To the Grand Canyon out Return.
July 19 - Aug. 7, 1928

Vernon Bailey
July 19, 1928

Left Washington, D.C. capital
finished at 1 PM for the
Grand Canyon, at request of
the Park Service of Carnegie Unit
to help with their Nature Education
Program. The request was from
Dr. John C. Merriam, to especially
correlate present fauna and flora
with the Geological ages traced
up from the bottom of the Canyon
to the tops, but it is a part of
the Big Plan to open to the public
a better understanding of natural history
and outdoor knowledge and values
through the great nature laboratories
of our National Parks.

As I see it, my best work will
be with the Park rangers of Nature
guides who will help going any
work we can get started there.
The original conception of Dr. Child Mierian—when he planned the San Francisco Mountain Expedition in 1869—of a biological section of the earth including the five zones from lower Sonoran in the Grand Canyon up to Transition and Canadian on top of the rim and through Canadian, Hudsonian, and Arctic Alpine on the San Francisco Peaks just south of the canyon at insight of the rim, carrying plant and animal life from the upper edge of the Tropics clear to the Arctic climate will apply to the present studies. In fact we only need to put in practice
results of the
and bring out the survey one
made at that time, and that were
graphically published in
North American Fauna No. 3.

This fauna will be my first
and starting point but I
hope to get plenty of
illustrations of animal and
plant life in relation to the
zonal distribution as well as
to their more appealing interest
to all of us at first hand
and close range. I am hoping
to bring in many of the small
animals alive to be really seen
and appreciated by the hotel guests
and tourists who come in
and out of the Park.
As I leave Washington the day is considered hot, probably 95° but clouds are gathering and a thunderstorm will probably cool the air before night.

The capital limited is comfortable, smooth and swift so that after an hour's sleep I feel like settling down to a most enjoyable nap.

The country despite of poor soil is rich in verdure and in places bright with wildflowers. A pink silence is the most abundant and conspicuous flowers along the railroad where it seems to have grown from gardens.
White daisies, yarrow and elderberry blooms hold:
parts of the remedy and
in places a faintly goldenrod
suggest autumn. Deep orange
wildweeds (Aster ericoides)
show up in spots and many
other flowers are nowhere
local. Farther along there
scarlet red trumpet cypers
give a rich touch to the dusty
vinery foliage and a few
purple joe pie weeds are
beginning to blossom.

On the whole the country is
beautiful in a quiet way but
the printing season is here
and whether the brightness of
spring nor the richness of autumn
The wheat is cut and shocked and shovelled in, then stacked or barned. Corn is knee high to waist high and occasionally a patch on low ground looks promising. Fruit trees, apples and pears, seem to be well loaded in some acres and mostly empty in others. Vegetables in home gardens are generally spotty but with many exceptions.

Later in the day we reach the head of waters of the Potomac with the high elevation and delightful coolness of the mountains.
July 20. After a delicious cool night woke up in northern Indiana rushing across the land country and making the first time necessary for a 18-hour trip between Washington and Chicago. Got up at 10 and breakfast at 8 o'clock only to find we had changed time of it was only 7.

But the country is beautiful and the air delicious. Crops are good vegetation rich and dense. Winter wheat and corn are in the thick know about as tall as on the western slope but dark green and heavy stemed spring what red and red rust spring ripe potatoes and sweet potatoes look promising and fruit has as generally fruitful. It is a good rich border farm county.
which agriculture supports the farmer instead of the farmer having to support agriculture.

The life zone of this part of the trip is Upper Sonoran, about the same as at Washington to a comparison of the floral and faunal elements is not necessary. The main differences are in geology and soil.

As we near the southern shore, John Muir, at least the sand dune formation with its great variety of red and white vegetation conditions, affecting plant and animal life. Numerous tule and cat-tail marshes and sloughs suggest good sites for muskrat farms. The sandy soil near the lake shore would also be good for cultivated blueberries if properly managed with marsh much, as the lake protects for part.
Chicago meets you a little farther out on each trip through it.

I would like to see a map of the city in September of 1870 when I first rode clear through it in a covered wagon, as I remember it 20 miles of deep sandy road between rows of unpainted yellow or gray board houses with wooden sidewalks and no pavéd streets. It was a long hard days travel at a slow steady pull before we got through the city to a cherrut place to camp on the prairie beyond, with our two covered wagons, my father and mother, two brothers and two sisters of which I was next to the youngest, a year old.
Today I took the Blue Line light-railway bus and rode about 45 miles around the city. In about 2½ hours.

One hundred years ago Chicago consisted of 4 log cabins beside Ft. Dearborn which had just been rebuilt after the Indian invasion of 1812 when the whole settlement was destroyed. In 1871 when the city burned 70,000 people were made homeless, about a quarter of the population. Now there are over 3,000,000 and still growing.

Went to the Field Museum and spent an hour in the group of mammals. Was struck by the excellent group of western elk
from the Olympic Mts., collected
and mounted by Carl E. Akeley,
and hope I can get a photograph
of the group for my Oregon Rep.
The old bull elk has the typical
short, heavy, web-tipped horns
of Cerbus c. novovulturn, very
like those of the hog and the elks,
and general character of the
species were recognizable
before I got near enough to
read the label. The mounting
and setting are up to Akeley's
best and would make a wonderful
picture.

The Akeley memorial hall
is the finest feature of the museum
but contains only a part of his work.
Went next to the Art Gallery (Chicago Institute of Art) and greatly enjoyed the rich collections there. It is such a satisfaction to find Rembrandts, Gainsboors, Carpets, Millets, Troyouses, Bists, Troyouses French pictures instead of the modern stuff I recently saw at the Detroit Art Gallery. There was a lot of modern work here too but none of a pedest and disgusting type. The statuary is mostly classical and the more recent work is by Daniel C. French St. Gaudens and some of Rodins best pieces. A full length
statue of Lincoln is probably the same as the big bronze statue in Lincoln Park, but the bus didn't stop to let us see it closely. St. Gaudens' Lincoln in Lincoln Park is fine and stands out in good light which it does not in the Lincoln Memorial in Washington.

The parks in Chicago are the most numerous and extensive any city I know covers well equipped with lakes for boating and swimming and with play grounds, conservatories, a good zoo, and many educational and recreational features.
July 21, Daylight of Roswell.

Mr. and I watched the fields go by till we crossed the Missouri River, then got up and finished breakfast as we pulled into Kansas City at 8 A.M. Left Kansas City at 9.

In crossing the Missouri River Valley the rice seed is evident in the good crops where properly cared for and otherwise in the luxuriant growth of weeds. Unfortunately most of the fields produce only weeds than escape or many fields are grown up to weeds or used as coarse pastures of weeds and grass.

On almost any extensive area seen the yields of crops could be more than doubled with intelligent husbandry of the land and with less need labor than is now in most cases wasted on it. Farm engineering ought to be a most attractive science.
The Missouri Valley then must be
clay to the edge of Iowa. Southerly
Corn is high in most of it already,
but mostly in the shade. There is
unmistakable advance in this area
over any place we have crossed
in Maryland or Indiana.
It is been a rainy season, checks
and vegetation are abundant.
Sunflowers are also comflowers
and dandelions, violets. There is
knots of pink book-end, white daisies
blossoms, while moving glades and a just
other inconspicuous flowers but the
flowering season is at its best yet.
I heard an eastern woodchuck
just before crossing the Missouri River
but have not yet heard the western.
Thought I heard a distant skylark.

Crossing The Missouri at Hard
1829 and along the Kaw Valley between
Kansas City, Wichita

Early potatoes are up at being dug and stacked in large fields, thousands of acres of them. Alfalfa is in blossom and some fields have been cut. Groups of hogs are cmon along the Caw River bottoms.

Corn is big and heavily noodled. Grapevines lead the trees along the roadbanks. Cottonwoods and willows are abundant and would find thousands of doves.

Water is high and muddy in the Caw but no signs of flood this year.

There are some fine farms heard the first western meadowlark between Topeka and Emporia and lots of them farther along.

From Hutchinson west the county is hilly and dry and lots are largely grazed alfalfa. They're pretty good this year as there has been plenty of rain.
With better culture and less weeds they would be twice as good. Sunflowers are abundant but rather unprofitable weeds as they furnish rich seeds for stock and birds and mice. Even the tumble weeds have a use for they furnish a favorite food for birds and mice, and could probably be used for mulches on roads to yield a good weed..

Cool and delightful after the rain.
July 22, Sunday 3 supp

Daylight on the high mesa country near Raton, N.M., and I got up as our Pullman

left Las Vegas at 6:30 AM.

There has been lots of rain and the country

is greasy. The pinyons and junipers are full of green and well rounded.

Crops are greening—lots of little dry

farming patches and there are many

flowers in blossom.

Crossed the Pecos River at Rika

and had a good view of the old Spanish

mission of San Miguel just below.

Not much snow on the south side of

Pecos Bluff and Tewotos Peaks.

Over the rampart of Glorietta and
down to Rancho and into the Rio Pecos

Valley. Dry and dusty outside

but not uncomfortable in the

well aired California sleeping

car and Winslow of Oklahoma

before dark.
July 23. Left Williams for the Grand Canyon about 6 AM and saw the sunset on the desert and San Francisco Mts. Watched the range for life zones, prairie dogs etc. all the way. We arrived at the edge of the Canyon at 8 AM. Found a room reserved for me at the El Tovar Hotel, and was met by Dr. Fred Wright and Edwin W. Kee. Mr. Elliotson, park superintendent, took Dr. Wright and Glen Elward, the park naturalist, and we went to Havasupi Point where we had a wonderful view of that part.
9th canyon as is described in the
comparatively near the depth
of its initiation of the old
canyons of the canyon that would
were...
small plants of grasses. An open juniper and Katipin forest borders both sides of the road and affords shade and shelter. There is no open water but a drainage tank of sixteen supply the range station and would water a few antelope and later a larger tank could be added. The conditions would be ideal for antelope while those down in the Indian Gardens are almost tiring off the extreme heat, panting violently all the time during the heat of the day, saw a few lambs dries that hung around the hotels El Zorro etc.
and eat the flowers in the hotel garden but are more attractive than all the flowers. They were brought over from the south side of the campus and are doing well here.

If the range cattle were permitted to eat up every green thing along this rim of the Park could be eliminated we could have deer and antelope all through these beautiful yellow pine and nut pine forests and some day it will come to be. Also mountain sheep could come up over the rim and be a welcome part of the Park fauna.
July 24. Helped the boys set out traps and woke up okies to get them started on a collection of mammals, birds and reptiles which they need here.

Gave a brief talk at the little museum building at Yavapai Point on the animals of the Canyon and another in the evening at the campfire.
July 25 - Started across the Canyon with Capt. Fildon, his wife, and two children, Glen and Jean, and Glen Sturdevant on mule back with a pack mule to carry our extra baggage. Sturdevant and I started ahead so we could stop at Hunt Bighorn and callvet plants but were overtaken by the rest of the party. Reached the Phantom Ranch near mouth of Ophir Angel Creek about 5:30 and stayed over night. Set traps and prepared specimens in evening and caught 3 species of Peruvian frogs before we went to bed.
It seemed natural to go up in the hot lower season zone with the pungent odor of Bracken and the thin shade of mosquitoes and to sleep on top of the covers on a screened porch. The temperature to day was only 106° in the shade but has been 116° this summer. The campers do not cool off soon at night and is rather funny. I feel the heat more than I used to and had to be careful not to over exert myself. Could not drink enough water to cool my engine, but later acquired the habit.
Found an interesting lot of lizards in the canyon including one that I never saw before with a banded tail like a gila monster. It may be the young of the Chuckawalla but is not yet old enough to be very different shaped. Could not find a Chuckawalla tho they are said to be fairly common. Collard lizards were common, also Cnemophorus, Sceloporus magister, a herd of little Sceloporus deserti and Holbrookiæ. Got all we could for specimens and will have them identified later.
July 24 - Followed up Bright Angel Trail Creek through a deep canyon for some miles, then out into more open valley, lunched at Ribbon Falls, a beautiful spot and continued up the splendid new trail past Roaring Springs to the top at Bright Angel Point at the great hotel, called the Lodge, on the North Rim. Was delighted to find students of botany or ornithology for some miles along the trail opposite Roaring Springs and got photographs and seeds of it.
Get our dinner as early as possible at the hotel and then went out -- a big car to see the dunes, along the road north about 18 miles through the open valley known as the VT Ranch. Found lots of dunes of course roughly from the car 9 1/2 on the way out but did not count near all of them.

They come into the long meadows and open valley to just a tiny wild clover that grows in great abundance and should be introduced where corn does not raise. They were just digging it up by
Beautful old buck came in
from the forest all around.
Were in bunches sometimes
a dozen or so huddled together
or a lot of does et 
I
or all mixed up or scattered
out. The bucks had full grown

antlers on the velvet & I
never saw so many sets of
huge antlers bigger. It
seemed as if half the does
were old bucks but the new
lots of spotted fawns et al
all looked plump et sleek et
happy et they were not
afraid of us. A dozen old
bucks would raise their
heads and gaze as we or we went by an so put away with about as much interest as if we were a passing car. I mean unless we treated them to get them out of the road. It was a sight the thrill the soul of anyone but a hunter. Caught two porcupines on the way and brought a young one back to the hotel to show the people.

Nearly froze as I went without a hood and had to turn up my coat collar and tie notwithstanding over my head of wishing both
The whole drive except the start was through pure Canadian forest above 8500 ft and it felt good to get back to the hotel among the yellow pines at 8100 feet and feel the warm air come up out of the canyon. Slept with all the covers over me in a nice warm log cabin close to the hotel and the porcupines we brought back stayed quietly behind the stove in our corner of our room.
July 24. Went out to the Ranger Station & set traps for pocket gophers, shot a chipmunk & wood rat & red squirrel & caught 3 Callorhinchus & in traps set last night by flash light caught 3 Peromyscus manchurica, a Neotoma lugubris & a Eutamias dorsalis & utahensis.

In afternoon went with the Head Ranger, Frank Wissell to Far View Point gone 8 miles east on the rim of Marble Canyon where I could look all over the Painted Desert Country across Marble Canyon, up the Canyon of the Little Colorado & got a good view of Navajo Mountain in the distance.
Got some photographs of Ed. Laws of Ranch, one of the park rangers, and found he was a \textit{tartedum\textit{a}} and knows a lot of the animals. He told me about 25 mountain sheep down on this side of the Canyon below here that he had seen last winter.

Got Charles Merriam and Glen E. Stuart want to make up specimens and I worked with them showing them all I could of the Canyon. In evening gave a talk...
In a lecture room on the animal life of the campus and told the personage on a table for illustration. He behaved nicely and allowed the people to stick his performer very quietly. There were probably so people in the audience.

In walking went out with Charles Murie—a nature walks with a dozen or so people and he gave them a lot of good information. He is a fine boy and people like him but a little more enthusiasm would make his talks more inspiring.
July 27. - Gathered a few more specimens and started back across the canyon about 10 o'clock and lunched near the overhanging ledge before reaching Roaring Springs. Reached Phantom Ranch about 5 PM and stayed all night. Caught a rock rattler about three feet long near our tent and put it in a gummed sack to be photographed in the morning. Scratched my fingers as one of its teeth as I bit go of it in the back and drew blood but got no poison in ad no more effects.
If I could scare it on a pin, such as blood out of after supper put a little iodine on it to prevent infection and went moving could scarcely find the place.

Got some fine live specimens of the Ceratocephalus tillilatus and Sceloporus clarki majestis at the power house. A man has to dead them for me with a nozzle on a pitchpole.

Sitting after supper of my I went to bed and two

My tone lips in our hips and 3 species of Porcupine + a Rhinocerontemys in the others.

Not a very hot day.
July 28: Got a fairly early start up the south side of the Canyon, after taking moving pictures of the rattlesnake and trying to get a chuck-walla. Came back by way of Indian Gardens where the Antelope are but saw only 2. The old buck is close. The rest were off in the brush but those two were eating cactus buds in the shade by the ranger's house and were so tame they would let me pet them and would not go out in the hot sun to be photographed.
The doe very thin and not in good shape but the buck is fine and smooth and plump. Both were feeling the heat badly and painting all the time in the shade they could find. There is abundance of food for them, both green and dry sod grass and browse. They eat all the leaves of a large case bush as high as they can reach and all food of the leaves of peach and apple trees and many of the native bushes. Short dry grass, Plantago, Fillaree, and many little green grass along the water edges are available as well as Hesperis Campestris, Eratia, Chrysanthemum and others because plants.
40

Reached El Tovar about 4 P.M.

tired but with a great feeling of accomplishment and full of the壮丽

and wonders of the Grand Canyon.

Took a bath and got into clean

clothes and rested and after

supper gave a talk on Carlston

cavern with a set of slides

at the hotel.

Then went down to the

camp fire and heard part of

a talk on Geology by

Steward. Next day,

helped make up skins and stuffed

the rattlesnake with sand.

We then cooked all some of it

and all agreed that it was good.
July 28

Helped wake up specimens and sort 4, rushed waste of the day. Gave a talk on Carlsbad Cavern in evening at the hotel with a set of lantern slides found there and not being used. Then went down to camp fire and heard part of a talk on The Geology of the Canyon by Sturtevant.

Had an easy day and felt much rested up.

At 11 A.M. Mr. Davis and his daughter and party of a dozen or so came to the Narafki Point Museum.
where they were given talks on the geology of the canyon by Stulwagen and W. Kuehne. Then I talked to them on the animal life of the canyon. I gave the Secretary's daughter a box of tobacco that I had picked up by the trail. At lunch in the El Tovar Hotel the Secretary called me over to his table where I enjoyed a delightful visit between him and his daughter. She had the box of tobacco in a paper box and when last seen on the train asked Catching Plans for it.
July 30, Wrote letters and notes
and colored some maps and
got out my lantern slides and
in evening gave a talk on
the Animal life of the Grand
Canyon country, illustrating
it with life size maps, types of
vegetation of the 4 zones present
and then showing most of the
mammals of the region.
Had a good lecture hall in the
El Tovar, a good lantern and
very appreciative audience.
Had to stay nearly an hour
after the lecture to talk of
answer questions but gave
them the best I could.
Aug. 1.- Started for Flagstaff with Superintendent Libbittsen and his daughter Gene and Eddy 
Mc Ken by way of the Camp and the little Colorado, the Cameron ranch and painted Desert, 
then back around the east side of 
San Francisco Mountains, about 85 miles with fairly good road nearly 
the way. Found the great way as published in 1889 approximately correct, but was able to define 
the lower portion of the little Colorado valley more definitely as 
not including all below the edge 
the junipers and spruce pines but 
restricted to the lower valley of the river.
The lower Sequoia of the little Colorado Valley is indicated by Colocarya semasiussissima, Thamnophis guttatus, Agave utahensis, Queca argutifolia, with a two foot high spars.

In the lower part of Grand Canyon, Atriplex tile carnescens but the same as grows in the Grand Canyon at the Mohave Desert, Echinocereus leontii, Coctus engelmanni, Opuntia engelmanni, Opuntia clavata, very spiny Opuntia with fine white spines is in Grand Canyon Atriplex carpenteri, Bigelovia of 3 species, Gutierrezia of two species.

By Crotalophytes taileri, Sceloporus magister, Anisoplophora cinerariae, Bowmans perplexus. Generally the zone is very bare and somewhat unified with upper zones species.
Aug. 3. Prof. H.S. Colton in charge
the Archaeological and general museum
he at Flagstaff took his big Black
Car & took Eddy McKee & me
up San Francisco Mountain on
the new road now completed almost
to the top of Agassiz Peak, a
wonderful trip for scenery &
life gone studies. We then went
to the top of the peak & we went
well above timberline. After
The road winds up the south side
of the mountain & around into
the old crater east of the next peak
south of Agassiz & then across
the east face of Agassiz above
timberline onto the saddle to
the north of Paola along the peaks.
The grades is easy and woodbed good, the last nights heavy rain had rolled a lot grades into it.

Found the hike your way approximately correct but with a few slight additions to it, adding more Canadian guns to the NW slopes of Eldon Mountain connecting Hudsonian over the saddles between the 7 peaks of the old crater rim.

Our lower edge of douglas spares is also the lower edge Aspen and Pines flatlets of can well be swapped as Canadian while the species of fir you are above is mainly Canadian with the dwarf firs.
of foxtail pine and Picea engelmanni.

Abies amegrae near the Hudsonia.

There seems to be no old snow on the peaks. This morning we hiked on the N.E. side of Humphreys Peak, where we could not see but a lot of fresh snow or overall hail from last night's storm is still lying on cold upper slopes.

Found Callistemon phillyrius and
Eutamia brevicaulis with Service up to timberline and abundance of Clark's Carns, juneaes and
homing birds. Two banded taild
pigeon swept close to us over one of
the saddles at timberline.
Came back down to Prop. Colton's beautiful home on the mesa above Flagstaff and had a delicious lunch with the family, Mrs. Colton and a 14 year old son.

Went through Colton's laboratory where he is experimenting with biped white rats moving the plant put at birth and studying the effects of biped lips on toes and muscles of the rats through numerous generations. He has a well equipped laboratory with an assistant and is doing really careful scientific work. Also he is in charge of the museum at Flagstaff.
Mrs. Colton is an artist and has done beautiful paintings of the Grand Canyon, Painted Desert, and many scenes of this region. She has a remarkable studio of her own design, like an Indian adobe with all north light.

This windows in the house are all picture windows with views of the San Francisco Peaks or out over the valley and big yellow pine forest, a most interesting pair of with a boy of quiet but original mind.
Aug. 3 - Left Flagstaff for home at 8:10 A.M. Santa Fe, Calif. limited. 
Cool and pleasant after the rains of not hot all day, even in the Rio Grande Valley at Isleta and Albuquerque where we arrived at 6:15 and left at 7 P.M. 
There has been considerable rain all along, the grass is good when not over stocked or overgrazed.

The Little Colorado was over the banks day before yesterday and the water a foot deep in the hotel at Winslow. Today it is down to a narrow stream on one side of the bed of the river.
Aug. 4 - A cold night over the Raton Pass and I wished I had a second blanket over me. Got up at 5 a.m. in a beautiful bright world with lush green all around out of doors. It has been raining and is a good year for stock.

Farther east crops are good and eastern Kansas is boring.

It is pretty rainy and some crops are spoiled.

Reached Kansas City after dark.

A cool and comfortable day.

Aug. 5 - Reached Chicago at 11 a.m.,
Cool and Cloudy, Left 12:45.
Aug. 4. Arrived Lansing, Mich. 7 P.M. and went to Downing Hotel for the night.

Aug. 7. Out to North American fur farm to inspect pens and cages where muskrats are being placed for breeding purposes, made exercise wheels and suggested some changes in methods of handling the animals.

The lake where a pair of muskrats was found last spring contains numerous snapping turtles as well as a few nins and ranging around its mouth is the everlast, of
the muskrats are reported not very numerous.
Left for Washington 7:45 PM
Aug. 7. Arrived Washington 10 PM