Robert F. Burgh
University of Colorado Museum
Boulder, Colorado

C9.D1.F1
Burgh 1947: Castle Park, Yampa Canyon
THE ARCHEOLOGY OF CASTLE PARK,
YAMPA CANYON, NORTHWESTERN COLORADO.

NOTES

1947
Problems:

Culture allocation of pictographs & petroglyphs.

Statement from Dr. Anderson on age and genetic significance of maize.

Staetigraphic study of Hell's Midden, and relationships of midden artifacts to artifacts from Manti's Canyons.

Possibility of house remains on open terraces in the canyon.

Significance of tree-ring dates, and search for further wood specimens.

Probability of ancient disturbance of cave deposits by transient Pueblos.

Possibility of occupation of cave prior to Basket maker II.

Presence and significance of masonry rooms and circular granaries.

Presence and significance of pottery in cave sites.

Location of burials.

Possibility of finding a very deep occupational stratum in Manti's Canyons.

Identification of textile materials and foodstuffs; with particular attention to beans and cotton.

Comparison of cave and midden artifacts with material culture of
Problems—continued

historic Ute and Shoshoni tribes.
Identification of animal remains: hide, hocks, antler, bone, pelt, feathers, etc.
Association of Castle Park occupation with cave remains in Nevada and Oregon, as well as with Classic Basket Maker and Pueblo.

Probability of the use of mantle cane as a seasonal shelter at harvest time for agricultural tribes in the region.
Possibility of a pre-agricultural horizon below the Basket Maker occupation.
Possibility of contact with prehistoric Plains Indians along northern buffalo routes.
Absence of bead-work, long lance, and horse trappings, as well as other objects of European manufacture, rules out possibility of occupation by historic tribes.

Absence of decorated pottery does not rule out occupation by Pueblo people, because transient bands of agriculturalists would not transport fragile pottery for summer camps.

Absence of smoke stains on cave roofs, absence of home remains and living areas, and the northern exposure of the cave are proof that the cave was not continuously occupied by a tribe for a long period of time. The shallowness of deposits, the prevalence of storage chambers, and the scarcity of midden material confirm this conclusion.

An impression of stratigraphy (subject to careful scrutiny) is as follows:

1. Culture remains (related to Lonchock Canoe?) non-agricultural; economy based upon hunting and fishing.

2. Deposit of a stratum of silt, sand, and rock-falls from cave roof over the
non-agricultural remains.

3. Excavation of deposits for construction of storage chambers for corn (typical Basket-maker slab-lined cists, bell-shaped cists, and potholes) by agricultural people. This excavation unearthed pre-agricultural remains and mixed them with the later horizon.

4. Further excavation, amid further sifting and scaling of slabs from cists, by agricultural people contemporaneous with late Basket-Maker or Early Pueblo. These people left pottery and beams. They modified earlier cists with masonry, and used early baskets as "he-him" cover for granaries. Their excavations failed to uncover all earlier cists and potholes, just as the earlier Basket-maker excavations failed to overturn all remains of the pre-agricultural stratum.

5. Presumably ancient objects discovered by later peoples (such as arrows, projectile points, fish-hooks, etc.) would be valued and preserved for practical use or for magical value.

6. Occupation of the canyon, but not the cave, by later nomads (possibly historic tribes) who left a record in pictographs beside pictographs and petroglyphs of earlier peoples.
Unclassified:

A bunch of tapered snares was found 30" below the surface, underneath a layer of compacted silt. Snakes of the same type exactly occur at the highest level of occupational debris in association with Basket Maker material.

Basketry, interlocked and uninterlocked on a half-round foundation, occurs in Manthi's Cave (where it is the prevalent type) and in the Arrangoo Rock Shelter. Presumably, the split rod (flat side down) gave stability in manufacture, and was later replaced by two rods in the foundation to achieve the same ease of manufacture, with a fiber bundle for securing the stitches. This is a conjecture based on typology, and is not to be considered conclusive.

A study of the Tomlock Cave deposits is required to determine whether all artifacts are associated with turned basketry, the absence of which, in Manthi's Cave, rules out any close relationship to cave cultures of the northern Great Basin.
The occurrence of two polished stones presumed to be atlatl weights is an anomaly, in view of the absence of the atlatl itself. The moccasins of the arrow fragments from the same show atlatl shaft present in the collection.

The absence of furnished women bags, women sandals, and the prevalence of leather mocassins suggest a very early horizon for the Basket Maker stratum, compared to the San Juan river region.

The presence of snares having a "keeper" or "trigger" (arced or hollow stick) indicates a relationship to Nevada cave remains.

The tapered cord used for Yampa canyon snares should prove to be a diagnostic trait, to be carefully examined by archaeologists in other areas. The literature, when carefully studied, may contain evidence of other occurrences.
Features in common with the "Fremont Hiner Culture" are:

- Sites: Pot holes, bell-shaped, slab-lined.
- Features: Plumes of flicker feathers.
- Corn
- Snares
- Sheep horn wrench
- Masonry granaries
- Interlocked basilisks
- Shallow cane deposits
- Presence of pottery

Clusters of pot holes on cane slope and around marginal areas is characteristic of Basket Maker culture in Anasazi Rock Shelter and Jemez Village.

Cache of same leaf-shaped blades, duplicated at Anasazi Rock Shelter.

Absence of bone dice, scored on one surface, is puzzling.

Presence of tubular stone pipe in Bell's Midden is suggestive of Pueblo occupation.
Necklace of bone tubes and juniper berries is straightforward Basket Maker.

Feather headdresses on ermine band could be ancient, in view of occurrence of similar feather plumes and ermine pelts in other cave sites to the south and west.

Miniatue basket-ladle is exact duplicate of pottery ladles of Early Pueblo III in Four Corners region.

Miniatue baskets (except above) characteristic of Basket Maker II & III.

Fur-cord blanket characteristic of Basket Maker II. Feather-cord is Basket Maker II & Pueblo III.

Cradle is characteristic Basket Maker II.

Pottery appears to be Basket Maker II, grit-tempered, fire-blackened, unslipped, but shows scar of handle attachment. Possibly a long handle. Pottery occurs in Kelli Midden.
Act. 3 University car #41 License 7-1569.
Starting mileage: 01350.

Arrived Denver from Boulder. Met
Dr. Jesse Jennings, National Park Service
Archaeologist, Missouri River Basin Survey,
at office of Mr. Hubler, National Park
Service, 1621 18th St. Denver.

Discussed Colorado-Big Thompson
Project with Jennings and Hubler. Gave
Hubler copy of my report on preliminary
survey of Reservoir Areas in C-B.T., sent
to Frank Roberts Act. 2.

Jennings and I drove to Craig.
Received copies from him of Cooper
report on Randall Reservoir, South
Dakota, and report on Farm Creek
Project, Illinois.

Obtained following information
on River Basin Surveys:

U. S. C. personnel utilized on River
Basin Surveys must be loaned to
Smithsonian Institution and paid by it.
Salaries from University for period 1
year may be utilized for operating
fund, supplies, etc.
Operating fund from University during
October 3, 1947
Craig, Colorado

Period of loan desirable for use without restrictions of governmental accounting.

Map reference: Irwin Raisz; Physiographic map of the U.S. Harvard University Press. 504.1939.

See about free maps of Colorado Counties – State Highway to U.S. Museum.

Make plans to give summary of Yampa archaeology & Dave Campbell for inclusion in Information Bulletin & Dinosaur National Monument.
Curved flake is characteristic scraper in Hells Midden and in Cave.

Leaf shaped blade with square base, used as knife or blank for notched point, is characteristic of Cave and of Basket makers.

Miniature arrow-points characteristic of Anasazi, Occur in Hells Midden at all depths.

Thomas Museum has four hafted knives like one from Mantle Cave.

Mrs. Mantle has arrow point with side-notches and arched base, delicately made. Surface find, identical with three specimens found in Hells Midden by Scott.

Mrs. Mantle reports no iron arrowpoints anywhere in the region. Thomas Museum has some iron arrowpoints of recent Ute origin.

Investigate possibility that wood self-arrows were used with bow, and reed arrows (compound) were used with atlatl.
October 2, 1947
Boulder, Colorado.

10-27-47 Butterfly grill was absent in Canon of Castle Park.
Inferior Organization of Monograph

Preface
List of Text Figures
List of Plates
Contents
Introduction

Part I Physiology, Climate, & Ecology
   Historic Occupation
   Prehistoric Occupation
   Association of Structures & Artifacts
   Cultural Relationships.

Part II Description of Sites
   Description of Structures
   Description of Artifacts
   Function of Structures and Artifacts

Appendix 1. Prehistoric Corn
Appendix 2. Identification of Plant Remains
Appendix 3. Identification of Animal Remains

Bibliography
Provenience of Specimens
Index.
October 2, 1947
Boulder, Colorado.
References: U.S.G.S. Professional Paper # 183
A.A. Behun, C.H. Dome & J.B. Rebecca,

G.E. & B.R. Unterman, geology of
Dinosaur Nat. Mon. in preparation.
Vernal, Utah. Ph. 339 W.

William Titworth. Episodes
of Yampa & Green River territory.
Journal:

Oct. 4, 1947
Vernal, Utah.

Jennings and I drove from Craig, Colorado, to HQ of Dinosaur National Monument at Jensen, Utah. Spent day with Custodian Jesse Lombard and Ranger J. L. Ingleton. Returned to Vernal for the night. Dinner and talk with Jesse Lombard.

Melbaum has seen two pictographs of Indians using atlatl; one in Nevada and the other in southern Utah. Both show figure using left hand to hold arrow and right hand holding atlatl.

Visited museum in Vernal City Office:
Basket fragment shows standard BM III design on half-round foundation presumably in one color. Apparent design:
Mummy wrapped in cedar bark robe.
Skull undeformed. Sandstone Missouri with hair side out. Melbaum thinks it is from Eightmile Canyon above the line it came from Douglas Creek South of Rangeley.
Food carrying basket - same shape as one from Mantle Cave - with, presumably ancient cane raiding.
Recent canoe raiding, Pons, Colorado, Cooking, and modern California (?) basket. Yes, according to Thorne.


Spent night at Vernal, Utah.
October 5, 1947
Mantle Ranch.

Journal.


Looked at petroglyphs on Blue Mountain and on road to Pati Holes.

Warm, windy, dusty.
Journal

Visited Mantle Cave with Musbarm, Jennings, Jerome, and Charlie Mantle. Musbarm confirmed evidence of BM II occupation.

Dined out. Lunch.

In afternoon, dug test pit at Hellie midden. Will complete test later in week.

Visited Mantle family in evening. Looked at Mantle collection of artifacts. Their collection suggest occupation of terraces as well as of caves.

Oct. 7, 1947
Castle Park

Musbarm and I went with Charlie Mantle to Marigold Cave. Musbarm puzzled by masonry in use with slate piete and turtle back or mud. Found slab smeared with hematite paint.

Visited small canyon ruins on way home. Charlie Mantle says there never were masonry rooms in Marigold cave.
Journal.

October 8, 1947
Vernal, Utah.


Thorne has worked caves on Douglas Creek south of Moab.

Items in Thorne's Museum:

- Mummy in cedar box robe is all right for BM II.
- Thorne has never found a bow in caves in the region.
- Spectacular pictographs are at Dry Fork, 10 miles south of Vernal, not at Anderson's ranch.
October 7, 1947
Mantle Ranch.

Wheeler left for Santa Fe.
Returned to Castle Park. Camped again at old site of Mantle Ranch.
Visited Mantle family in evening.

Review of Castle Park archaeology with Wheeler confirms my belief in a "pure" occupation of the region by early Basket makers. Lack of heavy occupation does not mean late survival into Pueblo era.

Mr. Mantle says that terrace above Wells' miller has been plowed in times past—chance of finding houses is very slim.
Began trenches in Belli Midden. Screened debris by levels.

**Level I.** Upper stratum. At apex of midden this is a light brown sandy loam, overgrown with armuraria sage, up to 6 inches in diameter. This stratum deposited by natural erosion from ledge above. Occasional flakes, bones, and one arrow point intact. Toward wall of small cave under ledge the loam grades to sand and sandstone fragments from cave.

**Level II.** Rich black, ashy deposit. Mammal and fish bones (burned and broken) in proprains. Numerous flakes. Fragments of metates (or other stones) pitted, groomed, and curved. One mano from original pit dug Oct. 6. This stratum grades into level, sandy, indurated lens formed by scoggins along wall of cave. Evidently storm washed carried materials back from cave of midden into cave, producing clear laminations shown in his photograph.


See next page.
Sketch of Hell's Midden

Scale: $\frac{1}{4}'' = 1'$

Fish bones occur only in upper half of Level II

Not: This trench was dug at right angle to ledge, opposite end was marked (+) by cut in ledge. Trench backfilled after excavating was completed.

This trench was dug at maximum depth of midden, where refuse was dumped from ledge above.

Looking West (Downstream)

Sandstone Ledge

Level I

Level II

Level III

2' Sand

3' Sand & Gravel
Level II. Sand, charcoal, animal bones, and flaked implements. Fine gravel. Bone as plentiful as in upper levels. Stratum darker than Level III. above.

Level IV. Charcoal and chips occur in level at bottom of test trench. Refuse looks as rich and black as level above it. Trench abandoned — too deep and narrows for further work. Maximum depth of test hole in Level IV: 10 feet, below surface.

No trace of pottery in my test trench.
Completed test of Bell's Midden. Recommend excavation of east half of midden to obtain large series of artifacts.

Bell's Midden evidently formed by deposition from ledge above. Level II, and probably lower levels, formed by disposal of camp refuse from above during occupation. Level I formed by washed material (artifacts, soil, plant mold, and small stones) after abandonment.

Lenses in midden extend back into cave on the east—much compacted and mixed with sand from cave erosion. Lenses were traced from point of Scozzini's excavation west into dry loose mass of the midden where I excavated.

This morning I hired Jim Mantle, age 8; and Nancy Mantle, age 10, to screen the material that I shoveled up from the nine-foot level. Paid them one dollar each.

One specimen of the miniature arrowpoints (about 5/8" long) came from each of the three lenses below level I—that is, from II, III, and IV.

No trace of charred corn or corn cobs in midden.

Broken mace, mano, and numerous lodestone rocks, presumably from fire hearths, occur in Level II.

Backfilled trenches after taking photographs in rain.
Mantle Collection
Typical Specimen

October 11, 1947
Mantle Ranch
Blade
Natural Size
White Quartzite

Percussion Chipping

Mrs. Mantle has five of these (one is sugar quartz) from terraces along the river.

Thin in section.
Mantle Collection

Typical Specimens

Natural size slightly larger than average for the type.

Knife.

Common in Yampa Canyon.

Frequent breakage suggests use as a knife in wood handle.

Usually broken.

Presumably flaked.

Thin in section.

Range of forms:

- Rare
- Rare
- Rare
- Rare
- Common

(See above)
Mantle Collection

Typical specimen

Average

Natural size larger than average for the type.

Asymmetrical Blade
Rarely broken
Common in Yampa Canyon
Pressure floked.
Thin in section
March 11, 1947
Manitou Ranch

March Collectors

Typical specimen

Natural size
Slightly smaller than average for type

Chopper
Perforation flaked
Thick in section
Rarely broken
Common in Yampa Canyon
Manteo Collection

Typical Specimen

Obverse = Pressure Flaked on edge

Reverse = Natural percussion flake

Section = Concave-convex

Scraper made from curved percussion flakes, by pressure flaking of edge. Probably re-sharpened frequently.
Mantle Collection

Item: Knot made of twigs. Lee Scoggins material.

Item: Wood arrow (feathers gone, or never used?). Tapered point of "self" material. Nock is notched for bow string. Thomas Museum has bundle of these, feathered with white feathers.

Item: "Trigger" or "keeper" for snare.

Item: Cedar-bark mat. Wrapped around bundle of feathers. Mat held by twined cord and twined fibers & cedar bark.

Item: Cedar-bark bag. Held by coarse lengths of twined cedar bark.

Item: Jute-reed mat. Held by twined cordage at 8" intervals. Lee Duvango material.

Item: Mountain sheep-horn wrench.

Stem: Pottery apparently not coil-fired. Check this with Miss Shepard. One sherd has scar for handle. Mantle's sherds from vicinity of Johnson Draw seem to be same as in Thorne Museum. Tall rough pitcher—coarse rock temper—fire flashed. Shape of specimen in Thorne Museum:
Oct. 11, 1947
mantle Ranch

mantle Collection

Typical Specimens

Natural Size

Average for Type

Rarely broken, although fragile. Possibly never had utilitarian function.

Knife
Common in Yampa Canyon
Long, thin in section. Widest at midpoint, tapers to point at both ends.
Pressure flaked.
Mantle Collection

Typical Specimen

Drill

Usually broken

Pressure flaked

Common in Yampa Canyon
Hadlem's Camp. West end of Blue Mountain.
Has buffalo skull - possibly b. Taylori.

Thorne museum has huge buffalo skull.
Possibly b. Taylori.

Note: Hadlem's Camp is east 7 of jet. 2 miles on road from Blue Mountain to Elk Springs.
Trip in jeep to ridge between Johnson canyon on north and Bull Canyon on south. Bencelas 500 feet above river stream with flint chips and artifacts. Growth in piñon-juniper on ridges between gullies at top of cliffs and talus slopes overlooking canyons below. Wickerses numerous, and probably associated with artifacts and midden material.

Observed metate at this elevation. Arrowpoints are of no distinctive form.

Caves and shelters under rim rock, high above canyon floor, contain slab sites like those at river level.

Wickerses built of piñon and juniper poles. Some of these still stand against living trees and could not be more than 200 years old at the earliest.

Mrs. Mantle and the boys showed me all the sites between Castle Park and Harding Rode.
Oct. 13, 1947
Mantle Ranch

Journal

Worked in Mantle Cave until 2:30 P.M. This afternoon began the first heavy rain. Have had light rain every afternoon since Oct. 9 but this is the first sign of autumn storm.

Found proof of lower occupation in Mantle Cave — presumably Basket Maker, lies below rock fall. Obtained three sections of charcoal from lower level.

This level of occupation contains charcoal and ashes to depth of six inches, with burned and broken animal bones throughout.

Moccasin cists, as well as a few slab cists, occur on top of rock fall, so the prior age of the lower level of debris cannot be questioned.
Summary on Archaeology of Yampa Canyon

Tree-ring dates indicate agricultural occupation contemporaneous with San Juan BM II.

Shell midden, containing artifacts same as in Mantle Canyon, indicates long, intensive occupation of canyon. (Middens in association with caves occur elsewhere in the canyon.)

Deep charcoal stratum underlying rockfall in east end of cave proves occupation long prior to Puebloan occupation on top of rock fall.

Kicking associated with areas of flint working belong to a latent people. These occur on high benches 400 to 600 feet above the river. (The middens occur on terraces on the canyon floor.)

The cave culture of the Yampa occurs widely over Northwestern Colorado and Southwestern Utah. The association of painted potting is lacking in Yampa Canyon, (far north Barroglyphs, wood artifacts, atlatl weights, hatchet etc. correspond closely to classic BM II, except for absence of twisted work. Twining occurs only in matting and cedar bark bags. This complex (compare DuPont Cave and Durango), I consider to be BM 1½. Check Mohave for twisted sandals and bags from Cave du Pont.

(over)
Northern Peripheral as classificatory term must be restricted to Pueblo. The BM trail is more than transitory, and is "pure", without noticeable indication of decadent traits, laggard survival, or aberrant features that might be expected in a peripheral culture.

The conception of a pure BM occupation is in accord with the old notion of a widespread substratum of Basket Maker I (hypothetical).

Presence of pre-agricultural horizon is possible, but further excavation is needed to prove its existence.
Plants and Animals in Castle Park

goose-bud  Chickadee
hay-grass  Swallows
 Cheat grass (recent)

Thistle

goldenrod

Sunflowers (recent?)

Clover (recent)

Johnson grass (recent)

Rabbits (possibly)

Cedars

Wren

Juniper

Pinyon

Red Cedar

Cottonwood

Sage

Rabbit brush

Birch

Service Berry

Choke cherry

Box elder

Buffalo berry

Elderberry

Blue Current

Red Willow

Squaw brush

Yucca

Castor

Briarrose

Slippery elm (shrub: wild hollyhock)

Frisco

Sand lily

Sage lily

Squaw root round

Pinto tam-o-shanter

Wild honey willow

Mountain mahogany

Russian thistle (recent)
Scoggin's Reconnaissance Report.


Sled rides in the open at Site B14 and at Charley Wente's summer camp on Blue Mountain along Turner Creek.

Scoggin Site not in Ancestral Nat. Mon.

Brownie Park, Site "A" is located on the upper road to the sodere country from greystone (by way of big bend in Vermillion Creek) approximately in the N.W. cor. of sec. 17, T. 9 N., R. 101 W.

Big Bend (of Vermillion Creek) Brownie Park is located in sec. 31, T. 9 N., R. 101 W. on the east side of the creek.

Peterson Spring site and Peterson Spring Cave are located in sec. 5, T. 7 N., R. 101 W. (sometimes called Vaughn's spring).

Walker Spring site is located in section 1, T. 7 N., R. 101 W. at the former Bower Place.

Red Rock site is located in sec. 15, T. 6 N., R. 103 W.

Tweedle site is located in sec. 6, T. 7 N., R. 101 W. (sometimes called Jumbo Spring).
Journal:

Spent afternoon with Custodian Jesse Lombard at H&G Dinosaur Nat. Mon. Obtained wood specimens from Stilands Site 5 (1947 Reconnaissance) at Jones Hole. Potting more common west of green river than in Yampa canyon. Corrugated ware as well as grey ware. One specimen of scapula, roughly broken, may be similar to implements from Shumag rock shelter.
Two arrow foreshafts with stone points attached, one cane shaft. Foreshaft about 10 inches long.

[Diagram of arrow foreshaft with labels for wood and sinew]

Two bundle of tapered strands. Possibly 200 in the group. Corn fiber, from Mellenje collection.
Wood Specimens sent to Gila Ruins 10-29-47

Field No. 47D1

Provenience

Fallen pine from bench 400 ft. above river at Harding's hole.
NE 1/4 Sec. 22 T6N. R102W.

47D2

Pine section of wickup pole.
From same as 47D1.

47D3

Cedar section of wickup pole.
From same as 47D1.

47D4

Charred wood from site 5, Jones Hole, Dinosaur Nat. Mon. To be returned to custodian.

47D5

Charred wood.
From same as 47D4.

47D6

Charcoal from mantles case below rockfall in deep section dug by Scoggins, Section E-1 on Scoggins map.

47D7

Stick from surface, mantles case.

47D8

Stick from surface, mantles case.


Conclusions

Upper level of Well's Midden only shows evidence of agriculture? Might corn have been introduced to existing population?
3-ply cord can be detected by amount of twist, which is more nearly at right angles to axis: 3-ply = x 2-ply = y
Petroglyphs in Brownie Park on Green River at upper end of Lodore Canyon.
Reported by C. F. Edgerton,
1607 S. Delaware,
Tulsa, Oklahoma.

Horse figures and goats in Vermillion Canyon on west face of north entrance of Vermillion canyon on road from Maybell to Lodore. Known to ranchers in the region.
May 28, 1948

Reconnaissance Trip & Survey, Nat. Mon.

R.H. Lister
R.F. Burch

Data Required:

- 6 copies of topo. map. 1945.
- Condition of roads, bridges, for trucks and cars. Condition in wet and dry weather.
- Mileages for supplies, mail, repairs, gasoline.
- Purchase of gasoline at Mantle Ranch.

Location of field camp:

- Water
- Fuel
- Swimming
- Work areas
- Drainage for tents and vehicles
- Latrine
- Shade
- Fire Hazard

- Lumber
- Dynamite
- Wheelbarrow

Can Lombard accompany Rodeo into Castle Park?

Date of arrival in June.
Sick time from Boulder to Blue Mnt. turn-off.

Can Lombard take Rodeck in if road impossible for car?

Storage of camp outfit at mantles ranch.

Purchase of eggs, meat, and vegetables from mantles.

Rental for tent.

Buy tire pump, tire tools, lug wrench, tire patch.

Crowbars for Park Service.

Fuel & water, refrigeration for Botanical Section.

Saddle and pack horses for Botanical Section. Rates and availability.

Storage of herbarium equipment and specimens.

Tourist camps for June 16.

Jones = plane at Vernal. Horse trip up river.
    Trail to Upper.
<table>
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<th>Road Log</th>
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<th>Time</th>
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<td>6389</td>
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<tr>
<td>Craig</td>
<td>6565</td>
<td>10:15 PM</td>
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<td>Jensen to Mon. Mtr.</td>
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<td>Jensen to Vernal.</td>
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<td>Turn-off</td>
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<tr>
<td>Left Turn across deep arroyo</td>
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<td></td>
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<tr>
<td>Cattle guard</td>
<td>7.9</td>
<td></td>
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<tr>
<td>Left Turn, Jct. Top of grade</td>
<td>12.5</td>
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</table>
Vernel 67 0 9 7 11 miles.
Juneau 67 2 1

Follow best road from Top of Grade, to Fire Cache.

Three-way fork, turn right on right fork. 18.2

Reservoir
Cross wagon trail 18.9

Cross
Jot with wagon trail from left 20.0
Keep straight ahead
Cross wagon trail 20.2

Reservoir 20.3

"Reverse" Jot from left. Keep straight ahead. 22.4

Jot with road left. Keep straight ahead. 24.5

Wire gate & Jot. Keep right. 24.9

Jot with Harper Corner Road.
Turn right down long steep grade 25.4
Harper Road impossible. Fire cache, fence posts, & boundary sign at Jot.

Jot with Chew Road. Keep right. 35.9
Schoolhouse, 39.8
Wattle Ranch 43.0
May 29

Get state clearance for mammal collection.

Thorne Collection, Vernal:
One pair and one extra yampa moccasin
One pair fremont moccasin

Discussion of Utah University:
Jennings going to Utah.
Bugs killed guano on Harding Hole road.
1936 2-ton truck for camp is available, also Army Carry all.

Sowbark away June 14 for June 19 at Castle Park

Wolfe and Dunn saw have apartment until Lombard's return.

Lombard can carry girls on field trip.

No mattresses available.

Kit of fire tools for 10 men, and back-pack. Lombard will deliver.

Contact state on trapping Charlie's beaver.
Rile Chew also does beaver.
Send Lombard picture of head-dress.
Bette Ahears came with basket in it.
Lombard has power plant available.

Check cliff house at Harper's Corner - across green River below Echo Park.

Take extra gas for Ahears truck. Key is on present tag.

Take fire cache and wheelbarrow in shed.
Take tent poles from overhead.

Horse hire doubtful for girls - horses wild.
Park Service won't recommend local horses.

Take fire tools for ten.
Take one bench-cut in two.

For message to Lombard telephone Rocky Mt. evening before for radio message.

Bain's Flying Service, Vernal.
Cessna 2-place for $10 hr.
Mantle Ranch

Camp in old orchard

Fresh beef and vegetables available.

Caution on firearms.
Additional equipment:

2 25 gallon gasoline drums.
<table>
<thead>
<tr>
<th>Item</th>
<th>Quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Eggs</td>
<td>1 doz.</td>
</tr>
<tr>
<td>Bread</td>
<td>2 loaves</td>
</tr>
<tr>
<td>Pepper</td>
<td>1 box</td>
</tr>
<tr>
<td>Chipped beef</td>
<td>1 #</td>
</tr>
<tr>
<td>Coffee</td>
<td>1 #</td>
</tr>
<tr>
<td>Sugar</td>
<td>1 #</td>
</tr>
<tr>
<td>Bacon</td>
<td>1 #</td>
</tr>
<tr>
<td>Wiener</td>
<td>1 #</td>
</tr>
<tr>
<td>Milk</td>
<td>3 pws</td>
</tr>
<tr>
<td>Hash</td>
<td>2 pws</td>
</tr>
<tr>
<td>Corn</td>
<td>2 pws</td>
</tr>
<tr>
<td>Preserves</td>
<td>1 pwa</td>
</tr>
<tr>
<td>Apricots</td>
<td>2 pws</td>
</tr>
<tr>
<td>Berries</td>
<td>2 pws</td>
</tr>
<tr>
<td>Grapefruit slices</td>
<td>2 cans</td>
</tr>
<tr>
<td>Oranges</td>
<td>½ doz.</td>
</tr>
<tr>
<td>Potatoes</td>
<td>5 lbs</td>
</tr>
<tr>
<td>Onions</td>
<td>2 lbs</td>
</tr>
<tr>
<td>Salt</td>
<td></td>
</tr>
</tbody>
</table>