

JOURNAL OF FIRST TRIP  
OF UNIVERSITY OF CALIFORNIA  
TO JOHN DAY BEDS  
OF EASTERN OREGON

*by*

Loye Miller  
1899

*edited by*

J. Arnold Shotwell

BULLETIN No. 19

*of the*

MUSEUM OF  
NATURAL HISTORY

*University of Oregon  
Eugene, Oregon*

*December 1972*



The *Bulletin* of the Museum of Natural History of the University of Oregon is published to increase the knowledge and understanding of the natural history of Oregon. Original articles, both technical and popular in character, appear irregularly in consecutively numbered issues.

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[Continued inside back cover.]

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the University of California at Berkeley, where the  
original manuscript is deposited.

First printing December 1972  
Second printing April 1983  
Third printing May 1991

Printed on acid-free paper

## INTRODUCTION

This publication of the journal of Dr. Loye Miller is intended to be the first in a series of journals of the work of early scientists in Oregon. The purpose of these is to provide some insight into Oregon at the time of each journal through the eyes of the natural scientist. The writer of a journal is directing his comments to himself. They are what he felt and saw at the time. His impressions, reactions and observations, both scientific and personal, are there as well as his day to day problems. The result is that the journal contains many historical notes as well as a great deal about the scientist himself.

The journal is Dr. Miller's account of the University of California field expedition into the John Day Basin of Central Oregon in 1899. This expedition, as well as many that followed from that institution, was led by Dr. John C. Merriam. It began a long association of the University of California with that area of Oregon, an association which still continues. Although the events of this journal occurred over seventy years ago, they by no means represent the first investigation of the area, for these beds were already famous when Miller first saw them. Condon had first seen them forty years previously, and such well known paleontologists as Marsh and Cope among many others had collected there. It was not until the work of Merriam and his students from the University of California began that any real understanding of the geology of the area or the sequence of the faunas present was developed.

Portions of this journal have been published in Miller's autobiography and as paraphrased sections in Merriam's reports. However, the purpose of these accounts was to either relate a portion of Miller's life or to record the events of an expedition in a scientific account. They do not give the immediacy and present-tense feeling that the full journal can.

Twenty years ago "Padre" loaned me his journal because of mutual interests we had at that time. My wife made a typescript of the journal. When I returned it I urged him to

deposit it in the Bancroft Library at the University of California, which he did. It is with their permission that it is reproduced here. When we first considered publication of a series of journals "Padre" was happy to have us include his. He proofread the typescript in order to remove errors of copying from the handwritten original and explained some brief notations which we did not understand. The only changes from the original are in the daily headings. They have all been put in the same form with the location of the camp on that day indicated in order to aid the reader.

One of Miller's many duties on the expedition was that of photographer. The photographs used in the journal are from the files of the Museum of Natural History of the University of Oregon. How they came to be in these files is somewhat of a mystery. After his retirement from the Carnegie Institution, John C. Merriam came to the University of Oregon in an advisory role. During his close association with the Museum he may have left the photos. Later Eustace Furlong provided the Museum with some copies of photos and these may have been included. Inquiries at the Department of Paleontology of the University of California failed to provide any clue as to their subsequent history, and the Bancroft Library has no record of them. Some of them were previously published in Merriam's reports; however, the originals have not been found. Some of the pictures were shown to Dr. Miller in hopes he could recognize them. This met with varying success. When he saw our copies, it had been nearly seventy years since he took the pictures. Since he had made the photographs for Merriam as part of his duties he simply turned over the unprocessed plates to Merriam on their return to Berkeley and did not have personal copies which would have aided his memory. To further complicate matters, Miller left for a position in Hawaii immediately on the return of the expedition from Oregon. He did not see the prints from the pictures until his return to Berkeley seven years later and then apparently

did not see all those which he had taken. However, he was positive about some of the pictures and recognized himself in some which were either taken by another member of the party or which he took by tripping the camera with a string. Some surely are from the 1899 trip since Miller records taking the pictures near "Siegfried's Ranch" and of the Balancing Rock. Thus these pictures plus the excavation of the *Entelodon* skull at Bridge Creek and the camp scene which includes Miller are very surely from the expedition recounted in this journal. The picture of Sheep Rock from the south may have been taken by Miller but could have been taken the following year when Merriam also worked in the John Day Basin. Miller said that he remembered climbing to the top of the gorge walls to take a picture from this point but cannot be sure this is the same one. It was used in a report by Stock sometime later. The picture of the horse and worker in the John Day beds has a similar background. It appeared in Merriam's 1901 report. The photograph of the outfit on the road above the Columbia River presents the greatest problem of authenticity. It is apparently taken not far out of The Dalles. The

make-up of the outfit is similar to that described by Miller in his journal. It was filed with the other pictures. However, I did not have the opportunity to actually show this picture to Dr. Miller. The best that can be said is that it represents an outfit like that used on the 1899 expedition and is in the right place. [Miller made the photographs with a camera that he describes in a letter (23 July 1969) as an old 5 x 7 dry plate, single lens contraption purchased second-hand for \$10.00.—*ed.*]

The map was originally prepared from the entries in the journal. It was modified after showing it to Miller who corrected some minor errors. At the time (1952) no complete topographic coverage of the entire route was available. When such coverage did become available a number of years later the map was redrawn to conform with the better base. Dr. Miller did not see this later version.

Dr. Miller died in 1970 at the age of 96. This journal simply represents a moment in his long and productive life.

J. ARNOLD SHOTWELL  
*Bay Center, Washington*  
*October 1972*



# JOURNAL OF FIRST TRIP OF UNIVERSITY OF CALIFORNIA TO JOHN DAY BEDS OF EASTERN OREGON

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## THE MEMBERS OF THE EXPEDITION

Dr. Jno. C. Merriam	(leader)
F. C. Calkins	(mineralogy)
L. S. Davis	(pack master and collector)
Geo. B. Hatch	(fisherman)
Loye Miller	(birds and mammals)

### Thursday May 18, 1899. Steamer— *State of California*

Started o.k. Raced out the straits with "Corona," and overhauled her easily. Our boat is quite speedy, narrow and deep draught. We pulled up on the Corona from the rear and gave her the varsity yell, which brought the U.C. men to her rail. Could distinguish Fred Rockhold. Both vessels kept up the cheering as we forged along down the water front toward the bar. Very rough outside swells broke over bridge. So all the passengers were soon below except some four or five, Rosmer, Cohn, the Kid, Noonan and myself. Mr. Hatch laid under soon. Sea was beautiful, swells immense. Wrote some in cabin after dinner. Slept well.

### Friday May 19. Steamer—*State of California*

Less wind, sea smoother somewhat cloudy on shore. Snowy mts. seen in shore. One or two more on deck. Steamer some hours behind; voyage very quiet as to people.

### Saturday May 20. Steamer—*State of California*

Made the Bar this morning before ten. Came in at half steam with the sounding line busy. Heads very picturesque. Fort Canby on North side in among the timber which comes down to the waters edge. Everywhere beautiful forests of fir, pine, and maple. Astoria at 11:00. Small town in very pretty place. Came up the Columbia with camera in hand. Rather cloudy but beautiful scenes. In the winding course up river we would come in close to the banks while out in mid-stream men and horses were at work dragging the nets. Houses on piles out in middle of river. Some most picturesque buttes and basalt pallsades. Everywhere lava country through which the river has cut. Side streams come tumbling down over the rocky walls in beautiful cascades. Reached Portland 5:30 p.m. Met at wharf by Merriam. Hotel Imperial. Good house, fine table. Mr. Hatch braced up and came on deck at Astoria. Sickest man I ever saw.

**Sunday May 21. Portland**

Went to church with Mr. Hatch at 1st. Cong. Very good talk on bible study. Portland a very beautiful place for location and buildings. Streets very narrow.

Train for Dalles at 2:10 beautiful ride up river but could not snap the places quick enough. Multnomah falls 800 ft. down Canyon side. Bridal veil slightly less. Timber grand. Crags and pallsades all along of imposing grandure. Came into The Dalles in a Sunday Deutscher picnic. Sons of Herman having a roaring time. Put up at Umatilla House—(!!!). Went to C. E. and church at Cong. in evening. Met young minister—quite pleasant man. Evening in Dalles very quiet and beautiful. Wrote home and to Brockton.

**Monday May 22. The Dalles**

Started rustling rest of outfit. Team sent for out in country 18 miles. Finished up groceries in morning and got to lunch at 12:20. Fixed up the old packing case in P. M., by firing the entire box except the lid and getting a goods box to fit. Davis has decided to go and is rustling like a good fellow. He is quiet and reliable man who knows what he is talking about, well acquainted with fossil fields and knows much about the different forms and systems. An Episcopalian and man in whom one places his confidence.

The Dalles is a great town. The first impression one gets at the depot is somewhat relieved by a better acquaintance. The business is in good condition. Some excellent merchantile houses to be found and wide variety of supplies. Town is supported by back country producing wool and wheat, hides, etc. Immense ware houses of wool. The Mays family do much of the retail business.

There seems to be little on the North side of the river, two or three isolated houses appearing on the rocky and forbidding hill.

Numbers of Wasco and Warm Springs indians on the streets in fantastic red, yellow, and green blankets. They come in along the Columbia for the Salmon season. The language with the Whites is Chinook and among themselves

their own dialects. They are a less picturesque race than the Yumas and less civilized than the Cahuillas.

Calkins did not come on the 5:50 train. Sprinted for P. O. after dinner. Got two letters from Brockton one from Hallie. Sprinted for steamer but no Calkins. Sat on rail and read my letters\*\*\*, while Mr. Hatch & Dr. M. chased wharf rats. The people and the daylight departed leaving me alone with the river and the night wind, perched on the rail by the steamer wharf. Wrote to Brockton in eve. Davis came at 9:10. Bed at 11:00 o'clock.

**Wednesday May 24. The Dalles**

Calkins came at 11:40 last night. Left his baggage in Portland (!!).

The birds I have observed are not rare so far. Western King bird, Bullocks orioles and robins singing in the maples and poplars. The robins doubtless build here as they are in full song. Meadow larks are heard outside the town. From my window in the early morning I heard this fine fellow across the river. A fine clear greeting from the sister state, by one of her country folk. A cheery "Goodmorning" coming faintly across the wide Columbia . . . A beautiful and a majestic river this, which one must come to love deeply if he lives long in its presence. Crows have been seen more or less common along the river. A Lewis' wood pecker (?) was seen from the train as we came up from Portland. Magpies are said to be very abundant out in the wooded country of the Jno. Day. I await with interest the acquaintance with the small birds of the wooded canyons vireos, warblers, and finches.

We hope soon to bid adieu to the Umatilla house and its imprepossessing ways and smells, table cloths and penny wall paper. Out in the country we will rough it but without any pretense of better. The country bids fair to be pretty dry and barren except in the water courses. The topography is remarkably like that in Arizona. The rugged lava formations resemble those scarred buttes and peaks of the Arizona country. Vegetation has a hard struggle except along the water courses there is



**Expedition outfit** on road overlooking the Columbia River near The Dalles. Evidence suggests that the photograph is one of Miller's, but it may have been taken in 1901 by another party.

much shifting sand to be carried about by the wind "where it listeth." There is a certain incongruity in seeing the great river with its volumes of water, flowing through a country so little suggestive of rain. The impression is much like that given by the Colorado river at Yuma where one crosses this vast body of water flowing in the midst of the desert.

Got under way at 3:15 p.m. The cavalcade files out with Dr. and me in the saddles Calkins staid to get baggage and come later in evening. Dr. rode the black bone-yard, I the little sorrel that I called Sorex on account of his diminutive size.

On way up the first hill the grey mare flew back and would listen to no persuasion, changed her to other side and she started off o.k. We were relieved. We reached 8 mile creek at 6:06 and outspanned. Supper of bacon, spuds, tongue gravy, and pears. Camp stoves

worked finely, economical of wood and patience. The country passed over was very dry and dusty, cut up by freight teams. Crossed 2 large creeks of good water. I came to like little Sorex as a spunky little chap with lots of vim.

#### **Thursday May 25. Eight Mile**

Calkins did not come during the night, don't know his whereabouts. Passed a good night, very comfortable. Went with Dr. fishing along the creek. No sign of fish so sat down on hillside to write while the Dr. went on down whipping the stream. Numbers of magpies observed along the stream at 8 mile creek, uttering their strident notes as they wheel along with their peculiar windmill flight. Numerous yellow warblers and yellow throats along the stream where the Hawthorne, poplar, willows and wild cherry form the growth of trees. Little horned larks are to be heard on the hillsides in the morning

light. From the slope of the hill by camp the great white cone of Mt. Hood towers up into the sky, brilliant in the morning light. The light on it at sunset last night was beautiful beyond description.

Calkins came at 10:00 and we *started*? The grey mare went four feet and flew back, that was the furthest she went. We sawed and seasawed forward and back but never a go. We tried the black-Hyparion, but she was not used to pulling. An interested indian insisted on putting in his cayuse about as large as a jack rabbit. It plunged along half way up the hill and flunked so we had to take it out and back down again. The little brute could almost crawl under the wagon tongue. Davis then saddled up the grey mare and galloped her over the hill while the rest of us sat down to lunch at 12:40. Davis came back and put the mare in with half load succeeded in getting over the grade some 2 miles then had to go back for the rest of stuff we finally got all together at 3:15 and made Nansene House (9 miles) in time to camp. All pretty well tired out with the worry and delay. The country became even more barren and rocky. Numbers of yellow headed spermophyle were seen along the road living in the rocks. Their sustenance is probably the seed of the scant grass that is found on the hillside for a season. The almost total absence of Artemisia or other brush on the hills is remarkable. The first was seen just before coming into camp. A bird note which must have been an Artemisia sparrow was heard on the hillside amongst it. After enjoyable supper, stories around the camp fire passed the time quickly until time to roll into our blankets on the hard floor of an old deserted shack the sole inhabitants of which were a nest of young Say's Pewees in full plumage.

#### Friday May 26. Nansene

Passed a good night, plenty of *fresh air* in the old house—floor became pretty hard. Broke camp and ready to start at 9:00. Mare flew back again. Wasted some half hour and then Davis mounted and rode off to exchange with a freighter while we spent the time in waiting

which has grown to be our chief accomplishment lately. Soliloquy on balky horses has been our chief mental development of late. Not altogether in line with Paleontology but I fear we will fossilize ourselves if things do not turn for the better soon. We seem to get exercise enough to give us good appetites however and make us enjoy outdoor life to the fullest extent.

Davis "swapped" the mare for a smaller buckskin plug and we got under way at about 10:15. The little buckskin pulled in great shape. I rode on the wagon with Davis finding him a very nice companion. He is a native of the State, one brother is a cow puncher in Colorado. He served four years as justice of peace.

During the afternoon we passed through some typical "hog wallow" land. The most niggardly soil I ever saw. Large, regularly placed mounds of fifteen feet in diameter the intervening hollows stoney and barren. From the hill top above the Deschutes River the most remarkable view of lava formation was to be seen. The junction of White river gave rise to falls of 100 ft.

Down the grade to the Deschutes at Sherar Bridge. The river cuts through the lava leaving terraced walls of several hundred feet in height. There is scarcely a blade of grass along the stream, the rocks looking like a wave beaten ledge devoid of life. After supper Mr. Hatch hauled in a fine trout of 1½ lbs. which vouchsafed a good breakfast. Passed a fine night in the straw of an old barn. Wrote home and to Brockton.

#### Saturday May 27. Sherar's Bridge

Got under way about 10:00 up the grade and out upon the plateau. The country is quite level cut by numerous shallow run ways. Sage brush becomes more prominent more like plains of southern California. Lunched on summit and continued across the plateau passing through Bake Oven at about 5:00. Bought gloves at 75¢. No good hay at any price to suit us. So pressed on up the grade making camp in Thorn Hollow about sunset. Cold as greenland. Hobbled the horses and turned them to graze. The wind drew down across the plain from the snow covered

mountains to the west and north, cold and cutting to the bone. We put stones around on the tent flap which was effectual in keeping it out. Hot bisquits and cocoa made a fine supper. All through the night at intervals the vesper sparrows would break into song.

#### **Sunday May 28. Thorn Hollow**

Woke at daylight to hear the sage thrashers and vesper sparrows singing on every side. The sage thrasher is a glorious songster—resembling much the mocking bird, much smoother than the California thrasher. Coming up out of the hollow upon the summit we got a fine view of the magnificent peaks of the Cascades. I could count twelve snow capped peaks rising above the blue range. The most perfect cone, Mt. Hood in the west, to the north Mt. Adams, to the south Mt. Jefferson with a smaller peak on either side, further south Three Sisters and in the extreme distance an unknown point. All old volcanic cones the outlets for the tremendous lava flows that we have been traveling across. In the afternoon at 2:00 we passed through the little town of Antelope. Sunday was a busy day, stores doing a good business, pack horses in the streets and saloons going full blast. The little “burgh” has the reputation of being the toughest town in the country. As we came up the grade on this side a drunken horseman swayed along to where we were, muttered some inarticulate babble finally toppling off his horse by road. We tied his horse to the fence and left him to sleep it off. Made camp at 5 and turned horses to graze on the hillside. The tent we pitched with the brake for one pole the shovel for the other, our geological picks served as tent pegs. Sage roots for wood. Too sleepy to sit up so turned in early, adjusting myself to the stumps of sage brush.

#### **Monday May 29. Cold Camp**

Woke to hear slight sprinkle of rain on the tent. Got up to a breakfast of germea, beans, bacon, cakes & syrup, with good hot bread & coffee. Started off at once to get horses, hunted for an hour or more so got late start. Obtained one of the sparrows that we have seen and heard so plentifully along the road. Established the

identity securely as Vesper sparrow. *Poecetes gramineus*. My mount for this morning is the little Cayuse-Sorex. About the meadow where we camped there is an abundance of pale iris and a smaller hyacinth like flower growing in spikes of rich blue flowers with bright yellow prominent anthers. The indians dig the bulbous root, grinding it into a sort of bread with locusts. The indians call it Camas. The road this morning ran through typical adobe soil for some distance, was deeply cut and very rough. About 11:00 we reached the top of the divide and looked down upon that classic region known as “The devils potato patch.” About the hilliest country I ever looked over. The hills quite regular in size and evenly placed. Down we went into it striking Currant Creek after lunch. We followed it down some miles then up Muddy Creek and out over the ridge again to late camp on Cherry Creek hill. Dr. shot three doves and I a rabbit with our pistols so we had game dinner. Down Currant Creek we passed through most remarkable country. Great columns of lava topped the knolls and studded the hillsides. On the tops of some were balanced stones of erosion. One hillside looked to be occupied by an army of gigantic penguins. The columns stood up so prominently.

I observed Lewis W'd-pecker again on a perfectly dry hillside among the rocks and sage. I thought of this bird only as woodland form it was quite a surprise to see it in such places. The country as we came further along into the Potato Patch became sparsely wooded with the scrubby juniper and quite thickly as we came on to Cherry Creek hill.

#### **Tuesday May 30. Cherry Creek Hill**

Slept rather poorly last night seemed to have gotten my head down into a hollow.

First bird note I noticed was peculiar metallic clink like that of *Guiraca cerulaca* somewhat. Investigation revealed a fine specimen of Evening Grossbeak feeding in the Juniper trees. A number of small flocks were observed later in the morning. This is an interesting acquaintance which I hope to improve. Lewis' Woodpecker was also observed again. The re-



**Balanced stone**, probably one of those that Miller mentions having seen near their camp at Cherry Creek Hill.

markable habitat of Brewer's blackbird has impressed me, during the last few days they have been common in all kinds of country even the dry sage canyons and barren hillsides. Broke camp while Davis & Calkins hunted horses and Dr. cleaned his pistol for about an hour. The animals seem to have gone a long way. Robins have been common all along the road they are probably breeding here. Calkins came in with Black & chestnut just as we were getting lunch. Davis soon came in empty handed, saddled buckskin and set out again. Dr. and Calkins saddled Black and Chestnut and went up the trail.

Mr. Hatch and I kept camp. Photoed some junipers. Wrote home and to Brockton. Davis came in with Bay about 4:30. We got under way and came down the canyon 3 miles to Pat Fagan's ranch on Cherry Creek where we stabled the horses and pitched camp by the

clear stream. Dr. & Calkins came in about 7:00. Fine supper of doves. Rain came up so we supped in the tent.

#### **Wednesday May 31. Bridge Creek**

Passed good night in hayloft with Mr. H. and Davis. Raining lightly when we awoke snoozed until 7:30 then came down to breakfast. Still raining no signs of stopping. Got under way about 10:15 though there was slight sprinkle. Down Cherry Creek a mile or two to the junction with the John Day River then up the river to the mouth of Bridge Creek. Where we lunched at 1:30. On the way up the river we met the mail cart going to Antelope and held him up long enough to post our letters. At Burnt Ranch we bought a sack of apples to enrich our larder. The fruit was nice and plump though kept through the winter. They were certainly cheap at 2¢ a pound. An excellent example of

fault was shown in the opposite side of the river gorge. The sedimentary rock stratum had slipped and the intervening fissure had been filled by a dyke. Up Bridge creek we were struck most forcibly by the absence of bridges and frequency of crossings. Little Kid-Sorex wet my shoes thoroughly floundering through. The lower part of the canyon was very steep and rugged but in the upper part the floor was more level and broad, the hills lower and rounded. We made camp at 4:10 in the midst of the fossil region of Bridge creek. Sheep man just came into camp and mistook me for a sheep driver.

#### **Thursday June 1. Bridge Creek Beds Junction with Bear Creek**

Rose at 5:45 after good sleep. The place where we are camped is the broad flat upper end of the valley. Several ranches along the creek grow large fields of alfalfa and some few fruit trees. On the east slope high sage scrub nearly conceals our tents. Higher up the sides are the lava capped hills looking like enormous fortifications. Under the lava are the sedimentary deposits in which the fossils occur. The trees and sage offer refuge for numerous birds. Lazuli Buntings and various sparrows in the sage. Robins everywhere, a nest by the roadside yesterday held four large young. Lewis Woodpecker seems fairly common along the fences. Orioles, meadow larks and yellow warblers keep up their morning songs. Spent the morning in the fossil beds finding only a few fragments none of the party fared any better however. Came home at 12:00 and fixed up my collecting kit, loading aux. shells, etc. Started out at 4:40 hunting up canyon but got nothing. Went to bed before dark dead tired. (First collecting done)

#### **Friday June 2. Bridge Creek Beds**

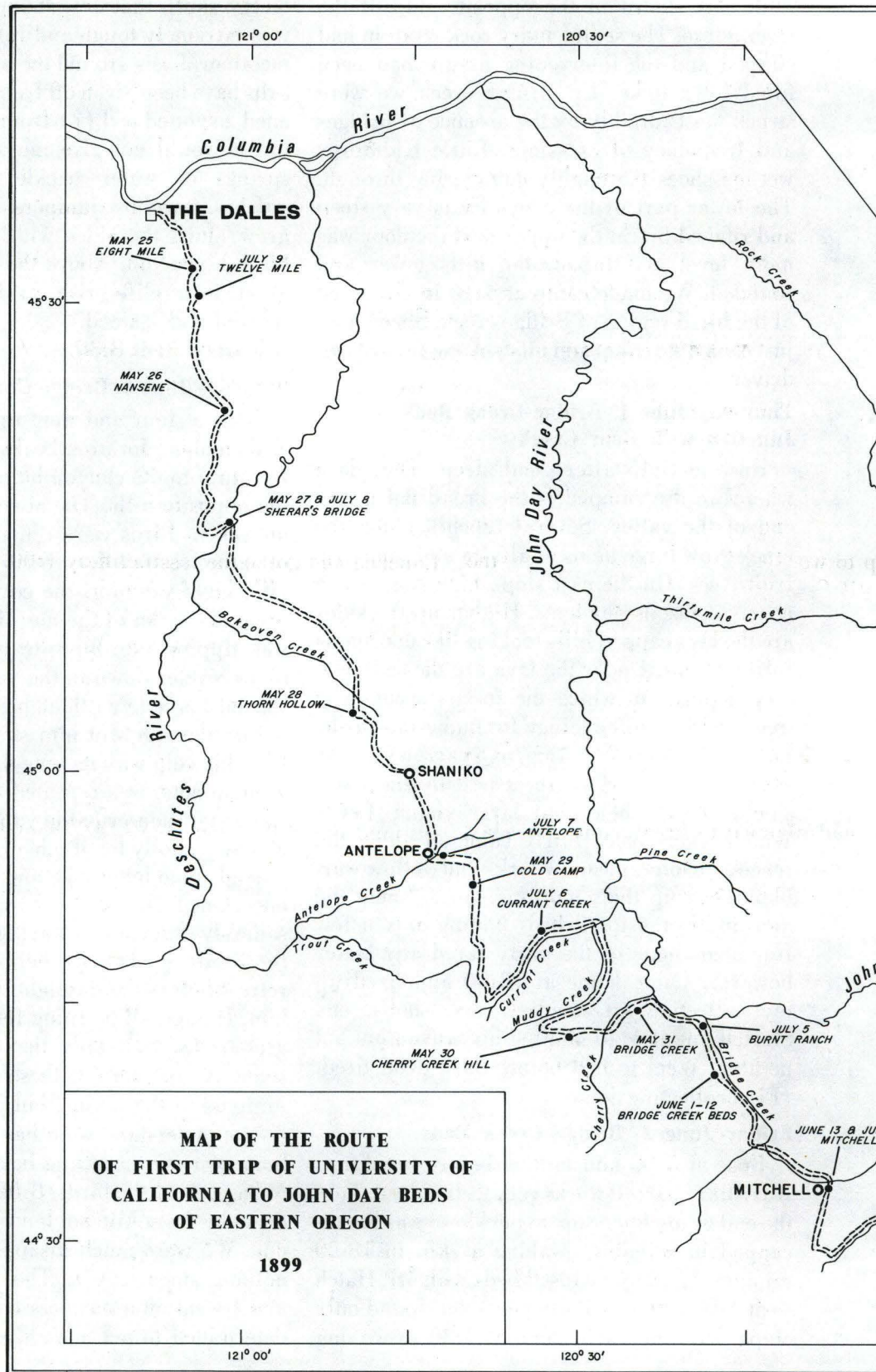
Rose at 5:00 and hunted before breakfast. Auxilliary barrell works very well indeed. Tore the end of my finger up on buckle so was handicapped in skinning. Making a skin in 18-20 minutes. Went to the fossil beds with Mr. Hatch—at 1:00 worked all afternoon but found only chips. Dr. and Davis came at 4:30 so we dug

on two skulls that were found day before. Rock was extremely tough and refractory—showing metamorphosis around the bone where calcium salts have been given off from the bones. Frightened a spotted owl (?) from a hole in the cliffs but it would not give me a shot at it. Little springs of water trickle down the larger gulches, scrubby junipers and thorn bushes grow along the sides with cotton woods and birch higher up. Above the fossil deposits the great lava cliffs rise in immense terraces, scarred and seamed.

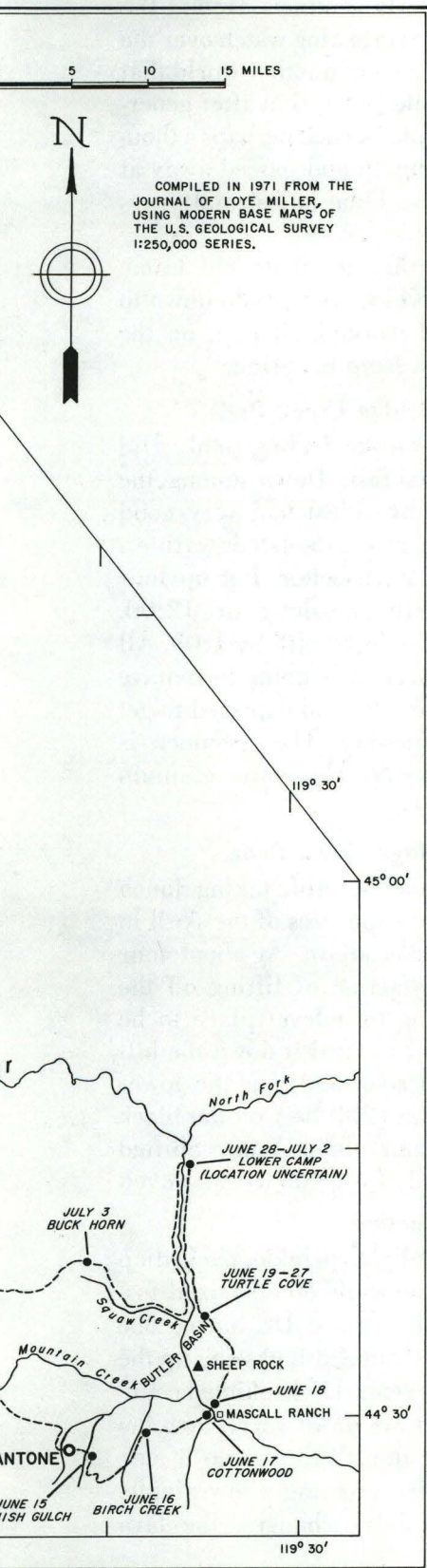
Turned in at 8:30.

#### **Saturday June 3. Bridge Creek Beds**

Rose at four and went up toward the fossil cliffs looking for grossbeaks and woodpeckers. Got up into the canyon before the sun rose on the opposite hills. The silence was heavy and unbroken. Birds were remarkably scarce so I sat down to wait for sunrise to rouse them. A late, night rambler, the coyote, chipped in to break the quiet of the morning, just as the sun was tipping the opposite hills with red this night reveler down in the yet shadowed valley started his note as though having a last word before the sun sent him skulking to the hills. First his yelp with its long drawn howl clear as a bugle note, was repeated several times, then came that indescribable yapple that one thinks at first is a jolly lot of school girls that have just played some huge joke and all talking of it at once. One feels that the coyote is chuckling over some sly prank and is having a good laugh over the result of his work before he is obliged to retreat before the daylight. I had to smile with him. Hunted all morning for woodpeckers and grossbeaks. Saw only the former. There are some five or more of these birds living in the junipers of the ravine, but extremely wary. I do not understand what has made them so. An hour or two's tramping back and forth failed to bag one of the birds. 8:00. The mail carrier came by from Mitchel but not a scrap for anyone. We were much disappointed have gotten nothing since leaving The Dalles. Mr. Hatch and I went on a business trip, after breakfast, determined to get a woodpecker. By working







together we succeeded. Mr. Hatch bringing down a bird with No. 5 shot Put up 4 birds before lunch then Mr. Hatch and I crossed the creek "neglige" to a fossil bed over the first ridge. The afternoons work yielded a few teeth and bone chips. Most of them were completely petrified, the marrow cavity being filled with clear silicious material. One piece of jaw of *Oreodon* with 2 perfect teeth. Mr. Hatch found two teeth of *Anchitherium* the little three-toed horse. As we forded the river homeward I noted numerous spermophile holes in creek bank very promising looking ground.

#### Sunday June 4. Bridge Creek Beds

Slept until breakfast. Sewed my leggins, cleaned sixshooter and wrote to Brockton, bummed, washed clothes and bummed more etc. went to bed.

#### Monday June 5. Bridge Creek Beds

Howling wind all morning. No good to hunt so loaded shells and cleaned up. In P.M. went up to dig on *Entelodon* skull. Took some views of the beds. Worked all afternoon with pick and did not get the head out came home pretty late and set traps along creek. Back to camp at 7:00 and had to get supper as Davis was still out. Dreamed last night of Bertha Holmes as a girl of 5, in Japanese costume. Prettiest picture one could wish. I made friends with her and carried her off as my partner in games and at table.

#### Tuesday June 6. Bridge Creek Beds

Had good luck hunting, securing my first specimens of evening grossbeak one male and 2 females. Also best specimen of Blackheaded grossbeaks I ever saw. The evening grossbeaks I was surprised to find down in the willows along the stream. They are not shy at all, seeming to ignore one's presence altogether. After lunch Mr. Hatch and I crossed the creek to the beds further up. Some fine exposures were examined but no trace of remains. The over topping lava contains much tufa which scales off and slides down over the sedimentary strata covering it with sharp edged fragments slipping once I cut the knuckles of my glove to shreds, severely skinning two fingers. On the

way home Mr. Hatch became communicative, told me all about Mellin and his mother, his ambitions and his foolishness. His own desire to go east was caused by his anxiety for the boy. We got into a squirrel town and bombarded it for a few minutes staying one only. Set traps in the evening along the drift wood by the creek where I had caught one *Hesperomys* during the night.

### Wednesday June 7. Bridge Creek Beds

Mail from Brockton (May 26)

Found 2 *Hesperomys* in traps this morning before breakfast. The other traps were not sprung, indicating quite a scarcity of mice. Shot one of the little shorttailed spermophyle which are numerous in the valleys. They resemble very much the "juancito" of Arizona. All went off to the fossil beds leaving me to work alone until 12:05. Then I lunched and went up to work on the *Entelodon*. Swung the pick until Calkins came at 4:00. Shot Black bat in evening, somewhat smaller than hoary bat. Breast and back hairs slightly hoary at tips.

### Thursday June 8. Bridge Creek Beds

Got 2 *Hesperomys* and a graywooly fellow resembling cotton mouse. Also 2 spermophyles in traps but spoiled. by the sun. All hands repaired to the cliff to work on the *Entelodon*. The Dr. had planned to break camp Tuesday but Wednesday and Thursday find us still here. I went up to the cliff at one o'clock and found them still at it with promises of some days work. The skull seems to be complete except the snout and is about 21½ ft. long. The lower jaw lies to one side intact. Mr. Hatch decided to go on the morning stage. He will make for Rogue River to do some fishing, getting home before July.

### Friday June 9. Bridge Creek Beds

Set no traps yesterday thinking we would start today. Work seems plentiful on the skull. Dr. thinks it as fine as any specimen of the kind known.

Started out for the hills at 6:45. Up and up above the valley, above the fossil beds into the lava terraces among the junipers Beautiful old

trees rugged and grizzly sentinels around the walls they keep their everlasting watch over the remains of those animals of another world that have lain burried while generation after generation of these old prophets, each perhaps a thousand years, has sprung up and passed away at the post of their duty. Time is lost and years are but the pulse beat.

Came down at 11:00 after short nap. Came by the cliff and got Kid Cayuse, rode down to lunch and back and worked all p.m. on the *Elotherium*. Caught a *Bufo* in spring.

### Saturday June 10. Bridge Creek Beds

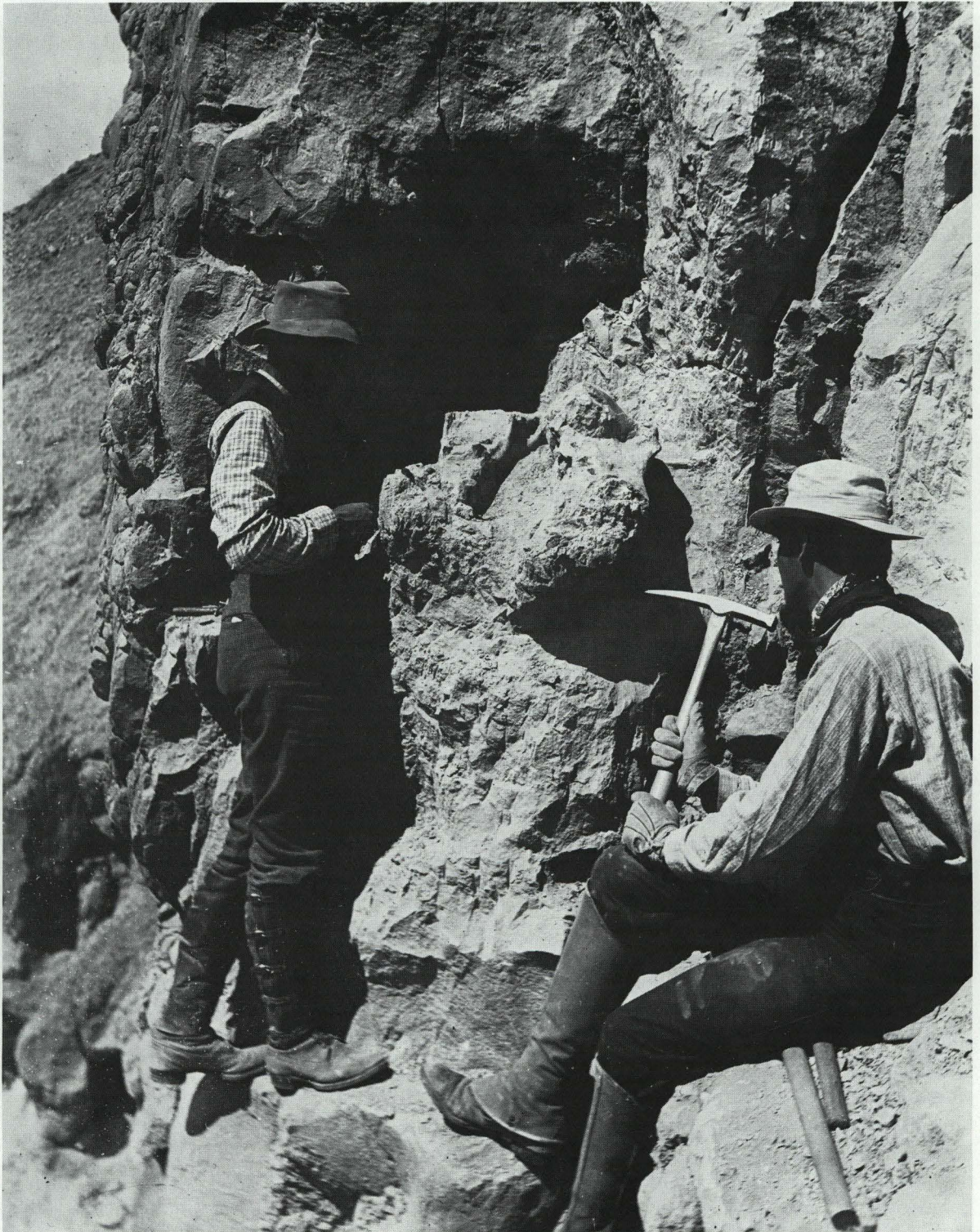
Slept poorly and awoke feeling punk. Did not hunt before breakfast. Down among the willow timber after breakfast had very good luck got two vireos and pileolated warbler. Came home feeling much better. Put up four skins per hour easily finishing at 12:00. Lunched and got to the fossil cliff by 1:00. All afternoon. The *Elotherium* is going to require another days work yet. We had expected to get away Monday or Tuesday. The specimen is worth the labor however. The entire cranium measures almost 36 inc.

### Sunday June 11. Bridge Creek Beds

Worked all day on the cliff, taking lunch with us. Made several exposures of the skull in situ and the cliffs from above. At about four p.m., I had the satisfaction of lifting off the cranium and carrying to a level place to be wrapped. Davis and I carried it down the hill then came back and soon took out the lower jaw. Packed the whole (200 lbs) on the black mare and made camp about 7:00. Shifted plates in evening ready for the morrows travel.

### Monday June 12. Mitchell

Cloudy like rain. Slight sprinkle, packed up then wrote to Brockton while others boxed fossils. Mail came for Davis and Dr. but no one else. Got under way about 2:30, passing up the canyon through some remarkable painted country. The canyon narrows down very much becoming very picturesque. We turn up a side canyon onto alkali flat, crossing a low divide. The character of country changes, the lava



**Elotherium locality** on Bridge Creek. *J. C. Merriam is on the left, Loye Miller on the right.*

capped beds are left behind, in general the topography is more like that of the potato patch country. Some majestic lowering crags appear in several places along Bridge Creek where they overtop a hard cretaceous rock with occasional crude slate. We came down again into the Bridge Creek canyon, having crossed an elbow of it. The clouds are breaking up in the west. The snow of Blue Mts. is but a few miles away. We are now almost under the great crag through which the valley is cut making a regular gateway, all unite into a very beautiful scene. Up the creek some distance we came to the little town of Mitchell, dropped down in the rugged canyon. Some on one side the creek some on the other, some on the hill above, the one street a mere road between the buildings, crooked as a cow path. We made Mitchell at 5:45, left some fossils, bought some supplies and passed through to camp a short distance beyond.

#### **Tuesday June 13. Mitchell**

We seem never to get a decent early start. After breakfast, Dr. and Davis went down town to pack the fossils for shipment while Calkins and I broke camp. We broke and *waited* then we went to bathe (snow water). and came back and *waited*, Calkins got tired and went down town while I *waited*. They came at 11:55. I put in my time watching the night hawks flying high over the canyon uttering their peculiar jarring note and occasionally sweeping down with their peculiar whirring boom. We got under way at 1:15 passing thro some very beautiful country, reaching the summit among the pine timber after 4:00. The snow lay very close by on the mountain side. Orchards of deciduous fruits were just leafing out, some still blossoming. Mountain Creek takes its rise here. We passed down through the wide meadows from which it springs, to camp at Caleb a small burgh of one store and postoffice. Hobbled the horses on the fine grassland. The creek is here bordered by wide patches of low willows just leafing. In this copse were numbers of Little Flycatchers, Kinglets and that fine songster Russet Backed Thrush. The exact identification

of the latter I am not positive of, the song is slightly different also the call note. I endeavored to get one but was unable. A prairie chicken was seen flying over from the creek about dusk.

#### **Wednesday June 14. Caleb**

Horses were right near camp but somehow we never start early. It was 10:00 before we saddled. Bay horse painfully lame Davis stopped and removed the shoe but not much relief. Down mountain creek crossed to Antone then down to Rock Creek. Lunched on Rock Creek at 1:15 near Antone here we out spanned for an hour or two while Dr. went fishing to be gone an hour. He got back at 4:00 with 6 nice little fellows I occupied my times with "Captain of the Poli Star" and watching the w'd peckers. These birds were flyng high in circles evidently catching insects. At Bridge Creek camp I observed them only lower down. We in-spanned and pulled up a most unrighteous hill into Spanish Gulch. Right under the snowy peak in the edge of pine timber. Shot first *Tamias* seen; observed also green tailed towhee and some warblers. Slept under the stars in a perfect sky with slight breeze coming down from the snow.

#### **Thursday June 15. Spanish Gulch**

Slept like Mr. Van Winkle, wakened for breakfast at 6:30. Glorious morning. A visiting miner told of a bone-discovery up the ditch some miles which, from his description, must be a cretaceous reptile. No great dependence can be placed on these stories, it may be an old log but Dr. decided to visit it anyway. Started about 9:00 (our usual *early* hour). Climbed up through the timber along the miner's ditches. The valleys are beautiful the gentle sloping hillsides rich green, spotted with numerous species of wild flowers, large yellow composites; fragrant crucifers growing in large spikes. A blue *Cissarinchium* like that of the Berkeley campus and then the more delicate strawberry blossoms and yellow violets. The timber is pine and Douglas "fir." Along the mining ditches are thrown out rich deposits of Cretaceous rock containing numbers of *Trigonium*, oysters, and a clam like bivalve. Into the saddle at 2:00 p.m.

down again into the dry hot country. Inspected some Loup Fork beds but found nothing. Extremely hot. Made camp at 5:00. After supper I made friends with the old "fid" and had quite a time, getting some real comfort from it.

#### **Friday June 16. Birch Creek**

Morning broke clear and promising hot weather. Rose to breakfast at 6:00. Skinned small flycatcher after breakfast seated on ground working on the candle box. The horses were easily found so we got into the saddles about 9:00 riding under a glaring sun. Along the way we spent some hours at Loup fork beds. I secured two teeth of *Hipparion* and a small ankle bone. Mostly fragments. We made Cottonwood about 1:00. Cottonwood creek here joins the John Day River, The valley is quite fertile and timbered with the slender leafed cottonweed. Dr. and I succeeded in dispatching a Badger so I had employment for the afternoon. No labor however until after we had a bath in the John Day river, the mecca of our pilgrimage, a muddy and very common-place looking stream. We dined among the mosquitos and retired early.

#### **Saturday June 17. Cottonwood**

Passed a miserable night fighting mosquitos, rising worn out. The problem that now confronted us was to get across the river and up the steep hill opposite. The only available boat had lain in the sun since early May. The stream was too high to haul across. So the entire morning was spent in calking the boat so that one bailing pan could keep up with the influx of water. The damagable goods were taken over between bailings, the others were placed in the wagon and into the stream we went. The horses were "persuaded" through, the water coming half way up their sides. The wagon bed was afloat so I stood upon the lemon box. The Doctor followed astern on the black mare holding his feet up while his stirrups floated out horizontal. The job was finished by 1:00 but that was too late to start up the hill so we camped there by the river, one mile in one day. We owe much to Mr. Mascall for the use of his team and boat. After lunch we had to pack the goods

from our "ferry" landing, out through the mire to the wagon road. We took our blankets out up the hillside to make our beds in order to avoid the mosquitos. Dr. and I did some shooting in the afternoon with Mr. Hatches rifle. It falls slightly at more than 100 yards. I found I could do almost as well with my sixshooter. It carries point blank at 100 yds with smokeless shorts and fell but slightly at 225 with longs. Calkins forded the river for the mail and a pail of water at the contact spring I got letters from Maud and Mammie joint, one from Brockton, Carl Warners' wedding card and notice of Academy meeting on June 6. Answered in brief way letters from home and from Brockton.

#### **Sunday June 18. Turtle Cove**

We slept well and free from mosquitos. Finished up letters and into the saddle at 9:00, started up hill with extra pair of horses to the wagon. We needed them goodness knows. Never did I see such a road, steep and covered with lava rock that threw the wagon bumping from side to side. We sent the helpers back about 11:00 continuing upward until after lunch. About 2:00 we looked down upon The Cove, the mecca of our pilgrimage, the grandest amphitheatre one could wish to see, terrace after terrace of lava rising thousands of feet above the river bed and above the white fossil cliffs. What a wonderful display of erosive forces. Our journey down took the remainder of the afternoon. The road gave out and we went down without any. Driving over sage brush, down steep hills that slid the wagon along with locked wheels, along sideling slopes where I stood on the brake block and swung out to add my weight on the upper side to prevent over-turning. We got down anyway, making camp at 5:00 in a beautiful group of Birch trees above a fine spring. Good grass waited for the tired horses. Everyone was worn out and little time was spent after supper before our hammocks swung for the night in the birch grove.

#### **Monday June 19. Turtle Cove**

Spent the entire day in the fossil beds, Calkins under the weather so did not go out. The view of the large bed is a most wonderful sight.

The cliffs are not less than 400 ft. high from top to floor. Cut and furrowed into chasms and pinnacles bare as a tombstone. The first impressions I received was that of Dante's illustrations of the inferno. To heighten the impression some of the strata are of a dull dirty green color most repulsive in tone. What a place for bones of ancient monsters of a long passed age. I was much more successful than in the Bridge Creek beds. My best find being the three molars of *Anchitherium*, set in the left upper jaw. The Dr. calls it the best specimen yet taken except the great *Elotherium* head. The teeth are in perfect condition, part of the bone being chipped off showing the brachiodont roots beautifully. A tooth of some small Rhinoceros and jaw of *Lemptomeryx* were others new to me. There seems to be a great preponderance of turtles in this bed. Quantities of fragments and three embedded skeletons were found. A flicker was observed preparing a nest in one of the numerous small holes that appear in the cliff. I never before saw this bird or, in fact, any woodpeckers, build in a cliff. Back to camp at 5:20 dead tired. Bed at 9:00 though it was still light enough down under the thick trees to read my watch.

#### Tuesday June 20. Turtle Cove

Wakened at 3:00 by the birds in the trees, it being quite light already. Succeeded in getting to sleep despite a noisy pair of Kingbirds. Loaded shells before breakfast preparatory to a days hunt. Hunted until 11:00 finding little of any value, fixed up skinning table and cleaned gun, getting ready for lunch. Just as Davis came in from a half days tramp after the horses dead tired. Put up skins until 5:00 and went to set traps. Got to thinking of *other people* and got into a most abject case of the dumps. Strange how one can deliberately be most unutterably miserable. Emptied my sixshooter into the creek bank, ate supper and played the fiddle until I got back into a sane condition and went to bed.

#### Wednesday June 21. Turtle Cove

Woke up freezing about 2:30 a.m. The remainder of the night was not the best. Traps

contained one *Hesperomys*. I wonder if there is anything else in the State of Oregon. Came onto a fine rattler, the first since '94 in the Chiricahua Mts. of Arizona. The Dr. has been jumping fit to snap his shoe strings at the sound of the Cicadae which are so numerous here, but this fellow I recognized at once and my first exclamation was a sort of triumph. Down to the fossil cliffs in p.m. alone. Discovered nest of young flickers in hole in the cliff, this proving beyond doubt that this bird does nest to some extent in the cliffs. Got stuck near the top of the cliff and came as near Eternity as is altogether wholesome. Almost lost my nerve, had to speak to myself peremptorily to keep from breaking down. When I reached a place where I could relax I went all to pieces, falling weak and nauseated as sick kitten. Hadn't the nerve to climb any more cliffs. Succeeded in finding some good leg bones before evening and became somewhat restored, getting home dead tired shortly before 7:00.

#### Thursday June 22. Turtle Cove

Found three *Hesperomys* in traps. Found a purple finch with no trace of red shading but in full song. Down to the beds in P.M. working on a hot hillside with no breath of wind. The glare and heat rousing a ripping headache which was somewhat relieved by finding heads of *Oreodon* and some dog. We came into camp early. Dr. much discouraged. The dogs head is first canine we have found.

#### Friday June 23. Turtle Cove

Spent the whole day in the beds off to the north about three miles. I walked over while the others rode the three horses. The beds there are the wildest and most rugged I have seen yet, the peaks and slopes being sharper and steeper than others of the beds. Mr. Davis found some fine rodents and I raked in another fine dog head containing several perfect teeth. Dr. was delighted. Came home worse tired than I have yet been, utterly worthless when got home. Rested an hour or two at lunch while Dr. and Calkins played "mumble the peg" under a juniper.

**Saturday June 24. Turtle Cove**

Started out for the hilltop to the south to prospect the juniper and mahogany country. Secured fine yellowheaded spermophile the first thing. Secured a fine cock grouse, magnificent game bird large as a well grown hen. The flight is powerful but not so swift as the quail. I flushed some half dozen in all but shot wild of them. The food is purely herbs. The crop containing an immense quantity of green leaves and buds of a composite resembling milk weed. Spent whole morning in preparing the grouse and Spermophile skins. In p.m. fixed collecting bag and read White Company. The others of the party returned from their day at Butler basin five miles above at 6:30 reporting a most interesting country.

**Sunday June 25. Turtle Cove**

We have been here just a week and not one human being sighted. Camped under a fine bunch of red birch trees we had not yet put up our tent. The morning broke cloudy with promise of showers, which came about noon in fitfull little spatters which gave us warning that shelter would be needed. Cleared off though as soon as the tent was stretched. Did nothing all day but lie around camp and read. Finished the "White Company" about 6:00, went over to look after the horses. They were soon found so lay down flat upon the hilltop gazing at the snowey drifts of cloud in the evening light, dreaming day dreams and building fantastic castles in the air. Some of my friends think me practical and proseic. I wonder. Is it because I express so few of such thoughts that people think them foreign? I suppose I do hug them pretty tightly within me, but why? His must be a gray and colorless life who has no such fancies, yet he is a better than I who fitly clothes them in words. Returned to camp just as the others were starting Grouseing. I went along with my "shix-gun" for the tramp. Davis introduced me to a porcupine up a juniper tree, a fellow I have been looking for all the trip. I called him down with my six-shooter and packed him into camp. Calkins came in later with a hen grouse. We supped by lantern light

and soon rolled in. Began to patter rain after my hammock had stopped swinging so discretion bade me seek the tent. About quieted down again when a thunder storm broke over us, pounding spray right through the tent cover. Finally got to sleep despite the disturbing thought that the tent was not trenched and that we might be afloat ere morning.

**Monday June 26. Turtle Cove**

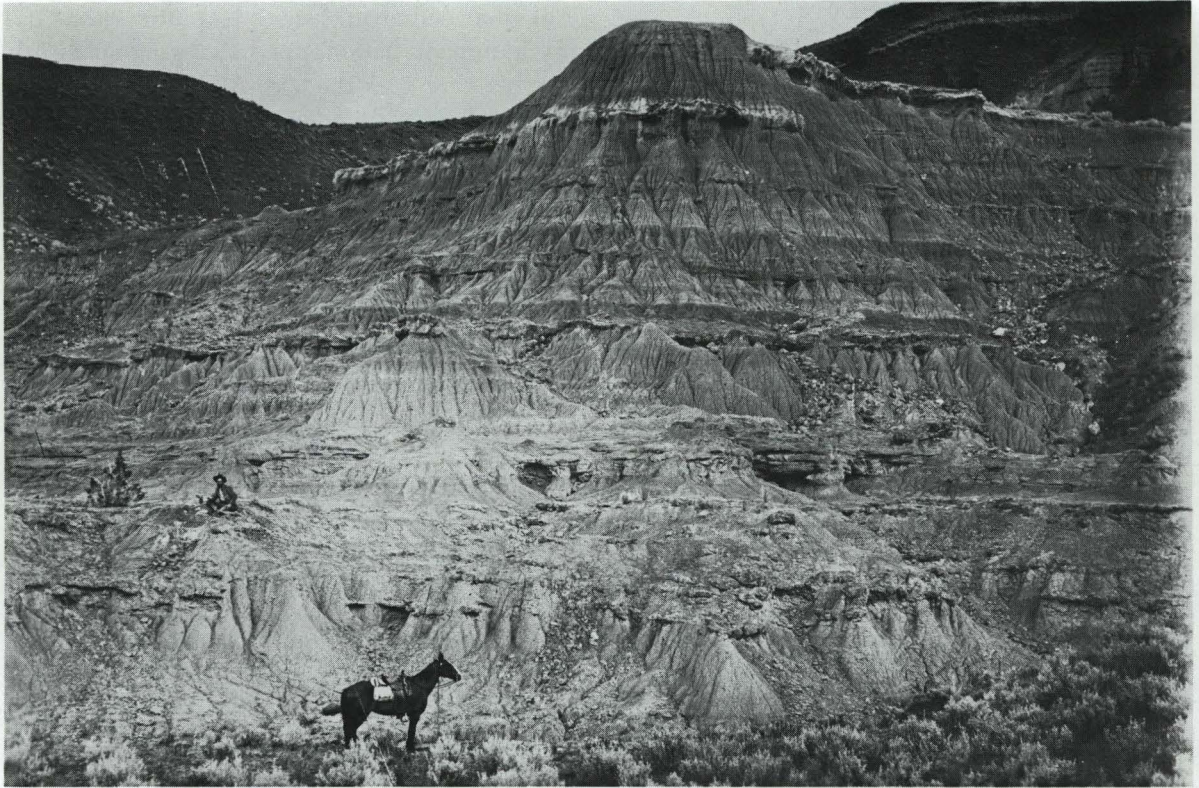
Awoke to find myself neither drowned nor soaked. The rain had soaked in as fast as it fell. Worked all day in the Big Bed with Calkins while Dr. and Davis went down the river to the lower bed. Found two heads—dog and Rhinoceros, some vertebrae, atlas and acetabulum. Came lunch time with no water so we swallowed our tears. Back to camp about 4:00 to carve my porcupine, made good skeleton. Calkins and I got some supper the others not coming in until dark. They reported good exposure down the river. Also brought some sugar which commodity we had been without for some little time.

**Tuesday June 27. Turtle Cove**

Slept as the innocent. Dr. started for Dayville for the mail taking my letters home and to Brockton. Hunted until noon finding little. Again afternoon flushed one grouse so gave it up as bad job and spent rest of the day taking views in the fossil beds. Back to camp at 6:44. Dr. had come home bringing me letter from Mr. Hatch but nothing further. He had received invitation to go to Laramie, Wyoming to collect in the Cretaceous beds there, asked me to go but "nit." Clipping from City paper reported Regents meeting, electing Wheeler of Cornell as President.

**Wednesday June 28. Lower Beds**

Dr. brought some fresh lettuce from Mascal's ranch which was about as welcome as any vegetable I have had in years. We have had nothing fresh in this line since leaving The Dalles. Potatoes are unknown luxuries. Broke camp this morning and started for the lower beds, that is, we started after working with the Buckskin mare until our patience and the horse whip were worn out. She at last started with a



**John Day beds**, probably near the camp at Turtle Cove. The human figure at left is unidentified.

plunge almost dragging the wagon down the steep ravine. Davis grabbed the reins just in time to save the whole outfit from destruction. She flew back once more further along the way but a slight persuasion was sufficient. Calkins and I collected on the way reaching camp at sunset. The ranch where we camped and pastured our horses is situated in the valley of the Jno. Day. Along the bottoms are meadow, marsh and cottonwood timber lands. Down from the west side comes a small creek wooded with birch along its lower course and Pine, Spruce, Aspen and berry bushes higher up. The place bids fair to furnish better variety of bird life. A chat with the fiddle and then to bed out under the stars though a light still glowed in the west.

#### **Thursday June 29. Lower Beds**

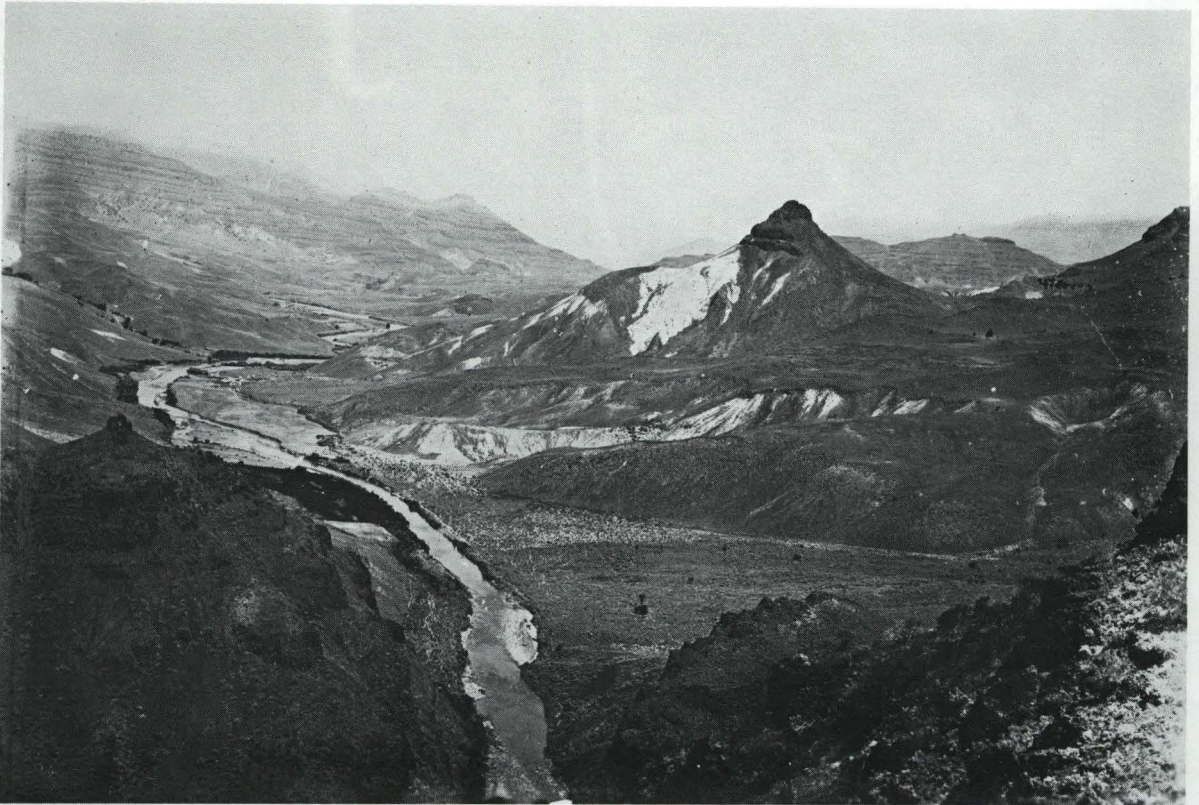
Spent all the morning up in the pine timber to the southwest. The mountain is not very high and is quite rugged so the forest is limited which fact probably explains the total absence

of chipmunks for which I went largely. Down in the steep ravines however the timber is very dense and beautiful; pine, fir and aspen grow, bright red and yellow flowers grow on the open hillsides where there is sufficient soil. Along the creek Bohemian Waxwings (?) purple finches and one House wren were observed. The first hummers were here taken also the first Jay that I have seen. My trip was quite satisfactory on the whole. Home about 2:00. Put up skins, loaded shells and patched up leggins meanwhile keeping the fire under the bean pot and some dried prunes. Davis and Dr. came in late with large number of fine rodent remains, petrified wood taken from under the lava and some excellent mineralogical specimens. Fossil bone was found less than a foot below the lava while stumps of trees stood erect embedded in the flow, lignitized on the surface and petrified within.

#### **Friday June 30. Lower Beds**

Spent 7 hours in the saddle and 2½ on the





**Sheep Rock** seen from the south, and the John Day River. Fossil-bearing beds of the John Day Formation on the flanks of Sheep Rock underlie the cap of Picture Gorge Basalt of the Columbia River Group.

tramp to get four pictures in Butler Basin. Dr. had found there a formation in one Butte that showed beyond question the relation of lava and sedimentary rock. Sheep Rock, a finger point of columnar basalt resting on vesicular lava, rises high on the summit of a great cone above the fossil cliffs which break out around its sides below. The sloping sides of the cone are strewn with the fragments of the former lava cap that is now represented only by this finger point. The almost perfect symmetry is broken only in one or two places by slight ledges which crop out from the sloping sides.

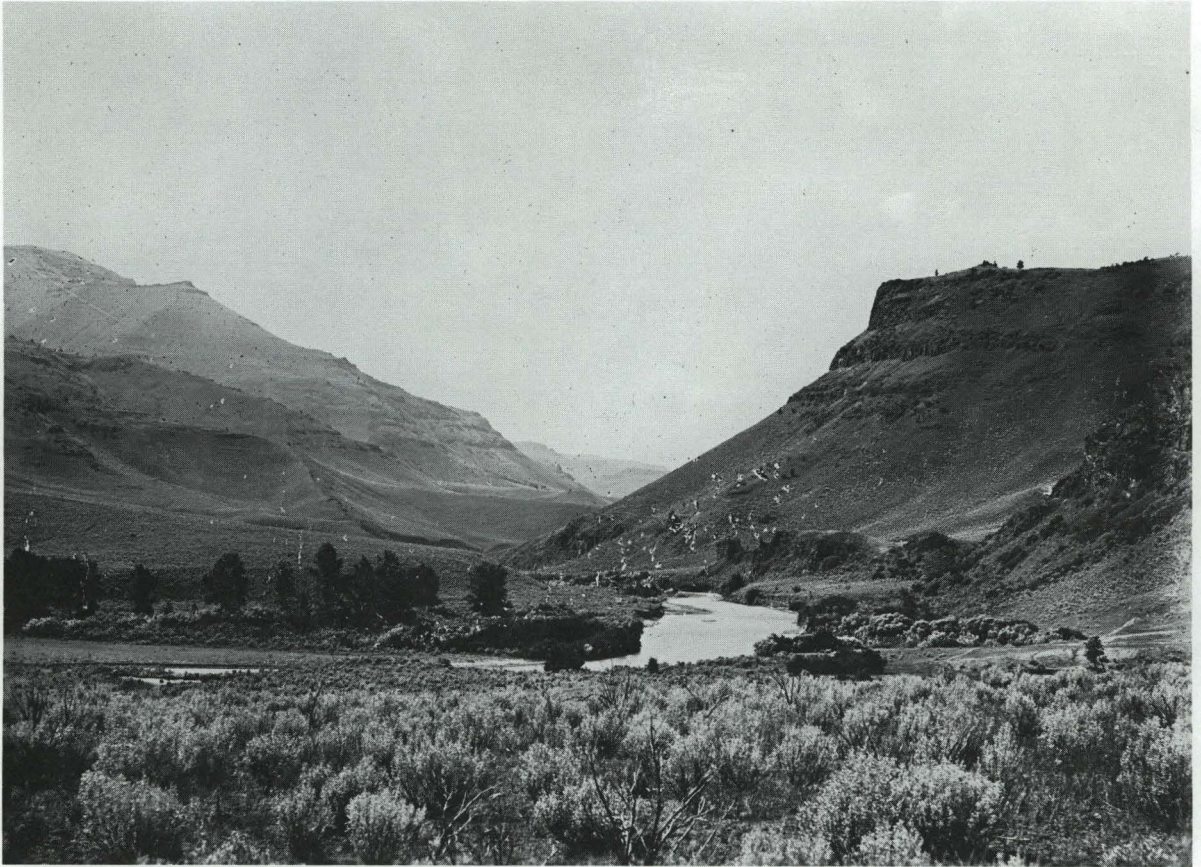
Rode the chestnut mare and Oh! My! All the patience and nervous energy I possessed were about exhausted before I got back. The animal is not endowed by nature with the full quota of intelligence known as horse-sense. It is also nervous to a high degree and I think near sighted. The combination in a horse is not conducive to serenity and patience in the rider.

#### **Saturday July 1. Lower Camp**

Awoke tired from my labor of the previous day, though I had passed a good night under the stars. Hunted in the river bottom all morning finding an interesting warbler (Am. Redstart) and the same flycatcher seen at Cottonwood Creek. (Eastern Kingbird) Wrote to Brockton at noon then down to river to lay for flycatcher went fast asleep for an hour. Came home at 4:00 and packed up things for the morrow. Planned to start at 7:30 in morning. Our rancher host, who by the way bears the classic name of Siegfried, agreed to help us up the hill with his team. Things pretty well in shape. Wonder if we really will start early!

#### **Sunday July 2. Lower Camp**

All hands on deck at 4:30. Sun just rising on the hilltop, breakfast over and packing done. Team came at 6:30 and we got into saddle at 7:45 Hurray! But alas the hour was too much



**John Day Valley**, near the Lower Camp at Siegfried's ranch. The exact location of the ranch is no longer known.

for us. We got about 40 rods when the coupling pole broke and we discussed the matter with our limited materials until our schedule time, 9:00. A new coupling pole in, we felt more secure. The tongue will be next to give way I presume. Coupling gave out again at 10:30 leading to another discussion of  $\frac{1}{2}$  hour. Bound the stay chains around and fastened to king bolt. Up into the pines at 11:40, lunched in most beautiful place in pine timber. Sent team back at 3:00, made camp at Buck Horn 4:15 in glorious timber by trout brook. Dr. caught some 15 little fellows. Finished up letter to Brockton and photoed camp, etc.

### **Monday July 3. Buck Horn**

Rose at 4:30 and trailed horses until breakfast, finding all up canyon some miles. Glorious morning out in the timber. Thrushes heard sing-

ing among the aspens. We got started early again but the Buckskin flunked on us leaving the wagon in a mud hole. We had to unload and pack stuff up to a level place and roll out the wagon while Davis "exercised" the mare (!!!!) Traveled some hours along through the pine timber, then down toward the more level country lurching on a perfectly open plain no water, nor shade nor stump to tie a horse even. Struck the main road again about 3:00, twelve miles to Mitchell 125 to The Dalles. Made camp at Mitchell after a hard tiresome day Kid Cayuse nearly jolted my joints apart. Stabled the horses and prepared for a night on bare hillside in a strong wind fresh from the snow mountains. The post office disappointed me woefully. My last mail was June 19 and we have struck the mails twice since then but never a scratch for me. Have heard from home once on the trip.



*Camp scene showing part of Miller's party. Loye Miller is second from the left; J. C. Merriam, the expedition's leader, third from the left; and L. S. Davis, the packer, on the far right. The man on the far left cannot be identified.*

#### **Tuesday July 4. Mitchell**

Arose at 4:30, cannon or anvils booming in Mitchell. No small fry however, fire crackers must be expensive in Mitchell and youngsters poor. The morning was colder than we found it up in the pine timber. Breakfast over by 6:00, into the saddle at 8:40. The fossils that we left in Mitchell as we went up were still here so we put them on the wagon, increasing our load some 300 lbs. We got about a mile out of camp and flop, we stalled halfway up a steep hill unable to budge forward. Davis went back to town for a team of helpers, while we waited with what patience we could command. These waitings and break downs are getting most woefully monotonous. Davis got the "Marshal of the Day" at Mitchell. He put in a sub and came up to pull us out for a dollar. Got into the saddle again at 10:30. Dr. hailed a man and got him to take three of the small boxes to express to Ar-

lington while we drove on. Made camp at 5:00 on Bridge Creek at Junction with the Jno. Day. The Kid Cayuse grew terribly foot sore before evening, nearly jolting my anatomy into its various parts. Could not get him shod at Mitchell in morning because the blacksmith had staid up all night to celebrate and his anvils were also in use.

We celebrated by getting two pailfulls of cherries at the ranch below. We ate several, cooked some for supper and after I had eaten a cupful with milk was reminded of their deadly character when mixed thus. Tried to get rid of them but succeeded only in strangling myself. Went to bed on two tablespoonfulls of whiskey and slept in perfect peace. No indication of ill effect. Calkins however dreamed of murdering a man or two with his fists but no other ill effect.

**Wednesday July 5. Burnt Ranch**

Decided not to stay and collect for a day as intended. Pushed on starting at 7:30. Stopped at grade to shoe the Kid and Black. Sat around in blacksmith shop while the old Patriarch ambled around for an hour or more. Great old character with gray beard and piercing black eyes. Caught up with the wagon about 11:30 at the leaf beds 2 miles above Fagan's ranch. Got some good leaves and rushes. Saddles at 1:00 at the old camp on Cherry Creek Hill shot two Blue Crows, 2 doves, and a rabbit. First Blue Crows obtained, not seen away from Bridge Creek before. Muddy Creek ranch about 4:00 but pushed on up the hill until 5:30 when we camped by the roadside right under the poised rock that we wanted so to photograph going down. At 4:45 Calkins suddenly remembered his belt was back at Cherry Creek Hill. It contained all his money and his ticket so he was obliged to turn around and start back over the six miles of rocky road. He came into camp at 8:20 from his search successful. We hobbled the horses on the hillside. The night was very close and warm until 9:00. Loaded plates and turned in under the stars. How bright they were, and how many of them.

**Thursday July 6. Current Creek**

Davis had a chase of three hours after the horses while we got breakfast and cleaned up camp. Into the saddle at 8:20, starting the buckskin mare with the usual formal ceremony of the bastinado. Up the hill, slow and tedious, reaching the summit at 12:00 where a beautiful clear cold spring comes out of the low hillside apparently from no where. Going again at 1:00, we passed across more level country broken by a few sage hills. Through cold camp again down to Antelope at 3:30. Here we out spanned as there was not time to make the next stop and Buckskin had to be shod in front. Stabled the horses so we may not be bothered so in the morning. Blacksmith was drunk and would not work. Baker was out of town and the "hotels" out of bread. The butcher was somewhere in town but not in his shop his wife afterwards

sold us some meat however and we managed till morning.

**Friday July 7. Antelope**

Got under way at 7:40 with no trouble. Roused the Blacksmith and after he had breakfasted at leisure he shod the horse. Stable keeper had to be roused in order that our horses might be fed then he charged 50¢ a head for them. Great town this. Reached top of the grade at 8:35 then across the plains 14 miles of monotonous travel through the niggardly "wallow land." Made Bake Oven at 12:20 and had the tire set and new fellow put in the rear wheel which had required pounding-in every mile or two during the entire morning to prevent total collapse. Saddles again at 2:00 making time across the plain 7 miles to Dead Dog by 3:00, making Sherar's Bridge at 6:30. The Deschutes is now a beautiful rushing river of clear cool water quite different from the muddy stream we passed six weeks ago. Saw here the first *Spermophilus beecheyi* running about the rocks. Made bed down among the rocks outside.

**Saturday July 8. Sherar Bridge**

Davis swapped the Kid for a buckskin plug that might be kin to the mare Bidly. Calkins was due the Kid, Dr. The Chestnut and I the old moose headed Black. Saddles just at 8:00 and up the grade. Spermophiles quite common now in the rocks. Up and up the whole morning a steady hard drag until 11:45 when at last we topped the hill and down over the other side to lunch at Warner's Ranch. The yellow headed spermophiles were very common all along the road. We did not see nearly so many as we went in, probably the season was too early then. After lunch the road was extremely dusty and the wind parallel to our course making it very disagreeable traveling. Reached 12 mile creek at 4:00 out spanned and made camp by the stream while Dr. and Calkins went fishing. The stream is beautiful and clear, fishing out to be good.

**Sunday July 9. Twelve Mile**

Awoke in fine shape. Drove the nest of half

grown hogs out of camp and rolled my blankets at 5:00. Dr. and Calkins pulled in some nice little trout last night which we had for breakfast. Got into the saddle at 8:15. The old mare fooled us in great style. Dr. and I laid hold of the rear wheels to start her off with the usual ceremonials but she stole a march on us by starting as quietly as a sleepy car mule. Lunched on the ridge above The Dalles in a driving wind that blew the food from ones spoon before one could eat it. Down in The Dalles about 1:30, our cavalcade filing down the quiet street to the coral at Davis' Feed yard whence we had started seven weeks before. Our trip ended as far as actual rough shod traveling was concerned.

The photographic exposures made upon our cerebral cortex which years and years will still continue to develop. Our collections made which will require long and careful study to arrange and classify, compare and ascertain their full significance in relation to other forms of other times and places.

My own work was to collect for the Zoology Dept half the time and half for Palaeontology Dept. The work of taking photographs was also mine.

We were in camp 25 days half of which could be devoted to Zoological work. The collections included ten mammals, fifty four birds and a few batrachians and reptiles.



[Continued from inside front cover.]

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