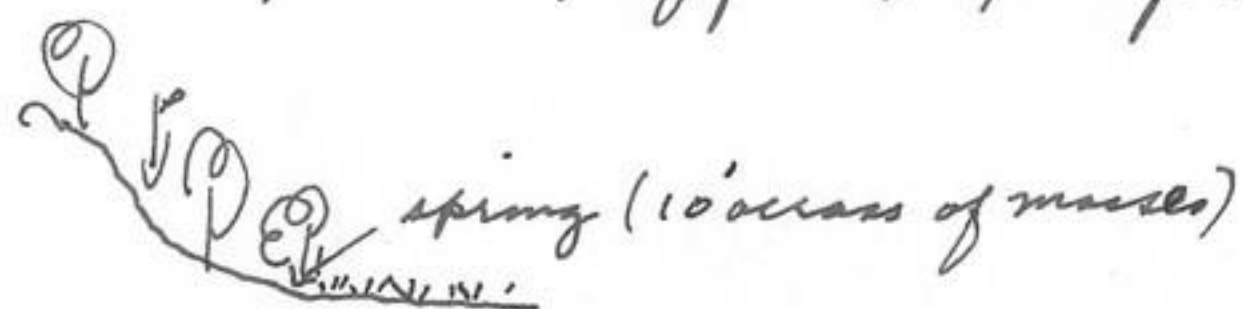
3:48 to up to now all excellent hydroponic slopes beyond no sudro. (now at rock fence corner.

Feb. 3, 1963

19

- 3:56 wing of yellow shafted flicker
- 403. dead raccoon. field just before good m. oaks although no audiopogon (NE house)
- 405 4 slate-colored juncos (Dead m. oaks runway in field NE glen)
- 412 first squirrel today at edge timber
- 423 not one bird since 412 (no wind)
- 428 3 juncos
- 429 rock fence gate (gap) 1 rabbit
- 430 40 tree sparrows (.road down hill)
- 438 edge contained field (cut at upper contour). This field has many good spots for m. oregonensis. 2 juncos
- 446- 8 m. oaks runway down slope to here.
- 448. 3 Crow to w 1 black calling as if at an owl.  
Spring directly below about point 135 feet long. Sparse vegetation + considerable moss
- left spring 454 2 rabbit below
- 457 good source of water + spring for Sigmatomys - good runways associated

Feb. 3, 1963



considerable muratic activity in weedy forail N of dike beyond mouth of canyon.

5:05 Car. seen about 1/2 hr before setting.

94.9 marsh bank to west 200 feet 5:12

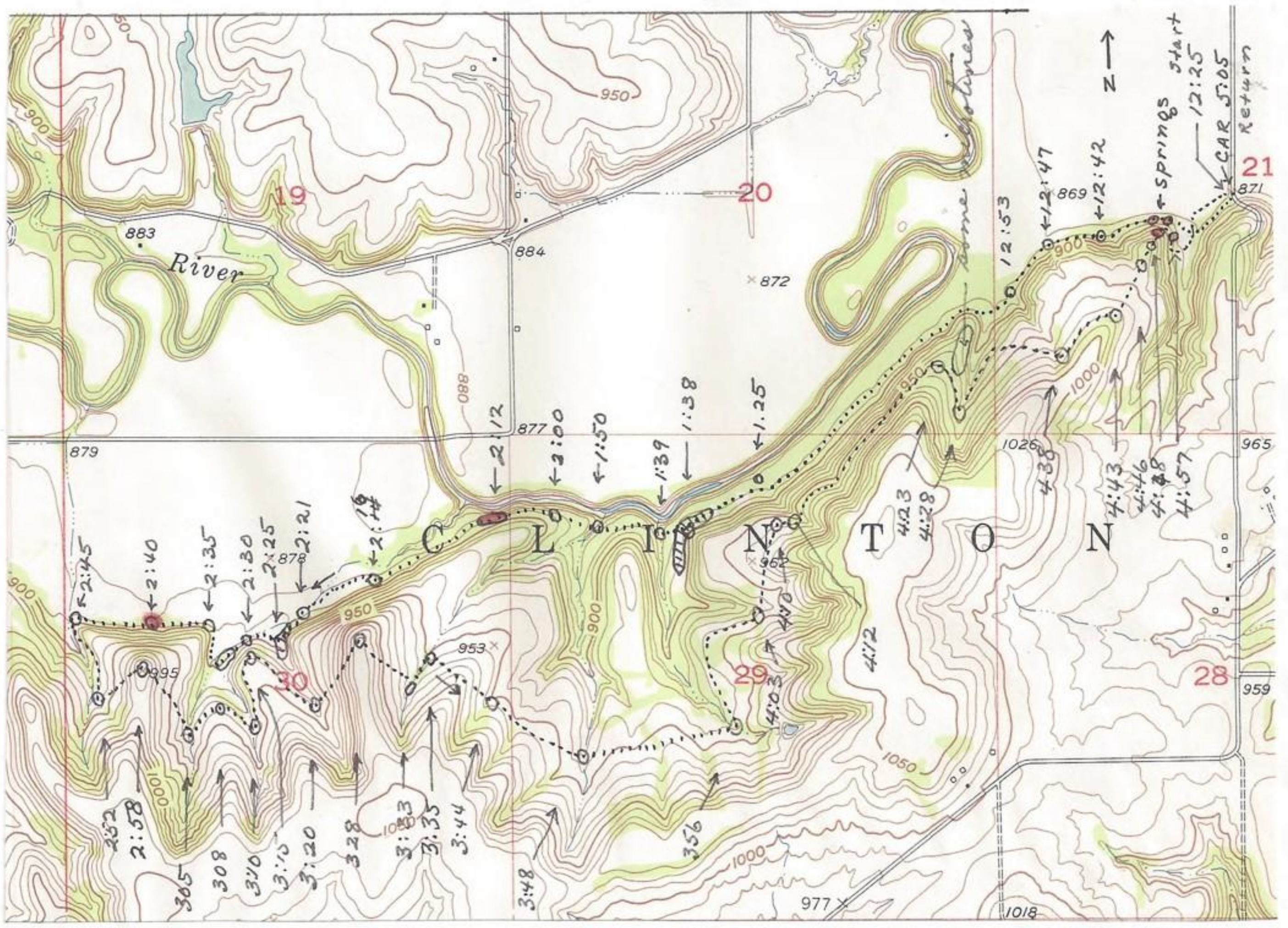
middle 16 - 95.2 (to east) 5:13 P.M

Clinton 97.3 - 5:16 P.M (to N)

Bridge 98.9

00.4 strike

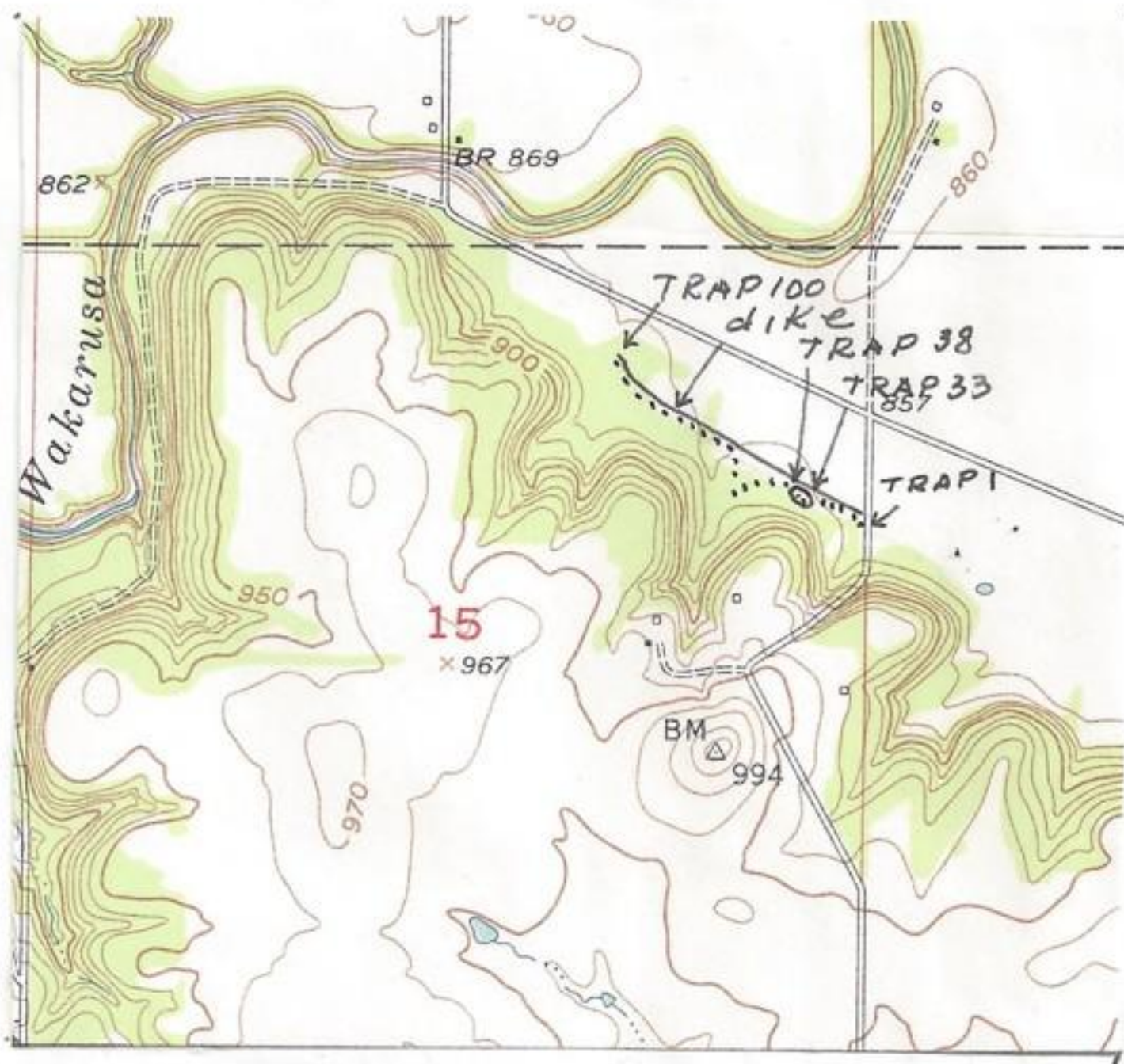
n. end dam 00.6 at 5:24 P.M



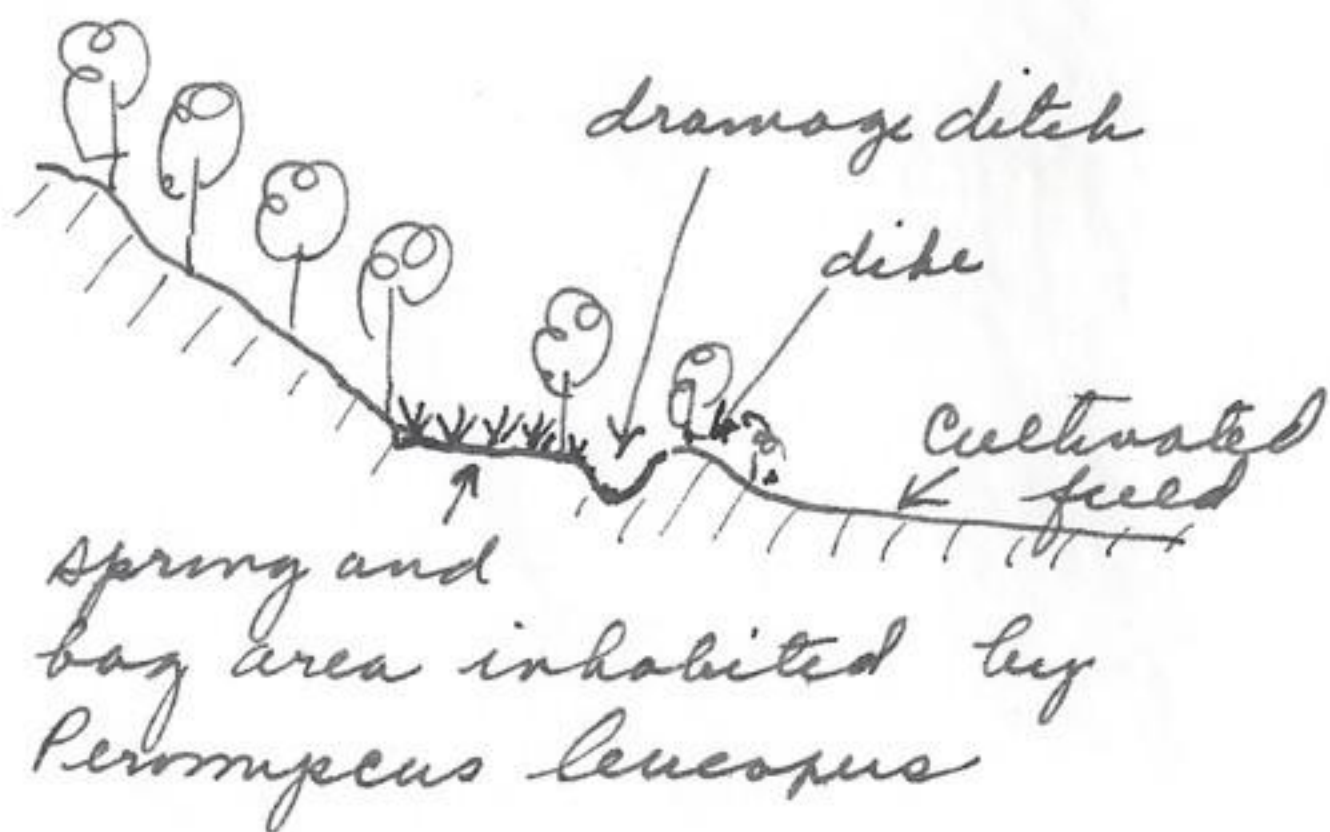
4100 feet N and 100 feet W Clinton (Center of town), Douglas Co., Kansas

Feb. 8, 1963

Set 100 traps in above area (the marsh is at exactly the above locality, between traps 33-38). Traps 1-32 in foxtail grasses, densely matted, on dike. Traps 33-38 around edge of marsh surrounded by large deciduous trees but near edge of forest community. Traps 39-56 along creek and return to dike on edge of forest. Traps 57-100 along dike, mainly foxtails



but some variation.  
as follows:



A typical cross-section thru marsh  
The dike appears to have  
been periodically burned  
as it is in an early  
successional stage.

The dike is so situated  
that runoff water and  
seepage waters are directly  
laterally around cultivated  
fields which would  
otherwise become saturated  
with runoff waters. The area

5 of traps 1 to about 28 associated with springs and damp  
to wet soils. The marsh area is definitely a bog area. Area  
beyond not directly associated with springs or seepage spots.  
This area of seepage may be the refugia for *Synaptomyza*  
*Cooperi* during periods of dry periods.

Feb. 9, 1963

mammals from trap line set last night. Traps 20 feet apart. Cloudy, foggy this A.M. Temp around 32°F, no wind. Checked 8:00 A.M. Number of trap is field number.

1 trap not visited	39 sprung	77 not visited
2 not visited	40 <i>Peromyscus leucopus</i>	78 " "
3 " "	41 not visited	79 " "
4 <i>Reithro m.</i>	42 <i>Peromyscus leucopus</i>	80 <i>Sigmodon h.</i>
5 " "	43 not visited	81 sprung (tail of <i>Reithro m.</i> )
6 <i>Reithro m.</i>	44 " "	82 sprung
7 " "	45 " "	83 not visited
8 not visited	46 " "	84 " "
9 <i>m. ochro</i>	47 " "	85 " "
10 sprung	48 <i>Peromyscus leucopus</i>	86 " "
11 <i>m. ochro</i>	49 not visited	87 " "
12 <i>mus. m.</i>	50 " "	88 " "
13 <i>Reithro m.</i>	51 " "	89 " "
14 not visited	52 " "	90 sprung
15 " "	53 " "	91 not visited
16 " "	54 " "	92 " "
17 " "	55 " "	93 " "
18 sprung	56 " "	94 " "
19 not visited	57 <i>Reithro m.</i>	95 " "
20 <i>Sigmodon h.</i>	58 sprung	96 sprung
21 <i>Reithro m.</i>	59 sprung	97 not visited
22 <i>Reithro m.</i>	60 not visited	98 " "
23 <i>mus mus.</i>	61 sprung	99 " "
24 not visited	62 not visited	100 " "
25 sprung	63 " "	
26 not visited	64 " "	
27 <i>Reithro m.</i>	65 " "	
28 <i>Reithro m.</i>	66 <i>Reithro m.</i>	
29 not visited	67 <i>Reithro m.</i>	
30 " "	68 <i>Reithro m.</i>	
31 " "	69 " "	
32 <i>Reithro m.</i>	70 not visited	
33 <i>Peromyscus leucopus</i>	71 " "	
34 <i>Peromyscus leucopus</i>	72 " "	
35 <i>Peromyscus leucopus</i>	73 " "	
36 <i>Peromyscus leucopus</i>	74 " "	
37 <i>Peromyscus leucopus</i>	75 " "	
38 " "	76 " "	

Summary.

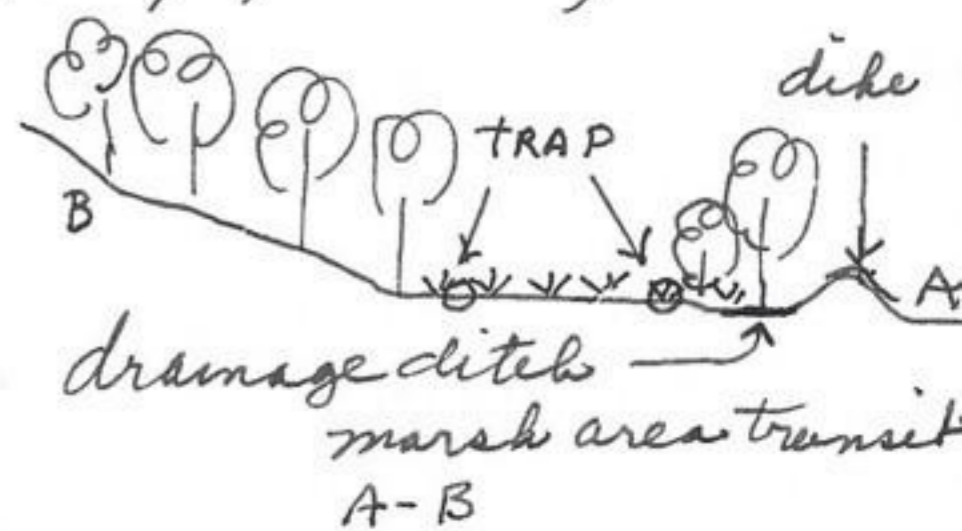
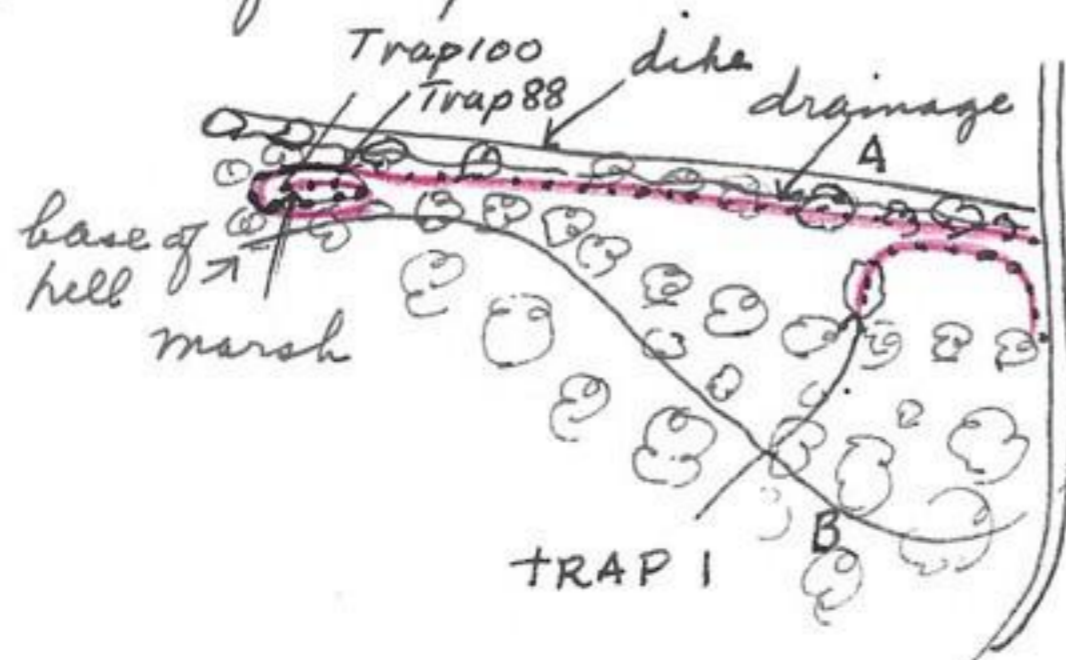
sum of catch last night	{	15 <i>Reithros</i>
		2 <i>Microtus ochro</i>
		2 <i>Sigmodon hispidus</i>
		2 <i>mus musculus</i>
		9 <i>Peromyscus leucopus</i>
		30 total
		11 sprung.
		59 not visited

## Preparation of mammals:

630209-4	<i>Reithrodontomys megalotis</i>	122-58-16.5-12-10gms
630209-5	" "	118-56-16-12-9gms
630209-6	" "	133-63-17-12-10gms
630209-7	" "	113-50-16-12-8gms
630209-9	<i>Microtus ochrogaster</i>	147-33-20-10-33gms, vag. perforate
630209-11	" "	119-25-19-9-25gms
630209-12	<i>Mus musculus</i>	162-81-19-12-17gms
630209-13	<i>Reithrodontomys meg.</i>	135-61-18-12-11gms
630209-20	<i>Sigmodon hispidus</i>	227-90-31-17-60gms
630209-21	<i>Reithro. megalotis</i>	140-63-18-13-12gms
630209-22	" "	142-64-17.5-13-12gms
630209-23	<i>Mus musculus</i>	140-63-19-13-14gms
630209-27	<i>Reithrodontomys m.</i>	118-51-16-12-9gms
630209-28	" "	128-60-16-12-10gms
630209-32	" "	123-56-16-12-9gms
630209-33	<i>Peromyscus leucopus</i>	163-71-23- <sup>17</sup> <del>15</del> -25gms.
630209-34	" "	164-72-23-17-23gms
630209-35	" "	156-66-22-16-20gms
630209-36	" "	168-72-23-17-25gms
630209-37	" "	168-68-23-18-28gms
630209-38	" "	174-75-22-16-31gms
630209-40	" "	163-68-22-16-24gms
630209-42	" "	165-70-23-17-24gms
630209-48	" "	157-66-22-17-21gms
630209-57	<i>Reithro. megalotis</i>	132-62-17-12-8gms
630209-66	" "	132-60-17-13-11gms
630209-67	" "	115-51-16-12-8gms.
630209-68	" "	130-58-17-13-10gms
630209-69	" "	152-71-18-14-13gms
630209-80	<i>Sigmodon hispidus</i>	[190]-[51]-30-17- <sup>71</sup> <del>40</del> gms

This evening set 100 traps in same general area but nearer slope of hillside. Traps 1 to 87 in pairs, 88-100 singles. all 20 feet apart.

The traps 88-100 in three rows three marsh area (4 traps per row).





Feb. 10, 1963

630210-23

(that is 1 and 2; 3 and 4 etc)

Collection this A.M. of ~~Preparation of~~ mammal from trap line <sup>set</sup> of last night. Traps 1 to 87 in pairs; 88-100 singles. all 20 feet apart: Trap numbers are also field numbers.

1 not visited	40 not visited	79 Reithro megalotis
2 Reithro megalotis	41 sprung	80 sprung
3 not visited	42 not visited	81 " "
4 sprung	43 Pero leucopus	82 Reithro megalotis
5 Pero leucopus	44 sprung	83 Reithro. megalotis
6 Reithro megalotis	45 sprung	84 not visited
7 not visited	46 not visited	85 sprung
8 sprung	47 " "	86 Sprung Pero leucopus
9 not visited	48 Reithro megalotis	87 not visited
10 " "	49 microtus ocher	88 Reithro megalotis
11 " "	50 not visited	89 not visited
12 Reithro. megalotis	51 " "	90 sprung
13 sprung	52 Reithro megalotis	91 not visited
14 not visited	53 not visited	92 Pero. leucopus
15 " "	54 " "	93 " "
14 Reithro megalotis	55 " "	94 sprung
17 not visited	56 Reithro megalotis	95 sprung
18 Reithro megalotis	57 not visited	96 not visited
19 sprung	58 " "	97 " "
20 not visited	59 " "	98 " "
21 " "	60 " "	99 " "
22 " "	61 Reithro megalotis	100 sprung
23 " "	62 Reithro megalotis	
24 " "	63 not visited	
25 " "	64 " "	
26 Reithro megalotis	65 " "	
27 sprung	66 " "	
28 not visited	67 sprung	
29 Song sparrow	68 sprung	
30 not visited	69 not visited	
31 " "	70 " "	
32 Reithro megalotis	71 sprung	
33 not visited	72 not visited	
34 " "	73 Pero. leucopus (in old hollow tree)	
35 " "	74 " "	
36 Pero leucopus	75 Pero leucopus	
37 not visited	76 sprung	
38 " "	77 sprung	
39 " "	78 Pero. leucopus	

Summary:  
 1 microtus ochrogaster  
 16 Reithrodontomys megalotis  
 10 Peromyscus leucopus  
 1 song sparrow  
 28 total  
 20 traps sprung  
 52 traps not visited

Feb. 10, 1963

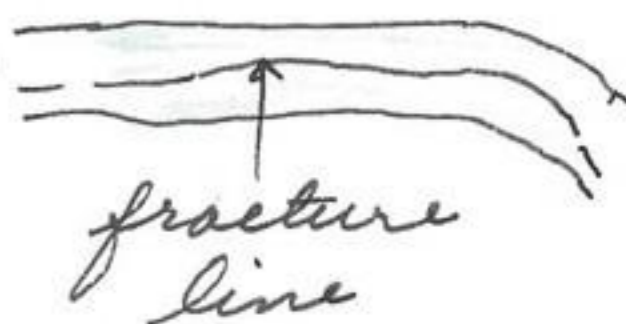
## Preparation of mammals from trap line of last night.

630210-2	<i>Reithrodontomys megalotis</i>	125-58-17-12-9 gms
630210-5	<i>Peromyscus leucopus</i>	169-73-22-16-25 gms
630210-6	<i>Reithro. megalotis</i>	140-65-18-12-11 gms
630210-12	" "	122-53-16-12-9 gms
630210-16	" "	121-55-16-12-9 gms. ♂ testis 5 mm (dest.)
630210-18	" "	127-53-16-12-8 gms
630210-26	" "	134-61-17-12-12 gms
630210-29	<i>Melospiza melodia</i>	168 T.L., 27 gms
630210-32	<i>Reithro. megalotis</i>	120-56-16-11-8 gms
630210-36	<i>Peromyscus leucopus</i>	182-82-23-16 <del>gms</del> - 30 gms
630210-43	" "	160-69-22-15-24 gms
630210-48	<i>Reithro. megalotis</i>	122-58-17-12-10 gms. ♂ testis 4 mm
630210-49	<i>Micratus schrogaster</i>	150-33-20-11-39 gms
630210-52	<i>Reithro megalotis</i>	131-61-17-12-10 gms
630210-56	" "	139-66-17.5-12-11 gms
630210-61	" "	135-68-17-13-10 gms
630210-62	" "	126-56-17-12-8 gms
630210-73	<i>Peromyscus leucopus</i>	168-72-22.5-15-24 gms
630210-74	" "	172-78-23-16-31 gms
630210-75	" "	165-68-23-16-26 gms
630210-78	" "	168-73-22-16-26 gms
630210-79	<i>Reithro. megalotis</i>	127-61-17-12-10 gms
630210-82	" "	150-71-17-13-13 gms
630210-83	" "	141-62-17-13-14 gms
630210-86	<i>Peromyscus leucopus</i>	165-83-23-15-24 gms
630210-88	<i>Reithro. megalotis</i>	126-58-17- $1\frac{3}{4}$ -8 gms
630210-92	<i>Peromyscus leucopus</i>	170-74-23-16-28 gms
630210-93	" "	173-78-23-18-27 gms.

The above trapping area had the characteristics of favorable conditions for *Micratus schrogaster* and especially *Synaptomys cooperi*. The vegetation of marsh grass was ideal but the presence of encroaching deciduous trees excluded these two forms.

I have noticed that the ice on the Wakarusa River has a fracture line that parallels the sides of the river

A *Peromyscus leucopus* that had been caught in trap and still alive made a noise that resembled the very young birds in a nest.



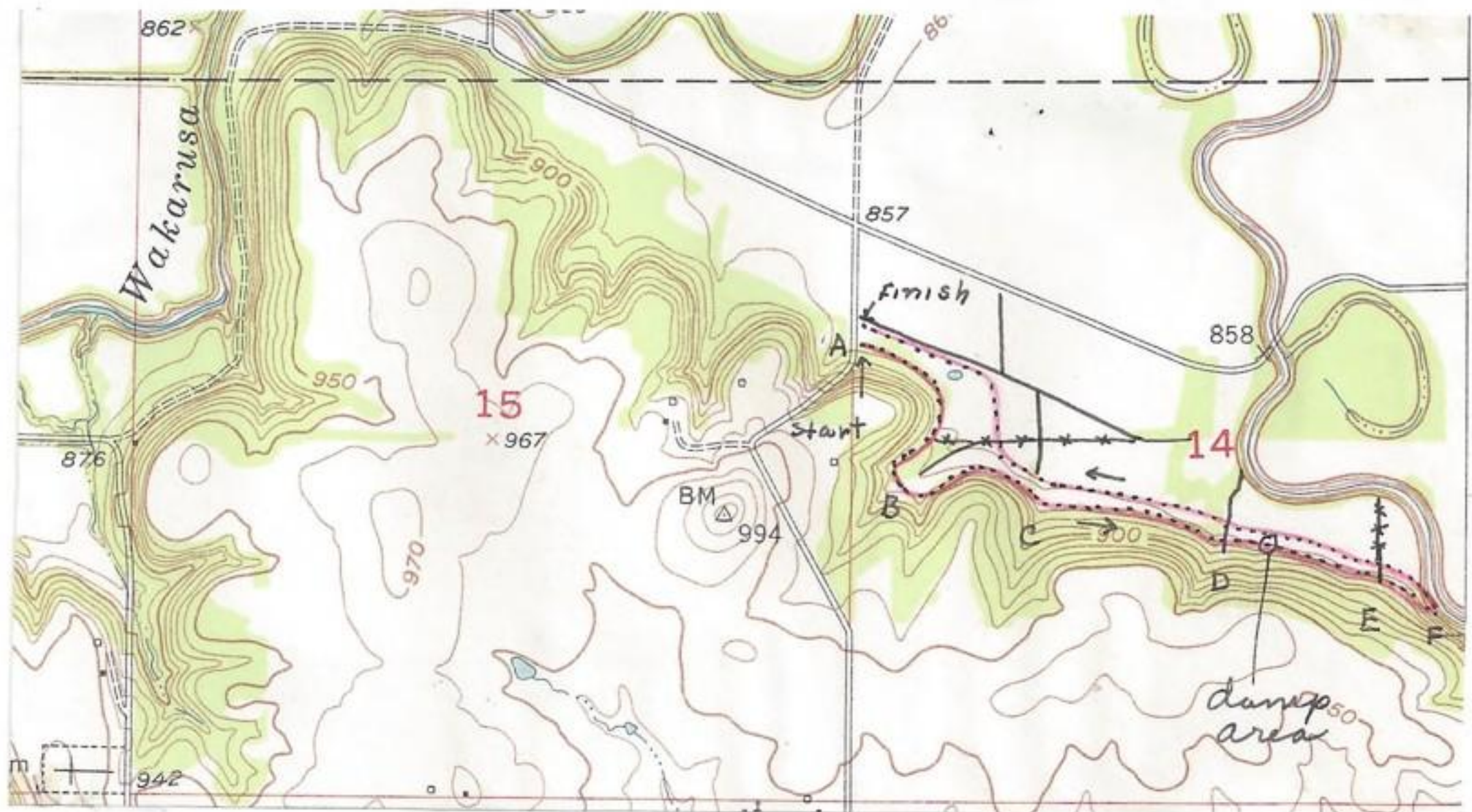
3850 feet

1/4 mi. N and 200 ft. E Clinton, Douglas Co., Kansas

Feb. 10, 1963

made census and checked possible microtine activity along the contact between the valley and the sidehill. Between A and B deciduous trees on hill to base, some advancing onto the wet meadows of sedges and grasses on flat part of valley beyond base. Some small passerines in meadows. 2 chickadees in forest. 1 meadowlark in field to the N.

Between B-C slope cleared of deciduous trees occupied by high weeds sparsely spaced and solid mat grass of fine, delicate green grasses. microtine trails (mainly *M. ochrogaster*) conspicuous and almost continuous. many trails deeply-set and under mat grass. Trails on all slopes but mainly on brink of



hill and below.  
no birds observed.



no foxtail grasses and

Between C-D Field of foxtail grasses and some high weeds. Only runways on upper slope of field nearest hill and then only 1 per 60 feet. no birds in field except one song sparrow but a flock of small birds in deciduous forest including 3 titmice, 8 juncos, chickadees, Kinglets, 2 cardinals and 2 blue-jays. 2 crows in field to N.

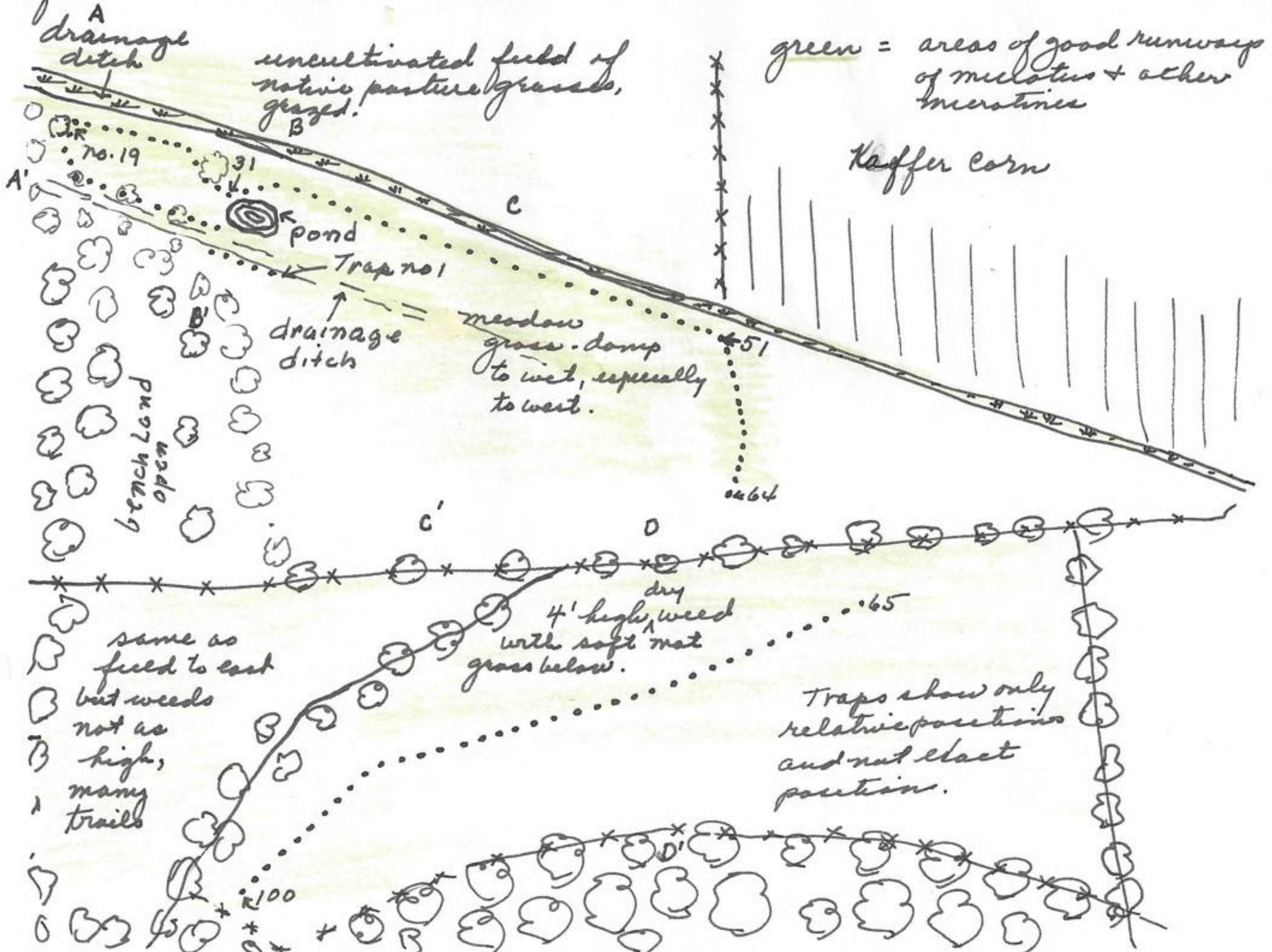
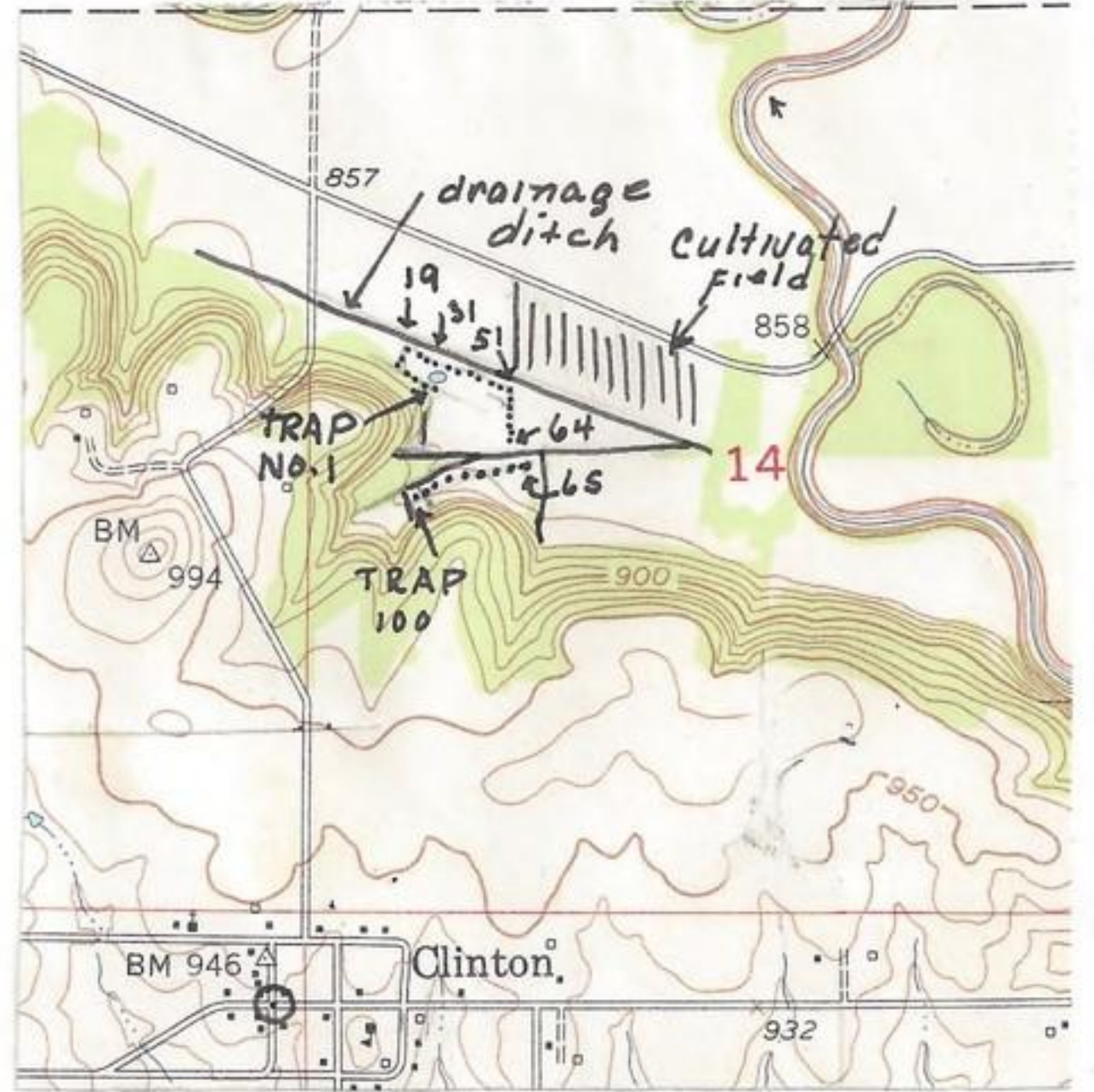
Between D-E. old cultivated field (soft soils) with high weeds and a few patches of foxtails. Only trails of microtines at upper slopes near forest contact every 30 or so feet. These fields have drainage channels for directing hillside runoff water around fields.

Between E-F. Field of consocias of foxtail grasses and cleared slopes above. no birds and only 2 microtine trails. From this point where Wakarusa contact hillslope return to car as indicated.

7/10 mi. n and 900ft. E Clinton, Douglas Co., Kansas

Feb. 16, 1963

Set 100 traps this evening. The above locality is from the center of Clinton marked with circle. The exact position is a pond. The traps were set in vicinity as outlined. The general area is one of marsh grasses associated with damp to wet soils. I cannot determine if area is supported by subsurface waters or is always wet because of the drainage factor. Several areas of marsh grass in standing water suggests a permanent source of water. The area (exclusion of field at base of slope) slightly grazed with vegetation about 3/4 feet high and sufficiently matted to hide 80% of trails. Entire area support runways of microtines and other mammals.

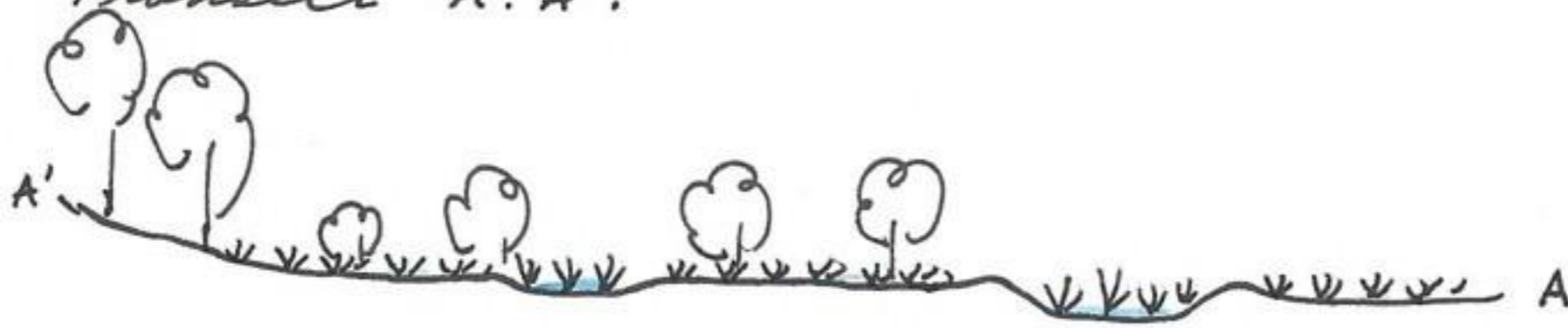


Feb. 16, 1963

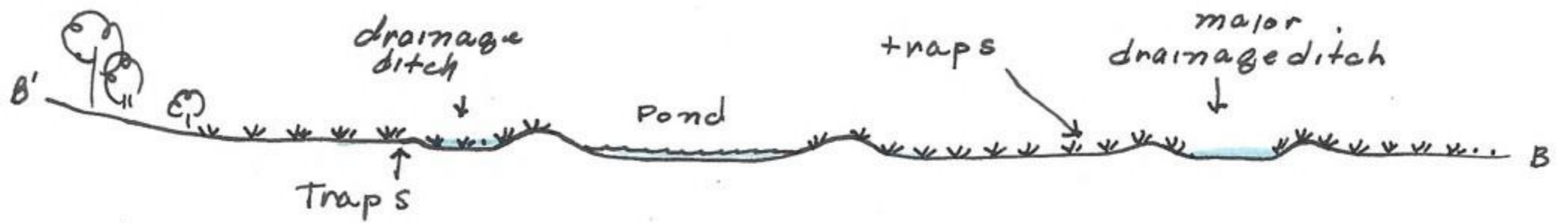
27

The following profiles show drainage slopes + vegetation.

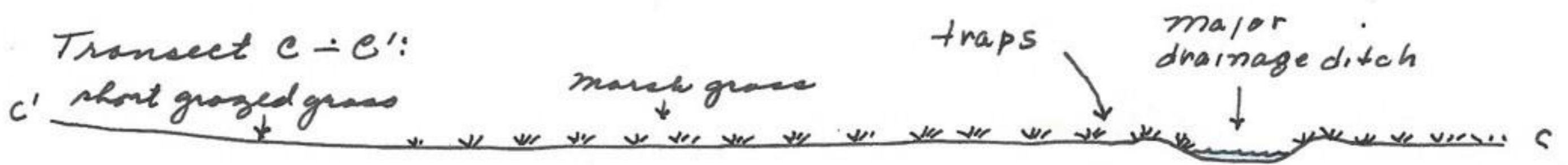
Transect A-A':



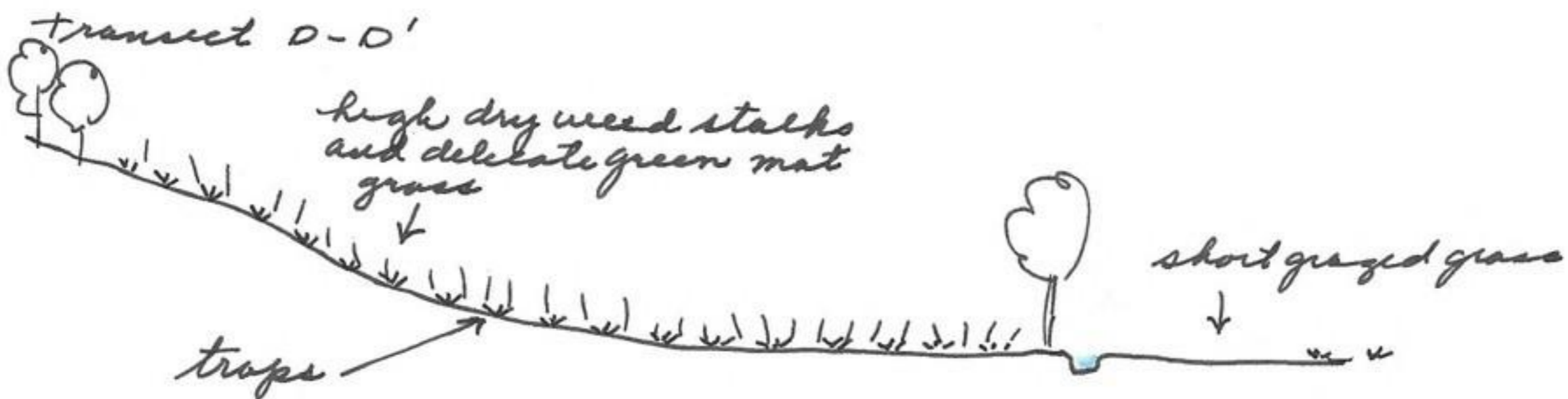
Transect B-B':



Transect C-C':



Transect D-D':



Soils on low flat areas of marsh meadow with frozen soil which were difficult to or impossible to thrust metal stakes to hold traps. Soils on slopes (area of traps 65-100) rich, soft and relatively free of frost. No snow on ground, ice on pond and 80° of drainage ditches. Five microtine nests had been excavated by carnivores. The meadow grasses in wet to damp soils, grasses and sedges average 1 foot high and concealed 90 percent of runways. The green mat grass (delicate) on slope field, <sup>90% coverage</sup> concealed 20 percent of runways. The weed stalks protected the runways below from hawk or owl predation.

Runways covered entire area of green color (see map) and were well developed and used not too long ago. Will estimate a high population last fall or early winter. From trap number 19 to road to west counted 22 runways that crossed the trail that led along slightly raised edge of the south side of the drainage ditch. Traps set between 4:30 P.M. and twilight. Temp high today 49°F. day cloudy. A *Microtus ochrogaster* taken from trap 23 this P.M. as I crossed trapline on return to car. It measured:

630216-1 *Microtus ochrogaster* 165-38-21-12-57gms

7-20-16, 1963

Feb. 17, 1963

mammals from trap line set last night <sup>set</sup> between about 4:30 P.M and twilight. Temp about 46°F. late last night. Temp this A.M at time of inspection 9:00 A.M - 10:30 A.M about 34°F. Early clouds.

1 not visited	38 not visited	75 Pero. leucopus
2 " "	39 Microtus ochro	76 Reithro. megalotis
3 Microtus ochro	40 " "	77 sprung
4 not visited	41 sprung	78 not visited
5 " "	42 not visited	79 <del>Synaptomys Cooperi</del> Pitymys pinetorum
6 " "	43 sprung	80 Microtus ochrogaster
7 Pero. leucopus	44 Microtus ochro	81 Peromyscus leucopus
8 Reithro. megalotis	45 sprung	82 Microtus ochro
9 bait gone	46 Synaptomys c.	83 Reithro. megalotis
10 Pero. leucopus	47 not visited	84 sprung.
11 not visited	48 sprung	85 "
12 " "	49 not visited	86 "
13 sprung	50 Microtus ochro	87 "
14 not visited	51 " "	88 not visited
15 " "	52 sprung	89 sprung
16 " "	53 "	90 Pero. leucopus
17 " "	54 "	91 not visited
18 Reithro. megalotis	55 Microtus ochro	92 Microtus ochro.
19 not visited	56 sprung	93 sp.
20 " "	57 "	94 "
21 " "	58 Microtus ochro	95 not visited
22 " "	59 sprung	96 sprung
23 " "	60 "	97 Pero. leucopus
24 Microtus ochro	61 "	98 not visited
25 not visited	62 Microtus ochro	99 Pero. leucopus.
26 " "	63 sprung	100 not visited.
27 " "	64 sprung	
28 Microtus ochro	65 Microtus ochro	<u>Summary</u>
29 not visited	66 Pero. leucopus	35 traps not visited
30 " "	67 sprung	1 bait gone
31 Microtus ochro	68 "	30 traps sprung
32 Microtus ochro	69 not visited	19 Microtus ochrogaster
33 not visited	70 Pero. leucopus	1 Synaptomys Cooperi
34 sprung	71 not visited	1 Pitymys pinetorum
35 "	72 Reithro. megalotis	10 Peromyscus leucopus
36 "	73 sprung	5 Reithrodontomys megalotis
37 Microtus ochro	74 not visited	36 total

mammals prepared from trap line this A.M. Field numbers are trap numbers also.

630217-3	<i>Microtus ochrogaster</i>	144-32-21-11-38gms
630217-7	<i>Peromyscus leucopus</i>	168-72-23-16-23gms
630217-8	<i>Reithrodontomys megalotes</i>	138-62-17-11-10gms
630217-10	<i>Peromyscus leucopus</i>	182-86-23-15-26gms
630217-18	<i>Reithrodontomys megalotes</i>	124-56-17-12-9gms
630217-24	<i>Microtus ochrogaster</i>	143-33-19-11-39gms
630217-28	" "	165-40-21-11-62gms
630217-31	" "	138-31-19-11-33gms
630217-32	" "	166-36-19-11-46gms
630217-37	" "	148-34-19-11-42gms
630217-39	" "	141-34-19-11-40gms
630217-40	" "	150-31-20-11-49gms
630217-44	" "	150-36-21-10-46gms ♂ testes 10mm
630217-46	<i>Synaptomys cooperi</i>	133-21-20-9-43gms ♂ testes 6mm, flattened
630217-50	<i>Microtus ochrogaster</i>	153-35-20-11-49gms
630217-51	" "	130-30-19-10-34gms
630217-55	" "	150-34-19-11-50gms
630217-57	" "	143-29-20-11-46gms
630217-58	" "	163-34-20-11-55gms
630217-62	" "	150-35-18.5-11-46gms
630217-65	" "	102-26-18-8-14gms
630217-66	<i>Peromyscus leucopus</i>	175-72-23-15-31gms
630217-70	" "	162-66-23-16-25gms
630217-71	" "	153-63-23.5-15-22gms
630217-72	<i>Reithrodontomys megalotes</i>	137-66-17-12-11gms
630217-75	<i>Peromyscus leucopus</i>	160-65-22-15-26gms
630217-76	<i>Reithrodontomys megalotes</i>	122-57-17-12-9gms
630217-79	<del><i>Pitymyscus pictoratus</i></del> <i>Synaptomys cooperi</i>	136-25-18-10-44gms ♂ testis 11mm
630217-80	<i>Microtus ochrogaster</i>	147-34-20-11-41gms
630217-81	<i>Peromyscus leucopus</i>	[170]-[63]-22-15-33gms
630217-82	<i>Microtus ochrogaster</i>	127-33-19-10-21gms
630217-83	<i>Reithrodontomys megalotes</i>	125-56-17-12-8gms
630217-90	<i>Peromyscus leucopus</i>	[106]-[21]-22-15-18gms
630217-92	<i>Microtus ochrogaster</i>	137-31-20-11-28gms
630217-97	<i>Peromyscus leucopus</i>	153-66-22-16-27gms
630217-99	<i>Peromyscus leucopus</i>	152-62-22-16-20gms

It is very unusual that this area does not support *Sigmodon hispidus*, unless they have been killed by the recent low temps of the last month. This could account for the extensive use of the area and at one time in the near past (within last month) and the relatively few mammals captured this date. The most remarkable change is the extensive use of runway on the hill field and the few mammals captured in traps. *Microtus* gone and *Peromyscus* encroaching.

This afternoon made hawk census in Clinton Reservoir (proposed) before picking up traps set last night (last checked this A.M.).  
 Approached area from north. First redtail at east side sec. 1 where utility lines cross road. continued N to NE sec 1, thence west to sec. 1 NW, thence N to east section 35 at 62.6 mileage (now to west). continued to dead end road and return to middle sec. 35 (63.8) thence to N to highway at N Sec 35, thence N sec 34, thence S to mouth Coon Creek at N sec 10, thence W to N sec. 8, thence S to middle sec. 17, thence east to road to N a few hundred miles west of Wakarusa River bridge, thence N to end of road and return to main road, thence east to middle sec 16, thence S to middle sec. 21, 4 horned larks along road. returned sec. 16 thence east to E sec 16, thence N around point. at a point 1/10 mi E of N.W corner of sec 15 noted 1 horned owl. Continued east to road to Clinton. Stopped at base of hill and checked trapline, pulled all traps and returned to car, thence back to road to N (2/10 mi.) thence east along main road to N end of proposed dam site.

Examined trapline above between 1/2 hr before sunset and twilight. These traps were set last night and examined this A.M. and at that time recorded, reset in same position & baited to see the degree of activity of mammals during the day (Temp high 51°F). The numbers are same as this morning except addition of the number 100 to trap number. Trap number same as field number (for example trap and field number this A.M. no 48 is 148 this evening). Mammals captured are: 120 *Microtus ochrogaster*, 122 *Microtus ochrogaster*, 130 *Microtus ochrogaster*, 131 sprung, 140 *Microtus ochrogaster*, 142 sprung, 156 *Microtus ochrogaster*, 157 *Microtus ochrogaster*, 159 *M. ochro*, 161 *Microtus ochro*, 164 sprung, 172 and 190 *M. ochro*, 194 *Pitymys pinetorum*.

Prepared the following above:

630217-120	<i>Microtus ochrogaster</i>	154-37-20-12-51	gms
630217-122	"	149-32-19-11-44	gms
630217-130	"	135-30-19-13-43	gms
630217-140	"	155-37-20-12-45	gms
630217-156	"	149-36-19-12-44	gms
630217-157	"	148-33-20-12-45	gms
630217-159	"	153-36-21-12-48	gms
630217-161	"	152-36-21-12-43	gms
630217-172	"	149-36-20-12-45	gms
630217-190	"	112-26-18-10-19	gms
630217-194	<i>Pitymys pinetorum</i>	136-26-18.5-9-37	gms ♂ testes 10 mm

This list, plus the one taken this A.M. will give complete number of mammals taken from this trapline.



Apparently there is considerably less activity during the day hours than at night. A comparison of the night-day activity is as follows:

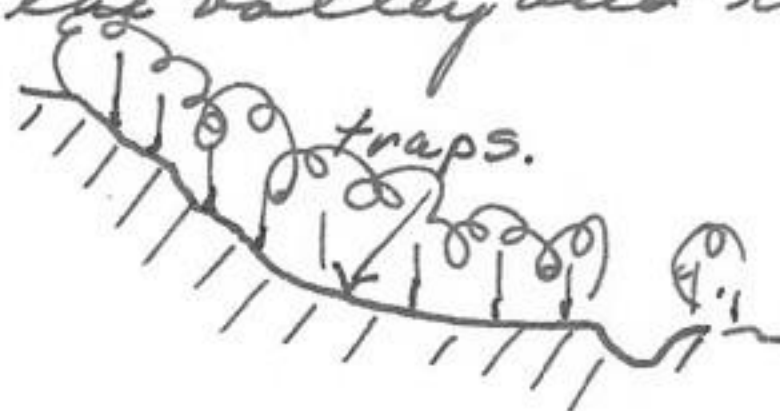
<u>Night of 16th</u>	<u>Day of 17th.</u>
35 traps not visited	86 traps not visited
1 bait gone	0 bait gone
30 traps sprung	3 traps sprung
19 <i>Microtus ochrogaster</i>	10 <i>Microtus ochrogaster</i>
1 <i>Synaptomys</i>	0 <i>Synaptomys</i>
1 <i>Pitymys punctatorum</i>	1 <i>Pitymys punctatorum</i>
10 <i>Peromyscus leucopus</i>	0 <i>Peromyscus leucopus</i>
5 <i>Reithrodontomys megalotis</i>	0 <i>Reithrodontomys m.</i>

This evening heard a great horned owl in deciduous forests to S of trapping area. It would be a good idea to check the pellets of owls for *Synaptomys* etc. On return to home noted the Wakarusa River to be 95% ice in contrast to 60% last week. All snow gone from ground but ice in creeks and drainage areas.

1 1/10 mi. S and 3 mi. 200 ft. W Clinton, Douglas Co., Kansas  
Feb. 22, 1963

This locality is the position of a marsh that was used extensively by *Synaptomys cooperi* during the late fall and early winter.

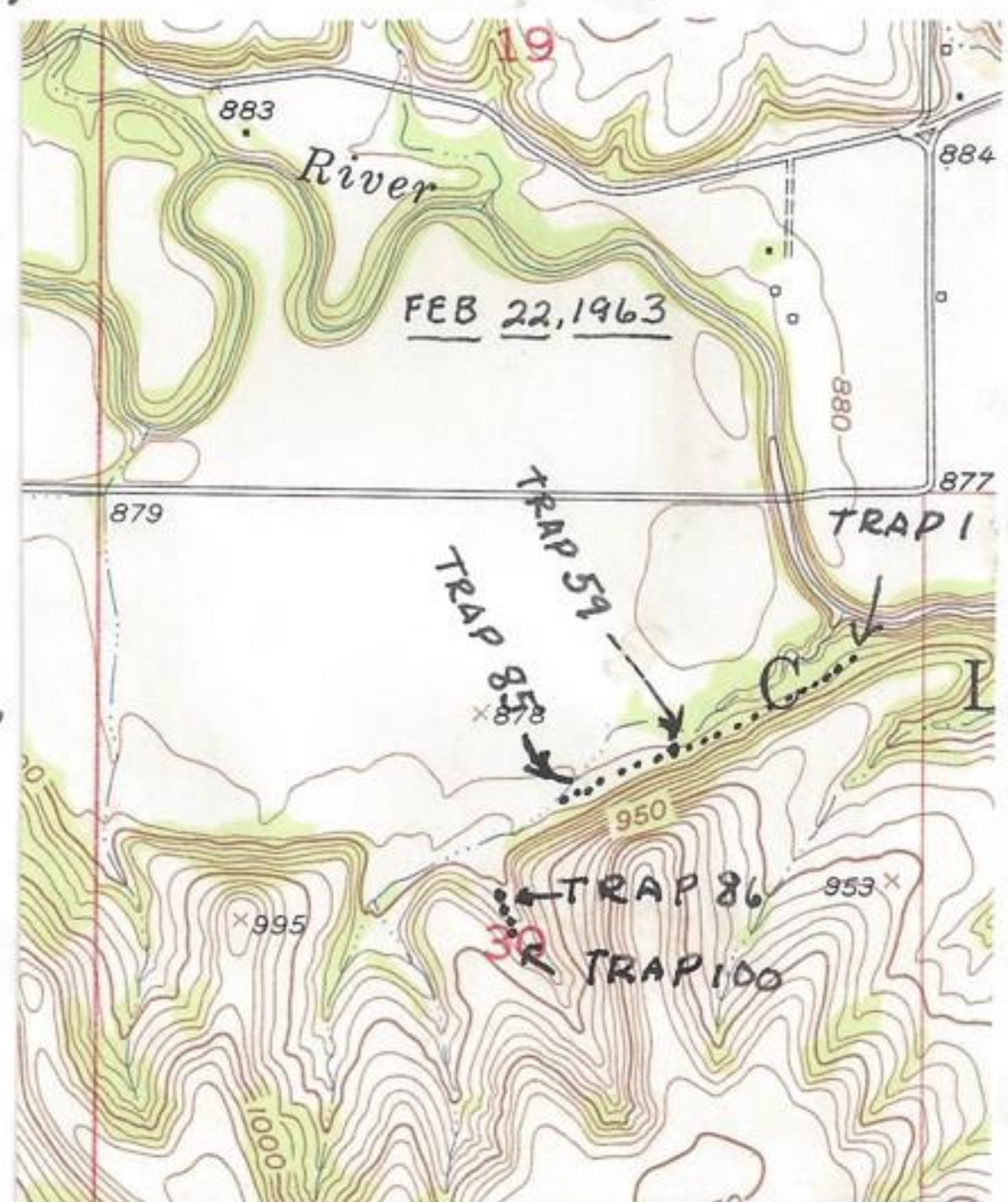
The general trapping area is in the NE 1/4 Sec 30 of Township 18 E and Range 13 S, along the contact between the valley and the hillside.



Three different communities were tested.

1. Sedge marshes among trees.
2. open field cut last year.
3. mouth canyon on alluvial flat.

The first area is the most likely looking area for *Synaptomys* as evidenced

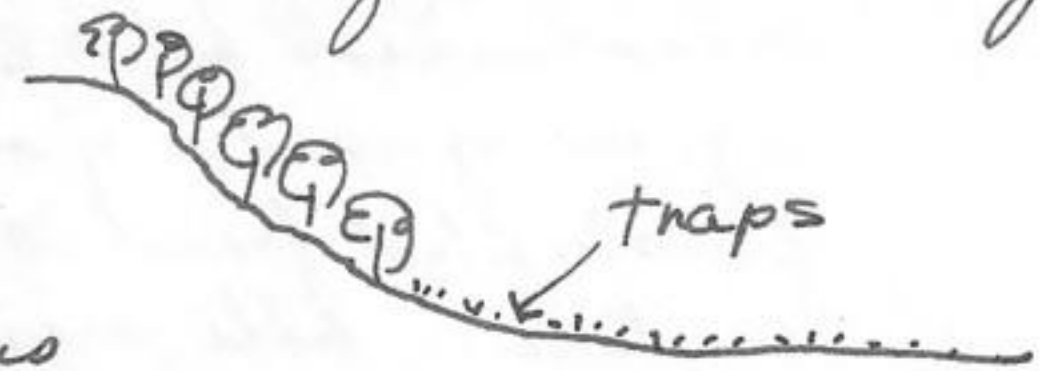


Feb. 22, 1963

by the extensive utilization during the winter, <sup>(Trap 1-24)</sup> Green (bright and faded) pellets were deposited on trails and in isolated areas among the sedges. There is more concentration of community use of the sedge marshes (in this case more properly referred to as a bog) than is the case of *Microtus ochrogaster*. Some areas had the poorly defined runway completely carpeted with disintegrated fecal pellets. These marsh or sedge areas are more or less joined by grasses and underbrush. Penetration is difficult. Soils in marsh area solid ice and difficult to penetrate with wire stake. Under ordinary circumstances, such places are not inviting to either *Synaptornis* or *Microtus ochrogaster* because of overhead tree protection. The only marsh supporting water is the first marsh area nearest the Wakarusa River! No evidence of springs on slope of hill.

(traps 59-85)

The second area, is open cultivated field bordering the deciduous slope. This area is like previous except without trees and on more of a slope. This area seems



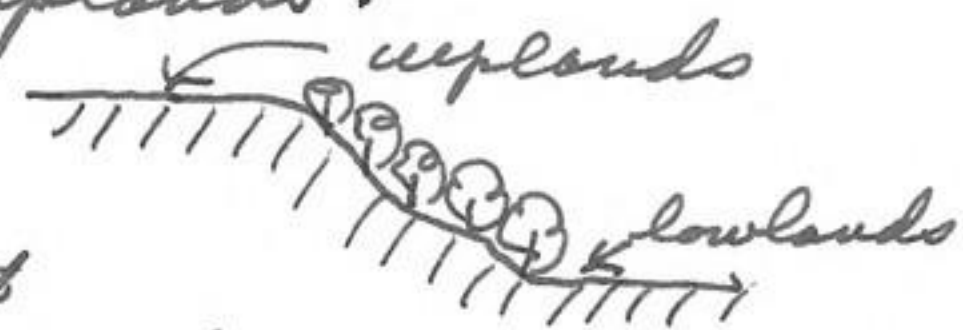
to have been more extensively used than at present. 3 nest had been elevated by fox or some other carnivore.

Area 3, <sup>(traps 86-100)</sup> is at mouth of drainage canyon on flat part of canyon. Vegetation west of fence overgrazed. Area in canyon & to east only moderately grazed. Grasses dense, matted and continuous. Traps set up this canyon floor some 150 feet from the mouth. It judged this area to support *M. ochro*

but in setting traps (6:00 P.M. at this point) caught one *Synaptornis cooperi* in <sup>(m. ochro?)</sup> meraline, trail thru grass. It measured: 630222-2 *Synaptornis cooperi*. 128-23-18.5-10-34gms.

This canyon continued south to uplands with the same kind of grass community (*Audropogon*). It will be interesting to see if *Synaptornis* extends up to upland via this canyon. Elsewhere the steep deciduous slopes intervene between the lowland valley contact and the uplands.

If the *Synaptornis* prefers wet marshes it will more likely be found at base of slope in areas that have not be disturbed by man by cultivation or especially by periodic burning of fields.



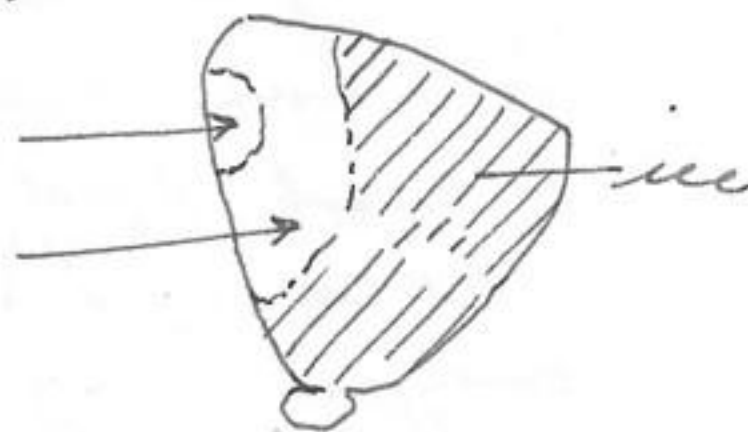
\* Univ. Kansas, Lawrence, Kansas

Feb. 22, 1963

The ice on Patter's Lake for last week has been a deep blue with some surface water. The open water has been maintained at NE corner of lake all winter because of inflow of water from a pipeline. This open water has fluctuated from 20 to 40 feet in diameter according to temperature. The present open water (this date) is as indicated.

Temp today 10°F

open water  
this winter  
present open  
water



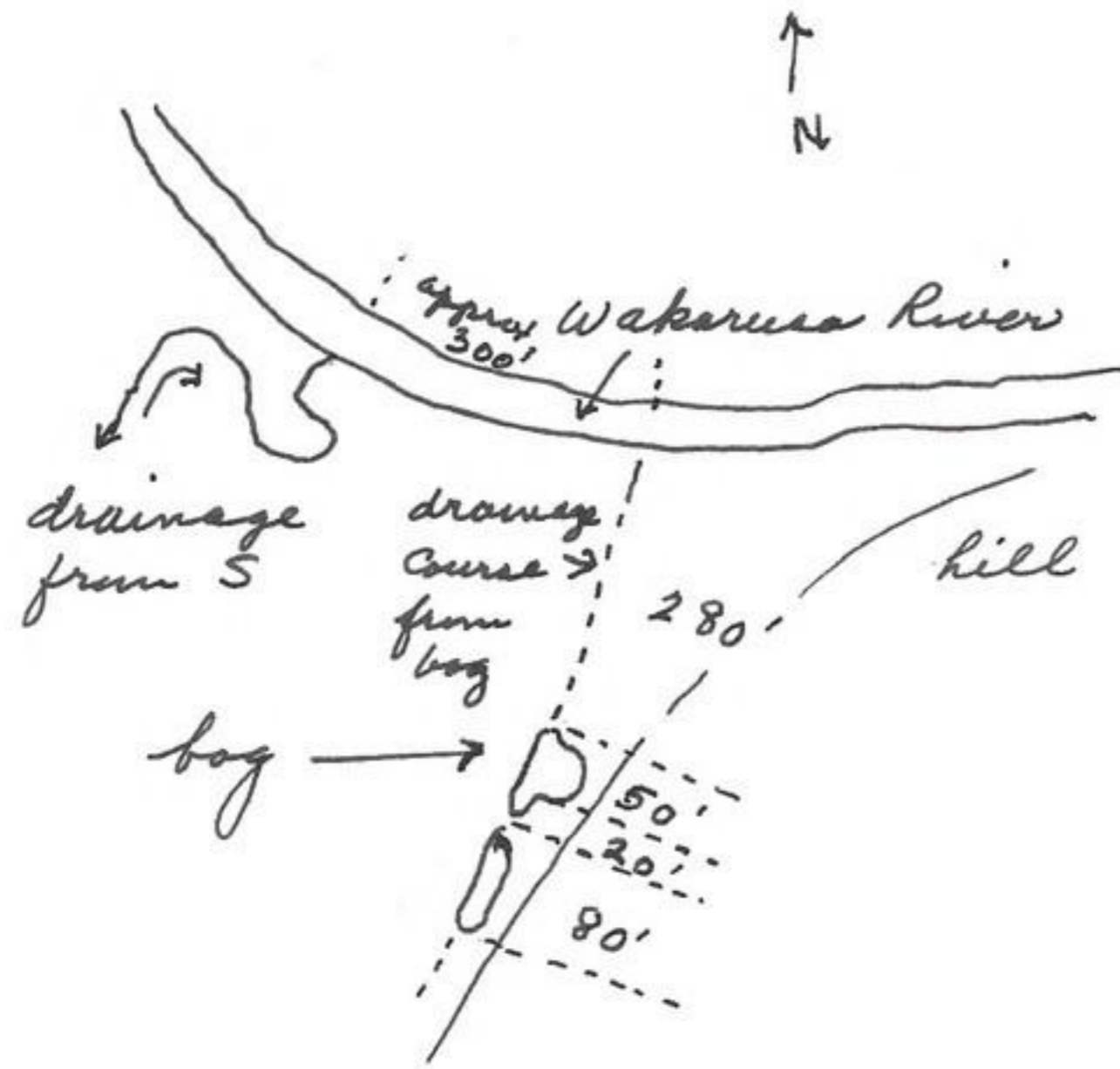
From trap line among grasses in deciduous trees caught the following:  
 630222-1 *Microtus ochrogaster* 143-33-19-10-32 gms. at 6:20 P.M.  
 at late twilight checked marsh that supported greatest evidence  
 of *Synaptornis* but did not find evidence of *Synaptornis* in traps.  
 One opossum in small tree near trap 52. It remained  
 motionless. 2 cottontails in area. They run 20 feet or  
 so and then stop; not like those that are more frequently  
 molested. (no other rabbits seen in Clinton Reservoir on way home or  
 for that matter none on entire trip to Lawrence). On arrival  
 at 4:30 P.M. noted on redtail to fly from N to S across valley  
 and alighting at point 1/2 mi. E and 1/10 mi. S from NW  
 corner of sec. 29, T. 18 E and R. 13 S. Heard great horned  
 owl calling at point 1/2 mi. E and 4/10 mi. S of NW sec 30.  
 a large nest in tree (either redtail or great horned owl) at a  
 point just below where owl was calling. Nesting tree near edge  
 of forest at base of hill. Set traps at 4:30 P.M., concluded  
 6:20 P.M. Temp. approx. 36°F at time traps were set.  
 Temp. to go down to 20 tonight. Skies partly cloudy.

←\*

1 1/10 mi. S and 3 mi. 200 ft. W Clinton, Douglas Co. Kansas.  
 Feb. 23, 1963

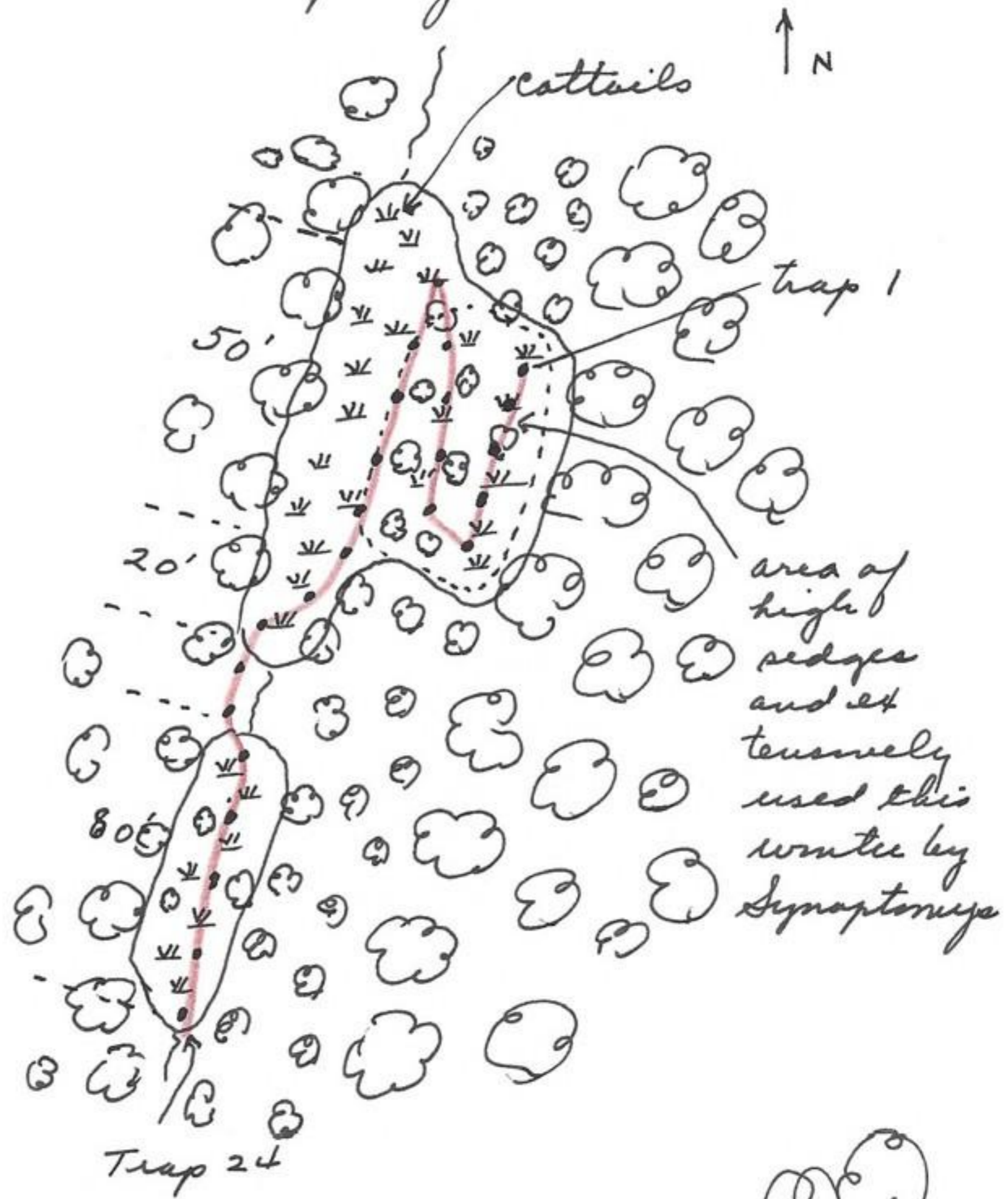
Checked trapline of 100 traps set yesterday afternoon.  
 Left Lawrence 8:20 A.M. mileage 50.8 Temp 30°F, slight rain  
 and dark clouds to north which will produce rain or snow.  
 N end proposed dam site at 58.7. See in creeks, free of snow.  
 at mileage 60.0 2 crows flying SE in valley. 60.4 first  
 bridge over Wakarusa River which is completely frozen over  
 except 1 small patch about 6 feet wide (diameter). 61.7  
 passing by second bridge. Continuing west along prominent  
 point. at 62.0 a redtail hawk flew in from N and lit in  
 tall tree on hill on south side of road. Many small birds here  
 including junco, tree sparrows. This point has always been  
 inhabited by a flock of small birds. 62.8 have passed  
 along hillside of deciduous trees and now at main road from  
 Clinton to west. 63.6 bridge across Wakarusa River. River  
 completely frozen. 64.3 turn south at E edge Sec 18.  
 64.9 several large red granite boulders. Continued S to floor  
 of valley, thence W to bridge over Wakarusa River. One  
 open spot in snow. at this point parked car and walked S  
 to first trap. 9 crows flew east up valley flying about  
 400 feet high. Detail of marsh area thus:

Feb. 23, 1963

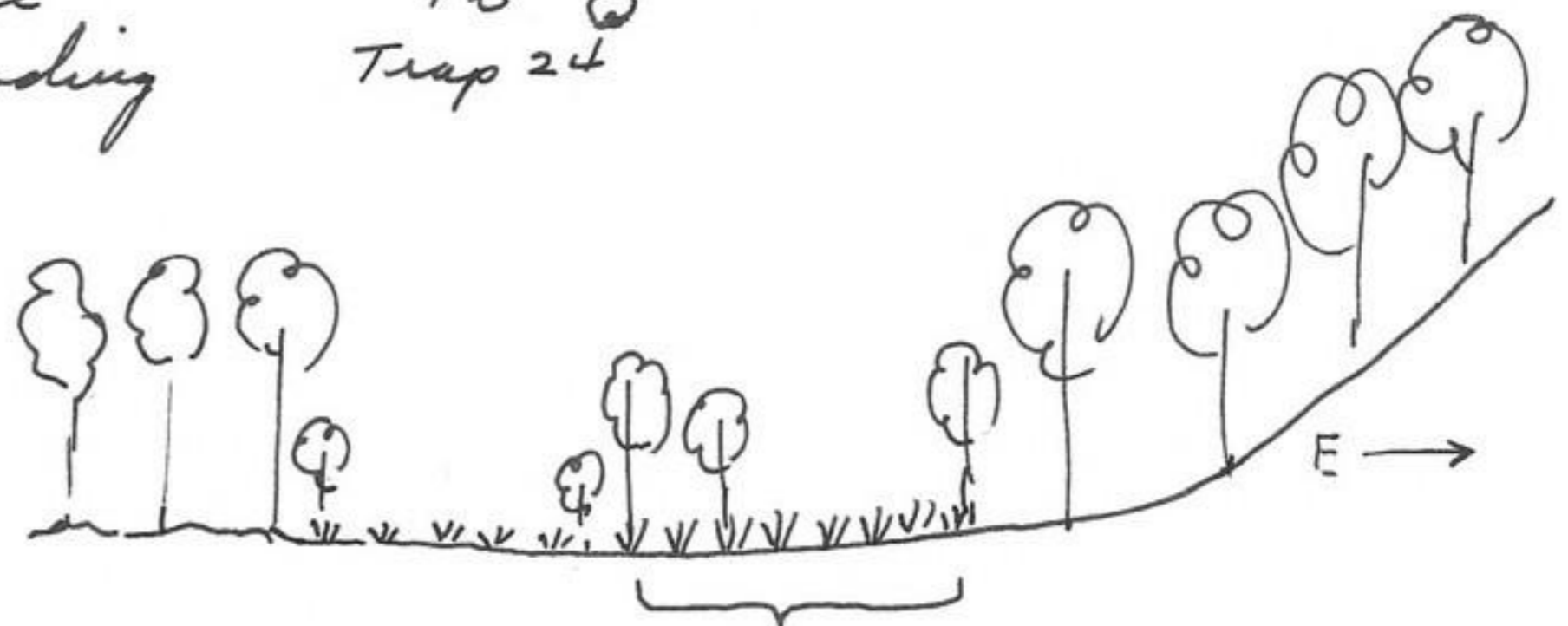


The bog is 280 feet from Wakarusa River along drainage course and the point where it enters the Wakarusa is about 300' or less from mouth of creek that enters from the south. The bog is at base of slope and presumably is fed by a spring.

Bog consists of one dominant high sedge (2') but includes 3 or 4 other associated grasses and sedge. At the N end of bog are a few cattails. These bogs occupy partially open situations in the tree community. The large trees east of bog are climax while those in bog area and to west are successional due to periodic flooding of Wakarusa and by man activities.

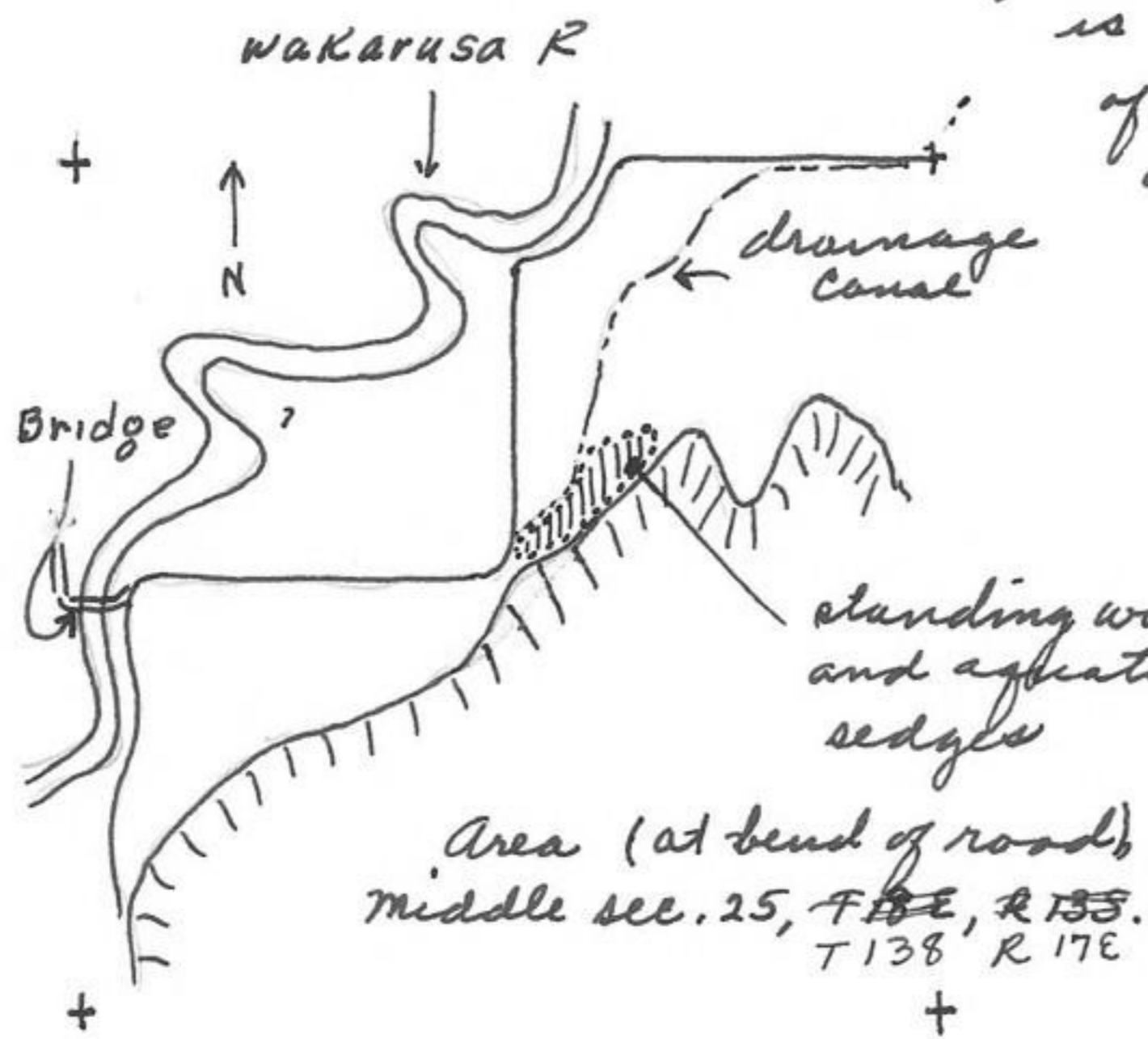


This area has been least affected by man's presence and especially burning and it is because of this that the *Synaptormys* population is unusually high. As the soils are solid in bog area, I wonder how they dig chambers and escape enemies of weasel, fox and skunk. Mosses are a conspicuous element of the flora



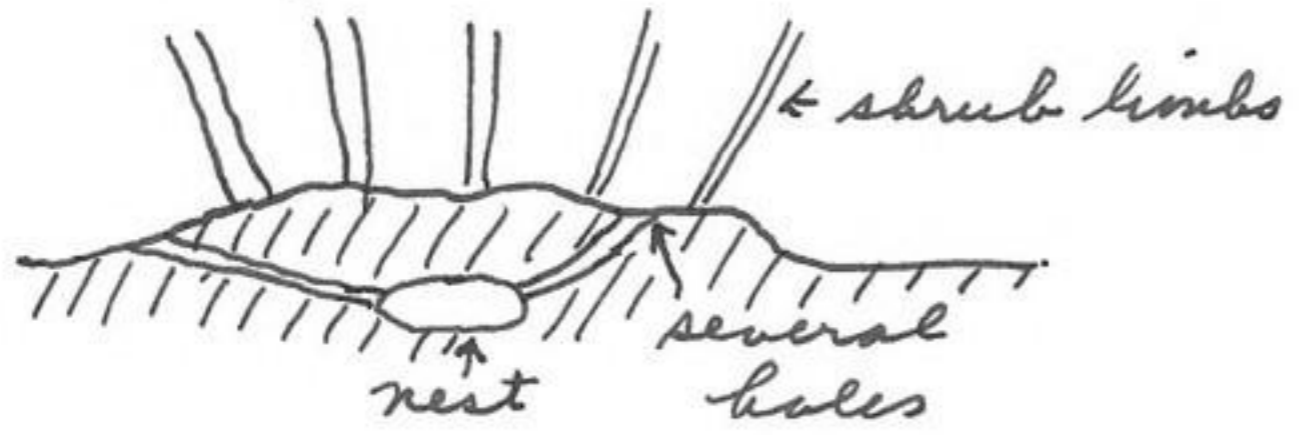
high sedge and used extensively by microtines (*Synaptormys*)

After checking traps and James Robert and I surveyed a field of marsh grasses that had just recently been burned, probably last week. This area



is or was an extensive field of basal mat grasses, partially open, overhead weeds to give protection above. Some willowlike growths about 4 feet high grew in isolated spots about every 10 feet apart with 1 to 10 basal stems going into the ground. This brush condition occupied about 80% of the area. These bushes acted as if sparsely placed weeds. The area

is between a drainage ditch and the base of the mountain or hillside of valley and was probably burned for the first time in 3 or 4 years. Before that time it was probably used for grazing. Fields cultivated beyond. One permanent patch of water as indicated. Soils damp but not wet and in summer would become dry. In the area marked, the runways were continuous and interconnected. nesting holes and mounds spaced about 1 per 40 feet. The area is 1200 feet long (NE-SW axis) and averaged 250 feet wide. This area was burned. On this basis I would calculate 480 microtus ochrogaster on the basis of 4 mice per mound and 1 mound per 2500 sq. feet or 120 mound in all. Evidence of Sturnoporus in area. There would probably be many Leptodimorphus, Peromyscus leucopus & maniculatus, Blarina and others in the area.

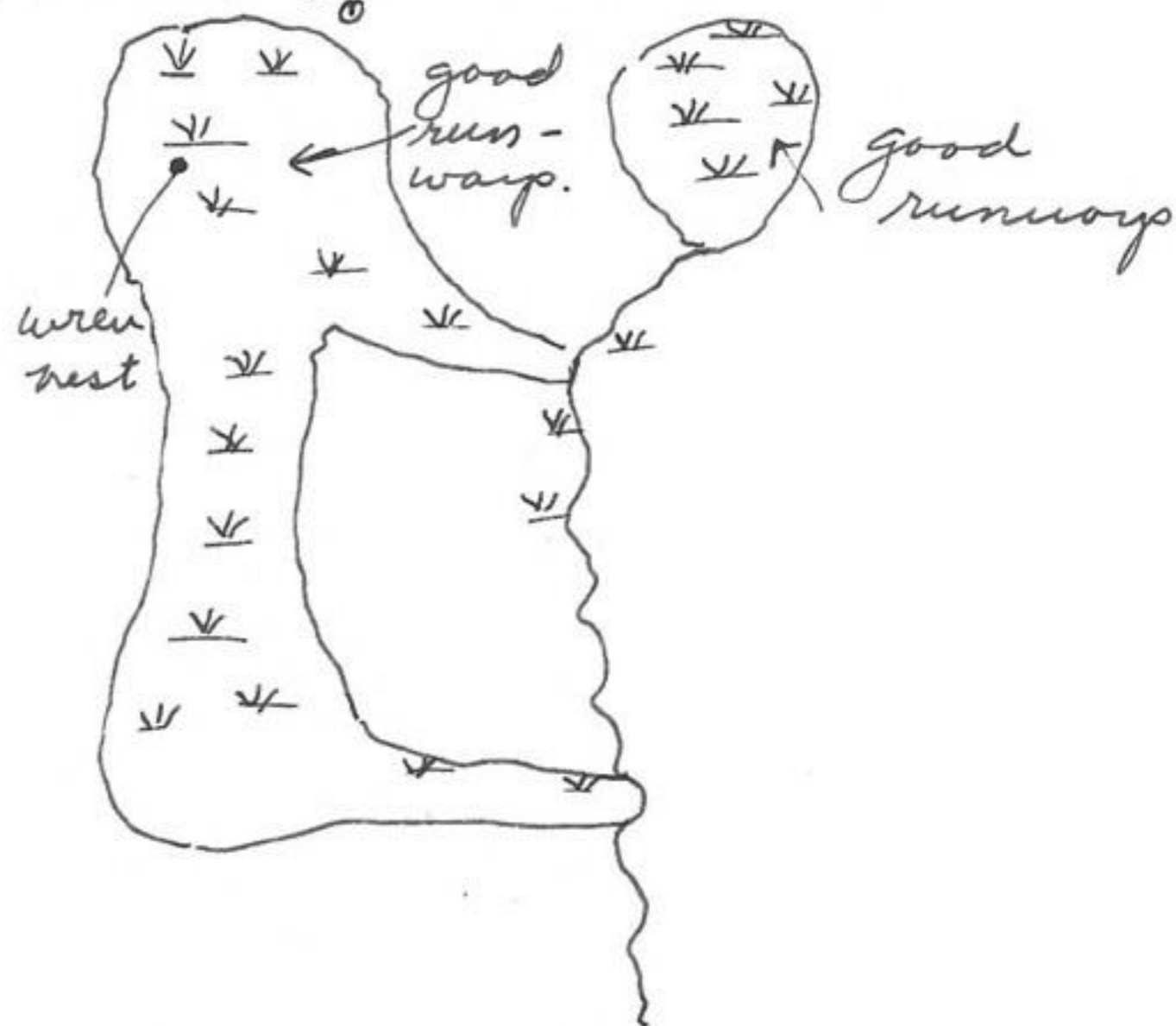


mounds with from 1 to 12 holes and elevated soil dug and accumulated by the voles. These mounds averaged about 5 inches above the surrounding runway area. Some of the

mounds and nests had been excavated by predators (some by small animals like weasel or skunk, others by fox or coyote) before the fire but the great majority (40% of total number) were excavated (that is the nest had been exposed

and nesting material brought to surface) by predators after the fire. One is immediately impressed with two things; one, the amount of predation of a microtine population when the natural overhead protection is eliminated (in this case by fire) and secondly by the lack of lateral movement out of the area of the fire to peripheral areas. There were no dead or burned animals in fire area except an old carapace of a turtle. Returned to car after checking burned area (10:30 A.M.), thence W. six horned larks associated with a flock of tree sparrows. Bridge over Wakarusa at 68.7 mileage, thence N to west middle border of sec. 24, thence E. Excellent native grasses on S side rd, especially near middle E border of sec. 24, thence to 71.2 to E at mouth of canyon with large reservoir to N. Examined marshes below dam. noted ----- rabbit (dam) -----

one nest of marsh wren, many trails of microtines (probably *M. ochrogaster*) but only a few in use. Area trampled by stock. One cottontail rabbit on slope of dam above marsh. It ran up slope and over dam. Reservoir frozen at south end ~~up~~ but open at N. end (1/2 lobe).



Returned to car and left 71.2. 71.5 good sedges on hillside.

marsh 1500 ft E and 2000 ft S of NW corner Sec 19, T. 18E, R. 13.S.

Continued east on valley road and at 72.2 a redtail hawk flew south and followed the same route as redtail of yesterday that flew S across valley and alighted in tree near Wakarusa River. at 72.8 mileage noted 1 crow in field. at 73.2 1 crow. Arrived center of sec 17 at 73.3, thence to east. now starting to snow. at middle east border sec. 16 mileage 74.8, thence N to 75.7 where a redtail hawk left top of tree and flew N out over valley. Passed bridge (over Wakarusa) on way to E at 75.9. Shrike at 76.3. 76.5 passing road to S (Clinton). 77.2 bridge over Wakarusa near middle of sec. 14. Continued E on valley road. 77.7 2 crows feeding at pond area on N side road, also 4 horned larks, at 78.8 mileage at N end of proposed dam at 12:00. 2 redtails on way to home (1 at juniper knoll and 1 about 1 mile beyond along utility lines

Inspection of trapline set last night. (9:00 A.M. to 10:00 A.M.) Temp 30°F  
trap number is also feed number

1 Synaptomys cooperi	40 not visited	79 not visited
2 not visited	41 Pero. leucopus	80 Reithro megalotis
3 " "	42 not visited	81 " "
4 " "	43 " "	82 not visited
5 sprung	44 Pitymys pectorum	83 Reithro megalotis
6 not visited	45 not visited	84 not visited
7 " "	46 " "	85 not visited
8 " "	47 Synaptomys cooperi	86 Reithro megalotis
9 " "	48 not visited	87 not visited
10 " "	49 " "	88 microtus ochrogaster
11 " "	50 " "	89 not visited
12 " "	51 " "	90 Synaptomys cooperi
13 " "	52 " "	91 Synaptomys cooperi
14 " "	53 Pero. leucopus	92 microtus ochrogaster
15 " "	54 not visited	93 not visited
16 " "	55 Reithro megalotis	94 not visited
17 " "	56 not visited	95 Synaptomys cooperi
18 " "	57 Synaptomys cooperi	96 not visited
19 " "	58 microtus ochrogaster	97 " "
20 " "	59 not visited	98 Reithro megalotis
21 " "	60 " "	99 not visited
22 " "	61 " "	100 " "
23 Pitymys pectorum	62 Pero maniculatus	
24 not visited	63 not visited	
25 " "	64 " "	
26 " "	65 Pero. maniculatus	
27 " "	66 not visited	
28 " "	67 Pero maniculatus	
29 " "	68 Reithro megalotis	
30 sprung	69 not visited	
31 Pero. leucopus	70 " "	
32 Synaptomys cooperi	71 " "	
33 sprung	72 " "	
34 Pero leucopus	73 " "	
35 not visited	74 " "	
36 " "	75 Pitymys pectorum	
37 " "	76 not visited	
38 " "	77 " "	
39 " "	78 sprung	

### Summary

7 Synaptomys cooperi
3 microtus ochrogaster
3 Pitymys pectorum
4 Peromyscus leucopus
6 Reithrodontomys megalotis
3 Peromyscus maniculatus
26 total
4 traps sprung
70 traps not visited.



## Preparation of mammals collected this A.M.

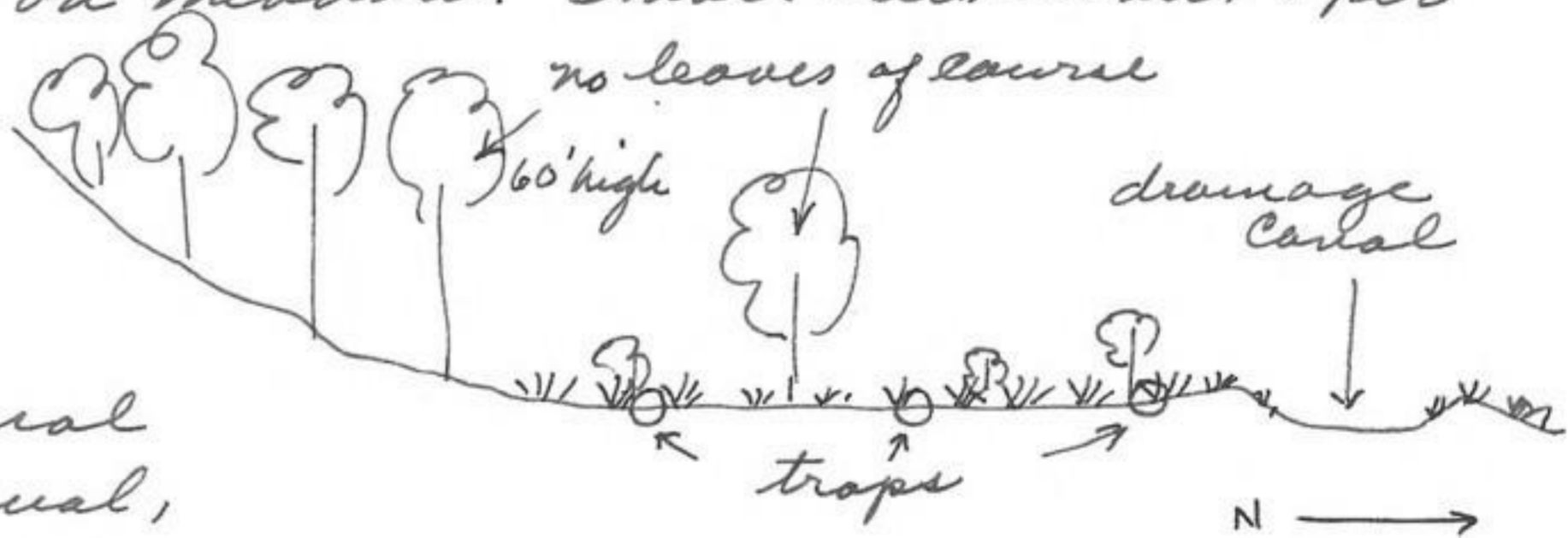
630223-1	<i>Synaptomys cooperi</i>	128-22-19-10-36gms
630223-23	<i>Pitymys pinetarium</i>	138-23-18-11-36gms
630223-31	<i>Peromyscus leucopus</i>	187-88-23-16-27gms
630223-32	<i>Synaptomys cooperi</i>	134-21-20-10-41gms
630223-34	<i>Peromyscus leucopus</i>	158-67-22.5-17-22gms
630223-41	" "	142-71-23-17-23gms
630223-44	<i>Pitymys pinetarium</i>	131-25-19-10-36gms
630223-47	<i>Synaptomys cooperi</i>	134-22-20-10-41gms
630223-53	<i>Peromyscus leucopus</i>	159-66-22-16-24gms
630223-55	<i>Reithrodontomys megalotis</i>	126-60-17-12-9gms
630223-57	<i>Synaptomys cooperi</i>	127-22-20-10-30gms
630223-58	<i>Microtus ochrogaster</i>	124-27-19-10-25gms
630223-62	<i>Peromyscus maniculatus</i>	[147]-[55]-20-15-24gms
630223-65	" "	152-58-19-15-21gms
630223-67	" "	138-51-19-15-20gms
630223-68	<i>Reithrodontomys megalotis</i>	138-64-17-12-10gms
630223-75	<i>Pitymys pinetarium</i>	120-22-17-10-29gms
630223-80	<i>Reithrodontomys megalotis</i>	133-61-17-12-10gms
630223-81	" "	128-62-17.5-12-9gms
630223-83	" "	130-56-17.5-12-9gms
630223-86	" "	132-61-17-12-8gms
630223-88	<i>Microtus ochrogaster</i>	152-35-19-11-41gms
630223-90	<i>Synaptomys cooperi</i>	128-22-20-10-36gms
630223-91	" "	155-36-20-12-46gms
630223-92	<i>Microtus ochrogaster</i>	142-27-19-11-38gms
630223-95	<i>Synaptomys cooperi</i>	128-18-20-10-39gms
630223-98	<i>Reithrodontomys megalotis</i>	128-61-17-12-9gms

3/4 mi. N and 1/20 mi. E Clinton (center of town), Douglas Co., Kansas.

Feb. 23, 1963

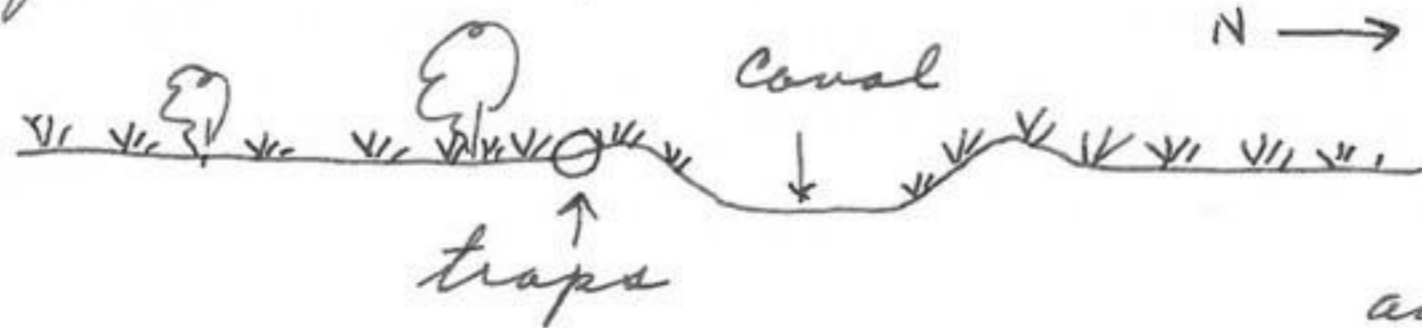
This evening between 5:30 P.M. and 6:30 P.M. set 100 traps (see map). Temp 32°F and wind from N. This A.M. cloudy and rain followed by snow. The individual snow flakes, or rather, aggregation of individual snow flakes were large, some measuring 3 inch in length. The masses of snow fell at different rates, some fast because of excessive weight and shape, and some slow because of the parachuting effect of the flakes. The sky was filled with these flakes and looked liked a feather pillow had been broken. The direction of these flakes indicated differences in direction of the wind. It was only after reaching the protection of trees that the flakes fell straight down. Snow soon melted but remained as slush. At time of trap setting (5:00 P.M.) the skies had cleared and were predominantly blue.

Trops 1 to 22 in sedge patches and general wet meadow grasses. Partially shaded by high trees to S, a few individual trees in meadow and small successional bushes & trees that are encroaching on meadow. Small trees about 1 per every 20 feet. The soils were with standing water to dry. Edge of dike of drainage canal dry but soils, as usual, frozen solidly.



soils were with standing water to dry. Edge of dike of drainage canal dry but soils, as usual, frozen solidly.

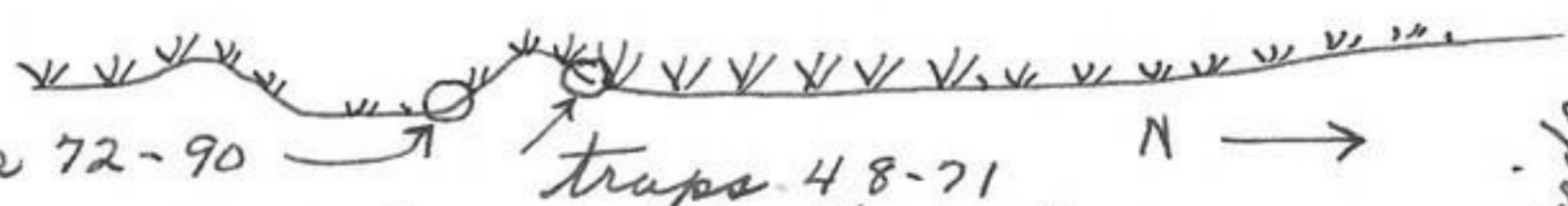
Trops 23-~~47~~<sup>47</sup> along dike in sedges and grasses with small bushes and trees about every 20 feet. The grass formed well protected areas about the base of the trees.



The traps were about 80' from the deciduous forest to the S. Grasses and sedges good overhead protection

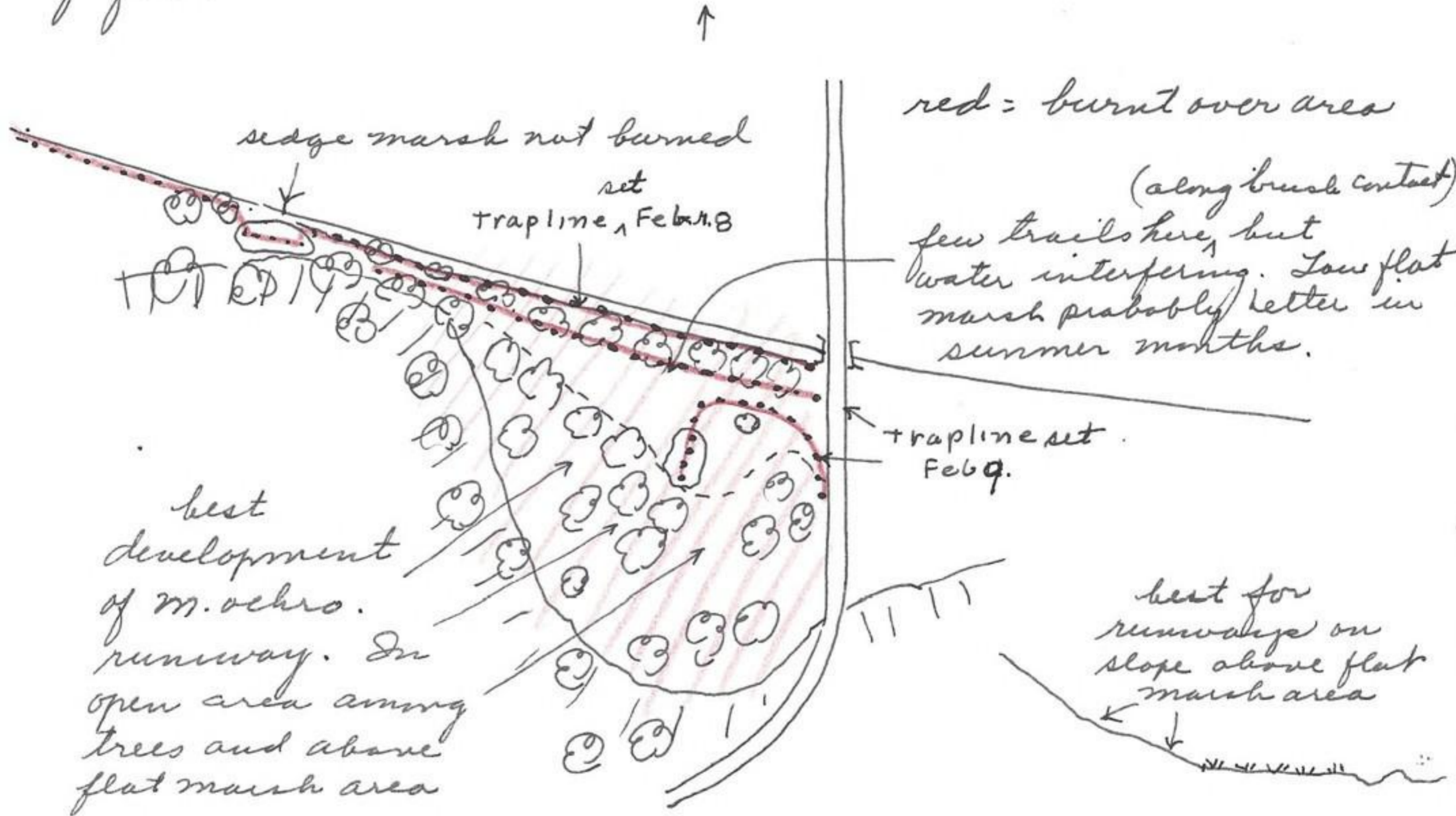
Trops 48 to ~~70~~<sup>71</sup> on N side of dike of drainage canal and were all strictly open meadow

Good sedges and grasses for overhead (Trops 72-90) protection. Height of N side of dike about 1 1/2 feet. Traps mainly on main runway along dike. Trails hidden, soil frozen solid. On route home in valley road to Neudum did not observe birds.



Feb. 24, 1963

Checked trapline set last. Left home 7:30 A.M. Temp at that time 20°F. From N end of proposed dam site - mileage 24.7 (will follow regular valley road to trapping area. At 25.9 mileage noted 3 horned larks and 1 crow at pond along N side road near intersection. 26.5 bridge over Wabamusa. 50% open water. Yesterday was completely frozen. Cardinals high in trees at this time of morning. 27.2 mileage at trapping area where road crosses drainage canal. Before checking traps inspected area to west in area trapped February 10 and 11. This area had been burned, probably yesterday as some bases of trees were still smoldering. This gives the opportunity of checking runways in areas trapped previously. Upon arrival not 2 crows on ground in burned over area. Did not see any mammals or birds which had been killed by fire.



The dike showed a few runways at base (s. side) but no activity on dike proper. This might account for the fact that only *Reithrodontomys* were collected on dike. It is unusual that there was not more activity on dike because the soils were proper of excavating and development of runways (at water level)

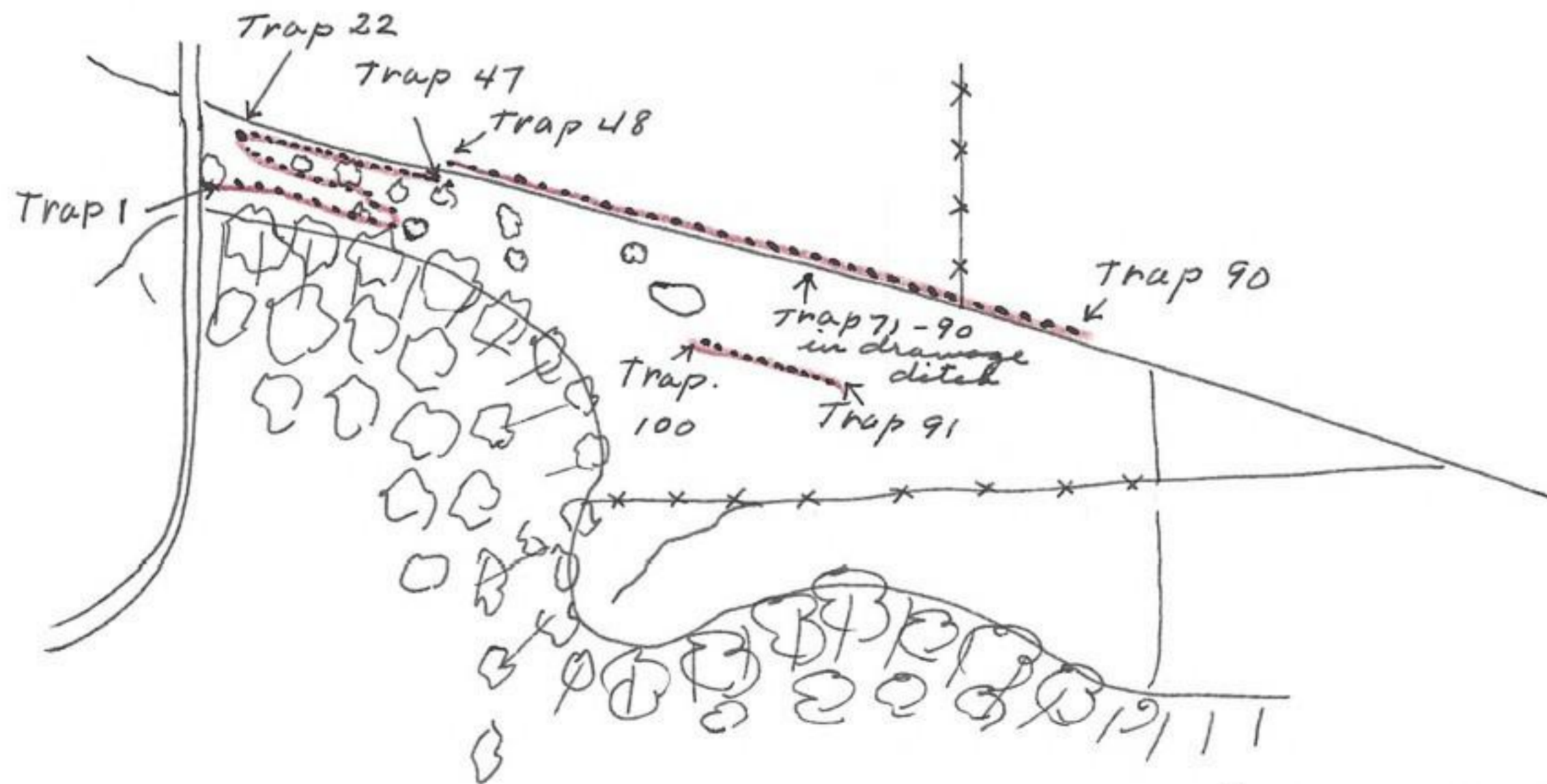
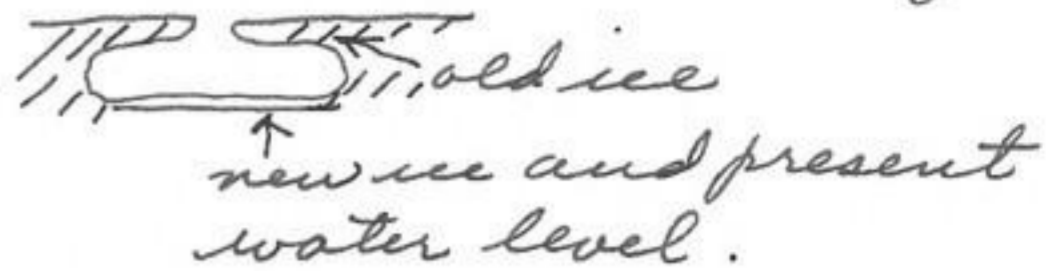
(fotall grass now burned off) cult. field

bottom canal runways.

The soils were proper of excavating and development of runways

The best runways for *M. ochrogaster* were on slope of hill in grasses & sedges above the flat marsh at base of slope. The lowlands are presumably too wet in winter & spring, at least water now stands in trails previously occupied. Later in season with more rainfall, there will be even more water. Ice level had dropped since a week or so ago and now is an elevated bridge.

A trail of an opossum on ice channel. It apparently walked up creek yesterday after it snowed because the tracks were frozen in slush. A few tree sparrows were feeding in burned area. Muskrat burrows were in area bordering the road. Examined one tree stump, cut 1 foot above ground, that was 32 inches in diameter. After leaving the area, the two crows first noted on arrival, returned to the burnt area. I did not see dead animals but apparently there were a few killed by the fire. I can never understand why there <sup>is</sup> not ~~been~~ more evidence of dead animals after a fire. or why the peripheral edges do not support more live mammals.



The metal stakes that were used to secure traps, wherever they could be forced into ground were frozen in and difficult to pull out of ground. Mammals captured were frozen solid (these will need to be measured when prepared). It is unusual that *Synaptomys* was not taken in this live as the area is near the permanent bog to west and on a previous trap line in same area, one was captured. On return to car, the two crows were still in burned area. I could not determine what they had been feeding on. On return to N end of dam along valley rd. did not make significant <sup>observations</sup>

Inspection of trap line (traps 1-100). all 20 feet apart.  
 checked 8:00 A.M to 9:00 A.M Temp 20°F. sky slightly overcast  
 but blue 50% of sky. Trap number will be field number.

1	39	77
2 m. ochro.	40	78 m. ochro
3 Reithro megalotis	41	79 Reithro megal.
4 " "	42	80 " "
5 m. ochro (not frozen)	43	81
6	44 sprung	82 sprung
7 m. ochro	45	83 sprung
8	46 m. ochro.	84 Reithro megal.
9	47	85
10 m. ochro	48 Reithro. megal.	86 sprung
11 Pero. leucopus	49	87 sprung
12	50 sprung	88 Blarina brevicauda
13 m. ochro	51 m. ochro	89 Pero. moniculatus
14	52 Reithro megal.	90 sprung
15	53	91 "
16	54 microtus ochro.	92 sprung
17	55 sprung	93 m. ochro
18 m. ochro	56 m. ochro (not frozen)	94
19 sprung	57	95 Reithro megalotis
20 microtus ochro	58 sprung	96
21	59 m. ochro	97
22 sprung	60 Blarina brevicauda	98 m. ochro. (not frozen)
23	61	99 sprung
24	62 sprung	100. sprung
25	63 sprung	
26	64 microtus ochro	
27 m. ochro (not frozen)	65	
28 m. ochro	66 sprung	
29 m. ochro	67 m. ochro.	
30	68	
31 m. ochro	69	
32 sprung	70 m. ochro.	
33	71 m. ochro.	
34	72 Reithro megal.	
35 sprung	73 sprung m. ochro	
36 Pero leucopus	74 sprung	
37	75	
38 m. ochro (not frozen)	76	

### Summary

25	microtus ochrogaster
2	Promyrcus leucopus
1	" moniculatus
2	Blarina brevicauda
9	Reithrodontomys megalotis
39	total
21	traps sprung
40	traps not visited

## Preparation of mammals trapped last night:

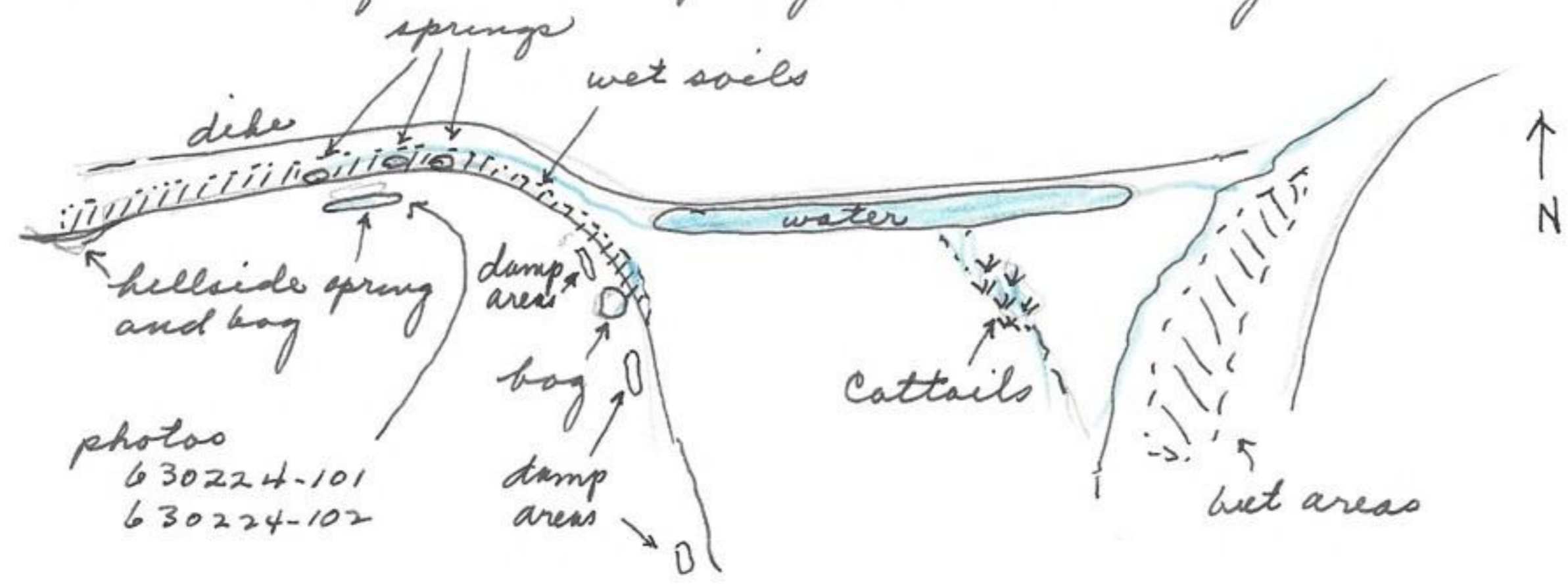
630224-2	<i>Microtus ochrogaster</i>	
630224-3	<i>Reithrodontomys megalotis</i>	
630224-4	" "	
630224-5	<i>Microtus ochrogaster</i>	154-38-21-12-45 gms
630224-7	" "	
630224-10	" "	
6302 <sup>24</sup> <del>24</del> -11	<i>Peromyscus leucopus</i>	
630224-13	<i>Microtus ochrogaster</i>	
630224-18	" "	
630224-20	" "	
630224-27	" "	169-42-21-12-43 gms
630224-28	" "	
630224-29	" "	
630224-31	" "	
630224-36	<i>Peromyscus leucopus</i>	
630224-38	<i>Microtus ochrogaster</i>	150-36-20-11-39 gms
630224-46	" "	
630224-48	<i>Reithrodontomys megalotis</i>	
630224-51	<i>Microtus ochrogaster</i>	
630224-52	<i>Reithrodontomys megalotis</i>	
630224-54	<i>Microtus ochrogaster</i>	
630224-56	" "	164-42-21.5-11-49 gms
630224-59	" "	
630224-60	<i>Blarina brevicauda</i>	
630224-64	<i>Microtus ochrogaster</i>	
630224-67	" "	
630224-70	" "	
630224-71	" "	
630224-72	<i>Reithrodontomys megalotis</i>	
630224-73	<i>Microtus ochrogaster</i>	
630224-78	" "	
630224-79	<i>Reithrodontomys megalotis</i>	
630224-80	" "	
630224-84	" "	
630224-88	<i>Blarina brevicauda</i>	
630224-89	<i>Peromyscus maniculatus</i>	
630224-93	<i>Microtus ochrogaster</i>	
630224-95	<i>Reithrodontomys megalotis</i>	
630224-98	<i>Microtus ochrogaster</i>	155-35-21-12-47 gms

8600 ft W and 2500 ft. S Clinton (center), Douglas Co., Kansas.

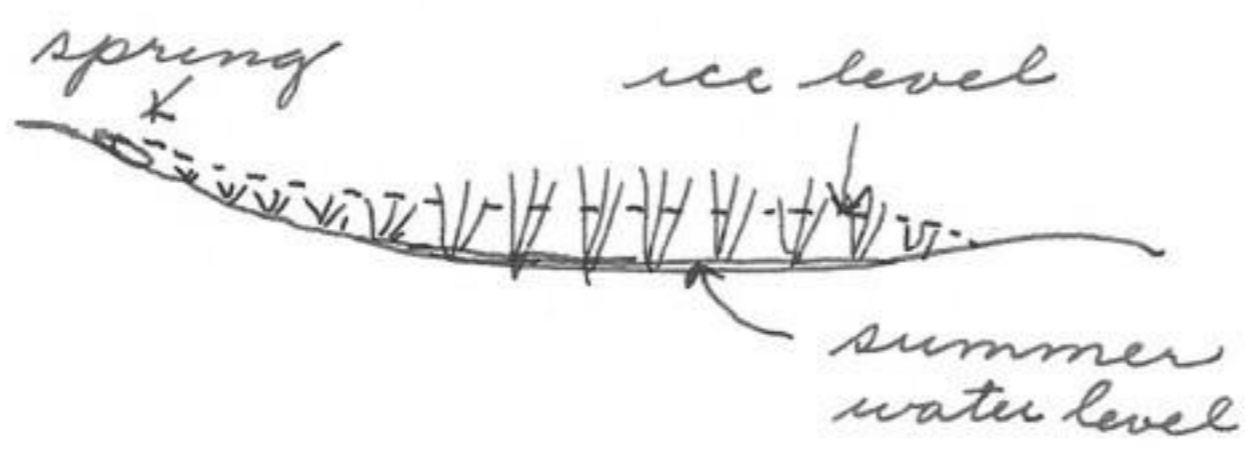
Feb 24, 1963

(See previous notes for Center of Clinton). Annette M and I photographed ice mass of sidehill spring at this locality.

Feb. 24, 1963

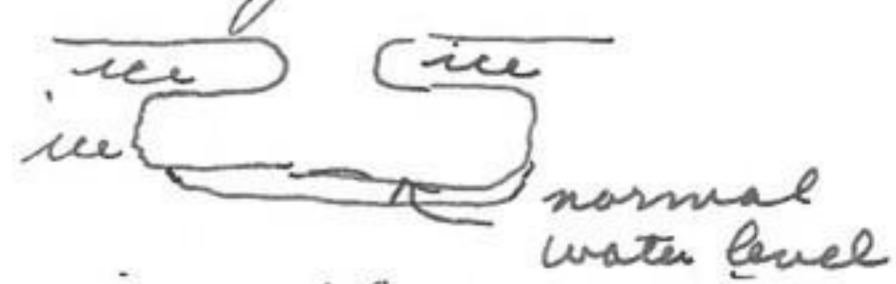


(See previous notes on these springs. Photos 630224-101 and 630224-102 showing ice mass built from water of spring. All water had accumulated in ice and none had flowed down hill. There are some grasses and sedges and considerable moss covered soils but cattle have interrupted the normal plant and animal community. I doubt whether small mammals are present because of the trampling effect. Perhaps in summer where more overhead protection is available, mammals will use this area. At base of hill the several springs have placed ice over the plant community and sealing in the vegetation with solid ice. This ice mass effectually excludes all small invertebrates. Some ice is 1 1/2 feet thick. The



water freezes and build up a mass of ice with well defined peripheral edges. This same type of freezing has occurred in small creeks where ice build up

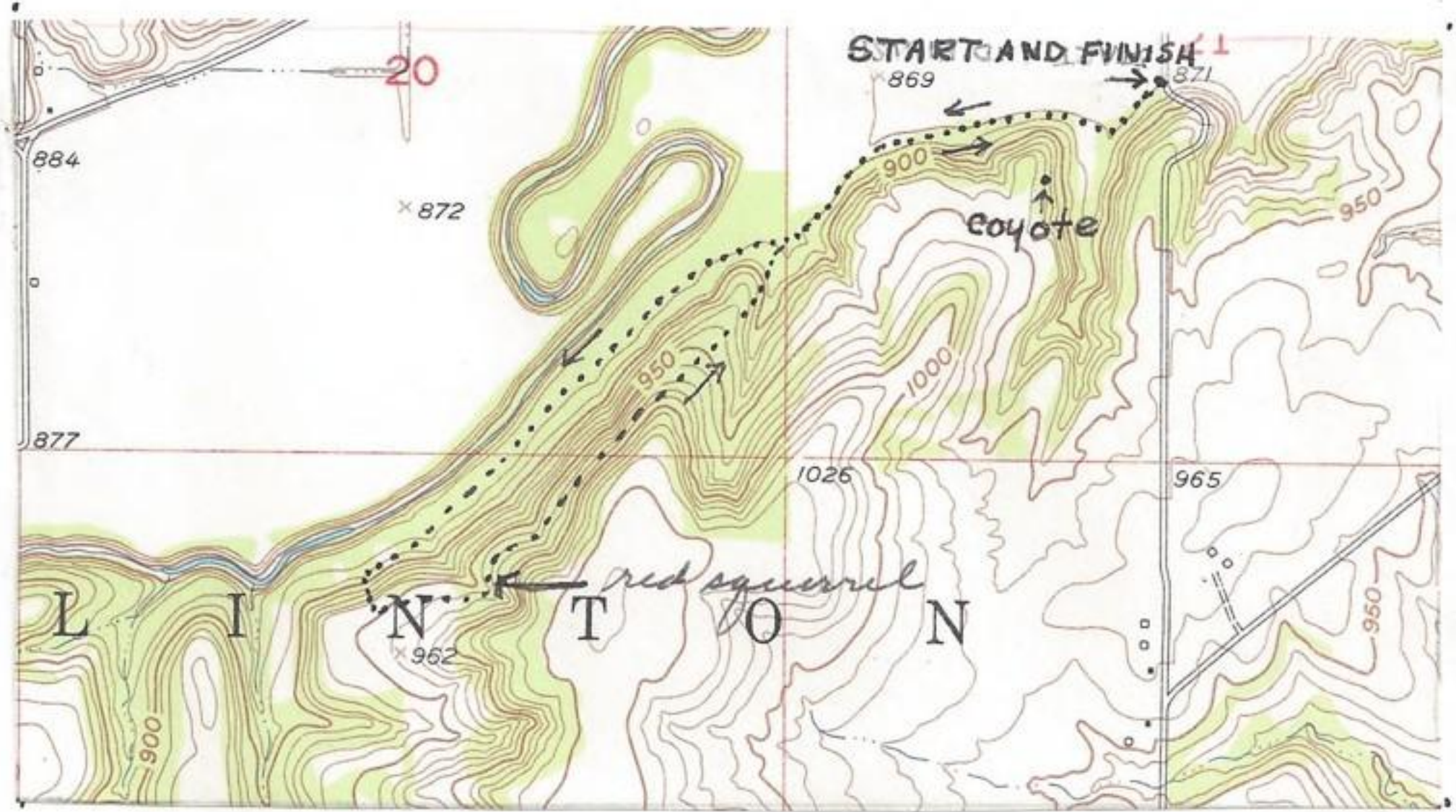
and surface are flow surfaces like the viscous lava fields. These ice masses in creeks are the last to melt and are conspicuous with surrounding slopes bare. Several drainage courses, particularly slow draining, have an upper level of ice which formed at the highest level of water



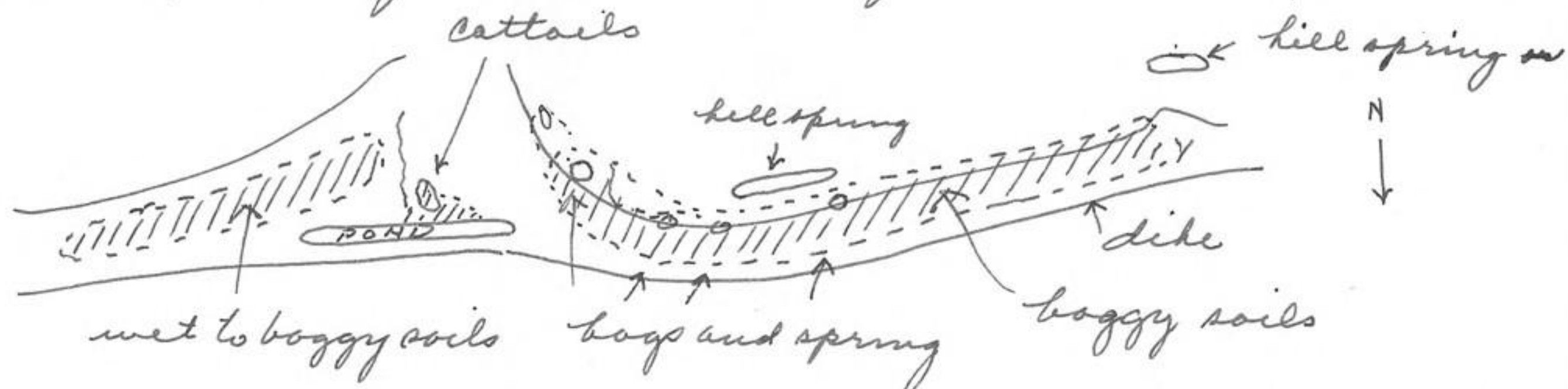
accumulation. On this date the ice is breaking through and exposing the new ice formed on bottom of creek bed. Water now is relatively

low on the ice masses <sup>barriers</sup> have adjusted and are now allowing water to flow along its normal bed. Annette and I continued SW along base of hill as indicated on

the map. Except for a few woodpeckers we did not see small birds except 1 blue jay and 1 cardinal. This is the quiet time of day for bird movement.



On the return trip on upper benchland not a few juncos and tree sparrows but these were in one small group. at the western limit of our trip we heard a great horned owl calling from tree at mouth of canyon. The soil, at this time of day was soft and muddy to about 1 inch in depth; the ground beneath was solid (frozen). Walking was more difficult and ground more slippery than usual. At 6:00 P.M. at 1 block SW of hill spring heard 2 coyotes calling from on top of hill to S. One answered near Clinton cemetery to the NE some 1 mile away. On entire hiking trip noted 3 cottontail rabbits and 1 squirrel. Extent of damp soils as follows:



On return home followed valley road to bridge at S Sec 10, thence N to N Sec 10, thence E to Peterson corner. Did not see animal or birds. Being late twilight we did see small <sup>white</sup> moths (wing spread about 3/4 inch) in lights from car. They occurred in all situations; open valley, deciduous forests, upland grassland. I would estimate about 20 per mile. Along road in NW 1/4 Sec 10 counted 6. Temp. 47°F



Wakarusa Valley, near Clinton, Douglas Co., Kansas

March 1, 1963

Took several photographs enroute to trapping area SW of Clinton. Followed valley road from N end of proposed dam at 18.0 mileage.

At 2:30 P.M. photo 630301-1 of sedge marsh where several *Synaptornis* were collected.

This marsh is approx.

800 feet east of the SW corner sec. 12, T. 18 E, R. 135. Photo 630301-2

of hillside of grasses and shrubs where other *Synaptornis* were taken and represent

lateral extension of habitat or plant community

into a drier hillside situation. Their presence there may be due to competition with *Sagmenodon* in the wetter community preferred by *Synaptornis*.

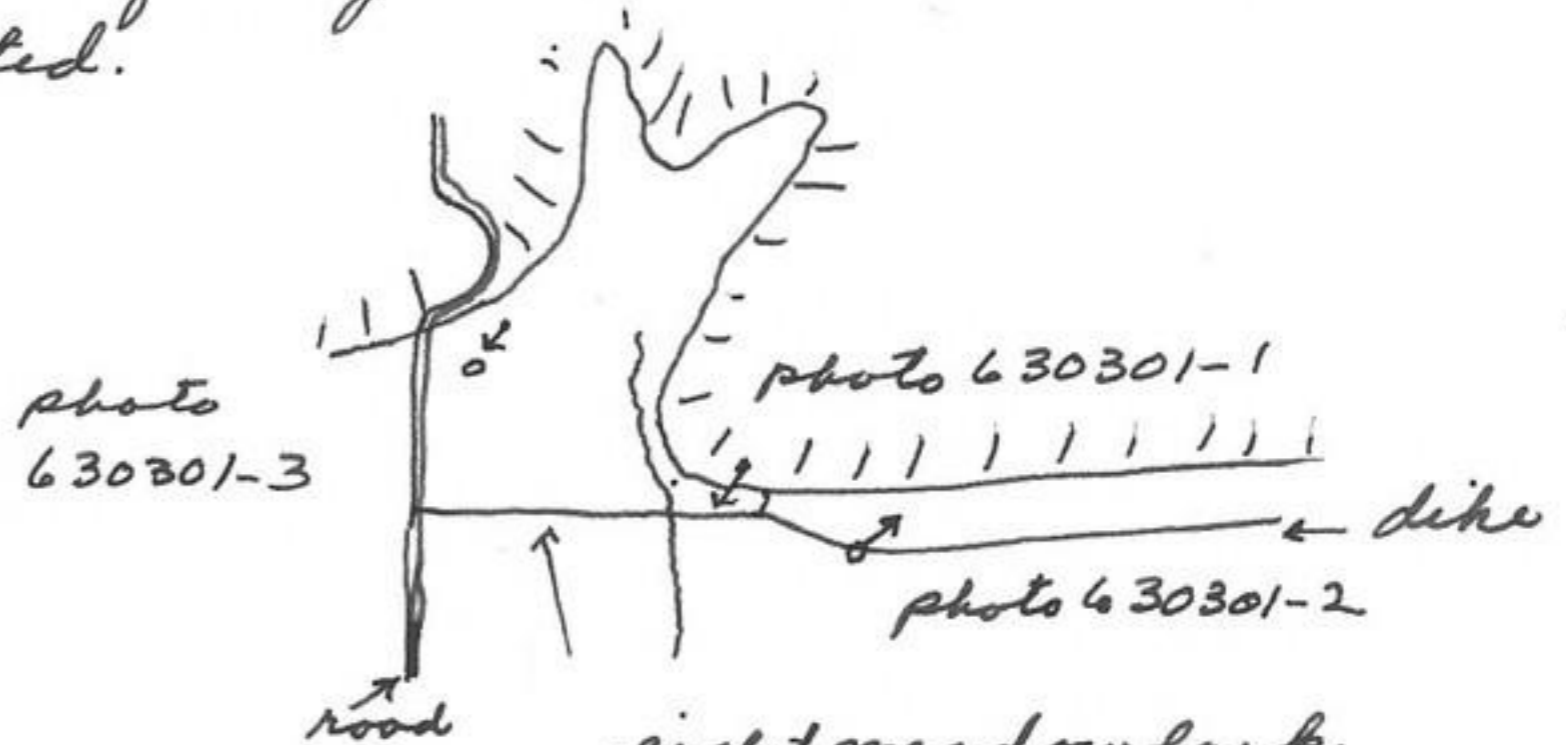
Photo 630301-3 of cattail marsh on alluvial fan at mouth of canyon. This spring is the most permanent water in the general area and probably the refugia during dry years for *Synaptornis*.

It is located at approx. 650' N and 200ft E of SW corner Sec 12, T. 18 E, R. 135. Ice on marsh in protected areas. at

point where road of valley joins road from N in this area, noted 6 horned larks. They are seen here on practically every time I have passed by. The open field and wet lands immediately N of road are the attractions to these birds. This same area at one time was a fishing lake and slough grass 6 feet high. At the Wakarusa bridge

(middle Sec 14) noted water about 90% open. At this time of years is slightly greenish in color. Continued W along valley road to base of hill on road at east ~~middle~~ <sup>border</sup> Sec 15.

In this area to east and west of road took several photographs. This is the area that I have trapped previously. (see notes for general trapping area and date of fire on west side of road. Two crows were noted in burned over area. They fed on blackened soils but I could not determine exactly what they were eating.

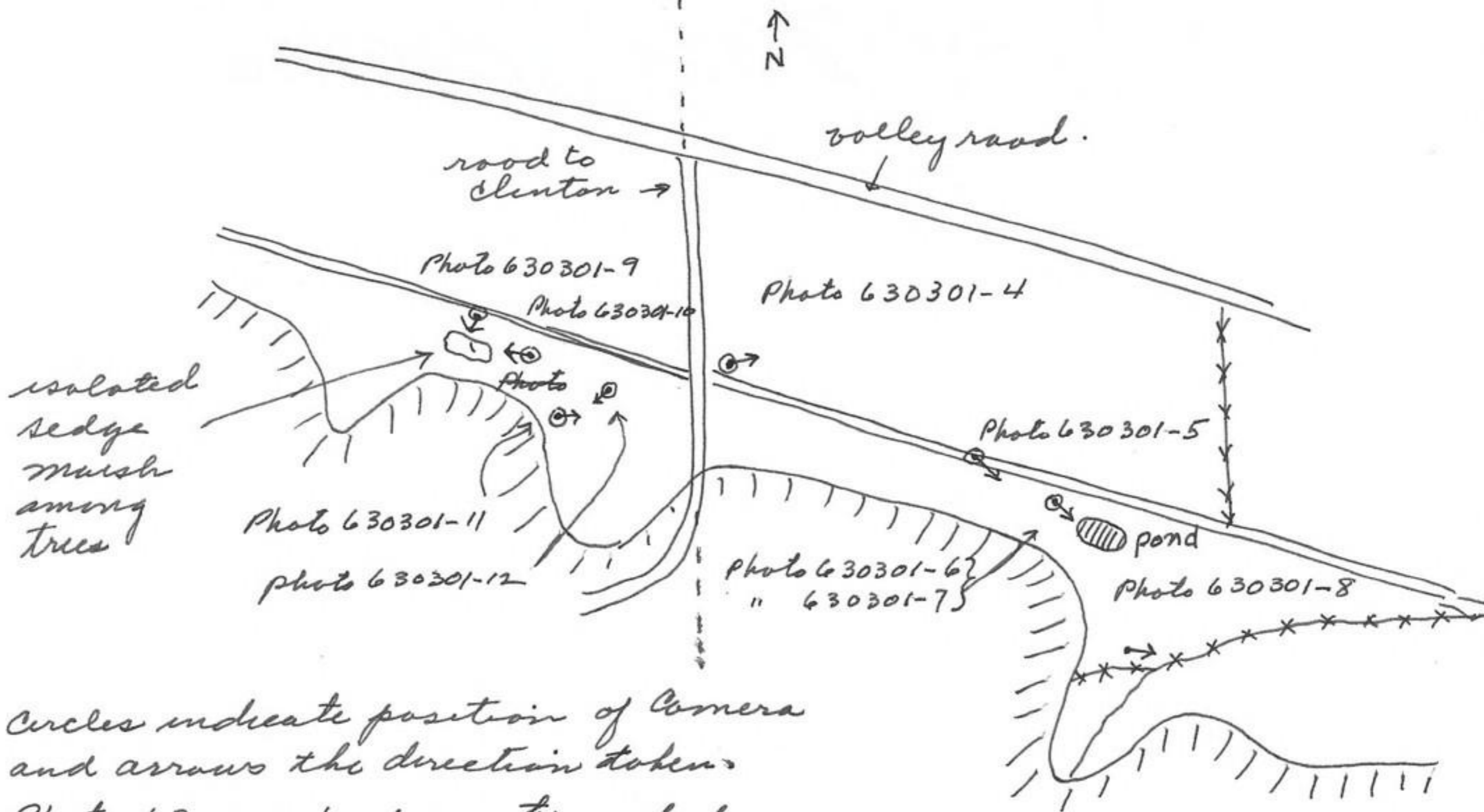


eight meadowlark along this dike of high grasses. Some were singing

March 1, 1966

divides sec. 15 + 14

630301-47

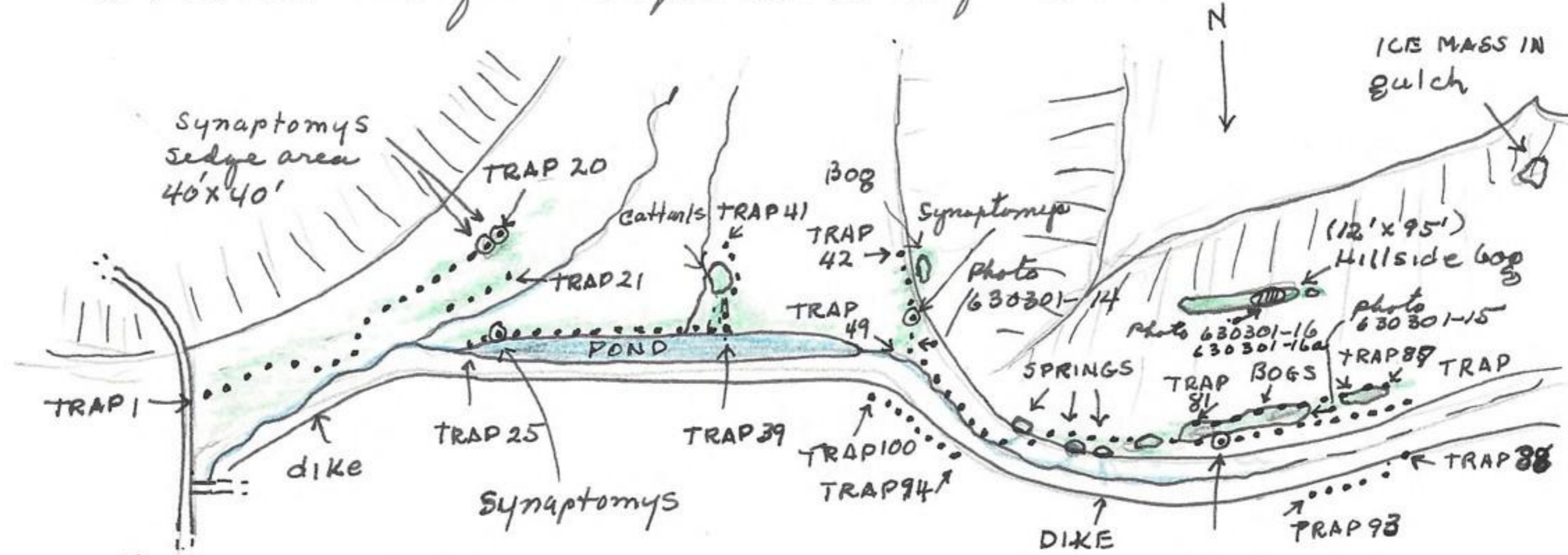


Circles indicate position of camera and arrows the direction taken.

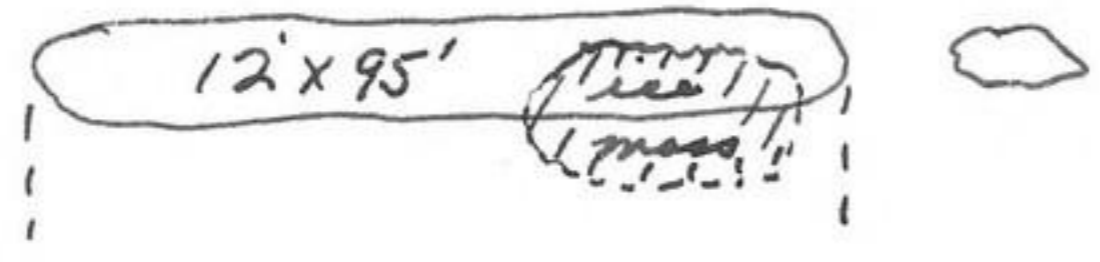
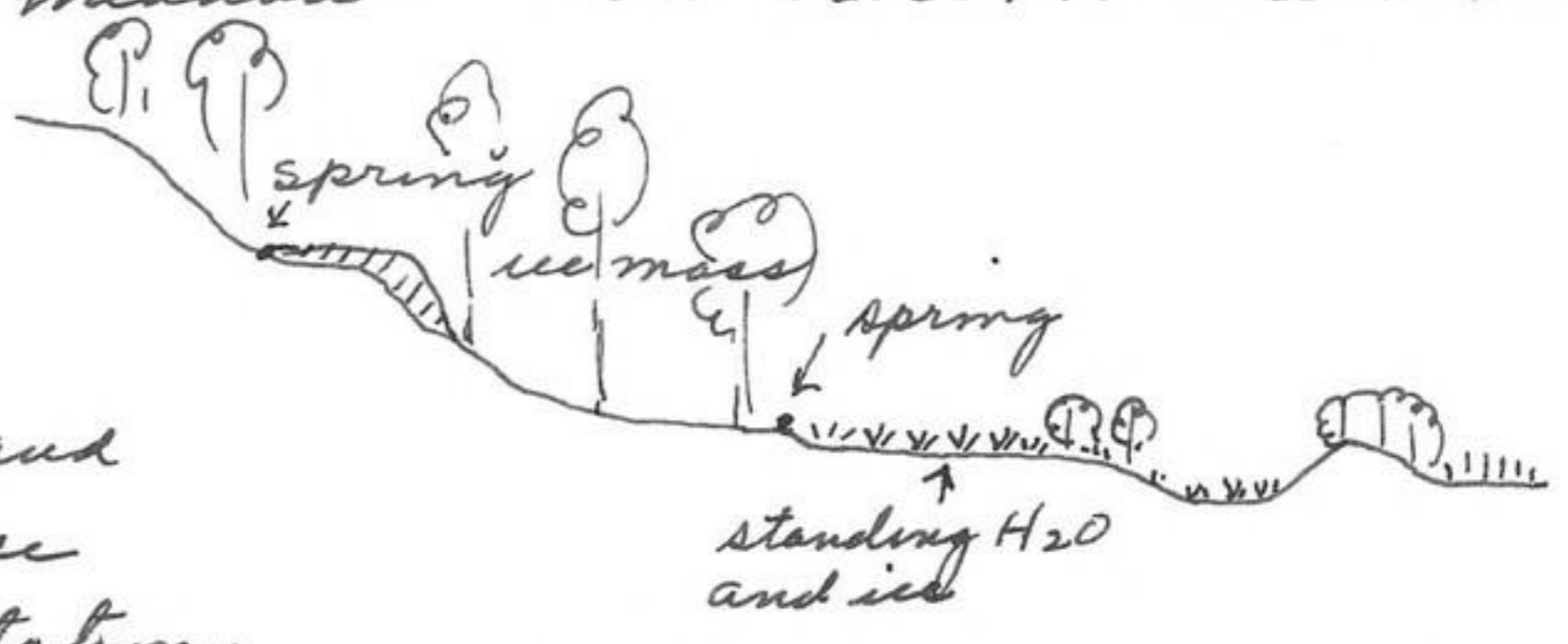
Photo 630301-4 of six branched tree along dike and grasses of field beyond. These fields are not as heavily populated as sedges associated with damp areas. The open field does not supply adequate overhead protection. Photos ~~630301-6~~ 630301-5 of meadow tree (black willow) and artificial pond. The sedges and grasses in this field support many microtines. Hillside trap area in distance Photos 630301-6 and 630301-7 of black willow tree at NW corner of pond. Pond 1/3 open on N side. Photo 630301-8 of trapping area on hillside - weed-grass community (see previous dates) and ice in creek which is characteristic of this time of year. The field to right has previously been cultivated. The one on right only grazed. Two crows remained in pond area while I took photographs. On the west side of Clinton road took photo 630301-9 and 630301-10 of sedge marsh among trees. This area used extensively by *Peromyscus leucopus* and rabbits. Although I thought it was a good marsh for *Synaptomys*, did not catch this mammal here. Considerable ice among sedges. Photo 630301-11 of burned area. The sedges are now covered with water and is excluding small mammals that might of inhabited the area in winter. Photo 630301-12 showing extent of water in sedge and grass marsh. This is the area that seems a likely community for *Synaptomys* but did not find them here. Continued W along valley road to point about 3/10 miles S from center of Sec 16, T.18E, R.13S. Photo 630301-13 across valley floor to SW. Hillside spring of ice can be seen to left on hill.

March 1, 1963

The mile across the valley road supported 8 meadowlarks some of which were singing and 4 horned larks (2 pairs) Continued S to base of valley slope and took several photographs of general trapping area and set 100 museum traps as indicated below. Traps 20 feet apart. Set between 5:00 P.M. and 6:15 P.M. At 6:30 P.M. late twilight and saw just make out bird forms as positive identification.



Four rabbits in area. Heard a bird call in forest to S that sounding like a vibrating murmur. Many birds in area. Photo 630301-14 of drainage pond and damp meadows on right side of picture from cattails area. The dike to left did not support runways. Photo 630301-15 of spring and bog at base of slope below hillside spring and ice mass. Some ice in meadow. Photo 630301-16 ice mass on hillside spring. Photo 630301-16a of ice mass and bog vegetation of contrasting green against a dull and lifeless hillside. Ice covering most of vegetation. Some runways but all old.



The bog area measured while setting traps noted 2 redtail hawks flying about 200' north of trapping area and calling. 1 *Pseudocircus* calling.

In trap 63 caught a *Synaptomys cooperi* at 5:45 P.M. shortly after trap was set. This *Synaptomys* measured: (see this number on proper data) 630302-63 *Synaptomys cooperi*. 142-25-20-11-49 gms.

At 6:30 late twilight. Left area at 6:40 P.M. at 3/10 mi north from base of hill (center sec. 21) a great horned owl was setting on a fence post. It flew east into field and alighted. 2 horned larks in rd in lights of car. Continued to N end of dom (proposed) by valley road. no important observations. 630301-17 east from base of hill (proposed) (wide area)

March 2, 1963

March 2, 1963 (see end notes on preparations for details)

Checked trapline set last evening: Temp 34°F, sky clear 7:00-8:00 A.M.

Trap numbers are also field numbers. Traps set 20' apart.

1 not visited	40 sprung	79 not visited
2 <i>Pero leucopus</i>	41 not visited	80 " "
3 <i>m. ochro</i>	42 " "	81 " "
4 sprung	43 <i>m. ochro</i>	82 " "
5 <i>m. ochro</i>	44 <i>Reithro. megalotis</i> (estm) <sup>tail 60</sup>	83 <i>Pero leucopus</i>
6 not visited	45 <i>pero. leucopus</i>	84 " "
7 not visited	46 <i>Pero. leucopus</i>	85 not visited
8 <i>m. ochro</i>	47 <i>Synaptomys c.</i>	86 sprung
9 not visited	48 sprung	87 not visited
10 not visited	49 not visited	88 " "
11 " "	50 " "	89 <i>Pero leucopus</i>
12 sprung	51 " "	90 <i>Pero. maniculatus</i>
13 not visited	52 " "	91 <i>Pero leucopus</i>
14 <i>Pero leucopus</i>	53 " "	92 not visited
15 " "	54 sprung	93 " "
16 not visited	55 <i>Pero leucopus</i>	94 sprung
17 " "	56 sprung	95 not visited
18 " "	57 sprung	96 <i>Reithro. megalotis</i>
19 <i>Synaptomys c.</i>	58 <i>Reithro megalotis</i>	97 sprung
20 <i>Synaptomys c.</i>	59 not visited	98 not visited
21 not visited	60 " "	99 sprung
22 <i>m. ochro</i>	61 " "	100 not visited
23 not visited	62 " "	
24 " "	63 <i>Synaptomys c.</i>	
25 " "	64 sprung	
26 sprung	65 <i>Reithro megalotis</i>	
27 <i>Synaptomys cooperi</i>	66 not visited	
28 not visited	67 " "	
29 " "	68 " "	
30 " "	69 " "	
31 " "	70 " "	
32 " "	71 " "	
33 " "	72 " "	
34 " "	73 " "	
35 " "	74 " "	
36 <i>m. ochro</i>	75 " "	
37 sprung	76 " "	
38 not visited	77 " "	
39 " "	78 <i>Reithro megalotis</i>	

Summary.

10 <i>Peromyscus leucopus</i> .
5 <i>Synaptomys cooperi</i> .
6 <i>microtus ochrogaster</i>
1 <i>Peromyscus maniculatus</i>
5 <i>Reithrodontomys megalotis</i>
<u>27</u> total
14 sprung
59 not visited

Preparations of mammals collected this A.M. from last night's set:

630302-2	<i>Peromyscus leucopus</i>	180-78-23-16-31 gms
630302-3	<i>Microtus ochrogaster</i>	148-31-19.5-11-34 gms
630302-5	" "	144-32-19-10-37 gms
630302-8	" "	145-33-19-10-36 gms
630302-14	<i>Peromyscus leucopus</i>	160-66-22- <sup>-16-</sup> 26 gms
630302-15	" "	155-67-23-16-21 gms
630302-19	<i>Synaptomys cooperi</i>	128-23-19-11-33 gms
630302-20	" "	129-23-19-10-47 gms
630302-22	<i>Microtus ochrogaster</i>	110-23-17-9-20 gms
630302-27	<i>Synaptomys cooperi</i>	134-22-19-10-51 gms
630302-36	<i>Microtus ochrogaster</i>	160-34-19-11-51 gms
630302-43	" "	153-33-20-10-44 gms
630302-44	<i>Reithrodontomys megalotis</i>	173-73-23-16-27 gms
630302-45	<i>Peromyscus leucopus</i>	♂ tail 60, entire anterior end eaten
630302-46	" "	168-70-22-17-20 gms
630302-47	<i>Synaptomys cooperi</i>	134-21-19-11-51 gms
630302-55	<i>Peromyscus leucopus</i>	168-73-22-15-25 gms
630302-58	<i>Reithrodontomys megalotis</i>	132-56-16-12-12 gms
630302-63	<i>Synaptomys cooperi</i>	142-25-20-11-49 gms
630302-65	<i>Reithrodontomys megalotis</i>	128-55-17-12-11 gms
630302-78	" "	143-66-17-12-12 gms
630302-83	<i>Peromyscus leucopus</i>	188-83-23-16-30 gms
630302-84	" "	189-85-23- <sup>-17-</sup> 33 gms
630302-89	" "	193-88-23-17-31 gms
630302-90	" <i>maniculatus</i>	146-55-19-13-20 gms
630302-91	" <i>leucopus</i>	182-72-22.5-16-28 gms
630302-96	<i>Reithrodontomys megalotis</i>	143-66-17-12-12 gms

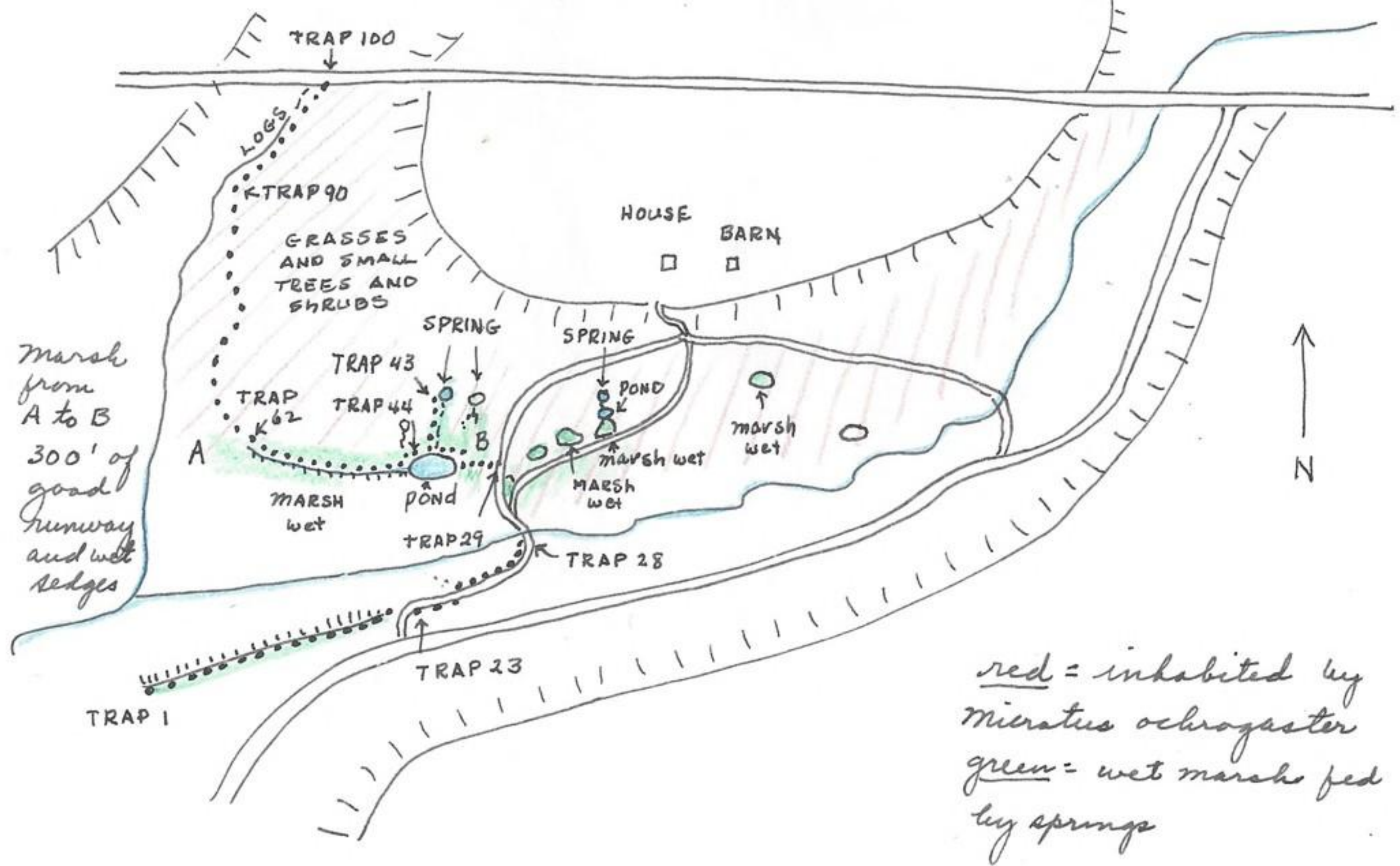
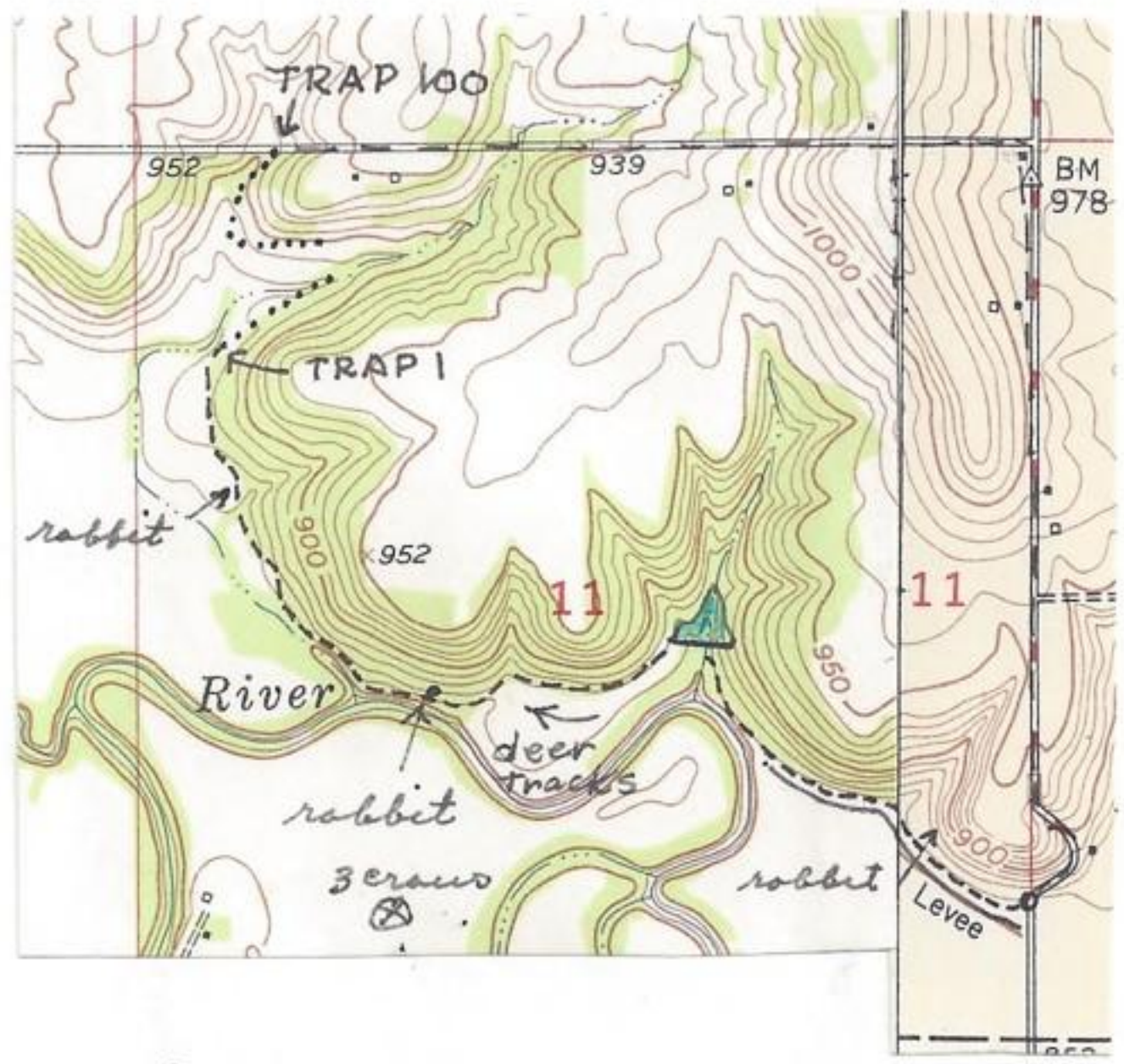
Photo 630302-101 of Pete Pearson and 2 bass he caught near Oskaloosa. They weighed 6 1/4 and 6 lbs. respectively. This morning James R. and I checked traps. Crossed area via paved road. Clinton etc. 4 crows just 1 mi. E Clinton, 2 crows at trapping area, 1 coyote called for about 5 minutes in same area as recorded by Annette and I previously. 3 cottontail rabbits along trapline. On return home followed same route. 6 horned larks across field N of trapping area, also 2 meadowlarks. 1 redtail at NE Cemetery (Clinton) resting in tree, 1 crow 1 mi. E Clinton. At the S end of dam of proposed reservoir noted 40 crows in compact group feeding in field 400 feet to N. Left area 8:30 A.M. (site of dam).

2 mi. N and 1/4 mi. E Clinton, Douglas Co., Kansas

March 2, 1963

Annette C. and I made reconnaissance from base of hill on road from 800 feet N of the SE corner of sec 11, T18 E and R135 to a point 800 feet east of the NW corner of the same sec. 11. following mainly the contact between the flat valley of the Wakarusa and the base of the valley hill slope. There were no wet meadows between the Peterson Pond and the area marked Trap 1. Traps 1-28 wet from drainage rather than spring. The slopes on N side of the valley are excellent for *Synaptomys* and an unusual area of springs and dam meadows. The house above was probably located because of presence of spring for culinary water supply.

March 2, 1963



area traversed about 3 1/2 miles. Last 50 traps set after twilight and placed on top of grasses rather than selective. Area below Peterson Pond not favorable for small microtines except at permanent water.

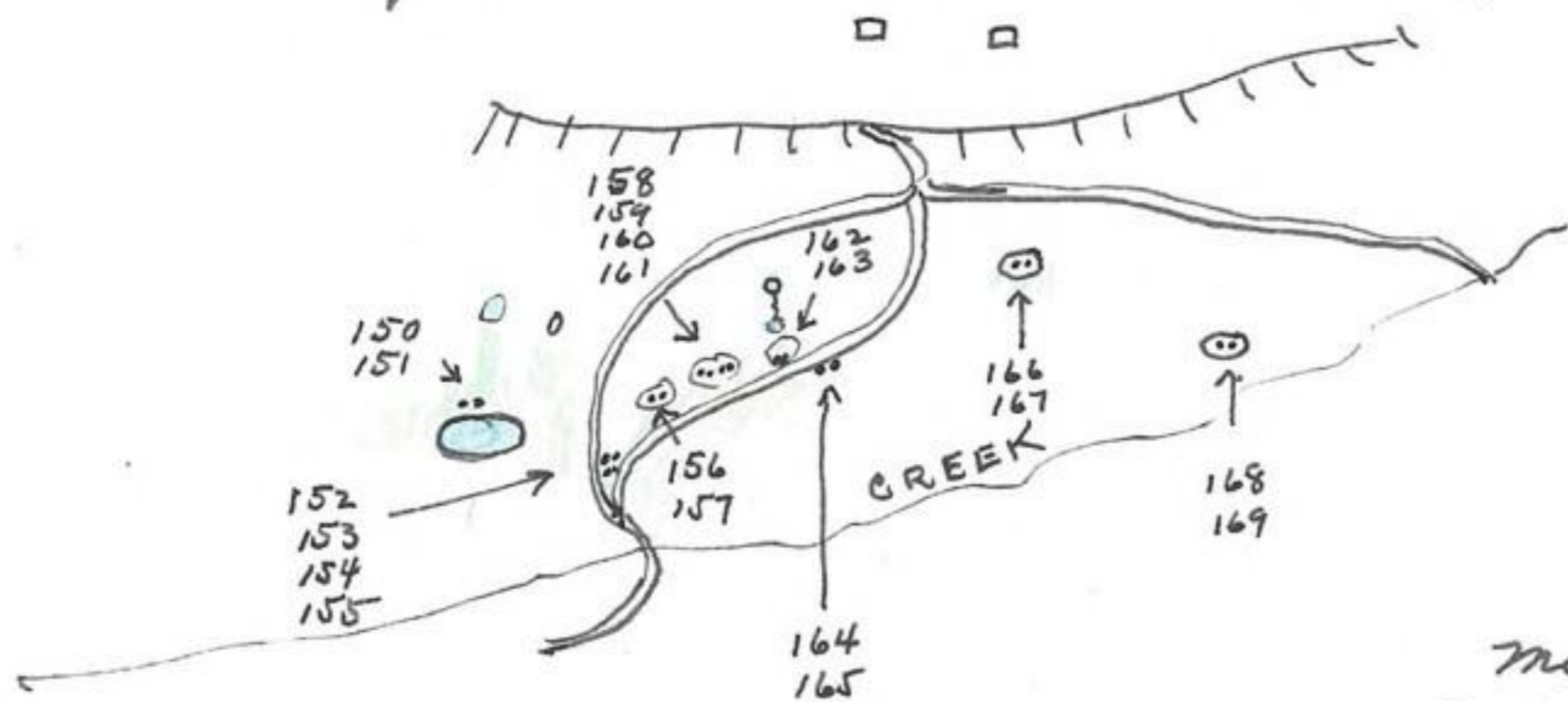
2 mi. N and 1/4 mi E Clinton, Douglas Co., Kansas

March 3, 1963

at 5:30 A.M. heard a flock of geese, either snows or blue, flying north. These were the first ones heard this season. Yesterday and today have been the real beginning of spring as evidenced by temperature and activities of birds. This A.M. mourning doves and cardinals singing. For the last few days (to as long as a week ago) farmers have been burning fields and plowing. Photo 630303-

Checked trap line set last night in area above. (see next page for mammals collected this A.M. (between 9:00 A.M. and 10:00 A.M.)) Fog with visibility 400 feet up to about 9:45 A.M. After checking trap line continued W to mouth Coon Creek (at that point mileage 68.1). Turned S. at 68.8 photographed 630303-101 of tree and open fields which were originally forested. At bridge over Wakarusa photographed river to east from bridge 630303-102. Continued east along valley road. At 70.0 mileage (1400 feet S of NE corner sec. 14.) noted 2 horned larks and 3 crows. At 72.1 at N end of proposed dam. 10% of Wakarusa in ice. Ice on creeks that are protected from sun. Returned to home in Lawrence and prepared mammals. Took Jay + Pete to pond 300' W Mackey School, Leavenworth Co. Kansas

This afternoon visited the trapping area above to set 20 traps in selected areas and to photograph the marsh areas.



Set the following traps in selected areas of wet marshes (Set at 2:30 P.M. and rechecked 5:00 P.M., temp 66°F). At 5:00 P.M. caught one *Microtus ochrogaster* number 630303-165. It

measured. 159-39-20-11-46 gms.

Recorded two photographs of area.

no. 630303-105 of spring pond and marsh (trap set 162 and 163). The spring is about 30 feet up slope from artificial pond and lined with rocks. The water was flowing about 1 quart per 30 seconds. This spring was developed for use by the homestead, now abandoned. Photo 630303-106 of a large elm tree and juniper tree. Grassland in foreground inhabited by *M. ochrogaster* trails, but not wet meadows and marshes that are associated with springs. Left area and returned to NE corner section 11, thence N to highway 10. The area above in canyon of springs is exceptionally well populated with birds of the usual kinds including, Cardinal, juncos, bluebirds, blue jay, crows, chickadees, tree sparrows and others.

March 3, 1963

mammals collected this A.M. between 9:00 A.M. 10:15 A.M. Temp. 8:00 AM 34°F. Fog with visibility about 400 feet. When sun came out at 10:00 A.M. temp went up to 46°F. Field numbers are trap nos. Traps 20 feet apart.

1 Synaptornis C	39 m. ochro	77 not visited
2 sprung	40 not visited	78 " "
3 m. ochro	41 " "	79 " "
4 m. ochro	42 " "	80 Reithro megalotis
5 not visited	43 " "	81 feather of junco
6 m. ochro	44 sprung	82 sprung
7 " "	45 Synaptornis C	83 not visited
8 Pero leucopus	46 not visited	84 sprung
9 sprung	47 " "	85 sprung
10 Pero leucopus	48 " "	86 sprung
11 Pero leucopus	49 " "	87 Pero leucopus
12 not visited	50 " "	88 not visited
13 " "	51 " "	89 Pero leucopus
14 " "	52 Pero leucopus	90 sprung
15 m. ochro	53 not visited	91 sprung
16 Pero leucopus	54 sprung	92 not visited
17 not visited	55 sprung	93 not visited
18 Reithro megalotis	56 sprung	94 sprung
19 sprung	57 sprung	95 Reithro. megalotis
20 m. ochro	58 m. ochro	96 Pero leucopus
21 m. ochro	59 not visited	97 sprung
22 sprung	60 m. ochro	98 not visited
23 not visited	61 not visited	99 not visited
24 " "	62 Reithro megalotis	100 not visited
25 Pero leucopus	63 m. ochro	
26 not visited	64 not visited	
27 " "	65 sprung	
28 " "	66 sprung	
29 Pero maniculatus	67 sprung	
30 m. ochro	68 not visited	
31 " "	69 " "	
32 not visited	70 Pero leucopus	
33 m. ochro	71 not visited	
34 Pero leucopus	72 " "	
35 sprung	73 " "	
36 not visited	74 " "	
37 m. ochro	75 " "	
38 not visited	76 " "	

Summary  
 1 Peromyscus maniculatus  
 2 Synaptornis cooperi  
 15 micratus ochrogaster  
 11 Peromyscus leucopus  
 4 Reithrodontomys megalotis  
 33 total

21 traps sprung  
 46 traps not visited.



measurements and preparation of mammals of last night's set.  
Field numbers are also trap numbers.

March 3, 1963

630303-1	<i>Synaptomys cooperi</i>	133-21-20-9-40 gms
630303-3	<i>Microtus ochrogaster</i>	135-32-20-9-28 gms
630303-4	" "	154-34-20-10-43 gms
630303-6	" "	168-41-21-11-53 gms
630303-7	" "	142-34-20-9-31 gms
630303-8	<i>Peromyscus leucopus</i>	178-74-23.5-16-30 gms
630303-10	" "	178-78- <u>22</u> -15-27 gms
630303-11	" "	178-74- <u>24</u> -15-33 gms
630303-15	<i>Microtus ochrogaster</i>	151-33-20-11-38 gms
630303-16	<i>Peromyscus leucopus</i>	177-75-22.5-16-29 gms ♀ 2x1 emb 19 mm <sup>1.6 gms each</sup>
630303-18	<i>Reithrodontomys megalotis</i>	128-62-17-11-10 gms
630303-20	<i>Microtus ochrogaster</i>	147-34-19-10-36 gms
630303-21	" "	159-34-21-12-46 gms
630303-25	<i>Peromyscus leucopus</i>	[122]-[27]-22.5-16-26 gms
630303-29	" <i>maniculatus</i>	140-52-19-13-17 gms
630303-30	<i>Microtus ochrogaster</i>	160-36-21-11-51 gms
630303-31	" "	140-30-20-11-40 gms
630303-33	" "	164-45-20-11-51 gms
630303-34	<i>Peromyscus leucopus</i>	166-68-22-16-27 gms
630303-37	<i>Microtus ochrogaster</i>	166-37-21-11-56 gms
630303-39	" "	163-37-21-11-49 gms
630303-45	<i>Synaptomys cooperi</i>	147-23-21.5-10-60 gms
630303-52	<i>Peromyscus leucopus</i>	188-82-23-15-34 gms
630303-58	<i>Microtus ochrogaster</i>	143-33-19-10-36 gms
630303-60	" "	158-38-21-11-40 gms
630303-62	<i>Reithrodontomys megalotis</i>	130-63-17-20-10 gms
630303-63	<i>m. ochrogaster</i>	140-33-19-9-33 gms
630303-70	<i>Peromyscus leucopus</i>	187-80-23-16-37 gms
630303-80	<i>Reithrodontomys megalotis</i>	132-62-17-11-10 gms
630303-87	<i>Peromyscus leucopus</i>	179-78-23-16-31 gms
630303-89	" "	174-74-23-15-32 gms
630303-95	<i>Reithrodontomys megalotis</i>	125-60- <sup>17</sup> 23- <sup>10</sup> 11- <del>22</del> gms
630303-96	<i>Peromyscus leucopus</i>	170-73-23-15-22 gms

March 4, 1963

2 mi. N and 1/4 mi. E Clinton, Douglas Co., Kansas

March 4, 1963

Checked traps (20) set yesterday afternoon (see notes of that date) Today has been cold and it rained continuously. Mammals soaked and some in straits that were inundated this afternoon but dry yesterday. Checked line at 5:00 P.M.

150 <i>Microtus ochro</i>	158 not visited	166 sprung
151 sprung	159 sprung	167 <del><i>Pitymys punctoreum</i></del>
152 sprung	160 <i>Microtus ochro</i>	168 not visited
153 <i>Microtus ochro</i>	161 sprung	169 <i>Microtus ochro</i>
154 <i>Reithro megalotis</i>	162 not visited	170 " "
155 sprung	163 <i>Reithro. megalotis</i>	Noted one red squirrel near trap 166. 3 crow in area.
156 <i>Synaptornys cooperi</i>	164 sprung	
157 <i>Microtus ochro</i>	165 <i>Microtus ochro</i>	

Preparation of mammals. of above trap line.

630304-150	<i>Microtus ochrogaster</i>	165-38-22-12-56 gms
630304-153	" "	150-34-20-11-42 gms
630304-154	<i>Reithrodontomys megalotis</i>	140-66-18-13-12 gms, testes 6 mm
630304-156	<i>Synaptornys cooperi</i>	133-24-21-11-54 gms
630304-157	<i>Microtus ochrogaster</i>	152-34-21-11-45 gms
630304-160	" "	156-34-20-11-44 gms
630304-163	<i>Reithrodontomys megalotis</i>	133-62-18-13-10 gms ♀ ut. normal
630304-165	<i>Microtus ochrogaster</i>	161-38-21-12-57 gms
630304-167	<i>Pitymys punctoreum</i>	142-27-19-10-39 gms
630304-169	<i>Microtus ochrogaster</i>	134-30-19-11-24 gms
630304-170	" "	129-29-18-10-23 gms

Univ. Kansas, Lawrence, Douglas Co., Kansas

March 6, 1963

Noted the <sup>(1)</sup>sparrow hawk at Blake Hall for first time this year. They have used this building for nesting in previous years

Wakarusa Valley, near Clinton, Douglas Co., Kansas

March 7, 1963

Took several photographs in area of the proposed Clinton Reservoir. Day windy and cold but skies blue and bold clouds; typical of a march day. At a point at the south end of the proposed dam at 1/2 mi. E and 100 feet S NW corner of sec 20, T. 18 E, R. 135, photographed valley to west with large tree <sup>and</sup> limb in

630307-1

March 7, 1963

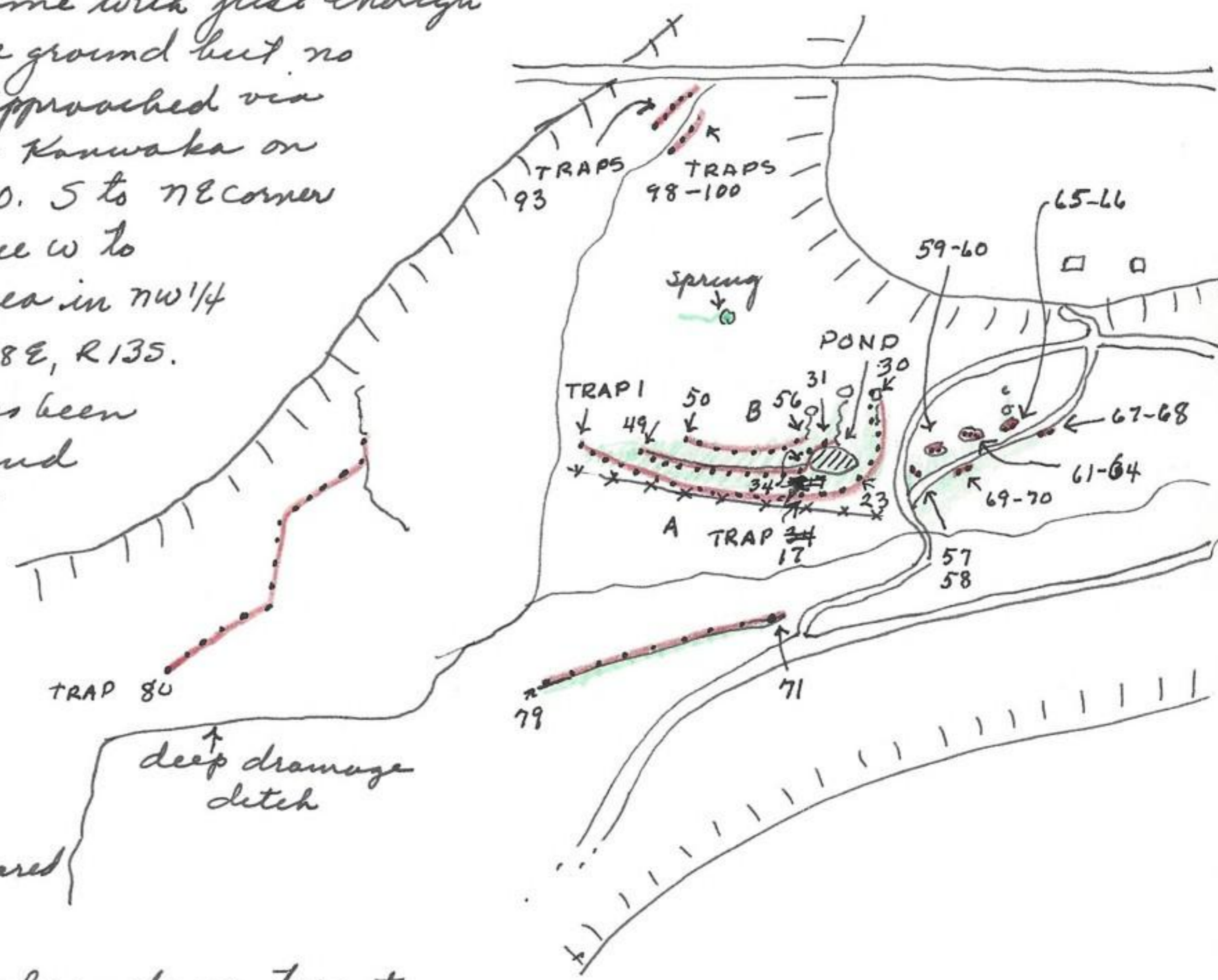
foreground. water standing in fields and filling roadside draw-  
 ages because of recent rain (about 2 inches). The top of this ridge  
 makes an advantage point for observation, windy however.  
 Tree dead for some reason. At a point 2400 ft E and 200  
 feet S of NW corner sec 21, a redtail was building a nest. This  
 bird, when I gained top of ridge, glided with strong wind down  
 across nest and NE to beyond point. It then returned to nest  
 by gliding directly into wind and alighted on the nesting tree,  
 then after placing some material on nest left and flew SW,  
 keeping low to the ground. This hawk was very dark and  
 did not have either the redtail or Harlaw hawk tail. It  
 seemed larger than the redtail. I will check nest at a later  
 date. nest now about 1/2 finished and placed in dead tree of  
 a group of sparsely placed trees. Two <sup>cottontail</sup> rabbits were noted and  
 in what I would consider in exposed situations away from  
 grass or weed protection. Photo 630307-2 of cultivated field  
 and Wabamusa River taken from NE end of bridge at 4/10 mi  
 E from NW corner of sec 9, T.18E, R.13S. Photo to SE. The  
 river is about 3 times as high as in winter, is flowing  
 freely and is a brownish green in color. A redtail,  
 at this point flew S across valley and alighted in trees  
 along Deer Creek. a crow also noted in this area. At  
 1,700 feet E of NW corner sec 10, T.18E, R.13S took photo  
 630307-3 of valley to south showing pond in foreground  
 and cultivated fields to S. This area will all be  
 inundated by reservoir. One redtail, light colored, in  
 top of small tree at 900 ft east and 200 feet N of SW corner of  
 sec. 2, T.18E, R.13S. This area is just N of the last trapping  
 area. One crow in same area. At 8/10 mi. E of NW  
 corner sec 11, T.18E, R.13E. made three photographs of an old  
 rock building and associated rock structures. 630307-4  
 of home and rock fences in foreground. These fences were  
 probably for wind protection. 630307-5 of stone building  
 associated with home, with old chair & pump in foreground.  
 Photo 630307-6 of building alone. Continued N, thence E  
 passed Petersons, thence to river valley rd where I noted 5  
 horned larks in road at 1300 feet S of NW corner sec. 13,  
 T.18E, R.13S. One crow in field about 200 ft. E. Continued  
 E to N end of proposed dam. Route covered. S end dam, Clinton,  
 N to valley rd, W to bridge over Wabamusa, thence N 1 mi, thence W  
 2 miles, thence E (same rd) to Petersons corner, thence S to valley Rd  
 thence E to N end proposed dam.

2 mi. N and 1/4 mi. E Clinton, Douglas Co., Kansas

March 8, 1963

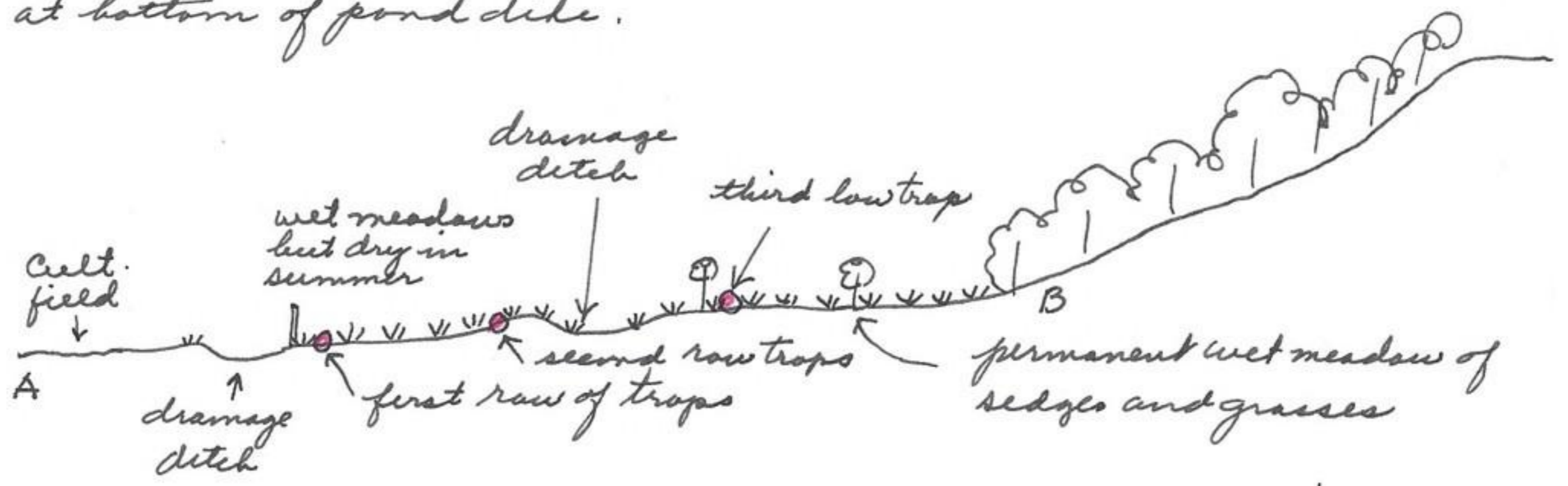
The above locality is pond and spring SW of abandoned house on hill. (See March 2 for general map of this area; one below is from the map of March 2.) Set 100 traps, 20 feet apart in several situations, some repeats of trapping March 2 and 3. Set traps between 5:30 and 7:00 P.M. (temp 43°F), the latter time with just enough light to see ground but no detail. Approached via road from Kanwaka on highway 40. S to NE corner sec 11, thence W to trapping area in NW 1/4 of sec 11, T. 18 E, R. 135.

The day has been raining and cold. At about 5:00 clouds moved to east and clear sky appeared to west.



Traps mainly in damp to wet situations.

Traps 1 to 22 at base of wet meadow except last three at bottom of pond dike.



Traps 23 to 30 up wet meadows from spring. Trees interspersed  
 Traps 31 to 49 south side dike of drainage ditch leading into pond  
 this area does not support many trails of microtines. 31-32-33 on upper edge of pond.

March 8, 1963

March 8, 1963

630308-58

Traps 50 to 56 in best sedges and grass, some bushes and with wettest soils. Good stand of vegetation.

Traps 57 and 58 in wet sedges on flat (trapped before)

Traps 59 and 60 in damp sedge not dominated with ~~populus~~

Traps 61 and 64 in wet sedges and bushes supported by spring

Traps 65 and 66 at base of best spring area.

Traps 67 and 68 damp grasses and bushes.

Traps 69 and 70 in wet sedges & grasses as extension of area supporting traps and

Traps 71 ~~and~~ <sup>to</sup> 79 along drainage ditch. The above sets of 2 and one of 4 have been trapped on March 3 (see that date)

Trop 80 to ~~81~~ 92 in old grass & sedge field grown to bushes & small trees, no wet or damp soils from subsurface water.

Trap 93 to 97 among downed timber along drainage canal, grasses bordering.

Trap 98 to 100 same as above but on opposite side of creek.

while on <sup>trap</sup> route noted 3 rabbits, 2 crows and several small birds roosting in grass on west side of canyon.

From trap 31 which caught a *Synaptomys* March 2, caught a *Microtus ochrogaster* at 6:20 P.M. It measured: 630308-1 *Microtus ochrogaster* 150-33-20-12-45 gms.

Heard other traps going off while setting other traps.

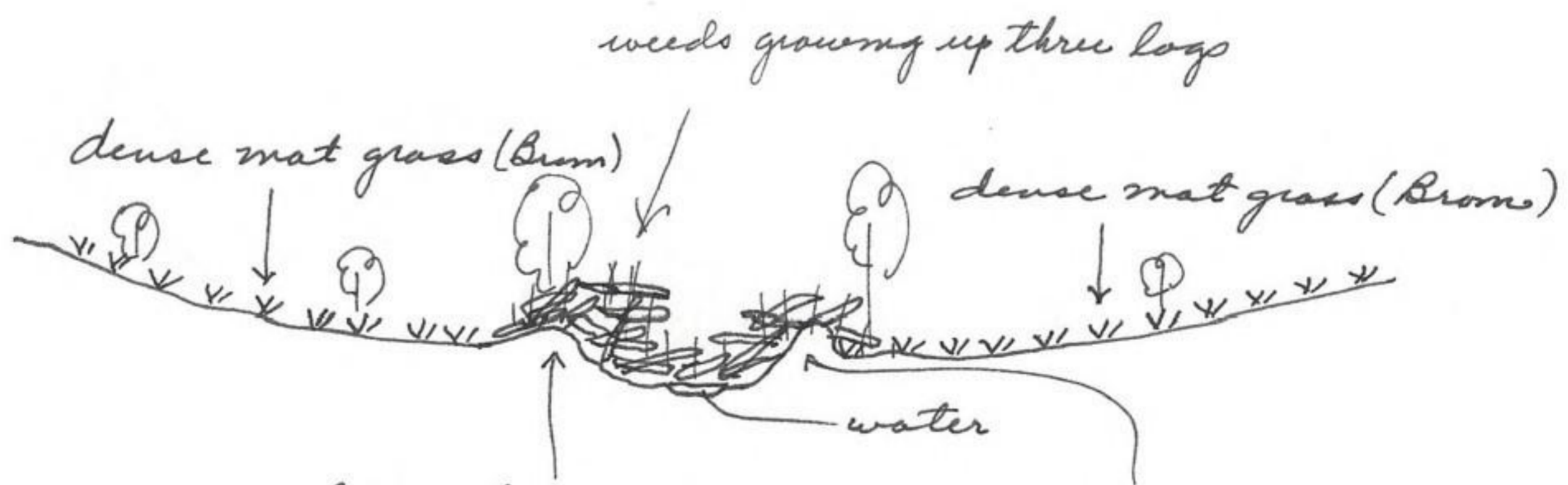
Left area after dark and drove west to Mound Cemetery, thence N to Stull, thence E to Lawrence. Did not see animal or bird along road between trapping area and Stull. Greatest amount of fog at Deer Creek valley.

2 mi. N and 1/4 mi. E Clinton, Douglas Co., Kansas  
March 9, 1963

Checked trap-line set last night at above locality. Enroute photographed a creek, deeply eroded and trees on edge. This photograph 630309-1 is approx. 3 miles W and 2 miles S Lawrence (P.O.), Douglas Co., Kansas. At N end of proposed Clinton Res. dam at mileage 28.8. 8:20 A.M. & 28°F. One redtail was on top fence pole in middle of field of Bromo Grass approx 2 blocks NE of N. end dam site. At 29.2 Counted 11 killdeer in recently burnt field, now with shallow pools of water. At 30.5 bridge over Wakarusa. Water free flowing and about 3 times volume of winter volume. Rise in water because of recent rains last week. At 31.1 at rd which turns S to Clinton noted a shrike. Continued W to bridge across Wakarusa at 31.8, thence to N to road to left. At 37.0 a redtail glided east across mouth of Coon Creek just N of road.

It return to same area, then flew east again, suggesting courtship flights and territorial performances. Arrived trapping area 33.6 at about 8:45 A.M. Checked traps. *Synaptomys* all from runways. The one caught in trap 23 was among old dry weeds with soils covered with dry stalks of weeds and no grass. Grass & sedge habitat 10 feet away. Runway supported standing water and small twigs of weeds. Not bare and worn like most well used runways of *microtus ochrogaster*. At 9:00 a redtail flew over trapping area. At 9:10 a flock of mixed blues and snow geese flew n high. They duckled (just a few) and did not offer their characteristic call. Another flock of 200 and one of 150 about 9:30. One flock of 140 consisted of 52 blues and 68 snows. The blues were arranged at random in flock.

The *Sigmodon hispidus* were taken from 2 set of traps placed together in an area of 1 sq meter; one with five traps (93-97) and one group of 3 traps (98-100). The first group caught 3 *Sigmodon* and 2 sprung traps, the second group 1 *Sigmodon* and 2 sprung traps. These are the first *Sigmodon* taken since several weeks and are survivors of the *Sigmodon* population which were not killed by <sup>low</sup> winter temperatures. The community was of the kind that would give added protection to these animals and was artificial in nature.



logs & trees and piles of dirt bulldozed into creek. It is believed that this protection of loose soils for digging, and logs for protection of winds and <sup>moderating</sup> warmth from water <sup>for ice</sup> of creek gave better living conditions than by those of the open fields and fence rows. This same area on March 2 yielded only *Peromyscus leucopus* and *Reithrodontomys megalotis*. The use of bulldozers in recent years may have permitted the extension of range of this animal. Will test other similar areas for *Sigmodon* refugia. Left area 33.6 at 10:00 A.M. to E. thence S to valley rd at 35.9 5 horned lark and 3 meadowlarks. 37.1 N end dam.

# Inspection of trapline set last night.

March 9, 1963

1	<i>m. ochro</i>	40	not visited	79	sprung
2	<i>m. ochro</i>	41	" "	80	not visited
3	<i>Perom. maniculatus</i>	42	<i>m. ochro</i>	81	" "
4	<i>Microtus ochro</i>	43	<i>m. ochro</i>	82	" "
5	not visited	44	not visited	83	" "
6	<i>m. ochro</i>	45	" "	84	sprung
7	" "	46	" "	85	not visited
8	not visited	47	sprung	86	" "
9	<i>m. ochro</i>	48	not visited	87	<i>m. ochro</i>
10	not visited	49	sprung	88	not visited
11	<i>Reithro megalotis</i>	50	<i>m. ochro</i>	89	" "
12	<i>Reithro megalotis</i>	51	sprung	90	" "
13	<i>Synaptomys cooperi</i>	52	not visited	91	sprung
14	not visited	53	<i>m. ochro</i>	92	not visited sprung
15	" "	54	<i>Reithro megalotis</i>	93	<i>Scymnodon hispidus</i>
16	<i>Reithro megalotis</i>	55	sprung	94	" "
17	not visited	56	not visited	95	<i>Scymnodon hispidus</i>
18	" "	57	" "	96	not visited sprung
19	" "	58	<i>Reithro megalotis</i>	97	sprung
20	" "	59	not visited	98	sprung
21	" "	60	" "	99	<i>Scymnodon hispidus</i>
22	" "	61	<i>Reithro megalotis</i>	100	not visited sprung
23	<i>Synaptomys cooperi</i>	62	not visited		
24	not visited	63	" "		
25	<i>m. ochro</i>	64	" "		
26	not visited	65	" "		
27	sprung	66	" "		
28	not visited	67	" "		
29	" "	68	" "		
30	" "	69	" "		
31	sprung	70	<i>m. ochro</i>		
32	not visited	71	not visited		
33	<i>Microtus ochrogaster</i>	72	tail of <i>Reithro</i>		
34	<i>Synaptomys cooperi</i>	73	not visited		
35	<i>m. ochro</i>	74	" "		
36	" "	75	" "		
37	sprung	76	sprung		
38	not visited	77	<i>m. ochro</i>		
39	" "	78	<i>m. ochro</i>		

## Summary.

18	<i>Microtus ochrogaster</i>
3	<i>Synaptomys cooperi</i>
1	<i>Peromyscus maniculatus</i>
6	<i>Reithrodontomys megalotis</i>
4	<i>Scymnodon hispidus</i>
32	Total
11	sprung
57	not visited

## Preparation of mammals caught last night.

630309-1	<i>Microtus ochrogaster</i>	151-39-18-11-34 gms.
630309-2	" "	156-41-20-12-45 gms. ♀ 3x2 emb. 5mm
630309-3	<i>Peromyscus maniculatus</i>	133-51-19-14-16 gms
630309-4	<i>Microtus ochrogaster</i>	147-33-20-11-44 gms
630309-6	" "	153-36-19-11-41 gms
630309-7	" "	150-38-20-11-40 gms
630309-9	" "	161-36-21-12-58 gms
630309-11	<i>Reithrodontomys megalotis</i>	122-55-17-13-9 gms
630309-12	" "	126-58-17-13-9 gms
630309-13	<i>Synaptomys cooperi</i>	142-23-20-10-52 gms
630309-16	<i>Reithrodontomys megalotis</i>	130-56-18-12-10 gms
630309-23	<i>Synaptomys cooperi</i>	144-26-21-10-51 gms
630309-25	<i>Microtus ochrogaster</i>	154-36-20.5-12-54 gms
630309-33	" "	153-38-21-10-42 gms
630309-34	<i>Synaptomys cooperi</i>	138-24-20-10-40 gms
630309-35	<i>Microtus ochrogaster</i>	[152]-[21]-20-11-61 gms
630309-36	" "	132-32-19-11-29 gms
630309-42	" "	157-38-21-11-46 gms
630309-43	" "	164-42-20-11-51 gms
630309-50	" "	160-39-20-11-44 gms
630309-53	" "	158-38-20-12-48 gms
630309-54	<i>Reithrodontomys megalotis</i>	125-60-17.5-13-10 gms
630309-58	" "	145-70-17-13-11 gms
630309-61	" "	<sup>129</sup> <del>128</del> -63-17-12-9 gms
630309-70	<i>Microtus ochrogaster</i>	168-42-21-11-51 gms
630309-77	" "	135-32-19-11-30 gms
630309-78	" "	158-38-20.5-12-50 gms
630309-87	" "	151-31-19-11-42 gms
630309-93	<i>Signadon hispidus</i>	[193]-[58]-31-17-68 gms
630309-94	" "	[180]-[60]-29-17-53 gms
630309-95	" "	[165]-[35]-29-17-68 gms
630309-99	" "	234-103-31-16-65 gms

This afternoon took photo 630309-102 of water <sup>of Kaw river</sup> below dam at Lawrence. Not as muddy as it will get later in the season. Photo 630309-103 also of the water of Kaw River below bridge. Photo 630309-104 of ~~Kaw~~ <sup>Kaw</sup> river ~~taken from S side river~~ <sup>630309-5 of water at dam</sup> on City Waterworks property upstream of dam. This completes roll of 36 and sent airmail to Kadak Processing at 1712 South Prairie Ave, Chicago 16, Illinois. The package is order number H6727.



## Richland, Shawnee Co., Kansas

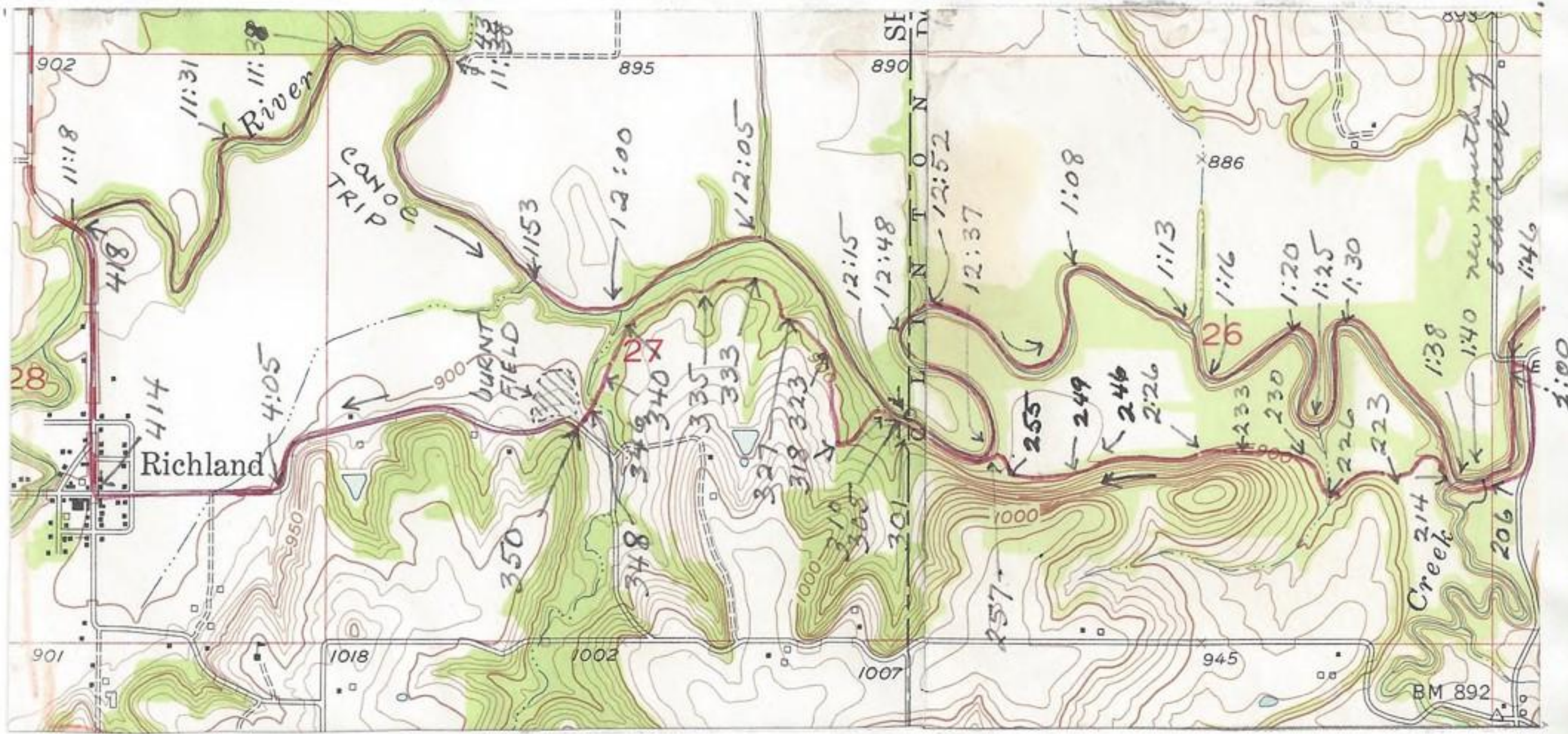
March 10, 1963

James R and I made canoe trip down Wakarusa River from Richland to Elk Creek. Left home at 58.9 mileage. at 8:50 A.M. 38°F Followed paved route to Clinton, thence regular route to Richland, send proposed Clinton Res. dam at 67.0 or 4/10 mi. W of Banning Corners Redwings on territories. [ducks have been in area for last week]. 4 horned larks between dam & Clinton. Clinton 70.9. at 9:14 A.M. approx 150 red-winged blackbirds 71.4. Redtail 81.5 on telephone pole left rd. meadowlarks about 1 per 2 miles. At first bridge over Wakarusa W Clinton, James R returned to Lawrence for map. Left 9:30. Temp 45° at 9:45 At bridge watch a marsh hawk hunting over corn field and along Wakarusa. Redtail middle 13 sec flying high. Continued to Richland. Left Richland Bridge 11:18 A.M. windy & skies starting to cloud. 2 cardinal singing. 11:22 beaver digging hole. <sup>2 feet high</sup> hole size of beaver and just started. 6 chickadees, water has been <sup>2 feet high</sup> 1 1/2 feet higher since rains. slopes wet & muddy above. 11:25 2 cardinals, 3 Oregon juncos. 11:28 3 chickadees, 1 red-bellied woodpecker and 1 muskrat. 2 cardinals, 1 downy, 11:31 creek to left. 2 Oregon juncos, 11:31 red-tail flying high to N. [Bring Compass next trip] 11:35 2 chickadees, 1 red-billed, 1 downy 6 juncos, 11:36 2 red-bellied, Kinglets, cardinal song, 11:38 crossing 8 into <sup>7 W</sup> sec 27. rapids below creek from N. just down river rapids. 2 juncos, woodpecker drumming. 11:43 Crossing into sec 27 2 red-bellied, 8 juncos. (wind in creek bottom) 11:45 G.H. Owl downy chasing red-bellied, 3 juncos

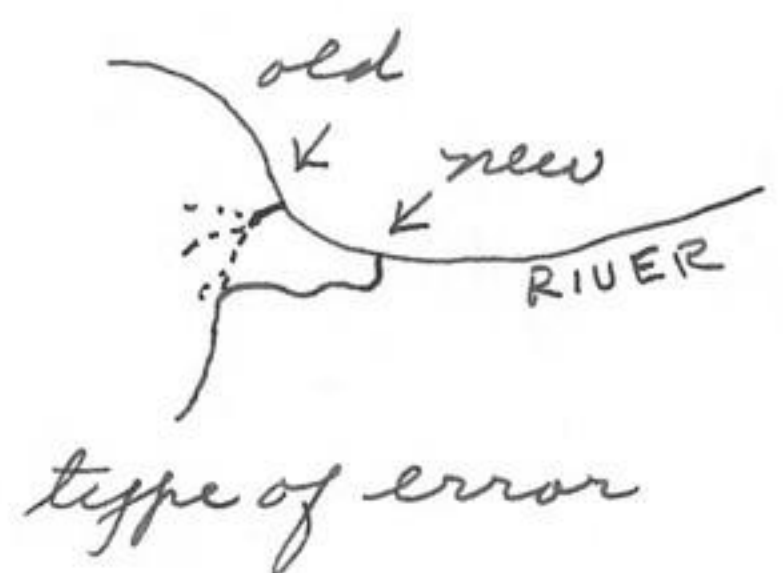
11:49 2 Chickadees. Lane not see beaver tracks but raccoon about every 30 feet  
 11:51 2 chickadee, 2 red bellied woodpecker, 3 Titmouse, 11:53 rapids. creek from W below rapids, group chickadees, Kinglets. 12:00 immediately NW center 27 sec at creek entrance. flock of about 160 small birds, titmouse, juncos, chickadees, 2 cardinals, 1 downy, 1 song, 2 red squirrels chasing each other. many more birds along contact with hillside. 12:03 undisturbed and small groups of birds, 1 redtail. Farthest point on curve 12:05. Creek from N & rapids below. Group small birds at rapids. (ran) 2 cardinals singing. 12:09 G.H. Owl. (2) Together. 12:12 red-bellied, juncos, chickadees. juncos nearest water, 2 cardinals singing to N. 12:15 great blue herons nest. muskrat left water and climbed 2 feet up bank, then saw us and went into water. Birds in area. 2 cardinals, 3 bluejay, juncos, 2 red-bellied woodpeckers, chickadees, titmouse. Heronery. big tree 11 nests, next tree to east 1 nest, next tree to east 7 nest. one oval nest below a great blue heron nest. Left heronery 12:31. 2 cardinals 12:37 bend (now to NW) redtail to east. juncos, 1 cardinal, 11:40 1 red-squirrel, chickadees woodpecker drumming. rarely a birds along edge of water or on banks immediately adjacent water. 12:45 G.B. Heron nest on S side river. about 300 feet east of large bend to W. 12:48 bend (Shawnee Co.) now N E. 1 juncos at bend. Last 3/10 mi without a bird. 12:50 chickadee and other small birds, 2 cardinal, (♀ and ♂), 1 squirrel 12:52 bend & drainage from N. 1 Kingfisher, 2 red-bellied woodpeckers, 1 squirrel 1 yellow-shafted flicker. 12:55 2 cardinals, 2 red bellied, group small birds. 1 white breasted nuthatch, woodpecker drumming. 1:05 2 red bellied, 1:08 most northern bend in sec 26. Drainage from N bend curve 26 sec at 1:13. 1 ♂ & ♀ wood ducks just below entrance of drainage ditch. 1:16 bend to NE just S middle sec 26, 1 hairy. bend to harpin to S at 1:20 2 redbellied, chickadees, juncos, 3 titmouse, woodpecker drumming, 2 cardinals, many birds singing beyond river. Snats on river, no frogs or voices, 2 cardinals. 1:25 S end harpin curve. 1 cardinal, 1 titmouse. 2 redbellied, 1:26 2 woodpecker pairs (probably some buck)

March 10, 1963

Because of the conditions of the day, being very windy, the complete census on return trip was not as revealing of the true condition of bird life as it could have been. It is surprising that the country in this part of the Wakarusa Valley does not support permanent springs as



is true in the region north of Clinton. The bird counts on canoe trip seemed to reflect the condition of the bordering community, being considerably greater where many trees lined the river and especially where river bordered the side of the valley. There are some errors on map of entrances of drainages into river. The most noticeable one being the mouth of Elk Creek.



The common mistake is not recognizing the true course of a drainage system because of the creek being hidden by trees. The mouths of creeks, if the above is not

true have migrated down river from old entrance. There is considerable shifting of the lateral creeks and most of the large ones are meandering before entering the Wakarusa. The meanders in valley flood plain.

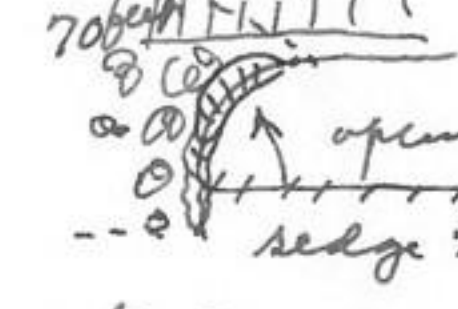
March 10, 1963

2 chickadees, 2 red-bellied woodpeckers 30 robins, 3 bluebirds, 2 cardinals calling to  
 1:30 n end harpincurve, 1 red bellied, 3 chickadees. can hear many robins calling to  
 S.E. 1:34 1 red squirrel, robin widely spread in this area. 1:27 small flock birds,  
 2 cardinals, nuthatch, 3 chickadees, 9 juncos. 1 red bellied 1:38 creek from S at  
 bend, now nne. 1:40 mouth Elk Creek. Bridge on w border middle of sec 25  
 3 red bellies here at 1:46 P.M.

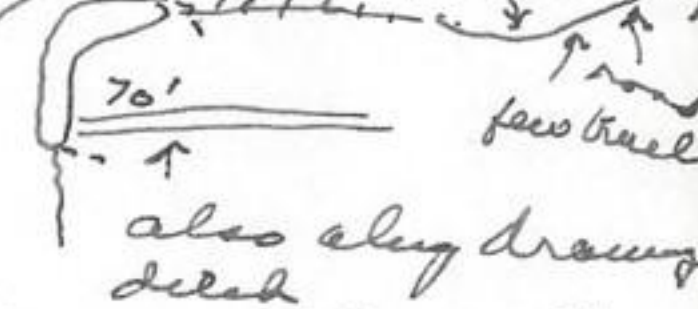
Left bridge 2:00 P.M. Left rd 2:05 windy. mt Elk Creek 2:06, crossed creek on  
 high log. Saccoon droppings on log. 2 red bellies, 1 red bellied & squirrel fighting  
 over nesting hole, chickadees concerned below. 2nd drainage 2:14. 1 red bellied,  
 Chickadees & 3 juncos. The meanders are characteristic of drainage into Wakarusa River  
 (old entrance ELK CR.?)



Point of ridge 2:23, red bellied, chickadee & robin.  
 2:26, north canyon. few cliffs on low hill. 2:30 opposite  
 harpincurve, at base of hill. 2:33 steep hill to S now. good  
 2:36 end forest now open field, birds at edge but not in forest.



2 cardinals song, Kinglet, 1 redtail flew across field to N. Excellent Synagotrupis  
 good signs, tracks etc. Length marsh  
 2:46 turn of dike. One continuous  
 runway in damp sedges to here  
 2 redtails still leveling to N over Wakarusa, 1 Jay calling  
 to S. 2:49 rd from hill to S. Few tracks E & W of rd. but not as good as  
 from bend E. 3 jays to S, 3 juncos. good tracks W end of drainage before Wakarusa  
 all runoff water not springs. 255 end field & dike. 257 Wakarusa. 90 blue geese to  
 N. Rock fence segment on top cliffs to S. 2 red bellied, 3 chickadees 3:00 1 red bellied  
 301 cabin on top cliffs 3 m. ochroleuca under boat, had piled up 1 bushel dirt under



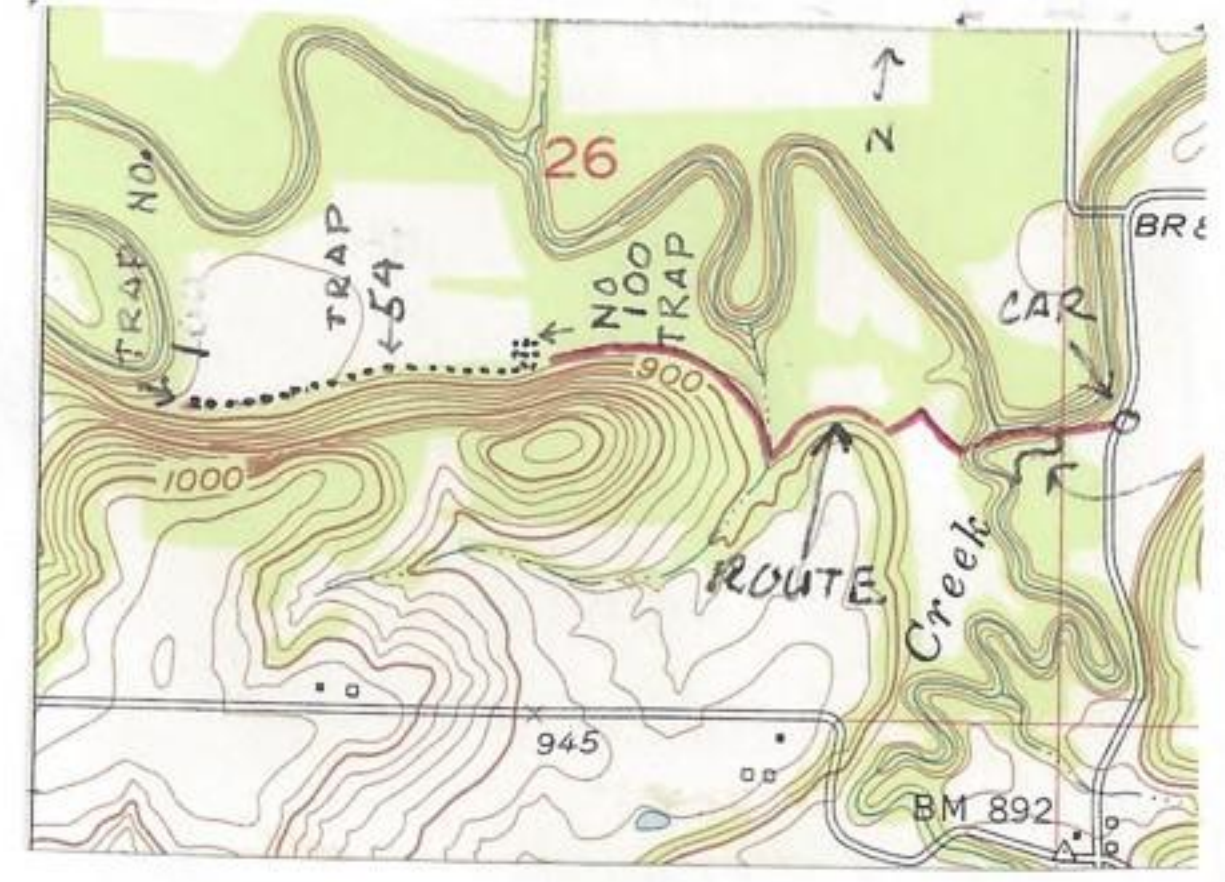
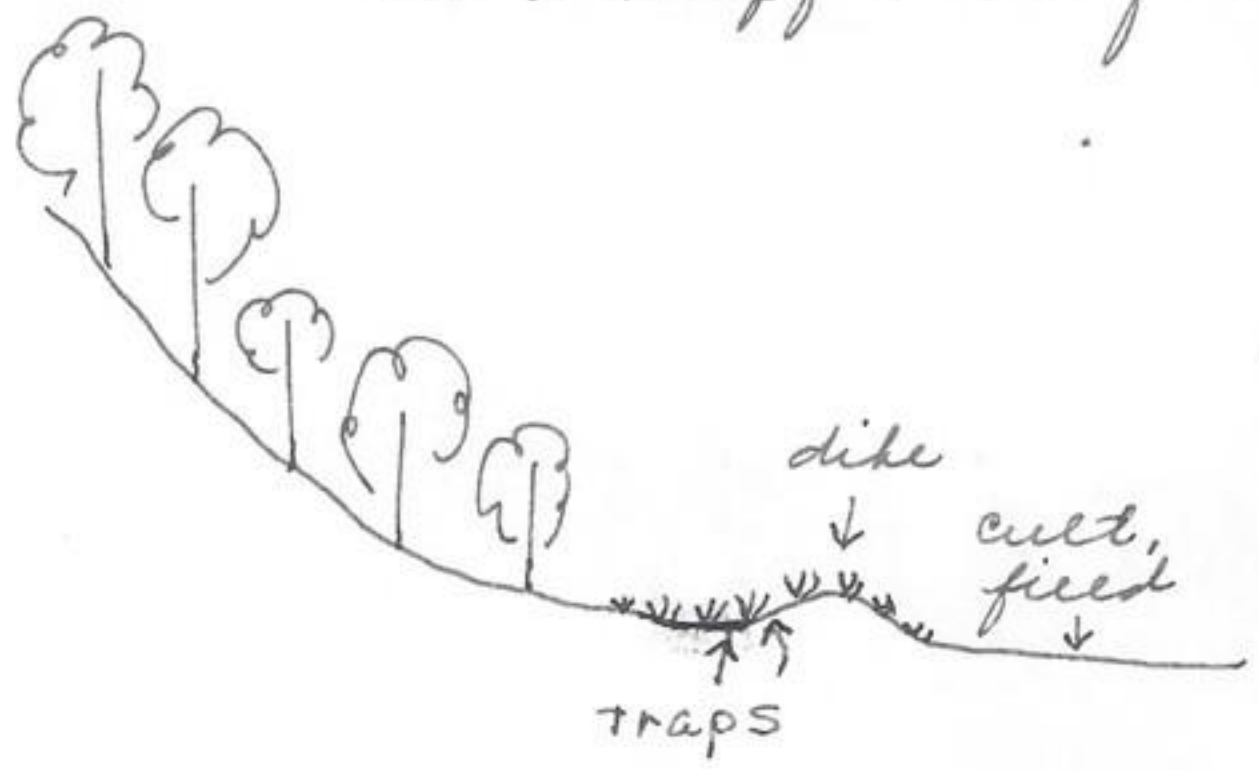
3:08 Heronry - nest from W to E, tree 1=11, tree 2=1, tree 3=6, tree 4=1, 3:10 drainage creek  
 S. highly meandering. 3:18 head open field, will follow lower contour. few  
 runways on contours but not too many. 18 juncos. 3:23 east end open field  
 among timber, 12 juncos, 1 red bellied. 3:27 deep erosional gully from pond above.  
 1 G.N. Owl from creek bottom, 2 red bellied, 3:33 opposite straight drainage  
 from N. 3:35 drainage from S. 1 G.N. Owl. Wakarusa lower hillsides 3:40  
 chickadees & small birds. 3:46 isolated patch of weeds & foxtail. 3:48 crossed  
 drainage, some runways in weed field. Road 3:50, juncos, 2 cardinals  
 3 hawks, 3 horned larks in burnt field to N. Field with continuous runway  
 of m. ash. 3 jays to S, hawks & centers of trails every 60' as centers of  
 microtus activity. runway almost continuous. 4:10 4 crows to S. 4:03 2  
 blue jays. Redwings calling to N in drainage ditch. 3 juncos. at 4:05  
 leaving hillsides to cross valley to Clinton along road. Some microtus activity  
 where drainage ditch crosses road. 4:14 Richland. Temp. 50°F  
 Picked up car at bridge to N and then return to Richland. now to east  
 to pick up Conae. 24.7 at Richland, at 4:20 P.M. 2.80 just 1/10  
 mile N of 4 way crossroad at Elk Creek saw 1 red-headed woodpecker.  
 Picked up lane at 28.4 - 4:40 P.M. Bridge at 48.5 now to east. 28.7 3  
 horned larks. Center 25 sec. now to N. 29.4 1 horned lark, 29.9 12 tree  
 sparrows. 30.4 horned lark. bridge SE corner sec 19 30.7. E border sec 19  
 middle at 4 way cross rds, 31.2. about 3/8 mile of good grasses, sedges and  
 runways on N side road to where rd turns N. Redtail flew across valley  
 evenly as on two previous occasions 18 hawks in fields below.  
 31.9 at turn to N, 32.8 middle sec 17 now on regular rd to E. Clinton 35.9  
 at 5:05. 39.9 S end proposed dam, 5:15 P.M. Day cloudy, windy & cold.

1 9/10 mi. E and 400 ft. N Richland (center of town, crossroads),  
Douglas Co., Kansas.

(20 feet apart) March 17, 1963

Set 100 traps, along dike at contact between valley and hillside. Cultivated field to N and deciduous forests to S. A dike directed the runoff water from sidehill to the east end of the

March 17, 1963



new entrance Elk Creek to Wakarusa River

field. At the east end of dike there was an area of about 70' of good sedge that could conceivably support *Synaptomyza* as green fecal pellets were noted. Runways extended the full 1800 feet of dike, especially in damp bottom of drainage system. (See March 10 for area of sedges at east end of field.)

Left Lawrence 4:40 P.M. at 71.6 mileage. Arrived 1/2 hr later at 5:15, mileage 71.1. Followed paved highway to Clinton, thence valley Road to Elk Creek. At 2 miles west of S end of proposed Clinton Reservoir dam noted 1 shrike & 1 Crow. 2 crows at 1 mi. E Clinton and 1 Crow middle Sec 25 near Elk Creek. Left car and continued west to trapping area. At mouth of Elk Creek, which has moved east from original entrance into the Wakarusa, noted a fox squirrel crossing creek on a high tree bridge which had fallen across creek. Another fox squirrel on opposite side of creek met the challenge by fighting and calling. I have noticed that many creeks that enter the Wakarusa, according to maps of 10 years or so ago, have moved down creek a hundred feet or so.



while this seems to be the trend, I have also noticed rock barriers in the Wakarusa River that are above the present entrance of lateral creeks, indicating a shifting down stream of the mouths of these creeks. Most creeks are at grade with river, and are

meandering to greatest degree. Continued west to <sup>mouth</sup> canyon west of Elk Creek Canyon. From here could hear a great horned owl calling at mouth of Elk Creek. Between car and here noted 6 slate-colored juncos. No birds were noted between this canyon and the east end of trapping area, area mainly deciduous trees, even out onto flood plain of Wakarusa. At the sedge marsh at east end of trapping area observed an unusual congregation of birds, probably associated with open situation and marsh area including, 2 robins, 3 cardinals, 7 juncos, 2 jays, 1 flicker, 1 goldfinch and 1 red-tail hawk to north along Wakarusa. At point where road comes off hill, noted 1 squirrel, 6 juncos, 2 chickadees, one red-bellied woodpecker drumming in deciduous forests to S. 5 red-wing black-birds flew east across field. Set 100 traps from west end of field at end of dike to a point 1800 feet to east ending at sedge marsh. At marsh set 10 traps at 20 foot intervals to cover entire sedge patch. On rechecking the trapline caught the following. Trap 38 *Microtus ochrogaster*; trap 60, *Microtus ochrogaster*; trap 80 *M. och.*; trap 89 *Peromyscus leucopus*; trap 92 *Microtus ochrogaster*; Trap 95 *Peromyscus leucopus*. Caught *Peromyscus leucopus* in trap 89 at 6:35 P.M. when western sky was still light and full of color. Just before leaving 5 crows flew into trees in area N of Hermy, presumably for roosting. Returned to car by some way and arrived 7:05 P.M. Fields dry and one can walk on plowed soils, grasses and sedges dry. Followed Wakarusa Valley route entire trip back to proposed dam site of Clinton Reservoir and did not see any birds or mammals in lights of car. The six mammals captured on trapline are as follows:

630317-38 *Microtus ochrogaster*  
 630317-60 " "  
 630317-80 " "  
 630317-89 *Peromyscus leucopus*  
 630317-92 *Microtus ochrogaster*  
 630317-95 *Peromyscus leucopus*.

These specimens will require measurement when prepared.

19/10 mi. E and 400 ft N Richland, Douglas Co., Kansas

March 18

Checked trapline set last night. Left Lawrence 6:00 A.M and arrived 6:35. Followed paved highway to Clinton, thence valley road. At mouth Elk Creek noted 12 juncos, 2 red-bellied woodpeckers, 4 chickadees, 3 titmouse, 1 cardinal. Between mouth Elk Creek and W side canyon (point of ridge saw 4 juncos. From here to 1st canyon W of Elk Creek noted 1 titmouse, 4 juncos, 2 cardinals, 2 chickadees. At mouth this canyon saw 1 red-bellied woodpecker, 1 cardinal, several juncos, 1 yellow-shafted woodpecker, 2 jays. There were no birds between 1st canyon <sup>(west of Elk Cr.)</sup> & trapping area. Many along trapping area including, 8 juncos, 2 chickadees, 3 blue jays, 2 robins, 1 goldfinch, 2 red-bellied woodpeckers. 8 red-wing blackbirds flew west across field. Collected the following from trapline:

1 sprung	26 not visited	51 not visited	76 not visited
2 m. ochro	27 " "	52 " "	77 m. ochro
3 " "	28 " "	53 " "	78 m. ochro
4 not visited	29 " "	54 " "	79 not visited
5 " "	30 sprung	55 Pero leucopus	80 " "
6 " "	31 not visited	56 Pero leucopus	81 m. ochro
7 " "	32 Reithro meg.	57 m. ochro	82 not visited
8 m. ochro	33 not visited	58 sprung	83 " "
9 not visited	34 Pero leucopus	59 not visited	84 " "
10 " "	35 m. ochro	60 " "	85 sprung
11 " "	36 m. ochro	61 " "	86 m. ochro
12 " "	37 " "	62 " "	87 not visited
13 " "	38 not visited	63 m. ochro	88 m. ochro
14 " "	39 sprung	64 not visited	89 m. ochro
15 m. ochro	40 Pero leucopus	65 sprung	90 Pero leucopus
16 sprung	41 not visited	66 Reithro m.	91 not visited
17 microtus ochro	42 " "	67 sprung	92 " "
18 not visited	43 Pero leucopus	68 Reithro megalota	93 " "
19 " "	44 not visited	69 not visited	94 " "
20 " "	45 " "	70 m. ochro	95 sprung
21 " "	46 Pero leucopus	71 not visited	96 Pero leucopus
22 " "	47 sprung	72 m. ochro	97 Pero. leucopus
23 microtus ochro	48 not visited	73 m ochro	98 sprung
24 not visited	49 " "	74 sprung	99 not visited
25 " "	50 " "	75 not visited	100 Pero leucopus

Total 33.

See next page for summary ->

March 18, 1963

The following mammals were prepared. Field numbers are also trap numbers.

630318-2	<i>Microtus ochrogaster</i>
630318-3	" "
630318-8	" "
630318-15	" "
630318-17	" "
630318-23	" "
630318-32	<i>Reithrodontomys megalotis</i>
630318-34	<i>Peromyscus leucopus</i>
630318-35	<i>Microtus ochrogaster</i>
630318-36	" "
630318-37	" "
630318-40	<i>Peromyscus leucopus</i>
630318-43	" "
630318-46	" "
630318-55	<i>Peromyscus leucopus</i>
630318-56	" "
630318-57	<i>Microtus ochrogaster</i>
630318-63	" "
630318-66	<i>Reithrodontomys megalotis</i>
630318-68	" "
630318-70	<i>Microtus ochrogaster</i>
630318-72	" "
630318-73	" "
630318-77	" "
630318-78	" "
630318-81	" "
630318-86	" "
630318-88	" "
630318-89	" "
630318-90	<i>Peromyscus leucopus</i>
630318-96	" "
630318-97	" "
630318-100	" "

Summary.

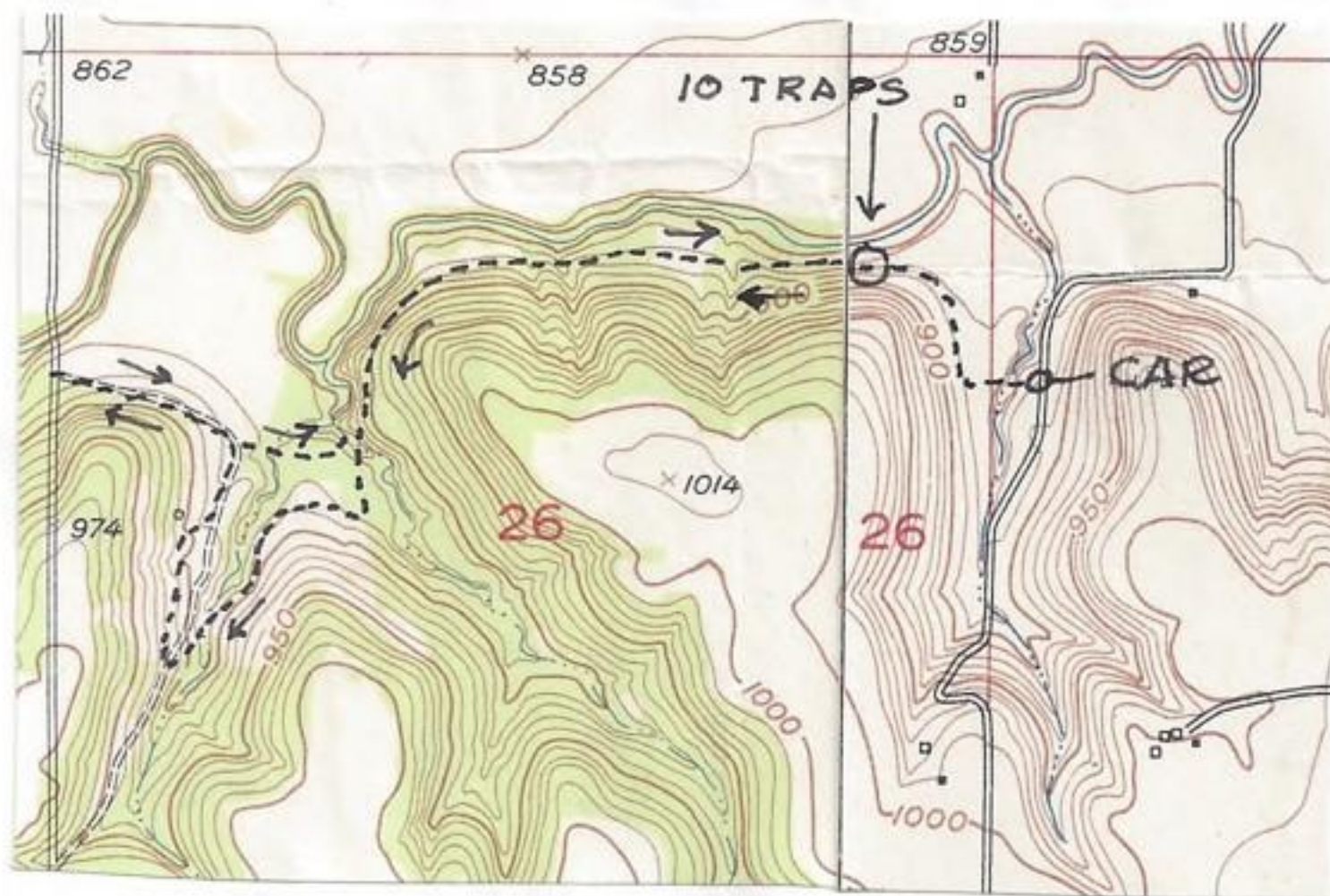
20	<i>Microtus ochrogaster</i>
3	<i>Reithrodontomys megalotis</i>
10	<i>Peromyscus leucopus</i>
<u>33</u>	Total

11 traps sprung  
56 traps not visited

1 3/20 mi. S and 9/10 mi. E Clinton (center of town), Douglas Co., Kansas

March 22, 1963

made reconnaissance trip from mouth of canyon at east border of sec 26, T. 18 E, R. 13 S to road on west side of sec. 26. Followed base of slope at valley - hillside contact, and slightly above. Enroute set 10 traps in weedy field at above locality. At 1500 feet E and 1700 ft S of NW corner 26 sec at point where creek from S enters Rock Creek, noted ♂ + ♀ wood duck. They called as they left. Did not see any rabbits and only a few birds. This area is depauperate of birds, especially at canyon of abandoned farm in western part of sec 26. Enroute back to car. noted that small canyon along slope supported cold air and between canyons, warm. There is no evidence of springs or marsh areas



across sec 26, at least at contact between hill and valley. The area of 10 traps was used by *Microtus ochrogaster*. There were also a few patches around abandoned house in canyon

in west side of sec 26. no evidence or likely places for *Synaptomys*. Left car approx. 6:10 and set 10 traps at 20' apart. On return picked them up at late twilight at a light too dark to see animals in traps. The two animals captured are as follows: (locality is the one listed at heading above date:

630322-1 *Microtus ochrogaster* 144-31-17-10 - 33gms  
630322-2 *Reithrodontomys megalotis* 140-65-17-12 - 13gms

Rock Creek is too small for continuous navigation by canoe; it is however, a very beautiful creek with large trees bordering. noted one eastern fox squirrel enter a twig + leaf nest 30' high in tree bordering field. Many corn cobs and husks at base of 4 adjoining trees.



March 23, 1963

March 23, 1963

Left Lawrence 8:25, 109.1 mileage. Follow highway 40 toward Stull  
Left highway to S at middle N border 33 sec. 21.0 8:48 many small  
birds and 1 fox squirrel at middle 33. Returned to highway. Now to  
W. at middle North border 32 at 23.7 to S. Continued S + E to

near (just north middle sec 9 at bridge. at 27.0 <sup>Left car here.</sup> 9:25. Hike to E to point  
on S side <sup>deer</sup> Creek. 2 mourning doves, 3 cardinals, many wood 2 jays. 2  
mourning doves, 1 red bellied, 7 juncos, 18 juncos. <sup>3 chickadees, 1 3 kinglets</sup> 9:35 at rock wall around  
point. water but no good vegetation just about 100' NE of point. - 1 red-tail  
now return to car. 1 tall tail in grass NE of Pt. 1 red bellied.

Car 9:50 now NW up Deer Creek (S side) contrast of valley with hillside of valley.  
Expect to go to Stull. 18 Oregon juncos, 1 blue jay 9:55 end of field. Good  
M. v. all along S side field but no permanent H2O. 9:58, excellent animal  
trail along sidewalk, 1 red bell, 4 juncos, 2 cardinals. sidewalk has good  
character, rocks, old logs etc. 10:00 cliffs 10'-20' high 10:03 mt creek, D.B. Heron

mt creek further down stream than map shows. Area in canyon & loop of creek  
dry grass but good M. v. 10:09 Point of hill. <sup>3 song sp., 2 cottontail, 3 chickadees, 2 cardinals</sup> 2 yellow shap. teal, 2 downy  
logher in one tree. 3 juncos, 2 jays. 10:14 2 red-bellied, 3 juncos 2 jays  
10:19 near N across valley. 2 sparrows. 1 crow fly E, 1 sparrow. 10:25 road  
1 chickadee 7 juncos. 10:28 2 cardinals, 3 juncos singing 10:31 in Deer Creek

8 juncos, 2 cardinals, 2 chickadees, 4 juncos singing, 1 chipping sp. tree  
sp. + juncos. moist area 10:35, <sup>short</sup> grass continuous but very little water  
except damp soils from poor drainage. Birds associated with damp areas.  
10:36 120 small birds including 4 Harris sp. 18 tree, 2 cardinals. 18 juncos <sup>3 fox sp.</sup>  
5 cardinals, all associated with wet area. (not good for trapping). 10:40

13 cardinals in one flock 9♂♂ 4♀♀, large trees being cut in area. red bellied  
if area not overgrown might support good reds & meadowlarks. 10:48. 1 cardinal,  
3 juncos, 4 chickadees, 1 downy; 10:50 dry weeds + good M. v. 10:51 mt canyon  
& Deer Creek to N. 2 cardinals, 12 small sparrows, butterfly 10:55 cottontail.  
Between 1051-1058 some M. v. along drainage ditch, wet to damp not permanent.

11:00 1 sq. 8 crow chasing red tail. squirrel calling 11:02 2 juncos.  
2 downy wood. 1 red bellied, 3 juncos 11:05 2 red bell, 2 cardinals, 3 chickadees,  
1 fox squirrel, 2 blue jay. 11:07 mt canyon, 3 chickadees, 2 cardinals, 5 chickadees;  
1 titmouse, 4 juncos, 11:16 fox squirrel feeding in open and relatively tame.  
11:25 pond. D. Heron left edge, robin singing, song sparrow, Field dweety N  
pond good for M. v. 11:33 Creek. 2 juncos, 3 chickadees, 2 cardinals; 6  
juncos, 11:37 fox squirrel on ground, wood house beam, 3 titmouse, 11:40 2 chickadees

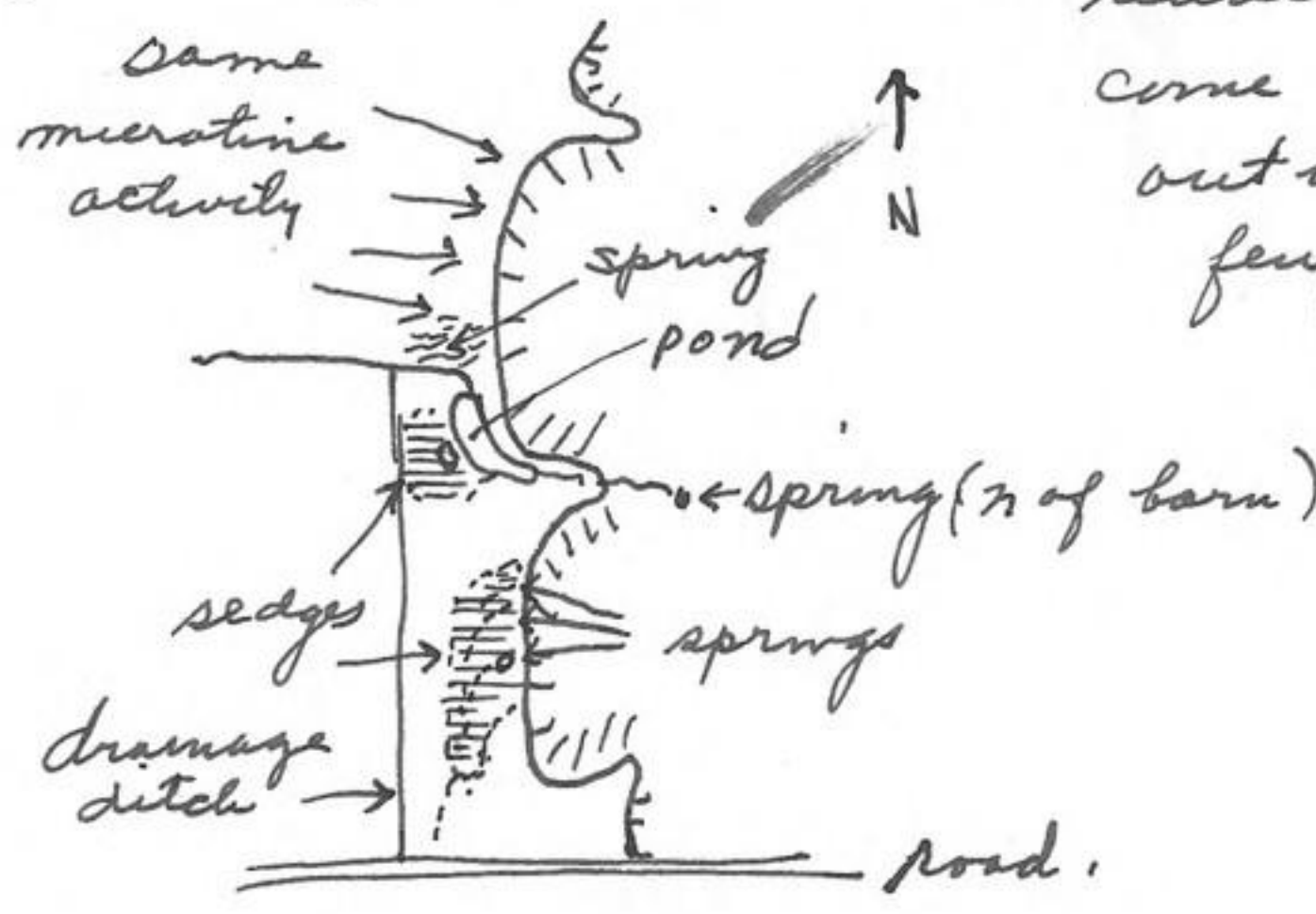
Can hear many birds beyond immediate census zone, 2 red bellies;  
11:44 2 juncos, 11:45 D.B. Heron nest? in sycamore. 1 red tail woven in roots  
of trees below. A large sycamore on opposite of creek (S) of heron tree;  
11:50 mt creek (S), creek now turn N. (new entrance of creek). 8 slate-colored juncos  
11:55 13 slate-colored juncos, 1 fox sq; 12:00 6 juncos, 1 robin, 2 red-bellied, 4  
Cardinals. 12:03 8♂♂ 3♀ Cardinals, 2 jays, 12:15 Red tail hawk

March 23, 1963

630323-71

12:20 Cottontail. 12:24 3 blue jay, 3 cardinal, 4 chickadees, 12:25 good  
 M. ochro., Chickadee; 1233 high cliffs 50' above creek. Time out for lunch  
 Left cliffs at 1:00. No bird activity while here, frog started calling along  
 river at about time I left. Could hear for several chatters from time to time  
 every 10 min & a red bellied woodpecker. Continues up river. Temp, 76°F  
 3 blue jay, 4 juncos, 1:10 bridge over Deer Creek S Still, 2 phoebe at  
 bridge, many small birds in weed field NE bridge, 2 cardinals & one  
 M. ochro. in weed field NE bridge, 3 cardinal, 3 juncos, 2 jays. 1:25 2  
 red-bellied w, 1 chickadee, 1 downy, 3 juncos, 1:30 owner said paper in creek  
 at this point. good field N & S of here, may contribute to spring in creek which  
 runs when creek is dry in summer. 1:45 Good meadow - also in field N of  
 drainage ditch 1:47 2 jay, 2 red bellied, 6 juncos, 1 hairy, 2 cardinal, 2 chickadee  
 3 crows, 2:02 2 chickadees, 2:10 13' hill deer. 2:14 Quarry. Photo 630323-1  
 and 630323-2 of cross-sectional surface of quarry gravels. Cattails  
 in permanent ponds in quarry. no grasses & sedges for muskrats.  
 2:30 across quarry. 1 meadowlark, first today on trip 2:37 11 cardinals, 16 juncos  
 1 hairy, titmouse, chickadees, 2 red bellied (all the group) can hear song sparrow &  
 juncos singing. 5 Harris Sparrows. 2:40 red tail. 243 feet sq. 2:45 red tail  
 flew out of this east side canyon. 8 <sup>longspur</sup> ~~horned~~ larks in field 3:00 end Brome  
 slope. Talked to own Wolfen 3:31. Then S around farm. 2 cardinals, 4 Eng Sp.  
 3 juncos, 2 sparrows?, 3:28 2 chickadees, 3:30 6 juncos, slate colored, 2 cardinals  
 340 2 Harris Sp. 2 Cardinals, 3 juncos. 4 cardinals, 2 jays. 3 chickadees, 2 titmouse,  
 1 G.H. owl, 1 downy, 345 1 cottontail, song sp. 350 3 Cardinals, 5 Harris Sp.  
 2 chickadee, 9 juncos. some M. ochro along dike - dry. Car 4:00. Then on to rd

thence E. (27.3) Coffman, gave permission to trap on his property  
 where there are several springs. The springs are located along the  
 east side of Corn Creek north of the southern boundary of sec. 3. (see  
 map). at 1100 ft W and 900 feet N of the SE corner of sec 3, T18 E, R135  
 Mr Coffman showed me a spring that has been running as long  
 as he can remember. It seldom freezes in winter. The spring is  
 boped in, open above now and runs into a concrete tank, thence into a  
 pond and then down the canyon to another impounding pond. There  
 is no vegetation because of trampling effect of cattle but if left  
 along would produce a good flow of water & build up adequate  
 vegetation for *Synaptormys*. noted 1 red-tail here. The spring  
 nearest road, one of which is boped in. come from base of hill and flow  
 out into sedge marsh. There are a few good runways in sedge marsh.  
 both in lower part of field and below pond & one spring  
 beyond. The drainage ditch has a continuous runway will set traps here to test  
 for *Synaptormys cooperi*. at a later date.



March 23, 1963

630323-72



Stull

Yarnold Sch.

Deer

River

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861

11  
952

COURSE FOLLOWED AFTER RETURN FROM MAIN TRIP TO STULL AND RETURN. CENSUS NOT COMPLETE

MARCH 23 1963

SEE PRECEDING PAGE DRAWING

(FINISH)

(START)

CAR

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Continued E to Peterson farm, thence S to <sup>630323-73</sup> where I checked field which had been burned last week, <sup>bottomland</sup> The field is the one SW quarter sec. 12. The permanent spring and cattails were burned but water still flowing. Many good trails associated with this spring. Entire field covered with runways. I cannot understand where these mice go when fields are burned. They do not move to peripheral areas. Three redtails circled above point to SW where Synaptornis marsh is located. The microtus ochrogaster build mound areas, as home base, by bring the soil to top in small pelletlike pieces  as if held in mouth. There has been considerable activity in the last week or so in building these mounds of dirt or rather cleaning out old nests and enlarging chambers or adding chambers. The soil reaction is favorable for plant growth and protection around the immediate area of the hole. Grasses and vegetation is always higher here than elsewhere. Seeds are covered and allowed to germinate, new soils are brought to the surface, much of them with fecal pellets and debris from nests which add to the fertility of the soil. For native soils these microtines must have played an important part in the ecology of soil development. Runways also add to the favorable growth of plants and especially grasses and sedges as the fecal droppings and urine add greatly to the soils. Grass cuttings are added to the soils and most importantly the grasses are kept from forming mat conditions and too thick an overhead protection. In a community of microtines and grasses I cannot think of any unfavorable reaction or reaction. After fields are burned the hole of the mounds are partly filled with the burned fragments of the supporting vegetation and examination shows that these holes are not used. I believe that the entire population is eliminated from the burned field, although some animals could live underground until overhead protection is again established. To attempt to forage on the surface without overhead protection would certainly mean death from predation by hawks and owls. Elevation of mounds by foxes, skunks etc indicate that some microtines remain. Peripheral areas do not show signs of lateral movement.

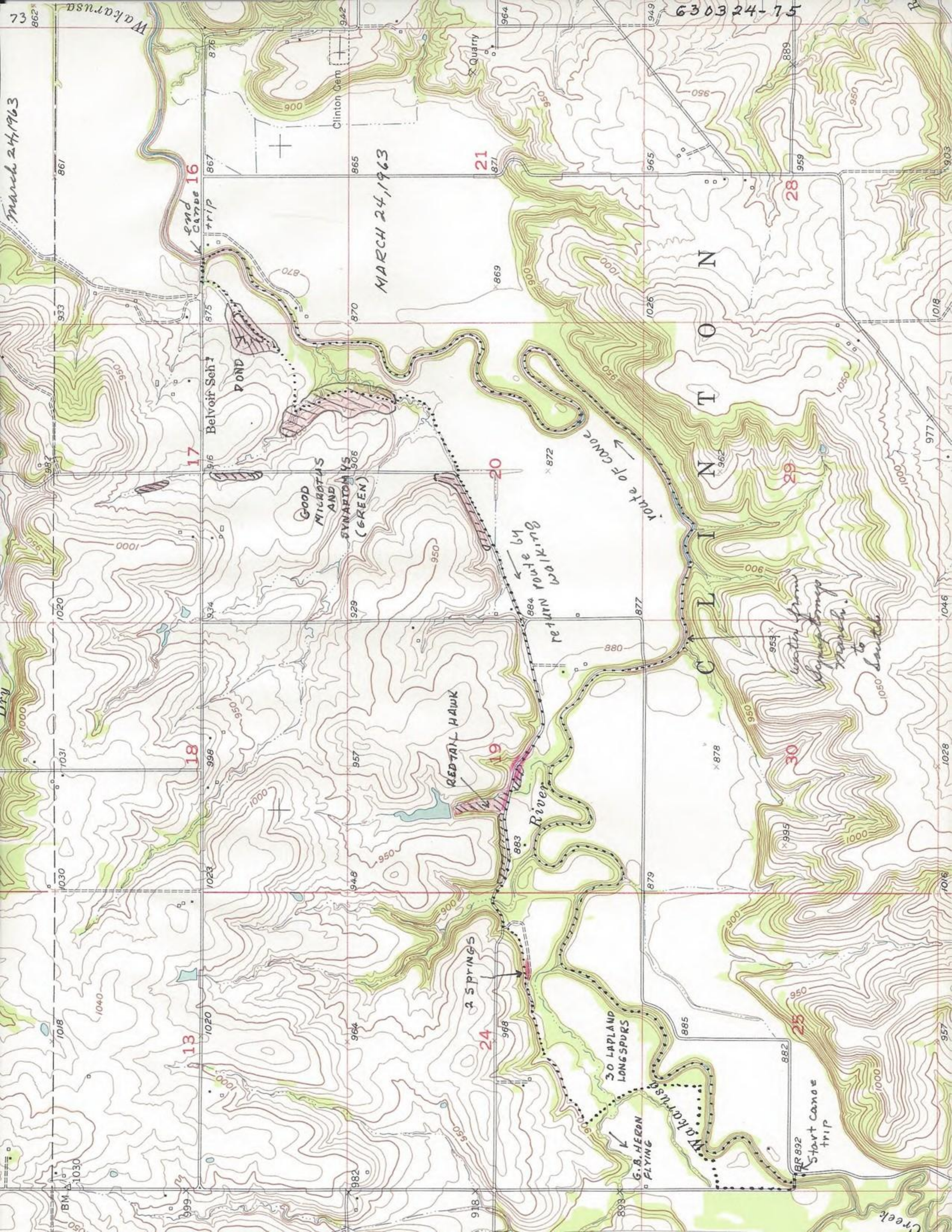
71  
March 23, 1963

March 24, 1963

March 24, 1963

made canoe trip down Wakarusa River from bridge on east side (middle) sec. 26. Annette C and Mary P accompanied. Plan to make complete census of birds and mammals. Left Lawrence at 9:15 A.M., 45.5 mileage and will follow paved highway to Clinton, thence west to road that follows Wakarusa valley. At one mile east of Clinton, one redtail and ~~two~~ <sup>2</sup> crows feeding on dead cottontail on road. Arrived bridge at center east border sec 26. at 64.5 mileage. Redtail in trees at base of hill SE of bridge. Left 9:50 A.M. 3 cardinals, 6 juncos, 2 chickadees. 11:00 2 chick. 11:03 2 juncos. 11:05 frog, red-bellied, (beginning of river) that goes E. N., 3 juncos. 11:08 red-bellied, 2 juncos, 2 chick. 11:11 2 cardinals. 11:12 3 cardinals, 2 juncos, 1 red-bellied. 11:14 east of E.W. part of river 2 little green heron, 3 ~~crows~~ <sup>crows</sup>, 1 yellow shafted. 2 cardinals - 11:21. 2 leopard frogs - 11:22. Tit mouse - 11:25, northward bend, 2 cardinals, Downy woodpecker, 2 cardinals. Squirrel - 11:27 2 chick - 11:28, 3 juncos, frog calling to north. 11:33 road to S, 3 chick. 11:45 crossing middle N. edge section 25, 2 red-bellied, 2 chick, 2 E. bluebirds, 2 tit mice, 2 juncos. 11:50 6 chick, most northern end sec. 24, Drainage from north. 11:59 - 2 cardinals. Rock barrier 700 ft. below drainage. 12:14 - red bellied, 3 chicks, 5 juncos. Great Blue heron. Crossing into Sec. 19

12:25 bend S.W. corner section 19, drainage from S., kingfisher, morning dove, 2 cardinals. 12:30 red-bellied, 4 juncos. 12:35 most N. curve in section 19, red-bellied, 3 juncos, 2 tit mouse, cardinal, 3 chicks. 12:35 drainage from N., rocks above, beaver tracks, most frogs on dry debris of log jams. 12:45 2 cardinals, 12:48 tit mouse S. curve. 12:55 red-bellied 3 chicks, drainage from N., 2 kingfishers. 1:05 morning dove, 2 chick, 2 red-bellied, beaver tracks. Bridge N.E. corner section 30 1:10, 2 red-bellied, beaver, 2 cardinals. 1:15 drainage from S. 1:20 2 chick, 2 red-bellied. 1:25 2 juncos, 2 chickadees, 2 red-bellied, 1:26 2 cardinals, 6 juncos, 2 chickadees. 1:28 drainage from S. 2 red-bellied, 2 juncos. 1:30 2 cardinal, 3 chickadees, 8 juncos, 1 song sparrow. 1:35 drainage from S. below good M. ocher, 2 cardinals, 2 red-bellied. 1 hairy, good beaver activity since before last bridge, 150 2 chickadees, 1 red-bellied beaver cutting mt hole. 3 chickadees, 154 chickadees, 155 chickadees, 156 red-bellied, 5 juncos. 2:00 2 chickadees, 2 red-bellied, 2:05 east end long stretch river, 2:10 red-bellied, 3 juncos, 1 chick. 2:15 N. end river bend 2 males 1 female Woodduck, 3 chick. 2:20 redtail, tit mouse, cardinal, woodchucks (same ones). 2:25 red-bellied, 2:27 - Great horned owl. 2:29 - 2 juncos, 2 squirrels. 2:30 bend nearest E. end section 20, 2 cardinals, red-bellied, 5 chick, great blue heron. 2:40 5 cardinals, goose tracks in mud, song sparrow, good beaver activity



March 24, 1963

630324-75

MARCH 24, 1963

end canoe trip

17

18

13

21

20

19

24

28

29

30

25

Belvoir Sch 1 Pond

Good Microtus and Synaptomys (Green)

Redtail Hawk

30 Lapland Longspurs

G.B. Heron Flying

Watauga River

route of canoe

return walking by

water from sleeping camp March to south

Start canoe trip

73

630324-75

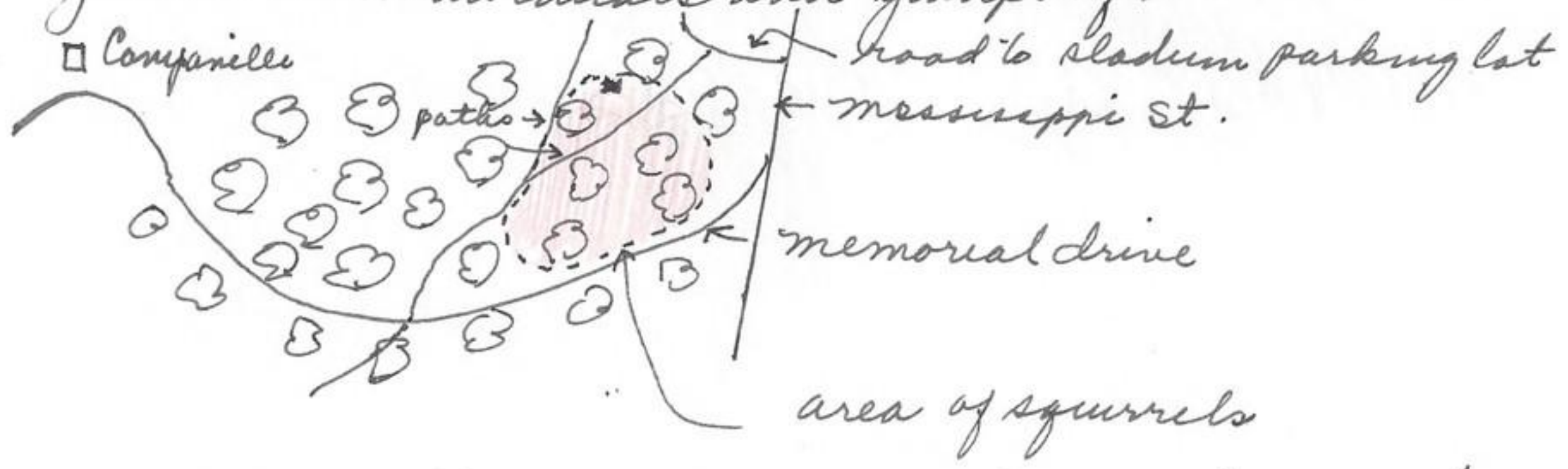
2:42 5 juncos, crow, 2:45 crossing N. border section 20, 2 cardinals, flock <sup>gold finch</sup> ~~pink skin~~, red-bellied, cooper hawk. 2:47 drainage from N., 2:50 entering section 16, 2 ~~lebes~~ <sup>phoebes</sup>, good beaver sign, 1 crow.

2:55 great horned owl, downy w, cardinal, good beaver activity.

3:00 junco, downy, reached bridge<sup>w.</sup> section 16 Left bridge 3:12 to pick up car to west. Checked at bridge. Arrived car 5:30 PM bridge at course 69.5. now to east. Lawrence 83.8 at 6:25 PM. On return trip by walking did not keep complete census as was done on course trip, because of other interests on the return trip. One of the areas supporting greatest number of birds was in area surrounding pond approx. 2.10 mi. SE Belvoir School in sec 17. The area in red at S border of sec 17 is a good habitat for meadow orhogaster and Synaptomyza. The native grasses extend from edge of permanent creek which is fed by spring on upland to NW, to the top of the slope. Some good sign of Synaptomyza. The two small springs in sec. 24 are devoid of vegetation because of cultivation. They may be dry in summer but ground is probably wet to damp. These damp areas have forced the farmers to extend roads beyond base of hill. Good native grasses on uplands to N.

Univ. Kansas, Douglas Co., Kansas  
march 25, 1963

at about 10:00 A.M noted 8 fox squirrels on ground in forested slope on campus. These squirrels were actively feeding on ground as individuals and groups of 2.



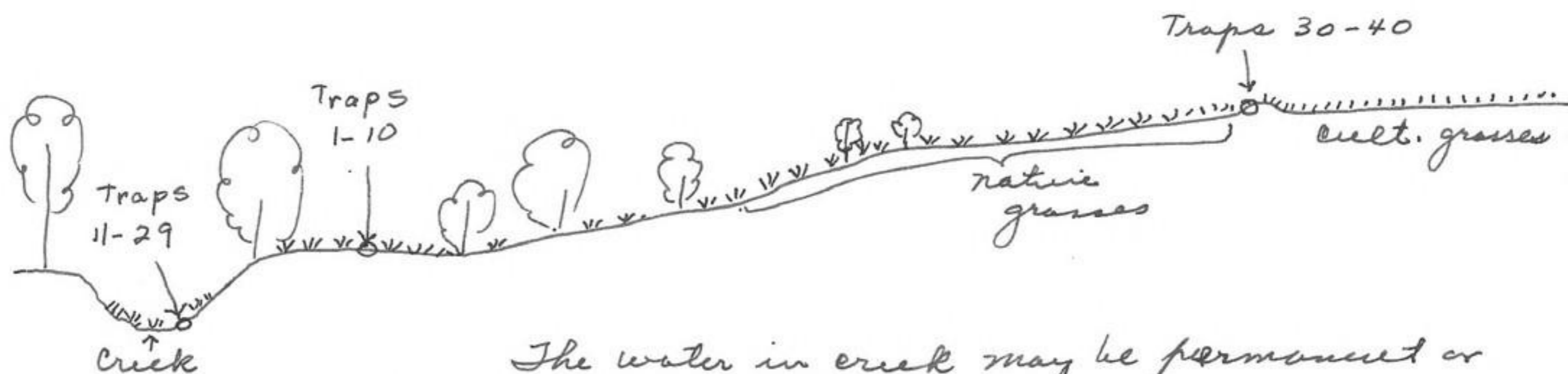
at 2:00 P.M there were no squirrels on the ground. There were no other squirrels on the ground in the rest of the grove indicating a definite community development. A hundred or so students pass thru this grove in the course of a day.

march 24, 1963

2 1/10 mi. W and 2/10 mi. N Clinton (Crossroads of town), <sup>or center</sup> Douglas Co., Kansas (see march 31 for map of this area)

March 29, 1963

Set 40 traps along creek on on hillside in area that had not been grazed or disturbed for a long time. This area is part of a drainage that originates as a spring to the NNW (or a well). The entire drainage is wet and supports sedges and a few cattails farther up drainage. The lower reaches in area of trapping is undisturbed and there is more favorable areas on slopes adjacent to the creek.

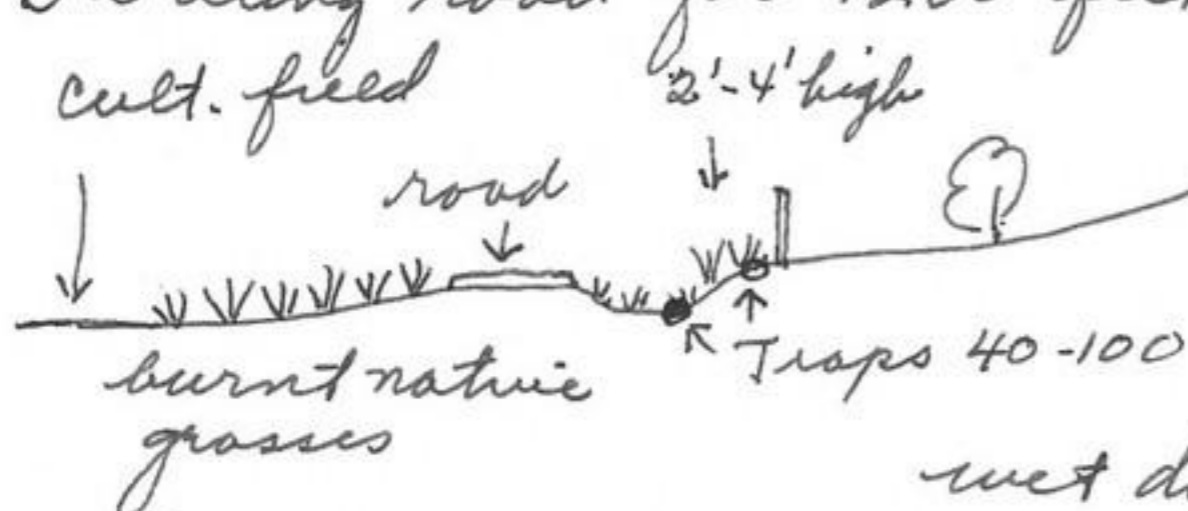


The water in creek may be permanent or at least damp in dry periods. Grasses on slopes dry except damp where lateral drainage penetrates slope. Slopes may have been cleared at one time but are now in successional stages with small trees, *Symphoricarpos* and other bush type plants. First bench is in dense matgrass and probably retains water after rains, a <sup>shallow</sup> drainage ditch traverses this benchland from the south. It may have served a purpose in former times but is now dry or damp. This area acts as a refugia for microtines and other mammals associated with the water course originating in the SE quarter of sec 17, T.18E R.13.S. Traps set 20 feet apart.

2 1/2 mi. W and 1/4 mi. S Clinton (Center of town), Douglas Co., Kansas

March 29, 1963

Set 60 traps along road beginning at head of road and continuing SW along road for 1200 feet. Traps set 20 feet apart. Grasses cult. field about 5 feet wide and isolated by road to S and completely grazed hillside to N. Drainage ditch dry but probably wet during rains. Grass (30' wide) to S burned. This area has been used extensively at one time by microtines.





March 30, 1963

March 30, 1963

mammals collected from trapline set last night. Trap numbers will be field numbers (from 2 localities, see notes March 29)

1 <i>Synaptomys cooperi</i>	40 not visited	79 not visited
2 not visited	41 sprung	80 " "
3 <i>Microtus ochro.</i>	42 <i>Microtus ochro</i>	81 " "
4 not visited	43 <i>Synaptomys cooperi</i>	82 " "
5 " "	44 not visited	83 " "
6 " "	45 <i>Microtus ochro.</i>	84 " "
7 sprung	46 <i>Peromyscus leucopus</i>	85 <i>Reithro. megalotis</i>
8 not visited	47 <i>Microtus ochro</i>	86 not visited
9 <i>Synaptomys cooperi</i>	48 <i>Synaptomys cooperi</i>	87 " "
10 <i>Microtus ochro.</i>	49 <i>Reithro. megalotis</i>	88 " "
11 not visited	50 not visited	89 sprung
12 <i>Synaptomys cooperi</i>	51 " "	90 <i>Pero. maniculatus</i>
13 not visited	52 " "	91 not visited
14 <i>Microtus ochro</i>	53 " "	92 " "
15 not visited	54 <i>Microtus ochro</i>	93 " "
16 sprung	55 <i>Microtus ochro.</i>	94 " "
17 <i>Microtus ochro</i>	56 not visited	95 " "
18 sprung	57 " "	96 sprung
19 <i>Microtus ochro</i>	58 " "	97 <i>Microtus ochro</i>
20 sprung	59 " "	98 not visited
21 not visited	60 sprung	99 " "
22 " "	61 not visited	100 <i>Peromyscus maniculatus</i>
23 " "	62 <i>Synaptomys cooperi</i>	
24 " "	63 <i>Peromyscus leucopus</i>	
25 " "	64 <i>Reithro. megalotis</i>	
26 " "	65 <i>Pero. maniculatus</i>	
27 " "	66 not visited	
28 " "	67 " "	
29 " "	68 " "	
30 <i>Synaptomys cooperi</i>	69 " "	
31 <i>Microtus ochro</i>	70 <i>Peromyscus leucopus</i>	
32 not visited	71 not visited	
33 " "	72 " "	
34 " "	73 " "	
35 " "	74 " "	
36 " "	75 " "	
37 " "	76 " "	
38 " "	77 " "	
39 " "	78 " "	

Summary

<i>Microtus ochrogaster</i>	12
<i>Synaptomys cooperi</i>	7
<i>Peromyscus maniculatus</i>	3
" <i>leucopus</i>	3
<i>Reithrodontomys m</i>	3
Totals	28 Total
Trops sprung	8
Trops not visited	64

Trops 40-100 along road (see March 29 for description of trapping areas)

March 30, 1963

Preparation of mammals Captures this A.M. Trap numbers are field numbers:

<u>630330-1</u>	<i>Synaptomys cooperi</i>	137-21-19-11-46gms ♂ testes 7mm
<u>630330-3</u>	<i>Microtus ochrogaster</i>	150-34-20-11-44gms
<u>630330-9</u>	<i>Synaptomys cooperi</i>	141-23-21-10-49gms testes 6mm
<u>630330-10</u>	<i>Microtus ochrogaster</i>	122-28-20.5-11-25gms
<u>630330-12</u>	<i>Synaptomys cooperi</i>	120-20-19-10-30gms
<u>630330-14</u>	<i>Microtus ochrogaster</i>	163-38-20.5-11-51gms
* <u>630330-19</u>	" "	152-38-19.5-11-42gms
<u>630330-30</u>	<i>Synaptomys cooperi</i>	139-21-20-10-47gms ♀ 3x2 emb 12mm
<u>630330-31</u>	<i>Microtus ochrogaster</i>	150-37-20-11-47gms ♀ ut. normal
<u>630330-42</u>	" "	147-34-20-12-42gms
<u>630330-43</u>	<i>Synaptomys cooperi</i>	133-22-19.5-11-31gms ♀ 1x3 emb 6mm
<u>630330-45</u>	<i>Microtus ochrogaster</i>	151-35-21-10-43gms
<u>630330-46</u>	<i>Peromyscus leucopus</i>	184-81-23-15-29gms ♂ testes 12mm
<u>630330-47</u>	<i>Microtus ochrogaster</i>	152-35-20-11-45gms
<u>630330-48</u>	<i>Synaptomys cooperi</i>	142-22-21-11-49gms ♂ testes 6.5mm
<u>630330-49</u>	<i>Reithrodontomys megalotis</i>	134-60-17-12-17gms
<u>630330-54</u>	<i>Microtus ochrogaster</i>	167-41-20-11-63gms
<u>630330-55</u>	" "	160-40-20-10-44gms
<u>630330-42</u>	<i>Synaptomys cooperi</i>	128-21-20-11-43gms ♀ 3x0 emb 13mm
<u>630330-63</u>	<i>Peromyscus leucopus</i>	177-74-23-15-27gms ♀ ut. normal
SK. only <u>630330-64</u>	<i>Reithrodontomys megalotis</i>	122-54-16-11-9gms ♂ testes 6mm
<u>630330-65</u>	<i>Peromyscus maniculatus</i>	144-51-19-14-22gms
<u>630330-70</u>	<i>Peromyscus leucopus</i>	166-69-23-15-23gms
<u>630330-85</u>	<i>Reithrodontomys megalotis</i>	128-60-17-11-9gms
<u>630330-90</u>	<i>Peromyscus maniculatus</i>	138-49-18-13-17gms
<u>630330-97</u>	<i>Microtus ochrogaster</i>	153-37-19-12-38gms
<u>630330-100</u>	<i>Peromyscus maniculatus</i>	134-46-18-14-22gms
* <u>630330-17</u>	<i>Microtus ochrogaster</i>	156-35-19-11-41gms

while on trapline noted 1 group of 5 Harris sparrows, others singing. also one group of 6 Cardinals (♂♂) and 1 female Cardinal. This seems to be the usual aggregation of Cardinals for this time of year. One red-tail flying over tops of high trees about 200 feet north of large nest, presumably of this species. Nest at point where creek enters large forest of trees. One great blue heron flew by to east. 2 cottontails noted while gathering traps. This area is of the kind that supports many cottontails. Several weedy patches showed use by this animal during winter.

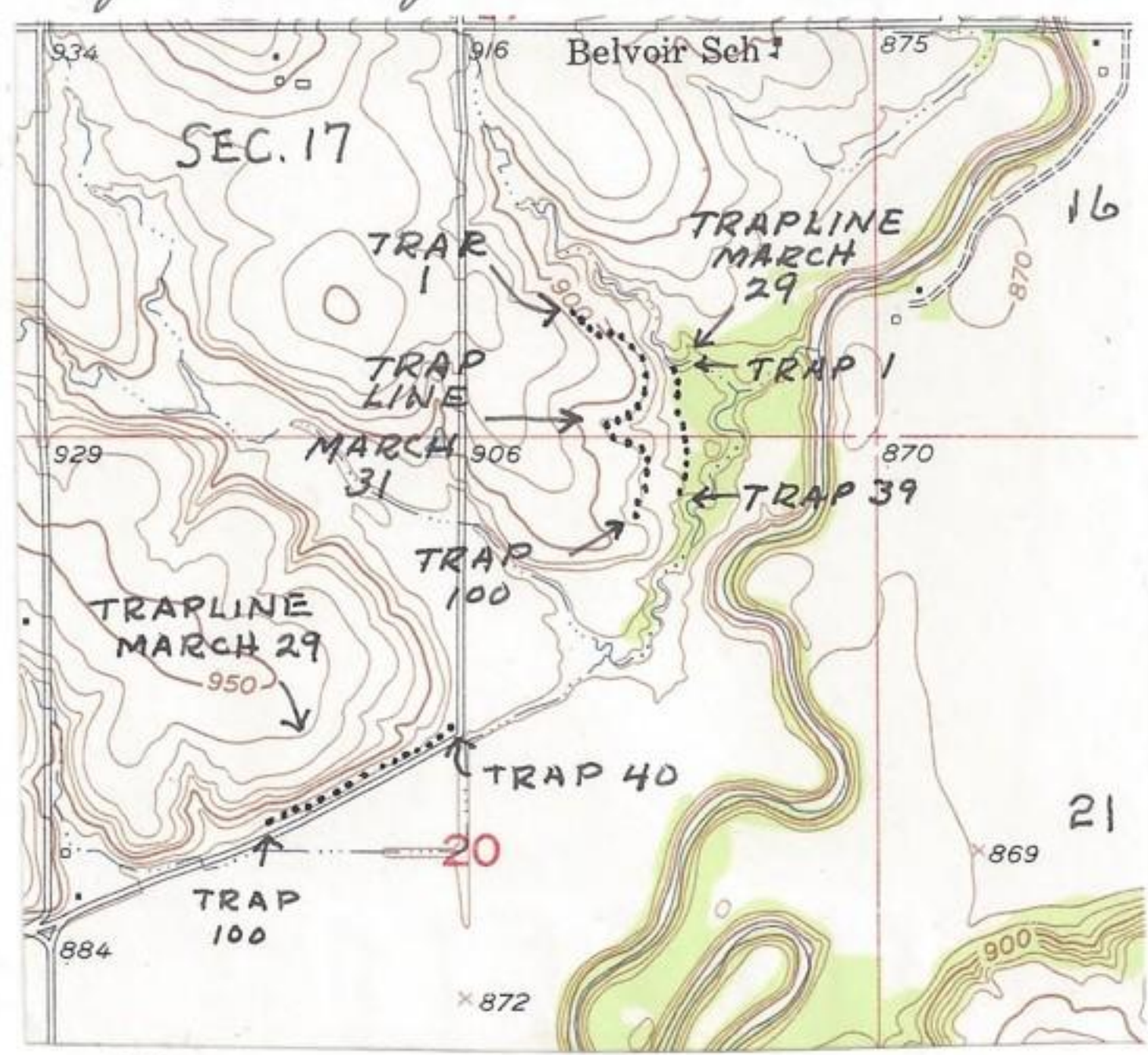
March 30, 1963

At 8:20, near trap 28, noted a young *micratus ochrogaster* ~~foraging~~ foraging among tall weeds where soils were free of the usual grasses and sedges associated with this *micratus*. Also noted a *Leithrodontomys megalotis* in a similar situation. At the trapping area (traps 40-100) along fence, noted a marsh hawk that flew out of canyon to N and flew S over plowed fields. It followed along drainage ditch where I had previously noted 2 separate systems of runways, one 200 and one 400 feet S of trap no. 40. One route home, at a point along road where road crosses NW boundary sec 15, noted a D.K. Owl. I have seen an owl at this location on 2 previous trips. The one seen about 9:30 A.M. At point where road turn to Clinton on east (N) border of sec 15, note a shrike. One crow fed in field to N.

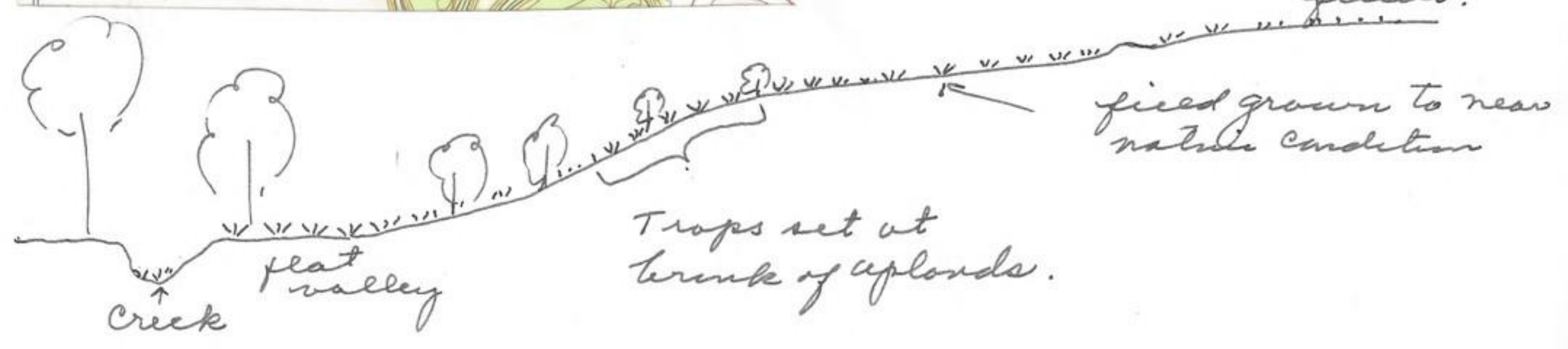
2 1/10 mi. W and 2 1/10 mi. N Clinton (center of town), Douglas Co., Kansas,

March 31, 1963

This evening set 100 traps in the same general area as March 29 but in area that I consider optimum for *Synaptomys*. The community was on edge of uplands and of undisturbed native grasses and soil. Old granite boulders still in place. The *Audropogon* was in patches and a *Symphoricarpos* bush was spaced at about 20 foot intervals. At one time there was considerable *micratus* activity, some trails looked as if being used. All traps in trails and 20 feet apart.



Cultivated fields. field grown to near native condition



Started setting traps at 4:55 P.M. (Left Lawrence 4:30) and completed set at 6:45. On return over trapline found only 1 mammal which was a *Reithrodontomys* in trap 18. and is recorded as follows:

630331-118 *Reithrodontomys megalotis* 128-63-17-12-10gms.

This animal was captured at 6:59 P.M. at late twilight. All traps 20 feet apart and on brink of uplands. Some traps crossed headwater drainages and were in damper situations. On return to Lawrence, followed valley road to N end proposed dam site. At  $13/10$  mi. S and  $3/20$  mi. E of NW corner Sec 16, noted a great horned owl above trees & fly up Wakarusa River. No other birds noted along route except some small birds. It is about 13 miles from trapping area to Lawrence (1820 Tennessee St.)

$2\frac{7}{10}$  mi. W and  $2\frac{7}{10}$  mi. N Clinton (center of town), Douglas Co., Kansas.

April 1, 1963

Left Lawrence to pick up traps set last night. At S end of proposed dam (middle of N border sec. 20) made complete census of conspicuous birds and mammals. Mileage at this point 22.7 at 7:50 A.M. Well continue west along paved road. 22.8 1 meadowlark; 23.3 1 red-wing and 2 robins; 2:35 3 red-wings (these birds are on territories); 2:36 1 red-wing and 2 meadowlark; 2:38 1 meadowlark; 24.0 bridge, 1 cardinal; 24.3 1 meadowlark; 24.6 1 meadowlark; 24.9 2 meadowlarks; 25.1 1 meadowlark; 25.3 1 meadowlark; 25.4 keeldeer; 25.8 4 redwings; 25.9 1 redwing; 26.0 1 redwing; 26.2 11 redwings in tree top; 26.4 Clinton. Have seen English sparrows at several farm enroute but have not recorded; 26.7 2 redwings; 26.8 1 redwing; 26.9 1 mourning dove, 1 meadowlark; 27.2 1 meadowlark, 27.5 opposite (east of) Clinton Cemetery; 27.6 1 cardinal, several small birds; 27.8 6 redwings in flight; 28.0 turn of rd to W; 28.1 1 <sup>fox</sup>squirrel + 1 cardinal; 28.2 redwing; 28.7 bridge across Wakarusa River, several small birds; 29.0 1 cottontail, 2 squirrels, 2 quail; 29.1 8 redwing blackbirds, 1 grackle; 29.2 2 redwings; 29.3 2 meadowlarks; 29.5 rd to left toward trapping area. 29.5 4 redwings in marsh area along creek, 2 meadowlarks. 29.8 end census. all birds observed were within 100 feet on either side of road. Arrived 8:00 A.M.

April 11, 1963

checked trap-line. marsh hawk flying over area of creek to n. 2 cottontails noted on trapline. The area where traps were placed was, in my judgement, the most permanent and stable area. It was on the brink of the uplands and was too rocky (one granite boulder per 30 feet or so) and on slope unsuitable for cultivating. The native grasses were of good growth and favorable niches (although grasses continuous) about every 20 feet which was interval of setting. The favorable niches were probably produced by microtine activity (on cultivated field above, these home bases of holes and concentrated trail activity were 60 feet apart (15-100). A small bush, probably *Symphoricarpos*, stabilized these niches. For the results which I attained, I was surprised that there were not more microtines. As a matter of fact, there were practically no mammals here, except those associated with draws. At one time this area supported a high concentration of runways and some not very old, probably used by a high population of *Spermophilus* last fall before the winter kill. This ~~to~~ was the kind of area where I postulated presence of *Synaptomys*. Those captured were from a similar situation. Returned to car at 9:00 A.M. made census on return to n end of proposed dam (Clinton Reservoir). Started n for 1 3/10 miles. Left at mileage 29.8. 29.9 2 killdeer; 30:0 2 meadowlarks, 3 redwings, 2 robins; 30.2 (crossroads, cont. to n); 30.3 2 redwings, 1 meadowlark, 1 quail; 30.6 D.B. Heron feeding at pond to W. Can hear many meadowlarks & blackbirds (redwings) singing beyond 100 feet census strip (either side of road); 30.8 2 jays, 4 juncos; 30.9 Crossing Dry Creek; 31.0 1 red wing, 1 meadowlark; 31.3 1 meadowlark; 31.6 2 robins, 1 mourning dove, 1 cardinal, small birds. 31.7 now at road to east. 1 redtail hawk circling over n E field, 2 jays, 1 meadowlark; 32.3 4 juncos, 32.7 bridge across Deer Creek, 1 cardinal, several small sparrows. 33.0 1 meadowlark, 1 redwing blackbird, 33.2 2 redwing blackbirds, 33.3 1 phoebe near bridge; 33.5 2 meadowlarks; 33.6 2 meadowlarks; 33.7 rd to S (will follow); 33.8 2 cardinals and some small sparrows; 33.8 2 cardinals; 34.0 2 meadowlarks, 34.3 1 cardinal, 1 redwing, 1 crow calling to E; 34.6 Wakarusa Bridge; 35.3 passing by road which turn S to Clinton (will continue E); 35.5 2 meadowlarks, 1 junco; 35.9 bridge across Wakarusa, 3 cardinals and several small birds; 36.2 2 crows; 36.4 1 horned lark, 1 meadowlark; 36.8 Acus calling from roadside pond, 1 redwing blackbird; 37.6 1 redwing and n end proposed Clinton Dam.

Inspected trap line set last night. 100 traps 20 feet apart:

1 <i>Synaptomys cooperi</i>	41 not visited	81 not visited
2 not visited	42 " "	82 <i>Synaptomys cooperi</i>
3 " "	43 " "	83 not visited
4 " "	44 " "	84 <i>Microtus ochrogaster</i>
5 " "	45 " "	85 not visited
6 " "	46 " "	86 " "
7 " "	47 " "	87 sprung
8 " "	48 " "	88 not visited
9 sprung	49 " "	89 " "
10 not visited	50 " "	90 " "
11 " "	51 " "	91 <i>Reithrodontomys megalotis</i>
12 <i>Signmodon hispidus</i>	52 " "	92 not visited
13 not visited	53 " "	93 <i>Microtus ochrogaster</i>
14 sprung	54 " "	94 not visited
15 <i>Synaptomys cooperi</i>	55 " "	95 " "
16 not visited	56 " "	96 " "
17 " "	57 " "	97 " "
18 " "	58 " "	98 " "
19 " "	59 " "	99 " "
20 " "	60 " "	100 " "
21 " "	61 " "	
22 " "	62 " "	
23 " "	63 " "	
24 " "	64 " "	
25 " "	65 sprung	
26 " "	66 <i>Signmodon hispidus</i>	
27 " "	67 not visited	
28 " "	68 <i>Signmodon hispidus</i>	
29 " "	69 <i>Peromyscus maniculatus</i>	
30 " "	70 not visited	
31 " "	71 " "	
32 " "	72 <i>Microtus ochrogaster</i>	
33 " "	73 <i>Microtus ochrogaster</i>	
34 " "	74 not visited	
35 " "	75 " "	
36 " "	76 " "	
37 " "	77 " "	
38 " "	78 " "	
39 sprung	79 " "	
40 not visited	80 " "	

### Summary

3 *Synaptomys cooperi*  
 4 *Microtus ochrogaster*  
 3 *Signmodon hispidus*  
 1 *Peromyscus maniculatus*  
 1 *Reithrodontomys megalotis*  
 12 total

5 sprung

82 not visited

April 1, 1963

Preparation of mammals captured last night. Trap numbers are field numbers:

630401-1	<i>Synaptomys cooperi</i>	126-21-20-10-32gms ♀ 1x3 emb 12mm
630401-12	<i>Sigmodon hispidus</i>	228-89-30-18-78gms
630401-15	<i>Synaptomys cooperi</i>	142-25-21-11-55gms. ♂ testes 6mm
630401-66	<i>Sigmodon hispidus</i>	260-102-31-19-104gms
630401-68	"	238-101-30-16-91gms
630401-69	<i>Promyscus maniculatus</i>	146-58-19-15-20gms
630401-72	<i>Microtus ochrogaster</i>	176-46-21-12-55gms 1 ear smaler
630401-73	"	161-37-20-11-57gms
630401-82	<i>Synaptomys cooperi</i>	108-21-19-9-18gms ♂ testes 3mm
630401-84	<i>Microtus ochrogaster</i>	156-36-20-12-47gms
630401-91	<i>Reithrodontomys megalotes</i>	130-58-18-12-10gms
630401-93	<i>Microtus ochrogaster</i>	115-28-18-10-20gms

Univ. Kansas, Douglas Co., Kansas  
 April 2, 1963

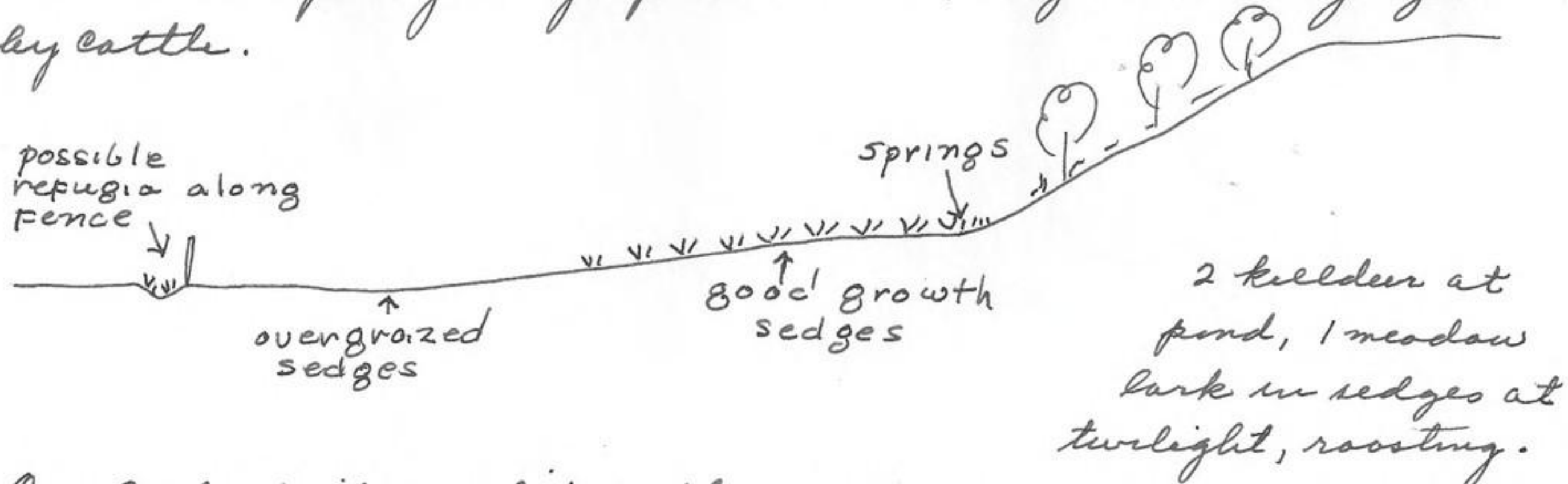
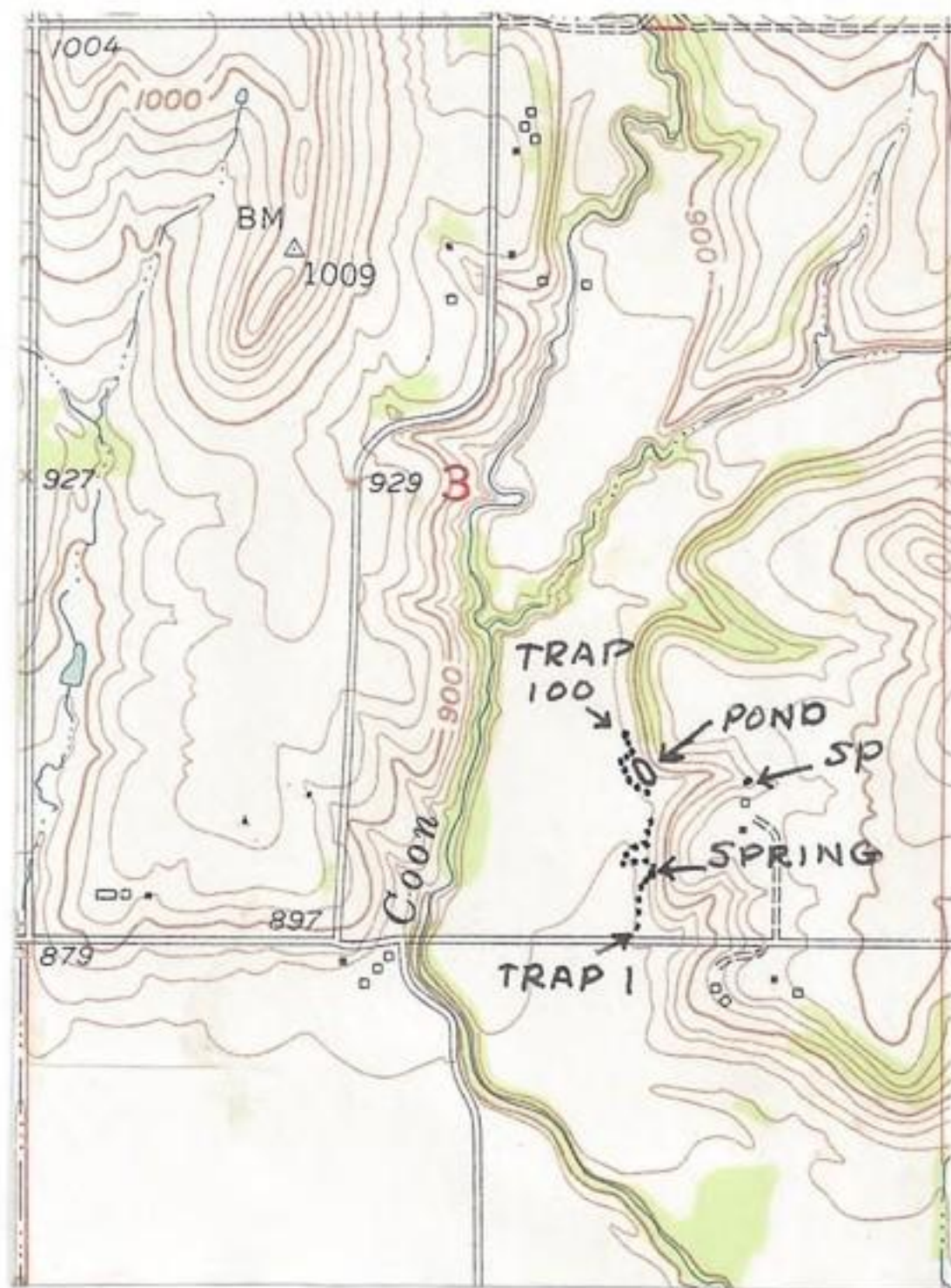
Noted a cardinal carrying nesting material into a wall vine on N side of Strong Building on the campus. The nest was about 8 feet high and was 3/4 completed. Have noted many instances of groups of male Cardinals indicating that nesting has not begun in all cases. This weekend plan to trap on the Coffman property in the Clinton Reservoir area. There are good springs on his farm and although grazed heavily, should produce some select areas. The spring in canyon on E side of valley is considered to be one of the largest and continuously flowing springs in the Clinton area. It issues from near the top of the canyon and flows into a drink reservoir for cattle. I would estimate that it was flowing about 1 quart per minutes in April. The sedges & grasses below the spring are so heavily overgrazed that small mammal find no refuge there. Other springs issue from base of hill along main valley that feed the more extensive wet meadows on floor of valley. I understand that an upland field there is a deep well-like depression in the middle of a field that might be associated with this spring.

2 2/10 mi. n and 3/10 mi. w Clinton (center of town at cross-roads), Douglas Co., Kansas

April 5, 1963

This locality is the spring (largest one and first one north of road; see March 23 for map of area). Set 100 traps, in sedge and grass. all traps except 95-100 in wet to damp situations and in (including 95-100) trails made by meerkats. 5:30 P.M.

The sedges are typical meadow growth, averaging 1 foot high and developed to hummocks by cattle. The best runways were associated with the wet areas, not with the wet areas but adjacent. Fields completely grazed did not support grasses high enough for overhead protection. Springs have slow but running water. Traps 95-100 were in dry area of undisturbed andropogon and other weeds but associated with springs to S. It is probable that *Synaptomys* used this area when springs dry up and the sedges are overgrazed by cattle.



One cottontail rabbit with well developed nest or resting spot 2 feet into sedge along east side at base of hill. Hill-side not particularly favorable for cottontail. Enroute to this area made the following observations (starting 5:00 P.M.). mileage 19.3 n end proposed dam. 19.7 shrike; 20.4 2 horned larks; 21.0 bridge over Wakarusa; 21.1 S. Owl 300 feet to S; 21.6 shrike; 22.3 bridge over Wakarusa (now travelling n); 22.6 6 crows; 23.2 corner & now to E. Left car at base of hill on Coffmans property. Returned some way after twilight (late twilight is when I cannot distinguish mammals in traps on the ground) but did not see animals or birds in traps or car.

April 5, 1963



April 6, 1963

630406-86

April, 6, 1963

Inspection of trapline set last night. Traps 20' apart.  
Collected mammals at A.M.

1 trap not visited	40 not visited	79 not visited
2 " " "	41 <i>Synaptomys cooperi</i>	80 " "
3 " " "	42 not visited	81 " "
4 " " "	43 " "	82 <i>Microtus ochrogaster</i>
5 " " "	44 " "	83 trap sprung
6 " " "	45 <i>Microtus ochrogaster</i>	84 not visited
7 " " "	46 not visited	85 " "
8 " " "	47 <i>Microtus ochrogaster</i>	86 " "
9 <i>Microtus ochro</i>	48 not visited	87 " "
10 not visited	49 " "	88 <i>Peromyscus maniculatus</i>
11 " "	50 " "	89 not visited
12 <i>Peromyscus leucopus</i>	51 " "	90 " "
13 trap not visited	52 <i>Reithro. megalotis</i>	91 " "
14 " "	53 not visited	92 " "
15 " "	54 <i>Microtus ochrogaster</i>	93 " "
16 " "	55 not visited	94 " "
17 " "	56 " "	95 " "
18 " "	57 " "	96 " "
19 " "	58 " "	97 <i>Synaptomys cooperi</i>
20 " "	59 " "	98 <i>Microtus ochrogaster</i>
21 " "	60 " "	99 not visited
22 " "	61 " "	100 " "
23 " "	62 " "	
24 " "	63 <i>Microtus ochro</i>	
25 " "	64 trap sprung	
26 " "	65 not visited	
27 " "	66 " "	
28 " "	67 " "	
29 " "	68 <i>Reithro. megalotis</i>	
30 " "	69 not visited	
31 " "	70 <i>Microtus ochrogaster</i>	
32 " "	71 not visited	
33 " "	72 <i>Microtus ochrogaster</i>	
34 " "	73 not visited	
35 <i>Microtus ochrogaster</i>	74 " "	
36 not visited	75 <i>Microtus ochrogaster</i>	
37 " "	76 not visited	
38 " "	77 " "	
39 " "	78 " "	

Summary

- 1 *Microtus ochro.*
- 2 *Synaptomys cooperi*
- 1 *Peromyscus leucopus*
- 1 " *maniculatus*
- 2 *Reithro. megalotis*

17 total.

2 sprung  
81 not visited which is an unusual situation for kind of trap set where every trap was in a runway that was being used.

## Preparation of mammals captured last night:

630406-9	<i>Microtus ochrogaster</i>	144-33-19-12-31gms
630406-12	<i>Peromyscus leucopus</i>	190-85-22-15-29gms
630406-35	<i>Microtus ochrogaster</i>	144-37-20-11-39gms
630406-41	<i>Synaptomys cooperi</i>	140-23-20-10-45gms
630406-45	<i>Microtus ochrogaster</i>	148-36-20-11-32gms
630406-47	" "	150-35-19-11-37gms.
630406-52	<i>Reithrodontomys megalotis</i>	148-65-17.5-12-16gms
630406-54	<i>Microtus ochrogaster</i>	150-38-19.5-12-40gms
630406-63	" "	133-31-18-11-24gms
630406-68	<i>Reithrodontomys megalotis</i>	141-62-17-11-14gms
630406-70	<i>Microtus ochrogaster</i>	164-42-20.5-12-50gms
630406-72	" "	160-37-19-12-52gms
630406-75	" "	166-39-20-12-45gms
630406-82	" "	140-33-19-12-44gms
630406-88	<i>Peromyscus maniculatus</i>	141-54-20-15-20gms
630406-97	<i>Synaptomys cooperi</i>	141-25-19-11-50gms ♂ testis 6mm
630406-98	<i>Microtus ochrogaster</i>	146-36-20-11-41gms

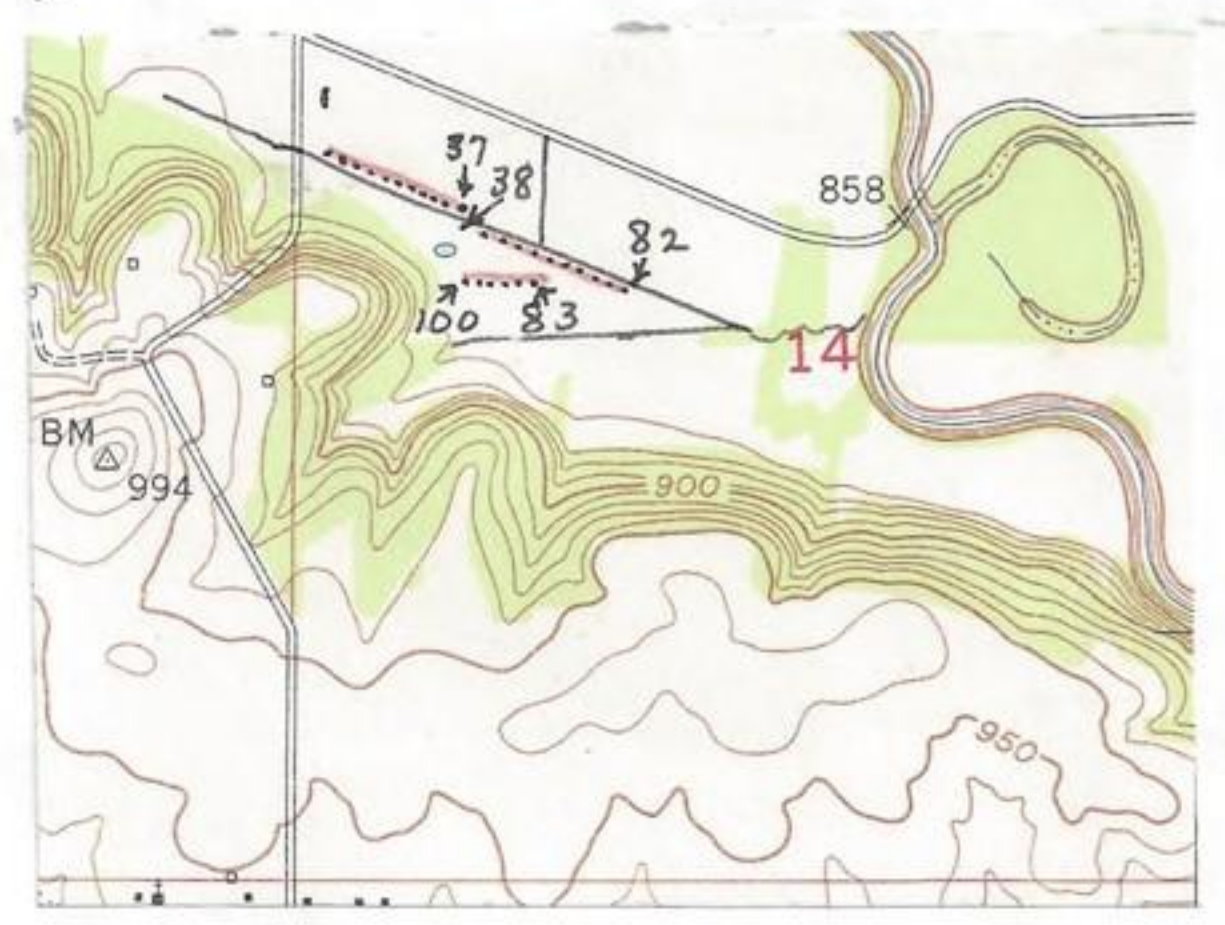
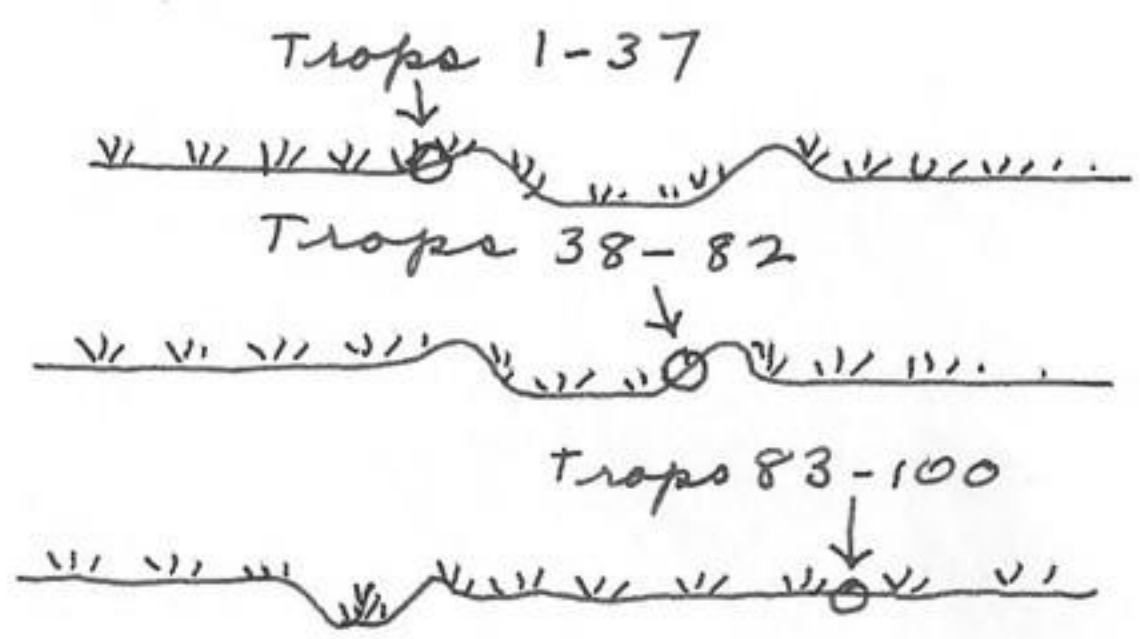
On way to trapline made complete census. at N end proposed dam of Clinton Reservoir at 7:25 A.M. at 44.2 mileage, cardinal and small birds; 44.8 cardinal; 45.6 crow; 45.9 bridge over Wakarusa, cardinal, small birds; 46.5 at point where road branches to Clinton noted a shrike in tree; 47.1 bridge over Wakarusa (now to N); 47.4 3 killdeer, 1 yellowshafted flicker, 1 cardinal; 47.7 3 horned larks; 48.0 small birds; 48.1 rd to E; 48.4 Trap area at base of hill (Coffmans place). After checking traps continued east leaving at 48.5 (8:45 A.M.); 48.6 3 meadowlarks; 48.8 Coopers hawk, 1 cardinal, 8 juncos, 1 meadowlark; 49.1 1 meadowlark; small birds; 49.7 3 meadowlarks; 49.8 Petersons corner now to S; 50.1 1 horned lark, 1 meadow; 50.2 1 meadowlark; 50.5 Rattlesnake Point, 1 cardinal, 1 yellowshafted flicker; 50.8 1 meadowlark; 51.1 crossroads in valley now to E; hunters conducting wolf hunt to N + E of crossroads; 51.1 small birds, 1 robin; 52.3 N end proposed dam.

I am at loss to understand why I did not catch more meadowlarks in trapline this A.M. as every trap was placed in a runway which was well used and clipping of fresh green grass present. Weather clear and 46°F last night. New on grass this A.M. I had anticipated at least a 50-60 percent catch.

4,100 ft N and 250 ft E Clinton, (Center of town), Douglas Co., Kans.

April 6, 1963

Set 100 traps, 20 foot intervals, along dike. Trap 1-37 on N side of drainage ditch; traps 38-82 on S side of ditch and 83-100 in meadow.



Slight depression on either side of dike (each side of canal) provided good sedges and grasses. Runways continuous. The best area N of drainage ditch was an area of approx. 15 feet beyond edge. The sedges are higher than field of grasses to N. Sedges S of canal or ditch more continuous than on N side. Traps set between 5:00 P.M and 6:00 P.M. Sun still about 1/2 hr before sundown. Two Wilson Snipe were in drainage ditch near pond. Quail called from field to north. Several red-winged blackbirds along drainage ditch and on territories.

On way back to Lawrence made complete census of birds along road in 100 foot corridor on either side. Left at 6:00 P.M. at mileage 81.4 at dike on road to Clinton. At 81.5 road to E, 2 sharp-shinned hawks in air. 82.1 bridge over Wakarusa river, some small birds; 82.6 crossroads, no horned larks. 83.7 now at N end of proposed dam of Clinton Reservoir.

April 7, 1963

Picked up traps and mammals from traps set last night. Entered area at N center border of Sec 34, R 13 E, T 12 S at mileage 02.5 at 9:15 A.M. Will make complete census to trapping area. 02.7 meadow lark, red wing; 03.0 2 meadowlarks; 03.4 red-wing; 03.4 good field for microtines to S; 03.5 2 meadowlarks; 03.8 mourning dove; 04.1 2 meadow larks; 04.4 2 meadowlarks; 04.5 2 meadowlarks and 2 mourning doves; 04.6 road; 04.7 to S, cardinal; 04.9 cardinal; 05.3 yellow-shafted flicker; 1 fox squirrel; 05.4 2 meadowlarks, 1 redwing, 3 cowbirds; 05.7 bridge over Wakarusa; 06.1 sparrow; 06.3 road to Clinton, 1 meadowlark; 06.4 at trapping area at road crossing dike. Checked traps. It was unusual that

the S side of dike supported only *Reithrodontomys* in microtus runways. 2 Wilson snipe in drainage ditch. Returned to Lawrence via valley road. At 06.5 road to E, shrike; 07.2 bridge over Wakarusa river, cardinal along river, 1 bluebird; 08.8 N end of proposed dam. No birds noted between bridge and N end of dam.

April 6, 1963

April 7, 1963

mammals captured on trap line set last night. Traps 20 feet apart.

1 not visited	40 sprung	79 not visited
2 " "	41 not visited	80 " "
3 " "	42 " "	81 " "
4 " "	43 " "	82 " "
5 m. ochro	44 lethro m	83 " "
6 sprung	45 " "	84 " "
7 m. ochro	46 sprung	85 " "
8 m. ochro	47 lethro m.	86 " "
9 " "	48 " "	87 " "
10 sprung	49 not visited	88 lethro. m
11 m. ochro	50 sprung	89 sprung
12 m. ochro	51 lethro. m.	90 not visited
13 sprung	52 sprung	91 " "
14 m. ochro	53 not visited	92 " "
15 sprung	54 lethro m	93 " "
16 m. ochro	55 not visited	94 m. ochro
17 " "	56 " "	95 not visited
18 " "	57 " "	96 lethro m.
19 sprung	58 m ochro	97 not visited
20 not visited	59 " "	98 " "
21 " "	60 sprung	99 lethro. m.
22 sprung	61 sprung	100 sprung
23 not visited	62 sprung	
24 m. ochro	63 not visited	
25 not visited	64 m. ochro	
26 " "	65 not visited	
27 " "	66 " "	
28 m. ochro	67 " "	
29 sprung	68 " "	
30 not visited	69 " "	
31 " "	70 sprung	
32 " "	71 " "	
33 lethro m.	72 not visited	
34 not visited	73 Perom. manic.	
35 " "	74 not visited	
36 lethro m.	75 " "	
37 not visited	76 " "	
38 " "	77 " "	
39 lethro m.	78 " "	

### Summary

14	Microtus ochrogaster
12	Reithrodontomys megalotis
1	Peromyscus maniculatus
29	total
18	traps sprung
53	not visited

Preparation of mammals caught last night. Field numbers are also trap numbers:

630407-5	<i>Microtus ochrogaster</i>	164-36-19.5-11-55 gms
630407-7	" "	150-33-19-11-44 gms
630407-8	" "	158-37-20-11-52 gms
630407-9	" "	168-36-20.5-11-61 gms
630407-11	" "	167-42-21-12-53 gms
630407-12	" "	161-37-20-12-49 gms
630407-14	" "	160-38-20-12-47 gms
630407-16	" "	154-33-20-12-51 gms.
630407-17	" "	168-38-20.5-12-56 gms.
630407-18	" "	158-39-19-10-52 gms
630407-24	" "	166-38-21-12-55 gms
630407-28	" "	164-41-20.5-12-56 gms
630407-33	<i>Reithrodontomys megalotis</i>	130-61-17-12-10 gms
630407-36	" "	135-60-17-12-12 gms
630407-39	" "	132-63-17-12-10 gms
630407-44	" "	156-75-17-13-14 gms
630407-45	" "	134-61-16-13-10 gms
630407-47	" "	132-47-17-12-12 gms
630407-48	" "	131-60-17-12-13 gms
630407-51	" "	133-60-17-12-13 gms
630407-54	" "	161-76-17.5-13-18 gms
630407-58	<i>Microtus ochrogaster</i>	148-34-19-11-38 gms
630407-59	" "	159-38-20-10-43 gms
630407-64	" "	153-38-20.5-11-40 gms
630407-73	<i>Peromyscus maniculatus</i>	140-51-19-14-20 gms
630407-88	<i>Reithrodontomys megalotis</i>	128-59-17-12-10 gms
630407-94	<i>Microtus ochrogaster</i>	164-40-21-12-57 gms
630407-96	<i>Reithrodontomys megalotis</i>	134-64-16.5-13-13 gms
630407-99	" "	135-55-16.5-11-10 gms

Rock Creek Trip, Douglas Co., Kansas.  
April 7, 1963

630407-91

Will start at bridge in SW corner sec 7, R13E T19S and follow east side Rock Creek valley to bridge on Rock Creek S of Clinton. Complete census from S end proposed dam to start of trip. Will follow main road. At S end dam, 1:05 P.M. at 26.2 mileage. 28.1 meadowlark; 28.5 meadowlark; 29.6 meadowlark. Clinton 30.0; wind about 25 miles per hour; 32.6 1 meadowlark; 33.3 meadowlark; 34.2 1 meadowlark; 36.2 cardinal; 36.6 meadowlark; 36.9 start of bridge. Census not as complete as desired because of speed following map. Arrived 1:20 P.M. 2 Cardinals, 2 crows; saw slung nettle about 1 foot high. phoebe; 1 red bellied 1:28 2 chickadees. Photo 630407-101 sycamore trees falling into gulch; 1:35 2 H. owl; 2 chickadee, 1 titmouse; 2 bluejays; 1 phoebe, 1 bluebird, 1 red bellied. 1:38 3 starling at nesting holes; 2 chickadees; 1 cardinal; 1:43 2 chickadee, 1 red bellied, 1 cardinal. 1:50 chickadee, 1 fox sp; 1:52 bend directly S Rock Creek Cemetery; 1:55 high cliffs. 1 titmouse; 2:00 cliffs just beyond curves of river; 2 chickadees; Photo 630407-102 of east group of cliffs; 2 chickadees, 4 juncos; violets out; 2:03 permanent pond in river bed, cattails etc; 2:05 road crosses river; 2:18 mouth creek from major drainage to S. Sand ocher in field east of farm house 2/10 mi. SW. 2:20 2 chickadees, 1 titmouse, 1 cardinal. 2:25 cardinal, 1 red bellied, 1 chickadee, 2:30 bridge. Last 2/10 - 3/10 mile from here back to drainage (2:18) some microtine activity but sparse, tree growth too high. From bridge to old house 2/10 NE good micro ochro on slope S of EW road. 2:42 Photo 630407-103 of pioneer house; 2 cardinals, 1 chickadee. Well at house with H<sub>2</sub>O. 2:47 drainage east of house, 1 red bell, 1 junco, 1 chickadee, 3 crows; 2:5 3 east

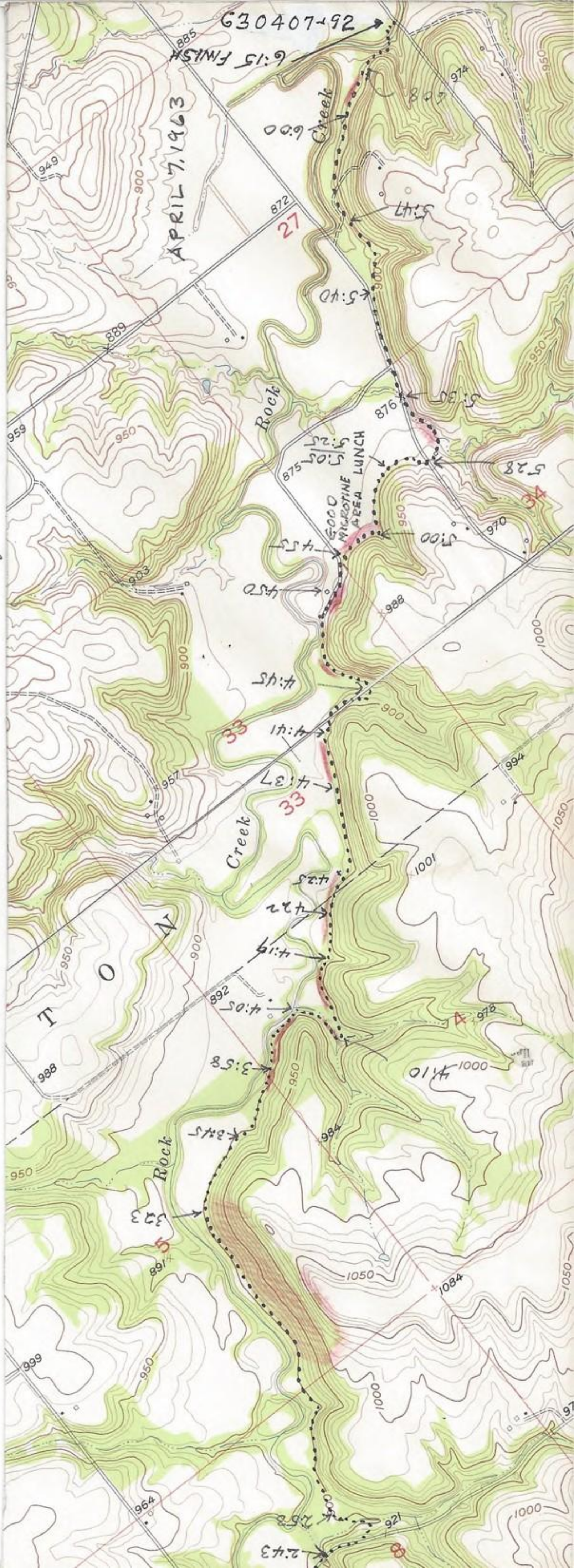
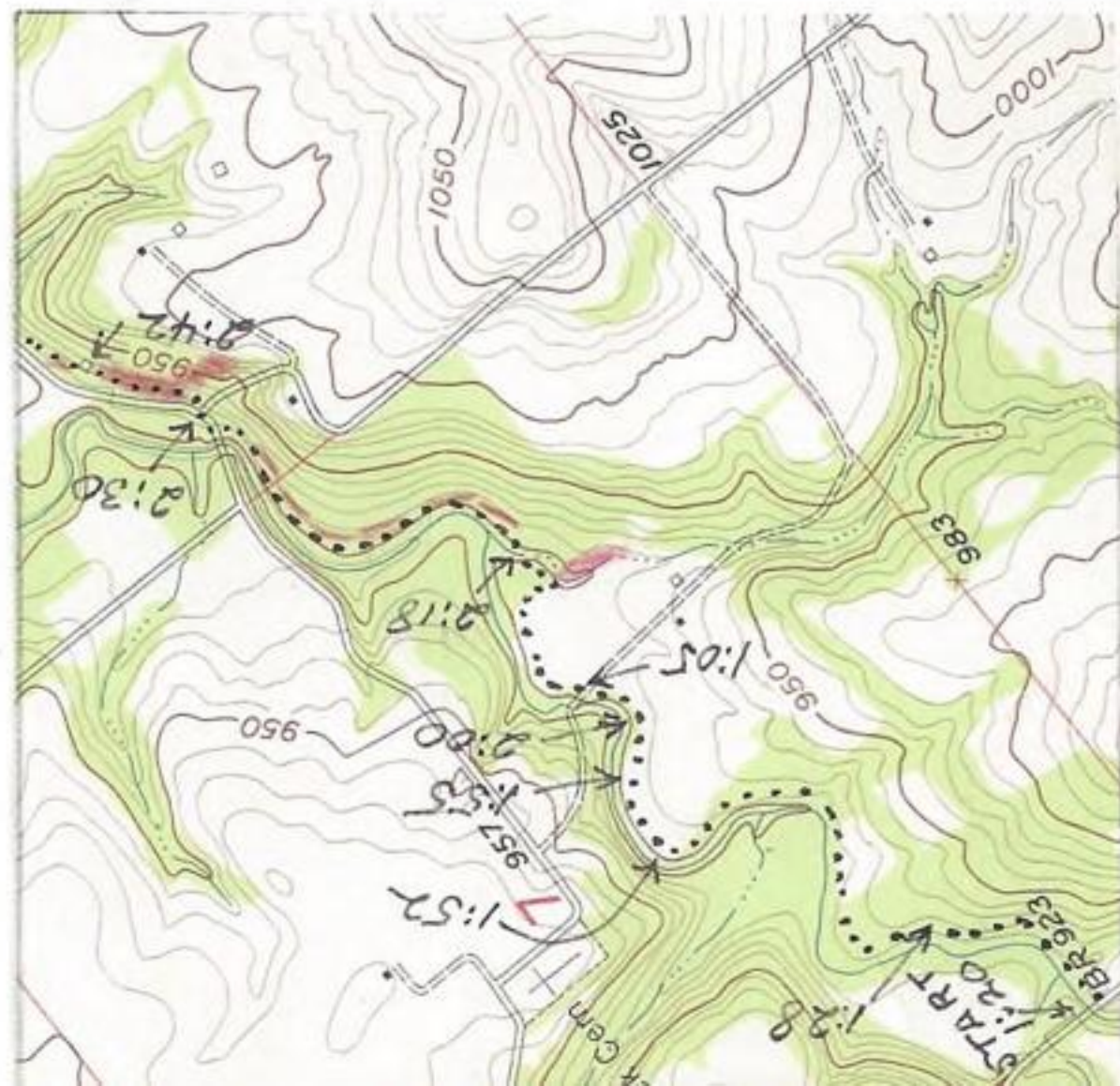
of canyon. 2 cardinal, 1 hairy; 2:57 1 chickadee; 2 cardinal; 1 cottontail 3:00 2 titmouse, 1 chickadee, 1 fox squirrel. 1 jay; 3:07 2 cardinal, 4 juncos; 3:10 1 red-tail calling overhead, likely nesting site in trees; 2 cardinals, 1 chickadee. 3:15 crow from nest, 1 red bellied, 1 downy 1 chickadee. 3:18 2 juncos, 2 cardinals; 3:20 ♂ & ♀ cardinal; 1 red tail hawk; 3:23 point of ridge, view NE. Entire slope since last major drainage with grasses especially upper 100 feet of hill. All in climax deciduous and wherever favorable grasses there are runway. This area should be trapped. 3:25 2 turkey vulture soil by along top of ridge. 3:36 from top of hill at point took photo 630407-104 to W. Most of trees at top of hill seem to be dead. At this point I saw the 2 vultures. 3:45 Photo 630407-105 of fungus on stump. 3:46 2 cardinals; 3:48 squirrel 2, 1 red bellied, 1 cardinal; 3:50 end of deciduous sidehill, now 90% cut. 2 cardinals, 1 junco, 2 cardinals flew by, 106 1. good gnat catcher, 2 chickadees, 1 cardinal; 2 sparrow; 3:58 photo 630407-106 of Rock Creek about 2/10 mi. W of house on N side. 4:00 S of house on N side were all hillside just covered is good for m. ochro but dry & spotty; red bellied. 2 bluebirds. 4:05 mouth creek to S. Rana pipiens all along river & they jump into water when passing, titmouse, red bellied, cardinal. 4:08 good m. ochro up canyon, 2 cardinals, 1 red bellied. 4:10 forks of canyon, now return. Old runway in pond now drained, cattail & herb weed in pond now; 4:17 Mt con on farm S; yellow warbler like call; 2 cardinals; 4:18 cardinal. 3 sparrows; 4:20 2 cardinals; 4:22 muskrat in river, 2 red tail hawks soar above. 4:25 good m. ochro grasses since 4:17; 2 cardinal; 2 crow, 1 flicker. 4:32 now open field, 1 red tail flew from trees to S. 4:26 3 cardinals; 1 junco. 4:37 beginning of good m. ochro trails; 3 bluebird; trails look old & dry but continuous.

April 7, 1963

April 7, 1963

April 7, 1963

Route followed along East side of Rock Creek valley April 7, 1963. Location is correlated with time (see notes for complete details). Red areas are those areas where microtine trails were noted in grasses. These grasses were on dry soils. I did not see one area that could be considered a spring, bog, or permanent water in soils. Some were damp from stream runoff and were created by poor drainage. I did not see areas that I would consider optimum for *Synaptomyza cooperi* although I am sure they would be found in areas which have not been disturbed for long periods of time. The west side of Rock Creek seemed to be more favorable for microtine communities. I will investigate this side of valley at a later date.



April 7, 1963

630407-93  
 nuthatch, 441 end trail of moches, best seen so far. 4:45 Crossing creek <sup>but all look used, finch.</sup> finch 5. Corn blue gold finch,  
 2 bluebirds, male following ♀. 4:46 good grass to left. 4:50 house,  
 1 ♀ and 3 ♀♀ cardinal, 1 red bellied. 4:55 road turns N. Good m. vobis in fields SE of house, old  
 fields but not native, 2 phoebes, 2 cardinals, 4 sparrows sp?, 1 juncos, 2 chickadees  
 near house. 5:00 drainage from S. good microtus trails along dike at  
 base of hill (should set traps to test, runway continuous, 2 cardinals. 5:02 red-  
 tail, 5:03 gnatcatcher; 5:04 1 bluebird, 6 red-wings in top tree, 2 cardinals,  
 1 chickadee. (Time out for lunch). <sup>5:05</sup> There has been a decided lack of meadow  
 larks along route; they are more strictly an upland bird in their local  
 community. On trail again at 5:25; 2 blue jays; 5:28 main road; 5:30  
 N.H. owl good grass in conifer floor, fine grass but not many runways;  
 5:35 bridge, 2 cardinals. red bellied, 1 meadow lark; 5:38 red bellied, 2  
 jays; 5:40 leaving road, gonubery in leaf & flower; 1 cardinal; 1 flicker,  
 Symphoricarpos no leaf; 1 chickadee; 1 titmouse; 1 gnatcatcher; 5:45 1  
 cottontail, 1 chickadee; 8 goldfinch, 2 cardinals, 1 hairy; 5:47 opposite  
 (E) bridge along base hill; 5:50 Oregon juncos; cardinal, titmouse  
 5:51 red-bellied woodpecker; small bird outer tail feathers white, body green with  
 grey & conspicuous eye ring; 2 cardinal, 1 red bellied, 1 titmouse, 2 mourning dove  
 2 jays; 5:56 cardinal, 2 crow, 1 cardinal, 1 red bellied; 2 blue jays.  
 6:00 red tail left nest; 6:01 cardinal, 6:04 cardinal 6:05 red-tail voted  
 at 6:00 returned to nest; 6:08 painting ridge, 6:09 red bellied, 2 cardinals  
 bridge at 6:15, 1 red bellied. From bridge Annette was there with car.  
 We travelled S, thence E, thence N to Clinton.

Univ. Kansas, Lawrence, Kansas  
 April 8, 1963

Five male English Sparrows were chasing a single female English Sparrow. The course was erratic and about 3 feet from ground. The female was forced down and the 5 males started to chase the female and <sup>to</sup> fight among themselves. They formed a circle around the female at about 6 inches away. Copulation was attempted several times and one was successful. After about 1 minute of this activity the female flew and was again forced to the ground where the same kind of performance took place. A sixth male sparrow attempted to join the group but was forced away by the males. Whether all the males participated in the copulation act was not ascertained but it appeared as if they did.

5 3/4 mi. W and 9/20 mi. S Clinton (center of town), Douglas County, Kansas.

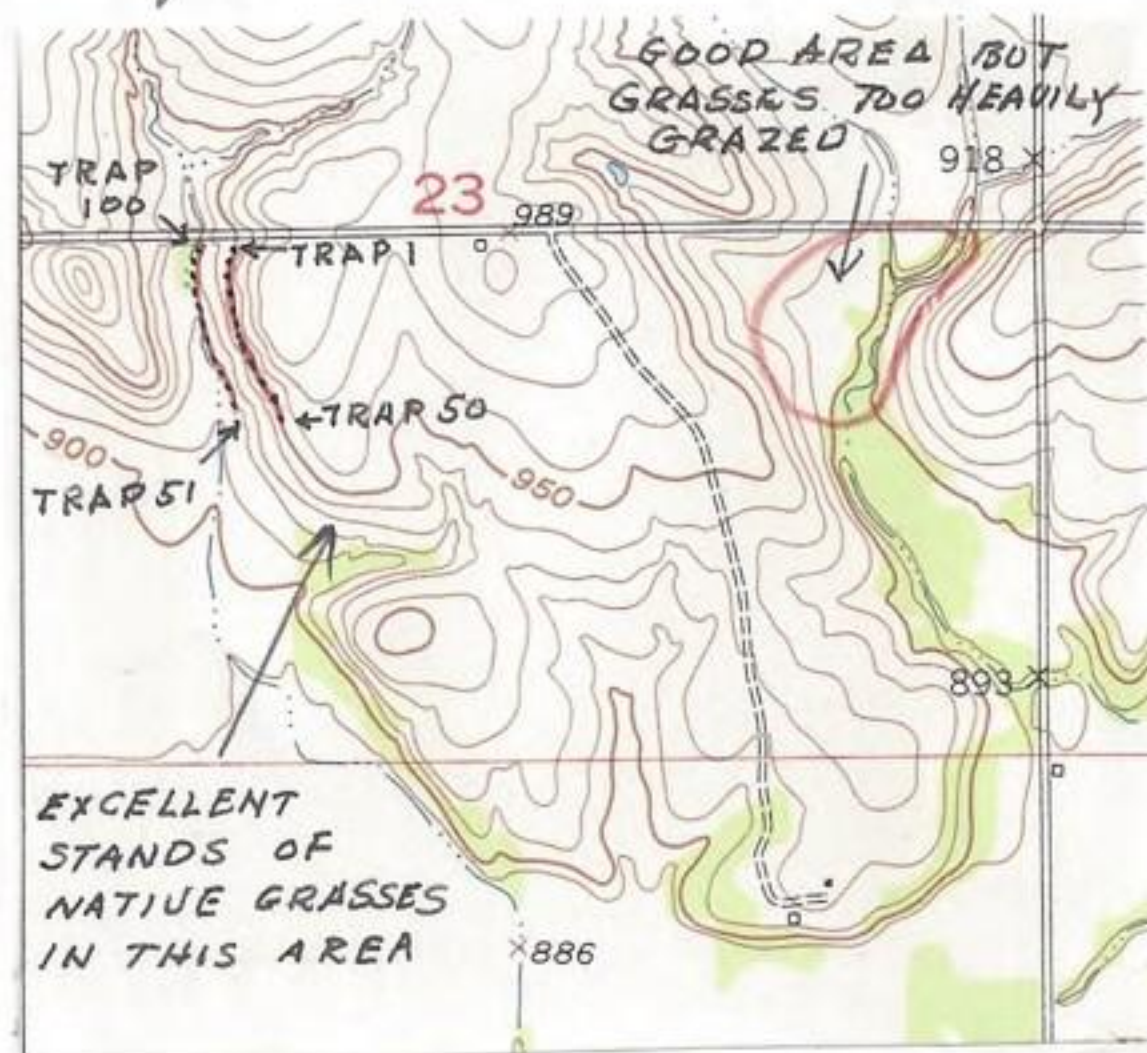
April 8, 1963

Annette and I made trip to Topeka in afternoon and on return set 100 traps at the above locality. The exact locality



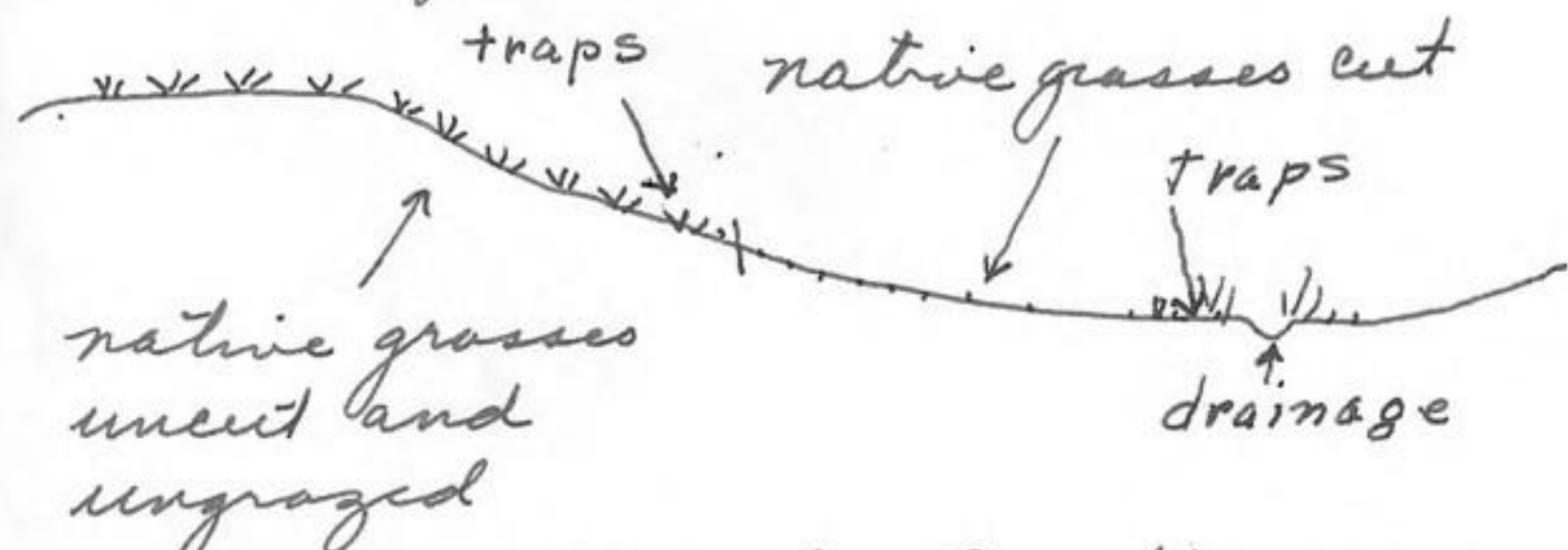
April 8, 1963

is the position of trap no 1. The trap line extends about 1/2 way up slope for 1000 feet at trap intervals of 20 feet and a second line of 50 traps, also placed 20 feet apart was parallel to above but in bottom of the canyon. The hillside was in native grasses, mainly Andropogon, and had not been cultivated or grazed for a very long time. It has been in this condition at least for the last 15 years. The grasses were not high but the mat formation at base was substantial. It was a condition that is not conducive to at least *Microtus ochrogaster*.



630408-94  
 The hillside was in native grasses, mainly Andropogon, and had not been cultivated or grazed for a very long time. It has been in this condition at least for the last 15 years. The grasses were not high but the mat formation at base was substantial. It was a condition that is not conducive to at least *Microtus ochrogaster*.

There were many trails but nearly all of them were old and unused. Amphibians calling in drainage in bottom of canyon mainly nearer road to n.



5 3/4 mi. W and 9/20 mi. S Clinton, Douglas Co., Kansas

April 9, 1963

Picked up traps set last night. Left Lawrence 7:25 A.M., 48°F, mileage 57.8. Made complete census from S end proposed dam, following main highway toward midland 65.7 S end dam; 65.8 meadow lark, meadowlark; 66.9 redwing; 68.1 meadowlark; 68.3 cardinal; 68.5 meadowlark & bluebird; 68.8 shrike, cardinal; 69.3 robin, redwing; 69.5 center of Clinton; 69.7 redwing, 2 meadowlarks; 70.5 Cemetery, meadowlark; 71.5 2 redwings; 71.8 bridge over Wakarusa; 72.2 meadowlark; 72.6 redwing blackbird; 73.1 redwing, downy woodpecker; 73.9 yellow s flicker, 2 meadowlarks, 1 dove, cardinal; 74.1 1 dove, 2 meadowlarks, redwing; 74.2 killdeer, meadowlark; 74.5 meadowlark; 74.6 redtail hawk; 74.8 3 grackles; 75.1 road to S, redwing; 75.3 3 meadowlarks; 75.5 1 meadowlark; 75.6 cardinal; 75.8 4 redwings; 75.9 3 meadowlarks; 76.1 road to W, 1 mourning dove, 1 meadowlark; 76.4 5 redwings; 76.6 3 mourning doves; 76.9 2 redwings, 2 phoebe, at top line. Collected traps and returned to car. Returned to Lawrence by valley road (Wakarusa) 77.1 2 meadowlarks; 77.3 3 meadowlarks, 1 dove, 1 redwing; 77.4 field to S grazed and then grown to andropogon; 3 meadowlarks, 1 marsh hawk; 77.7 road to S, 3 meadowlarks; 77.8 2 meadowlarks; 77.9 cardinal, small birds, meadowlark; crow, small birds along road; 78.7 bridge over Wakarusa, 3 cardinals, small birds in trees; 79.2 road to N, red headed woodpecker; 79.5 meadowlark; 79.7 cardinal, titmouse; 80.2 redwing, meadowlark; 80.5 horned lark; 81.0 bridge over Wakarusa, cardinal, small birds; 81.6 road turns; horned lark; 81.8 redwing, small sparrow; 82.1 8 Harris sparrows, 1 meadowlark, 1 cardinal; 82.4 card, small birds; 82.5 meadowlark; 82.9 2 redwing, meadowlark; 83.0 road to E, 1 shrike, meadowlark, cardinal; 83.3 grackles, 2 meadowlarks, redwing; 83.5 road to W 3 redwings; 83.7 bridge over Wakarusa, cardinal, small birds; 84.0 2 redtails; 84.5 road to N; 84.9 chickadee; 85.4 cardinal; 85.5 opposite bridge; 86.8 bridge over Wakarusa, 3 cardinals; 87.2 3 meadowlarks; 87.4 4 meadowlarks; 87.7 1 meadowlark; 88.0 1 meadowlark; 88.1 1 meadowlark; 88.2 1 meadowlark; 88.3 1 meadowlark; 88.4 1 meadowlark; 88.5 1 meadowlark; 88.6 1 meadowlark; 88.7 1 meadowlark; 88.8 1 meadowlark; 88.9 1 meadowlark; 89.0 1 meadowlark; 89.1 1 meadowlark; 89.2 1 meadowlark; 89.3 1 meadowlark; 89.4 1 meadowlark; 89.5 1 meadowlark; 89.6 1 meadowlark; 89.7 1 meadowlark; 89.8 1 meadowlark; 89.9 1 meadowlark; 90.0 1 meadowlark; 90.1 1 meadowlark; 90.2 1 meadowlark; 90.3 1 meadowlark; 90.4 1 meadowlark; 90.5 1 meadowlark; 90.6 1 meadowlark; 90.7 1 meadowlark; 90.8 1 meadowlark; 90.9 1 meadowlark; 91.0 1 meadowlark; 91.1 1 meadowlark; 91.2 1 meadowlark; 91.3 1 meadowlark; 91.4 1 meadowlark; 91.5 1 meadowlark; 91.6 1 meadowlark; 91.7 1 meadowlark; 91.8 1 meadowlark; 91.9 1 meadowlark; 92.0 1 meadowlark; 92.1 1 meadowlark; 92.2 1 meadowlark; 92.3 1 meadowlark; 92.4 1 meadowlark; 92.5 1 meadowlark; 92.6 1 meadowlark; 92.7 1 meadowlark; 92.8 1 meadowlark; 92.9 1 meadowlark; 93.0 1 meadowlark; 93.1 1 meadowlark; 93.2 1 meadowlark; 93.3 1 meadowlark; 93.4 1 meadowlark; 93.5 1 meadowlark; 93.6 1 meadowlark; 93.7 1 meadowlark; 93.8 1 meadowlark; 93.9 1 meadowlark; 94.0 1 meadowlark; 94.1 1 meadowlark; 94.2 1 meadowlark; 94.3 1 meadowlark; 94.4 1 meadowlark; 94.5 1 meadowlark; 94.6 1 meadowlark; 94.7 1 meadowlark; 94.8 1 meadowlark; 94.9 1 meadowlark; 95.0 1 meadowlark; 95.1 1 meadowlark; 95.2 1 meadowlark; 95.3 1 meadowlark; 95.4 1 meadowlark; 95.5 1 meadowlark; 95.6 1 meadowlark; 95.7 1 meadowlark; 95.8 1 meadowlark; 95.9 1 meadowlark; 96.0 1 meadowlark; 96.1 1 meadowlark; 96.2 1 meadowlark; 96.3 1 meadowlark; 96.4 1 meadowlark; 96.5 1 meadowlark; 96.6 1 meadowlark; 96.7 1 meadowlark; 96.8 1 meadowlark; 96.9 1 meadowlark; 97.0 1 meadowlark; 97.1 1 meadowlark; 97.2 1 meadowlark; 97.3 1 meadowlark; 97.4 1 meadowlark; 97.5 1 meadowlark; 97.6 1 meadowlark; 97.7 1 meadowlark; 97.8 1 meadowlark; 97.9 1 meadowlark; 98.0 1 meadowlark; 98.1 1 meadowlark; 98.2 1 meadowlark; 98.3 1 meadowlark; 98.4 1 meadowlark; 98.5 1 meadowlark; 98.6 1 meadowlark; 98.7 1 meadowlark; 98.8 1 meadowlark; 98.9 1 meadowlark; 99.0 1 meadowlark; 99.1 1 meadowlark; 99.2 1 meadowlark; 99.3 1 meadowlark; 99.4 1 meadowlark; 99.5 1 meadowlark; 99.6 1 meadowlark; 99.7 1 meadowlark; 99.8 1 meadowlark; 99.9 1 meadowlark; 100.0 1 meadowlark.

at Lawrence 9:45 A.M.

April 9, 1963

Collection of mammals from trap line set last night:

1 <i>Microtus ochros</i>	40 sprung	79 not visited
2 <i>Microtus ochrogaster</i>	41 not visited	80 " "
3 not visited	42 sprung	81 sprung
4 <i>Peromyscus maniculatus</i>	43 sprung	82 not visited
5 sprung	44 <i>Synaptomys cooperi</i>	83 " "
6 <i>Reithro megalotis</i>	45 not visited	84 <i>Pero leucopus</i>
7 not visited	46 <i>Pero. manic</i>	85 <i>Pero leucopus</i>
8 " "	47 not visited	86 sprung
9 <i>Microtus ochrogaster</i>	48 " "	87 sprung
10 not visited	49 " "	88 not visited
11 " "	50 <i>Reithro meq</i>	89 sprung
12 <i>Synaptomys cooperi</i>	51 <i>Microtus ochros</i>	90 not visited
13 not visited	52 <i>Reithro meq</i>	91 " "
14 " "	53 <i>Pero. leucopus</i>	92 " "
15 " "	54 <i>Reithro meq</i>	93 <i>Pero. leucopus</i>
16 sprung	55 " "	94 <i>Reithro meq</i>
17 not visited	56 not visited	95 not visited
18 sprung	57 " "	96 " "
19 not visited	58 " "	97 <i>Pero. leucopus</i>
20 " "	59 " "	98 <i>Reithro meq</i>
21 " "	60 " "	99 not visited
22 <i>Pero. manic</i>	61 " "	100 not visited
23 sprung	62 " "	
24 not visited	63 " "	
25 " "	64 " "	
26 <i>Microtus ochros</i>	65 " "	
27 not visited	66 " "	
28 " "	67 sprung	
29 " "	68 not visited	
30 <i>Reithro. meq.</i>	69 " "	
31 not visited	70 <i>Pero. manic</i>	
32 " "	71 <i>Pero. leucopus</i>	
33 sprung	72 sprung	
34 not visited	73 not visited	
35 <i>Pero. manic</i>	74 " "	
36 <i>Reithro meq</i>	75 <i>Pero manic</i>	
37 not visited	76 not visited	
38 " "	77 " "	
39 " "	78 " "	

Summary

5 *Microtus ochrogaster*  
 6 *Peromyscus maniculatus*  
 9 *Reithrodontomys megalotis*  
 2 *Synaptomys cooperi*  
 6 *Peromyscus leucopus*

28

14 traps sprung  
 42 traps not visited

April 1, 1963

Preparation of mammals capture this A.M. from trapline set last night

630409-1	<i>Microtus ochrogaster</i>	164-41-20-12-54 gms
630409-2	" "	156-35-21-12-43 gms
630409-4	<i>Peromyscus maniculatus</i>	143-58-19-14-15 gms
630409-6	<i>Reithrodontomys megalotis</i>	132-61-17.5-11-8 gms
630409-9	<i>Microtus ochrogaster</i>	157-39-20.5-12-39 gms
630409-12	<i>Synaptomys cooperi</i>	137-22-20-11-39 gms
630409-22	<i>Peromyscus maniculatus</i>	150-56-18-14-23 gms
630409-26	<i>Microtus ochrogaster</i>	156-35-20-11-44 gms
630409-30	<i>Reithrodontomys megalotis</i>	126-58-17-11-8 gms.
630409-35	<i>Peromyscus maniculatus</i>	148-54-20-15-19 gms
630409-36	<i>Reithrodontomys megalotis</i>	130-60-17-11-10 gms
630409-44	<i>Synaptomys cooperi</i>	130-22-20-11-41 gms
630409-46	<i>Peromyscus maniculatus</i>	150-60-18-12-17 gms
630409-50	<i>Reithrodontomys megalotis</i>	132-61-17-11-9 gms.
630409-51	<i>Microtus ochrogaster</i>	139-32-20-11-30 gms
630409-52	<i>Reithrodontomys megalotis</i>	132-61-17-11-11 gms.
630409-53	<i>Peromyscus leucopus</i>	169-78-22-14-29 gms
630409-54	<i>Reithrodontomys megalotis</i>	129-61-16.5-11-9 gms
630409-55	" "	135-65-17-11-8 gms.
630409-70	<i>Peromyscus maniculatus</i>	143-54-19-13-18 gms
630409-71	" <i>leucopus</i>	174-80-23-16-24 gms.
630409-75	" <i>maniculatus</i>	167-71-23-15-25 gms
630409-84	" <i>leucopus</i>	170-78-22-14-24 gms
630409-85	" "	170-73-22.5-15-23 gms
630409-93	" "	183-80-22.5-16-30 gms.
630409-94	<i>Reithrodontomys megalotis</i>	139-66-17-12-9 gms
630409-97	<i>Peromyscus leucopus</i>	173-78-22.5-16-26 gms
630409-98	<i>Reithrodontomys megalotis</i>	137-61-17-12-11 gms

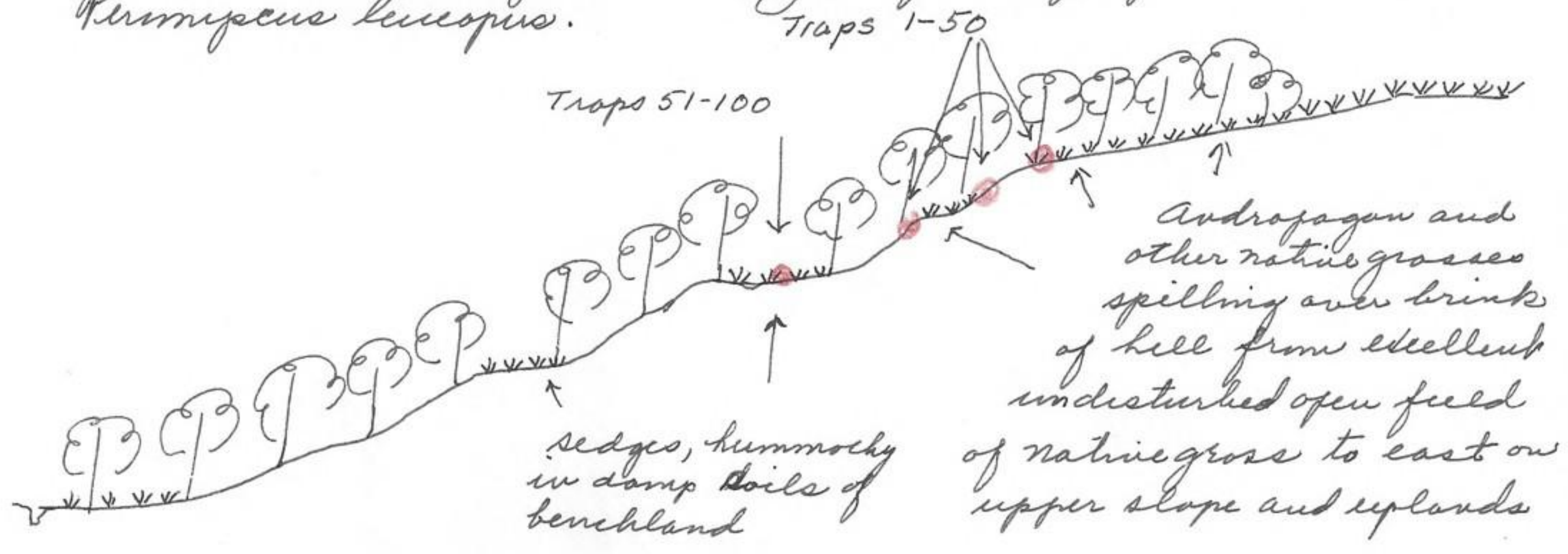
3 17/20 mi. S and 2 3/10 mi. W Clinton (center of town), Douglas Co., Kansas.

April 9, 1963

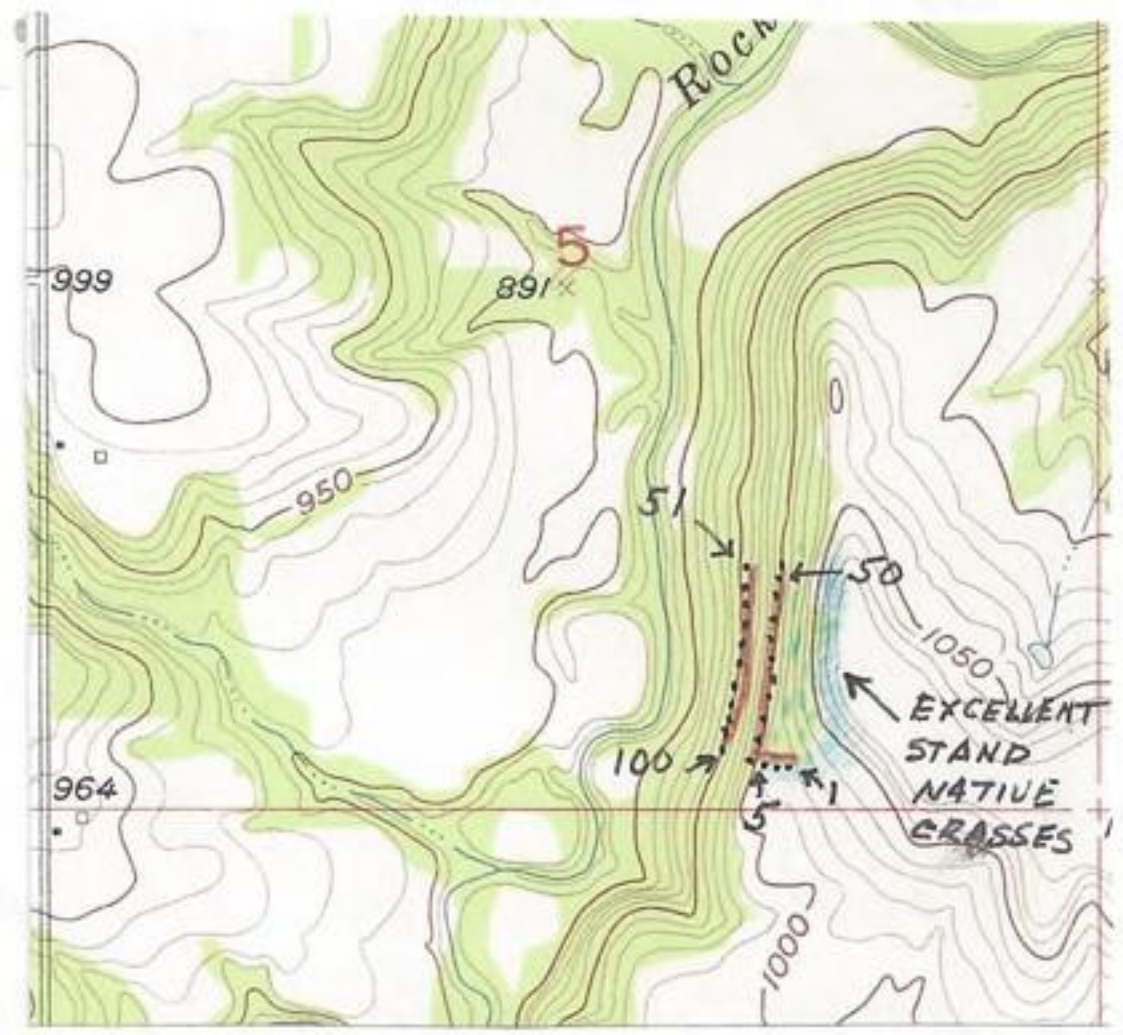
Set 100 traps on a sidehill of deciduous trees beginning with trap no. 1 at the above locality and continuing N along sidehill for 1000 feet (traps 1-50 at 20 foot intervals) along the upper edge of hill and traps 51-100 for 1000 feet on benchland below and parallel with upper set. This entire slope is undisturbed and the several crossonal benches offer good grasses and sedges for *Microtus* and *Peromyscus*. The slope was shaded by deciduous trees and not too suitable

for *Microtus ochrogaster* but good for *Pitymys nemoralis* and *Peromyscus leucopus*.

April 9, 1963



The general floor cover was weedy, brushy, downed timber, damp sedge benches and steep barren soils <sup>and rocks</sup> on steeper slopes below benchlands. Except for lack of permanent springs the community could be considered as favorable for *Synaptomys*. Community on upper slopes beyond trees are excellent for *Microtus ochrogaster* and possibly *Synaptomys*. Recently this area has been developed for grazing cattle and horses with new fences in several directions.



A few cattle had been put to graze in area perhaps ~~but~~ not longer than 2 days previously. These cattle will destroy the undisturbed condition of this climax slope. Skies overcast and rain is promised for to-night. Finished trap line at about 10 minutes after sundown. It was late twilight before a got back to car near bridge over Rock Creek.

3 17/20 mi. S and 2 3/10 mi. W Clinton (center of town), Douglas Co., Kansas  
 April 10, 1963

Checked trap line of 100 traps set last night. Left Lawrence 7:00 A.M., temp. 46°F, raining. Kept complete census from 5 end proposed dam. Followed regular highway to Clinton, thence SW on diagonal road to east middle border sec 31, thence S to bridge over Rock Creek. Left car 3/10 mile east of bridge on regular road. At 5 end dam at mileage 52.6; 54.6 meadowlark; 55.3 3 meadowlarks; 55.7 redwing; 1 meadowlark; 56.3 Clinton (center of town), 8 grackles, stopped raining; 56.6 redwing (over) →

56.7, 2 meadowlark; 56.8 1 meadowlark; 56.9 1 meadowlark; 57.6 redwing  
blackbird; 58.0 Cardinal; 58.5 meadowlark; 59.4 horned lark; 59.6  
meadowlark, 2 grackles; redwing; 59.8 2 meadowlarks; 59.9 2 mead-  
owlarks; 60.4 leaving diagonal road and now to S, 4 meadowlarks, red-  
wing; 60.6 meadowlark, shrike; 61.6 Cardinal, mourning dove;  
61.3 2 meadowlarks; 61.5 2 meadowlarks; 61.8 Cardinal, small  
birds; 62.1 30 Cowbirds, small birds; 62.3 small birds, 2 bluebirds;  
62.5 road to E; 62.6 bridge over Rock Creek, Cardinal; 62.9 end  
Census and parked car, now 7:45 A.M. one redtail to N. Checked traps  
and returned to car at 9:30 A.M. Returned to Lawrence same way (complete  
Census). Raining. 63.8 meadowlark; 65.0 5 grackles, mourning doves; 65.3 road  
to NE; 67.9 marsh hawk; 69.3 8 grackles; 69.4 Clinton, 4 grackles; 70.5  
2 starling; 70.6 Cardinal; 71.0 meadowlark, cold, windy, raw; 72.0  
2 meadowlarks; 72.2 2 horned larks, 73.1 south end proposed dam.  
Rain keeps birds down on ground and hidden.

April 10, 1963

mammals trapped (lost night set) and collected this A.M. April 10, 1963

1	<i>Microtus ochrogaster</i>	41	not visited	81	not visited
2	spring	42	spring	82	" "
3	<i>Reithrodontomys megalotis</i>	43	<i>Peromyscus leucopus</i>	83	spring
4	<i>Microtus ochrus</i>	44	not visited	84	not visited
5	<i>Microtus ochrus</i>	45	not visited	85	<i>Peromyscus leucopus</i>
6	" "	46	<i>Peromyscus leucopus</i>	86	not visited
7	<i>Peromyscus leucopus</i>	47	not visited	87	" "
8	not visited	48	<i>Peromyscus leucopus</i>	88	" "
9	" "	49	not visited	89	" "
10	" "	50	" "	90	<i>Peromyscus leucopus</i>
11	<i>Peromyscus leucopus</i>	51	<i>Peromyscus leucopus</i>	91	" "
12	<i>Peromyscus leucopus</i>	52	not visited	92	<i>Peromyscus leucopus</i>
13	not visited	53	" "	93	<i>Peromyscus leucopus</i>
14	" "	54	" "	94	not visited
15	<i>Peromyscus leucopus</i>	55	" "	95	" "
16	" "	56	spring	96	" "
17	not visited	57	not visited	97	" "
18	<i>Peromyscus leucopus</i>	58	<i>Peromyscus leucopus</i>	98	spring
19	" "	59	not visited	99	not visited
20	<i>Peromyscus leucopus</i>	60	" "	100	not visited
21	not visited	61	" "		
22	" "	62	<i>Pitymys nemoralis</i>		
23	<i>Peromyscus leucopus</i>	63	not visited		
24	not visited	64	<i>Peromyscus leucopus</i>		
25	" "	65	<i>Pitymys nemoralis</i>		
26	" "	66	not visited		
27	" "	67	" "		
28	<i>Peromyscus leucopus</i>	68	spring		
29	spring	69	<i>Peromyscus leucopus</i>		
30	<i>Peromyscus leucopus</i>	70	not visited		
31	not visited	71	<i>Peromyscus leucopus</i>		
32	" "	72	spring		
33	" "	73	<i>Peromyscus leucopus</i>		
34	<i>Reithro megalotis</i>	74	not visited		
35	spring	75	not visited		
36	not visited	76	<i>Peromyscus leucopus</i>		
37	<i>Reithro megalotis</i>	77	<i>Peromyscus leucopus</i>		
38	not visited	78	not visited		
39	not visited	79	spring		
40	not visited	80	spring		

Totals

3	<i>Reithrodontomys megalotis</i>
4	<i>Microtus ochrogaster</i>
27	<i>Peromyscus leucopus</i>
2	<i>Pitymys nemoralis</i>
36	total
11	traps sprung
53	traps not visited

April 10, 1963

April 10, 1963

Preparation of mammals caught this A.M.

630410-1	<i>Microtus ochrogaster</i>	153-36-20-12-41 gms
630410-3	<i>Reithrodontomys megalotis</i>	129-63-16.5-12-8 gms
630410-4	<i>Microtus ochrogaster</i>	145-32-20-11-41 gms
630410-5	" "	163-38-20-12-55 gms
630410-6	" "	150-30-19-11-42 gms
630410-7	<i>Peromyscus leucopus</i>	170-76-22-16-26 gms
630410-11	" "	190-88-22-15-32 gms
630410-12	" "	190-86-23-17-31 gms
630410-15	" "	178-77-23-17-26 gms
630410-16	" "	194-85-24-16-30 gms
630410-18	" "	185-85-22-16-28 gms
630410-19	" "	175-78-23-16-23 gms
630410-20	<i>Reithrodontomys megalotis</i>	144-72-17-13-10 gms
630410-23	<i>Peromyscus leucopus</i>	176-72-22-16-26 gms
630410-28	<i>Peromyscus leucopus</i>	166-72-22-16-24 gms
630410-30	" "	174-71-23-15-28 gms
630410-34	<i>Reithrodontomys megalotis</i>	138-68-17-12-11 gms
630410-37	" "	132-63-17-12-9 gms
630410-43	<i>Peromyscus leucopus</i>	188-81-22-17-28 gms
630410-46	" "	174-74-22-16-26 gms
630410-48	" "	178-81-23-16-29 gms
630410-51	" "	173-77-21.5-15-26 gms
630410-58	" "	177-73-23-15-24 gms
630410-62	<i>Pitymyus nemoralis</i>	128-24-16.5-9-31 gms
630410-64	<i>Peromyscus leucopus</i>	193-87-22-16-32 gms
630410-65	<i>Pitymyus nemoralis</i>	107-21-16.5-9-17 gms
630410-69	<i>Peromyscus leucopus</i>	187-83-23-16-24 gms
630410-71	" "	187-80-23-17-30 gms
630410-73	" "	183-77-22-17-32 gms
630410-76	" "	170-74-23-17-25 gms
630410-77	" "	140-60-21.5-14-11 gms
630410-85	" "	185-82-22-16-31 gms
630410-90	" "	170-72-22-16-22 gms
630410-91	" "	173-75-22-16-25 gms
630410-92	" "	180-76-22.5-16-30 gms
630410-93	" "	187-82-22.5-16-29 gms

2 17/20 mi. E and 4/10 mi. S Clinton (center of town), Douglas Co., Kansas

April 10, 1963

This afternoon made survey of valley - sidehill contact between a point 1 3/10 mi E and 1 2/10 mi. S Clinton. and the above locality where traps were set.



This area is characterized by broad flood-plains covered with deciduous trees, especially those associated with river bottoms. The lowlands is poorly drained and damp soils prevail but in no case did I see evidence of permanent springs or bogs. The trees + shade keep the sedge from developing into useable community for *Microtus ochrogaster* or *Synaptomys* - some *Pitymys* may inhabit the area. Many of the trees are of second growth but approaching climax. Solitude and quiet prevail and birds are uncommon. Trail used for horse riding have been developed by Mr Collins. This area would be good for census of birds + mammals as it represents the best development of valley floor forests. At locality above set 100 traps as indicated. The damp soils are outlined in red. Traps in grasses where soils were unprofitable for cultivation or grazing; in an area neglected and grown to grasses + weeds. Mr. Whitaker, the owner, told me that the dam (S end) will be placed about 80 feet west of his house. This new site changes all previous records which list the S end of dam at a point 9/10 mi. NE of the actual dam site. Returned same way to car. Enroute at twilight noted 3 cottontail rabbits (2 together), 3 turkey vultures roosting in tops of high sycamore trees, 1 red-headed woodpecker, 1 great horned owl at mouth of canyon east of car. Cardinals found it difficult to leave bushes + trees when disturbed (late twilight). Other birds noted but not recorded.



April 11, 1963

mammals from trapline set last night, 20 feet apart.

April 11, 1963

1	<i>Synaptomys cooperi</i>	41	81
2		42 <i>m. ochro</i>	82
3	<i>Peromyscus leucopus</i>	43 <i>Pero. manic.</i>	83
4	<i>m. ochro</i>	44 <i>Reithro megalotis</i>	84 sprung
5	<i>m. ochro</i>	45	85 <i>Reithro meg.</i>
6	<i>Microtus ochrogaster</i>	46 <i>m. ochro</i>	86
7	<i>m. ochro</i>	47 <i>Microtus ochro.</i>	87
8		48	88
9	sprung	49	89 <i>Blarina brevicauda</i>
10		50	90
11	<i>Microtus ochro</i>	51	91
12	sprung	52 <i>Microtus ochro</i>	92 <i>Microtus ochrogaster</i>
13		53 sprung	93
14		54	94
15		55	95
16		56	96.
17	sprung	57	97 sprung
18		58	98
19	<i>m. ochro</i>	59	99
20	<i>m. ochro</i>	60 <i>m. ochro</i>	100
21	sprung	61	
22	<i>m. ochro</i>	62 <i>Microtus ochro</i>	
23		63	
24	sprung	64 <i>m. ochro</i>	
25		65 sprung	
26		66	
27	sprung	67	
28		68 <i>Microtus ochro.</i>	
29		69	
30		70	
31		71	
32		72	
33		73 <i>Reithro megalotis</i>	
34		74 <i>Pitymys nemoralis</i>	
35		75 sprung	
36		76	
37		77	
38		78 <i>m. ochro</i>	
39		79 <i>Pero. maniculatus</i>	
40	sprung	80	

Summary

- 1 *Synaptomys cooperi*
  - 1 *Peromyscus leucopus*
  - 2 *Peromyscus maniculatus*
  - 1 *Blarina brevicauda*
  - 3 *Reithrodontomys megalotis*
  - 18 *Microtus ochrogaster*
  - 1 *Pitymys nemoralis*
- 
- 27 Total.

11 traps sprung  
 62 traps not visited

April 11, 1963

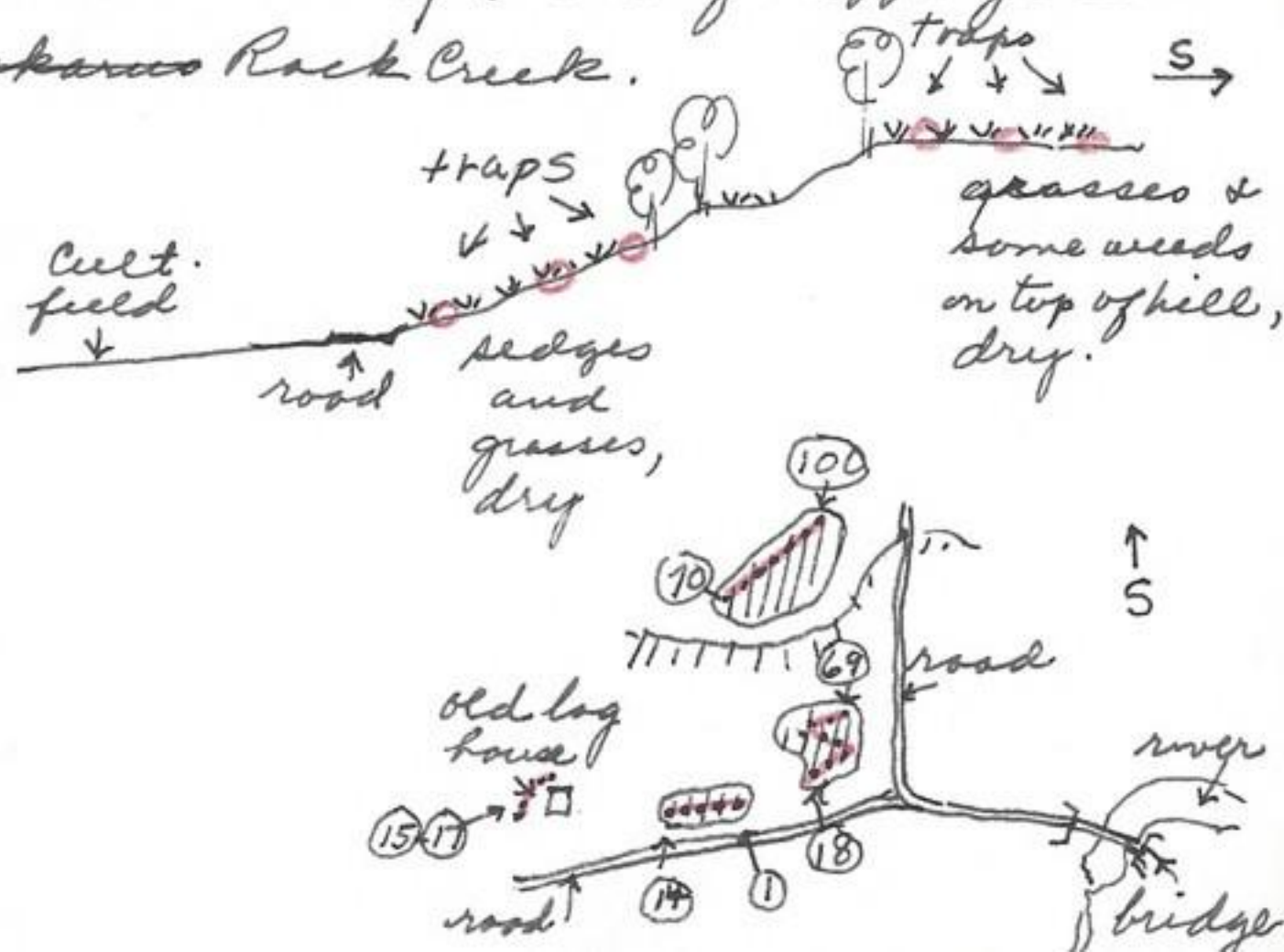
Preparation of mammals caught last night:

SK. ONLY	630411-1	<i>Synaptomys cooperi</i>	142-21-20-11-46 gms ♂ testes 5mm
SK. ONLY	630411-3	<i>Peromyscus leucopus</i>	188-86-22-15-29 gms ♂ testes 10mm
	630411-4	<i>micratus ochrogaster</i>	145-32-20-11-34 gms
	630411-5	" "	167-40-20-11-54 gms
	630411-6	" "	147-36-19.5-11-33 gms
	630411-7	" "	157-36-19-12-42 gms
	630411-11	" "	118-28-18.5-9-17 gms
	630411-19	" "	150-34-19.5-12-38 gms ♀, ut normal
	630411-20	" "	159-37-20-10-42 gms
	630411-22	" "	150-32-18-10-35 gms
	630411-42	" "	150-32-18-10-35 gms destroyed
	630411-43	<i>Peromyscus maniculatus</i>	135-50-18-14-14 gms
	630411-44	<i>Reithrodontomys megalotis</i>	[141]-[57]-17-12-15 gms
	630411-46	<i>micratus ochrogaster</i>	151-34-21-11-44 gms
	630411-47	" "	154-36-19-11-40 gms
	630411-52	" "	160-36-19-11-52 gms ♀ 2x2 emb. 8mm
	630411-60	" "	162-38-20-11-46 gms
	630411-62	" "	155-36-21-11-43 gms
	630411-64	" "	145-30-18-10-41 gms ♀ ut. normal
	630411-68	" "	159-34-20- -35 gms
	630411-73	<i>Reithrodontomys megalotis</i>	128-58-17-12-9 gms ♂ testes 2mm
	630411-74	<i>Petymys nemoralis</i>	125-23-18-10-31 gms
	630411-78	<i>micratus ochrogaster</i>	168-42-20-11-46 gms
	630411-79	<i>Peromyscus maniculatus</i>	[25]-[40]-19-14-17 gms ♂ testes 10mm
SK. ONLY	630411-85	<i>Reithrodontomys megalotis</i>	143-70-17-12-10 gms ♀ 3x3 emb. 5mm
	630411-89	<i>Blarina brevicauda</i>	117-24-14.5- -20 gms
	630411-92	<i>micratus ochrogaster</i>	159-36-20-11-49 gms

4 4/10 mi. S and 2 8/10 mi. W Clinton (center of town) Douglas Co., Kansas

April 11, 1963

Set 100 traps <sup>20 feet apart</sup> on slope of hill at above locality (center of trapping area about 300 feet ESE of bridge over Wakarusa Rock Creek).



4 4/10 mi S and 2 8/10 mi W Clinton (center of town), Douglas Co., Kansas

April 12, 1963

Checked trap line set last night. Left Lawrence 7:30 A.M., temp 40°F. Followed same route as (April 10) from S end proposed dam to Clinton, thence diagonal road to SW, thence S to bridge at trapping area. Kept complete census of birds noted 100 feet either side of road as has been the usual procedure. Hawks may be recorded beyond this limit. At dam mileage 75.4; 75.6 meadowlark, redwing (this means 1 individual redwing blackbird, otherwise a number is given, example 4 redwings); 75.8 redwing; 76.4 redwing; 76.7 bridge over Rock Creek; 76.9 starling (up to now I have not recorded starling or English Sparrows in census); 76.9 redwing; 77.9 redwing; 78.5 meadowlark; 79.2 Clinton; 79.3 2 grackles, meadowlark; 79.4 3 horned lark, meadowlark; 80.5 Cardinal; 80.7 meadowlark, 3 horned larks; 81.1 meadowlark; 81.3 3 grackles, 2 horned larks; 81.5 horned larks; 82.1 meadowlark; 82.5 redwing; 83.1 horned lark; 83.2 road now to S; 83.3 redwing; 83.5 shrike; 83.9 meadowlark; 84.0 2 meadowlarks; 84.2 meadowlark; 84.5 Cardinal; 84.8 redwing and small birds; bridge over Rock Creek 85.3 G.H. owl calling NE of bridge. parked car and picked up traps. noted that there is less microtine activity under fine, heavily matted grass. It is best where trails can occasionally be seen and grass or weeds included to give overhead protection. Made complete census on return trip (some way). 85.4 mourning dove; 85.7 mourning dove, redwing; 85.8 mourning dove, meadowlark; 85.9 2 cardinals, 3 crows; 86.1 cardinal, some small birds; 86.2 cardinal, small birds; 86.4 meadowlark; 86.5 mourning dove; 86.7 2 meadowlarks; 86.8 meadowlark; 86.9 grackle; 87.0 2 kingbirds (size of Cassins); 87.1 meadowlark, mourning dove; 87.3 2 redwings, 2 crows; 87.4 redwing; 87.5 meadowlark; 87.9 meadowlark; 88.2 grackle, meadowlark, redwing; 88.4 meadowlark; 88.5 meadowlark, starling; 89.1 redwing, horned lark; 89.3 meadowlark; 89.4 meadowlark; 89.6 meadowlark; 89.9 meadowlark; 90.1 redwing; 91.0 2 meadowlarks; 91.3 redwing, meadowlark; 91.5 Clinton; 3 grackles; 91.9 meadowlark; 92.0 meadowlark, redwing; 92.4 2 meadowlarks; 92.7 2 redwings, 1 meadowlark; 92.8 Cardinal; 93.1 meadowlark; 93.9 bridge over Rock Creek; 94.0 2 meadowlarks; 94.7 meadowlark; 94.9 redwing; 95.1 S end proposed dam. The time of day is significant in making census of birds, for example on route to trapping area noted 11 meadowlarks and on return 27.

Apr 12, 1963

April 12, 1963

Checked trapline set last night, traps 20 feet apart. Temp 8:00 41°F. sky clear.

1	<i>m. ochro</i>	39	77 sprung
2	<i>Reithus meg.</i>	40	78 <i>m. ochro</i>
3	" "	41	79 sprung
4	<i>Reithus meg.</i>	42	80 sprung
5		43	81 <i>m. ochro</i>
6		44	82 sprung
7		45	83
8		46	84
9		47	85
10		48	86
11		49	87
12		50	88
13		51	89 sprung
14		52	90 sprung
15		53	91
16		54	92 sprung
17		55	93
18	<i>m. ochro</i> (in trap 15	56	94
19	minutes after sundown last night)	57	95
20		58	96 <i>m. ochro</i>
21		59	97 <i>m. ochro</i>
22		60 sprung	98 <i>m. ochro</i> .
23	<i>m. ochro</i>	61	99 <i>Reithus meg</i>
24		62 <i>Blarina brevicauda</i>	100 " "
25	<i>Peromyscus leucopus</i>	63	
26		64 <i>m. ochro</i>	
27	<i>m. ochro</i>	65	
28	<i>m. ochro</i>	66	
29		67	
30		68	
31	sprung	69	
32		70 <i>m. ochro</i>	
33	sprung	71 <i>m. ochro</i>	
34		72	
35		73	
36		74 <i>m. ochro</i>	
37		75 <i>m. ochro</i>	
38		76 <i>m. ochro</i>	

Summary

- 16 *Microtus ochrogaster*
- 5 *Reithrodontomys megalotis*
- 1 *Blarina brevicauda*
- 1 *Peromyscus leucopus*

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- 23 Total.
  
- 10 traps sprung
- 67 traps not visited

April 12, 1963

Preparation of mammals trapped this A.M. from trapline set last night:

630412-1	<i>Microtus ochrogaster</i>	142-33-19-12-34gms
630412-2	<i>Reithrodontomys megalotis</i>	127-57-17-12-7gms
630412-3	" "	131-58-17-12-9gms
630412-4	" "	137-61-17-11-9gms
630412-18	<i>Microtus ochrogaster</i>	156-35-20-10-41gms
630412-23	" "	155-38-20-12-43gms
630412-25	<i>Peromyscus leucopus</i>	175-72-22.5-16-27gms
630412-27	<i>Microtus ochrogaster</i>	145-32-19-11-34gms ♀ 2x1 plac. scars
630412-28	" "	143-34-19-11-28gms
630412-62	<i>Blarina brevicauda</i>	109-23-15- -14gms
630412-64	<i>Microtus ochrogaster</i>	154-34-20-11-35gms
630412-70	" "	154-34-19-11-33gms
630412-71	" "	150-33-20-11-33gms
630412-74	" "	145-29-20-11-39gms
630412-75	" "	156-40-20-12-38gms ♂ testes 13mm
630412-76	" "	164-39-21-12-42gms
630412-78	" "	136-62-17-12-11gms
630412-81	" "	158-33-20-12-44gms
630412-96	" "	127-30-18-9-20gms
630412-97	" "	150-33-19.5-11-34gms ♂ testes 13mm
630412-98	" "	155-34-20-13-44gms
630412-99	<i>Reithrodontomys megalotis</i>	137-63-16.5-12-11gms
630412-100	" "	134-62-16.2-12-9gms

~~4 4/10 mi. S and 2 8/10 mi. W Clinton (center of town) Douglas Co., Kansas.~~

April 12, 1963

~~Left Lawrence at~~

University of Kansas, Lawrence, Douglas Co., Kansas

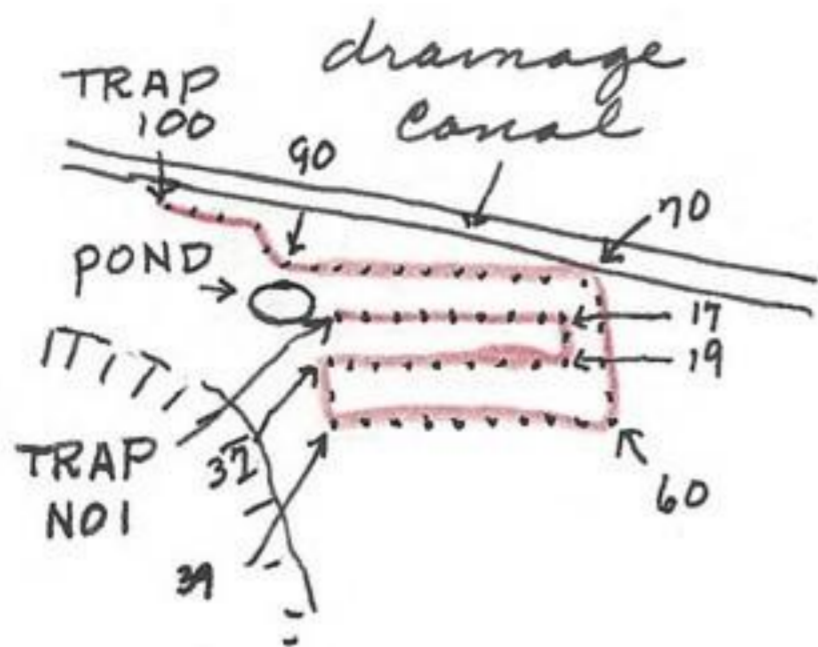
April 12, 1963

Took several color (35mm) photos on campus. Photo 630412-101 of red bud and other flowering trees immediately west of Green Law Building. Photo 630412-102 of red bud east of Museum of Natural History. Photo 630412-103 of one of the *fadtermies* on campus (NE) showing large spreading elm tree. These shots were taken with Kodachrome II film. Day slightly hazy.

7/10 mi. N and 900 ft E Clinton (center of town), Douglas Co., Kansas

April 12, 1963

Set 100 traps in the general area of the pond. The above locality is the pond. All traps set 20 feet apart and in open field of meadow grasses and sedges (see previous trapping of this same general area). The trap lines were not controlled by drainage courses and runways were random. All traps set in runways, most of them seemed old and not frequently used. Completed trapping at sundown. Day clear and cool. These meadows have an occasional



trail used by cattle but for all tense and purposes the area is not affected by trampling of these animals. Soils from dry to wet but mostly damp.

7/10 mi. N and 900 ft E Clinton (center of town), Douglas Co., Kansas

April 13, 1963

Inspected trap line of 100 traps set last night. Left Lawrence 7:40 A.M. Temp 44° F, skies cloudy but blue when visible. Temp. last night 40° F. Between Lawrence and Clinton Reservoir area noted 2 shrubs together, usually one sees only singles. Made complete census of birds from N end proposed dam to trapping area. mileage at N end dam 35.2, redtail in tree 300 to the NE, 2 cardinals and some small birds. It is difficult to identify and record the small birds when driving; 35.3 meadowlark, redwing; 35.5 meadowlark; 35.8 meadowlark; 36.8 bridge over Wakarusa, cardinal; 36.9 crow; 37.2 2 small sparrows; 37.3 horned lark; 37.5 shrub, road turn S to Clinton. 37.6 left car where it crosses dike on main road to Clinton. On trap line noted 1 greater yellowlegs; 2 Wilson snipe and quail calling from field to N. muskrat in drainage ditch, 2 swamp sparrows 300' W of pond. 8 redwings on territories, 2 meadowlarks; finished trap line at 8:40 A.M. and returned to car. Left car 8:40 (will use valley road to Clinton up hill, thence to E. 38.0 2 jays, 1 cardinal, some small birds. 38.1 meadowlark; 38.3 horned lark; 38.4 several grackles, 38.5 Clinton; 38.7 robin; 39.0 horned lark; 39.1 redwing, meadowlark; 39.5 meadowlark; 39.6 meadowlark, mourning dove; 40.1 blue bird; 40.5 mourning dove; 41.3 meadowlark; 42.2 S end proposed dam. (this location is east of the actual dam site as determined by Corp of Engineers.

April 13, 1963

Result of trapline set last night and inspected this A.M. between 8:00 and 8:40 A.M. Temp. last night 40°F, now at 8:00 44°F.

1	Microtus ochrus	40	Microtus ochrus	79	not visited
2	Reithro meg	41	not visited	80	Reithro. meg.
3	not visited	42	" "	81	not visited
4	sprung	43	" "	82	" "
5	Reithro meg.	44	sprung	83	" "
6	Microtus ochrus	45	sprung	84	Reithro meg
7	not visited	46	sprung	85	not visited
8	" "	47	not visited	86	sprung
9	" "	48	Reithro meg	87	Microtus ochrus
10	" "	49	not visited	88	" "
11	" "	50	" "	89	not visited
12	" "	51	" "	90	Reithro meg.
13	Microtus ochrus	52	" "	91	Microtus ochrus
14	" "	53	" "	92	sprung
15	Microtus ochrus	54	" "	93	not visited
16	not visited	55	Microtus ochrus	94	Reithro meg.
17	" "	56	not visited	95	sprung
18	" "	57	" "	96	Microtus ochrus
19	sprung	58	" "	97	Microtus ochrus
20	Reithro meg.	59	" "	98	" "
21	not visited	60	Microtus ochrus	99	sprung
22	" "	61	not visited	100	Microtus ochrus
23	Microtus ochrus	62	" "		
24	not visited	63	Microtus ochrus		
25	" "	64	Microtus ochrus		
26	" "	65	not visited		
27	" "	66	" "		
28	" "	67	Microtus ochrus		
29	Microtus ochrus	68	" "		
30	not visited	69	Reithro meg.		
31	" "	70	not visited		
32	" "	71	Microtus ochrus		
33	" "	72	" "		
34	" "	73	sprung		
35	sprung	74	not visited		
36	Microtus ochrus	75	Microtus ochrus		
37	not visited	76	not visited		
38	Reithro meg	77	" "		
39	Reithro. meg	78	" "		

Summary

11 Reithrodontomyx megalotis  
 25 Microtus ochrogaster  
 36 total  
 11 traps sprung  
 53 traps not visited

April 15, 1963

Preparation of mammals caught last night and collected on trap line this morning.

630413-1	<i>Microtus ochrogaster</i>	147-35-18-11-39gms
630413-2	<i>Reithrodontomys megalotis</i>	137-65-17-13-12gms
630413-5	" "	130-60-16.5-12-10gms
630413-6	<i>Microtus ochrogaster</i>	163-40-20-12-45gms
630413-13	" "	154-32-20-12-43gms
630413-14	" "	151-34-20-12-40gms
630413-15	" "	150-67-17-12-12gms ♂ testes 2 mm
630413-20	<i>Reithrodontomys megalotis</i>	134-60-17-13-12gms
630413-23	<i>Microtus ochrogaster</i>	108-27-20-10-18gms destroyed
630413-29	" "	165-44-21-12-57gms
630413-36	" "	160-38-19-12-48gms
630413-38	<i>Reithrodontomys megalotis</i>	126-55-16.2-12-10gms
630413-39	" "	[110]-[30]-16.5-12-9gms
630413-40	<i>Microtus ochrogaster</i>	150-69-17.5-11-13gms
630413-48	<i>Reithrodontomys megalotis</i>	134-60-16-11-12gms
630413-55	<i>Microtus ochrogaster</i>	112-28-19-10-15gms
630413-60	" "	131-29-19.5-11-28gms
630413-63	" "	108-26-18-10-13gms
630413-64	" "	143-34-19-10-46gms
630413-67	" "	153-35-20-12-53gms
630413-68	" "	163-38-21-12-52gms
630413-69	<i>Reithrodontomys megalotis</i>	128-54-16.5-12-9gms
630413-71	<i>Microtus ochrogaster</i>	148- <del>74</del> -18-12-10gms
630413-72	" "	156-35-19-12-50gms
630413-75	" "	160-35-19-12-70gms
630413-80	<i>Reithrodontomys megalotis</i>	122-55-17-12-9gms
630413-84	" "	139-67-17-12-12gms ♂ testes 2 mm
630413-87	<i>Microtus ochrogaster</i>	158-37-21-12-47gms
630413-88	" "	122-28-19.5-11-24gms
630413-90	<i>Reithrodontomys megalotis</i>	137-61-17-12-10gms
630413-91	<i>Microtus ochrogaster</i>	156-35-19.5-12-53gms
630413-94	<i>Reithrodontomys megalotis</i>	128-59-17-13-9gms
630413-96	<i>Microtus ochrogaster</i>	142-32-20.5-12-40gms
630413-97	" "	163-36-21-13-56gms
630413-98	" "	140-34-20-11-28gms
630413-100	" "	164-40-20-12-50gms

Lawrence, Douglas Co., Kansas  
April 16, 1963

Noted chimney swifts in Lawrence (A.M) for first time this season. They were in normal number (summer population)



1 1/10 mi. S and 3 mi 200ft W Clinton, Douglas Co., Kansas

April 19, 1963

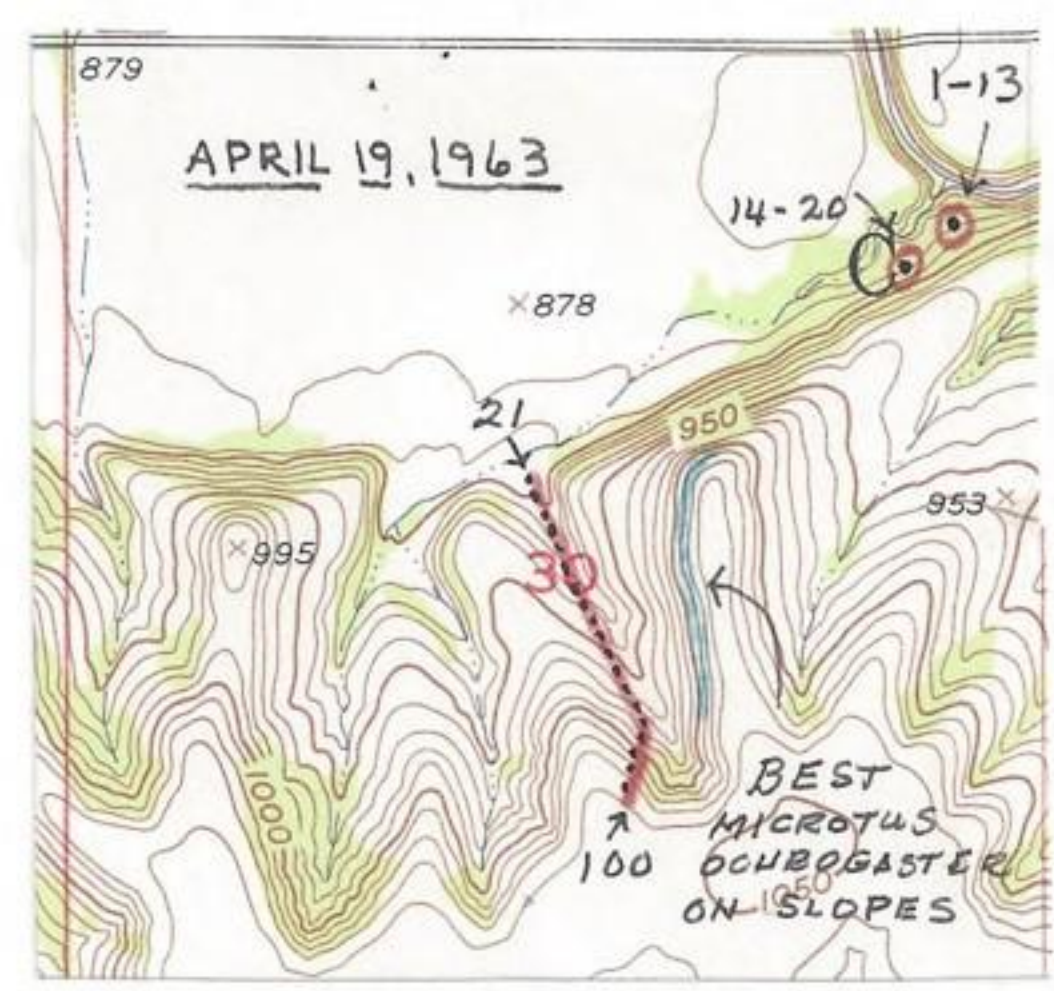
Set 20 traps at above locality (traps 1-20) and at a point 3 9/20 mi. W and 17/20 mi. S Clinton, Douglas Co., Kansas set 80 traps. The first 13 traps were in bog (see previous date Feb 22, 1963 for description of area) and traps 14-20 in another wet area approximately 400 feet SW of the main bog. Traps 21-100 were from mouth of a canyon at valley level define as above locality and to top of ridge to the south. Traps placed mainly near bottom of canyon on slope.



This canyon and canyon to east have not been grazed for many years and the native grasses are covering nearly all slopes.

To the west the range is grazed to almost lowlike in appearance.

Enroute to trapping area made complete census of birds and mammals. These birds & mammals were within 100 feet on either side of road. Some small less conspicuous birds were not identified. Mileage at N end of proposed dam 13.8, wind up to 35 mi per hour and from W. 14.2



14.2 killdeer; 14.5 horned lark; 14.8 horned lark; 15.2 crow; 15.4 bridge over Wakarusa River; 15.8 sparrow hawk; 16:0 passing road that goes to Clinton; 16.6 opposite bridge that crosses Wakarusa; 17.3 cardinal; 17.6 main road from Clinton (now going W) 18.4 bridge over Wakarusa; 19.1 road now to S; 20.0 18 Harris sparrows, 2 doves, 1 redwing at corner where road turns SSW, 20.4 redwing, mourning dove; 20.9 new to S, 1 turkey vulture; 21.1 bridge across Wakarusa, left car here and walked S to trap area at bog near mouth of drainage from SW. Set traps from about 1 1/2 hours before twilight. In bog set traps according to the following pattern.



At twilight took 2, *Synaptomys cooperi* at twilight in traps numbers 2 and 15. Well give numbers in tomorrows listing. a redtail hawk called as if it had a nest between bog & mouth canyon to SW. One mourning dove nest of 2 eggs, nest 3' high at trap 24. Tree dead but many limbs gone, protection. Used old nest lined with feathers. no attempts to reconstruct. Towhee on hillside above smaller bog. At about sundown a *S. blueheron* flew W up river valley. 1 cottontail in each of two main trapping areas.

April 19, 1963

1 1/10 mi. S and 3 mi 200 ft W Clinton, Douglas Co., Kansas

April 20, 1963

April 20, 1963

Inspected trap line set in bog areas (traps 1-13 and 14-20). also checked trap line (traps 20-100) in canyon SW of bog in locality 3 7/20 mi. W and 1 7/20 mi. S Clinton, Douglas Co., Kansas. Left Lawrence 7:30 A.M. Temp 52°F, sky clear, no wind. Annette P. accompanied. Followed highway to Stull. Kept <sup>incomplete</sup> record from Stull. Left Stull at 59.7 mileage and went S. 61.3 marsh hawk; 61.6 mound, now E, 2 turkey vultures; 62.3 meadow lark, 64.4 crossroads now to S 66.2 bridge across Wakarusa (at point where we left car and walked S to side of valley. On floor of valley near bridge counted 28 horned larks in an area where there were only a few during the winter months. As we approached the bog area noted 1 crow and 2 blue jays in area. Redtail calling about 800 ft to SW of first bog. The first bog shows extensive cutting of sedges and appears to be most favorable for microtines and especially Synaptomys. Only 2 Synaptomys were taken and no other traps sprung. They must return to the bog after winter months. Continued SW along base of slope and collected another Synaptomys in second bog area. This area also appeared to have more microtines than the actual number caught. Traps 20-100 in canyon were checked. all traps were placed in runways, some not as fresh as those continually used. Synaptomys are occasionally taken from old runways. There did not seem to be colonial development in Synaptomys in this general prairie expanse. The best trails were on slope just above creek bed but extended in all directions <sup>from creek</sup> to top of hill. There is a great host of birds in this canyon. Two mourning dove nests were located with 2 eggs each. On return we followed ridge on east side of canyon. This ridge is flat. On the west edge of ridge the Andropogon is better developed and the greatest number of runways of M. ochrogaster are there. Photo 630420-101 of Annette and canyon to NE. taken at head on W side.

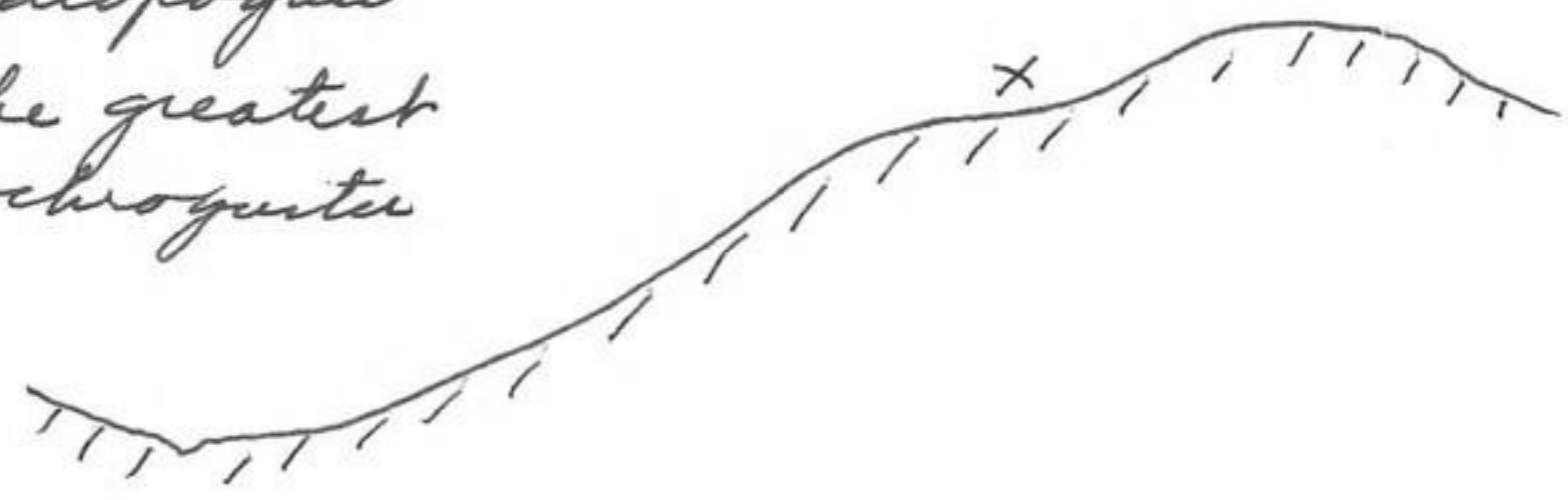


Photo 630420-102 of Annette and ridges to W taken from N end of flat ridge. Returned to car. Mileage at bridge 66.3. consec 4 vultures circling over area of sportsman's lake to N. Continued along valley road to NE end. at 7.1 killed deer, meadow lark; 7.6 horned lark; 7.8 m. dove, meadow lark; 7.9 2 meadowlarks; 8.0 meadowlark; 8.3 road to east; 8.7 meadowlark; 9.0 bridge over waka 9.8 road to N; 9.8 cardinal; 10.9 blue jay; 11.6 shrike; 11.7 2 crows; 11.8 2 crows; 12.0 bridge over wakarusa. 13.7 N end proposed Clinton Res. dam.

April 20, 1963

Inspection of trapline set last night. between 8:00 A.M. and 9:30 A.M. Temp. 52°F at 7:30 A.M. night clear. All traps in runways.

1 not visited	39 not visited.	77 not visited
2 " "	40 " "	78 m. ochro
3 <i>Synaptomys cooperi</i>	41 <i>Synaptomys cooperi</i>	79 <i>Reithrodontomys</i>
4 not visited	42 m. ochro.	80 not visited
5 " "	43 sprung	81 m. ochro
6 " "	44 not visited	82 not visited
7 <i>Synaptomys cooperi</i>	45 " "	83 " "
8 not visited	46 <i>Reithrodontomys</i>	84 m. ochro
9 " "	47 not visited	85 sprung
10 " "	48 m. ochro	86 sprung
11 " "	49 m. ochro.	87 m. ochro.
12 " "	50 sprung	88 <i>Synaptomys cooperi</i>
13 " "	51 not visited	89 sprung
14 " "	52 " "	90 sprung
15 <i>Synaptomys cooperi</i>	53 m. ochro	91 sprung
16 not visited	54 not visited	92 not visited
17 " "	55 m. ochro	93 " "
18 " "	56 m. ochro	94 m. ochro
19 " "	57 not visited	95 not visited
20 " "	58 " "	96 m. ochro
21 " "	59 m. ochro	97 not visited
22 m. ochro	60 m. ochro	98 <i>Reithrodontomys</i>
23 m. ochro	61 sprung	99 not visited
24 not visited	62 m. ochro	100 " "
25 " "	63 m. ochro	
26 " "	64 <i>Synaptomys cooperi</i>	
27 " "	65 not visited	
28 " "	66 " "	
29 <i>Synaptomys cooperi</i>	67 sprung	
30 sprung	68 not visited	
31 not visited	69 " "	
32 m. ochro	70 <i>Reithrodontomys</i>	
33 not visited	71 m. ochro.	
34 " "	72 <i>Reithrodontomys</i>	
35 m. ochro	73 not visited	
36 m. ochro	74 " "	
37 sprung	75 sprung	
38 not visited	76 <i>Synaptomys cooperi</i>	

## Summary

22	<i>Microtus ochrogaster</i>
8	<i>Synaptomys cooperi</i>
5	<i>Reithrodontomys megalotis</i>
35	total
12	traps sprung
53	traps not visited

April 20, 1963

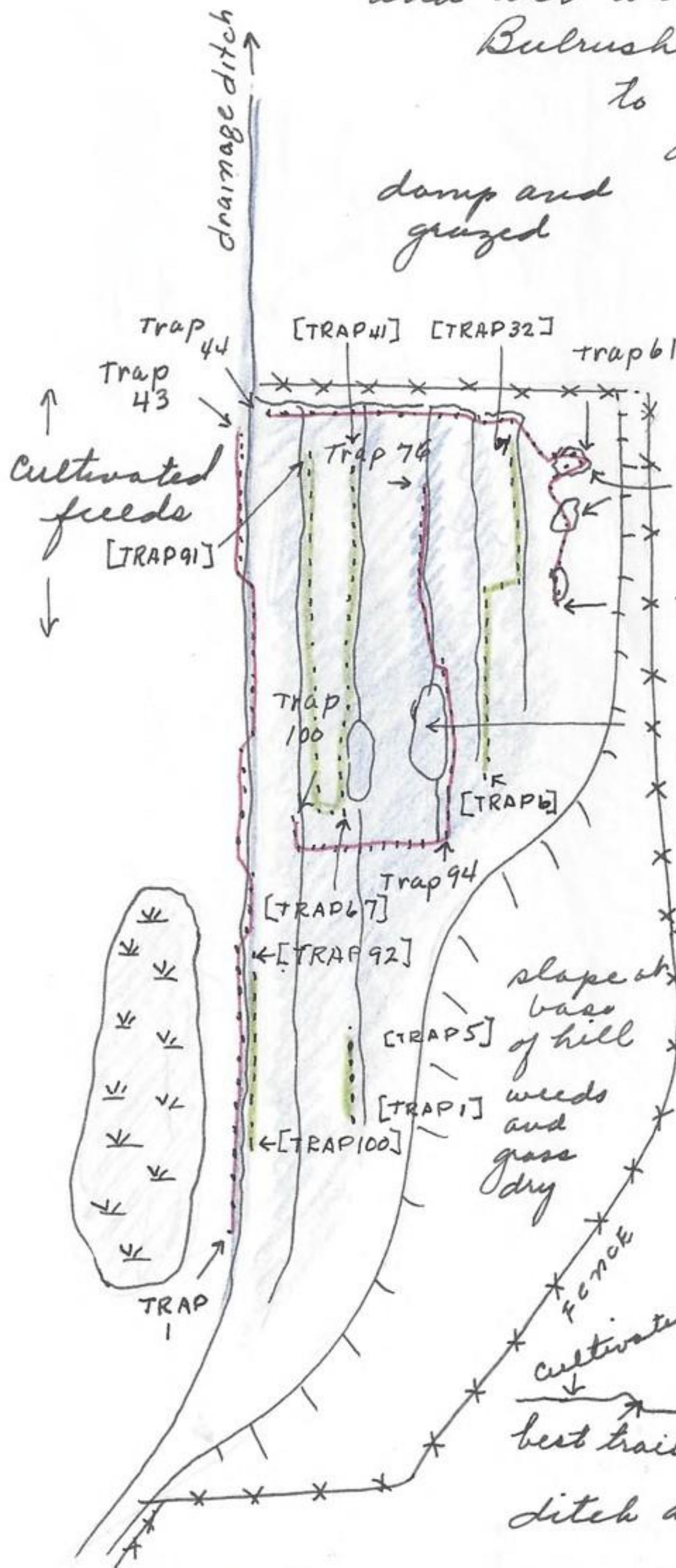
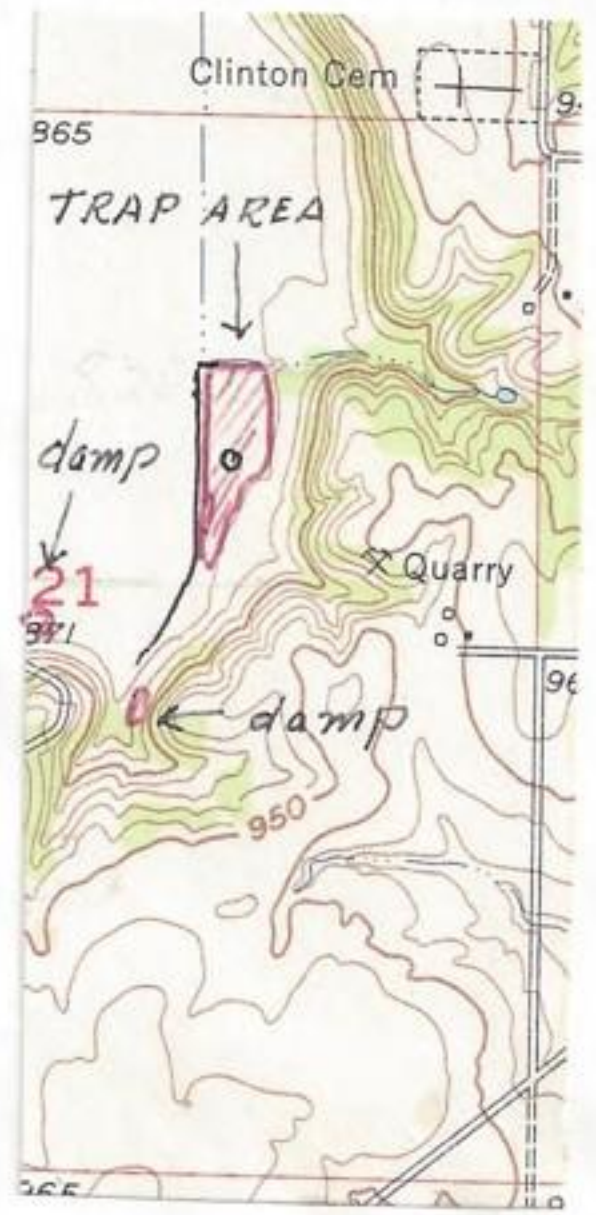
Preparation of mammals caught from traps set last night.

April 20, 1963

630420-3	<i>Synaptomys cooperi</i>	131-17-20-10-41 gms
630420-7	" "	118-20-18-11-27 gms
630420-15	" "	126-21-20-11-41 gms
630420-22	<i>Microtus ochrogaster</i>	147-27-20-11-41 gms
630420-23	" "	150-34-20-11-39 gms
630420-29	<i>Synaptomys cooperi</i>	130-21-19-11-38 gms
630420-32	<i>Microtus ochrogaster</i>	157-35-19-12-45 gms
630420-35	" "	167-38-21.5-12-50 gms
630420-36	" "	156-35-19-13-45 gms
630420-41	<i>Synaptomys cooperi</i>	128-21-21-10-38 gms
630420-42	<i>Microtus ochrogaster</i>	162-41-21-12-43 gms
630420-46	<i>Reithrodontomys megalotis</i>	133-62-17-12-9 gms
630420-48	<i>Microtus ochrogaster</i>	148-35-19.5-12-41 gms
630420-49	" "	159-39-22-13-45 gms ♀ ut normal
630420-53	" "	123-31-20-10-21 gms ♀ ut normal
(destroyed 630420-55)	" "	115-28-20-10-20 gms, ♂ testes 6.5 mm
630420-56	" "	158-35-21-13-40 gms
630420-59	" "	161-36-21-13-45 gms
630420-60	" "	163-38-21-13-50 gms ♀ 2x1 emb 17 mm
630420-62	" "	153-36-22-11-47 gms
630420-63	" "	150-36-21-12-39 gms ♂ testes 10 mm
630420-64	<i>Synaptomys cooperi</i>	124-22-20-28 gms
630420-70	<i>Reithrodontomys megalotis</i>	135-64-17-12-8 gms
630420-71	<i>Microtus ochrogaster</i>	148-32-20-12-41 gms
630420-72	<i>Reithrodontomys megalotis</i>	142-70-17.5-12-11 gms
630420-76	<i>Synaptomys cooperi</i>	119-20-20-10-25 gms
630420-78	<i>Microtus ochrogaster</i>	153-36-19-11-52 gms
630420-79	<i>Reithrodontomys megalotis</i>	127-63-16.5-11-7 gms
630420-81	<i>Microtus ochrogaster</i>	143-31-19-11-35 gms ♂ testes 13 mm
630420-84	" "	154-34-19-12-43 gms
630420-87	" "	152-35-19.5-12-44 gms
630420-88	<i>Synaptomys cooperi</i>	106-20-19-10-18 gms
630420-94	<i>Microtus ochrogaster</i>	112-26-18-10-17 gms ♀ ut normal
630420-96	" "	153-31-20-13-46 gms
630420-98	<i>Reithrodontomys megalotis</i>	133-63-16-12-9 gms

April 20, 1963

This evening set 100 traps at the above locality. The largest bog area, <sup>in the marshy area</sup> is the exact location. This is the most extensive bog area discovered so far in the Clinton Reservoir area. The dominant grass or sedge in the wettest areas is \_\_\_\_\_ . It gives the bog the hummocky life form. It is associated with the areas of standing water especially surrounding the bulrushes and along the drainage courses. The blue is the areas of this type of sedge and wet to damp soils.



Bulrushes are confined to bogs proper and in isolated stands along the drainage courses. The nearer to standing water the more perfectly are the sedges as isolated clumps of blades with intervening areas of mud. As the soils become drier or less damp these sedges are closer together and are joined by other sedges making a continuous stand of grass. These sedge are completely utilized <sup>by microtines</sup> with sign and segments of stems at most any place where one separates the sedges. The most concentrated microtine activity is along the main drainage ditch and is a continuous runway.

TRAPS APRIL 20 (red dot)  
 TRAPS APRIL 27 (green dot)  
 (see notes of that day)

April 20, 1963-2

The dry sedges are not as populated as the wet areas. The slopes, now dry, have been extensively used at some previous time but are not used today. These slopes could have been used in later summer or early winter when population was high, or they could have been used by *Sagittaria* at a population high. This condition is the usual condition wherever I have trapped this year. It is possible to walk over most of this area and at the softest places one only sinks to his knees. The odor is strictly a marsh or bog odor. Recent firing has burned some of the sedges at the S end of marsh and area adjoining the main drainage canal. In area noted 1 redtail in trees to S. It called as if it was on its nesting territory. In marsh noted 1 group of 3 Wilson snipe and 1 of 2 snipes; 3 killdeer and 12 redwing blackbirds nesting in bulrushes. There was a noticeable lack of frogs or their calls. At twilight noted *Microtus ochrogaster* in traps 2-6-8-9-11-15-18-22-23-28-30. Collected a blotched King snake from 1 9/20 mi W and 2200 ft S of Clinton, Douglas Co., Kansas. This snake is as follows: 630420-103 Blotched King snake, BL 620; tail 92; wt 127gms. It was late twilight and the snake was coiled under a plank on a sidehill recently burned (Brown Grass). It is very aggressive and moved 2 feet toward me in a series of strikes. The mouth is opened and a noise is given. The head is jerked laterally as a defense mechanism. Also 2 *Scaphiopus* 630420-104 which was 270mm body, 60mm tail, 7gms and 630420-105 which measured 147mm body, 24mm tail, 2gms. Both under a plank.

April 21, 1963

Picked up traps set last night. Enroute from S end proposed dam followed paved road to Clinton, thence W past cemetery to road that leads S to base of valley slope. Temp 51°F at 7:00 A.M., day clear. Made complete census. Mileage 21.2 S end dam, G. Blue Heron in canal; 21.4 redwing; 21.8 redwing; 22.0 redwing; 22.3 meadowlark; 22.4 meadowlark; 22.5 bridge over Rock Creek; 24.1 mourning dove, robin; 44.6 m. dove; 24.8 several grackles; 24.9 Clinton (center of town at store); 25.2 grackles. Most of grackles associated with town of Clinton; 25.3 2 m. doves; 25.4 1 mourning dove; 26.0 sparrow hawk, 2 doves; 26.3 Cardinal; 26.5 Cardinal; 27.0 sparrow hawk, 2 doves; 27.0 road leaves main road & turns to S; 29.1 ♀ sparrow hawk; 27.2 horned lark; 27.3 2 horned larks; 27.4 3 horned larks, 3 h. larks, 2 m doves; 27.5 18 horned larks; 27.6 2 horned larks, 1 meadowlark; 2 savanna sparrows, 1 red sparrow; 1 m. dove, 4 horned larks; 8 savanna sparrows; 27.7 2 horned larks; 28.0 base of hill at center sec. 21. Redtail in some trees as yesterday evening. Redwings<sup>12</sup>, Wilson Snipes 4, 2 swamp sparrows, 1 cottontail in trapping area proper

April 21, 1963

mammals from trap line set last night and inspected this A.M. between 7:30 A.M. and 8:30 A.M.

1 sprung	40 sprung	79 not visited
2 <i>Microtus ochro</i>	41 not visited	80 <i>Reithro meg.</i>
3 <i>Microtus ochro</i>	42 not visited	81 not visited
4 not visited	43 <i>Peromyscus</i>	82 " "
5 " "	44 <i>Peromyscus</i>	83 " "
6 <i>M. ochro.</i>	45 <i>M. ochro</i>	84 <i>M. ochro</i>
7 <i>Peromyscus</i>	46 <i>M. ochro</i>	85 <i>M. ochro</i>
8 <i>M. ochro</i>	47 <i>Reithro meg.</i>	86 <i>M. ochro</i>
9 <i>M. ochro</i>	48 sprung	87 not visited
10 <i>M. ochro</i>	49 not visited	88 <i>M. ochro</i>
11 <i>Microtus ochro</i>	50 " "	89 <i>M. ochro</i>
12 <i>M. ochro</i>	51 " "	90 sprung
13 <i>M. ochro</i>	52 sprung	91 <i>Synaptomys cooperi</i>
14 <i>M. ochro</i>	53 not visited	92 sprung
15 <i>M. ochro</i>	54 " "	93 <i>Microtus ochro</i>
16 <i>M. ochro</i>	55 sprung	94 not visited
17 <i>M. ochro</i>	56 sprung	95 <i>M. ochro</i>
18 <i>M. ochro</i>	57 not visited	96 not visited
19 sprung	58 " "	97 <i>M. ochro</i>
20 not visited	59 " "	98 not visited
21 sprung	60 <i>M. ochro</i>	99 <i>Microtus ochro</i>
22 <i>M. ochro</i>	61 <i>M. ochro</i>	100 <i>Peromyscus</i>
23 <i>M. ochro</i>	62 sprung	
24 <i>M. ochro</i>	63 not visited	
25 sprung	64 " "	
26 <i>Synaptomys cooperi</i>	65 " "	
27 sprung	66 <i>M. ochro</i>	
28 <i>M. ochro</i>	67 not visited	
29 sprung	68 <i>Synaptomys cooperi</i>	
30 <i>M. ochro</i>	69 not visited	
31 sprung	70 " "	
32 <i>Rattus</i>	71 sprung	
33 sprung	72 sprung	
34 <i>Peromyscus</i>	73 not visited	
35 sprung	74 sprung	
36 not visited	75 not visited	
37 not visited	76 <i>Reithro meg.</i>	
38 sprung	77 <i>M. ochro</i>	
39 <i>Rattus</i>	78 <i>Synaptomys cooperi</i>	

## Summary

34 <i>Microtus ochrogaster</i>
4 <i>Synaptomys cooperi</i>
5 <i>Peromyscus maniculatus</i>
3 <i>Reithrodontomys megalotis</i>
2 <i>Rattus norvegicus</i>
48 total
21 sprung
31 not visited

Preparation of mammals from trap line set last night.  
and inspected this A.M.

	630421-2	<i>Microtus ochrogaster</i>	165-38-21-11-66 gms ♀ 4 X 1 emb 9 mm
	630421-3	" "	161-35-19-11-45 gms ♂
	630421-6	" "	166-40-21-12-52 gms ♂ testes 11 mm
	630421-7	<i>Peromyscus maniculatus</i>	153-60-19-14-22 gms ♂
	630421-8	<i>Microtus ochrogaster</i>	130-26-18-11-41 gms
	630421-9	" "	158-35-20-13-50 gms ♂
	630421-10	" "	167-38-20-13-52 gms ♂
	630421-11	" "	135-28-18-11-35 gms ♀ ut normal
	630421-12	" "	157-37-20-11-45 gms ♂
	630421-13	" "	136-34-19-11-31 gms ♂
	630421-14	" "	162-38-20-11-61 gms ♀ 2 X 2 emb. 25 mm
	630421-15	" "	115-26-18-10-20 gms ♂
	630421-16	" "	160-37-21-12-55 gms ♀ 1 X 1 plac. scars.
	630421-17	" "	158-38-20-12-46 gms ♂
	630421-18	" "	114-27-18-10-20 gms
	630421-22	" "	113-25-18-9-21 gms
	630421-23	" "	170-42-20-11-55 gms ♀ ut normal
	630421-24	" "	162-36-21-10-52 gms ♂
	630421-26	<i>Synaptomys cooperi</i>	137-20-20-10-51 gms ♂
	630421-28	<i>Microtus ochrogaster</i>	110-27-17-9-19 gms
	630421-30	" "	117-26-17-10-20 gms
dest.	630421-32	<i>Rattus norvegicus</i>	242-112-33-18-45 gms. ♀
	630421-34	<i>Peromyscus maniculatus</i>	156-61-20-15-23 gms ♀
	630421-39	<i>Rattus norvegicus</i>	231-108-32-17-49 gms ♀
	630421-43	<i>Peromyscus maniculatus</i>	145-54-18.5-14-21 gms ♂
dest.	630421-44	" "	138-51-18.5-14-19 gms ♀ 2 X 3 plac scars.
	630421-45	<i>Microtus ochrogaster</i>	158-38-19-12-44 gms ♀
	630421-46	" "	150-33-19-11-45 gms ♂
dest.	630421-47	<i>Reithrodontomys megalotis</i>	135-63-17-12-12 gms ♂ testes 8 mm
	630421-60	<i>Microtus ochrogaster</i>	132-30-19-11-29 gms ♂
	630421-61	" "	125-29-18.5-10-27 gms ♀
	630421-66	" "	121-28-18-11-21 gms. ♂
	630421-68	<i>Synaptomys cooperi</i>	146-22-20-10-63 gms ♀
	630421-76	<i>Reithrodontomys megalotis</i>	145-66-17-12-16 gms ♀
	630421-77	<i>Microtus ochrogaster</i>	156-35-21-12-45 gms ♂
[dest.]	630421-78	<i>Synaptomys cooperi</i>	tail 17, h. foot 19, 4 X 2 emb 3.5 mm
	630421-80	<i>Reithrodontomys megalotis</i>	153-64-17-12-11 gms ♂
	630421-84	<i>Microtus ochrogaster</i>	158-33-21-12-48 gms ♂
	630421-85	" "	155-35-20-11-42 gms ♀
	630421-86	" "	166-38-19-11-50 gms ♀



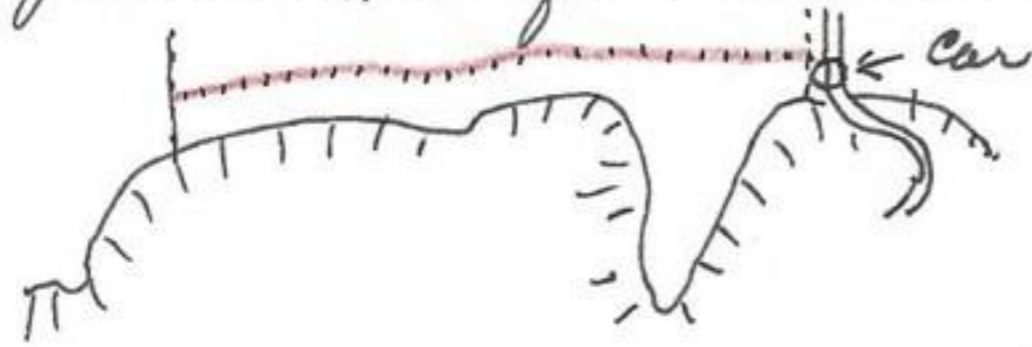
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630421-88	<i>Microtus ochrogaster</i>	160-36-19-12-47gms ♀
630421-89	" "	162-40-20-11-55gms ♀
630421-91	<i>Synaptomyia cooperi</i>	133-21-20-12-50gms ♀
630421-93	<i>Microtus ochrogaster</i>	151-35-20-11-44gms ♂
630421-95	" "	133-31-19-11-28gms ♀
630421-97	" "	160-35-20-12-48gms ♂
630421-99	" "	160-40-21-13-55gms ♀
630421-100	<i>Peromyscus maniculatus</i>	160-62-19-17-22gms ♀

Embryos of 630421-78  
*Synaptomyia cooperi*.



In area where *Rattus* was taken, other traps were pulled from their settings in trails and partly eaten. The rats were associated with the bulrushes. The best catch was from the continuous runway along drainage canal. Other areas good and all traps set in runway but the runways were, in many cases, peripheral and several days would be needed to make contact with the microtine using the runways. There was no evidence that the burning of the sedges of the S end of area, increased the mammal population of adjacent areas. Where runways crossed burned areas from one untouched patch of sedges to another, the mice were still using but other areas completely burned were not used. Returned to car on road at base of hill. Noted Harris sparrows still in area. From car to a point 2000 feet to west at about 100 feet from base of hill made



census of a corridor 20 feet wide of the old nests, now burned, of the *Reithrodontomys megalotis*. This area was grown to dense foxtail grasses and other weeds. It was burned this week.

There was a remarkable lack of microtines except a small area near foot of hill to west. The distribution of nests, per 100 feet are: (from west to east) 100, 3; 200, 2; 300, 3; 400, 0; 500, 2; 600, 2 (dead turtle); 700, 6; 800, 2; 900, 1; 1000, 3; 1100, 2; 1200, 0; 1300, 4; 1400, 4; 1500, 5; 1600, 7; 1700, 5; 1800, 5; 1900, 1; 2000, 12, 2100, 10. while at trapping area

recorded the following photographs (color, 35mm):  
 630421-101 center of trapping area showing main log with bulrushes  
 630421-101a as above

and sedges inhabited by *micratus ochrogaster* and *Synoptornis*. The background is cleared slopes and Clinton cemetery in distance. Photo 630421-2 of close up of *Carex vulpinoidea* Michx. as hummocktype sedge or grass, *Eleocharis calva* Torr. growing on muds in center of drainage and bushes in background. Photo 630421-3 close-up of flowering grass *Carex vulpinoidea* Michx. which is the dominant grass in marsh and the grass that forms hummocks. Photo 630421-4 of burned grasses (hummocky form) and unburned grasses in foreground. Photo 630421-5 from near top of hill to E showing marsh area below. Large elm trees in foreground. Extensive cultivated fields in distance.

Left area at base of hill at 28.0 mileage (will keep complete census. 28.1 killdeer; 3 savanna sparrows; 28.2 horned lark, 1 mourning dove, 3 horned larks, 2 savanna sparrows, these 2 sparrows fed in <sup>dirt</sup> road about 50 feet in front of car for about 5 minutes. They walked *terre* rather than on toes; 28.3 2 savanna sparrows; 28.4 6 sparrows, savannas; 28.5 3 savanna sparrows; 28.6 6 savanna sparrows; 28.6 2 horned larks; 3 savanna sparrows; 28.7 8 horned larks. These horned larks more numerous now (last week) than they were in previous months; they also are lighter in color, not as much yellow in forehead. ~~29.0 road now joins main road~~ <sup>E-W</sup>; 28.7 3 sparrows, 2 horned larks; 28.8 3 sparrows; 29.0 road now joins main E-W road; 29.5 road leaves main road, now to N; 29.9 cardinal; 30.5 opposite bridge over Wabarusa; 31.7 bridge over Wabarusa, redtail soaring to N.W 1 block; 33.3 cardinal; 33.4 N end of proposed dam. Continued to Lawrence.

This evening at home 1020 Tennessee, took 3 telephotos (color, 35mm) of thunderstorm clouds to east. They are: 630421-110; 630421-111; 630421-112; 630421-113.

1/4 mi. W and 1/4 mi. S Clinton (center of town), Douglas Co., Kansas

April 26, 1963

Set 100 traps in some general area as of April 20, 1963, (see that date for placement of traps on map). Left Lawrence 4:30 P.M. temp 64°F. Mileage at <sup>S</sup> end of proposed dam 77.4. wind ESE and occasional rain drop on windshield. Will continue west on regular road. 80.0 mourning dove; 80.2 robin; 80.5 2 cardinals; 80.6 redwing; 80.9 robin, grackles; 81.0 Clinton (center of town by store); 81.2 8 grackles, 1 mourning dove; 81.4 mourning dove (time 4:50 P.M.);

April 24, 1963

81.9 mourning dove; 82.0 mourning dove; 83.1 now leaving main road trending west and turning S across valley to hillside to S.  
 83.3 3 horned larks; 83.5 3 horned larks; 83.6 6 savanna sparrows;  
 83.7 savanna sparrow, 4 savanna sparrows; 6 savanna sparrows;  
 83.8 3 horned larks; 84.0 savanna sparrow; 84.1 base of hill at side of valley. This road is a dirt one and is soft and dry. The birds favor this road for resting, feeding & dusting. In the area of the traplines noted 3 Wilson snipe. Dickcissels in field to N. The cattails are in main bog areas and along drainage canals but bulrushes are represented in minor numbers. Returned to car and checked plank on burned over slope, now short green grass, and killed a *Thamnophis*. This snake measured:

630426-1 *Thamnophis* body 370 mm, tail 130 mm, wt 2.1 gms

The exact locality is 1 1/2 mi W and 2200 ft S Clinton, Douglas Co., Kansas and the snake was under the same board as was a blotched King snake (specimen no. 630420-103). Mileage at base of hill 84.1. Left 6:20 and will keep complete census on return, as was true of trip to trapping area. Will follow valley road all the way to N end of proposed Clinton Reservoir dam.  
 84.4 horned lark (slight rain on windshield); 84.5 dickcissel;  
 84.7 2 horned larks; 84.8 horned lark; 2 savanna sparrows;  
 84.9 2 savanna sparrows; 85.0 horned lark; 85.1 weaver sparrow;  
 85.1 at main road, now to E; 85.2 redwing; 85.6 road to N and will follow; 86.5 Cardinal (temp 68°F at 6:30 P.M.); 86.6 opposite bridge over Wakarusa; 86.8 meadowlark; 87.2 passing road S to Clinton; 87.8 bridge over Wakarusa; 89.5 N end proposed Clinton Res. dam.

1 1/4 mi. W and 1/4 mi. S Clinton (center of town), Douglas Co., Kansas.

April 27, 1963

Inspected trap line set last night at above locality. Left Lawrence 8:00 A.M. cloudy skies and showers last night, wind still from ESE, Temp 52°F, humidity 92%. Mileage at S end proposed Clinton Res. dam at 11.1; 11.2 meadowlark; 11.5 2 redwings; 2 meadowlarks; 11.7 meadowlark; 11.9 2 meadowlarks; 2 redwings; 12.2 2 meadowlarks, 2 redwings; 12.3 bridge over Rock Creek; 13.4 redwing, dickcissel; 13.6 2 dickcissels, mourning dove; 14.0 meadowlark; 14.3 meadowlarks; 14.7 Clinton (center of town); 14.8 4 grackles; 15.2 mourning dove; 15.5 2 redwings; 15.6 meadowlark; 15.7 2 cowbirds; 15.9 mourning dove; 16.1 eastern bluebird; 16.7 leaving main road and now to S; 16.8 lark sparrow; 16.9 horned lark; 17.3 horned lark; 17.2 meadowlark, 2 horned larks; 17.3

April 27, 1963

meadowlark, 2 horned larks; 17.3 dickcissel, horned lark; 17.4 marsh hawk; 17.5 dickcissel (others singing beyond limits (100 feet) of census area); 17.5 savanna sparrow; savanna sparrow; 17.8 base of hill. On road just beyond (1 mile) there were fewer birds along road opposite plowed fields than where cultivated fields of wheat & alfalfa. In trapping area flushed 2 Wilson snipe. Many birds calling from wooded slopes to E & S. Except for redwing blackbirds in trapping area, I did not see other kinds. *Microtus ochrogaster* was eating the dominant grass in area, some of the stems over an eighth of an inch in diameter. In trap 92-100, one *M. ochrogaster* in trap had been pulled to top of canal and all eaten except elementary canal. Return to car with traps and mammals and left at 9:30 A.M. Mileage 17.8 Will return via valley road all the way to N end dam (proposed Clinton Res.). Complete Censuses: 17.9 2 savanna sparrows, 2 horned larks, 1 savanna sp; 18.0 4 cowbirds (front of alfalfa & wheat): These birds are probably in area to parasitize nests of dickcissel. 18.1 barn swallow, meadowlark, 2 horned larks; 18.3 dickcissel, 2 savanna sparrows; 18.4 3 savanna sparrows, 3 savanna sparrows; 18.4 3 savanna sparrows; 18.5 mourning dove, horned lark, savanna sparrow; 18.6 horned lark; 18.7 drainage ditch crosses road; 18.8 main road, thence east; 19.0 2 lark sparrows ♂ following ♀, the male with tail up & wings low, in open plowed field near road. 19.1 road to N; 19.2 cardinal. There are seldom birds noted in this wood area. 20.3 opposite bridge which crosses Wakarusa River; 20.5 2 small birds, horned lark, lark sparrow, 3 savanna sparrows; 20.7 2 savanna sparrows; 20.9 passing by road which turns to Clinton; 21.3 horned lark; 4 savanna sparrows; 21.6 bridge over Wakarusa River (temp 53°F); 22.3 savanna sparrow; 23.2 N end dam.

1 2/10 mi. W and 1/10 mi. N Clinton (center of town), Douglas Co., Kansas.

April 27, 1963

Set 100 traps at above locality. Trap no 1 is the exact locality. Traps set between 4:30 and 6:30 P.M., windy.

Inspected areas between car and trapping area as indicated on map. Areas in red favorable along drainage ditch. Will record area tomorrow. Picked up a female *Peromyscus maniculatus* at 1/2 mi. W & 9/20 mi. N Clinton, 630427-101

142-52-18-14-25gms. ♀ 2 redtails at bend.



mammals collected this A.M from trap line set last night:

1 m. ochro	39 sprung	77 sprung
2 sprung	40	78
3 sprung	41 m. ochro	79
4 sprung	42 m. ochro	80 Reithro meg.
5 sprung	43	81
6 Reithro meg	44	82 sprung
7	45	83 sprung
8	46	84 Rattus norvegicus
9 m. ochro	47 Reithro. meg.	85
10 sprung	48	86 m. ochro
11	49 sprung	87
12	50 sprung	88 m. ochro
13	51 sprung	89
14 sprung	52 sprung	90
15 m. ochro	53	91 sprung
16	54	92 m. ochro
17 m. ochro	55 sprung	93 sprung
18	56 m. ochro	94 sprung
19	57	95 Blarina brev.
20 Synaptomys c	58 sprung	96 sprung
21	59 m. ochro	97 m. ochro
22 m. ochro	60 m. ochro	98 m. ochro
23 sprung	61	99 m. ochro
24 sprung	62	100 sprung
25	63	
26	64 m. ochro	
27 Crayfish	65	
28	66	
29	67	
30	68	
31 m. ochro	69 Synaptomys cooper	
32 m. ochro	70 m. ochro	
33	71 m. ochro	
34 sprung	72 Synaptomys c.	
35 m. ochro	73	
36	74 m. ochro	
37 m. ochro	75 sprung	
38 m. ochro	76 sprung	

Summary.

25	Microtus ochrogaster
3	Synaptomys cooperi
1	Blarina brevicauda
3	Reithrodontomys megalotis
1	Rattus norvegicus
1	Crayfish
34	total
26	Spring
39	not visited

April 27, 1963

Preparation of mammals collected this A.M., April 27, 1963, from trap line set last night.

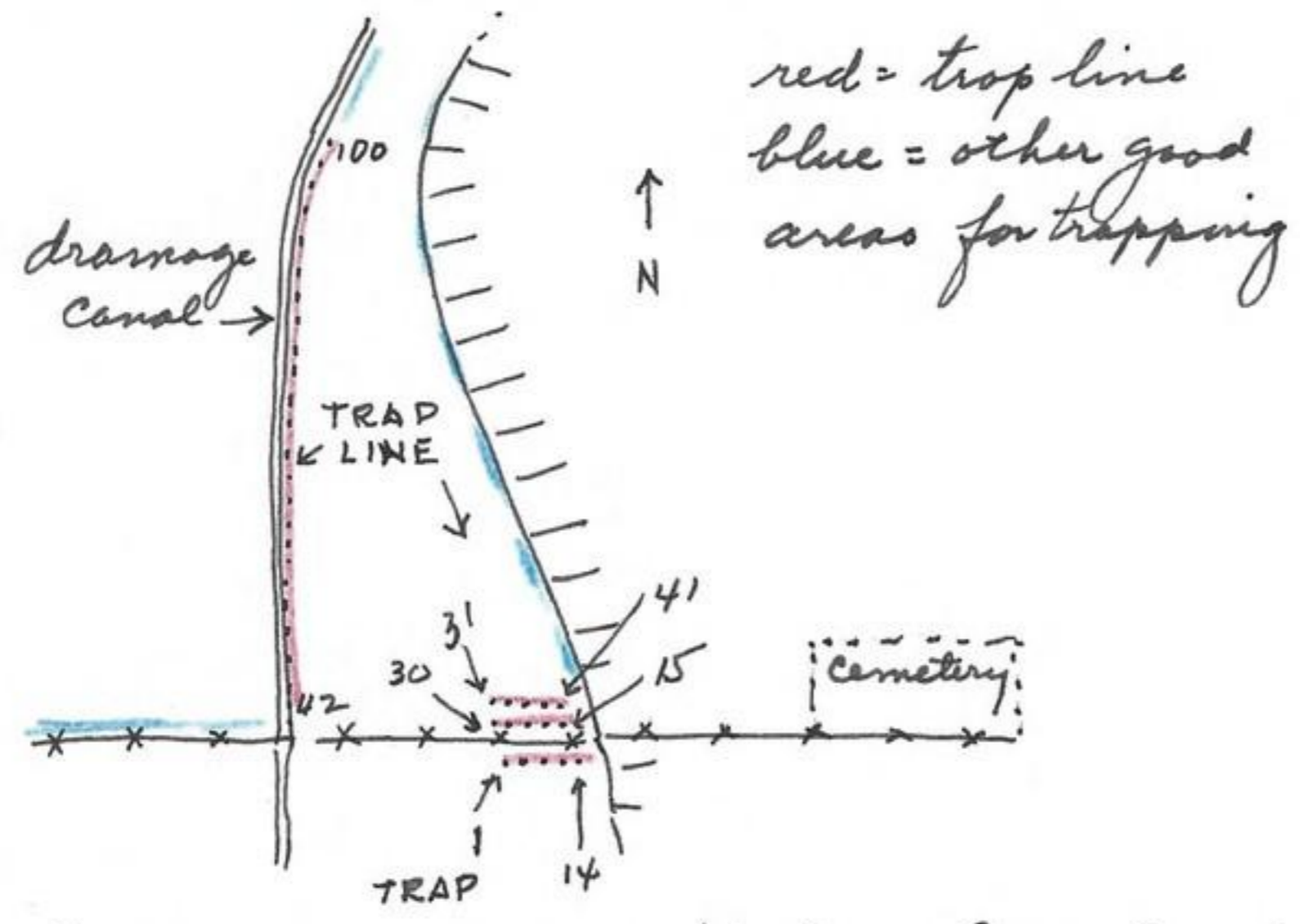
630427-1	<i>Microtus ochrogaster</i>	163-32-19-11-66 gms ♀ 2x2 emb. 29 mm
630427-6	<i>Reithrodontomys megalotis</i>	150-80-18-13-14 gms ♂ testes 5 mm
630427-9	<i>Microtus ochrogaster</i>	167-35-21-12-50 gms ♂ testes 14 mm
630427-15	" "	160-34-20-11-53 gms ♀ 2x1 emb plac. scars
630427-17	" "	165-32-20-12-47 gms ♀ 2x2 plac. scars
630427-20	<i>Synaptomys cooperi</i>	128-20-20-10-37 gms ♀ ut normal
630427-22	<i>Microtus ochrogaster</i>	147-31-18-11-38 gms ♀ 1x2 plac. scars
630427-27	Crayfish	75 mm T.L., 12 gms wt.
630427-31	<i>Microtus ochrogaster</i>	160-33-21-12- <del>43</del> <sup>69</sup> gms ♀ 2x2 emb 8 mm
630427-32	" "	153-33-20-12-47 gms ♂ testes 13 mm
630427-35	" "	141-33-20-11- <del>40</del> <sup>36</sup> gms ♂ testes 10 mm
630427-37	" "	169-37-20-12-51 gms ♂ testes 14 mm
630427-38	" "	120-30-18-10-20 gms ♂ ut normal
630427-41	" "	163-37-21-12-55 gms ♀ 2x1 emb 31 mm
630427-42	" "	165-41-21-12- <del>53</del> <sup>57</sup> gms ♀ 2x1 emb 21 mm
630427-47	<i>Reithrodontomys megalotis</i>	154-68-17-12-15 gms ♀ ut normal
630427-56	<i>Microtus ochrogaster</i>	153-36-20-11-50 gms ♀ 2x1 emb. 26 mm
SKV 630427-59	" "	163-37-20-11-51 gms ♂ testes 16 mm
630427-60	" "	121-27-18-12-23 gms ♀ ut normal
630427-64	" "	165-34-21-11-52 gms ♀ ut. normal
630427-69	<i>Synaptomys cooperi</i>	137-21-20-11-50 gms ♂ testes $\frac{5}{2}$ mm
630427-70	<i>Microtus ochrogaster</i>	127-28-19-10-28 gms ♀ ut normal
630427-71	" "	137-32-19-11- <del>38</del> <sup>32</sup> gms ♂ testes 10 mm
630427-72	<i>Synaptomys cooperi</i>	138-20-20-10-39 gms ♀ 2x2 plac. scars
630427-74	<i>Microtus ochrogaster</i>	161-38-20-13-51 gms ♀ 2x1 plac. scars
630427-80	<i>Reithrodontomys megalotis</i>	145-68-17-13-12 gms ♂ testes 5 mm
630427-84	<i>Rattus norvegicus</i>	242-112-33-18- <del>68</del> <sup>73</sup> gms. ♀ ut. normal
630427-86	<i>Microtus ochrogaster</i>	158-35-19-12-53 gms ♀ 1x2 plac. scars
630427-88	" "	138-33-19-11-31 gms ♀ ut normal
630427-92	" "	158-37-19-12-47 gms ♂ testes 14 mm
630427-95	<i>Blarina brevicauda</i>	128-27-15-8-26 gms ♀ ut normal
630427-97	<i>Microtus ochrogaster</i>	143-33-19-11-39 gms ♂ testes 12 mm
630427-98	" "	173-38-20- <del>38</del> <sup>12</sup> -57 gms ♂ testes 12 mm
630427-99	" "	158-33-19-12-57 gms ♀ 2x1 emb 32 mm

1 2/10 mi. W and 1/10 mi. N Clinton (center of town), Douglas Co., Kansas.

April 28, 1963

April 28, 1963

Checked trap line set last night. Rained last night and again at 7:30 A.M. <sup>humidity 72%</sup> Census from S end dam at mileage 64.6, temp. 60°F, 8:10 A.M. 64.7 2 redwing, killdeer; 65.1 redwing, killdeer; 65.8 bridge over Rock Creek; 67.1 cardinal, 67.9 meadowlark, robin; 68.1 grackle; 68.3 Clinton (center of town); 68.4 grackles; 68.6 meadowlark; 68.8 mourning dove; 68.9 meadowlark; 69.2 lark sparrow; 69.4 cardinal; 69.8 mourning dove; 69.9 fox sparrow; 70.3 lewising main road and now to S; 70.4 2 horned larks; 70.6 2 horned larks; 70.7 2 savanna sparrows; 70.8 3 cowbirds, dickcissel, 2 savanna sparrows. Left car here and followed fence line east to trap line. many runways along this fence line of sedges and small bushes. Sky clearing to west and blue and clear front N-S as far as the eye can carry. The traps 1 to 41 were in high sedges and associated with



sedges in drainage ditch along edge of field. Traps 42-100 along main drainage canal from S. Traps placed on both E and W side according to best setting. Main sedge in canal a high, angular stemmed sedge. Traps mainly in

trails on side of ditches. Considerable evidence of muskrat activity although water discontinuous. Plowed field to W and alfalfa to E. Field to S of area not sufficiently protected over-land for good microtine community. Blue area along base of hill should be good for *Peromyscus leucopus*. Picked up traps and returned to car and continued S. 70.9 dickcissel, 71.0 2 dickcissels, 71.1 3 savannas, 71.2 horned lark; 71.3 base hill. Inspected old trap area to W of here. at trap 20 (see march 1, 1963, for position, evening set) collected 2 sedges which are the dominant plant.

- 630428-101 *Carex frankii* Kunth, dominant
- 630428-102 *Eleocharis compressa* var. *compressa* <sup>subdominant</sup>
- 630428-103 Photo of juniper parasite at this location near trap 20.

This parasite is also on trees of juniper in Lawrence. Continued west to spring area and extended dam areas S to

April 28, 1963

to end of cultivated field. Saw areas on w side of canyon. At this point noted a D. N. owl being harassed by bluejays. a passermetype bird, red in color, gave warning calls from top of tree. It could have been a tanager or crossbill. at main spring at west side of canyon at a point just beyond point noted a yellowthroat singing in tree above the bog area. Fire had burned all high vegetation, sedges, cottails, etc up to the fence line bordering S side of drainage canal. Vegetation South of fence in marsh area not affected. at a point 10 feet beyond marsh area noted a cottontail leave the edge and run 10 feet uphill. It stopped and remained motionless in crouched position for about 15 seconds. on its own initiate, it left and ran 5 feet up hill and stopped. This time it fell back on its hind legs and over onto its side where it had difficulty righting itself. It then moved up the hill another 5 feet and again fell back upon its haunches, moving backwards in this awkward position for about 4 inches, Moving up hill again for about 10 feet it stopped and blindly moved into low branches of a bush as if not aware of the barrier, slightly slaggering to the left. At this moment I walk toward the rabbit uphill and it then hopped in normal fashion for another 10 feet. As I neared the animal, it again ran for 100 feet or so and then beyond my sight or reach, the last movements in a normal cottontail manner. This was definitely a case of feigning by an adult mammal to protect its young. At first I thought it was a case of tularemia or an animal partly paralyzed by a gun shot. I have observed this type of action before and in each case was associated with a nest of young rabbits. Returned to car and drove N again, mileage 71.3. at 71.7 savanna sparrow and 1 dickcissel; 71.8<sup>2</sup> dickcissel; 71.9 savanna sparrow; 72.0<sup>2</sup> horned lark; vesper sparrow; 72.0 horned lark; 72.3 road now to E; 72.8 road now to N; 73.8 opposite bridge to N over Wakarusa River; 74.1 4 savanna sparrows; 74.2 lark sparrow; 74.4 passing road to S (Clinton); 74.6 mourning dove & loggerhead shrike; 75.1 bridge over Wakarusa, cardinal; 75.8 mourning dove; 76.7 N end proposed dam (Clinton Reservoir).

630428-104

Back at Lawrence photographed appendicitomy scar on <sup>at Watkins</sup> Annette Christies side. She was operated April 14 by Jones + Mannshaw.

at 3 mi. S and 1/2 mi E Lawrence, Douglas Co., Kansas photo 630428-105 of greater + lesser yellowlegs and a sandpiper. Telephoto lens. Black tern godwits and dowitchers at gravel pits by temporary NE of Lawrence.



April 28, 1963

Collection of mammals this A.M. from traps set last night. Rained last night and this morning. Collected traps between 8:30 and 9:30 A.M.

1	38	75
2	39	76
3 sprung	40	77 sprung
4 <i>Synaptomys cooperi</i>	41	78
5	42	79 <i>m. ochro</i>
6 <i>m. ochro</i>	43	80
7 sprung	44	81 <i>Peromyscus</i>
8 <i>Reithro megal.</i>	45 <i>Peromyscus</i>	82 <i>Peromyscus</i>
9 <i>m. ochro</i>	46 <i>m. ochro</i>	83
10	47 sprung	84
11	48	85
12 <i>m. ochro</i>	49	86
13	50 <i>Peromyscus</i>	87
14 sprung	51	88
15 <i>m. ochro</i>	52	89
16 <i>Peromyscus</i>	53	90
17 sprung	54	91
18 <i>Peromyscus leucopus</i>	55 <i>Peromyscus</i>	92 <i>m. ochro</i>
19 <i>m. ochro</i>	56	93 sprung
20	57	94
21	58	95
22	59	96
23	60 <i>m. ochro</i>	97
24	61 sprung	98 <i>Peromyscus</i>
25	62 sprung	99 <i>Reithro megal.</i>
26 <i>m. ochro</i>	63 <i>Reithro megal.</i>	100 sprung.
27	64	
28	65	
29 sprung	66	
30	67	
31	68 <i>Peromyscus</i>	
32 <i>m. ochro</i>	69 <i>Peromyscus</i>	
33 sprung	70 sprung	
34 <i>Reithro megal.</i>	71	
35	72 <i>Peromyscus</i>	
36	73	
37 <i>m. ochro</i>	74 <i>m. ochro</i>	

### Summary

1	<i>Synaptomys cooperi</i>
13	<i>Microtus ochrogaster</i>
10	<i>Peromyscus maniculatus</i>
8	<i>Peromyscus leucopus</i>
4	<i>Reithrodontomys megalotis</i>
29	total
13	traps sprung

April 28, 1963

Preparation of mammals caught last night from trap line inspected this A.M. April 28, 1963.

630428-4	<i>Synaptomys cooperi</i>	142-20-20-11-73gms ♂ testes 14 mm
630428-6	<i>Microtus ochrogaster</i>	156-35-21-12-48gms ♀ 2x1-emb. 18mm
630428-8	<i>Reithrodontomys megalotis</i>	141-66-17-13-13gms ♀ ut normal
630428-9	<i>Microtus ochrogaster</i>	157-36-20-11-45gms ♀ 1x1-emb 3 mm
630428-12	" "	130-31-20-11-27gms ♀ ut normal
630428-15	" "	160-35-21-12-54gms ♀ 1x2 emb 16 mm
630428-16	<i>Peromyscus maniculatus</i>	153-60-19-15-23gms ♀ 2x3 emb 3 mm
630428-18	<i>Peromyscus leucopus</i>	172-70-20-17-29gms ♀ ut normal
630428-19	<i>Microtus ochrogaster</i>	121-31-19-11-23gms ♀ ut normal
630428-26	" "	147-33-20-11-40gms ♂ testes 13 mm
630428-32	" "	155-37-19-11-60gms ♀ 2x1 plac. scars
630428-34	<i>Reithrodontomys megalotis</i>	140-65-17-12-16gms ♂ ut normal
630428-37	<i>Microtus ochrogaster</i>	150-37-20-11-40gms ♀ 2x2 emb. 14 mm
630428-45	<i>Peromyscus maniculatus</i>	151-55-19-14-23gms ♂ testes 11 mm
630428-46	<i>Microtus ochrogaster</i>	156-38-21-13-48gms ♂ testes 11 mm
630428-50	<i>Peromyscus maniculatus</i>	149-52-18-13-19gms ♂ testes 9 mm
630428-55	" "	133-33-19-11-28gms ♀ ut normal
630428-60	<i>Microtus ochrogaster</i>	161-37-20-11-50gms ♂ testes 14 mm
630428-63	<i>Reithrodontomys megalotis</i>	115-55-16-11-6gms ♀ ut normal
630428-68	<i>Peromyscus maniculatus</i>	148-52-19-14-20gms ♀ ut normal
630428-69	" "	135-50-18.5-13-17gms ♀ ut. normal
630428-72	" "	148-57-18-15-20gms ♂ testes 8 mm
630428-74	<i>Microtus ochrogaster</i>	165-38-20-11-49gms ♂ testes 14 mm
630428-79	" "	125-29-19.5-11-25gms ♂ testes 5 mm
630428-81	<i>Peromyscus maniculatus</i>	123-50-17-13-12gms ♀ ut normal
630428-82	" "	148-52-18-15-22gms ♀ 4x3 emb 3 mm
630428-92	<i>Microtus ochrogaster</i>	160-37-19-11-49gms ♀ 2x2 emb 15 mm
630428-98	<i>Peromyscus maniculatus</i>	156-59-19-15-23gms ♀ ut normal
630428-99	<i>Reithrodontomys megalotis</i>	137-62-17-12-12gms ♂

1620 Tennessee Street, Lawrence, Douglas Co., Kansas  
May 9, 1963

Recorded song of male Baltimore Oriole. This male called regularly between early morning and noon. Day windy.

May 9, 1963

normal song      variation      variation up to 10 notes

variation      variation      variation.

The image shows six staves of handwritten musical notation. The first staff is labeled 'normal song' and shows a sequence of notes on a treble clef staff. The second staff is labeled 'variation' and shows a similar sequence. The third staff is labeled 'variation up to 10 notes' and shows a sequence of notes with a bracket underneath. The fourth, fifth, and sixth staves are each labeled 'variation' and show different sequences of notes.

About noon tested camera for rendition of color according to different apertures. From front yard across to Maupius.

Photo 630509-1 at apert 2, 15 sec. } neither will be any good because of error.

Photo 630509-2 at apert. 16, 1000 sec }

Photo 630509-3 at apert. 2, 1000 sec

Photo 630509-4 at apert 16, 15 sec.

Photo 630509-5 of lawn-mower among vines.

Photo 630509-6 of large flower in backyard of home.

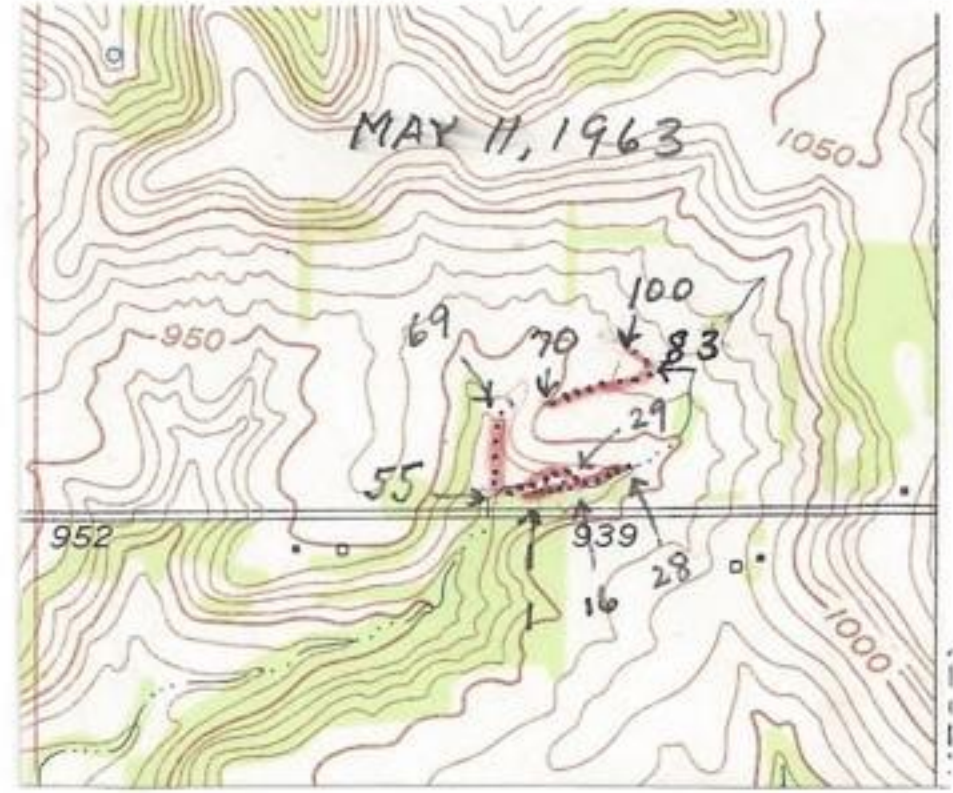
Photo 630509-7 Spruce tree needles and cone. Keller home, our neighbor.

Photo 630509-8 Large weed, also from Keller's residence.

Photo 630509-9 of painting (reproduction of a painting)

Sent film to Chicago Eastman's air mail this evening. 36 roll.

1 1/20 mi. E and 1 1/20 mi. N Clinton (center of town), Douglas Co., Kans.  
May 11, 1963



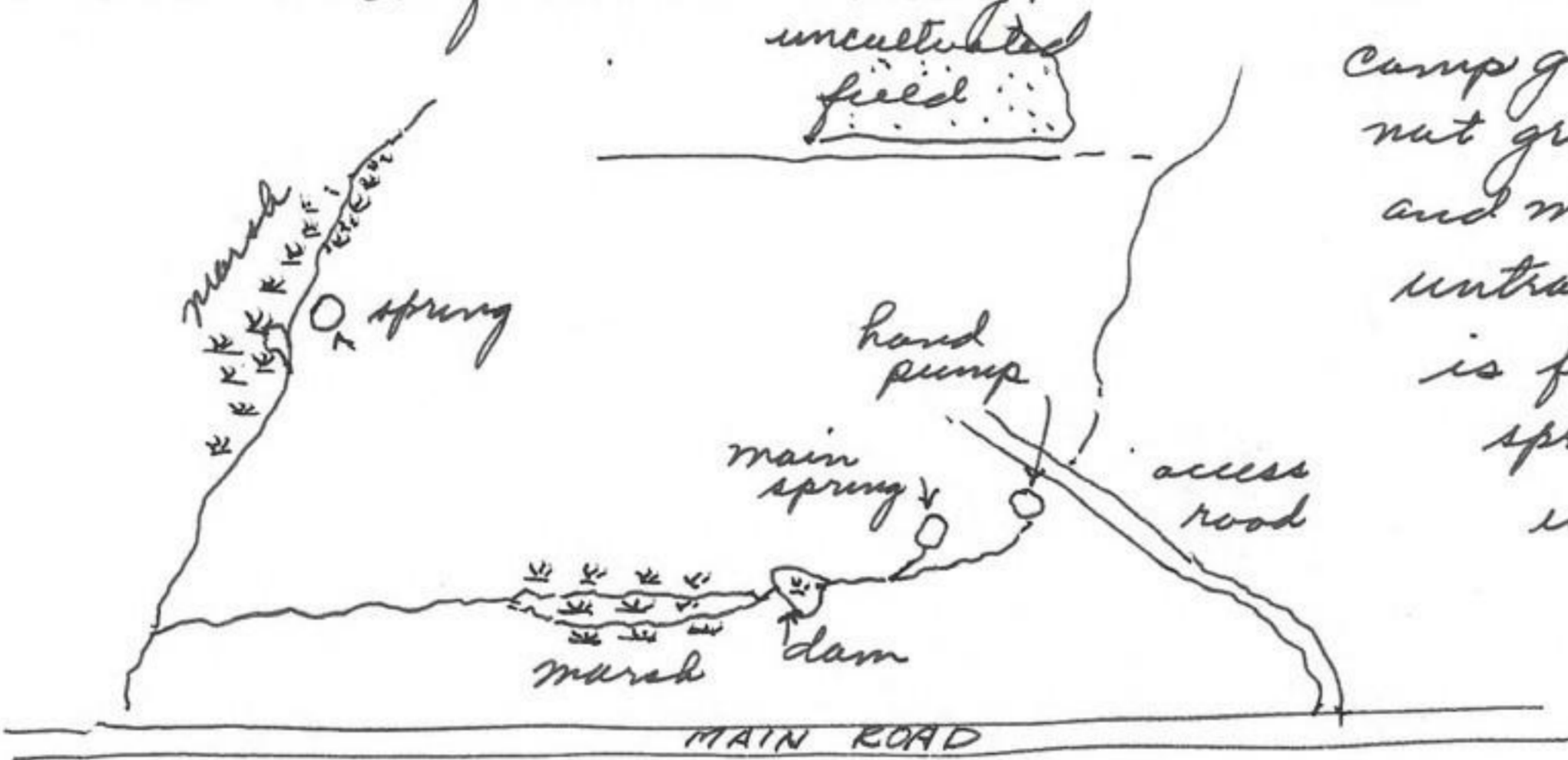
100 traps set between 5:30 and 7:00 P.M.

The locality is the open pond (natural) near head of drainage (SW of hand pump). This area is the Peterson farm set aside for Boy Scouts. On return after setting last trap noted animals in traps 5-8-11-12-16-19-21-33-34-38-70. 3 adults and 3 small Cottontails (1/3 size adult) in trapping area. about 6 inches long

1 1/2 mi E and 1 1/2 mi. N Clinton (Center of town), Douglas Co., Kansas.

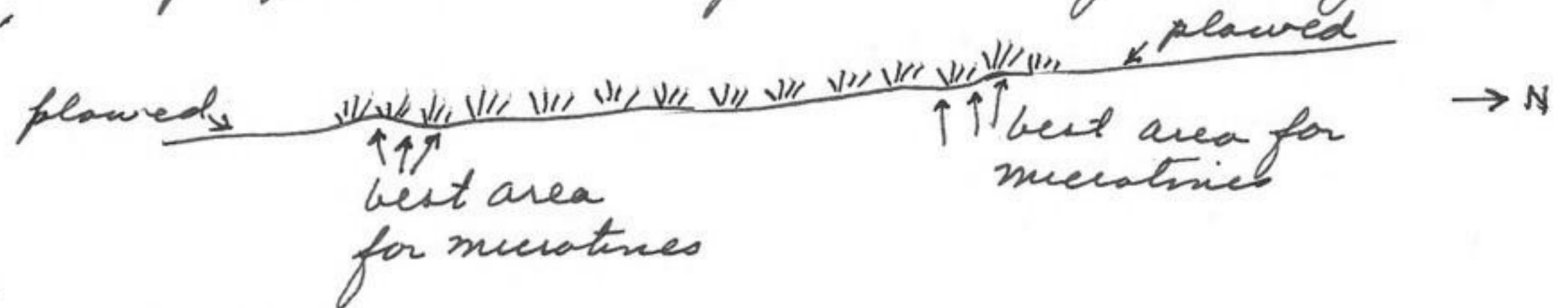
May 12, 1963

Checked 100 traps this A.M. at 9:00 A.M. There was considerable out and beetle depredation and about 8 flyblows; others eaten by other members of the community.

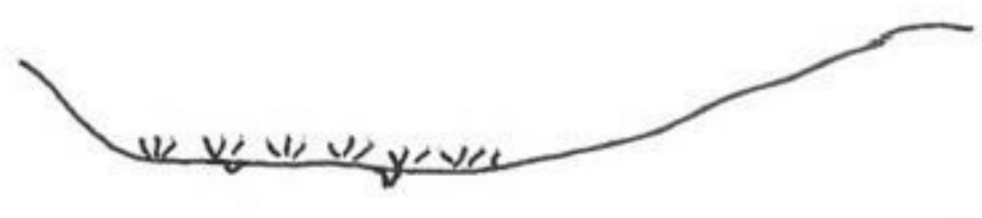


This area is a boy scout camp grounds and is not grazed. The spring and marsh areas are untrampled and water is flowing from spring. The uncultivated field is perhaps 5 or 6 years old and has an

excellent mat condition. The surrounding area has been plowed in recent years, perhaps even last year. The slope is gradual and a slight elevation around S & E edge of field makes for good retention of moisture for best growth of grasses

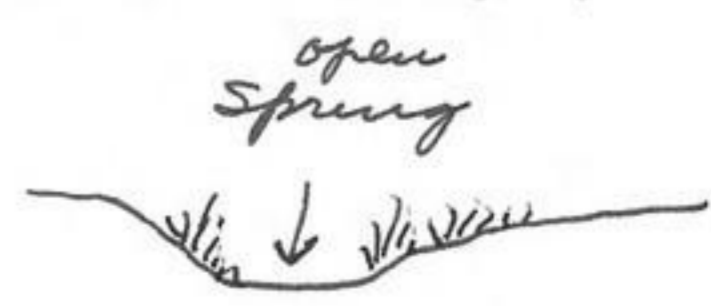


This entire field supported favorable plant community for small mammals, each clump or mass of dried grasses supported established runway beneath.



Cross section of marsh area. Two main drainage courses flowed thru this marsh, later

joining to form 1 channel thru non marsh soils. The main spring was in slight depression with sides about 4 feet high. The N-S



trending marsh was a typical marsh swale with damp soils bordering a central channel with free-flowing water. The lack of grazing, or at least heavy grazing, has preserved this area as a most favorable one for microtines. Outside of the wet marsh area & uncultivated area, the plant community shows sign of trampling by scouts.

May 12, 1963

mammals from trap line set last night (May 11) and inspected this A.M.

1 not visited	40. m. ochro	80 sprung
2 not visited	41 <i>Pero mameulatus</i>	81 m. ochro
3 m. ochro	42 <i>Microtus ochrogaster</i>	82 <i>Leithromys</i>
4 " "	43 sprung	83 m. ochro.
5 <i>Microtus ochrogaster</i>	44 not visited	84 m. "
6 not visited	45 " "	85 m. ochro.
7 sprung	46 " "	86 not visited
8 <i>Microtus ochrogaster</i>	47 " "	87 sprung
9 " "	48 m. ochro	88 <i>Sigmodon hispidus</i>
10 m. ochro	49 sprung	89 sprung
11 <i>Microtus ochrogaster</i>	50 m. ochro	90 not visited
12 <i>Microtus ochrogaster</i>	51 not visited	91 sprung
13 " "	52 " "	92 m. ochro
14 m. ochro	53 " "	93 m. ochro
15 not visited	54 " "	94 " " ( <sup>dest.</sup> 115 mm T.L.)
16 <i>Microtus ochrogaster</i>	55 " "	95 m. ochro
17 " "	56 " "	96 <i>Synaptomys cooperi</i>
18 m. ochro	57 " "	97 m. ochro
19 <i>Microtus ochrogaster</i>	58 " "	98 m. ochro
20 sprung <i>Pero. leucopus</i>	59 " "	99 " " ( <del>dest.</del> <del>63-36-21-12-45 gms</del> )
21 <i>Microtus ochrogaster</i>	60 " "	100. sprung m. ochro
22 " "	61 " "	
23 m. ochro	62 " "	
dest. 24 m. ochro (118 mm T.L.)	63 " "	
25 m. ochro	64 " "	
26 <i>Mus musculus</i>	65 m. ochro	
27 not visited	66 not visited	
28 " "	67 m. ochro	
29 " "	68 sprung	
30 m. ochro	69 m. ochro	
31 m. ochro	70 <i>Sigmodon hispidus</i>	
32 m. ochro	71 <i>Sigmodon hispidus</i>	
33 <i>Microtus ochrogaster</i>	72 m. ochro	
34 <i>Microtus ochrogaster</i>	73 m. ochro	
35 sprung	74 m. ochro	
36 m. ochro	75 m. ochro	
37 m. ochro	76 m. ochro	
38 <i>Microtus ochrogaster</i>	77 " "	
39 not visited	78 m. ochro	
	79 m. ochro	

Summary.

54 <i>Microtus ochrogaster</i>
1 <i>Peromyscus leucopus</i>
1 <i>Peromyscus mameulatus</i>
3 <i>Sigmodon hispidus</i>
1 <i>Synaptomys cooperi</i>
1 <i>Leithrodontomys megalotis</i>
1 <i>Mus musculus</i>
<hr/> 62 Total
9 traps sprung
29 not visited

Mammals prepared from trap line set last night and collected this A.M.

	630512-3	<i>Microtus ochrogaster</i>	153-34-20-11-42gms ♀ ut, normal testis 10 mm
SKU	<u>630512-4</u>	" "	113-26-18-10-16gms ♀ ut normal
	630512-5	" "	163-42-20-11-53gms ♂ testis 11 mm
	630512-8	" "	166-43-20-11-50gms ♀ ut normal
sk. only	<u>630512-9</u>	" "	170-40-21-12-48gms ♂, testis 10 mm.
sk. only	<u>630512-10</u>	" "	163-37-21-12-52gms ♀, 1x1 emb 24 mm
	630512-11	" "	120-33-18-11-23gms ♀ ut normal
	630512-12	" "	114-29-18-10-20gms ♀ ut normal
SKU	<u>630512-13</u>	" "	112-30-19-11-19gms ♂ testis 3 mm
SK. only	<u>630512-14</u>	" "	182-41-21.5-13-56gms ♂, testis 12.
	630512-16	" "	158-35-20-11-50gms ♀ 1x1 emb 31 mm
	630512-17	" "	166-41-20-12-52gms ♂ testis 14 mm
sk. only	<u>630512-18</u>	" "	157-38-21-11-48gms ♀, 3x2 emb, plac. near
	630512-19	" "	146-36-19-11-40gms ♀ ut. normal
	630512-20	<i>Peromyscus leucopus</i>	188-84-22-17-31gms ♀ ut normal
	630512-21	<i>Microtus ochrogaster</i>	125-33-17-10-24gms ♀ ut normal
	630512-22	" "	120-28-20- <sup>11</sup> <sub>1</sub> -21gms ♀ ut normal
	630512-23	" "	118-28-19-11-18gms ♀ ut normal
	630512-24	" "	Total length 118 mm. ♂ destroyed
	630512-25	" "	destroyed
	630512-26	<i>Mus musculus</i>	158-75-18-12-10gms ♂
	630512-30	<i>Microtus ochrogaster</i>	166-33-20-11-45gms ♂ testis 13 mm
	630512-31	" "	118-28-19-10-18gms ♂ testis 3 mm
SKU	<u>630512-32</u>	" "	140-35-20-12-26gms ♂ testis 5 mm
	630512-33	" "	118-30-18-10-21gms ♀ ut normal
	630512-34	" "	147-35-19-11-40gms ♀ ut normal
	630512-36	" "	164-35-20-11-47gms ♀ ut normal
	630512-37	" "	168-40-21-12-48gms ♂ testis 10 mm
	630512-38	" "	155-35-20-11-51gms ♀ 2x1 emb. 30 mm
	630512-40	" "	130-29-19-11-26gms ♂ testis 6 mm
	630512-41	<i>Peromyscus maniculatus</i>	168-76-21-15-18gms ♀ ut. normal
	630512-42	<i>Microtus ochrogaster</i>	destroyed
SKU	<u>630512-48</u>	" "	109-26-18-10-16gms ♀ testis 2.5 mm
SKU	<u>630512-50</u>	" "	132-34-19-12-24gms ♂ testis 5 mm
	630512-65	" "	154-32-21-12-50gms ♂ testis 13 mm
	630512-67	" "	129-30-19-11-23gms ♂
sk. only	<u>630512-69</u>	" "	158-36-20-12-58gms ♀, 2x2 emb 3 mm
	630512-70	<i>Sigmodon hispidus</i>	153-61-24-14-20gms ♂ testis 3 mm
	630512-71	" "	248-94-30-17-122gms ♂ testis 19 mm

May 12, 1963

	630512-72	<i>Microtus ochrogaster</i>	125-32-18-11-20gms ♀ ut normal
SKU	<u>630512-73</u>	" "	172-43-20-13-50gms ♂ testes 13mm
	630512-74	" "	166-42-20-10-48gms ♀ ut. vascular
	630512-75	" "	163-36-20-11-51gms ♀ 1x2 plac. scars
	630512-76	" "	175-45-21-11-52gms ♂ testes 14mm
SKU	<u>630512-77</u>	" "	171-42-20-12-52gms ♂ testes 13mm
	630512-78	" "	128-32-20-10-27gms ♀ ut. normal
	630512-79	" "	128-34-20-11-30gms ♀ 1x2 emb., 10mm
SKU	<u>630512-81</u>	" "	164-37-20- <sup>12</sup> <sub>1</sub> -61gms ♀ 2x2 emb. 26mm
	630512-82	<i>Reithrodontomys megalotis</i>	143-68-17-12-13gms ♀ ut. normal
	630512-83	<i>Microtus ochrogaster</i>	174-40-22-12-54gms ♂ Testes 13mm
	630512-84	" "	172-42-20-12-50gms ♀ 2x1 emb 11mm
	630512-85	" "	161-38-21-12-50gms ♀ 2x2 emb. 7mm
SK. ONLY	<u>630512-88</u>	<i>Geomys hispidus</i>	270-103-32-20-130gms ♀ 3x4 emb/plac. scars
	630512-92	<i>Microtus ochrogaster</i>	138-30-19-10-28gms ♂ testes 8mm
SKU	<u>630512-93</u>	" "	162-38-21-11-46gms ♀, ut normal
	630512-94	" "	T.L. 115mm, ♂, destroyed
	630512-95	" "	140-34-19-11-28gms ♀ testes 5mm
SK ONLY	<u>630512-96</u>	<i>Synaptomys cooperi</i>	139-23-20-11-50gms ♂ testes 6mm
	630512-97	<i>Microtus ochrogaster</i>	destroyed, 163-36-21-12-45gms ♂
	630512-98	" "	176-40-21-11-63gms ♀ 2x4 emb. 8mm
	630512-99	" "	108-24-18-10-16gms ♀ ut. normal
SKU	<u>630512-100</u>	" "	102-25-17-9-10gms ♂ testes 3mm

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

May 13, 1963

Robert Pierson presented me with a mole and a pilot black snake, taken from the above locality in the Haskell Bottoms. These two are as follows:

<u>630513-1</u>	<i>Scapanus</i>	178-35-23-( )-68gms. ♂, testes 6mm
630513-2	Pilot black snake	body length 1340; tail 280; wt 870gms

This afternoon preserved the snake in formalin.

1613 Tennessee St., Lawrence, Douglas Co., Kansas

May 13, 1963

The ground debris under the trees & shrubs that had been allowed to grow unattended for at least the last 6 years was cleared down to the soil. For the next 3 days, robins, bluebirds, starlings and grackles fed there where previously one seldom observed these birds. After about 4 days they abandoned the area for feeding.

May 13, 1963

May 13, 1963 630513-130

History of employment at K.U.M.W.	From			To			Kans. Public Retirement months
	Year	Month	Day	Year	Month	Day	
Research Assistant	12	1	47	5	31	49	18
" " "	9	15	49	5	31	50	8 1/2
Assistant Instructor	6	1	50	6	30	50	1
" " "	9	1	50	5	31	51	9
Research Assistant	7	1	51	12	31	53	30
" " "	1	1	54	9	30	54	9
" " "	11	19	54	7	31	55	9
State Taxidermist	8	1	55	8	31	57	25
Research Associate	9	1	57	6	30	58	10
Instructor	7	1	58	12	31	61	42

Soc Sec. no. 509-38-6999 Total months 161 1/2  
 Agency no. 682

The above is record of employment at K.U.M.W. at Lawrence since Jan 1, 1947 to Dec 31, 1961.

Lawrence, Douglas Co., Kansas

May 15, 1963

At approx. 2.00 A.M. this morning, a wind blew across Lawrence at speeds up to 100 miles per hour. The duration was short, perhaps less than 10 minutes at which time only mild winds remained. The damage to trees was the worst in the history of Lawrence, and was generally distributed throughout the city and adjacent country. This was the wind that struck Topeka to the west & Eudora to the east as it moved across the area. Trees were blown completely over; large limbs were splintered to the base of tree and small branches covered the ground. Many streets were blocked and lines were down all over city. Trees on streets on lee of Oread Hill (Univ. Kansas) were particularly damaged from what appeared to be caused by downdraft. Tree without protection in direction of wind were damaged to the greatest degree. It would have been interesting to check casually of nests and young birds. Old Virginia Creeper vines on Haworth Hall on Campus were blown from building. Today noticed first ripe mulberry fruit on ground. First on trees about a week ago.

2 mi. N and 6/10 mi E Clinton (center of town), Douglas Co., Kansas  
 May 17

Set 100 traps between 7:00 P.M. & 8:00 P.M. in uncultivated field (see May 12 for position in field). The locality is for trap no. 1, mammals being caught at 7:45 P.M. Observed 1 striped skunk at NW corner Sec 12, T13S, R18E.



2 mi. N and 6/10 mi. E Clinton (center of town), Douglas Co., Kansas.

May 18, 1963.

Check trap line set last night. Left Lawrence 7:00 A.M., day clear, temp 60°F. Last night the temperature was 55°F. A heavy dew covered the grasses and vegetation this A.M. mammals in good condition and without ant or beetle depredation. no fly eggs in fur. Started 7:20 A.M. on line and completed at 7:40 A.M. I noticed that the soils were damp from previous rains, even at base of the otherwise dry grass stalks and seeds. This field of grass (will collect and identify later) is dominated by one grass (not *Andropogon*) which gives the appearance of the life form of *Andropogon*. It is loosely matted and is necessary to separate old grasses before one can examine the ground. The grasses on the elevation bordering the S and E edges of the field have another grass included which produces a even denser mat of horizontal stems and makes a perfect covering overhead. It is more difficult to separate old grasses to expose ground. The soils under the mat are bare and the surface of the ground is almost completely utilized by trails and foraging corridors. Grasses are almost continuous and corridors are between the individual stalks or bunches. There are, however, certain trails that are well established and are used more consistently than other areas. Grass cuttings were generally distributed throughout the area. Did not see any birds that were permanently inhabiting the area. The first line of traps across the field (W to E) and about half way up east side had the same position as the traps set May 12. The remainder were in new territory. It is interesting to note that the traps across the center of the field did not yield as many microtines as those placed at peripheral edge of field, although the center of the field supported almost as many runways as the edge of the field. The kind of vegetation and overhead protection and drainage was slightly different. *Reithrodontomys* were poorly represented in the field for some reason. It is interesting to note that the *Sigmodon* low numbers and that the *Synaptomys* (2) were taken in marginal areas at the NW corner of the field. (See diagram at bottom of page (next) page for position of traps.)

mammals from trap line set last night and checked this A.M. (between 7:20-7:40 A.M.). Temp 60°F, slight wind, clear skies. Temp. 55°F last night. Traps 20 feet apart and set in pairs.

1 sprung	39 m. ochro	77 sprung
2 sprung	40 not visited	78 sprung
3 m. ochro	41 " "	79 m. ochro
4 <i>Scymnodon hispidus</i>	42 " "	80 not visited
5 sprung	43 " "	81 " "
6 sprung	44 " "	82 " "
7 m. ochro	45 " "	83 " "
8 not visited	46 " "	84 " "
9 sprung	47 m. ochro	85 sprung
10 sprung	48 not visited	86 not visited
11 m. ochro	49 m. ochro	87 sprung
12 m. ochro	50 m. ochro	88 m. ochro
13 sprung	51 sprung	89 not visited
14 <i>Synaptomys cooperi</i>	52 not visited	90 " "
15 m. ochro	53 sprung	91 m. ochro
16 not visited	54 sprung	92 sprung
17 <i>Reithro meg.</i>	55 sprung	93 not visited
18 not visited	56 sprung	94 " "
19 " "	57 not visited	95 m. ochro
20 " "	58 <i>Synaptomys cooperi</i>	96 not visited
21 " "	59 not visited	97 " "
22 m. ochro	60 <i>Synaptomys cooperi</i>	98 " "
23 m. ochro	61 not visited	99 m. ochro
24 m. ochro	62 " "	100 m. ochro
25 not visited	63 " "	
26 sprung	64 " "	
27 not visited	65 " "	
28 m. ochro.	66 " "	
29 m. ochro	67 <i>Peromyscus</i>	
30 m. ochro	68 not visited	
31 m. ochro	69 " "	
32 m. ochro	70 sprung	
33 sprung	71 not visited	
34 sprung	72 sprung	
35 m. ochro	73 not visited	
36 not visited	74 " "	
37 not visited	75 " "	
38 m. ochro.	76 sprung	

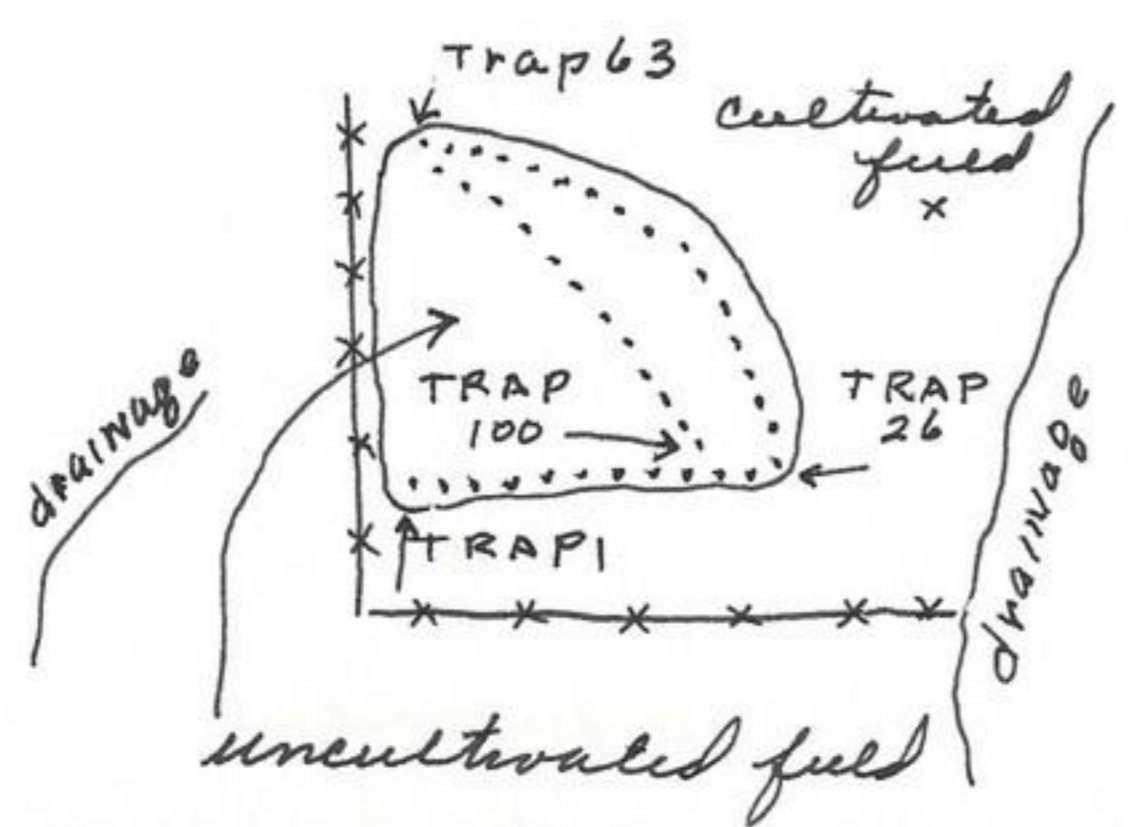
Summary

25 <i>Microtus ochrogaster</i>
3 <i>Synaptomys cooperi</i>
1 <i>Scymnodon hispidus</i>
1 <i>Peromyscus maniculatus</i>
1 <i>Reithrodontomys megalotis</i>
31 Total
23 traps sprung
46 not visited

Preparation of mammals collected this A.M.

SKU	630518-3	<i>Microtus ochrogaster</i>	155-38-21-12-46 gms ♂, testes 11 mm
	630518-4	<i>Synaptomys hispidus</i>	173-73-25-15-26 gms ♀ ut normal
	630518-7	<i>Microtus ochrogaster</i>	133-32-20-11-27 gms ♂ testes 7 mm
	630518-11	" "	125-32-19-11-26 gms ♀ ut normal
SKU	630518-12	" "	160-37-21-12-56 gms ♀ ut normal
SK. ONLY	630518-14	<i>Synaptomys cooperi</i>	131-20-19.5-10-38 gms ♀ ut normal
	630518-15	<i>Microtus ochrogaster</i>	144-34-19-11-29 gms ♂ testes 10 mm
	630518-17	<i>Reithrodontomys megalotis</i>	148-69-18-17-13 gms ♂ Testes 5.5 mm
	630518-22	<i>Microtus ochrogaster</i>	120-28-19-10-21 gms ♀ ut. normal
	630518-23	" "	137-31-19-11-29 gms ♀ ut normal
SK. ONLY	630518-24	" "	163-42-19-10-53 gms ♀ 2x1 emb. 23 mm
SKU	630518-28	" "	163-41-21-12-48 gms ♂, testes 11 mm
	630518-29	" "	112-31-19-10-17 gms ♀ ut normal
SKU	630518-30	" "	158-36-20-11-46 gms ♂, testis 15 mm
SKU	630518-31	" "	171-40-21-12-57 gms ♂, testis 13 mm
	630518-32	" "	137-34-20-11-27 gms ♂ testes 7 mm
SKU	630518-35	" "	159-37-20-13-50 gms ♀, 0x2 emb. 7 mm
SKU	630518-38	" "	159-35-20-11-50 gms ♀, 1x0 emb. 15 mm
SKU	630518-39	" "	159-40-20-11-54 gms ♂, testes 14 mm
SK. ONLY	630518-47	" "	161-38-21-11-52 gms ♂ testes 12 mm
SKU	630518-49	" "	137-32-20-11-33 gms ♂ testes 7 mm
SKU	630518-50	" "	153-35-20-11-49 gms ♀, 0x2 emb. 6 mm
SKU	630518-58	<i>Synaptomys cooperi</i>	138-20-20-11-50 gms ♂ testes 7 mm
	630518-60	" "	120-18-19.5-10-35 gms ♀ ut. normal
	630518-67	<i>Peromyscus maniculatus</i>	137-50-19-13-18 gms ♂ testes 8 mm
	630518-79	<i>Microtus ochrogaster</i>	131-32-19-11-27 gms ♂ testes 7 mm
SKU	630518-88	" "	176-45-21.5-13-80 gms ♀, 1x2 emb. 15 mm
SKU	630518-91	" "	155-35-20-12-62 gms ♀, 1x2 emb. 29 mm
	630518-95	" "	154-38-20-11-40 gms ♂ testes 10 mm
SKU	630518-99	" "	162-41-20-11-54 gms ♀, 2x1 plac. scars
	630518-100	" "	122-30-19-11-23 gms ♀ ut. normal

May 18, 1963



100 Traps set at intervals of 20 feet and 2 traps to a station, both traps within 5' or 6" of each other and in same runway or area utilized. The Boy Scout area is directly 5' aft this uncultivated field of grasses. (See May 12 for other details of this area.)

In trees 5 of uncultivated field noted a loggerhead shrike feeding a young about 1/4 th small than the adult. On return to Lawrence from trapping area noted a spotted sandpiper at a natural spring and pond at 2 1/2 mi n and 9/10 mi. w Clinton. This area could potentially become an important marsh if grazing were controlled. Above and below this area the fields are cultivated. Not much microtine activity but I am sure there must be *Microtus ochrogaster* in the community. On the west sidehill there is a layer of exposed limestone rocks: under one was two box turtles unbedded in soil and 3 inches apart. These turtles were about 40' from the pond. There are many flat rocks on slope that would make favorable retreats for snakes which might forage in the fields.

On return to Lawrence, made count of mammals collected since last fall. Summary to date, May 18, as follows:

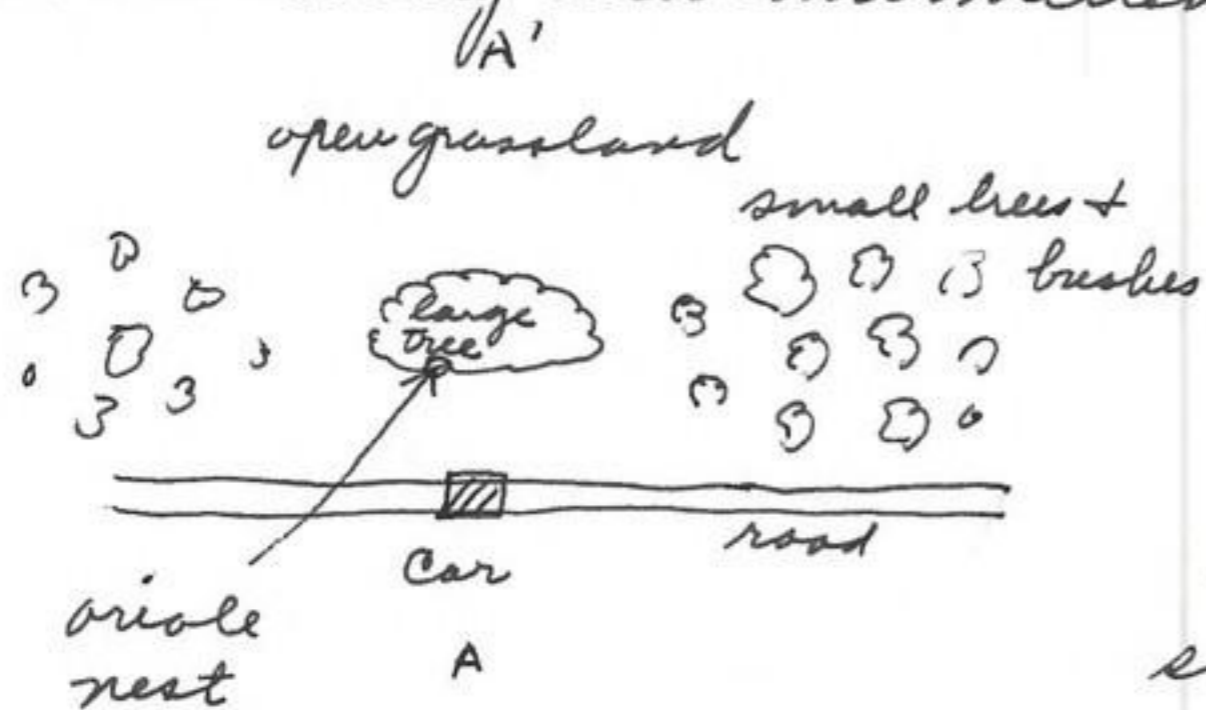
466 <i>Microtus ochrogaster</i>	158 <i>Reithrodontomys megalotis</i>
62 <i>Synaptornis cooperi</i>	7 <i>Blarina brevicauda</i>
64 <i>Peromyscus maniculatus</i>	5 <i>Mus musculus</i>
122 <i>Peromyscus leucopus</i>	3 <i>Rattus</i>
45 <i>Spermophilus hispidus</i>	8 <i>Pitymys remoralis</i>

Total 939 These mammals have been trapped at regular intervals to show reproductive cycles, growth rates, population composition etc.

1/2 mi. w and 1/20 mi. n Washington Creek School, Douglas Co., Kansas

May 19, 1963

On return from driving James Robert Bee and Robert Pierson to a fishing pond w of above locality, stopped to inspect a nest of the Baltimore Oriole. While here made the following observation in a period of 1 hour from 2:00 P.M. to 3:00 P.M. Skies cloudy and intermittent rain, day cool.



The large tree was between extensive growths of shrubs and small tree (8-12 feet high) about 30-40' high

The following birds were observed in the immediate area of large tree and adjacent brushland. Distance from car to tree about .80'.

Duckwings: almost continuously singing in brushland on either side of area. Two passed by.

Cardinal: 1 male and 2 females passed from N to S feeding from limb to limb.

Crested flycatcher: One bird feed for 2 minutes in tree at lower levels.

Baltimore Oriole: female entered nest in tree (west side tree) and remained. male in area for about 1 minute and then left to NE or SW. It would return about every 5 minutes. At one time 2 males were at the nest, 15 feet away. The occupant of nest did not drive the other bird away except when it approached to within about 10 feet, then only a mild rebuff without body contact. At one time it flew directly & slowly to the car and then continued to west. At no time did it interfere with the action of other feeding birds of different kinds.

Field sparrow: Single bird appear in upper branches of a dead bush on 5 different occasions.

Mourning doves: 8 flew by over head, one alighted in tree about 100 S of large tree.

Eastern Kingbirds: visited large tree 3 times and alighted in topmost branches.

Veery: one bird fed to N thru lower branches of large tree.

Meadowlark. Several in adjoining area, several flew through area and one alighted on ground in grass.

Downy Woodpecker an adult and young fed on lower trunks of trees for 15 minutes. The adult fed the young several times.

Brown thrasher. One alighted in branches (dead) of a small bush. It occupied the center of the dead limb.

Cowbird. One alighted on top of dead limbs of small tree, cleaned its bill and continued S.

Scissor-tailed flycatcher. One fly by to S.

Mockingbird. One in area most of time. Fed in all conceivable places.

Orchard Oriole. One male fed in large tree and then flew E.

Robin. One returned to top of large tree and sang for several minutes on 4 occasions.

One small flycatcher (*Empidonax*) and one unidentified warbler.

1 mi. E and 1 3/4 mi S Steel (cross road in center of town), Douglas County, Kansas.

May 22, 1963 (see next page for May 20, 1963)

From the above locality took several photographs of country-side to determine correction factor for closed aperture (Kodachrome II, 35mm). Mr Swallow, who owns the grazing land informed me that this area was cleared of deciduous forests 10 years ago by 2 Dutchmen. The roots were injected with ksilol. Before that time the slopes were covered by trees, an example is the island of trees on top of the hill. Grazing and contours have kept grasses at proper height and community composition. Today has been exceptionally clear and distant views without haze. These conditions occur mainly in the spring and after a rain. The photos were taken to determine effect of closing the aperture and correcting it with compensated light.

- Photo 630522-1 To north from above locality at 15<sup>th</sup> sec and 16 apert.
- Photo 630522-2 To SW at 15<sup>th</sup> sec. 16 apert.
- Photo 630522-3 To SW at 250<sup>th</sup> sec and 4.5 apert.
- Photo 630522-4 To N at 250<sup>th</sup> sec and 4.5 apert.
- Photo 630522-5 To N at 8<sup>th</sup> sec and 16 apert.
- Photo 630522-6 To SW at 8<sup>th</sup> sec and 16 apert.
- Photo 630522-7 To west at foot 1/2 block N above locality with rock fence in foreground at 250<sup>th</sup> sec and 5.6 apert.
- Photo 630522-8 Ibid
- Photo 630522-9 To NW showing remnant deciduous trees on top of hill at 15<sup>th</sup> sec and 16 apert.

at a point 2/10 mi. S of above locality along side of road and bordering a native field of grass and fence trees, upturned a flat rock and found a male and female *Peromyscus leucopus*. The male was brown and the female greyish. They were both in a nest of dried grasses. The male left area and the female entered a hole leading underground.

At a point at exactly center of ~~see border~~ N border of sec 17, R. 18 E, T. 13 S at top of curved hill (road) noted a dark colored hawk of the size of a redtail and was perhaps a melanistic form, but not Barlow's. On return from the Clinton Reservoir area (proposed) noted one scissortailed flycatcher at 2 4/10 mi. S and 2 1/2 mi. W Lawrence (P.O.), Douglas Co., Kansas. This bird was feeding and moving progressively to the west. The tail was about 2/3 the size of the normal length of tails of adult birds.

Univ of Kansas, Lawrence, Douglas Co., Kansas

May 20, 1963

At approx 10:30 A.M noted a blue jay take a young mourning dove from nest and after attempting to fly with the bird in its bill, dropped it to the cement road below. In a few seconds the skin of head of young bird was pulled over skull and 4 puncture wounds made in skull. On two attempts, the jay was able to



move the bird to linear feet, each attempt lifting the bird approx. 1 1/2 feet in the air. An examination of the bird found it to be warm and slight signs of life. This young bird was

taken to lab and measured; 122mm total length; 52gms weight.

This same day noted ♂ & ♀ robin copulating.

\*(see <sup>previous</sup> next page for May 23, 1963)

2 mi. N and 6 1/10 mi. E Clinton (center of town at crossroads), Douglas Co., Kansas

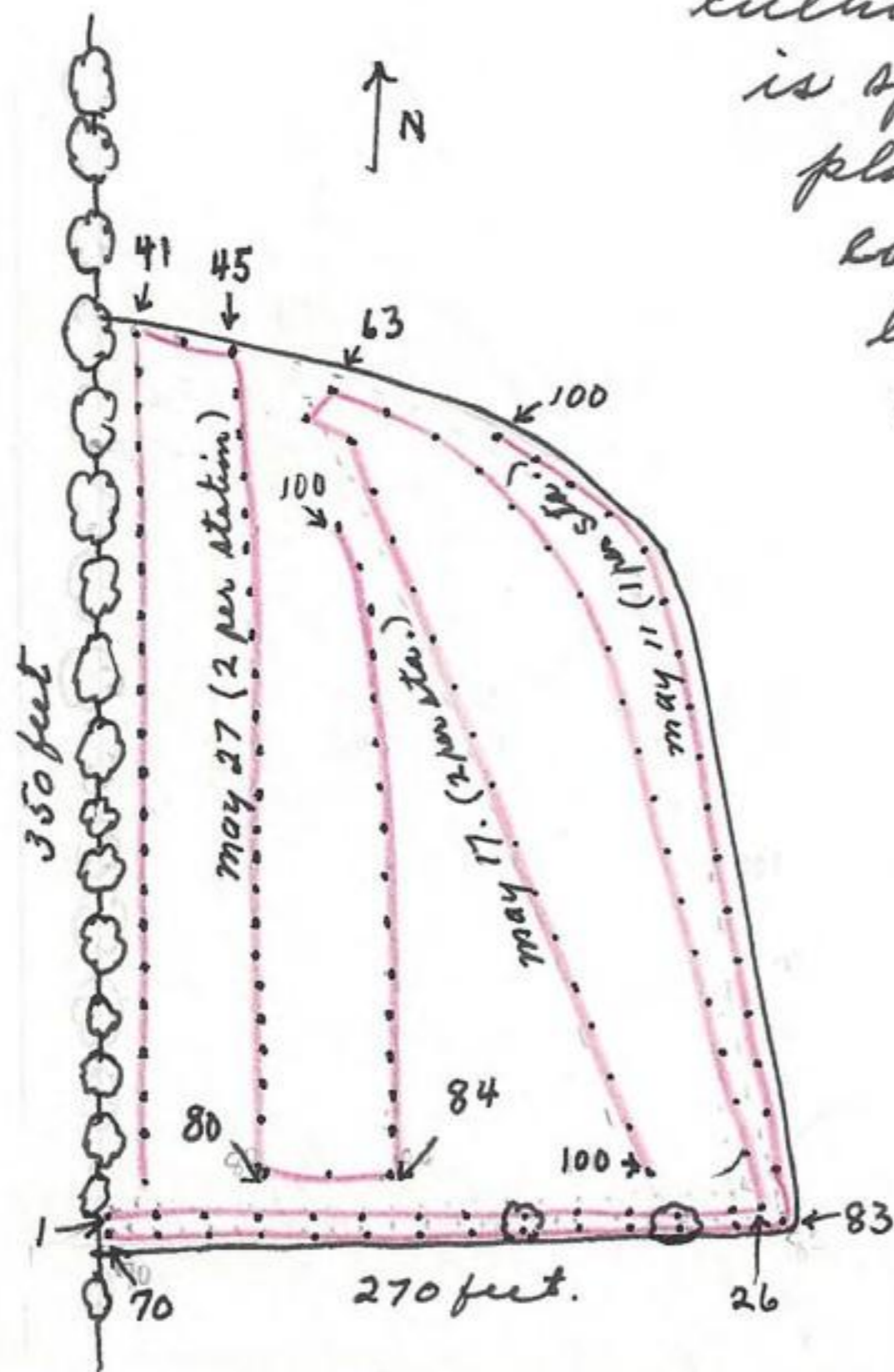
May 27, 1963

Set trap line 100 traps, 2 per station, 2 feet apart, between 7:10 P.M and 8:00 P.M. (late twilight when finished. This area (south border), is approx. 600 feet N of the county road to the south. The field is irregular and measures approx. 350 N-S and 270 ft E-W.

The adjoining areas support short grass to W, recently cultivated fields to N & E, now with few weeds, and recently cultivated field to S, now growing grass which is sparsely swarded.

Two previously placed trap lines are included to show coverage of field (May 11 listed under locality 1 1/2 mi. E + 1 1/20 mi. N Clinton and May 18 which bears the same locality as above).

The greatest concentration of mammals is on peripheral edges. The wettest is along W border. There is one dominant grass but several other kinds that dominate certain areas. A blotched kingsnake was noted at trap no 11. It tried to escape into a hole used by a meerkat. It was coiled at time of discovery and was adult in size.



May 28, 1963

May 28, 1963

630528-138

mammals collected in morning (8:00 A.M - 9:00 A.M) temp 54°F sky cloudy, no rain last night. (Trops in pairs, odd number first, even second).

1 m. ochro.	40 not visited	79 not visited
2 " "	41 Peromane.	80 " "
3 Sigmodon hisp	42 m-ochro	81 " "
4 " "	43 sprung	82 sprung
5 sprung	44 Sigmodon hisp.	83 not visited
6 Peromane.	45 " "	84 Peromane
7 not visited	46 not visited	85 m. ochro
8 m. ochro	47 m. ochro	86 " "
9 not visited	48 not visited	87 not visited
10 " "	49 " "	88 sprung
11 Sigmodon hisp	50 " "	89 m. ochro
12 m. ochro	51 " "	90 m. ochro
13 m. ochro	52 sprung	91 not visited
14 " "	53 m. ochro	92 " "
15 Sigmodon hisp	54 not visited	93 " "
16 " "	55 m. ochro	94 sprung
17 sprung	56 " "	95 sprung
18 m. ochro	57 " "	96 m. ochro
19 not visited	58 Sigmodon hisp	97 m. ochro
20 " "	59 not visited	98 m ochro
21 " "	60 m. ochro	99 m ochro
22 sprung	61 not visited	100. not visited
23 m. ochro	62 sprung	
24 not visited	63 m. ochro	
25 " "	64 Sigmodon hisp	
26 sprung	65 Sigmodon hisp	
27 m. ochro	66 mus musculus	
28 not visited	67 not visited	
29 Sigmodon hisp.	68 " "	
30 Sigmodon hisp.	69 m. ochro.	
31 sprung	70 sprung	
32 m. ochro	71 sprung	
33 not visited	72 not visited	
34 m. ochro	73 " "	
35 Blarina	74 " "	
36 not visited	75 " "	
37 sprung	76 " "	
38 sprung	77 " "	
39 sprung	78 " "	

Summary

28	microtus ochrogaster
12	Sigmodon hispidus
1	mus musculus
3	Peromyscus maniculatus
1	Blarina brevicauda
<hr/>	
45	total
17	sprung
38	not visited



Mammals prepared from trap line set last night.

SKU	<u>630528-1</u>	<i>Microtus ochrogaster</i>	159-38-21-12-53gms ♀ 1x2 emb. 5mm
SKU	<u>630528-2</u>	" "	144-35-21-13-55gms ♂, testes 12mm
SKU	<u>630528-3</u>	<i>Signadon hispidus</i>	169-70-24-15-30gms ♂ testes 5mm
	<u>630528-4</u>	" "	160-68-25-15-26gms ♂ testes 7mm
	<u>630528-6</u>	<i>Peromyscus maniculatus</i>	125-48-18-12-11gms ♂ testes 2mm
	<u>630528-8</u>	<i>Microtus ochrogaster</i>	160-38-20-11-46gms ♂ testes 14mm. Bot fly on sternum
	<u>630528-11</u>	<i>Signadon hispidus</i>	166-52-27-16-42gms ♂ testes 7mm.
SK. ONLY	<u>630528-12</u>	<i>Microtus ochrogaster</i>	158-35-20-11-50gms ♂ testes 13mm
	<u>630528-13</u>	" "	134-32-20.5-11-29gms ♀ ut. normal
SKU	<u>630528-14</u>	" "	158-37-20-12-48gms ♂ testes 9mm
	<u>630528-15</u>	<i>Signadon hispidus</i>	190-80-27-16-45gms ♂ test 9 (one is 1/2 size + yellow)
	<u>630528-16</u>	" "	194-85-29-16-40gms ♂ testes 9mm
SKU	<u>630528-18</u>	<i>Microtus ochrogaster</i>	166-38-21.5-12-56gms ♂ testes 13mm
SK. ONLY	<u>630528-23</u>	" "	163-35-20-12-58gms ♀ 1x2 emb plus scars
SKU	<u>630528-27</u>	" "	145-30-19-12-36gms ♂ testes 10mm
	<u>630528-29</u>	<i>Signadon hispidus</i>	164-70-25-14-24gms ♀ ut normal
SK. ONLY	<u>630528-30</u>	" "	263-116-31-18-142gms ♀ 4x2 emb 20mm.
SK. ONLY	<u>630528-32</u>	<i>Microtus ochrogaster</i>	165-42-21-12-50gms ♂ testes 14mm
SKU	<u>630528-34</u>	" "	138-32-20-11-31gms ♂ testes 5mm
	<u>630528-35</u>	<i>Blarina brevicauda</i>	113-25-15-( )-17gms ♀ ut normal
	<u>630528-41</u>	<i>Peromyscus maniculatus</i>	150-61-21-14-17gms ♂ testes 5mm
	<u>630528-42</u>	<i>Microtus ochrogaster</i>	101-30-18-10-14gms ♂ testes 5mm
SKU	<u>630528-44</u>	<i>Signadon hispidus</i>	143-68-23-14-20gms ♂ testes 5mm
	<u>630528-45</u>	" "	138-56-22-12-16gms ♀ ut. normal
SK. ONLY	<u>630528-47</u>	<i>Microtus ochrogaster</i>	162-39-20-12-55gms ♀ 2x1 plus scars
SKU	<u>630528-53</u>	" "	137-33-20-12-32gms ♀ ut normal
SK. ONLY	<u>630528-55</u>	" "	165-39-21-12-52gms ♀ ut normal
SKU	<u>630528-56</u>	" "	138-33-20-11-30gms ♂ testes 5mm
SKU	<u>630528-57</u>	" "	116-34-18-10-20gms ♂ testes 2.5mm
	<u>630528-58</u>	<i>Signadon hispidus</i>	169-71-25-14-25gms ♀ ut normal
SKU	<u>630528-60</u>	<i>Microtus ochrogaster</i>	166-38-20-12-55gms ♀ 1x2 emb 4mm
	<u>630528-63</u>	" "	158-37-21-12-47gms ♂ testes 12mm
	<u>630528-64</u>	<i>Signadon hispidus</i>	185-80-26-14-30gms ♂ testes 5mm
	<u>630528-65</u>	" "	178-79-26-15-28gms ♂ testes 5mm
	<u>630528-66</u>	<i>Mus musculus</i>	167-78-17-14-15gms ♀ ut. normal
SK. ONLY	<u>630528-69</u>	<i>Microtus ochrogaster</i>	153-36-20-12-61gms ♀ 2x0 emb. 32mm
	<u>630528-84</u>	<i>Peromyscus maniculatus</i>	134-54-19-13-16gms ♂ testes 6mm
	<u>630528-85</u>	<i>Microtus ochrogaster</i>	137-35-20-11-29gms ♀ ut. normal
SKU	<u>630528-86</u>	" "	135-32-19-11-32gms ♀ ut. normal

SKU 630528-89	<i>Microtus ochrogaster</i>	167-40-21-12-60 ♀	0x2 emb. plac. scars.
nk only 630528-90	<i>Synaptornis</i>	169-35-21-13-56gms ♀	0x2 emb 8 mm
630528-96	<i>Microtus ochrogaster</i>	139-31-19-11-35gms ♀	0x1 emb 16 mm
630528-97	"	112-28-17-10-17gms ♀	ut normal
SKU 630528-98	"	161-35-20-12-56gms ♂	testis 13 mm
SKU 630528-99	"	147-36-20-11-41gms ♀	ut. normal

Univ. Kansas, Lawrence, Kansas

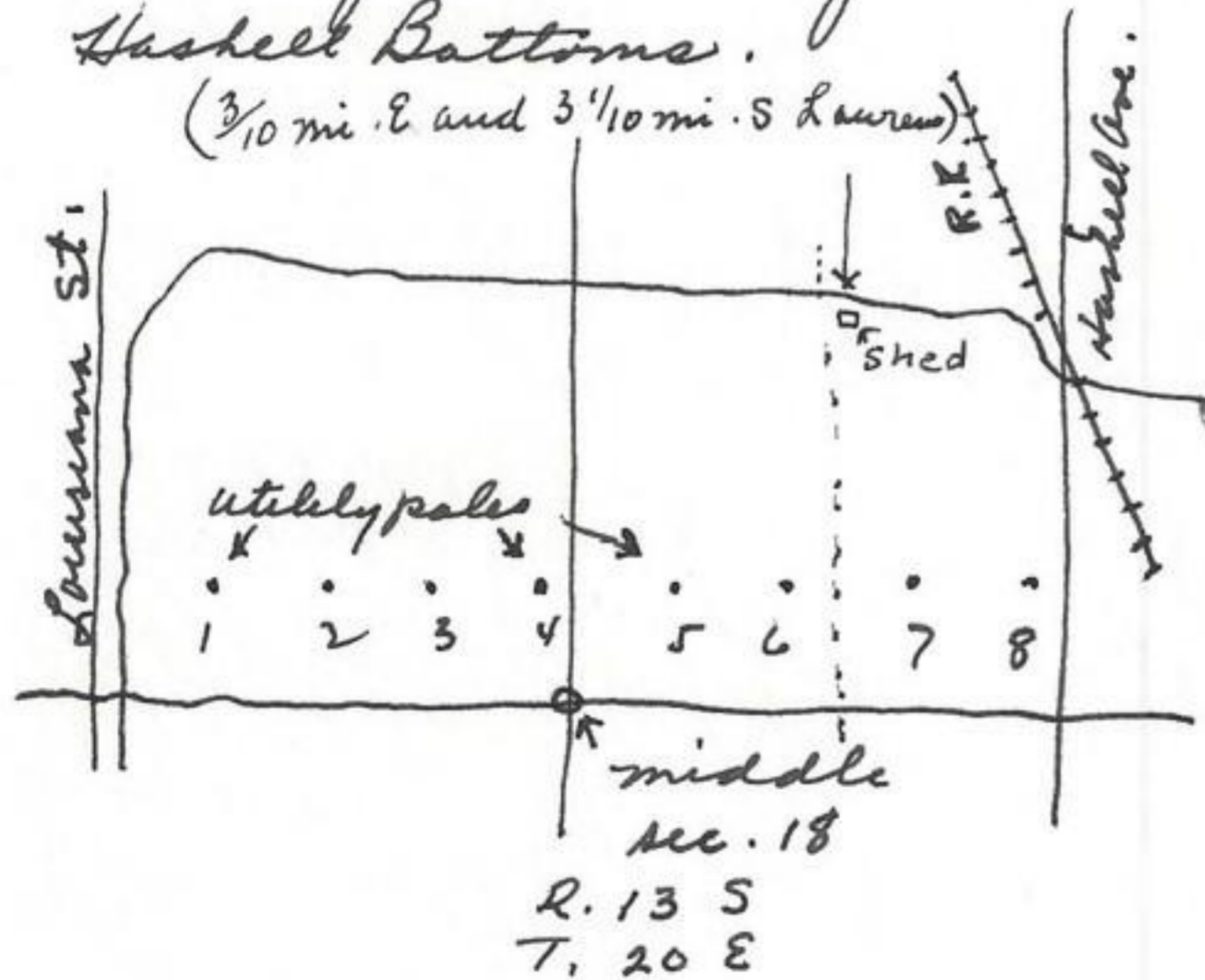
May 31, 1963

Preserved the uterus and embryos of a laboratory mouse *Mus musculus*, T strain, out bred. At 10:30 A.M. when dissected, was 8 days, 8 hrs (plus or minus 2 hours) old. This specimen is catalogued as no. 630531-1. It measured 204 mm T. length and weighed 43gms. mouse presented by Lathers

Haskell Bottoms, 3 7/20 mi. S Lawrence (P.O.), Douglas Co., Kansas.

June 1, 1963

Made census of *Microtus ochrogaster* runways in Haskell Bottoms. The area is as previously conducted and consists of a line 10 feet wide directly beneath the south lines of the utility lines that run east-west through the Haskell Bottoms.



From Louisiana Street to utility pole 1 observed 1 runway on west side of dike. Between pole 1 and 2 there were no runways. Between pole no. 2 and 3 noted 1 runway at 1/2 distance between no 2 and 3 poles and new crayfish holes associated; one runway 3/4 distance. Between poles 3 and 4 noted 1 runway 1/5 way; 1 at 1/4 and 1 at 1/2 way.

Between road, and <sup>Louisiana St.</sup> no 4 the soil is dry and new grass 6 inches high covering 80% of soil. 1 grass sparsely grown and 2 feet high. Weeds are rare. Meadow lark & Dickcissel common and both singing. At 1/2 distance between pole 3 and 4 located nest of Dickcissel in grass (2 feet high). Nest 4 inches from ground. ♂ + ♀ in area. Photo 630601-1 and 630601-2

June 1, 1963

of this nest. at 4/5 way noted 2 more microtine runways (all runways *M. ochrogaster*). Between poles 4 and 5 no runways. more weeds than previously and consequently more cover. 1 runway at about 1/2 way. Between poles 5 and 6 ~~none~~ 1 at 1/5 distance and 1 at 1/2 distance. a redwing blackbird and water at 3/4 way. Two runways at 9/10 distance. Between poles 6 and 7 1 at 1/10 by canal. Area mainly yellow clover and short grass. many bees. Between poles 7 & 8 none. One beyond pole 8 at edge of canal along road (Hasbell Avenue).

Continued west along dike and thence S to a point 3/10 mi. E and 3 1/10 mi. S Lawrence (P.O). This area is about 80 feet SE of canal gate which drains Hasbell Bottoms. At this point (see previous dates for high population of *Sigmodon*) collected three snakes.

- 630601-4 *Thamnophis* 290 mm body, 95 tail, 13gms.
- 630601-5 " " 472 " " , 142 " , 120gms
- 630601-6 snake 750 " " , 160 " , 145gms

These snakes, plus a large blue racer, were all within 20 feet of each other. The blue racer and the red-sided *Thamnophis* were together in the open and no. 630601-4 and 630601-6 were under boards. This is the area of many wood planks, doors and metal roof sheeting from old shed now partly raised. Photo 630601-3 of three eggs of a redwing blackbird from nest about 200 E of snake area. <sup>630601-3a</sup> nest in marsh vegetation along water on S side of dike. Only mammal under 12 wooden structures was a *Peromyscus maniculatus*.

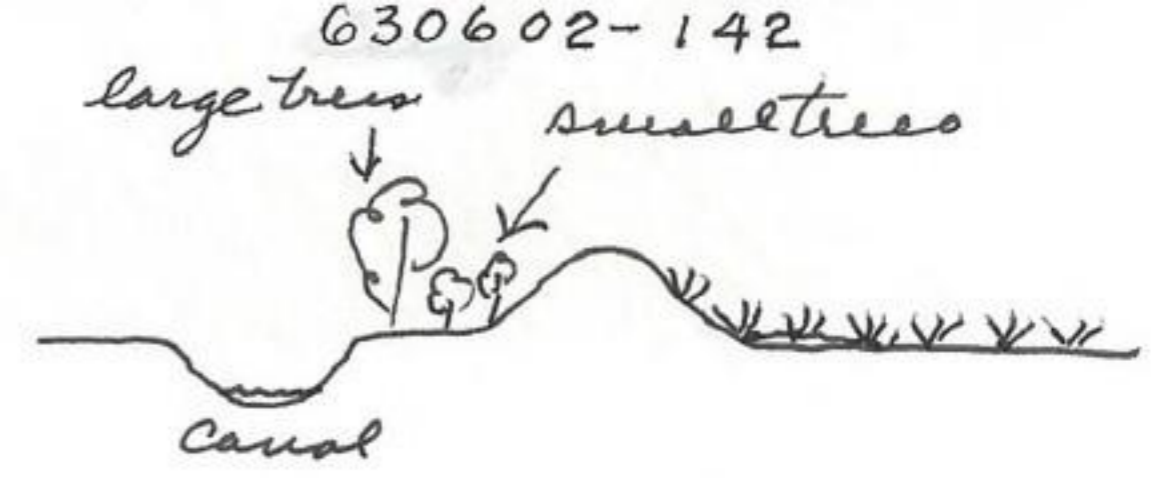
Hasbell Bottoms, 3/10 mi. E and 3 1/10 mi. S Lawrence (P.O)  
Douglas Co., Kansas.

June 2, 1963

Took several photos in Hasbell Bottoms area. The above locality is the shed and water gate area in NE part of bottom. Photo 630602-1 of purple flower and butterfly. 630602-2 of flower and bumblebee. Many different species of lepidoptera & insects visited these flowers. Photo 630602-3 of shed and wooden planks or doors on ground (30 sec + 14 aperture). These wood doors and other flat structure on ground supplied the refuges for *Sigmodon* and snakes. Photo 630602-4 a redwing nest in small bush on N side dike 2 feet above ground. Along this dike

June 2, 1963

on n side counted 13 nests  
of redwing blackbirds in  
the small trees (see diagrams)  
the nests,  
ranging from 2 to 15 feet high



above the ground. nests contained 1 egg, 2 eggs, 3 of 3 eggs,  
5 nests of 4 eggs, 3 nests just completed. These nests were  
between the gates near shed and the bridge over the Haskell  
Avenue.

1620 Tennessee St., Lawrence, Douglas Co., Kansas

June 3, 1963

- Recorded the following photos (color, 35 mm);
- 630603-1 of white flower, cultivated. closed ap. slow speed
  - 630603-2 " " " " " " open aperture - fast speed
  - 630603-3 Annette Christine Bee and new mercury monterey
  - 630603-4 " " " " " " " " " "
  - 630603-5 Robert Pierson, James Robert's friend. " and cyclo.

Tonganoxie Lake, Leavenworth Co., Kansas

June 8, 1963

Collected a tree frog no. 630608-1 from top of car trailer  
at 11:30 A.M. It measured 48 mm total length and weighed  
10 gms. These frogs were heard calling on previous night  
from trees surrounding the lake. The car trailer was in a  
wooded area bordering the lake. Photo 630608-1 & 630608-2 of  
James Robert Bee & Robert Pierson

Lone Star Lake, Douglas Co., Kansas

June 9, 1963

- Recorded the following photos (color 35 mm) of Chris and  
her friends
- 630609-1 Janet Ulmer, Brazier, Annette C Bee  
and Mary Pauline Bee.
  - 630609-2 same as above
  - 630609-3 Annette Christine Bee all photos at about  
630609-4 Brazier 10 minutes before  
630609-5 Janet Ulmer sun left western  
630609-6 Mary Pauline Bee sky. Day clear  
630609-7 same as no 1 and into sun. and sunny.
  - 630609-8 Annette P.M Bee
  - 630609-9 " " " "
  - 630609-10 James Robert Bee
  - 630609-11 James Robert Bee

3 1/10 mi E and 3 1/10 mi S Lawrence (P.O.), Haskell Bottoms, Douglas Co., Kansas

June 12, 1963

This is the locality of the abandoned shed near dike in NE corner of Haskell Bottoms. From the wet marsh immediately s. of dike collected the following grasses & sedges

630612-1 \_\_\_\_\_

from wet soils.

630612-2 \_\_\_\_\_

630612-3 \_\_\_\_\_

630612-4 \_\_\_\_\_

the area of standing water

630612-5 \_\_\_\_\_

from dry soils and generally distributed throughout the entire Haskell Bottoms, both on the dikes and in the previously grazed fields. It is the dominant grass beyond the marsh area and forms a continuous cover.

From under a board collected a small snake:

630612-6 \_\_\_\_\_ no measurements or weight taken

Photo 630612-7 of a nest of 4 eggs of the orchard oriole. nest 3 feet high in small tree 5 feet high. This bird was nesting in an area also used by redwing blackbirds nesting in small trees. This bird left nest and flew 40 feet under cover of other <sup>small</sup> trees to a large tree. It cleaned bill and adjusted feathers and showed concern by lowering head and watching. It was only when I was at nest that it flew into small bush 20' away and scolded vigorously. Up to that time it offered a soft single note. The male was not in area.

From a nest of a redwing blackbird photographed June 1 (630601-3) measured a young bird as 95 mm total length (tip of bill to base of tail)

June 16

Photographed nest of wood pewee 630616-3, two eggs creamish white in color and 18 mm in length. Both birds in area but inconspicuous until I approached nest when they came to within 15' and called. A yellowthroat was also concerned with area and may have had eggs or young. Several dickcissels in area and calling from tops of small trees which were invading the field. This nest is 60' N of dike at above locality at shed.



Kaw River, 3/10 mi. W and 8/10 mi. N Lawrence (P.O.), Douglas County, Kansas.

June 16, 1963

Fathers day and family at the river. Took six photographs:

- 630616-4 mercury monkey at edge of river  
 630616-5 large thistle seed, \_\_\_\_\_  
 630616-6 Chris, Jay and Pauly in shaded lone along river.  
 630616-7 sun on grasses  
 630616-8 ~~yellow~~ <sup>yellow</sup> ~~lucifer~~ <sup>lucifer</sup> ~~plant~~ <sup>plant</sup>, ~~cultivated~~ <sup>cultivated</sup>. ok  
 630616-9 \_\_\_\_\_  
 630616-10 road thru riparian growth at above locality

Lawrence, Douglas Co., Kansas

June 17, 1963

Received information on manufacturing company that constructs the Berkeley type specimen cabinet:

The Steel Fixture manufacturing Co., 612 East 7th Street, Topeka, Kansas. Case trade name "Standard metal case for vertebrate zoological specimens". Outside dem. 27 1/4 inches wide and 39 1/2 inches high and 38 inches deep. 35 angles high spaced on 1" centers. Price \$135.00

1620 Tennessee St., Lawrence, Kansas

June 18, 1963

Photo 630618-1 of large cultivated daisy from neighbors garden.

Umo. Kansas, Lawrence, Kansas

June 19, 1963

Lothers presented me with a mouse, *Mus musculus*, "T strain". Killed June 19 at 3:30 P.M. The uteri, no 630619-1, were preserved in 70% ETOH. This mouse measured 210 mm total length and 48 gms wt. One side complete and other side dissected. It was 7 1/2 days pregnant (plus or minus 4 hours). Ova probably fertilized about 5:00 A.M.

June 20, 1963

Lothers presented me with a laboratory mouse, *Mus musculus* 630620-1, T strain, post-parturition, T.L. 193, wt. 34 gms. Preserved ovaries and uteri.

June 24, 1963

On the campus of the Umo. of Kansas noted complete coverage of sidewalk under elm trees by their secretion. This complete surfacing remained until wash off by rain. This is a good example of how soils are built up by secretion from trees overhead.

1620 Tennessee St., Lawrence, Douglas Co., Kansas

June 28, 1963

A fox squirrel built a nest of leaves and sticks in an elm tree. Construction between sunset and late twilight. I watched for 25 trips. From nest top of tree (8 feet from nest) the squirrel took 7 seconds; 2 to 5 secs to cut twig; 5 second to return to nest; at nest from 8 to 21 seconds. These nests are built rapidly and perhaps in evening when need of a place <sup>to sleep</sup> for night is required. Also noted a blue jay to alight on a dead limb of an elm tree which broke. Chimney swifts left the air while color still in sky (20 minutes of color left in sky after they left).

4 7/10 mi. SE Oskaloosa (2400 ft N of SE corner sec 23, T 10S, R 9S) Kansas

June 29, 1963

Photo 630629-1 and 630629-2 of pond. Annette C in foreground of no. 2.

2 6/10 mi. SW Oskaloosa (700 ft N and 500 ft. E of SW corner sec 7, T 10S, R 9E), Jefferson Co., Kansas

June 29, 1963

Photo 630629-3 of a small spring pond NE of large farm pond. Photo 630629-4 of many tallies at edge of above pond, Tamarisk and willow is vegetation. Photo 630629-5 of shadow of trees from S end of pond. Photo 630629-6 of tent, James R and Craig Ester.

1620 Tennessee St., Lawrence, Douglas Co., Kansas

June 30, 1963

Photo 630630-1 of a doll and cloths made by Annette Christine.

Univ. Kansas, Lawrence, Douglas Co., Kansas

July 3, 1963

Lothens presented me with a *Mus musculus* (lab. mouse) 630703-1. albino, virgin, paired June 27, 4 days pregnant, plug June 29, killed 4:00 P.M. July 3. Length 185, wt 23gms. Preserved uteri & ovaries

July 4, 1963

Lothens presented me with a *Mus musculus* (lab mouse) 630704-1, inbred Ph low, 4 days pregnant, killed 4:00 P.M. Length 210; weight 35gms. Another mouse, 630704-2, Ph low inbred, 3 days pregnant. 1 previous litter. Total length 204mm, wt 30gms. Preserved uteri & ovaries

July 5, 1963

A third mouse, *Mus musculus* (lab. mouse) 630705-1 was given to me by Lothurs. It was a Ph low, first litter, 6 days pregnant. Total length 204, wt 33 gms. Preserved uteri and ovaries.

Univ. Kansas, Lawrence, Douglas Co., Kansas

July 6, 1963

The reptiles at K.U. and used in General Zoology are:  
 monitor, *Exanthematicus* from W. Africa. Anderson had this reptile for at least 10 years.

*Ophisaurus apodus*, glass snake. A European form.

2 2/10 mi. N and 3/10 mi. W Clinton (center of town), Douglas Co., Kansas.

July 18, 1964

Collected a *Lampropeltis caligaster* from this area (see April 5, 1963 noted). Snake taken from a few feet beyond trap 100 of that date.

630718-1 *Lampropeltis caligaster*.



Lawrence, Douglas Co., Kansas

July 20, 1963

made preparation for trip west.

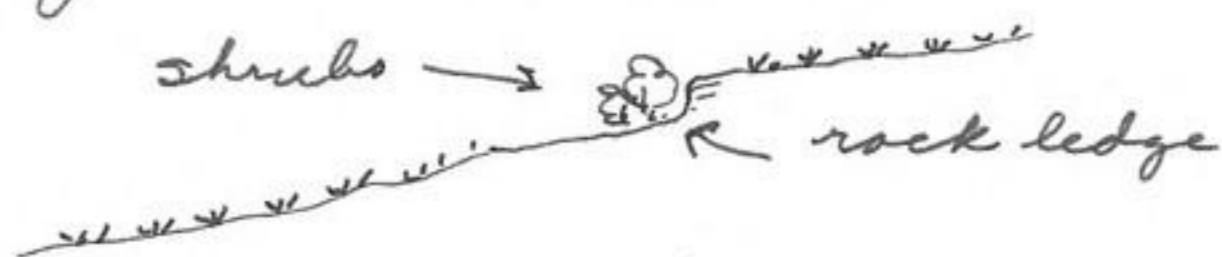
- ✓ overload springs for car
  - ✓ car top carrier
  - adapter to reduce 12 volts to 6 volts for electric shower and spotlight
  - ✓ remodel tent and water-proof it. Paint poles for more rapid installation
  - ✓ buy one more sleeping bag
  - ✓ buy 3 air mattresses
  - ✓ 2 plastic ground cloth.
  - ✓ boxes for back seat
  - ✓ 5 gal water can (2-2 1/2 gals)
  - ✓ large refriq. (foam) lewis for Polly
  - ✓ sweat shirt for Chris
  - ✓ heavy socks for family
  - ✓ thongs for Christ Polly
  - ✓ gasoline can
  - thermometer
  - ✓ wind gauge
  - ✓ mosquito nets
  - ✓ mosquito repellent + bombs
  - ✓ binoculars
  - ✓ camera, ext. meter, film, tel.
  - ✓ fieldguide
  - ✓ tent poles, pegs, ropes
  - ✓ 5 sleep bags, squeeze balls
  - ✓ 2 cots                      pillows
  - ground cloth
  - ✓ flash lights & batteries
  - pocket knife, compass
  - ✓ boots, hats,
  - ✓ stove, 2 chairs
  - ✓ fish gear
  - ✓ car registration, etc
  - ✓ field equipment.
  - ✓ socks, pants, shorts
- Some materials needed:
- ✓ 35 mm film
  - adapter for close-up.
  - carrying case for Nikon
  - ✓ finish mosquito screens
  - tow bar.
  - topo-maps of area
  - hiking shoes, high tennis.
  - ✓ stove for tent
  - ✓ flashlight source for light
  - lightweight binoculars.
  - tow rope, patch equip.
  - ✓ ~~water jug~~
  - ✓ gun, shells
  - ✓ shovel
  - ✓ notebook, 3 pens, ink
  - butcher knife
  - ✓ matches
  - ✓ can opener
  - ✓ fry pan
  - ✓ spatula
  - coffee pot
  - ✓ soap, scrub pads
  - ✓ dish pan
  - ✓ plates, cups, spoons, forks.
  - ✓ dish cloth, dish towel
  - ✓ sponge
  - ✓ salt-pepper
  - ✓ canteen 1 gal, 1 qt.
  - ✓ sun glasses
  - ✓ jar for butter
  - ✓ bread, butter, jam, peanut
  - ✓ butter, fruits, nuts, meat
  - ✓ milk, cereal, crisco, coffee,
  - ✓ milk drink,
  - ✓ med kit
  - ✓ watch.
  - ✓ turn off gas, lights water; pull
  - ✓ electrical outlets.

Lawrence, Douglas Co., Kansas

Aug. 3 1963

Left for vacation to Utah at 9:00 A.M. mileage 40954.6, gas 1/2 tank on highway 40 S of Manhattan, noted one turkey vulture. at this point noted a correlation of plant growth to rock structure.

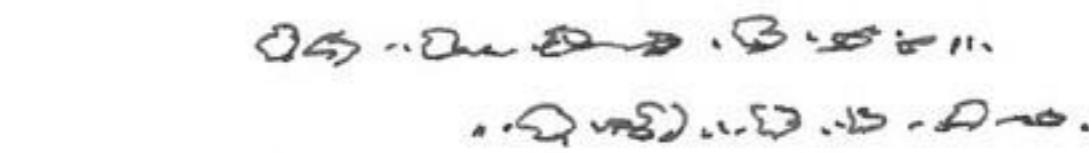
Small shrubs and sumac are just below rock ledges on tablelands. Shrubs and sumac



also followed horizontal line on hillside which were associated with underlying rock structures.

In recent road cuts on Highway 40 noted that cottonwood trees,

some 30 feet or so high had grown on talus directly below the cliffs. Weeds at base of talus and clear talus in tree area. From



junction City continued W on Interstate 70, US 40 highway at Abilene (junction) got

13 gal gas at 41081. now 12:00 noon

Int. ST 70 - 3 mi W Abilene - 1 scissor-tail flycatcher. 10 mi S. Salina highway 81 first red-tail hawk since Lawrence, 8 mi. N. ~~Hudson~~ <sup>McPherson</sup> highway 81 scissor-tail flycatcher and young. 3 mi. N. E. Imman highway 61 road killed red fox. One scissortail flycatcher at 6 mi. NE Bloom on highway 54. at mile 15.9 gas at 41314. at a point NE Meade on 54 at point Crooked Creek crosses highway noted 4 mallards. They flew exactly 48 miles per hour.

Meade, Meade Co., Kansas

Aug. 4, 1963

Left 8:15 A.M. at 41338. Camp in city park camp grounds. Swanson hawk 2 mi W Meade. 1 Swanson hawk 6 mi west Meade. 1 Swanson h. 7 mi. W Meade. West on highway 160. 2 Swanson, 3 mi W Plains, 12 mi. W Plains on highway 160 noted 16 Swanson hawks in one field, previous plowed, in an area of approx 2 acres. Avocets & sandpeeps in marsh area near by. Most common bird along road in western Kansas is the western Kingbird. First lark bunting, 3 miles east of 160-83 junction to north. Prairie dog community (30 animals) 2 mi S of 190-160 junction south of Sublette. 1 scissortail flycatcher 7 mi. N Sublette at junction to west. 1 turkey vulture 7 mi. E Pritchett, Colo.

From Las Animas Co line (east) to Trinidad (highway 160) made census of western Kingbird along road. Birds on fence lines or telephone lines. There is a definite decrease in numbers from east to west and is the dominant birds.

Lark bunting mainly to east into western Kansas. From county line to Kim = 156 W Kingbirds; from Kim 41552 to Tobe 41569 = 120 birds; from Tobe to junction of highways 382 = 159 birds; from junction to Trenchera (41595) = 59 birds; from above to San Francisco bridge (41404) = 23 birds; from above to Frijoles (41608) = 3 birds; from above to Beshoor junction (41620) = 8 birds; from above to Trinidad = 3 birds. at 6 mi NE Trinidad on highway 350 saw first magpie. Arrived Trinidad 3:00 P.M.

The western Kingbird was definitely associated with the typical great plains. Why they should be there in so great numbers is a question. No road killed birds because they fly up from car rather than to the side. There was a tendency for them to be in aggregates not as flocks but singles and pairs and more (4-6) in certain definite areas.

Photo: 63-~~0804~~-0804-1 Ja Veta Peak from east.  
" " " 0804-2-3 Blanca Peak from south.

On short cut to Great Sand Dune Nat Monument from S, noted 2 large areas of pumper cleared from slopes. could be fire or commercial cutting. Arrived monument 9:00 P.M. at 41758.

### White Sands National Monument, Colorado.

Aug 5, 1963

This A.M. between 8:00 - 11:00 A.M. made trip up river canyon to point where dunes were on E side of canyon. At camp photo 630805-1 and 630805-2 up canyon to N with cottonwood in foreground. No water in river which is the first time in history of the monument. Photo 630805-3+4 about 1 mile up canyon and both cottonwoods, dunes, and mt. and Christ Pally in picture. Photos 630805-5-6 of dunes east of canyon. Christ Pally in view. Photos 630805-7-8 of grasses in foreground and mt in background; same general area as above. Photo 630805-9-10 of old trees killed by sands moving into area. Photos 630805-11-12 of dunes in same area with family. Noted tracks of rabbits, magpie, beetles, Dipodomys, weasie?, burrowing on sands at edge of east part of sandy river valley. Birds in area: white breasted nuthatch, chickadee, magpies, black headed grackle, robin, Lewis woodpecker, red-shafted flicker, prairie jays, pine siskin, green-tailed towhee, mourning dove

Deforestation of junipers and piñon a program to replace with grass. Left camp at 12:30 P.M. for Mesa Verde. Arrived gate to Mesa Verde at 8:30 42001 mileage. Photo 630805-12 San Juan Valley Southwest. Gas at 41790 - alamosa

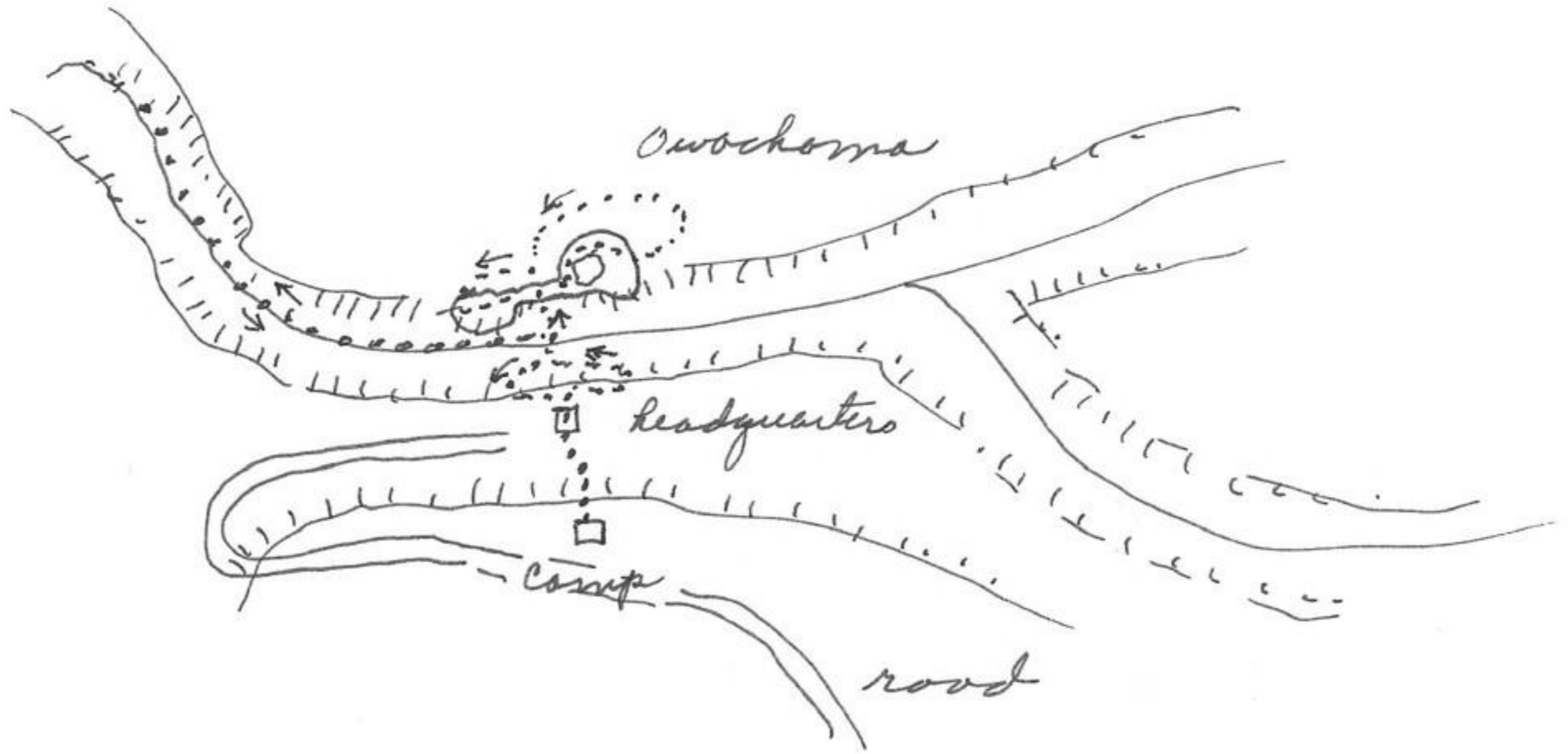
Mesa Verde Entrance, Colorado

Aug 6, 1963 Photo 630806-1 of camp at entrance. Left for park at 8:30 .. 42001. Photo 630806-2 to east just beyond switchbacks at Entrance, at Park headquarters photo 630806-3 of kiva (Spruce Tree) Photo 630806-4 of family at Spruce Tree ruins. Photo 630806-5 Navajo Canyon from lookout point. 630806-7 from Sun Point. Photo 630806-8 of new turquoise ruins. Photo 630806-9 and 10 of Sun Temple, no. 630806-11 of sun-dial. at SW corner of house no. 13 of girls & kiva at above. Photo 630806-14 of Perthe's disease of the acetabulum & head of femur. 630806-15 of a child mummy. Visited Mr. Wade, the chief ranger and Chuck Douglas. Douglas showed us thru the Wetherhill mesa project lab at the mesa verde headquarters, sponsored by the National Geographical Society and National Parks. He is responsible for the animal ecology of the project and is concerned with collection of mammals, and birdy herp list up to date. His studies with *Peromyscus maniculatus* & *P. truei*. A quid used by Colorado Fish & Game? ~~and~~ has been landed down to Douglas. *Pero. truei* had to have a definite increase this year compared to previous trapping of previous years. *P. truei* is an adult population in the main. The meteorological equipment includes a sun ray recorder (one on mesa and one in bottom of valley), minimum-maximum thermometers, humidity, evaporation, thermocouples at surface and 6 and 12 inches in soils; rain gauge. also tree growth & daily expansion & leave analysis. His time is divided equally between the meteorological and ecological survey. Wade claims that in 20 or 30 years all structures and buildings will be removed from park but to date they cannot because of political pressure. When Wetherill mesa is opened, the park facilities will be moved to N to point where <sup>new</sup> road will leave the old established road. Camp facilities will be on top of mesa in NE part of park. Returned to Entrance. Gas 17.9 at 42058. Now to Monticello, Utah on highway 160. Hence south for about 4 miles and then west to Natural Bridges National Monument where we camped on rim overlooking headquarters below and Owachoma bridge beyond. 3 cottontail rabbits between highway turnoff beyond Monticello and the bridges; last 20 miles after dark.

natural Bridges natural monument, Utah

Aug. 8, 1963

Camped on upper rim above headquarters which is on level with Owachona Bridges. This A.M. visited Owachona (Edwin) with family. Took several photographs.



- Photo 630808<sup>7</sup>-1 moki tank and children. Both well preserved!
- 630808<sup>7</sup>-2 moki tank and general view to N. Ladder to lower right to shelf.
- 630808<sup>7</sup>-3 Chris, Polly and Jay on ladder leading to moki house.
- 630808<sup>7</sup>-4 Owachona natural bridge to S.E.
- 630808<sup>7</sup>-5 Owachona (upright).
- 630808<sup>7</sup>-6 Mary at base of revulet at pool of Armstrong River below bridge where right hand ~~side~~ drainage cuts main river. Water red and result of recent rains.
- 630808<sup>7</sup>-7 Owachona and Mary; old penguin in foreground; from SE
- 630808<sup>7</sup>-8 <sup>and 8a</sup> Owachona and Mary with old animal bone in hand
- 630808<sup>7</sup>-9 Pond on top of Owachona. These ponds or tanks are characteristic of surface of the layer of rock supporting the bridge. no drainage into tank area.
- 630808<sup>7</sup>-10 Annette C on top of mound on east side of bridge. James R & Mary I on bridge below. Tank area clearly visible. End of roll no 492312. 630807-10a top Owachona from west.
- 630808<sup>7</sup>-11 <sup>and 11a</sup> Mary I on top bridge. Photo from SW edge.
- 630808<sup>7</sup>-12 Family on east side at mound; bridge in background. This number could be lost on roll.

- 630808-14 and 15 of Owachoma from n side.
  - 630808-16. n of Owachoma; yellow flower in foreground.
  - 630808-17 bridge from below looking up.
  - 630808-18 Closeup of live oak and its berries at bridge
  - 630808-19 Annette C and overhang showing rain lines & clear floor.
  - 630808-20 Close-up of narrowleaf yucca and Ephedra
  - 630808-21 Owachoma and red waters of Armstrong River.
  - 630807-21a " " from S side canyon
- The above pictures from about 9:00 A.M. to 11:30 A.M.

This afternoon visited The Kachina River.  
 Photos 630808-22 and 23 of tanks on side of creek leading into White Canyon. Just beyond, down canyon the creek plunges 40 or 50 feet to pond in narrow gulch in solid sandstone.  
 Photo 630808-24 of Kachina Bridge from east side of canyon.  
 630808-25 debris on tree to show height last high water of few days ago. Just SE of bridge about 300ft.  
 630808-26 goat petroglyph on wall of Kachina Bridge. On south side on east side of <sup>White Canyon</sup> river. Brown hand marks may or may not be genuine. Other drawings on cliffs.  
 630808-27 Kachina Bridge from S. Annette P in distance.  
 [Left 5:05 and back to car at 6:05. The bridge can be seen from vantage point near parking area].  
 630808-28 Looking up trail canyon at falls area. East side of creek.  
 630808-29 Tanks and children above falls.

The most noticeable bird on route was the hummingbird in bottom of canyon near bridge. The canyon at bridge is oak and vegetation of ranker growth than elsewhere. Birdlife and animal life uncommon. A few small lizards, no large ones. Birds in area are; white-throated swift, cliff swallow (most common), gnatcatcher, towhee sp?, hairy woodpecker, rock wren, night-hawk, Steller jay, . . . A small bat is active at 6:15 P.M. when other birds are still in the air.

Recommendation for camp would be to remove S to ridge beyond rim of canyon; headquarters should definitely be removed from rim.

Natural Bridges National Monument, Utah

Aug. 8

Left at 9:00 A.M. at 42219. Photos 630808-1 and 2 and 3 at camp <sup>(Annette)</sup> <sup>(camp)</sup> on rim <sup>across from Owachoma</sup>. These juniper trees will be completely denuded by campers. Photos 630808-4-5 & 6 at Goose Necks. At a point about 4 miles and 3a and 3b

# K A I B A B P L A T E A U

Marble Flats

Outlet Spring

FOOT TRIP  
AUG. 10, 1963



Bright Angel Spring

Bright Angel Ranger Station

Thompson Canyon

Fuller Canyon

Greenland Spring

Uncle Jim Point

Grand Canyon Lodge  
Bright Angel Point  
BM

THE TRANSEPT

Oza Butte

Manzanita Point

Widforss Point

Komo Point

Cottonwood Camp

Manu Temple

ANGEL CANYON

Ribbon Falls

Obi Point

Buddha Temple

Clement Powell Butte

Deva Temple

Ariel Pt

W A L H A L L A

P L A T E A U

Outlet Canyon

ade

Canyon





630810-4 of three children among ponderosa pine. no  
 630810-5 of Annette C and aspen tree, no 630810-6 of tree  
 struck by lightning. no 630810-7 of aspen fallen across  
 a swale and reacting to weight of the tree. Children in foreground -  
 ground. no 630810-8 of a large ponderosa pine and Mary.  
 The tree measured .21 ft in circumference. Photo 630810-9  
 of aspen grove and family. Photo 630810-10 of Mary and  
 large aspen. no 630810-11 of aspen in general. On returned  
 hailed with pellets as large as 1/2 inch. no 630810-12 of  
 these hail stones. Reached most distant point at 1:45 P.M.  
 and back to car at 3:00 P.M. Trail thru typical ponderosa  
 pine and aspen. Birds noted in this community are:  
 Steeler jay, Townsend calletiae, raven, white-throated sparrow, turkey vulture,  
 red-shafted flicker, hummingbird, Audubon warbler,  
 western tanager, western grosbeak, western warbling vireo, nutcracker, mourning dove,  
 juncos, mt. chickadee, goshawk, chipmunk, red-tailed  
 hawk, golden mantled squirrel, cheecharee, robin, bluebird,  
 prongbill, wild turkey.

Returned to camp and then drove to Cape Royal to E.  
 Photo 630810-13 a scenic view to E. From Cape Royal  
 took photos 630810-14 to 630810-20. Bat active at 7:15 P.M.  
 12 deer noted on return to Bright Angel Point. The spruce  
 tree needles, in light of car appeared luminescent.

Bright Angel Point, Grand Canyon Natl. Park, Arizona  
 Aug. 11, 1965

Erosion at camp site extensive. Area at Bright Angel Point  
 to 3 miles N is completely occupied by buildings and  
 one could walk for 6 miles around this area and not be out  
 of sight of man-made artifacts & buildings.

Left camp at 10:00 A.M. and drove N to Zions. Mileage  
 at camp 42694. Photo 630811-1 of savanna and aspen  
 trees just N of V.T. ranch. 12 raven in savanna just out-  
 side of park. Photos 630811-2 and 630811-3 of a buck deer  
 just beyond lower savanna. Photo 630811-4 to N from  
 about 1/2 way down N end of Keshob slope. Juniper-pinyon  
 community. Photo 630811-4 of James R. & Annette in same  
 area as above but to S. Ponderosa can be seen on top of plateau.  
 At a point a few miles up canyon to N from Kanab, photo  
 630811-6 of James Robert in foreground. Beyond Kanab Spring  
 photo 630811-7 of colored sandstone. At E entrance to Zions  
 Natl. Park photo 630811-8 to West. Photo 630811-9 of James  
 Robert on cliffs at E entrance. Photo 630811-10 of Great White  
 Throne. Photo 630811-11 of narrows. Bats of three kinds at 3  
 different levels in narrows in evening.

Zion National Park, Utah

Aug. 12, 1963

Camped last night at S entrance to Park. This morning photo 630812-1 of tent and family. visited several points of interest this A.M. Photo 630812-4 of Weeping Rock to S. no 630812-5 at some place and photo to W. Photo 630812-6 of Annette C & Mary near west end of Carmel tunnel. nos 630812-7 and 8 in some area. Beyond tunnel to E photos 630812-9-10-11-12-13 of bare rock surfaces. Photo 630812-14 at about 1 mile W junction of Mt Carmel road showing cliffs thru juniper trees. Continued to Bryce Canyon where we camped. Photos 630812-15-16 and 18 of Bryce Canyon at sundown. Deer & young in meadows nearby.

Bryce Canyon Natl Park, Utah

Aug 13, 1963

This A.M. drove car to several vantage points and recorded the following photographs. Will remain here today and then leave for Capitol Reef tomorrow. Photo 630813-4 of Rainbow Point. no. 630813-6 of a golden mantled ground squirrel. Photographs 630813-7 to 630813-28 between Sunrise Point and Sunset Point and at Inspiration Point, between 2:00 P.M. and 3:30 P.M. Some with telephoto. From the Navajo trail recorded the following photographs: 630813-29 at bottom of trail. 630813-30 of family in bottom of canyon. Photo 630813-31 of family and with green of ponderosa and reds of cliffs. Photo 630813-32 of a cedar tree. Photo 630813-34 general view of rock formation. Photo 630813-35 of deep canyon on ascent to rim. Returned to camp.

Bryce Canyon Natl Park, Utah

Aug 14, 1963

Before leaving camp photographed Annette C 630814-1 and Annette C, Mary & James Robert 630814-2.

Left Bryce at 9:15 A.M. at mileage 43026. At Tropic photo 630814-4 of James Robert & old farm yard & barn. Arrived Henrieville at mileage 43049. At the summit between Henrieville and Escalante inspected an old climate forest of junipers & pinyon. This is as old and mature forest as I have ever seen. Photos 630814-5 & 630814-6 of these old trees. Area noted by amount of down timber & size.

Photo 630814-7 of Annette C in same general area with cliffs to west. Between Escalante and Boulder took two general views including photos 630814-8 and 630814-9. Photo 630814-10 crossing canyon & green below down river. Photo 630814-11 at mouth of Caef Creek on up grade. Photo 630814-12 and 630814-13 on top with deep canyons to south. Photo 630814-14 of Boulder and environs. Arrive Boulder at 1:10 P.M. at mileage 43112. Continued up on E end of Aquarius Plateau. Photo 630814-15 of middle Deer Creek. at SE Glaver photo 630814-16 of sunflowers. Photo 630814-17 of cultivated valley east of Torrey. Continued to Capital Reef and photos 630814-18 and 630814-19 a few miles inside monument. 60 bats in canyon from E to W. 2 deer at west end of canyon. Camped at Fruitland. Fruita.

Capital Reef Natl Monument, Utah.

Aug 15, 1963

Photo 630815-1 of camp at Fruita. This morning hiked into Cahob Canyon. Photo 630815-1 of James Robert at mouth of Canyon. Photo 630815-3 across to W from Cahob Canyon. Photo 630815-4 of Cahob Canyon. 630815-5 of high cliffs to N with James R and Annette C in foreground. Deer + fox tracks in Cahob. The contact between Wingate + Chinle is  $\frac{W}{U \text{ } \overline{U} \text{ } \overline{U} \text{ } \overline{U}}$  Photos 630815-6 and 630815-7 from bench below Cahob Canyon and shooting W of general view. Photos 630815-8 & 630815-9 of Inglesby home. Photo 630815-10 of large Cottonwood tree in front of Inglesby home. Must be some kind of record. Photos 630815-11 and 12 about 1 mi. W of Fruita along main road. Drove to Grand Wash, leaving Fruita at 11:00 A.M. at mileage 43167. Photo 630815-13 of Grand Wash, 630815-14 of Capital Reef Wash and Children in foreground. Traffic is not permitted thru the Reef as formerly because of fear of flash floods. Photo 630815-15 of Egyptian Temple showing periodicity of stratification of Moenkopi. Shivariump layer on top. Returned and crossed reef to Hanksville. noted a kit fox 25 miles NE of Hanksville on highway 24. Continued on to Arches National Monument. Photo 630815-16 <sup>5th avenue canyon</sup> Photo 630815-17 of sunset at camp near Landscape Bridge area.

Arches National Monument, Utah

Aug 16, 1963

Photo 630816-1 of Annette C + Mary on cliff above camp near Landscape Bridge

This A.M. hiked N to Landscape Bridge area. Photos 630816-2 to 5 of this bridge or arch. Photo 630816-6 of son James R over Wall Arch. Photos 630816-7 + 8 of general views near camp. Left camp and drove to cabin near Delicate Arch. Photos 630816-9 and 10 of this cabin and store house, family in foreground. Photo 630816-11 of Canyon on way to Delicate Arch. No. 630816-12 of family on trail cut in cliff on approach to Delicate Arch, a piece of construction work that is unexcusable! Photo 630816-13 of Annette at registration book at Arch. Photos 630816-14 and 15 of Delicate Arch. Photo 630816-16 to east from D. Arch. Photos 630816-17 to 21 of Delicate Arch proper. Children in some of these shots. Photo 630816-22 to S from just W of Arch. Photo 630816-23 Delicate Arch. Photos 630816-24 and 25 to S from N of Arch. 630816-25 of Arch. Photo 630816-27 to SW from Arch. 630816-28 fault line to W. 630816-29 to SW from N of Arch. 630816-30 Tamarisk and alkaline of stream at Cabin site. 630816-31 as above with Pally <sup>(many)</sup> in foreground. Photo 630816-32 Firey Furnace with telephoto. Photo 630816-33 Arches to S into Park Avenue area. Left Arches National Monument 1:30 P.M.

The following are reflections on National Parks. Foreign material is being introduced into parks in way of mechanized (tar, cement, gravel) material for roads + trails. This material is being washed into drainage systems and is contaminating native erosional materials. Rock cuts are irreparable as natural scenic features. Erosion of composite during irreparable damage. Vegetation completely trampled and erosion as if off a cemented field. Wilderness integrity being destroyed and richer experiences are gone. Areas are being used as overnight stops without recognizing <sup>item</sup> scenic or best beauty around them.

Continued N from Arches Natl. monument. Photo 630816-34 of clouds a few miles W of Crescent. Continued N thru Price to Provo, Utah.

### Provo, Utah Co., Utah

Aug. 18, 1965

Remained at Dad's place in Provo. Recorded the following photographs 630818-1 Dad + Grace; 630818-2 Max and family; 630818-3 entire family; 630818-4 Son Jensen Jr; 630818-5 Mary Ann Bee; 630818-6 Son + Car; 630818-7 Son + Car at 250-E 1st + So.

630819-1 Sons house; also <sup>Aug 19, 1965</sup> no. 630819-2; 630819-3 + 630819-4 of Son and Mary's painting of alps by Richard Gunn.

Provo, Utah Co., Utah

Aug. 24, 1963

Left Provo 12:00 A.M. Mileage 43846. Photo 630826-1 of Provo Canyon from Heber Valley. Photo 630826-2 of Timpanogas Mt, from Heber Valley (N. end). No rabbit hills on roads. Photos 630826-3 and 630826-4 of sunset near our camp.

Red Hill Road (turn off), Wyoming.

Aug 27, 1963

Camp about 3 1/10 mi. N. Considerable mammal activity included - ing ground squirrel, cottontail, Reognathus, Dipodomys. Left at 9:00 A.M at 44105. Photos 630827-1 and 2 <sup>and 3</sup> of lowland field below Medicine Bow National Forest on Highway 130 east. of beaver created ponds and ducks. Photo 630827-4, 5 and 6 of small lake near Silver Lake toward top of divide. Photos 630827-7 to 16 at mirror Lake area. Had lunch here. Descending Snowy Range to east. took photos 630827-17 of <sup>Photo 630827-12 of</sup> conifer forest on S side Canyon. beyond Centennial. at Cheyenne visited with Norman Spear. Camped at 4 mi. W. of Kimball at a State Lake Park.

4 mi. W Kimball, Nebraska.

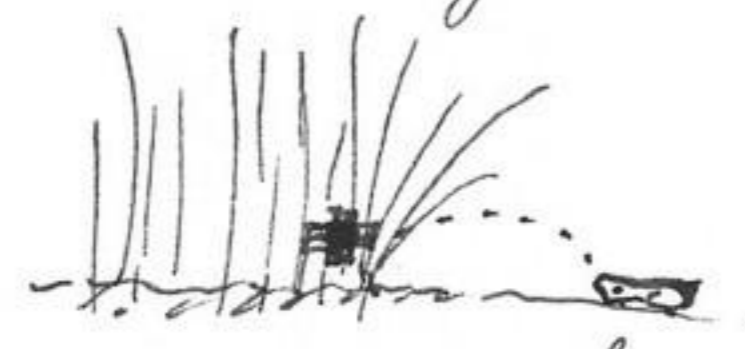
Aug. 28, 1963

Left 5:45 A.M (MT. Time) at 44428. 2 deer along river. magpie at Roscoe. Will follow highway 30 to Elm Creek. thence south to Phillipsburg and Glade, thence E (highway 9) to Downs, thence E (highway 24) to highway 81, thence S to Bennington, thence E (highway 18 to Junction City, thence highway 40 to Lawrence. Arrived 9:30 P.M and mileage approx. 44903 or 575 miles travelled today. Entire vacation trip was 3949 miles.

Lawrence, Douglas Co., Kansas

Sept. 4, 1963

At 1 7/10 mi N and 1 1/2 mi. E Lawrence, at Sandpit Lakes Collected the following birds: 630904-1 long-billed dowitcher and 630904-2 pectoral sandpiper. Other birds in area: small sandpipers, blue wing teal, pintail, pied-billed grebe, green heron, lesser yellowlegs, redwing blackbird, killdeer, The Franklin ground squirrel still active. Large Thamnophis



frog

an edge of vegetation of beach of lake and when Rana pipiens <sup>and bullfrogs</sup> jumps into protection of vegetation the snake grabs it and finally kills and consumes. Noted several with frogs being held by leg and calling.

1/62  
2 9/10 mi. S and 1 1/20 mi. E Lawrence (P.O.), <sup>630914-160</sup> Douglas Co., Kansas

Sept. 14, 1963

Observed 1 Pelecanus erythrorhynchos at north end of Mary's Lake. It was resting and preening its feathers. Collected several dozen small sunfish (less than 1 inch) from mosses around edge of lake. These were placed in aquarium at home. Nearly all ponds and roadside drainage ditch, which normally support water at this season of the year, are now dry and muds cracked. This season is one of the driest on record. The eastern kingbird is still in area. Hunters are in field for mourning doves. These hunters are in dress clothes and are shooting from sides of their cars parked along the road. Some are cruising and shooting from slow moving car.

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

Sept 21, 1963

Collected the following birds from the sandpits immediately S of turnpike. Low waters have exposed areas of bare soils around lakes:

630921-1 Black-bellied plover. 275 mm total length, 180 grams wt. ♀ Ovaries indistinctly formed. This bird was alone and no other observed in the area. It allowed an approach of 40 feet. Normal amount of fat on body.

630921-2 Longbilled dowitcher. 113 gms weight, 282 mm total length, tary 8 mm total length. The fat on this bird was solid.

630921-3 Solitary sandpiper

630921-4 Stilt sandpiper 209 mm T.L., fat on body 27 gms, thick 73 gms wt. ♂, testes 2.5 mm.

630921-5 pectoral sandpiper

630921-6 western sandpiper

630921-7 " "

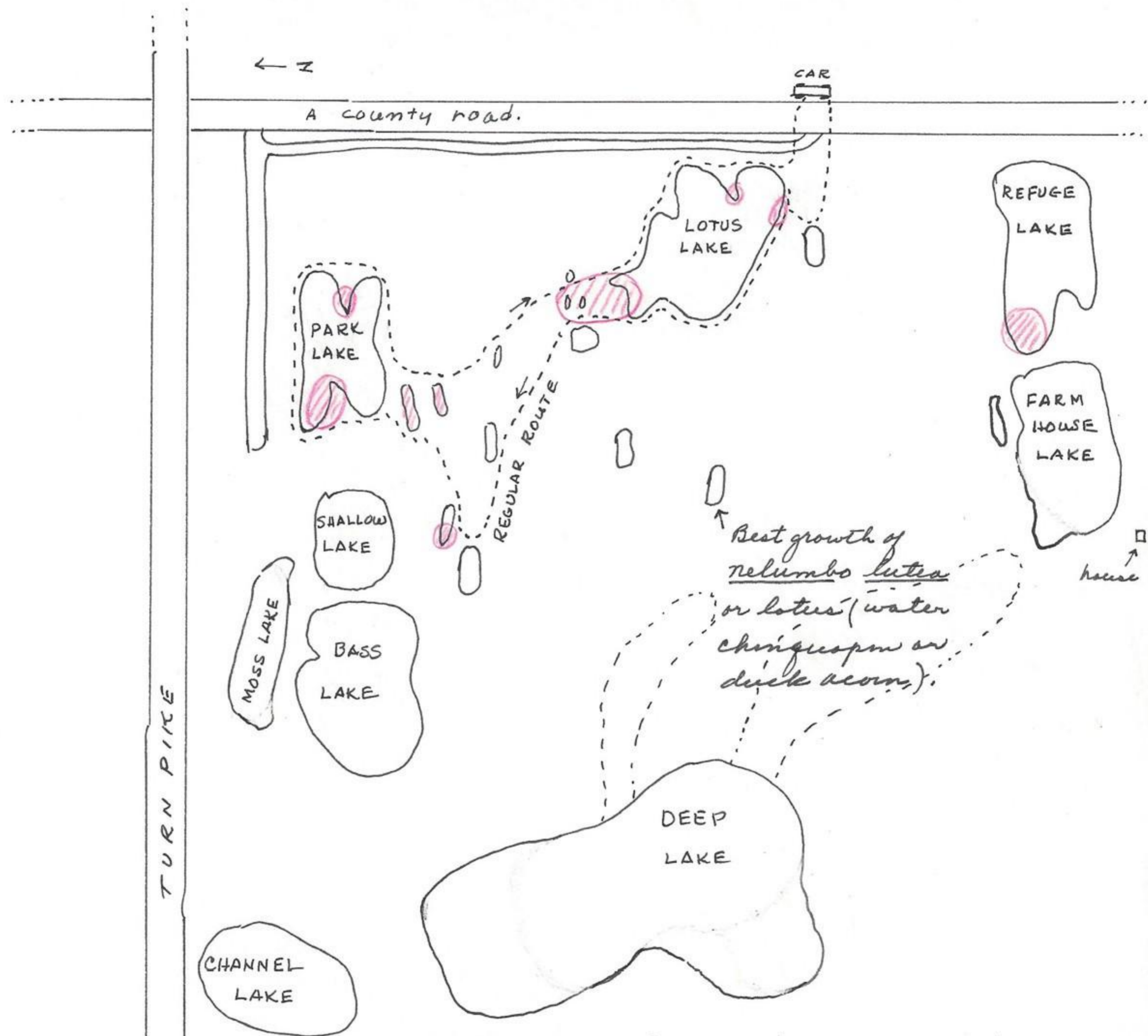
630921-8 " "

630921-9 " "

630921-10 " "

Other birds in area were: barn swallows, 2 Wilson Snipe, 1 kingfisher; 2 great blue heron, 2 coot; several <sup>(4)</sup> thousand redwings and Cowbirds, 3 lesser yellowlegs, 8 killdeer, 40 bluewing; 2 pied billed grebes, 8 mourning doves, 3 tern or gulls? This evening at 8:00 AM noted approx 60 black chimney swift above the new Ellsworth Hall at K.U. Campus.

## SANDPIT LAKES



This general area is designated as  $1\frac{1}{2}$  mi N and  $1\frac{1}{2}$  mi E Lawrence (P.O.), Douglas Co., Kansas. The regular route travelled is outlined. Sometimes other areas were visited (non-lake areas) for marsh wrens, rails and small sparrows. The usual flight of shorebirds was from Refuge Lake to Lotus, to Park and Shallow Lake. Most birds flew by the NW end of Lotus Lake. Areas in red were more frequently used by shorebirds than elsewhere. Refuge Lake was least disturbed because of off-limits to hunting and most ducks remained on this Lake.

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

Sept 22, 1963

This afternoon collected the following shorebirds from the sandpits immediately S of turnpike:

- 630922-1 Semipalmated plover, 166 mm total length, 40 gms weight, ♀. One other s. plover was feeding with this bird.
- 630922-2 Semipalmated sandpiper, 152 mm total length, 35 gms weight, ♂. There was 14 gms of fat on body between the skin on feathers and muscles. There was additional fat inside of the body. The weight of the body after skinned and fat removed was 18 gms.
- 630922-10 Solitary sandpiper 186 mm t.l., 48 gms wt, ♂, <sup>pygostyle glands, small</sup> yellow fat thick
- 630922-11 Least sandpiper
- 630922-12 Semipalmated sandpiper, 153 mm t.l., 42 gms wt, ♀, 1/3 wt fat.
- 630922-13 " "
- 630922-14 " "
- 630922-15 " "
- 630922-16 pectoral sandpiper

Lawrence, Douglas Co., Kansas

Sept. 25, 1963

Rained heavily this afternoon, swifts still in area

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

Sept. 27, 1963

Observed the following birds at sandpits this evening:

Great blue heron 3

Mallards 4

Blue wing teal 40

Pectoral sandpipers 4

Lesser yellowlegs 3

Killdeer 4

Semipalmated sandpipers 2

Nighthawks, common

Blackbirds and Cowbirds in

large flocks and all flying

S. + not stopping to drink

Chimney swifts

Meadowlark 1

Wilson snipe 3.

killdeer call continuously in evening, some leave for fields. Change in colors of leaves noticeable. Some maple in town have changed.

Sept 28, 1963

Late this afternoon a cold wave arrived in Lawrence area. At sundown there were only 2 killdeers at holes at sandpits



many swallows and chimney swifts in area and flying low over water.

Sept 29, 1963

Collected the following birds at the sandpits: (the locality is the same as Sept. 27), Between 10:00 A.M. + 12:00.

630929-1 greater yellowlegs, 338 mm total length, 180 gms weight, ♂, testis 3 mm. This bird was alone and fed with the green-wing teal and blue-wing teal, passing back and forth in shallow water where the teal were foraging. The water was about 3 inches deep. As the aquatic insects were disturbed by the feeding teal, the yellowlegs would pick them up. Some insects escaped from the area and the yellowlegs would pursue them. This bird fed with the teal for at least 1/2 hour. Pond grown to Chara and other aquatic plants.

630929-2 lesser yellowlegs, 256 mm total length, 80 gms weight, ♂, testis 2.5 mm long. This bird was very fat. Because of the shorter legs, this bird is not able to wade as deep as the greater yellowlegs and is excluded from following feeding ducks.

630929-3 pectoral sandpiper, 205 total length, 55 gms weight. ♀, ovary 5.2 mm length, very fat on body.

630929-4 pectoral sandpiper, 222 mm total length, 86 gms wt. ♂

630929-5 " "

630929-6 " "

There was not, at this hour, blackbird activity in the area, but when one penetrated the deep weeds and grass (shoulder high) one found the birds resting near the base of the weeds. These birds were hidden from above and were no doubt resting during the middle of the day. Thousands of birds were present in area but all concealed. Three great blue heron in area and 1 green heron.

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

Oct. 3, 1963

Collected the following birds from the sandpits: (6:00 P.M.)

631003-1 Stilt sandpiper 204 mm total length, 50 gms ♂

631003-2 pectoral sandpiper

The stilt sandpiper is best identified by white tail in flight and relative size in comparison to lesser yellowlegs. The stilt sandpiper was feeding with pectoral sandpipers. Birds in area of lake: coot 4, ducks 45, red-billed grebe 6, great blue heron 2, bittern, blackbirds & cowbirds, large flocks, swifts, swallows, Wilson snipe 3.

keel-deers, 6, pectoral sandpipers 4, semipalmated sandpipers 6, yellow-throated warbler. The bittern left the area at side of pond (vegetation of high weeds and grasses to with 5 or 6 feet of edge) and flew 100 feet and alighted in weeds. When flushed it flew another 100 feet and again dropped into tall weeds.

Oct, 6, 1963

Same area as above. Collected the following birds (5:00 P.M.)

631006-1 belted kingfisher. 320 mm T.L., 165 gms wt. ♂

This bird has been in area for last month or so (at least).

631006-2 long-tailed marsh wren. 113 mm T.L. 14 gms wt ♀

631006-3 " " " " 111 mm T.L., 10 gms wt. ?

631006-4 " " " " 112 mm T.L.; 11 gms wt. ♂ testes 2 mm

These wren and 2 others were in one group in tall grasses and weeds. When 1 was shot the others remained nearby and came to top of grass about 10 seconds after first shot. They do not remain hidden as other kinds of wren. This group is probably a family group and nest in area of the sandpits where there are many excellent plant communities for them. I have seen these birds on previous trips here but do not recognize them as marsh wrens. The juvenile look like short-billed marsh wrens.

631006-5 Lincoln sparrow. 133 T.L.; 20 gms wt. ♂ testes 2.3 mm

The chimney swift was the dominant bird in the area, replacing the great numbers of barn swallows noted here Oct. 3. Other birds were: bluewing teal, yellow-crowned night heron, rail (this bird, sp.?, has been flushed three times from edge of pond in grass & weeds, some area of same pond, and as flown inland to higher & denser weeds and grasses), pied-billed grebe 5, pectoral sandpiper 3, smaller sandpiper 6, meadowlarks 2, wilson snipe 2, keel-deer, 9, chimney swifts. Temp 98° F. this date. This condition exists throughout the central and western states and is unusual for this time of year. The highest temp in states was 102° in S. Dakota which was higher than in those parts of southern Calif & Arizona where temps are usually high.

A Lawrence, there has been more activity of starling than any time during summer months as if they had arrived or moved in from other places.

631006-6 Lincoln sparrow. 132 T.L.; 19 gms. ♂ testes 2.2 mm

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

Oct. 7, 1963

- Collected the following birds from sandpits: (6:00 P.M)
- 631007-1 Lesser yellowlegs. 264 mm t.l., 98 gms wt. + very 7 mm.
  - 631007-2 long billed marsh wren 110 mm t.l., 14 gms wt, ♀
  - 631007-3 swamp sparrow.

There was a decided increase of killedeer in area from the usual 8 or 10 to 32 in number.

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

Oct 8, 1963

- Collected the following from sandpits: 6:00 P.M
- 631008-1 song sparrow
  - 631008-2 pectoral sandpiper
  - 631008-3 least sandpiper

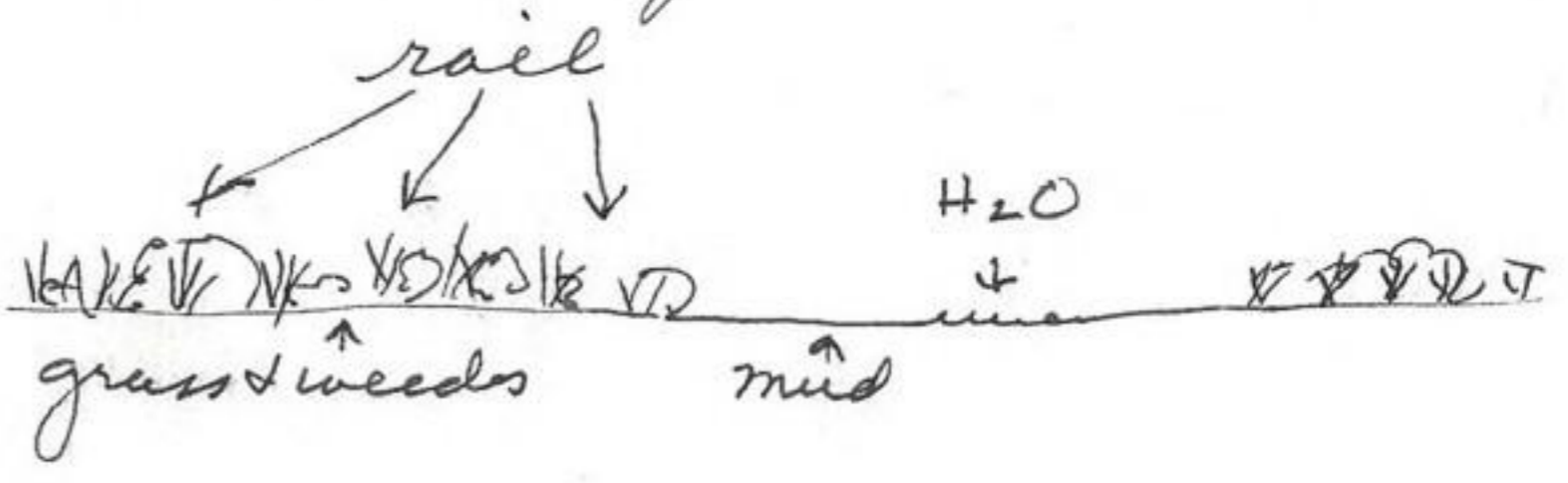
Also noted 4 killedeer, no yellowlegs, 3 pectoral sandpipers. The large number of killedeer noted yesterday were seen today.

Oct 10, 1963

Collected the following birds from the same locality as above at sandpits: 6:00 P.M

- 631010-1 pectoral sandpiper, 217 mm t.l., 102 gms wt.
- 631010-2 sora rail 201 mm t.l., 75 gms wt.

This rail is one of about 3 that are flushed on almost every visit to the area. They are never seen at edge of water or on mud flats but either in grasses and weed bordering the ponds or inland several



hundred feet from any source of water but among dense weeds. They fly about 100' or so and then drop into weeds where they can usually be flushed again when approached.

Other birds in area are: longbilled marsh wren 1, L. meadow sparrow 15, blue wing teal 30; redwing blackbirds 600, Cowbirds 1500, killedeer 6, pectoral sandpipers 4, 2 small Baird size sandpipers, pied-bill grebe 3, sora rail 2 (including above), wilson's snipe 3, chimney swift 3, 3 muskrats in one lake, Mosquitoes

numerous, small and large frogs (Lana + Bullfrogs). This evening was perfect as far as weather is concerned. The temperature was of the degree that one could not feel the atmosphere.

1 2/10 mi n and 1 1/2 mi. E Lawrence (P.O.), Douglas Co., Kansas  
Oct. 12, 1963

Collected the following birds from the sandpits: (9:00 A.M.)

631012-1 short-billed marsh wren

631012-2 " " " "

631012-3 pectoral sandpiper (destroyed)

Other birds in area 8 killdeer, 2 pectoral sandpipers, 8 small sandpipers (semi-palmated?), sudden increase of meadowlarks from the usual 2 to 5 to 25 or more. 1 mallard, 25 bluewing, 3 wooducks.

Oct 13, 1963

Collected the following bird from above locality: (8:30 A.M.)  
631013-1 semipalmated plover 160 mm t.l., 35 gms <sup>weight</sup> <sub>every 3.3 mm</sub>

This bird was with a pectoral sandpiper. It is characterized from other shore birds by the occasional tilting of the body as is done by killdeer.

Other birds in area are: 6 pectoral sandpipers, 8 killdeer, 9 bluewing teal, 1 mallard ♀, 1 kingfisher, 1 great blue heron, not over 50 black birds and Cowbirds, 2 Wilson snipe. There are several kinds of small sparrows in area including: swamp, Lincoln, song, white crowned or white-throated. No wrens noted today.

1 2/10 mi n and 1 1/2 mi E Lawrence (P.O.), Douglas Co., Kansas  
Oct 17, 1963

Collected the following from sandpits: (6:30 P.M.)

631017-1 Baird sandpiper 165 mm t.l., 45 gms wt., very fat ♂

The usual birds were in area but the lights were fading and it was difficult to see details.

Oct 18, 1963

Checked the above lakes (sandpits) at 6:00 P.M. to 6:30 P.M.

Followed same course as usual. Noted the following:

1 greater yellowlegs, 6 pectoral sandpipers, 2 killdeer, 13 wooducks in one group, 12 bluewing teal in small groups;

2 pied-billed grebes, 2 Wilson snipes, 5 or 6 flocks of redwing and cowbirds, several kinds of small sparrows, 3 Baird sandpipers?, grasshoppers and frogs active, also mosquitos. The ducks arrived shortly after sundown.

Oct 19, 1963

Collected the following birds from the sandpits:

- 631019-1 Pectoral sandpiper, 205 mm t.l., 68 gms weight ♀ very fat.  
631019-2 " " 212 mm t.l., 91 gms weight ♀ very fat  
631019-3♀ " " 225 mm t.l., 93 gms weight, very fat

Other birds in area: 8 wood ducks, 6 blue wing teal, 4 mallards

3 pied-billed grebes, 9 teal, 20 geese (6 blue, 14 snows, fledging high) 7 pectoral sandpipers, 3 Wilson snipes, 4 meadow larks, 2 swallows, 5 small groups redwings & cowbirds (20 per flock), monarch butterflies, a white butterfly, grasshoppers active. A Mr Lass, who cultivates the farm land for Mr Meller, said that the mallard ducks nest and raise young in the sandpits area. He said there is a ground water level about 8 feet below the ground and this water is fresh and clean. The sandpit area could be flooded with water and made into an excellent refuge & fishing area. The last rains have increased the size of the lakes and indicates that water does not sink into ground.

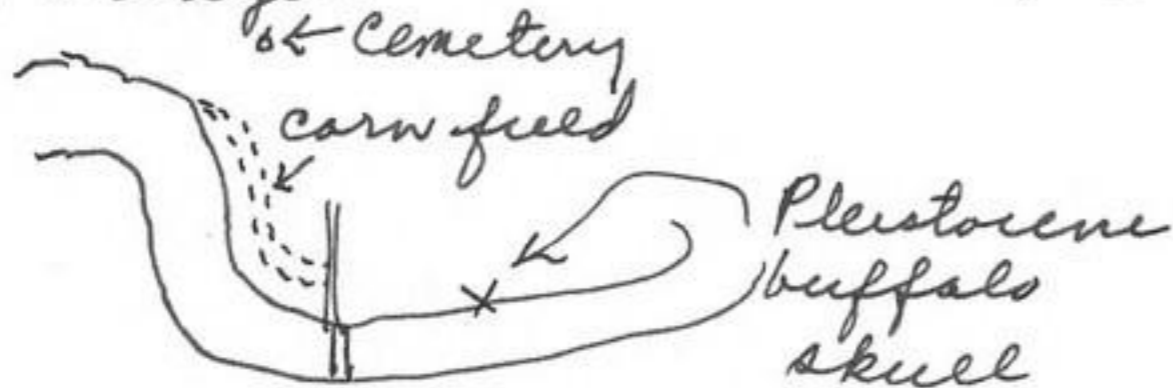
Lawrence, Douglas Co., Kansas

Oct. 20, 1963

Heard for first time a call of the eastern gray squirrel, Sciurus carolinensis. This call is not to be compared with any call of any bird or mammal I have ever heard before. The nearest is a birdlike call suggesting a pinyon jay. The squirrel sat on a dead limb 20' from ground, the nose was held close to the limb and the tail was overhead, each series of calls was associated with the respiration of the animal.

Oct. 20, 1963.

Recorded the following information from an informant from Eudora. The Delaware Indians say that the flood of 1830 was 8 feet higher than flood of 1951. The Delawares have a cemetery n of Eudora on opposite side of the valley. At the time they inhabited this area, they grew corn in swale n-nw of the N side of bridge. A buffalo skull was found 15 feet below bank at water level when river was low. The Delaware Indians still live in area and one died who was over 100 years of age.



631020-168  
These Indians were friendly to whitemen notified the inhabitants of Lawrence of the approach of Oushtil and his men at the time of the Lawrence raid.

1<sup>2</sup>/<sub>10</sub> mi. n and 1<sup>1</sup>/<sub>2</sub> mi. E Lawrence, Douglas Co., Kansas

Oct 20, 1963

Left home 7:50 A.M., temp about 64°F, skies cloudy. at sandpits a red-tail left area. It was a large bird and had a slow wing beat more like an eagle. The identification was positive. at sandpits there seem to be more ducks than I have seen before including 1 flock of 9 wooducks, 12 flocks of blue wing teal (from 2 to 18 in number per flock, 3 mallards, 8 spoonbills, and others I could not be positive about identifications. They were flying from one lake to another. One flock of snow & blue geese flew high from n to s at about 1/2 mi. n of sandpit area (blues about 1 to 10 snow). Small flocks of redwing blackbirds (10 to 200 in each flock) to west. 2 large great blue heron at ponds, <sup>two</sup> Kingfisher, 6 killdeer, 5 pectoral sandpipers, small sparrows, goldfinch, 3 Wilson's snipe, 2 red-billed grebes, 2 meadowlarks. The redwing blackbirds are calling continuously. One group of 6 blue-wing teal circled House Lake for 5 minutes before landing. After the initial flight of ducks, there was no further activity. The original flight could have been caused by disturbance of the lakes by fishermen or hunters. Noted one dead, uneaten *Promyces maniculatus* in vegetation bordering Lotus Lake. Collected the following bird:

631020-1 pectoral sandpiper. 208 mm t.l., 50 gms weight

This bird had the left leg broken and rehealed. The tibia-fibula bone was broken at the distal end and the broken part had reunited at an angle. This injury was recent. The bird appeared to be thin and there was evidence of diarrhea. It was in company



with another sandpiper of the same species. Right leg muscle <sup>4</sup> times larger than l.

Collected the following sandpipers:

631020-2 pectoral sandpiper. 226 mm t.l., 68 gms wt.

This bird was alone and when alighted did not move for 15 or 20 seconds. Frogs still active.

631020-3 lesser yellowlegs. 245 mm. t. length, 105 gms wt. ♂  
This bird was alone and resting as if sleeping. The depth of the bill of this bird when just killed is 6.8 mm I will show difference with drying of the bird as a museum specimen, which when taken \_\_\_\_\_ days later measured \_\_\_\_\_ mm.

at the west end of Refuge Lake (see previous map) noted 10 long-billed dowitchers feeding in one of the shallow bays. They arrived from the west and were flying high on approach. They called with their characteristic chattering which is a trilled call. On approach, one or two gave the call

67  
 which was followed by several more. 631020-169  
 after a few seconds of this alert call, <sup>until all were</sup> they left but circled  
 over lake several times, until they departed to the ~~west~~ west.  
 One or two call generally calling while in flight. Instead  
 of calling in unison, they chatter back and forth. These  
 birds have a definite group reaction and travel together  
 and feed together. While these birds were feeding in the  
 shallow water, a Wilson snipe left the mud flat and flew  
 over to the dowitcher and fed with them until they left.  
 The Wilson snipe remained. A duck was noted to travel  
 with the dowitcher while circling the lake. One sora rail  
 was flushed at edge of Latus Lake.

Missouri River, near Waleath, Leavenworth Co., Kansas

Oct. 20, 1963

Annette C. Bee, on a canoe trip from Platte River to Kansas  
 City, noted a single white pelican. It was able to fly.

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

Oct 26, 1963

Duck hunting opened at noon today. At sandpits 13 hunters  
 got 22 ducks in the first 20 minutes. By 1:00 P.M. 6 more were taken  
 The ducks are predominantly blue wing teal and mallards. From the area  
 collected:

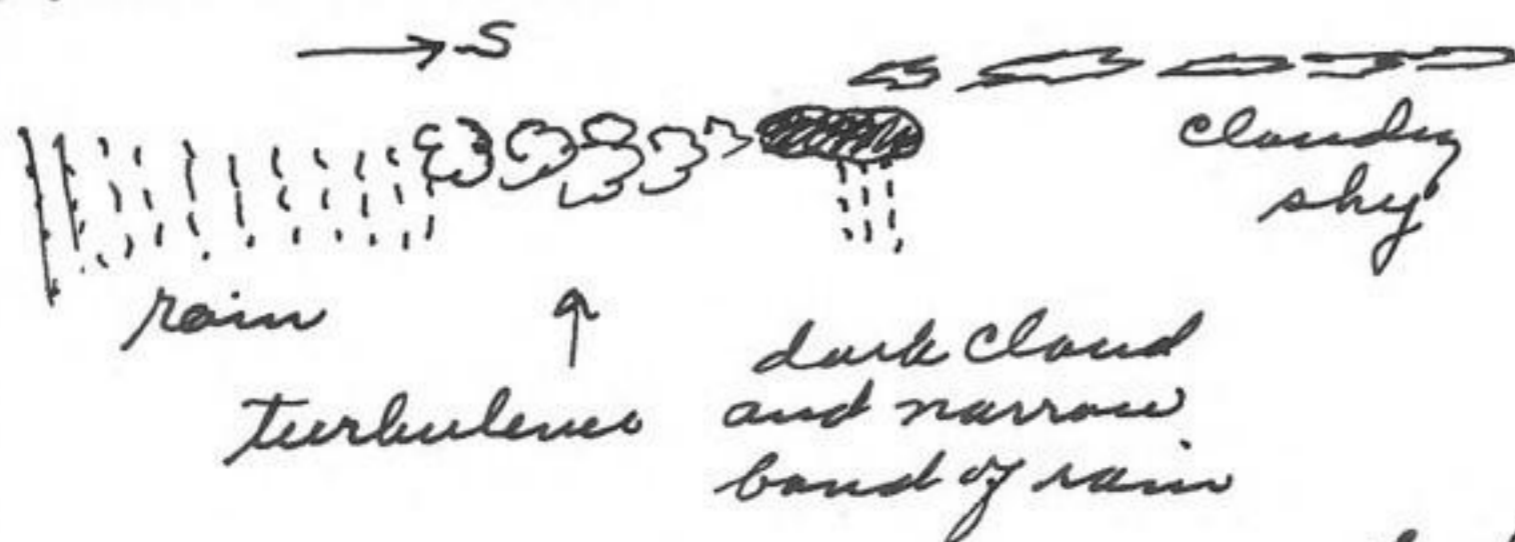
631026-1 American bittern 603 mm t.l., 601 gms. ovary 18 mm length. <sup>skin thin & no fat.</sup>  
 This bird inhabited the tall weed patches bordering the lake. One  
 sora rail also in similar situation. Birds in area: 9 pectoral  
 sandpipers, 42 killdeer, a large shorebird sp?, 1 red-tail hawk,  
 small flocks of redwings (10 to 200), small sparrows, 1 Kingfisher,  
 4 Wilson snipe. <sup>3 am. bittern</sup> Shot 1 blue-wing teal. <sup>in a flock</sup> From general observation  
 would say that native population of ducks is reduced in first 15  
 minutes of hunting. monarch butterflies active. This evening at  
 30 minutes before sundown shot a blue wing teal:

631026-2 blue wing teal, 370 mm t.l., 375 gms wt. ♂, very fat  
 Six more ducks were killed in the area. A Mr. Sheperd is a cousin

of Mr. Sheperd in the Entomology department at K.U. He invited me  
 to use blind in the South lakes (Refuge & Farm House Lake).

Oct. 27, 1963

Hunted from 7:30 A.M. to 8:30 A.M. at sandpits. A cold front arrived  
 about 8:00 A.M.



Temperatures dropped  
 from about 56 to 48°F.  
 Few ducks. 8 killdeer,  
 3 coot but no shorebirds  
 in area, few redwing  
 blackbirds. Harassment

by hunters may have stimulated shore-

birds to move on to the south.

1<sup>2</sup>/<sub>10</sub> mi. N and 1<sup>1</sup>/<sub>2</sub> mi. E Lawrence (P.O.), Douglas Co., Kansas

Oct 26, 1963

Made some observations at sandpits between 4:30 P.M. and 5:30 P.M.

Sundown at 5:25 P.M. clouds and intermittent rain from cold front of this morning continued all day. At about 4:30 P.M. the last of these clouds, travelling SE, were leaving the area and were replaced by clear blue sky. The last bank of these clouds was darker and more massive and was dropping light rain. Under this last cloud were unusually great numbers of purple martin and tree swallows. During the 40 minutes of observation (4:30-5:10 P.M.) estimated 300 martin

and 1800 swallows passed overhead (200 ft. corridor), all birds moved toward the sun or to the west. The martin were in loose groups and singles and travelled intermittently sailing west without wing beat for 20 or 30 ft and then darting laterally with quick wing beat to capture an insect. The lowest elevation was approx. 80 feet and the average height 200 ft. There were no calls uttered by the martin. The tree swallows formed closer groups and foraged more for insects than did the martin. They called occasionally. Their elevation above ground and direction was like the martin. After 5:10 the cloud cover moved S and E beyond the area. Only 10 or 15 martin and swallows were noted between 5:10 and sundown at 5:25 P.M. There

was definitely an association of these birds with the overhead protection of clouds and particularly with the last cloud bank before the clear open skies.

Approx. 3,000 redwing blackbirds (some grackles and cowbirds) in small groups of from 10 to 200. arrived from the east to roost in tall weeds and grasses. 8 killdeers only shorebirds in area. One duck flew high over area from N to S.

Oct 28, 1963

While at sandpits between 4:45 and 5:25 under blue sky noted one lone barn swallow. It passed S flying just a few feet above the weeds and grasses. One greater yellowlegs, 9 killdeer and 8 small

sandpipers in area. Also 8 pied-billed grebes in Lotus Lake. Usual number of redwing blackbirds in area.

Oct 30, 1963

Checked sandpits between 5:10 and 5:20 P.M. no shorebirds observed except 4 killdeer.

Nov. 1, 1963

Left James Rebut at sandpits at 8:00 A.M. will pick him up at noon. Yesterday was the first low temperature day of the season with early morning temp around 36° F. Cold wind all day. This morning with frost on ground, cold but skies are clear. Trees are essentially



631102-1

green in color but considerable yellow present. The drought of this summer removed many leaves from trees that would have normally turned to fall color, especially maples. In the last month there has been a decided increase in the calls of the red-breasted nuthatch within the city limits. The bird feed at home (for month of Oct.) has attracted mainly English Sparrows, a few blue jays and rarely a cardinal and no starling. Later in season a diversity of birds will feed at station. Picked up James R. at 12:30 P.M. at sandpits. He reports 2 American Coot came into Laties Lake where he had decap. no ducks in area. Kingfisher present.

5 1/2 mi. E and 2/10 mi. S Lawrence (P.O.), Kaw River,  
Douglas Co., Kansas

Nov. 2, 1963

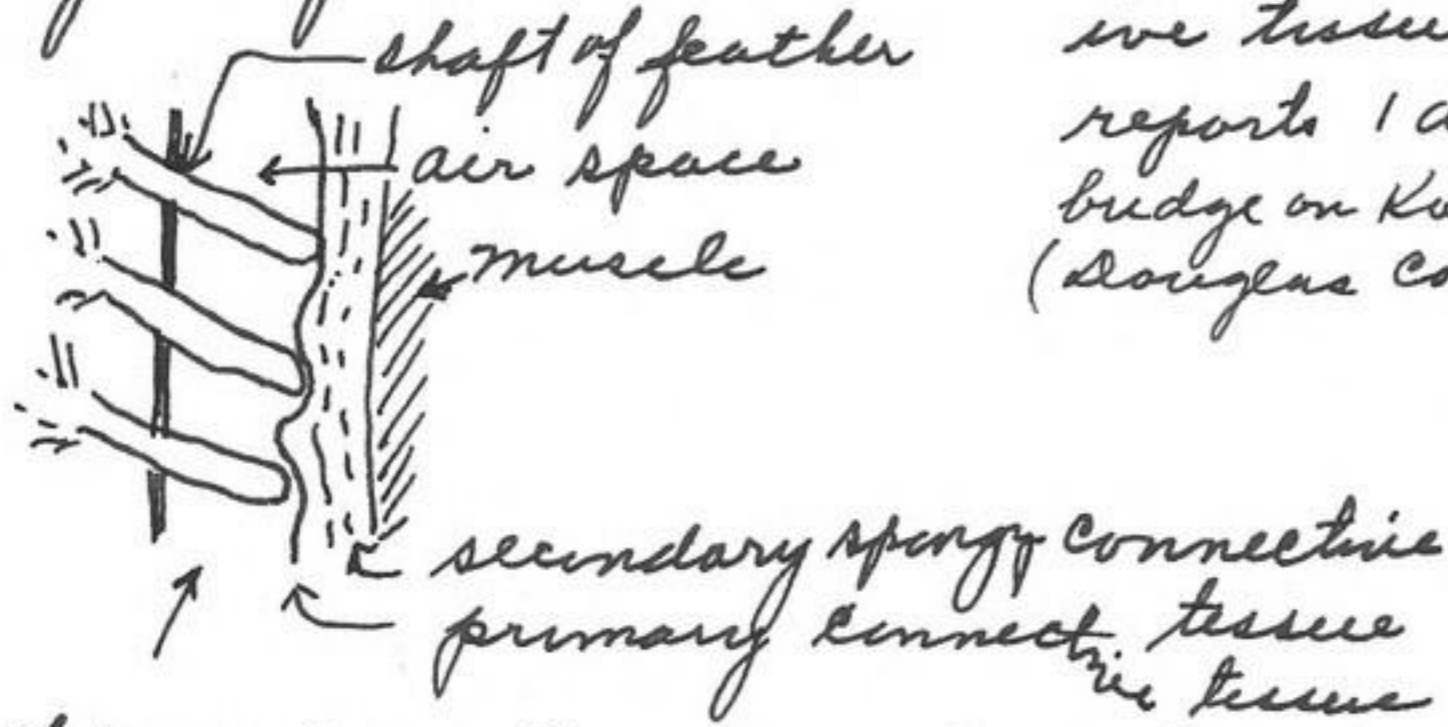
Son James Robert Bee and Mark Roberts made canoe trip down Kaw River from Lawrence (starting at 12:00 noon) to Eudora arriving at 4:00 P.M. at the bridge of the Wakarusa River. Enroute at the above locality they shot an American White Pelican:

631102-1 white pelican 1550 mm t.l., 12 lbs wt., wing spread 2470 mm. ♀

This bird was prepared as a museum specimen. In skinning this bird noted the lack of fat

The only place where fat was encountered was at the posterior end near the tail region and the amount here was less than 2 square inches of surface, in several patches. (thin layer 1/16 inches) The preening glands were very large and well formed. The pygmaeum supported well formed fat bodies parallel to the tail vertebrae and partly enclosed and along the bases of outer tail feathers. I would judge there to have been about 3/4 cubic inch of fat from this area. It is this fat and the preening glands that must be completely removed for mounting as a specimen. The construction

of the skin and the lack of fat makes this bird an extremely easy bird to skin. The skin separates at secondary connective tissue zone. James Robert also reports 1 dead pelican at 1/2 mi. W Eudora bridge on Kaw River. They shot one godwail (Douglas Co.) and saw a flock of 12 mallards. Pete Pierson saw 200 pelicans (Oct. 26) 1 mile down river from Eudora. They were flying in formation several hundred feet high above the river.



Blood Clots & hemorrhage forms here

Locality of 6311031 is mouth Buck Creek,  
Kow River, Douglas Co., Kansas

Leompton, Douglas Co., Kansas  
Nov. 3, 1963

631103-172

Left Robert Pierson and James Robert Bee at bridge on Kaw River at Leompton at 8:50 A.M. They will float down river to Lawrence. morning cloudy but by 9:00 most heavy clouds moved on and clear skies moved in. medium wind from S. noted 3 crows <sup>2 mi.</sup> south of Leompton and 3 on river 3 miles east of Leompton. The Cottonwood trees still retain leaves and are about 50 percent yellow. The willows may be a trifle more yellow than the cottonwoods. many broad sandbars in river. The canoeists arrived Lawrence at

2:30 P.M. having experienced considerable difficulty with the strong south winds, especially on N-S trending river channels - They collected a gadwall & a spoon bill. The latter measured: 631103-1 spoonbill 478 mm t.l., wt 570 gms.

This bird was extremely fat and almost impossible to degrease. Saw James reported 10 flocks of ducks, each flock of about <sup>20</sup> birds flew down river, but high. <sup>and one of 50 birds</sup> On one sandbar he saw a flock of white birds with tips of primary feathers black and supposed them to be sea gulls or terns (the former more likely); juncos, ~~chickadees~~, ~~chickadees~~, ~~crow to E.~~ Very quiet today. Can hear one ~~in each~~.

Lawrence, Douglas Co., Kansas

Nov. 6, 1963

There is considerably more yellow in tree leaves in city than two days ago. Today's weather clear and temp cool but not cold. no wind.

Nov 7, 1963

There is a noticeable change of color in trees since yesterday and represents the major change in autumn colors from greenish-yellow to good yellow tones. The last three days have been typically Indian Summer days.

Kaw River (from Lawrence to De Sota, Kansas

Nov. 9, 1963

Left 9:25 A.M. Day clear, no wind, temp 56°F. 9:10 small birds to right. 9:45 Kingfisher, 9:45-9:50 32 large fish (Carp?) on extensive <sup>and merged</sup> sand bar about 10 inch or less deep. Long stretches without birds. 9:50 2 killdeers. 2 chickadees. 9:55 steady line crosses river. no wind and perfect reflection. Cottonwood trees 80% yellow and still retaining leaves, 1 red bellied woodpecker. 10:00 creek from S. 10:09 Kingfisher, flock redwing (200) occasional small bird, flock goldfinch. 10:10 bank swallow cliffs. relatively few nests compared to previous years, chickadee 10:20 several hundred bank swallow nests to S on first part of long curve. Have replaced nesting area noted at 10:10. 2 chickadees, 2 killdeer, crow to E, juncos, goldfinch

Locality of 631109-1 is:

8<sup>3</sup>/<sub>10</sub> mi. E and 1 mi. S Lawrence (P.O.),  
Douglas Co., Kansas

10:30 dead pelican. mast of sand banks <sup>with weeds and</sup> excluding  
 bank swallows, 10:35 place where Chris & I captured. 1 Crow harassing  
 1 redtail in tree on bank, 2 cardinals, Chickadees & several sparrows  
 including 1 tree sparrow. 3 killdeer on other side river. Song sparrows  
 in area. Horned lark like call to N. only about 40 bank swallow holes  
 in bank beyond capture location. 10:40 240 swallow holes in 30 feet  
 of bank just before channel to east. 10:42 beaver house to S. Channel 10:45  
 to S. 10:50 <sup>50</sup> mouth creek from N. end bend of river, now to SE. 11:04  
 5 bank slides of beaver, just NE of island in middle of river. several  
 areas where beaver had fed on bark of branches. 11:08 4 crows to S  
 11:10 mt Kent Creek 11:25 bend of river, now NE. 2 blue jay, 1 flicker.

have been paddling consistently since last bend. Slight wind in  
 trees. 11:32 next bend (nearest R.R. tracks) now to east. 11:35 150 bank  
 swallow nests on N side river (one area of bank) 11:30 2 crows from N.  
 350 bank swallow holes to left. 11:45 8 trees recently cut by beaver to N.  
 3 killdeer, 1 ♂ mallard in river. now passing boulder barriers to N. 11:52 dead  
 pelican (same one noted by James R. Bee, see previous notes). at bend now  
 trending directly E to bridge. 11:58 Eudora Bridge, one dead pelican  
 under bridge <sup>1 great blue heron.</sup> 12:14 mouth Wakarusa River. dead pelican to N side of  
 Kaw River at this point. marsh hawk flew across river. junco  
 on bank. one flock 100 goldfinch. 12:25 Collected Franklin Gull:  
 631109-1 Franklin Gull. 390 mm T.L., 267 gms wt. ♀, ovary 3 mm

This bird was alone and resting on sand bar in middle of river.  
 Fat thick and yellow, in color skin fairly tough.

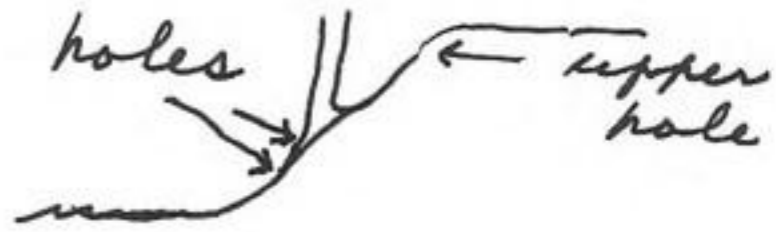
12:43 beaver house and tree cutting, right side. 12:54 9 killdeer, they are  
 confiding and do not call. 2 redtails. Creek from N at 1:00. 1:02 bend  
 now ENE. oak on hill to N in maximum color. This year yellow have  
 predominated over reds. more reds on hill than along river (cottonwoods)  
 1:12 utility line crosses river. 1:23 spotted sandpiper now to SE, 2 killdeer  
 1:25 100 nests of bank swallow. 1:26 8 of bank swallow, 1:30 250 nests of  
 bank swallow. 1:33 B.N. Owl. 1:51 beaver <sup>limbs and</sup>  
 house and kingfisher. 1:52 large creek <sup>small trees</sup>  
 from SW, now trending ENE. along tracks <sup>on bank</sup>  
 of R.R. and hill, 155 Park Bridge under <sup>west of house on NE side of river</sup>  
 R.R. track. 2:20 <sup>now</sup> to north. picked up shoveller duck that had been

killed and floated on to sandbar. Kingfisher in area. In cliffs just  
 N of house there are several thousand nests of bank swallow in a con-  
 tinuous bank. Largest seen so far. 1:25 2 mallards left river.  
 2:45 mouth present Stranger Creek. 1:56 beaver house on north side river

This is across river N from old bridge piling and  
 willows where river runs along R.R. track. Crows to S.  
 3:02 leaving R.R. and trending E. 3 killdeer. 3:12 2 killdeer

5 crows. 2:25 Sunflower water intake gate, 8 killdeer, they are  
 note calling as they usually do. 3:34 16 killdeer widely dispersed  
 on sand and mud flats on S side river. 22 other killdeer flew  
 down river, they called. 351 considerable beaver activity, N side river  
 and house.

4:02 S. B. Heron. Several hundred bank swallow nesting holes in sandy cliffs on N side of river, a good colony. As we pass by the sandy cliffs, an inverted shadow of the cones and occupants is reflected off of the water onto the cliff. Arrived De Soto Bridge (now torn down for rebuilding) at 4:07. Continued down river to mouth of Kill Creek, thence S to highway bridge. The creek has just enough water to support loonae. Arrived 4:20 P.M. at a point about 100 feet N of the highway bridge on west side noted a marmot run into its burrow at the base of a tree. A fox squirrel was associated with this animal. A well beaten path connected the



lower hole with one under a slab of cement near top of bank. This afternoon noted a few frog (all small) on bank of river. Max temp about 76°F. The carp seemed to be more numerous than on previous trip. Water relatively high for this time of year and fewer extensive sandbars! This is unusual considering the drought conditions which have prevailed this summer and autumn.

Wakarusa River, Douglas Co., Kansas  
Nov. 10, 1963

Annette & Mary and myself made canoe trip on Wakarusa from Blue Mounds Bridge to Eudora Bridge (W of Eudora on main highway) water at Haskell Avenue bridge & Louisiana bridge too low for navigation. Left 12:30 A.M. day clear, slight wind, temp 69°F. I have never seen so many small birds in vegetation and trees along the bank. Their numbers are perhaps 50 times greater than the winter population. No attempt to keep complete record this trip except great horned owls, g. b. herons & red tail hawks, no numbers of small birds. 12:50 S. H. owl being harassed by 5 crows. 80% of trees in yellow color, some without leaves but most of them retaining leaves. Small birds numerous, 2 lone red wing blackbirds along river. 12:55 beaver house and activity. 200 redwing blackbirds calling from top of a cottonwood tree (this flock consisted of 200 redwings, 60 grackles and 20 cowbirds) Photo 631110-1 of Annette & Mary in canoe at point where major creek enters from N (2:00 P.M.). One sharp-shinned hawk sailed directly overhead and about 40 feet beyond darted into a group of weeds and small tree where small birds were feeding. It left bank of river and flew up to upper bank and sailed three large trees for another 100 feet or so. 2:10 large white lined cross creek. 2:12 beaver house & activity. Photo 631110-2 and 631110-3 of Annette & Mary on river at 2:20. At this point a S. B. Heron left tree and flew down river. Also 2 wood ducks left water,

flew down river and then reversed flight <sup>631110-175</sup> and flew up river <sup>overhead</sup> and on each occasion  
The great blue heron was seen several times and on each occasion  
it left trees and flew down stream. At no time was it seen on the  
ground. Arrived Spring Creek Bridge (Tonganawic sandstone area)  
at 2:55. Two red tail hawks and a Wilson's snipe here. The water  
is running at about one gallon per 10 seconds. Leaves in river,  
especially at portages (about 10 between Blue Mounds and here.  
Photo 631110-4 of fall colors along river. 3:15 photo 631110-6 to 10  
at sandstone cliffs, mainly of gulls and loons. G. Horned owl  
left this area, black hornets on cliffs (8). 4:00 G.H. owl, 20 bob-  
whites. 4:18 red tail hawk, g. b. heron and a g.h. owl. 4:40 Photo  
631110-11 of reflection in river of yellow leaves. Continued on  
to Endora Bridge arriving about 5:10 P.M. In summary:  
more small birds along side vegetation than I have ever  
seen before at this time of year. They were distributed generally  
and not in definite flocks as is found in winter. There was  
considerably more song. I would estimate that in 1/10 of a mile  
there were 100 small birds. Those identified were (in decreasing  
abundance): unidentified sparrows, tree sparrows, juncos, Cardinals,  
chickadees, Kinglets, nuthatches, song sparrows, red bellied woodpecker 5,  
flickers 2, downy 8, robins 2, hairy 1, Baltimore oriole? 1, 20 fox  
squirrels. There were no shorebirds. The above is approx and  
not complete because of the nature of the trip and the opportunities  
of recording or observing the birds. One pelycepod, Protera  
alata 631110-15 measured 217 mm, greatest length. It was taken  
approx. 1 1/10 miles down stream on Wakarusa River from Blue Mounds  
bridge or 3 1/10 mi. E and 3 1/20 mi S Lawrence (P.O.), Douglas Co., Kansas.  
The largest specimen at K.V. measured.

Lawrence, Douglas Co., Kansas  
Nov. 13, 1963

Temp to below freezing last night (22°F). This morning and  
throughout the day leaves have been falling and covering  
the ground. <sup>fewer</sup> without leaves, the trees now are a <sup>predominantly</sup> brownish  
yellow instead of the greenish yellow of the preceding day.  
The leaves that are falling are green. Compound leaves  
like the walnut and locust are separating from the base of the  
petiole and the entire unit (green) is shed at one time.  
Slight wind, clear sky and cold all day.

Nov. 15, 1963

Falling of leaves irregular. Some trees have full complement  
of green leaves (some oaks, maples and others) while just next  
to them the same kinds of trees will not have a single leaf on the  
branches. Black walnut leaves mostly gone, hickories 50-50, <sup>Temp last</sup> 3 done

has been below freezing (around 22°F) and above freezing in the day.

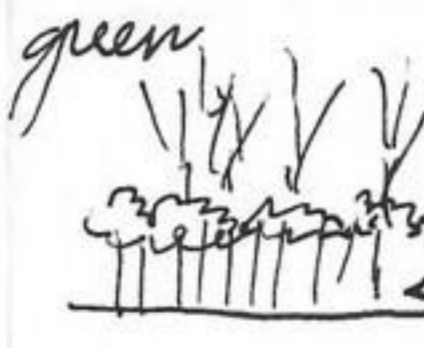
Wakarusa River, Douglas Co. Kansas  
Nov. 16, 1963

Left Spring Creek Bridge 1:55 P.M. Day cloudy, sunny & high wind. 2:20 5 turtles on log. 2:25 first portage<sup>(2)</sup>, creek from S. 2:50 Red tail hawk. 2:55 prominent cliffs to right - portage 3:25 portage, complete log dam across river. 3:35 second set of cliffs and red tail hawk. 3:40 bees active at pyramore which leans over river.

bee hole on under side of tree about 25 feet high. Wasp active at base of tree. Arrived 4:00 P.M. Towhee near bridge on E side. The turtles noted at 2:20 were relatively flat, brown Carapace with plates greenish necks and heads and pointed up. Approx diameter of carapace 4 inches. Birds noted on trip (record selective): slate colored juncos, Oregon juncos, Cardinals, Song Sparrow, blue jays, red tails, towhee, Chickadee, Kinglet, downy woodpecker, red-headed woodpecker, flicker, starling, red wing blackbird,

N. side Kaw River, Leavenworth Co., Kansas  
Nov 23, 1943

at sandpits NE of Lawrence noted 1 shrike, 1 red-tail hawk. Continued E on N side river toward Eudora. Left RR crossing on N side river N of Eudora 12:23 A.M. Day clear, temp about 38°F. 12:25 1 ♀ meadowlark. 12:30 bridge over creek from N. 2 blue jays, 5 cardinals, 20 juncos, 2 meadowlarks, chickadee, song sparrow, downy woodpecker. 12:54 Photo 631123-1 of Jay, seen at cabin N end of bend. ② + ③ at mouth creek N of cabin. at N end of turn of River. Photo ④ some area and to east, Kaw River background. 1:27 utility power lines cross river to S. 1:30 large creek (running from N) 2 red-headed woodpeckers 2:15 pond (Kaw turns SE. 4 G. H. Owl so far, 3 red-tails, 2 flickers. 2:25 now return (near farm house). Mourning dove. Photo ⑤ James Robert and Kaw background. High Cottonwood trees without leaves, understory of willow with yellow in upper branches only, color predominantly yellow without green.



← tall cottonwoods leafless  
← yellow of tops of willows  
← no leaves at lower level of trees

On return along tracks noted 3 dead stripped skunks killed by trains. These animals were at N bend of river. Re-union Pacific and Santa Fe tracks.

turned car 3:30 P.M. At crossing of Eudora Road and Santa Fe tracks, collected the following birds at 2 1/10 mi. N & 3 1/10 mi. E Eudora, Douglas Co., Kansas  
631123-6 meadowlark. 262 mm + L., 58 gms wt. ♂ rat fat.  
631123-7 downy woodpecker.

Small birds were uncommon in oak forests on river valley sidehills. On return to Lawrence noted several killed deer in open, closely grazed fields some 3 or 4 miles from the Kaw River.  
631123-8 James Robert at bridge at Lawrence.



Locality of nos 631124-1 and 631124-2 is:

Kaw River,  $3\frac{7}{10}$  mi. E Lawrence (P.O.), Douglas  
Co., Kansas.

Locality of 631124-3 is:

Kaw River,  $4\frac{4}{10}$  miles E and  $4\frac{1}{10}$  miles N  
Lawrence (P.O.), Douglas Co., Kansas.

Locality of 631124-4 is:

$8\frac{2}{10}$  mi. E Lawrence (P.O.), Douglas Co., Kansas

Kaw River (Lawrence to De Soto), Kansas.

631124-177

Nov. 24, 1963

Made canoe trip from bridge at Lawrence to bridge at De Soto. Left 9:15 A.M. Temp 36°F. Wind from SE, day clear, water temp 42 °F. (upper 2 inches) Son James and I made the trip. Met one of James' friends at bridge who had killed <sup>this A.M.</sup> a scoup and a teal at the sandpits NE of Lawrence.

Ice on some water in protected places. 9:50 6 ducks left S edge, Crow & redtail to N. 10:00 major creek from S. 10:45 Collected the following from a flock of 8:

- 631124-1 Hooded Merganser 420 t.L., 550 gms wt. ♀ ovary 19mm x 3.5mm
- 631124-2 Hooded Merganser 451 mm t.L., 680 gms wt. ♀ ovary 19 x 6 mm

These birds were at cupsized locality of several years ago. They remained in deep part of river on S side against bank. They were the same as observed

at 9:50 this A.M. Horned larks on sandbar. A large gull left area and moved down river. It was larger than a Franklin gull. Left area 11:00. Jack rabbit in short vegetation on sandbar area to N. 11:10 good beaver house at point, S side. 11:15 channel to right, Crows to N. chasing red-tail. 11:35 shot duck:

- 631124-3 Gadwall duck 503 mm t.L., 740 gms wt. Shot at island position in river. 2 redtails flying to N. Eudora Bridge 12:48.

Wind from E and impedes progress 1:00 P.M. mouth Wakarusa River. 1:36 light Franklin? gulls, 1:30 beaver on S side river. Collected:

- 631124-4 Ruddy duck. 1:50 N end of bend. 2:00 utility line across river. muskrat. Pair redtail bows over oak forests to N. 2:50 large Creek from S. 2 mallards, 2:54. RR bridge (arch), wind has been strong. 3:35 Stranger creek. N end river bend 3:50. Four ducks at mouth of creek.

4:00 2 Hooded Mergansers & 1 mallard. Arrived sunflower water gates 4:25. 2 killdeer, turtle caught on hook, & branch. Arrived De Soto 5:00 P.M.

- 631124-4 Ruddy duck 360 mm t.L., 430 gms wt. ♀ ovary 20 x 8.5 mm

The skin, fat, muscle contact in this species is not as toughly bonded as is the case of the hooded merganser.

631124-5 Trionyx muticus, smooth soft shelled turtle, ♀ approx 215 mm total length of carapace. The turtle was suspended by a hook and line some 4 feet above the present level of the river and no doubt had been caught at the time the river was at that level. It did not carry any odor and was completely dried although maintaining its almost normal life form. The hook was in the web of the right hind foot.

(P.O.)  
1 7/10 mi. N and 1 1/2 mi. E Lawrence, Douglas Co., Kansas  
Nov 28, 1963

Son James and I inspected sandpits NE of town. all lobes very low. Visited all lobes and found 4 killdeers, 3 ducks, 4 meadowlarks, and many small birds of sparrow size. Some of the smaller lakes were completely dry. Deep Lake may be a source of northern ducks (golden eye, buffle head etc) this coming winter as the lake is deep and will not fluctuate to any appreciable extent.



Kaw River (Lawrence to De Soto, Kansas)

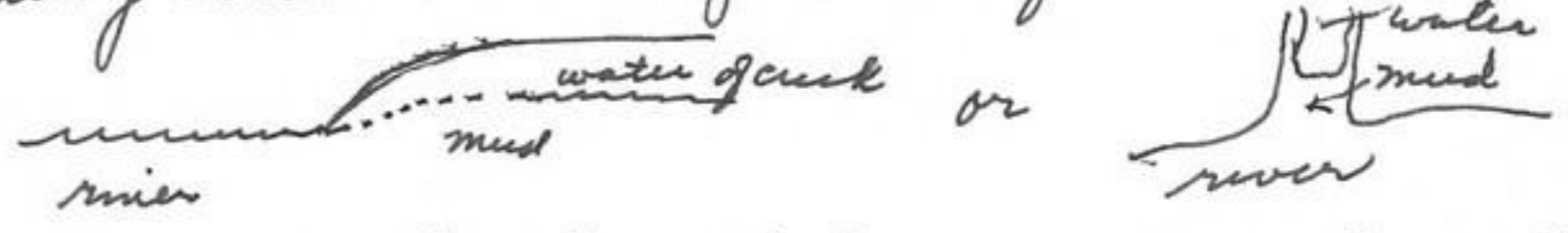
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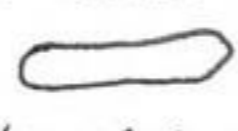
Nov 29, 1963

Left 8:20 A.M. Temp 26°F, breeze from NW. Water temp 40°F. Son James and I made this canoe trip. Left at Bowersock Bridge. Red tail to N 8:30  
8:53 beaver house N side. 9:00 beaver activity N side 9:15 utility lines across river. 9:40 3 ducks. 9:50 crowsize point, 10:00 channel to S, 10:10 creek from N. Crows in area. Horned lark & longspur? on sand bar in usual place back river near crowsize point. Considerable new beaver activity and house just W of mouth of creek (mud creek) Chickadees, juncos, 1 red bellied woodpecker, song sparrow, <sup>cardinals</sup> starling (more numerous than usual). Birds few.  
10:45 opposite island. River 6 inches lower than last week, more sand bars exposed

Considerable beaver activity on N side and on island since mud Creek. There seems to be more cutting of larger tree than in previous trips. Crows calling to south. High cirrus clouds moving fast into clear sky to east. 10:50 a hawk (crowsize) flew across river from S to N. 11:15 beaver house and activity. near bend of river. 11:20 bend of river. 11:30 bend of river now toward Eudora, red tail. 11:50 Considerable beaver activity & house, N side river. 11:53 first rock barrier. Pocom tracks all along river in mud exposed since last week. Bank swallow nest average about 4 feet from top of cliff, some 1 1/2 feet and 4 were within 3 inches of top. 12:07 Eudora Bridge. Kingfisher. Beaver house no log jam on S side of river. 12:15 2 red tails to N. 4 crows feeding on sand bar. 1 Killdeer.

12:34 mouth Wabamun River. Sand bar across except 10' of the 60 foot extreme. Temp in shade 41°F. 1:15 beaver house & activity N side. 1:20 N end bend at Cabin 1:32 under utility line across river. 1:50 now to SE leaving end area. Kingfisher. 2:15 10 mallards on sand bar. flew up river. 2:35 beaver house S side river and activity all along bank. 2:38 major creek from S. These creeks are higher than river at the water level and



for about 10 inches above are holes in the clay that are made under water actual size is about so.  and are generally all horizontal and numerous, perhaps 15 per sq. foot. Good bank exposures up river and on N side (actually N W side). 2:42 arch bridge (R.R.) to S. 3:00 bend

river & now to NNE. Ice in protected places on bank of river. Several thousand bank swallow nests just N of house on bank! Best Colony observed so far. Cliffs almost pure sand & perpendicular. 3:15 2 mallards. 3:25 mouth Stranger Creek 3:29 big beaver house on N side. Considerable activity beyond. 3:45 red-breasted merganser. 4:05 P. Prompew at base of sand bank. It could not get back to top of bank and had died. Redtail Hawk. 4:15 Sunflower water gates on S side river. 4:44 rock barriers in middle of river bed - Kingfisher & 1 Killdeer. The Killdeer (all recorded) are more confident than usual.

Arrived De Soto 4:55 P.M. <sup>(8 hrs and 35 min trip)</sup> just about 10 minutes to sundown. Full moon to east. Temp at 5:00 30°F Sky clear. Wind from a breeze to moderate but did not interfere with canoeing - a very pleasant day. Temp at Lawrence & Kansas City at 5:00 am 46°F There must be a cold basin at De Soto.

Dec 7, 1963.

Left 9:41 A.M. at Bowersock Bridge. Sky overcast, some clouds distinct, sun hazy. Temp water, 42°F temp air in shade, 44°F. Wind from SW. A cold front is to pass thru about noon. 10:18 major creek from S. 2 hildees, 1 crow, blue jay and usual birds along bank. Junco (slate colored) main bird along bank between water & top of bank. One crow at water level. 10:43 Capsize Point. 13 crows & 1 marsh hawk. The hawk was maintaining flying position around tree and crows were <sup>in</sup> singles chasing the hawk. 5 small flock 80-100 birds (starling) flying w along river with destination in mind. 10:56 Red breasted nuthatch. Mouth mud Creek from Nat 11:00 A.M. Water of river about 8 inches lower than last

trip. Sand bars more numerous but not like it is usual for this time of year. The last three weeks have exposed a considerable amount of the river bed, perhaps about 15 percent overall, some areas of river bed 90 sand. Have been paddling cones regularly (2). Beaver activity now general and tree cutting accentuated.

Wind now from the NW. <sup>Temp 48°F in shade, water 42°F 3 inches deep</sup> 11:13 1 red tail, 4 crows, 1 osceola in trap along river. were in knots of trees. Flock 60 red wings. 11:45 bend of river that leads to Eudora.

at point where river runs along R.R. and at mouth of creek from N. 12:00 1 gull sp?, 2 kingfishers. 12:10 Eudora Bridge, 12:22 Mouth Watawissa. we have been paddling <sup>strong</sup> wind from the N.W. 1:12 N end next curve, now to E.

2 red tails 1:25 under utility lines that cross river. Leaves of oak blowing out into river from hill to N. on N side wind comes from S from trees on other side of river & perhaps down draft. 1:43 marsh hawk. Temp 42°F and

seems to be getting colder. Wind still from NW & strong enough for white caps.

2:10 major creek from S, 2 red tails 1 marsh hawk 2:13 arch bridge of R.R. tracks.

2:25 4 <sup>golden eye ducks</sup> ~~mergluck~~. 2:55 Mouth Stronger Creek. Waves develop according to depth of water. Kingfisher, red tail. Red tail are sailing high today.

utilizing wind. Sand has been blowing along edge of river and on sand bars, mainly when gusts of wind blow. 3:10 2 red tails. Temp at 3:30 P.M. 43°F. Arrived De Soto 4:15. Wind carried us along entire strip

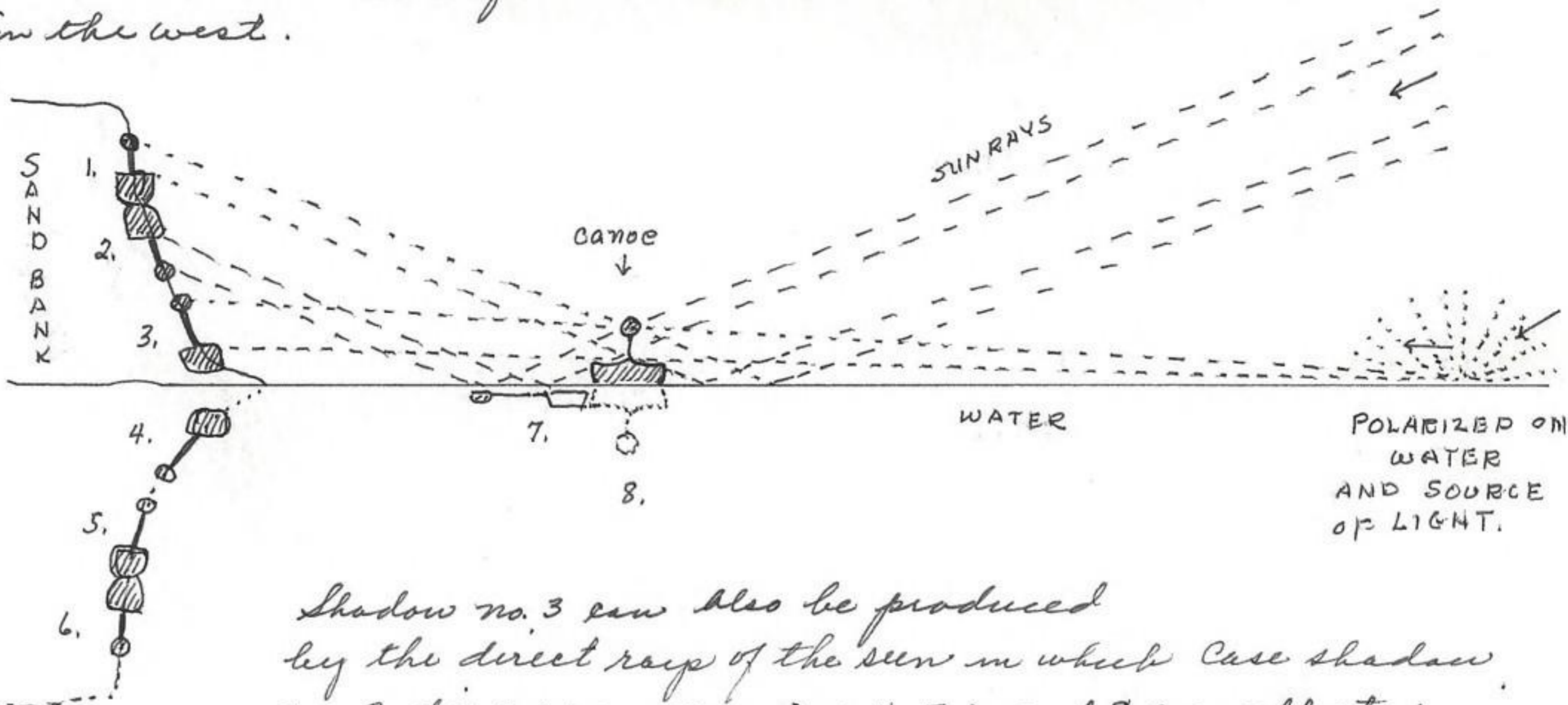
blowing sands on bars. Kingfisher. Temp at arrival 39°F. Time on river today 6 1/2 hours. We paddled consistently all the way and used the wind. Usual time is about 8 1/2 hours. We have noticed that ducks usually rest on bank on windward side of river, perhaps

to take advantage of the wind on take-off. It is also our opinion that ducks arrive from the north at definite times but are soon killed by hunters along the river. In comparison with earlier

trips down the river, there ~~was~~ <sup>was</sup> very little activity of fish. The best winds are from the northwest and under such direction it is possible to choose favorable side of river. Any other direction of the wind presents problems. The most damaging winds are from the NW of the type of storms that have gusts of wind that accompany the storm or wind. There are definite wind channels along the river which are produced by open field beyond. Hills and high trees protect the river from wave action and favorable

631207-180

wildlife habitat. Recorded a shadow-reflection complex ~~that~~ on the east sandbank of the river at a time when the sun was low in the west.



Shadow no. 3 can also be produced by the direct rays of the sun in which case shadow no. 2 disappears. nos. 4, 5, 6, and 8 are reflections in the water. no. 7 is a shadow. nos 1 and 2 depend on smooth water.

2  
10 mi. W and 12 1/10 mi. N Lawrence, Douglas Co., Kansas

Dec. 8, 1963

Checked Kaw River <sup>(1:00 P.M.)</sup> to determine effect of high wave action on river. The wind has been blowing all morning from the NW from 30-40 miles per hour. Some gusts up to 65 miles per hour.

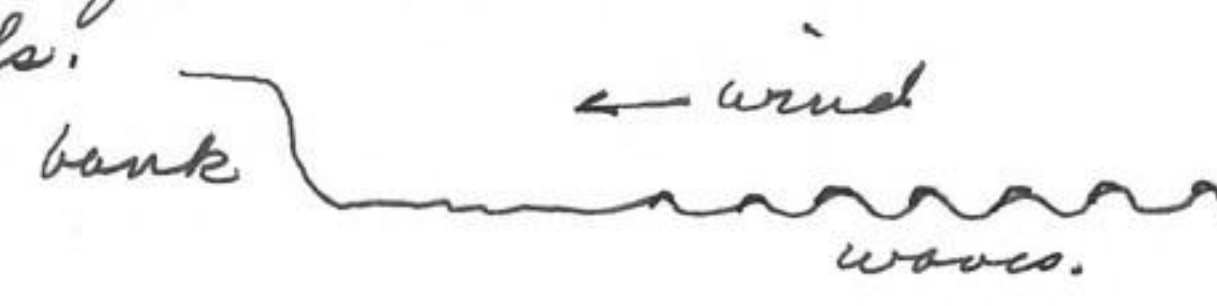
Examined a beaver house on edge of bank. mud had been piled on upper edge of bank, mainly on



solid river bank rather than on the mass of sticks. The last branches brought to house were tamarack. One main trail led from base of house to top of house and timber beyond. Six bank trail to cut timber were associated with the territory of this beaver house. Several photos were taken here, one of them of a unionid mollusc, Leptodea laevisserna no. 631208-1. This shell was on top of beaver house and had been pushed there by the beaver. This shell was only a day or less old. Several photos of this house were taken 631208-2 to 631208-8 showing construction of house and one of ice crystals on tamarack bordering open water of wave action. The mass of willows and cottonwood as the house may serve a purpose keeping wave action from destroying the bank burrow. Photos 631208-9 to 631208-20 of various conditions of surface wave action during the high wind. As the wind increases in velocity, the waves smooth out and the interval between each wave

81 becomes wider. Gusts blow the white tops <sup>631208-181</sup> as clouds of mist across the water at great speeds. Gusts of wind also make the water choppy and waves of short intervals.

Banks keep water relatively quiet because of pressure of wind which builds up against the bank. It was noted that high waves develop in these areas when gusts of wind blows and in 30 seconds can produce waves which would lopsie a canoe. The larger waves move in from the main wave beyond influence of bank. On gusty days it is not advisable to attempt crossing wide stretches of water because of the abruptness (30 or less seconds) of wave development. The noise of the wind among new growth of willow along river and high cottonwoods is an unforgettable experience, especially with winds of 50-60 miles per hour. Returned home and took photos 631208-21 to 631208-23 of many Pauline Bee.



Univ. Kansas, Douglas Co., Kansas

Dec 9, 1963

Photographed 2 relief maps, one of United States & one of the world.

- |  |                                       |
|--|---------------------------------------|
| 631209-1 world                                 | 631209-11 E. U.S.                     |
| 631209-2 N. Am & Greenland                     | 631209-12 Wyoming                     |
| 631209-3 near East and Africa                  | 631209-13 Arizona                     |
| 631209-4 Australia                             | 631209-14 S. Basin & Colorado Plateau |
| 631209-5 <del>N &amp; S America</del> E. Asia  | 631209-15 S. Texas - Mex.             |
| 631209-6 <del>E. Asia</del> N. America         | 631209-16 W. U.S.                     |
| 631209-7 U.S.                                  | 631209-17 Alaska                      |
| 631209-8 W. U.S.                               | 631209-18 Alaska                      |
| 631209-9 Utah - Colorado - Arizona, New Mexico | 631209-19 W. U.S.                     |
| 631209-10 Washington                           |                                       |

Univ. Kansas, Douglas Co., Kansas

Dec 10, 1963

Ice already formed on S side Potters Lake at 8:00 A.M. By 5:00 P.M. it had advanced approximately 2 feet northward. Ice on north side of lake started to form after 8:00 A.M. and gradually extended southward in projections to 1/3 the distance across the lake. Snow fell on the ice at 4:30 P.M.

Dec. 11, 1963

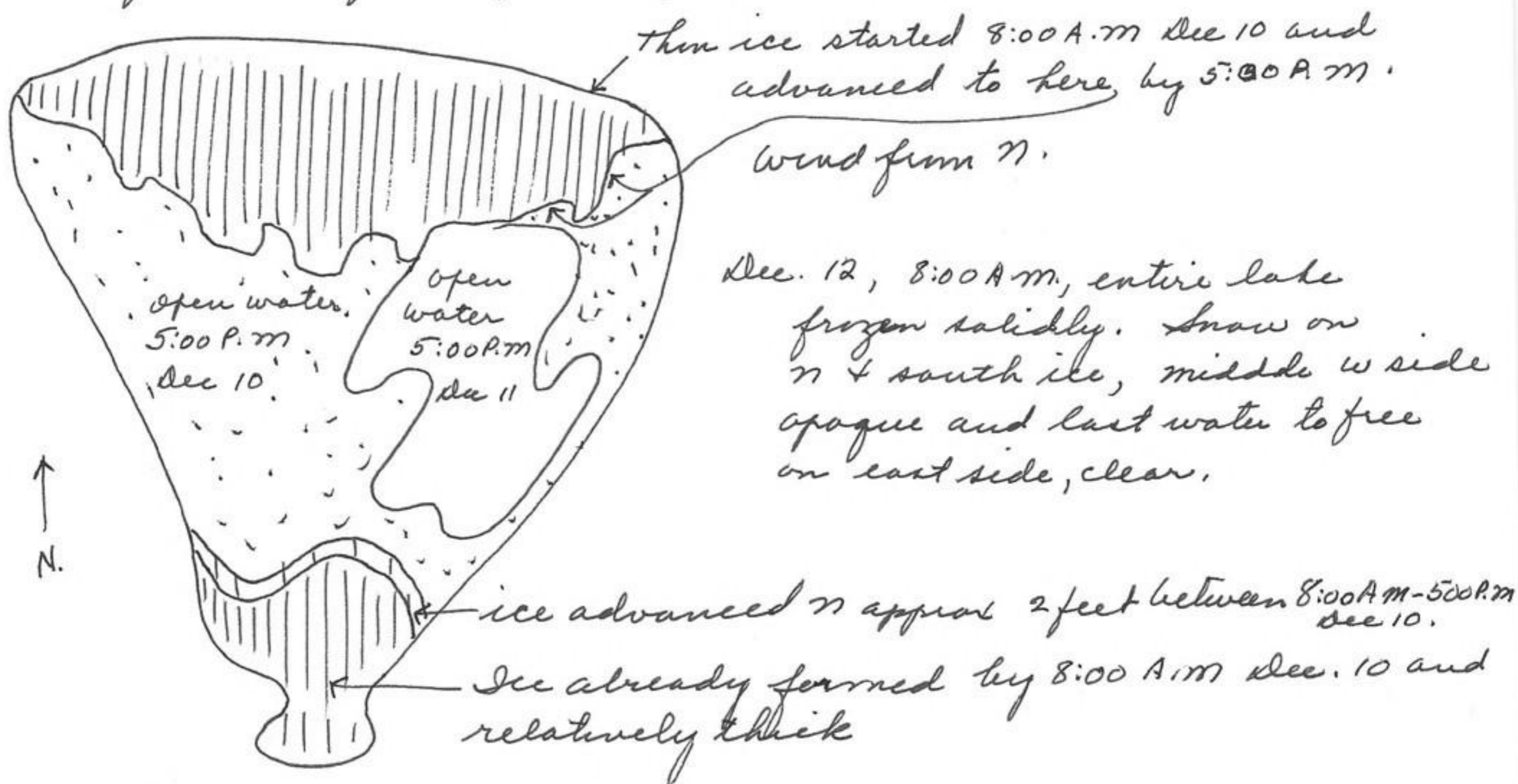
John Howard Hill II from Waverly, Kansas and a freshman

631211-182  
 at K.U. (a very reliable informant) noted approximately 800 snow geese (some blues) passing south, <sup>1:00 P.M.</sup> over the campus between Snow Hall and Hall. There were three flocks in the group

Univ. Kansas, Douglas Co., Kansas

Dec 12, 1963

The sequence of the freezing of Patters Lake is as follows:



Dec. 12, 8:00 A.M., entire lake frozen solidly. Snow on N & south side, middle W side opaque and last water to freeze on east side, clear.

Univ. Kansas, Douglas Co., Kansas

Dec 13, 1963

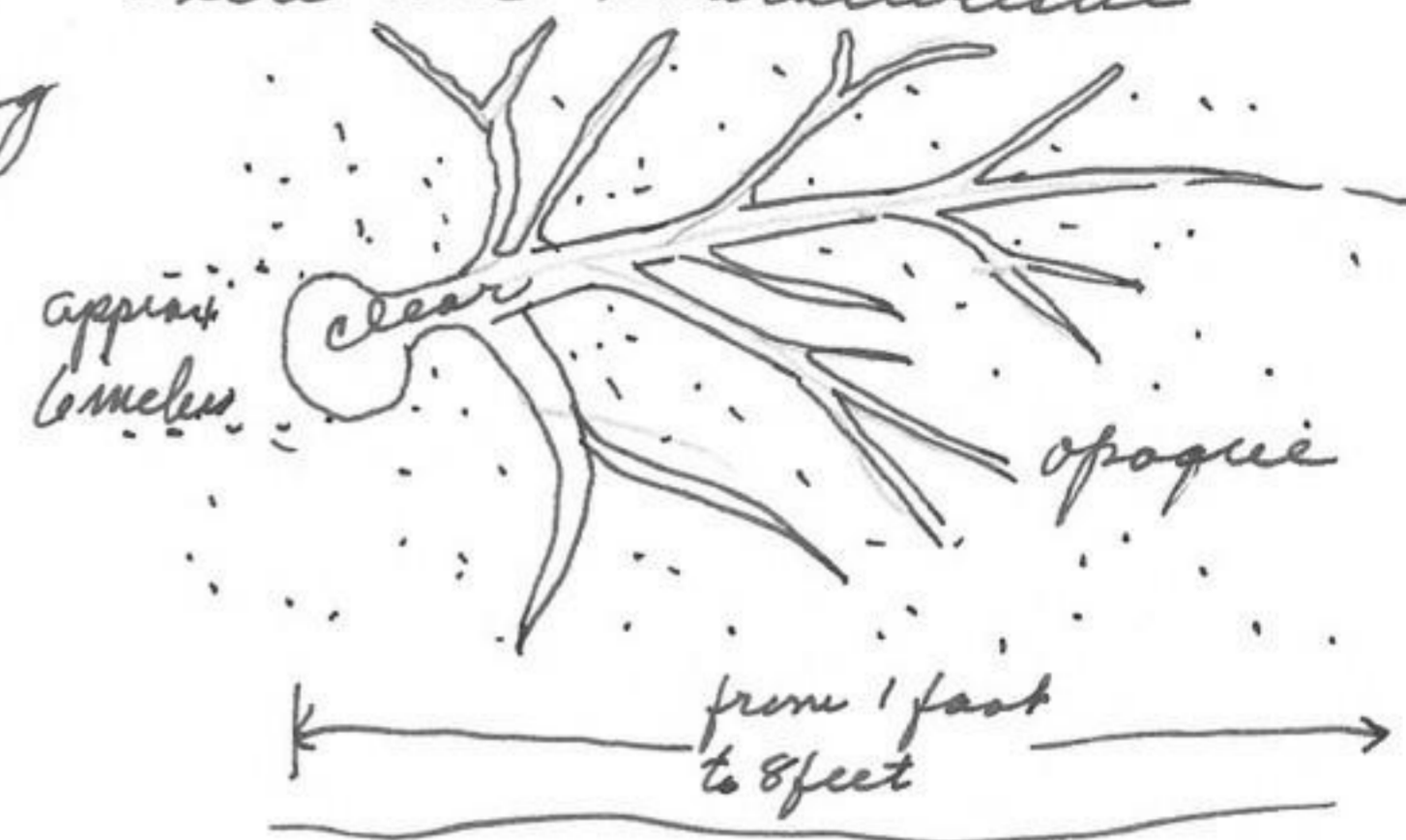
Skates are on all parts of Patters Lake. Surface features the same as Dec. 12. At home the food on bud feeder ran out Dec 11. at which time there were at least 50 English Sparrow as permanent residents at the feeder. Today there are no sparrow but the starling, jay, + redbellied woodpecker are in greater numbers and are feeding on the suit. I record here an observation of last week. The skies in the evening were pinkish or lavender for the week preceding the first freezing weather of Dec. 10. There was also considerable <sup>diffused</sup> yellows in the sunset and the artificial lights seemed brighter. The season has been very dry and the deficit is between 13 and 15 inches of precipitation. Many of the natural springs and ponds are dry. The Kaw river is higher than usual and is probably being implemented by the reserve waters of Tuttle Creek reservoir N of Manhattan, Kansas.

Dec. 22, 1963

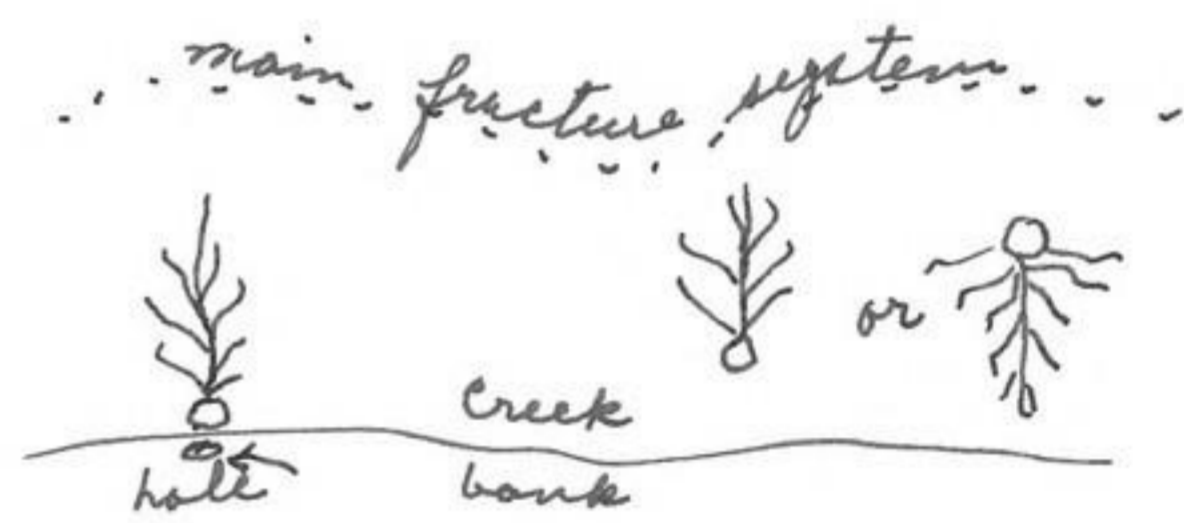
Saw James and I traversed Rock Creek from a point on west side of sec 8, T14S and R.18E where bridge crosses road, to a point on north edge of Sec. 19, T13S, R19E where bridge crosses Creek (main Clinton highway). The entire trip, <sup>13.2 miles</sup> was in creek bottom on frozen surface of creek or on dry intermittent section of creek bottom. Left bridge 10:35 A.M. Temp 0°F, sun skinning and sky clear, slight wind from N. Will keep complete record of observations. As is true with this kind of trip, it is not possible to check every bird and as a result there will be birds not identified, as some of the small sparrows, and many numbers are approximates. Snow in protected places, some on ice. 10:40 A.M. muskrat activity, trails follow along edge of ice and holes directly above ice are used. Ice completely sealing river and no water showing. Ice as thick as 2 or 3 feet. Considerable bird activity in localized area, especially on sunlit side of creek, including 1 redtail hawk, 16 slate-colored juncos and some ~~blue~~ juncos, 3 chickadees and 2 mourning doves. 10:40 5 beaver holes at and above water level. These holes were maintained as open throughfores before solid ice formed. At present the openings are thick clear ice with parts of freshly eaten stems and bark frozen in the solid ice at entrance. Tracks show that the upper holes had been used during a temporary thaw which left raised tracks on the ice of the creek. These slush marks refroze and marked their wandering up & down the creek. The last two weeks have been below freezing, some temps to -4 or 5° below 0. There was apparently one day in which the ice thawed enough to make slush for recording of foot imprints (rabbit, fox, coyote, beaver, muskrat). As far as I could tell the beaver were inactive on this day. In some area, which is represented by wide, long & deep creek bed with intermittent connections, noted 4 blue jays, 3 mourning doves, 8 juncos, 6 cardinals, 1 downy woodpecker, 1 red-bellied woodpecker, and 2 golden crowned kinglet. Tracks of cottontail rabbit, almost completely covered snow on ice, also tracks of coyote & fox. 10:45 end of cliffs on N side. 1 great horned owl. 10:50 beaver tracks on snow and ice, now at south side of valley. 10:52 beaver tracks on snow & ice 10:53 beaver tracks. 10:58 cliffs on south side of valley. wooden gate crosses creek.




11:02 redtail hawk left trees along creek. 11:06 beaver tracks, winter wren preceding us down creek from one clump of debris <sup>exposed</sup> or root system to another. It called several times and kept always just above creek rather than flying up over bank. 1 red-bellied woodpecker called. 10:10 strike on limb above creek. It allowed us to pass beneath 20 feet away. There are characteristic patterns of ice fractures all along creek, being more prevalent in some areas than elsewhere nor did they have any particular orientation. The fracture system was clear and the surrounding ice was opaque



some were at the base of old muskrat holes and radiated toward the center of the creek. The size of the crack decreased in size from the hole area outward. These patterns reminded me of neurological elements with cell bodies and dendrites. The orientation was predominantly at 90° to the axis of the creek. Main fracture parallel to side of creek and many were formed by our weight thru ice as deep as 2 feet. 11:18 middle of long stretch, 1 kinglet, 2 chickadees, beaver tracks on ice. There is less noticeable activity of beaver, especially piles of branches, cut trees etc. The tracks on snow are generally in middle of creek and regularly parallel to sides, although many side trips have been made to bank of creek. 2 chickadees, 1 crow fly by, 1 winter wren. Collected 631222-1 a winter wren. 11:33 south side of valley along hill, 2 redtails, 2 downy woodpeckers, 6 juncos (mainly slate colored), beaver tracks all along way 11:38 (barn & house to N. at NE <sup>corner of</sup> section 6). The farmer had placed a 50 gallon drum on ice and built a fire inside to melt ice for cattle to drink. It is surprising that although many cattle were in area, there was little evidence of tracks on the ice of the creek. As is true of areas around farms, there were more birds here than elsewhere. Included were 30 juncos, 4 chickadees, 8 cardinals, sparrow probably tree, 1 downy woodpecker. 11:50 2 chickadees, beaver hole. 11:52 1 downy woodpecker, 18 juncos, 2 cardinals, 2 red-bellied woodpeckers



8 unidentified sparrows. Collected a winter wren <sup>631222-103</sup> 631222-2 here.  
A shot will expose other birds which will go unnoticed. So thoroughly  
senses are one must proceed slowly and check <sup>critically</sup> all trees and  
bush along the way, stopping occasionally to note movement of bird or  
mammal. I would estimate that the birds recorded today represent  
about 80% of birds in area. 11:58 now on south side of valley, winter  
wren. 12:01 2 fox squirrels, 1 downy, 1 great horned owl, 5 fox squirrels,  
12 bob-whites, beaver tracks, 12 juncos, 6 cardinals, 8 tree sparrows,  
Creek from W. Temp. at this time 8°F, wind sufficient to require  
protection on face, sky clear. 12:15 winter wren, 12:20 collected a  
fox sparrow 631222-3, wren, 2 cardinals, 4 juncos. 12:25 winter  
wren, 6 juncos, winter wren, 12:27 2 hairy woodpeckers, 3 chickadees,  
8 juncos, 2 cardinals, 1 red-tail hawk, 1 winter wren, 1 red-bellied  
woodpecker, 2 Kinglets (golden crowned). 12:30 (middle section 33)  
2 blue jays, 1 red-tail hawk (could be same as seen 12:27), 12:33  
1 red bellied woodpecker, 2 juncos, 2 cardinals, 12:35 winter wren,  
beaver activity. 12:46 house to S., 2 towhees in weeds along creek,  
3 juncos, 2 cardinals, sparrows sp?, 2 winter wrens. 12:50 3  
chickadees, 2 song sparrows. 11:59 first sign of water at edge of  
creek (in intermittent area) 1:00 sharp bend of creek, 1 winter wren.  
1:04 spring area on return loop of creek opposite spring of 11:59, 1:05  
red bellied woodpecker, 1:08 muskrat activity 1:13 3 fox squirrels.  
These <sup>groups of</sup> squirrels are generally in some tree and closely associated  
with each other. They run into holes or along bank; winter wren,  
1 red bellied woodpecker, 5 song sparrows, one of which I collected  
631222-4, 2 crows, 1:20 1 squirrel, 3 chickadees, 1 red-bellied  
woodpecker. 1:30 7 fox squirrels within 100 feet of each other, 2  
of which entered same hole in tree, 2 winter wrens, 6 chickadees,  
12 juncos, 2 red-bellied woodpeckers. 1:38 2 song sparrows,  
8 cardinals, 2 blue jay, 7 juncos, 1 goldfinch. 1:42 bridge near  
middle sec. 27. at lunch here, 2 titmice come within 5 feet of us  
while resting. Left bridge at 2:00 P.M. 2:03 3 red-bellied woodpeckers,  
8 chickadees, 2 cardinals, 4 juncos; 2:04 1 downy woodpecker; 2:10  
W end of abrupt switchback, now to E; 2:15 base of high hill on S side  
of valley, 2 juncos; 2:18 bridge at on section line between 26 and 27;  
2:22 3 chickadees; 2:25 beaver activity, there has been less activity,  
at least noticeable inhabitation <sup>than</sup> since first of trip, 1 downy  
woodpecker, 1 red-tail hawk, 12 juncos, 2 cardinals, 1 <sup>fox</sup> squirrel;  
2:28 2 fox squirrels running along bank, 4 cardinals, 1 red-bellied  
woodpecker; 2:29 1 squirrel, 2 cardinals, 1 red bellied woodpecker, 8  
juncos; 2:31 2 fox squirrels ran across ice of creek from one side to the

651422-186  
other, one followed the other after 10 seconds, 1 red-bellied woodpecker,  
2 cardinals, 8 juncos, deer tracks now common. 2:37 muskrat active,  
1 winter wren, 1 downy woodpecker: 2:40 1 red-bellied woodpecker,  
8 juncos, winter wren, deer tracks, 1 great horned owl. There is  
a definite increase of birds as one approaches the side of the valley  
and associated timber. 243 muskrat <sup>tracks</sup> still in snow of creek bottom  
There is a greater congregation of tracks of rabbits, foxes & coyotes. 2:45  
2 blue jays, 2 cardinals, 1 winter wren, 6 cardinals, 1 downy woodpecker  
3 juncos, 3 chickadees. 8 juncos, sparrow sp.?, goldencrowned  
kinglet, deer tracks. A *Rana pipiens* was on surface of ice  
in middle of creek. It was in normal leg extension  and  
untouched ~~on ice~~ and was not desiccated. The creek was  
thoroughly sealed with ice and there was no possible way the frog  
could have been gained the surface from the water beneath  
the ice. The only explanation would have been that the  
frog had used holes in the bank which were above the level  
of the ice and water. 2:50 deer tracks all along the creek,  
2 crows; 2:55 house to N, 3 cardinals, 18 juncos, sparrow sp.?,  
4 cardinals, 10 juncos, 1 winter wren, 1 red-bellied woodpecker;  
3:00 3 cardinals, 8 juncos, another group 4 cardinals, sparrow sp.?,  
10 juncos, winter wren, 1 red-bellied woodpecker. 2 chickadees, 1  
downy woodpecker, 1 red tail hawk; 3:03 2 fox squirrels, 1  
red-bellied woodpecker, 3 chickadees, 10 juncos. 3:06 bridge  
at SW corner of sec. 27, 4 chickadees, 6 cardinals, 1 downy, 20 juncos;  
3:10 1 hairy woodpecker, 2 chickadees, 1 cottontail rabbit, the snow  
under overhanging limbs (over creek) is completely trampled by rabbits.  
Temp 12°F at 3:10. 3:20 18 juncos, 8 bob-whites, 3 cardinals, 3 song  
sparrows, 2 fox squirrels, 8 juncos, 3 cardinals. 3:24 1 great horned owl;  
3:30 2 red-bellied woodpeckers, 4 juncos, 3 chickadees, 1 hairy woodpecker,  
1 winter wren; 3:35 5 juncos. 3:47 2 trees cut by beaver, before freeze  
of creek; 3:50 2 chickadees; 4:00 2 cardinals, 20 juncos, 2 downy  
woodpeckers, 3 chickadees. 4:10 2 downy woodpeckers, golden-crowned  
kinglet weak from cold or starvation, moved a head of us by 2 or 3 feet  
4:12 leaving hills and trending N. This last loop before creek  
trends directly N is dry and has no resemblance to the wide, deep  
creek before. The last segment of creek is also narrow and not related  
to the main creek. 4:18 winter wren, red tail, 1 downy woodpecker,  
2 red-bellied woodpeckers. 4:25 red tail, 6 cardinals, 18 juncos,  
3 chickadees. These birds were preparing for night along banks of  
creek. Arrived bridge at destination at 4:42 P.M. Route 13 2/10 miles  
in 6 hrs 17 min. or about 2 miles per hour. made the following general  
observations. There were no meadowlarks or horned larks along  
entire course of Rock Creek although these birds are relatively

651-222-187

common on the flat fields of the valley. Expected many tree sparrows and Harris' sparrow but both rare. One downy woodpecker eaten on ice. Several large trees worked over by woodpeckers as evidenced by bark fragments <sup>(very extensive)</sup> on ice below the trees. Creek completely sealed with ice except 5 or 6 places between larger ponds where water (slush) had flowed out over ice and refroze. Scat of fox, coyote, raccoon?, muskrat at about every 300 feet. Several spots where small animals had been killed on ice. No rabbits kills or large mammals, 2 quail <sup>feels</sup>. Beaver are either scarce on certain parts of this creek or the ice has sealed off the evidence. The area of cut trees did not show signs of beaver activity <sup>above ice</sup> along creek. Bird aggregates of similar composition and travel together. It would be interesting to see if all birds of the community actually travel for long distances, or remain in restricted areas.

Lawrence, Douglas Co., Kansas  
Dec. 25, 1963

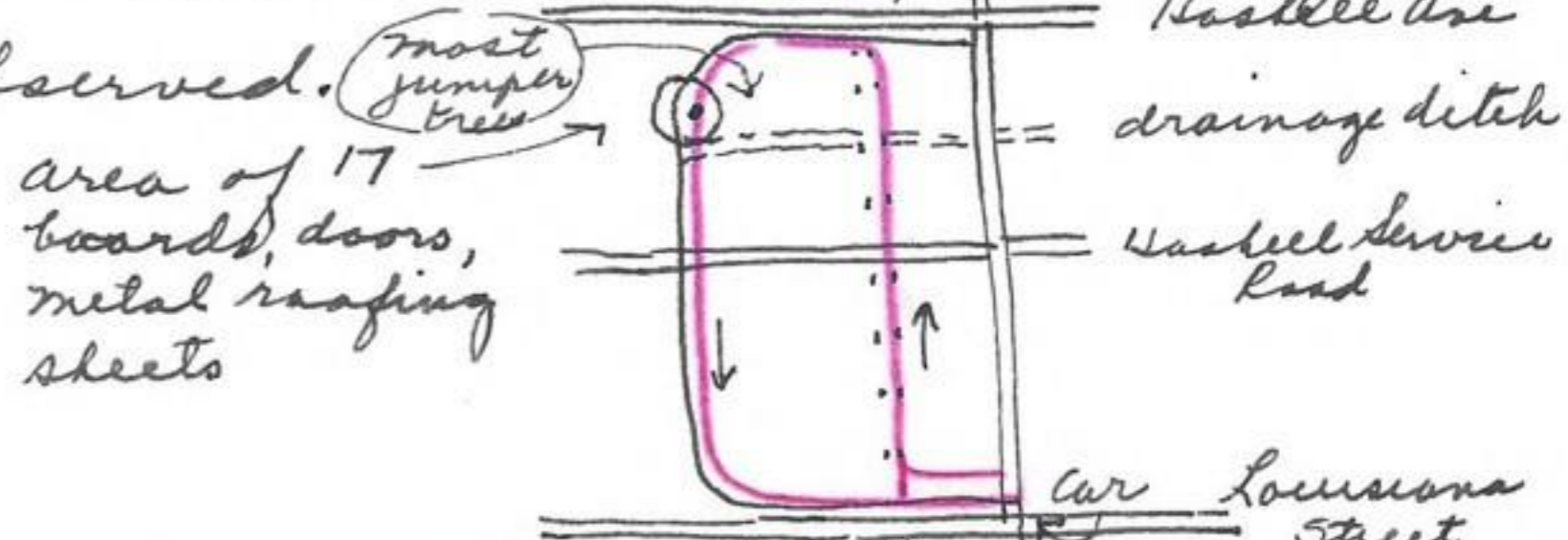
Temp in 50's °F today and snow has left ground. This preceded by 0° temp for last 2 weeks. The ice on the Kaw River has been solid during the low temps (since Dec. 12, 1963) but today water has formed on the surface in long irregular parallel lines (parallel to banks of the river).

Haskell Bottoms, Douglas Co., Kansas  
Dec 27, 1963

this A.M

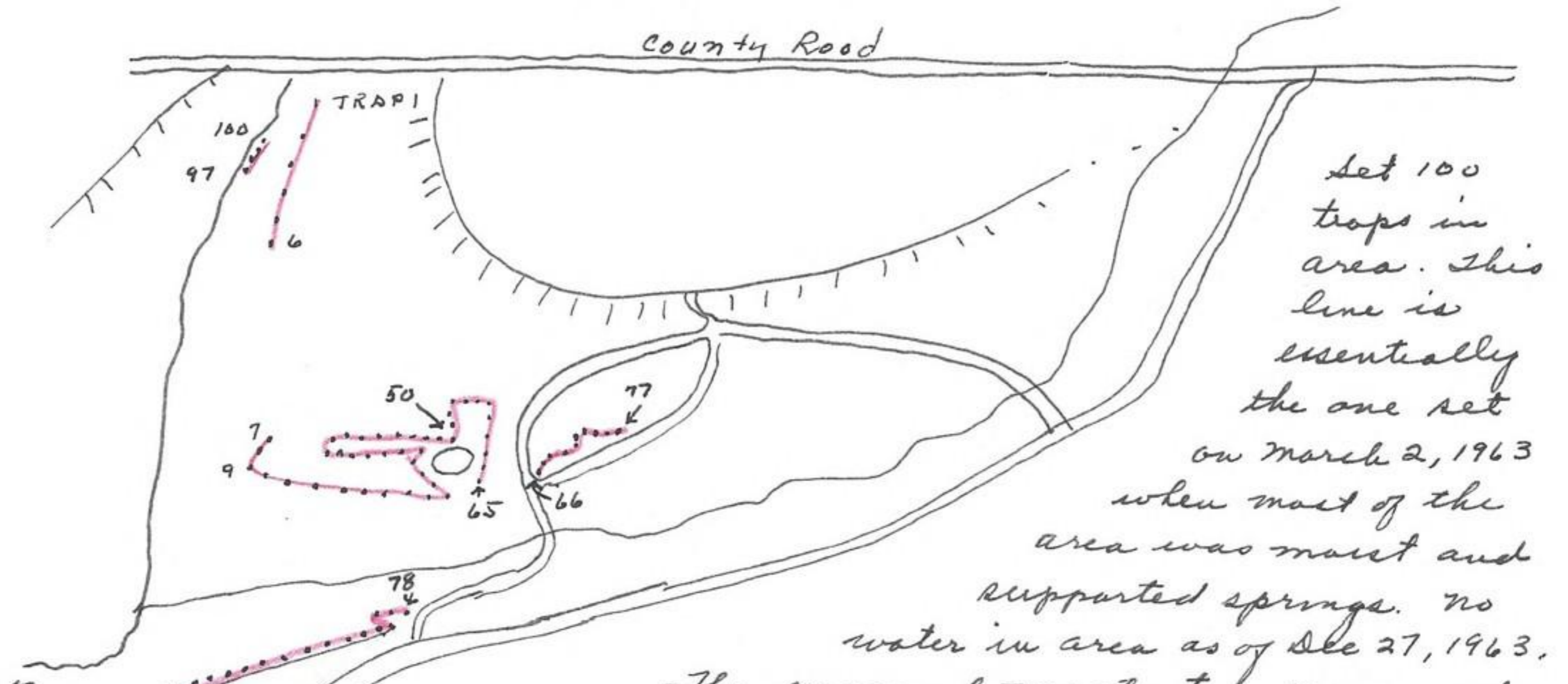
made census of microtine activity in Haskell Bottoms (see march 9, 1959 for map of area and transect). The linear transect started at Louisiana Street and followed the powerline (south poles of 2 poles) to the road to the north, Haskell Avenue. all trails of microtines counted (trails being used). Only two trails were noted, one 15 feet east of the N-S dike on west side of Bottoms and one 40 feet east of Haskell service road between 4<sup>th</sup> & 5<sup>th</sup> set of poles within area. This is the lowest numbers of microtines in Haskell Bottoms. The vegetation lacked the overhead protection of weeds that previously has protected the grasses. The grasses were also more sparse than usual. No water in area, soils dry.

There were no microtines observed. At point indicated examined 17 pieces of material on ground. There were no sigmodon,



micratus or *Peromyscus* in are. Two old nests under 2 of the larger boards. (see Dec 25, 1958 for previous census of *Sigmodon* in this same area). It would appear that the population of *Sigmodon* in this area for this season is extremely low. Continued W along dike, thence S to car at beginning of route. The dike shows many large fracture systems. at one point the dike was worn down to base level by cattle. There were no hawks in area nor any birds along census area. Only 4 small sparrows (tree sparrows) were noted and these along north dike. There is a noticeable increase or actually beginning of juniper trees (up to 1 1/2 feet high) especially in the NE part of Haskell Bottoms where in certain areas they occur <sup>about</sup> every 40-50 feet. Elm trees are also pioneering area, especially along powerline. They range from an average of 2 feet to 5 feet high.

2 mi N and 1/4 mi. E Clinton, Douglas Co., Kansas  
Dec 27, 1963



The original vegetation remained but the only difference was lack of water and moist soils. The only bird in area was a downy woodpecker (evidence of the influence of lack of water in the area). Ground clear of snow which fell earlier in the season. noted 5 cottontail rabbit hills which could have been made by predators or man. Left area and drove to W. At a point approx 200 feet N of where road crosses Coon Creek, noted a great horned owl sitting in to of tree. Traps set between 3:30 PM and twilight, Day cold (below freezing). not much activity of birds in the entire Clinton area. It is 17 miles from home in Lawrence to this area and return.

Dec 28, 1963

631228-189

Preparation of the mammals collected this A.M.

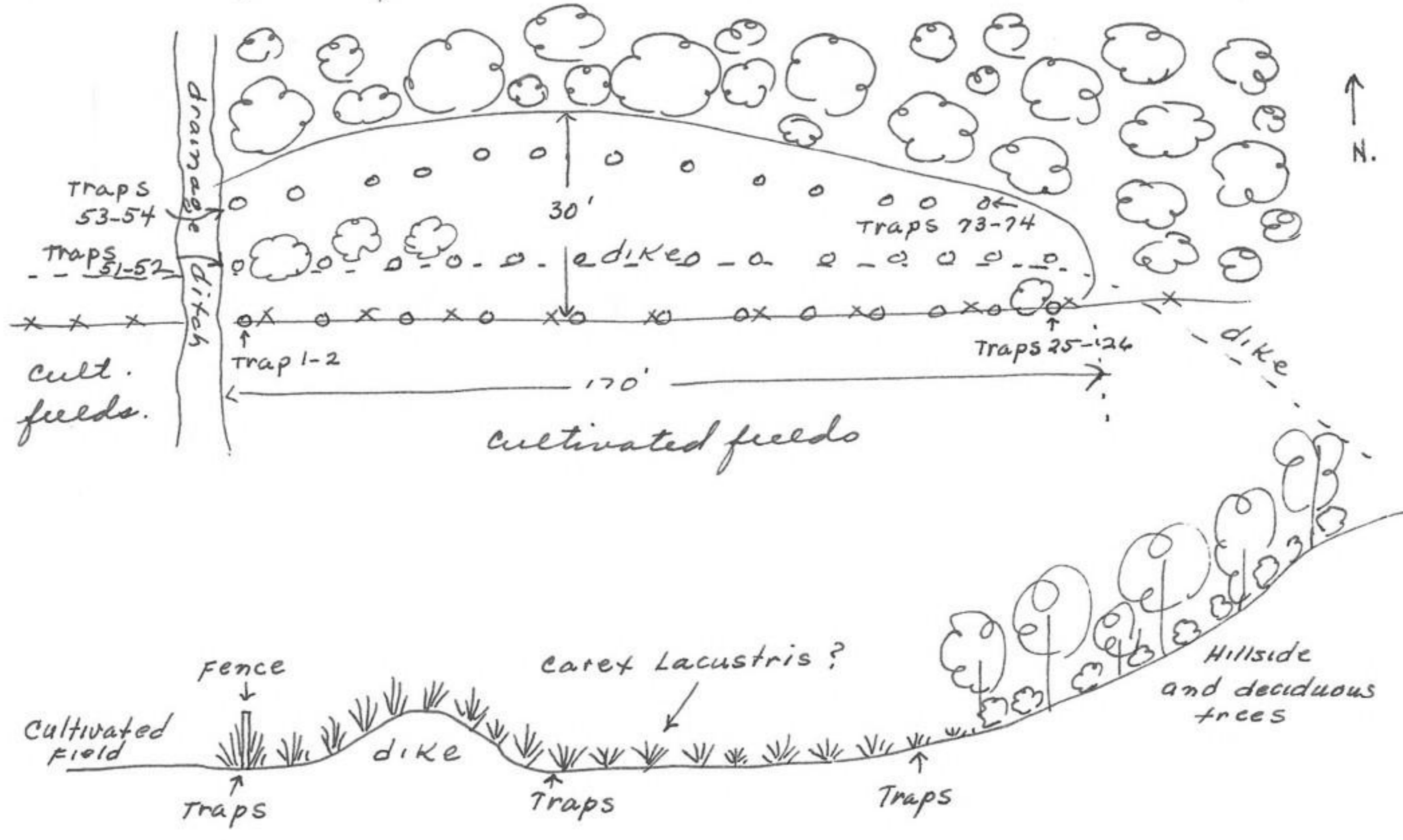
- 631228-2 *Microtus ochrogaster* 114-32-18-9-18 gms ♀ ut normal  
♂ testis 3 mm
- 631228-3 *Microtus ochrogaster*
- 631228-4 *Reithrodontomys megalotis* 128-62-17-12-? gms ♀ ut normal
- 631228-5 *Microtus ochrogaster* 161-40-20-12-40 gms ♀ ut normal
- 631228-6 *Peromyscus maniculatus* 148-63-19-13-19 gms
- 631228-13 *Microtus ochrogaster* 163-38-20-12-43 gms ♀ ut normal
- 631228-14 *Microtus ochrogaster* ♀ ut normal
- SKU 631228-27 *Peromyscus leucopus* 167-72-22.5-14-21 gms ♂ testis 3 mm
- 631228-28 *Reithrodontomys megalotis* 148-73-17-11-11 gms ♀ ut normal
- SK. ONLY 631228-31 *Peromyscus maniculatus* 155-64-22-14-20 gms ♀ ut normal
- 631228-34 *Microtus ochrogaster* 135-31-21-11-30 gms ♂ testis 4.5 mm
- 631228-51 *Reithrodontomys megalotis* [94]-[29]-17-13-8 gms ♀ ut normal
- m. only 631228-67 *Microtus ochrogaster* 139-33-21-12-22 gms ♂ testis 7 mm
- SK. ONLY 631228-83 *Peromyscus leucopus* 177-181-22.5-15-23 gms ♀ ut normal
- " 631228-88 *Peromyscus leucopus* 183-178-22.5-15-27 gms ♂ testis 12 mm
- 631228-92 *Peromyscus leucopus* 183-179-22-15-26 gms ♂ testis 3 mm

Picked up the following <sup>above</sup> mammals picked up this A.M. Snowed last night about 1/2 inch. Although the snow might have influenced catch, the main reason is lack of mammals in the area, especially microtines. No *Sigmodon* captured. Last year in this same area caught 15 *Microtus* on the initial trapping of the area. noted 12 cottontails in trapping area, mainly in brush piles in deep ravines. Coyote has passed through area after snow of last night. <sup>a towhee & 2 fairwings in area</sup> Deer tracks in area but uncommon. There has apparently been a shift of *Microtus* from the previously wet areas to the slopes of mat grass in area of traps 1-6. This area supported fewer microtines last year than this year whereas the wet areas supported more microtines last year than this year. On return visited Mr. Robert Peterson east of here. He claims that this drought is the worst since 1937 and they lack 13 inches of being normal. The only active spring is <sup>about 2 1/10 mi.</sup> S of his home and this one is covered. The lake that this spring drains into is almost dry. There is another spring in same drainage as lake and between it and Wakarusa River that is flowing about a pint per second. It is located about 100 feet from river. Engineers claim this spring was in existence before lake was formed and is not related to leakage from the lake. This spring supports green grasses. At permanent spring (now dry) at 1 7/10 mi. N and 1 1/20 mi E Clinton at base of Rattlesnake Point is absolutely dry but original vegetation in place. No runways visible but some in open field beyond. More weeds in field than previous year although area burned this spring.

1 1/10 mi. n and 1 2/10 mi. E Clinton (center of town), Douglas Co., Kansas.

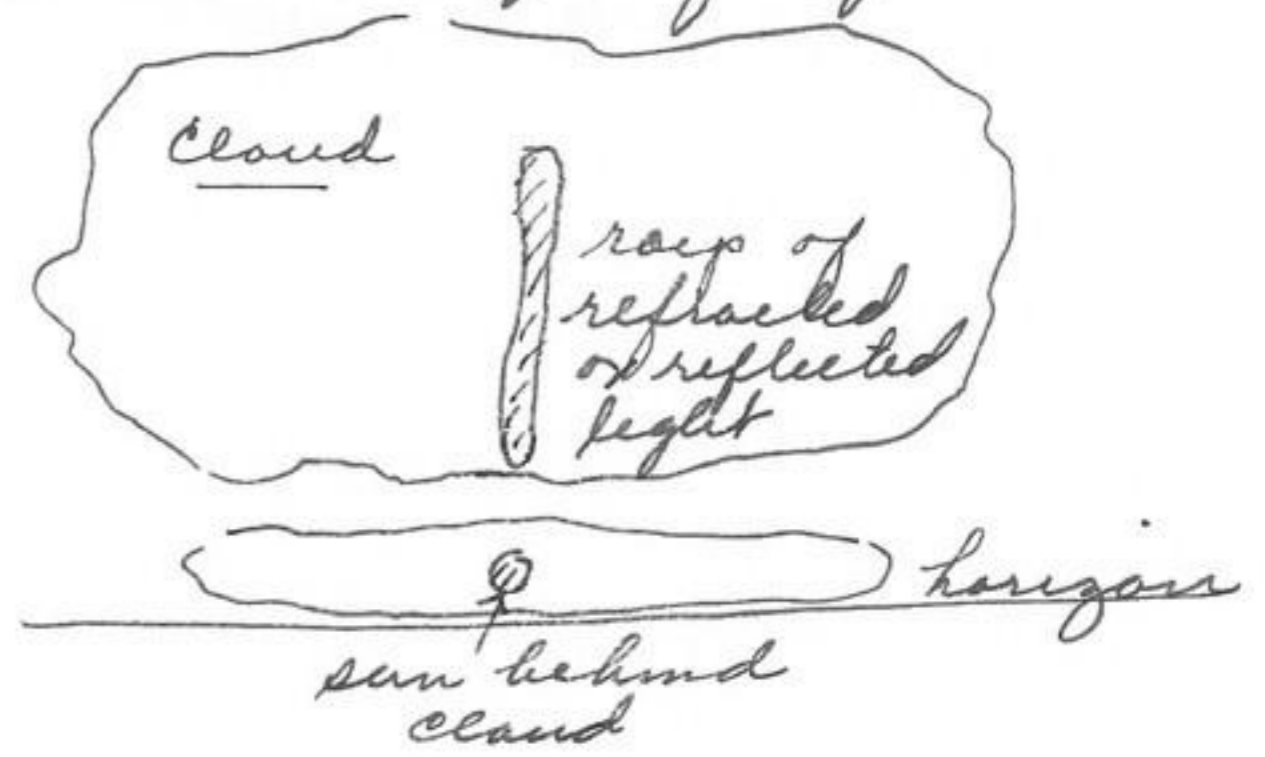
Dec. 30, 1963

Set 100 traps on Robert Peterson property in same position as trapped Jan. 2, 1963 (see notes of that date). The vegetation is principally Carex lacustris Willd.? and has not been disturbed for many years although adjacent areas are burned regularly to the south in the river bottom or valley.



Vegetation of marsh compact and blades of Carex had to be separated to expose ground. no snow among sedges. The surface beneath Carex was developed into interconnected runways of wide trails <sup>on dry soils</sup> and covered with dry stems of Carex. Complete corridors covered overhead. This condition is in contrast to other areas where trails are developed as single entities, deeply entrenched and only partly protected overhead. Traps 1 to 74 in this marsh in pairs (example traps 1 and 2 in one group, and 3 and 4 in next position) and placed approx. 13 feet (pairs) apart. Three rows (parallel) covered the marsh. These were set in evening at sundown, temp 26° F., slight wind. Traps 25-26-27-30 snapped by large Sigmodon. The remaining traps (75-100) in sidehill grasses about 200 feet east of marsh. Traps in pairs 10 feet apart. Snow in protected parts of grass and in valley on n. exposure.

This evening at sundown observed a reflection on clouds never witnessed before. A narrow shaft of light lined the clouds, but not as a result of rays from a hole in the clouds as is true with some corpuscular rays. In field about 200 feet west of above marsh counted 73 piles of dirt from gopher holes in a 115' linear line. The piles ranged from 1 pint capacity to 1 gal capacity.



In the area of dike in this field there were runways of *Microtus ochrogaster* in slough grass, <sup>new growth</sup> that was burned last summer. Before the burning the runways were used by *Signadon*. The trails were filled with snow. Some runways of *M. ochrogaster* in field that was also burned last spring and now grown to *Lespedeza* and high weeds.

1 1/10 mi. N and 1 2/10 mi. E Clinton (center of town), Douglas Co., Kansas.

Dec. 31, 1963

Collected mammals from traps set last night (temp. 8°F at 8:00 A.M.):

1 <i>Microtus ochrogaster</i>	35 not sprung	69 not sprung
2 not sprung	36 " "	70 " "
3 sprung	37 " "	71 " "
4 not sprung	38 " "	72 " "
5 " "	39 " "	73 " "
6 <i>Microtus ochrogaster</i>	40 " "	74 " "
7 sprung	41 " "	75 not sprung
8 not sprung <i>Synaptomys?</i>	42 <i>Microtus ochrogaster</i>	76 " "
9 sprung	43 not sprung	77 " "
10 not sprung	44 " "	78 " "
11 sprung	45 " "	79 " "
12 sprung	46 " "	80 " "
13 not sprung	47 " "	81 " "
14 <i>Microtus ochrogaster</i>	48 " "	82 " "
15 not sprung	49 sprung	83 " "
16 " "	50 not sprung	84 " "
17 " "	51 sprung	85 " "
18 " "	52 not sprung	86 " "
19 " "	53 sprung	87 " "
20 sprung	54 not sprung	88 " "
21 not sprung	55 " "	90 " "
22 sprung	56 " "	91 " "
23 sprung	57 " "	92 " "
24 sprung	58 " "	93 " "
25 not sprung	59 " "	94 " "
26 " "	60 " "	95 " "
27 sprung	61 " "	96 " "
28 not sprung	62 <i>Signadon</i>	97 " "
29 " "	63 not sprung	98 " "
30 sprung	64 " "	99 " "
31 not sprung	65 " "	100 " "
32 " "	66 " "	
33 <i>Synaptomys cooperi</i>	67 " "	
34 not sprung	68 " "	

Summary:

4 *Microtus ochro*  
2 *Synaptomys*  
1 *Signadon*



There were 20 crows in one tree 2 miles E and 1/2 mi N of this marsh.

measurements of the mammals caught this A.M. [no measurements except those that can be taken from the <sup>mounted</sup> specimens]

631231-1 *Microtus ochrogaster* ♂ testis 10 mm

631231-6 *Synaptomys cooperi* ♀ ut. normal

SRU 631231-8 *Synaptomys cooperi* ♀ ut. normal.

631231-14 *Microtus ochrogaster* ♂ testis 7 mm

631231-33 *Synaptomys cooperi*

631231-42 *Microtus ochrogaster* ♂ testis 6

631231-62 *Sigmodon hispidus*. ♀ ut normal

Lawrence, Douglas Co., Kansas  
Dec 31, 1964<sup>3</sup>

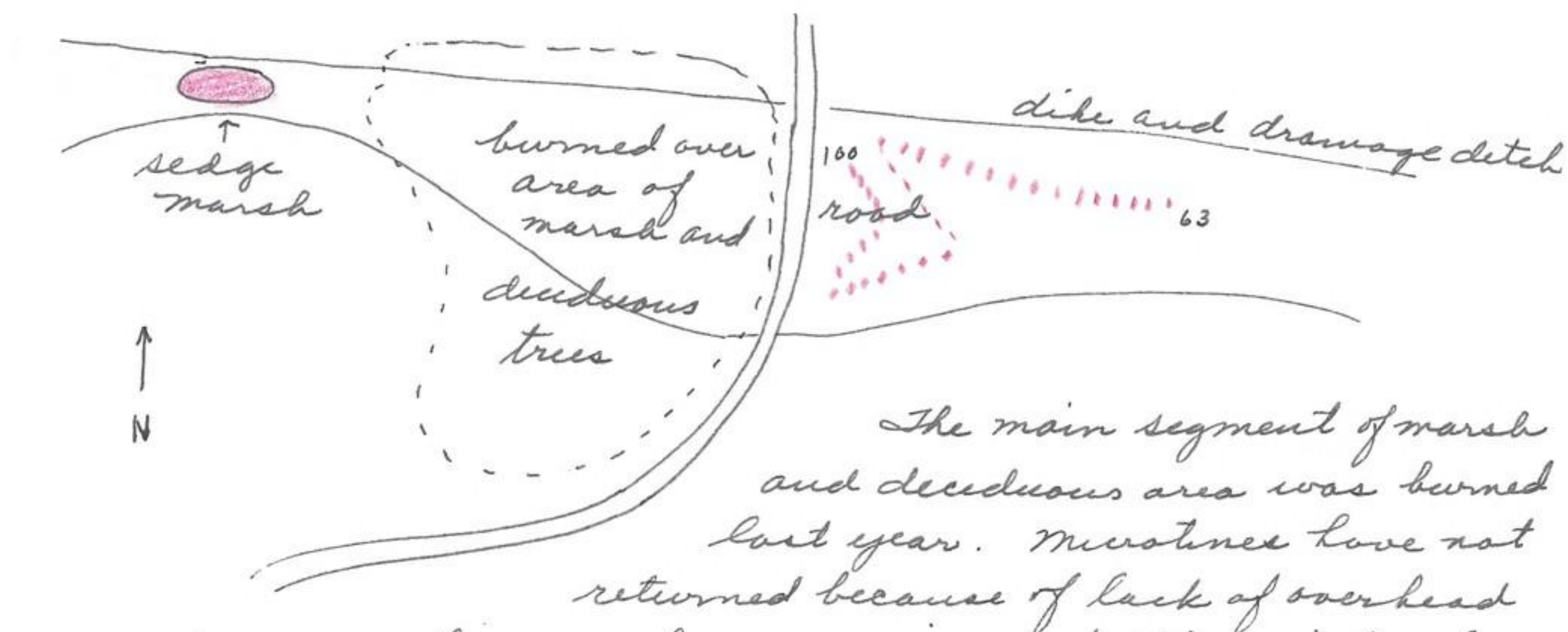
Annual report of birds collected. To U.S. Department of Interior, Fish and Wildlife Service, Bureau of Sports Fisheries and Wildlife, P.O. Box 1306, Albuquerque, New Mexico, Permit no. 2-496.

	by hand	acquired	disposed	total
American bittern	0	1	0	1
Hooded merganser	0	2	0	2
Semipalmated plover	0	2	0	2
Black-bellied plover	0	1	0	1
Solitary sandpiper	0	2	0	2
Greater yellowlegs	0	1	0	1
Lesser yellowlegs	0	3	0	3
Pectoral sandpiper	0	4	0	4
Bairds sandpiper	0	1	0	1
Long-billed dowitcher	0	1	0	1
Stilt sandpiper	0	2	0	2
Semipalmated sandpiper	0	2	0	2
Franklin's Gull	0	1	0	1
Short-billed marsh wren	0	4	0	4
Mockingbird	0	1	0	1
Lincoln's sparrow	1	1	0	2

1/4 mi W and 1/4 mi S Clinton, Douglas Co., Kansas  
Dec 31, 1964<sup>3</sup>

Inspected marsh at above locality (see notes April 20, 1963). 1 mile W Clinton noted 1 sparrow hawk. Snow on N exposures. Birds rare. Swamp or marsh of above drained and dirt from drainage piled on top of marsh. Redtail circling to N in nest field. 18 bobwhite. at a point 4100ft N + 100ft W Clinton set 100 traps in old sedge patch among deciduous trees at edge of valley. (see notes of previous sitting here)  
Feb. 9, 1963

This is the same marsh or sedge patch, Carex lacustris Willd  
640101-101 trapped Feb. 9, 1964 and caught essentially large  
Peromyscus leucopus.

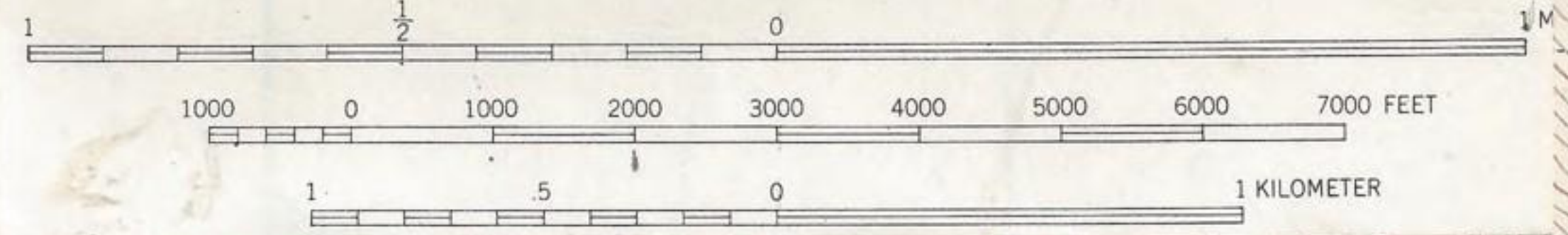


The main segment of marsh and deciduous area was burned last year. Microtines have not returned because of lack of overhead protection. The area, however, is used extensively by small birds. Sixty two traps <sup>(19 to 62 in sedge patch)</sup> were set in this sedge patch at 10 foot intervals, two traps per station as follows:

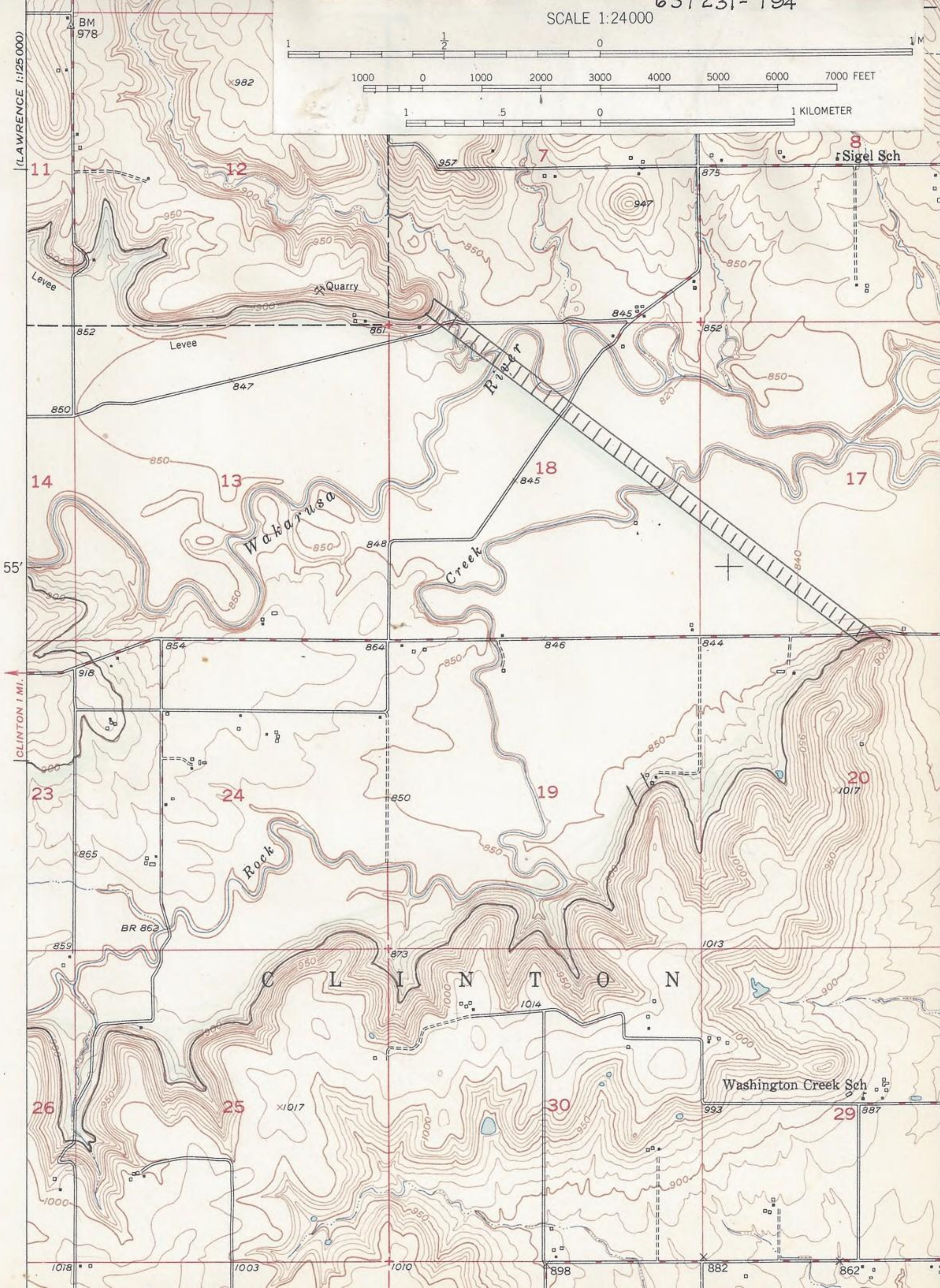


The second group of traps set east of road (nos 63 to 100) in an area that had been previously trapped last year. At that time the population of microtines were high. This same area did not show much evidence of habitation. Trapping last year may have influenced this population number. Snow remained on ground in protected places and on north exposures. The runway surface of the sedge patch was free of snow and dry because of the overhead protection of the sedges. On return to Lawrence noted a skunk at corner just n of the trapping area. No birds noted on return except a cardinal and 8 juncos at Wakarusa bridge to the east of the area.

SCALE 1:24000



(LAWRENCE 1:25000)









T O N

T O N

Quarry

Creek

Rock

Creek

Apple Pie Sch

21

22

23

28

27

26

33

34

35

33

34

35

4

3

2

870

865

966

BM 946

932

869

871

964

942

902

1026

965

949

885

862

858

1018

959

889

872

974

1014

77

875

876

1011

994

957

903

988

970

978

1011

950

957

903

988

970

978

1011

892

994

BM 1061

1035

1011

984

1001

1074

998

1020

1004

1084

1088

1090

1022

1002

898

