Lee W. Arnold
Field Notes

July 9, 1937 - August 9, 1937

Arnold
1937

Leroy W. Arnold 1937

Murphy Canyon, San Diego Co., Calif.

July 9 the car. When it was gaining speed by flapping its wings it flew around 35 miles per hour while on its long guides it never dropped far below 30 m.p.h.. About ¼ mile down the valley it circled and lit in the creek bed on the opposite side from the road. We got out of the car and walked over to the place where we last saw the bird. When we have into view around the bushes all four of the birds took to the air, circled over our heads and headed up the canyon. There have been numerous Ibis reported from Lake Hodges lately but I was surprised to find them in the habitat mentioned.

July 16 Little Spring, 8,200 ft., San Francisco Mt., Coconino Co., Arizona

On Wed., July 14, 1937 our party consisting of L. M. Huey, Morris Bloomfield, Richard Neil and myself left San Diego at 1 P.M. in the Museum's 1928 Ford truck. We met with engine trouble at Alpine & had to go back — finally leaving town about 4:30 P.M. We drove until 1:30 A.M. the following morning when we stopped just west of Gila Bend to sleep. At 5:30 we continued on. We arrived in Flagstaff at about six o'clock in the evening. The night of July 15 we slept under the pines about five miles east of Flagstaff. In the morning we went back to Flagstaff, loaded up with food, Mr. Huey saw the Forestry service men and we headed north for Little Spring. We arrived here at about 10:30 A.M. this morning. Little Spring is located

Arnold
1937

Little Spring, Coconino Co., Arizona

July 16, on the northwest slope of San Francisco Mt., It is a very historical spot as far as vertebrate zoology is concerned. In the 90's C. Hart Merriam and his party camped here for two months to collect. Twelve mammals have been typed from near this locality by Dr. ~~Goldman~~ Merriam. We are to be fortunate indeed in that we are going to meet Dr. Goldman at this point — the spot where Dr. Merriam derived and proved his life zone theory. When we meet Dr. Goldman and another

July 19, man from U. of Arizona the three cars will keep together and will probably travel through the painted desert and north of the Grand Canyon. Our camp is under a large yellow pine some 150 yards northwest of Little Spring. On the slope south of camp are aspens mixed with pines and firs. On the low slope in back of the camp, which Dr. Merriam was supposed to have camped on, are scattered, large yellow pines with occasional aspens and numerous small pines. This area at one time was occupied by a fox farm. There are at present reminents of the fences and enclosures. In back of the camp some 100 yards are two piles of approx 25 (each) fox carcusus. These were probably thrown there by the fox farmers when they quit the area. A few hundred feet west of camp I found an old

Arnold
1937

Little Spring, Coconino Co., Arizona.

July 19, carcus of a very dead Mephitus. This is probably Mephitus estor which is typed at this locality. On the night of July 16, I set out a line of 50 traps. 16 of these were in the meadow south of camp while the rest were along the east side of the large meadow some ½ mile from camp. I caught 26 Peromyscus maniculatus

11 ad. ♂; 6 ad. ♀; 9 imm ♂

Although some of the sets in the meadow seemed good for Microtus I did not catch any. On the night of July 17 I set 65 traps along the creek in Hart Prairie many of these were along the edge of the water while others were in meadowmice runs on the flat damp low ground near the water. I caught 16 Peromyscus and 3 Microtus. Of the 3 Microtus two were short-tailed and one was longtailed. On the night of July 18 I again set in this locality catching 6 Peromyscus and 3 Microtus (all short tailed). On the evening of July 18 we saw an adult ♂ Odocoileus in a grove of aspen about 1 mile from camp on the main road. Its ~~horns~~ antlers were in velvet and had two prongs on either side. We stopped the car for several seconds and watched it. After staring at us for a time it slowly ran away through the aspens.

Arnold (137)

Little Spring, Coconino Co. Arizona

July 19, At about 4:30 P.M. on July 18 while standing about 50 feet NW of Little Spring I saw a weasel run into a bush some 15 feet ahead of they and I. I ran for the gun but when I returned I did not see it again. While watching for the weasel a Callospermophile ran towards me through the weeds. It was apparently what the weasel had been hunting at the time I first saw it. The squirrel was almost exhausted and almost allowed me to catch it by hand. The weasel looked about ½ again as large as those in S.D. Early in the afternoon I hiked up to the old sawmill some two miles east of there. The mill was burnt to the ground with only charred boards and large piles of sawdust to show where it had been. On the way to the mill I shot a Pigmy Nuthatch. These birds seem to travel from pine tree to pine tree in flocks of 10 or more. It seems that most of them are immature birds, however. There were numerous chipping sparrows in the small pine trees. Probably they are nesting. On July 19 at about 7:30 A.M. I found a nest of a Broad-tailed Hummingbird in a willow tree near the spring at the north end of Hart Prairie. It seems that these birds must have quite a few

Arnold
1937 Little Spring, Coconino Co., Arizona

July 19, Nests in this small grove of willows from the hummingbird activity. The nest had two white (eliptical) eggs in it and was built of a white downy substance. It was about 4 feet from the ground and in a position that would get the sun part of the day (at noon). I noticed several birds going through a mating procedure similar to the Allen Hummer of the bay region. On the night of July 16 Mr. Huey woke me up to listen to the spotted owls calling in the aspens. They called similar to a dog bark. On the evening of July 17 I heard them once more in the aspen grove.

July 20, Last night I set out 73 mouse traps near the spring at Little Spring. 30 of these were in the green shrubs around and within a few feet of the spring while the rest are along a fence line west of the spring for about 200 yards. This fence line consists of large poles about every 15 feet with a ditch running along the base of them. This ditch showed signs of much wear from animals running along it. I set traps at every other pole where sign looked favorable and at every fourth pole where it did not look so favorable. This morning I had

Arnold
1937

Little Spring Coconino Co., Arizona

July 20, 16 Peromyscus maniculatus rufinus
4 adult ♀
10 adult ♂
2 imm. ♂
2 Microtus alticola alticola
1 adult ♂
1 imm. ♀

Most of the adult (sexually adult) peromyscus are apparently this years batch but are in breeding condition. Last night about 8 o'clock we heard a commotion from a pair of robins east of camp. Upon walking over toword the birds a large owl (probably a spotted) flew from the tree the birds were in and across the meadow to some other aspens. I do not know whether the birds was after young in the nest or older birds which were just learning to fly.

July 21, In the same trap line I caught:
9 Peromyscus maniculatus rufinus
2 adult ♀
1 adult ♂
4 imm ♀
2 imm ♂
1 ~~Peromyscus mar~~ Microtus alticola

Bloomfield in 20 traps set in green herbs in meadow caught:

Arnold
1937

Little Spring, San Francisco Mt., Arizona

July 21, 11 *Peromyscus maniculatus* 4 ad. ♂
3 ad. ♀
2 imm. ♀
2 imm. ♂

Neil caught:
12 *Peromyscus maniculatus*
5 ad. ♂
3 ad ♀
3 imm ♂
1 imm ♂
in aspens; bushy undergrowth — weeds etc. east of camp.

I saved 4 ad. ♀; 4 ad ♂; 1 imm. ♀, 1 imm ♂ in alcohol. They are as follows

300 ♂	*Peromyscus*		152-66-19-18 (ear from match)
301 ♂	"		152-62-20-19.5
302 ♂	"		144-55-19-18
303 ♂	"		151-63-19.5-17
304 ♀	"		154-61-19-20
305 ♀	"		168-72-20-20
306 ♀	"		158-67-19-19
307 ♀	"		155-66-18-19
308 ♀	imm.	"	127-53-18-17
309 ♂	imm.	"	133-62-20-17.5

Arnold
1937 Little Spring, San Francisco Mt., Arizona

July 22 Nominal List of Birds seen in San Francisco Mt., Arizona.

1. Broad-tailed Hummer — Nest seen
2. Chipping sparrow — Nest seen.
3 Crossbill
4. Williamson's Sapsucker
5. Red-tailed Hawk
6. Sharp-shinned Hawk
7. Spotted Owl
8. Red-shafted Flicker
9. Downy Woodpecker
10. Lewis Woodpecker (at Flagstaff)
11. Chipping Sparrow
12. Poorwill
13. Western Nighthawk
14. Western Tanager
15. Sparrow Hawk
16. Violet-green Swallow
17. Nutcracker
18. Steller Jay
19. Crow
20. Chickadee
21. Slender-billed Nuthatch
22. Pigmy Nuthatch
23. House Wren
24. Hermit Thrush
25. Robin
26. Western Bluebird
27. Mountain Bluebird
28. Warbling Vireo
29. Red-faced Warbler

Arnold
1937

Little Spring, San Francisco Mt., Arizona

30. Hudsonian Warblers (Black-fronted)
31. Macgillivray Warbler (Tolmie)
32. Meadowlark
33. Black-headed Grosbeak
34. Evening Grosbeak
35. Pine Siskin
36. Green-tailed Towhee
37. Spotted Towhee
38. Arizona Junco
39. Western Wood-pewee
40. Band-tailed Pigeon
41. Mourning Dove
42.

This afternoon at about 2:00 P.M. Mr. Goldman arrived in camp. He was in a 1936 Plymouth and was accompanied by his son, Luther. He discussed his plans with Mr. Huey for some time and then they left for Flagstaff. We are to meet them tomorrow in Flagstaff where we will depart for Zion National Park. This evening I collected a skull of the Mephitis estor I had seen previously.

Arnold
1937

5,400 ft.,
July 24, ~~a~~ mi north Wolf Hole, Mohave Co. Arizona
We left Flagstaff ~~the day~~ yesterday at about 1 P.M. Because of car trouble we were forced back and had to leave at about 3:30 P.M. We drove through to Jacob's Lake. We reached the Kaibab Plateau at about 8:00 P.M. Enroute we drove through the Painted Desert and over the Colorado River just below Lee's Ferry. The country was beautiful but the colors and angles of the buttes were not pictured at their best because of the heat rays and the bright sun. Animals were not very abundant on the open desert. We saw several Ammo's in the scattered brush. We also saw several Prarie Dogs. When we arrived on the Plateau we went to the Jacob's Lake autocamp and saw Major Goldman and his party. After finding out what the plans were we went about a mile down the road and camped. This morning we drove on through Zion National Park. On the north edge of the Plateau we saw several Colo's and Eutamias. As we went down the side of the Plateau we saw a dead Crotalus on the road (Mr. Huey collected it)

July 25, I collected:

3 Peromyscus truei 1 ad. ♀ (4mm. x 8mm)

Amended 1937 4 mi. N Wolf Hole, 5,400 ft., Mohave Co., Arizona

1 Perognathus formosus

July 25, 1 ad. ♂ ; 1 imm ♂

2 Perognathus parvus

1 Neotoma lepida ♀

The Neotoma and ♂ Peromyscus truei were caught on the NE Face of an outcropping of rocks about ½ mile SW of camp. The Perognathus formosus was caught on the side hill near the base while the remaining Perognathus and Peromyscus were collected on the flat land radiating from the base of the hill. The Perognathus parvus is the 3rd record for the state of Arizona according to Major Goldman. Bloomfield and Neil shot several specimens near here, these included: 1 grey Vireo; 1 Ash-throated flycatcher; 1 Western Kingbird; 2 Gnatcatchers; 1 Collared Lizard; 1 Crotophytes.

Our camp is located among the junipers about 2 miles south of the pass. The vegetation consists of Junipers and sage. Here and there are cactus plants. On the slopes of the hills are Piñon trees. Yesterday we tried to outfit in St. George but were forced to wait until Monday because of a Mormon holiday. Tomorrow we will proceed toward the Mt. Trumbull region.

July 26, This morning we went around to the traps but had no gophers. In 60 mouse traps set on the flatland south of camp we caught:

Wolf Hole, 5,400 ft. Mohave Co., Arizona

July 26, 2 Peromyscus maniculatus
1 Dipodomys ordii
3 ~~Peromyscus~~ Perognathus parvus

We are leaving today for Mt. Trumbull. Luther Goldman and Nichols are at St. George at present buying food and mailing letters. Here's hoping the receive a few as well as mail some. While here I have seen:

1. Western Red-tailed Hawk
2. Western Nighthawk
3. Poorwill
4. Western Gnatcatchers (Plumb.?)
5. Grey Vireo
6. House Finch
7. Desert Sparrow
8. Western Woodpewee
9. Piñon Jay
10. Fish-throated Flycatcher
11. Western Kingbird
12. Rock Wren
13.

Hickson Spring, 6,700 ft., Mt. Trumbull, Mohave Co., Arizona

July 28. Last night we set out 60 traps apiece:

Neil Caught:

7 Peromyscus truei
4 ad ♀; 2 imm ♂; 1 imm ♀

4 Peromyscus boylei
1 ad ♂; 1 ad. ♀;
1 imm ♀; 1 imm ♂

Bloomfield caught:

17 Peromyscus maniculatus
8 adult ♀
8 adult ♂
1 imm. ♂
(adults & subadults under adult head in all cases)

1. Reithrodontomys megalotis ad. ♂

1 Dipodomys ordii — ♂ adult.

1 Perognathus parvus (?) ♀

I caught:

2. Neotoma lepida (?)
1 ad. ♀
1 imm. ♀ (tail solid black)

4 Peromyscus truei
2 ad ♂
1 imm ♂
1 imm ♀

8 Peromyscus maniculatus
6 ad ♂
2 ad ♀

I set my traps in a line just north of the spring about 100 yards and ran them west along the lower edge of the

L. Arnold Hixon Spring, 6,200 ft. Mt. Trumbull Mohave Co. Arizona
1928

July 28, hill. Most of them were collected around old stumps, rocks and scrub oak. The *trvei* were ~~seen~~ caught farther up the hill than the *maniculatus*. I collected the adult breeding ♀ *Neotoma* in the woodpile north of the spring waterhole and barn. The other sub-adult ♀ was collected along the north wall of the barn on the outside. This one was peculiar in that it was very blackish on the dorsal side. The tail was solid black with no lighter bicolor on the ventral side. Both are in the S.D.M.H.M. collection at present. Major Goldman said that when he was collecting here he did not get any woodrats. Neil set his traps north east of the spring up on the side hill. He caught 11 *Peromyscus*. — 4 *boylei* and 7 *trvei*. He said that they were both in similar habitats and he did not distinguish between them ~~as yet~~ when picking up the traps. Our distinguishing character was the fact that the ear was longer than the hind foot in *trvei* and shorter than the hind foot in *boylei*. Another very interesting feature was that the immature *boylei* were very dark laterally and dorsally. Bloomfield set his traps about 150 miles SW of the spring (waterhole) across the flat. He set them in sage brush for the most part. It is interesting that he caught only *Peromyscus maniculatus* and no

L. Arnold 1937 Mixon Spring, Mt. Trumbull, Arizona

July 28, doylei or trvei. The Dipodomys ordii that Bloomfield caught was probably a straggler from the lower sagebrush levels. It is interesting to note that in central eastern Nevada the Dipodomys microps has a tendency to range higher than ordii which in my ~~estimation~~ opinion is a lower form in that region. The Reithrodontomys is probably the great basin form of megalotis (megalotis). The Perognathus parvus that Bloomfield caught looked much different than those collected in the lowlands. Although it was young it was considerably darker than the young specimens ~~in the~~ collected lower down. This specimen can also be seen in the S.D.M. It might be well to note here that I classed all mammals with sex organs fairly well developed under adults — even though it is apparant that they are this year stock. Last night when Bloomfield and myself were walking back to camp I saw a ¼ grown, broad-striped Mephitis running through the Junipers. After chasing it for about 50 yards I managed to jump on the middle of its back — but with "no good" results. The skunk managed to sent me considerably. This afternoon Bloomfield and I went up the pipeline from the water hole in search of the spring. We followed

Arnold
1937 Hixon Spring Mt. Trumbull, Arizona

July 28, the pipeline for about 1 mile at a 45° angle (more or less) but lost the line a few hundred yards below the face of the lava cliff which appears to be the high point of the mountain in this region. On the way up we saw numerous Band-tailed Pigeons and Mourning Doves. These birds were probably trying to get water from the mud holes made by the leaking pipe. At the base of the cliff near the top were numerous aspen trees. The large talus boulders at the base of the cliff had signs of brush rats in them. We also saw a number of locust plants. I caught 2 Otospermophilus — 1 imm. ♀ and 1 sub-adult ♂

July 29. Last night all three of us trapped in the sage flat just south of the open field south of the waterhole.

Neil caught.

7 Peromyscus maniculatus
5 ad. ♀; 2 ad ♂

2. Perognathus parvus
1 ad ♀
1 imm ♂

1 Onycomys leucogaster

1 Reithrodontomys megalotis ♂

His trapline was approx 60 feet south of the fenceline. It ran through the sagebrush at a point where the sage was heaviest and the trees (pines) were fewest.

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Mixon Spring, Mt. Trumbull, Mohave Co., Arizona

Bloomfield caught:
3 Peromyscus maniculatus — 1 ad. ♀
2 ad. ♂
1 Peromyscus boylei 1 ad. ♀
His trapline was along the fenceline at intervals of every 5 paces. Compare this catch with that of the previous night
I caught:
9 Peromyscus maniculatus
3 ad ♂; 5 ad ♀; 1 imm. ♂
1 Peromyscus truei ♀
My trapline was 50 paces south of the fence — as shown on map. For the most part my traps were in sagebrush near the trees under them. The truei was trapped the farthest west of any. It was about 50 feet from a large pile of boulders (about 15 ft. sq.)
July 30, We set out our traps at intervals of every 5 paces, south of where we trapped the previous night. Bloomfields were 75 paces south of fence, Meils were 100 paces south " " , Mine were 125 " " " ". We were all trapping in a habitat of less sage and more pine than on the previous night. Many of

Arnold
1937

Mixon Spring, Mt. Trumbull, Mohave Co., Arizona

July 30, Bloomfield:

1 Reithrodontomys ♂
1 Peromyscus maniculatus ♀

Neil:

4 Peromyscus maniculatus
2 ♂; 2 ♀

Arnold:

3 Peromyscus maniculatus
2 ad ♂; 1 imm ♀
1 Peromyscus truei (in cryphouse)

the traps were set on pine needles. this showed that there is a tendency for the mice to be more abundant in the sage which is closer together with scattered shrubs and grass than that which is further apart among the pines with a floor of pine needles. Out of 12 Scyler rat traps set around the old buildings north of the waterhole I caught only one Peromyscus truei this was caught on the floor of the old outhouse some 150 feet east of the house. this morning however at 9:45 when I looked at the traps again I had:

5 Otospermophilus

1 Eutamias

It was interesting to note that I caught two halfgrown Otosp. in one Scyler rat trap. The Eutamias was caught near

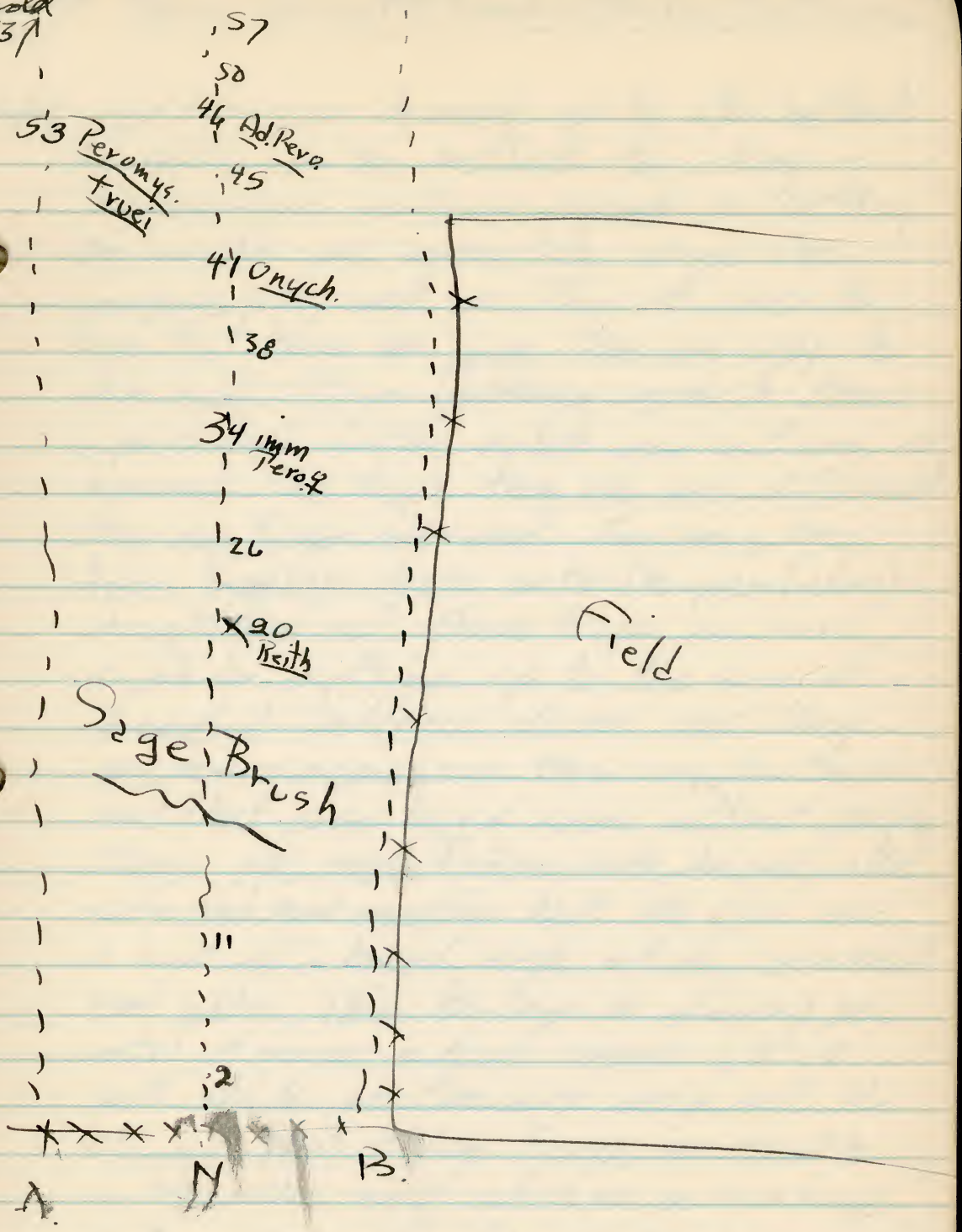
Arnold 1937 Nixon Spring, Mt. Trumbull, Mohave Co, Arizona

July 30, the corral. Mr. Huey shot a ½ grown ♀ *Lepus californicus* last night and an adult *Sylvilagus* this morning (the first of its kind I have seen up here — dead or alive. Last night at dusk we saw a Duck Hawk. This morning he shot at it and probably wounded it but it did not drop. The day before yesterday I saw a hawk — probably the same one dive on a flock of doves near the water hole and carry one off to the south. This morning I was hunting birds for Mr. Huey about 1½ miles WSW of camp. I was in rolling sage and juniper country stalking a Long-crested Jay when I suddenly was startled by a large Quinea-hen sized birds jumping up under a juniper about 20 feet away. The bird ran around the juniper bush and up the hill to the crest and vanished in the sage and juniper along the mesa-like crest. The bird was of quite a large size — as large as a big chicken and ran erect as a quinea hen. By its size, color, actions and pointed tail I am positive of its identification as a Sage Hen. After hunting the bird for some time I came back to the tree which I startled it from under. Here I found a smoothed place that appeared as if the bird had been resting at the base of the tree. According to Major Goldman, the sage hen has never before been recorded from Arizona.

Arnold (1937) Nixon Spring Mt. Trumbull, Mohave Co. Arizona

July 30, While chasing a flicker on an old stump I noticed a bluebird with a worm or grub of some kind fly up to one of the lower branches. It proved to be a ♂ Western Bluebird. It watched me from various points on the old pine for about a minute and then ventured to the hole. It remained at the mouth of the hole for several seconds. I could hear the young birds peeping when they were being fed. The nest hole was on the south side of the tree about 35 feet from the ground. I would guess that the family of flickers seen about this place ~~are~~ were raised in this same tree — though a different hole. The Goldwins went out with Nichols the day we stopped here. They said they were going to look over the country south and west of here. They may be back in a few days or may travel on without coming by here. It was very interesting to me to see some of the methods employed by the Biological Survey and get some of their viewpoints. In my opinion many of their methods ~~are~~ could be improved. In their skin making technique they use very different methods — such as — no leg wires — no stretch on tail wires, bodies of loose irregular cotton — mouthes open and twice the length of time a

Arnold
1937



July 29, 1937

Arnold
1437

Mexion Spring, Mt. Trumbull, Mohave Co, Arizona

July 30, good skin can be made up by other methods. In spite of the methods the skins — however — are uniform enough so that they are useable and evidentally serve the purpose very well. — This all goes to show that there is more than one way to skin a cat. Major Goldman seems to know a great deal of the habits and actions of mammals. The traps they use are different than any I have ever used. For mice they have Snyler traps with the pan (wire) straightened out. These traps are sure death for anything up to the size of a woodrat. Goldman claims that they are less conspicuous than regular traps and that even hard rains will not spring them. He uses Piñon nuts, bread, rolled oats and bird seed for bait. He also uses a sort of a bread made out of cornmeal and water. This he frys in a frying pan until it forms a hard mass which will stick on the wire very well. He claims that these traps are death on Micratus and shrews in runways as they can not get across the wire without springing the trap. - And once the wire comes down the mouse is yours. I believe that every trap outfit should have several dozen of these traps. on the following page is several views of the traps.

Arnold 1937 Nixon Spring, Mt. Trumbull, Mohave Co., Arizona

July 31, Last night the three of us set our traps in an open sagebrush flat about 3/4 mi. west of the spring. Each of us set out about 58 traps in a straight line from a given point — as the spokes of a wheel.

~~Arnold~~ caught

12 Peromyscus maniculatus
10 ♂; 2 ♀

2 Onychomys
2 ♂

2 Reithrodontomys
1 ♀; 1 ♂

2 Perognathus parvus
2 ♂

1 Dipodomys ordii
1 ♀

Bloomfield caught

9 Peromyscus maniculatus
4 ♂; 5 ♀

5 Perognathus parvus
2 ♂; 3 ♀

2 Reithrodontomys
2 ♂

3 Onychomys
1 ♂; 2 ♀

Neil caught

7 Peromyscus maniculatus
3 ♂; 4 ♀

2. Reithrodontomys
2 ♂

2 Perognathus
1 ♂; ?

3 Onychomys — 2 ♀; 1 ♂

Arnold 1937 Nixon Spring, Mt. Trumbull, Mohave Co, Arizona

Aug. 1, The three of us, Bloomfield, Neil and myself set out our lines of traps in the field 3/4 mile west of the spring. My line was next to where Bloomfield set the previous night, Bloomfield's was along the fence and Neil's was about 25 paces north of the fence.

Bloomfield caught:

5 Peromyscus maniculatus
4 ♂; 1 ♀

3 Perognathus parvus
1 ♂; 2 ♀

3 Reithrodontomys megalotis
1 ♂; 2 ♀

2 Onychomys leucogaster
2 ♂

I caught:

4 Peromyscus maniculatus
3 ♂; 1 ♀

1 Perognathus parvus ♀

1 Reithrodontomys ♂

Neil caught:

9 Peromyscus maniculatus
4 ♀; 5 ♂

2 Perognathus parvus
2 ♂

4 Onychomys leucogaster
3 ♂; 1 ♀

1 Dipodomys ordii ♂

Arnold
K31

Mixon Spring, Mt. Trumbull, Mohave Co., Arizona

~~April~~ Aug. 2, Last night I set out 60 traps on the side hill north of the camp. I also set 4 Schuylers in a large pile of boulders at the SE corner of the fence about ½ mile directly south of the pond & ranchhouse.

I caught

9 Peromyscus hoylei
3 ♂; 6 ♀

7 Peromyscus truei
6 ♂; 1 ♀

3 Neotoma
1 ad. ♀; 1 imm ♀; 1 imm ♂

Bloomfield caught:

15 Peromyscus maniculatus
7 ♂; 8 ♀

2 Onychomys
2 ♀

1 Dipodomys ordii
1 imm ♀

Neil Caught:

9 Peromyscus maniculatus
6 ♂; 3 ♀

5 Perognathus parvus
3 ♂; 2 ♀

1 Reithrodontomys
♂

1 Peromyscus hoylei
♀

Arnold 1937 Mixon Spring, Mt. Trumbull, Mohave Co., Arizona

April 2, Out of the catch last night I am saving several specimens of mice as alcoholics. These are:

310 ♂	Peromyscus	boylei	196-105-24-19
311 ♂	"	"	198-104-23-19
312 ♀	"	"	188-89-21-20
313 ♀	"	"	167+-69+-22-19
314 ♀	"	trovei (?)	191-98-23-20
315 ♂	"	"	163-80-21-23
316 ♂	"	"	179-91-22-22
317 ♀	Onychomys	leucogaster	155-49-22-?
318 ♂	Peromyscus	maniculatus	141-61-19-15
319 ♂	"	"	151-66-20-16
320 ♀	"	"	164-73-20-18
321 ♀	"	"	178-80-21-17

The distribution of Peromyscus in this region is very significant. The maniculatus seems to thrive on the open sage flats. In this type of habitat a few - but very few of the boylei and trovei have been trapped. These were probably stragglers. As one proceeds up the slope of the hill he encounters a gradual ~~inter~~ change from the lowland species to the species found higher up. At the point of the hill where the slope first begins I found that the % was about 50-50. It is significant that we have never caught any Peromyscus maniculatus over 25 feet from the level of the pond while we have caught a very few of the other two species in Peromyscus maniculatus territory (lowlands).

Arnold
1937

Hixon Spring, Mt. Trumbull, Mohave Co., Arizona

~~April~~ Aug. 2, There are several frogs that live in the pond containing the overflow of spring water. I do not know what kind these are but I saw one adult about the size of a small red-legged frog and one Pollywog about as big around as a 50¢ piece.

Reptiles seen here:

Sceloporus occidentalis

Phrynosoma platyrhinos (several small ones)

1 Blue-tailed striped lizard (not skink?) about 6 inches long. Much like Calif. Orange-throated lizard.

Birds seen here: (Those shot by others *)

1. Golden Eagle
2. Duck Hawk
3. Sparrow Hawk
4. Cooper Hawk
5. Sharp-shinned Hawk
6. Broad-tailed Hummer
7. Chipping Sparrow
* 8. Crossbill
9. Western Red-tailed Hawk
* 10. Red-shafted Flicker
11. Western Nighthawk
12. Violet-green Swallow
13. Tree Swallow
14. White-throated Swift
* 15. Long-crested Jay
* 16. Woodhouse Jay
17. Piñon Jay (heard)
18. Western Raven
* 19. Chickadee
* 20. Slender-billed Nuthatch
21. Pigmy Nuthatch
22. Western Robin
23. Say Phoebe
24. Western Bluebird
25. Warbling Vireo
* 26. Grace's Warbler
27. Audubon Warbler
28. Black-headed Grosbeak
* 29. Spotted Towhee
30. Western Wood pewee
* 31. Cassin Kingbird
32. Western Kingbird
33. Band-tailed Pigeon
* 34. Mourning Dove

Arnold
1937

Mixon Spring, Mt. Trumbull, Mohave Co., Arizona

~~April~~ Aug 2, * 35. Spotted Sandpiper
36. Sage hen
* 37. Hairy Woodpecker
38. Pine Siskin
39.

Arnold
1937

Mixon Spring, Mt. Trumbull, Mohave Co., Ariz.

Aug. 3, Last night I set out my trap line along the fence west of the pond. The asso. was grass and sagebrush.

I caught

11 Peromyscus maniculatus
8♂; 3♀

3 Reithrodontomys, 1 Neotoma ♂
2♂; 1♀

Neil set his traps in the meadow 1 mile south of the spring. He set in the same place that he did the night before last.

He caught:

2 Dipodomys ordii
2♀

6. Peromyscus maniculatus
4♂; 2♀

3 Perognathus parvus
3♂

Bloomfield caught:

11 Peromyscus maniculatos
7♂; 4♀

1 Dipodomys ordii — ♂

1 Perognathus parvus — ♂

He also caught 6 Thomomys. Of these one was melanistic with white feet. This makes three melanistic gophers that we have collected.

Arnold 1937

Mixon Spring, Mt. Trumbull, Mohave Co., Arizona

Aug. 4, 1937 Last night Bloomfield and I set our trapline along the road south of camp and in a shallow canyon running ⊥ to the road about 3/4 mile south of the pool. I was trapping along the low north side of the canyon while Bloomfield was trapping along the bottom. Both of the settings were in an association of Yellow Pine, Juniper and sage. Some of the open places on the side of the hill had what appeared to be kangaroo rat holes in them. We caught:

Bloomfield:

4 Peromyscus maniculatus
2♂; 2♀

Myself:

~~3~~ 4 Peromyscus maniculatus
4♂; 1♀

2 Peromyscus boylei
1♂; 1♀

Neil trapped along the road directly west of the pond. He caught:

7 Peromyscus maniculatus
4♂; 3♀

2 Dipodomys ordii
1♂; 1♀

6 Mi. N Wolf Hole, Mohave Co. Arizona

Aug 5, Today we did not have anything but 4 gophers to make up inasmuch as we did not set traps the night before. We showed for St. George after lunch after doctoring our pregnant radiator. We made it to Wolf Hole on 15 gals. of H_2O. At present we are camped in the wide open spaces between two hills. Those to the east of us, according to A. Nichols are the north end of (about 10 mi. west) Hurricane Cliffs. These follow through to Wolf Hole where they fade out into the flat — only to crop up in the form of Diamond Butte and later as the southern Hurricane Cliffs near the town of Mt. Trumbull. The habitat where we are camped consists of a small green shrub about 2 feet high. These bushes, according to Huey, are found in the S.D. desert also. The ground of the flat is paved with small, rough stones with occasional larger rocks. The cliffs about 200 yards east of us contain fossils — Bloomfield brought in several of these. — mostly bivalves in the form of pectens. Some are in the form of pelecopods (?) — i.e.  . On the slopes of the hillsides we found junipers

6 mi N Wolf Hole, Mohave Co., Arizona

Aug 6, Last night all four of us set out traps. Mr. Huey set near the dipo. mounds on the flat; Bloomfield ran a line directly up the steep talus slope to the east; Neil set out a line south of camp; I set a line NE of camp.

Neil caught:

3 Dipodomys microps
1 Neotoma
1 Onychomys torridus
1 Perognathus formosus
1 Peromyscus maniculatus
1 " crinitus

Bloomfield caught:

1 Dipodomys
1 Perognathus
6 Peromyscus crinitus (5 imm.)

Huey caught:

8 Dipodomys microps

I caught:

2 Dipodomys microps
1 Perognathus formosus
4 Peromyscus crinitus (1 alive)
1 Neotoma.

It seems that these Dipodomys can be caught the easiest near their mounds — although in several instances I did not catch any in several traps set at one mound.

1 mi. SE St. George, Washington Co., Utah

Aug 7, Yesterday we established camp along the road from Mt Trumbull to St. George about 2 mi Southeast of St. George. We established our camp next to an old dirt loading slide which was right next to the marsh land. In the afternoon Huey and I skinned while Neil and Bloomfield hunted around for favorable trapping locations. While we were skinning a large muskrat came up out of the marsh — under the truck and stopped at the edge of the tules to eat some grass (?). I shot it in the rear with a load of dustshot from the 38 but it did not seem to have much affect. Instead of killing the rat it merely made it more intent upon reaching the marsh. I was able to jump upon it before it reached the tules, however, and consequently was able to kill it. When we skinned it the back part of the hide was full of dust shot but few of them had even gone through the skin. Some of the natives said that Muskrats are more or less common around here but I do not know what type of rats they are. Perhaps they are a species that comes up from the Colorado River. We set out traps in the bottom land for the most part last night. I also set out 20 traps on the top of the hill in back of our camp. The flat land

Arnold 1937 1 mi. SE St. George, Washington Co., Utah

Aug 7, was not ~~very~~ very productive —
I caught:
In the flat among the willows (sp.?) and wire grass:
2 Peromyscus maniculatus
On the flat hilltop:—
1 Dipodomys merriami
On the side hill under a "sort of" poison oak looking bush:
1 Peromyscus boylei.
Bloomfield did not catch anything
Neil caught:
1 Reithrodontomys
2 Peromyscus maniculatus
3 Mus musculus
1 Dipodomys merriami
Last night while setting traps the mosquitos were almost intolerable — there were literally millions of them. When I got back to camp the rest of the bunch were packing up to leave for higher ground. We eventually made camp about 1 mile up the road on the open desert. While we were at this spot Neil & Bloomfield set out some small mouse traps to the west of camp. This morning Neil had one Neotoma in this line — this was probably of the lepida group. It was a breeding ♀. At present we are camping in a deserted house about 1½

Arnold 1 mi. SE St George, Washington Co., Utah.
1937

Aug 7, miles SE of St. George. It makes quite a nice layout for our gear while we are trapping in these parts and waiting for a radiator to come from Salt Lake City. While we were gathering in our traps this morning Huey found some meadow mouse sign east of the road next to the tules. We set out most of our traps near here for Microtus. Last night while eating supper on the desert south of here we were startled by the presence of a small sidewinder about 3 feet from Huey's chair. It had evidentally been attracted by our light (or at least not frightened by it). We preserved it in alcohol. This morning when I was starting to go around to my traps I had my attention called to a Red-tailed Hawk (imm.) on the edge of the cliff above which I had traps. It had apparently died after an Otospermophilus on the edge of the cliff for as I approached the bird it flew away — and almost simultaneously a large ground squirrel jumped up from the spot and ran down the hill. — Whether the bird had it in its talons or not I will never know.

Arnold
1937

1 mi. SE St. George, Washington Co., Utah

Aug. 8, Last night Bloomfield, Neil and myself set out the remainder of our traps on the side hill about 1/8 mi. east of camp. In all we set out approx 60 traps (mostly small mouse traps). The habitat consisted of a small portion of bottom, red alluvium and a sidehill of red soil with black rocks and boulders. There was quite some sign among the rocks.

Neil caught:

2 Perognathus formosus = 2♀
1 Peromyscus crinitus = 1 imm. ♀

Bloomfield caught:

1 Perognathus formosus ♀
1 Dipodomys merriami ♀

I caught:

5 Perognathus formosus
2 ♂; 3♀
1 Peromyscus crinitus

As this is the type locality of formosus this catch should prove interesting & helpful. Last night, we had one grand war between mosquitos and us.—The mosquitos won by a big margin. Between the heat and insects we did not have much time to think about sleep. In the traps set along the margin of the marsh we caught:

Neil:

2 Mus musculus: 1 ♂; 1 ♀

Bloomfield: " " ; 2 ♂; 2 ♀

Myself: 1 Reithrodontomys — ♂

Arnold
(93)

St. George, Washington Co., Utah

Aug 8, Huey caught a ♂ Muskrat in a #1 trap set in a side channel from the marsh land. It drowned itself by trying to swim with the horse shoe attached to the trap. Evidentally the sign which he thought to be Microtus was made by Mus musculus for the most part. The type of ground, cover, and moisture content, however, were much the same as where Microtus would be found. In my opinion, however, if the Microtus found here is in the montanus group they should probably be found in more distinct runways, as the californicus rather than in the type of habitat that the longicaudus group would be expected.

Aug. 9, Last night I set out a line of 50 traps among the black rocks on the hillside east of where we are camped. There was much Perognathus sign among the rocks. I caught:

10 Perognathus formosus
4 ♂; 6 ♀

1 Peromyscus crinitus 1 ♂

Blamfield set in the same type of habitat and caught:

6 Perognathus formosus
3 ♂; 3 ♀

Neil set his traps along the flat east of camp. The bushes were quite far apart and the soil was brick red.

Wed — 14 — Gilbert
Th — 15
Fri. — 16 — Flagstaff
Sat. — 17 — Con
Sun — 18 — Prer
Mon — 19 Prer
Tues — 20

Arnold St. George, Washington Co., Utah
1937

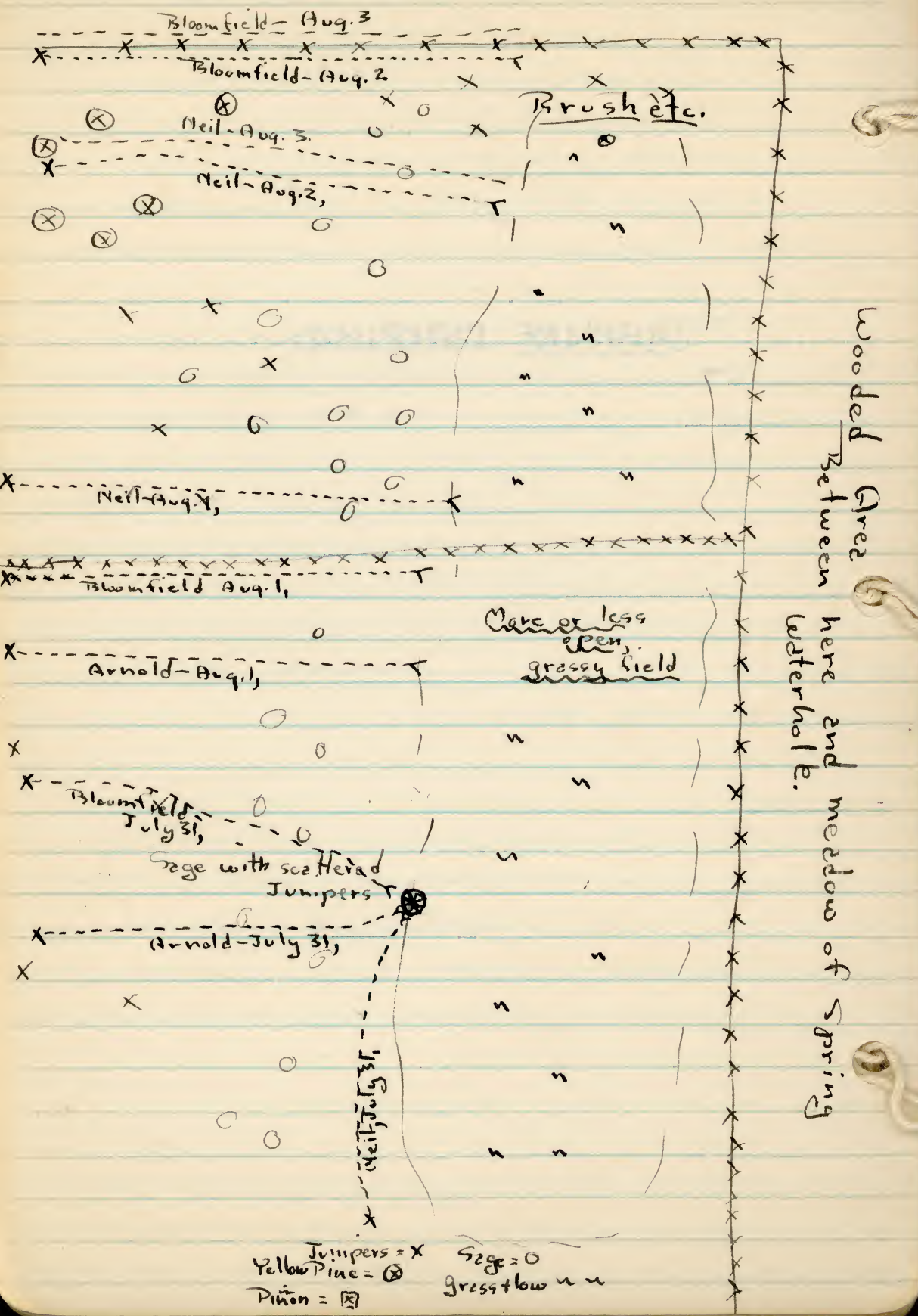
Aug. 9, He caught:

2 Perognathus formosus ♀'s
1 Perognathus longimembris ♂
1 Onychomys ♂
3 Dipodomys merriami
2♀; 1♂

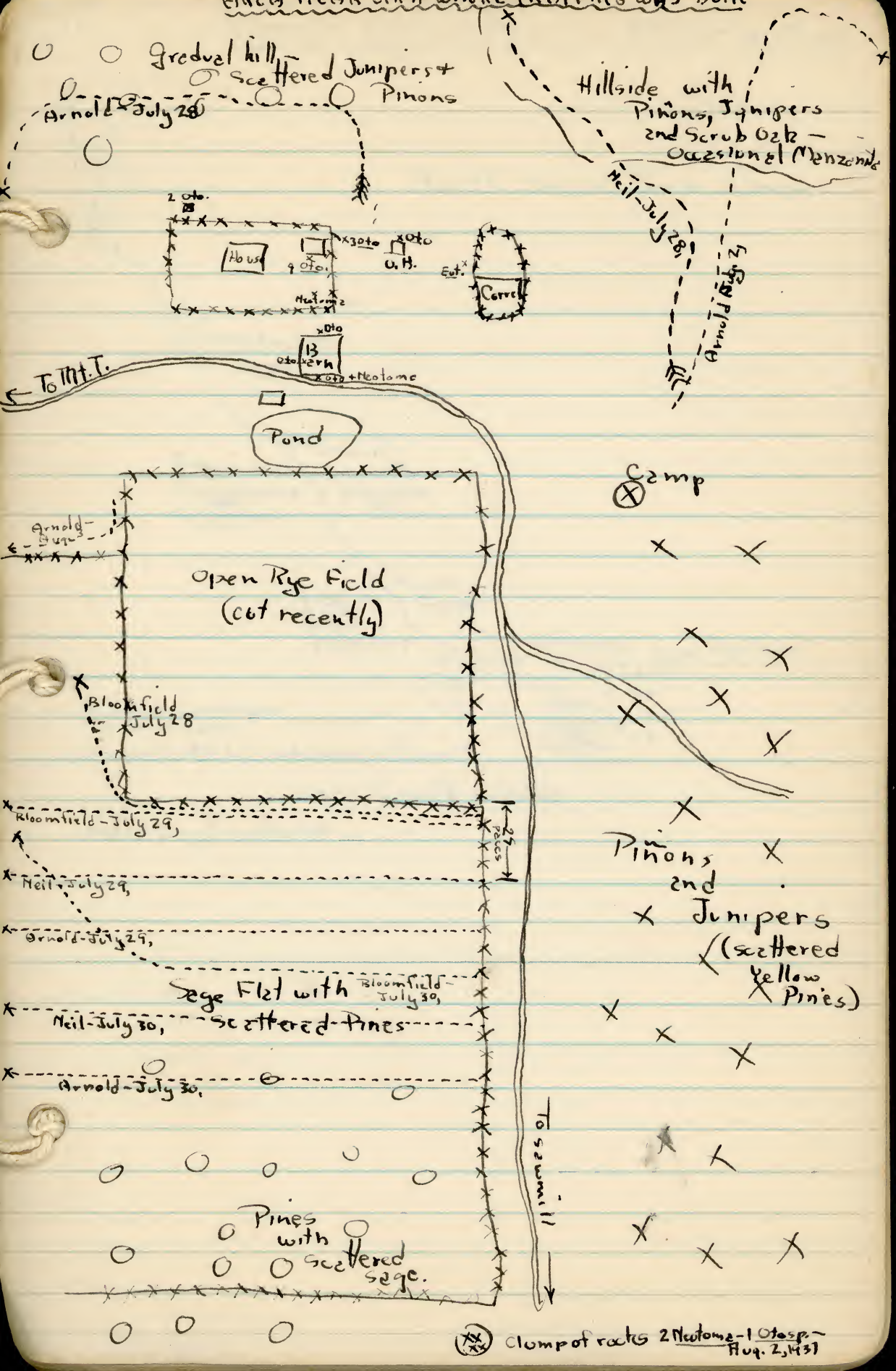
TRAPLINE MAPPINGS

1.

OPEN FIELD ABOUT 1 MILE WEST OF CAMP - SHOWING TRAPLINES

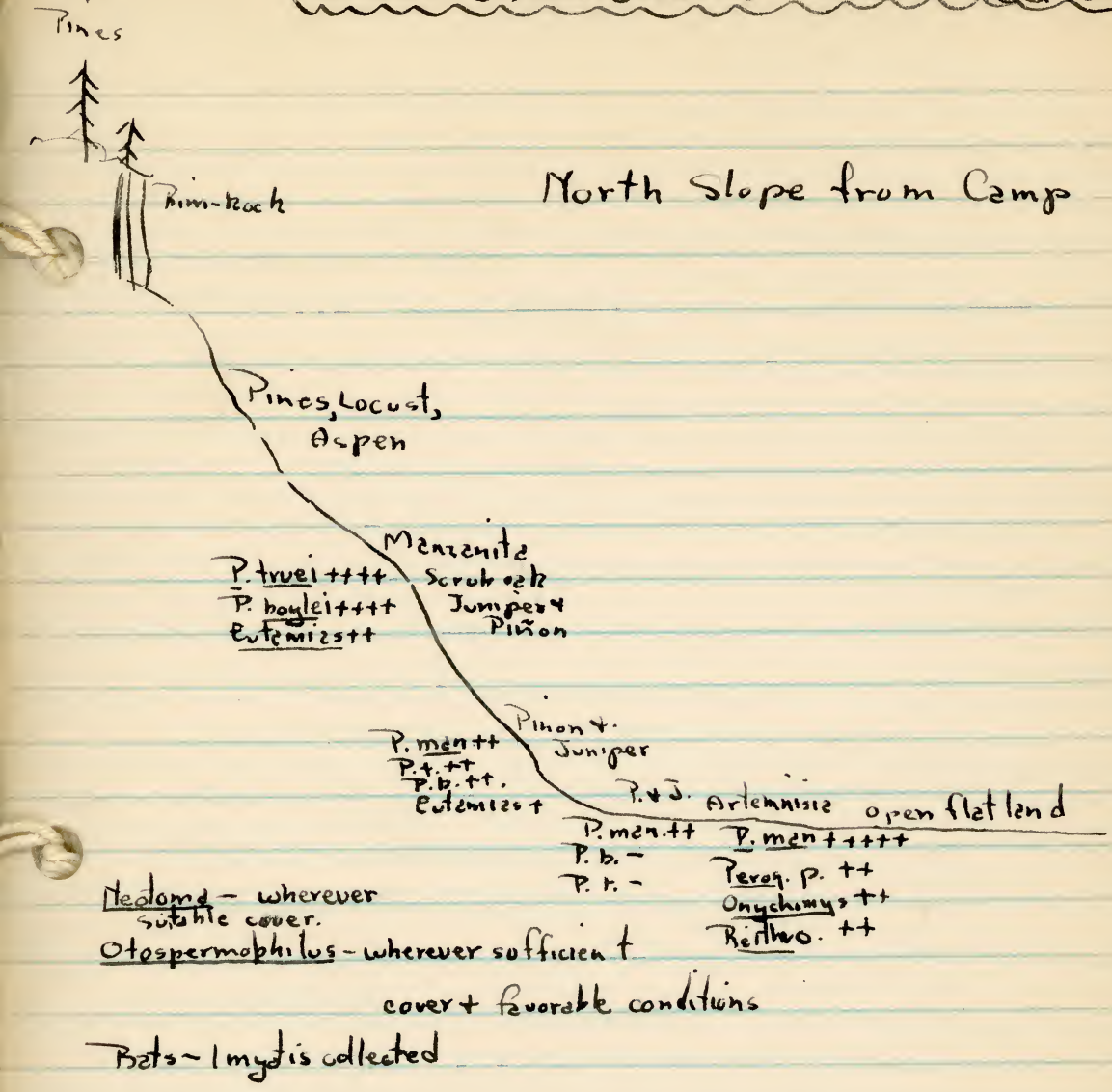


AREA NEAR CAMP WHERE TRAPPING WAS DONE



Arnold
1937

Various associations — cross-section



Neotoma – wherever suitable cover.

Otospermophilus – wherever sufficient cover + favorable conditions

Bats – 1 myotis collected

J