

Mexican Boundary
1849-50

Robt. B. B.

1849

California

1849-50

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Field Note-Book -

Botany: & Geology -

U. S. Boundary Commission

1849 & 50

Chas C. Parry

No 1

Anastasio - Capitán yumas



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Panama. June 5th 1849. Description
of plant. No 1 Nat Ord. (Myrtaceae)?

Flowers small, in fascicles 3 to 5, bracted,
; corolla, campanulate, slightly 5-lobed
lobes emarginate, with a tuft of
glandular hairs at the interval of the
lobes, interior smooth exterior glandular
pubescent, - pedicels elongated in
fruit; Stamens 1 to 2, partly exserted
anthers one celled. pollen large, granular
; stigma capitate, style as long as
the stamens, - fruit obconic
arranged somewhat in threes on
elongated, divaricate, pedicels, regularly
3 ridged, ridges beset with glands.

Leaves, broad-ovate, obscurely serrate
opposite, on the ^{knotted} jointed stem, ~~some~~ leaf
on one side smaller than its opposite
with smaller fascicles of leaves or flowers
in the axil. stems procumbent ascending,

Hab. Terraced pavements, about the town
of Panama. flowers expanded only in the
shade a cloudy weather! - C. C. P.

Borhavin -

Note. A plant very similar in habit to
this was found in the desert, west of the
Cordilleras, and must be a closely allied
species. It was further interesting in being
associated with another plant, almost a precise
congener with, a companion of the similar
one in Panama. (see species)

Kallstroemia

July 14th First day at San Diego. and delightfully pleasant one, the air is bracing, and agreeably tempered by sea breezes. - The bay is a beautiful sheet of water - the entrance, facing the South, hemmed in by narrow long points of Sea beach, & sheltered from the N.W. by the high promontory of Pt. Loma. The entrance itself is not more than a stone's throw across, and the anchorage ground is close up to the landing. 4 miles from the town, of San Diego - This latter is situated at the N. head of the bay, and looks out over the bay, and low point of beach that breaks off the ocean swell. - The town itself is elevated 10 to 20 ft above the low marshy bottom, in the rainy season submerged. back of the town a high steep hill rises, surmounted by an adobe fort. Ft Stockton. - The houses are mostly of sun dried brick (adobe) and a plaza of course some tolerable looking gardens. &c. All the Commissioners are now on the ground.

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including the Mexican Commissioners — and
the work of the Survey may now expect to be
pushed on. We are ordered, forthwith by Mr. Emory
to join the Astronomical Camp. ("Camp Riley")
at the southern part of the bay, near the
Line of Survey, accordingly start after
breakfast in an ambulance drawn by
4 mules, following along the edge of the
high table land to the east of the bay.

The Country is a plain, with a tree to be
seen, treeless mountains rise to our left
and the arid firmly baked soil, is
spotted with a profusion of singular shrubs
and plants, among these most conspicuous
is a species of frost plant, patching the ground
now in full flower, different species
of Adenocaulis. Isoetes arborea (Willd.)
and many others which will be noticed
in due time & place. The Camp is
situated about 12 miles from Town

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on a pretty rise, overlooking the bay
and now for another touch at Camp, life
July 15th (Sunday) Day fine as usual
thermometer usually ranging between
63° & 80.°

July 16th Commence botanical
specifications - Every thing is new,
among the plants particularly noticed is
Platanus Mexicana, the only tree to be
found of similar habit but smaller than
the Sycamore of the States, growing on
the moist borders of now dried up streams
water is found by digging in the sand a
foot or so. the pebbles in the ^{dry} bed of the
brooks are coated with a white saline
substance, and the water tastes brackish
Saline plants are common. Salsola &c
Notice a large Papaveraceous plant not
described in Torr & Gray, see Description No

The *Calycadenia tenella*, is common on the now parched soil, mostly dried up. said to be a nourishing food for horses. & cattle eaten when dry, or fresh. it is covered with a resinous substance, & exhalates a pleasant aroma. Another plant still more common is *Hemizonia*. - a yellow weed allied to the last, and covering every where the arid hills giving a distinct yellow appearance to the landscape.

July 17th (Sick & laid up in a hammock)
 July 18th Writing out a description of the Frost plant. - A shell after dinner affords with other plants undetermined, *Phaca Canescens*?
Lupinus, *Lepidus* (Dougl) - and *Eulobus Californicus* as singular, Onagraceous plant, A plant of the gentian family, the "heal all" of the Californians. - They have also, a sattlesnake weed, "herba del bebrona" an Umbelliferous

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plant now in seed, its reputed virtues
as much vaunted, and probably as worthless
as those of other regions. - rattlesnakes
are said to be plenty, but have not
yet seen any only their tails. - The
most abundant game is a large species
of hare, inhabiting the Atacama plain.
Deer are found on the mountains,
and wolves are frequent. - to say nothing
of fleas, which infest our ranchos to the
great annoyance of every one but me
who don't mind them

July 19th - Called to see a sick man in Mr Gray's
camp. - near by, in low, waste places
notice a large species of *Datura*,
with the sensible, and probably medicinal
qualities of *Stramonium*. -; there is also
a wild, Cucurbitaceous. plant, resembling
a pumpkin. large flowers. no fruit seen.

An Ambrosia looking plant, Franseria
(parviflora)? - a species of the Mexican
soap plant; - In the afternoon 3
miles from camp find beautiful
flowering specimens of Photinia arbutifolia
a handsome shrub or small tree with
dense, deep foliage. - On the sandy beach
near camp there is a species of Cuscuta
principally attached to Salsola -
The day is fine & comfortable even
with a temperature of 80°F .

July 20. Our Camp is beginning to assume
something of a military aspect, with
sentinels parading up & down. the astronomical
instruments are being fixed, though the nights
are frequently cloudy precluding observations
Capt Hadcastle started off to day for the
mountains, to select places for observation
The Colorado is represented as very high

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overflowing its banks, and from several parties we have rumours of a new river having broken out in the desert.

July 21st - Day fine, clouded in the afternoon, and the evenings, overcast so as to preclude observation.

July 22^d (Sunday) Walk to the sea beach about 3 miles, on our way came upon a large rattlesnake which I was within a step of lighting on, but he gave me a loud warning and got killed for his trouble. They resemble the Prairie rattlesnakes of States, but shorter, fangs $\frac{1}{4}$ inch long.

The sea beach is a sand bar running up towards Pt Loma to shut off the bay. On dry hard soil near the sea, a species of Cactus, hemispherical, and beset with sharp thorns, *Echinocactus Viridescens*? or not?

another beautiful Columnar species was also seen growing in dense patches, making in all 5 species of this family about here. Nights cool. and still cloudy -

July 23^d Making observations on magnetic ^{an} instrument and no bar rising about, night Cloudy. Thermometer 64°.

July 24th Observing. & writing letters day fine night again cloudy -

July 25th Day as usual, night clear & spent in observation of the Transit Instrument.

26th Plants, *Oenothera viridescens*, *O. biolorata*, *O. micrantha*, - a species of Sage. Letter to Dr. Torrey.

27th Day warm. - writing letters -

In the afternoon take a walk to the 1st ledge of hills. having a well defined edge. with steep sides. furrowed out. by sharp hollows and surmounted by a variously elevated table, the edge following the sinuosity of the valley. near the summit there is an old crop of coarse brown sandstone. - the overlying drift deposits of rounded pebbles. - This peculiar formation characterises the scenery the neighbouring hills. showing a flat summit. of various elevations and, furrowed, steep sloping sides the higher peaks, assuming the form of truncated pyramids while the distant mountains form a striking contrast being disposed in sharp irregular ridges. of probably granitic formation. -

On the summit of the hills the singular globe cactus is abundant & a singular pink flower, with wide spread dichotomous cyanes. & no leaves. The wide spread Yarrow also - and a species of *Cuscuta*! - At the foot of the hill find a twining milk-weed and the interesting *Acousta*.

I also saw a *Parantula*, like a large black spider, of formidable appearance, whose bite is venomous & fatal. -

July 28th Day fine - Plants, *Triglochin* for

July 29. (Sunday) Walk with Prof. Wooley to the rancho of Don Antonio 5 miles from camp, towards the mountains. The road follows a valley, the stream now dried up or standing in pools. The edges generally

fringed with *Platanus mexicana*
 and coarse plants, & grasses, - the
 narrow valley bounded by the tabulated
 hills on the right, and gently swelling
 rises on the left, - approaching the
 rancho the table land assumes a striking
 appearance, its smooth sides rising to
 a considerable height, and almost
 entirely bare of vegetation, - on the
 opposite side, is an outburst of ~~trap~~ rock
 rising, in broken knolls, to an equal
 height, but ridges in general outline
 and similar to the higher ridges that
 swell up to the mountains, the rock
 is dense, fissile, and fracture of bright
 greenish colour, with disseminated crystals.
 At the base of this, is a sizable stream
 which by damming affords water for
 irrigation, The soil in the low-
 land is of excellent quality, and

was supporting a fine growth of maize
 just belling out, - pumpkin vines
 mullans & beans were also in good
 condition. on higher ground was a field
 of wheat, fully ripe, with remarkably
 fine heads and the grains surpassing
 in size and plumpness anything I
 ever saw. a good deal of land might
 be made available for this crop, which
 has time to ripen before the height of
 the dry season. Maize cannot thrive
 without artificial irrigation - About the
 trap rocks, were Echinocacti of remarkable
 size one measured more than a yard in
 circumference, and 18 inches high, with
 its stout thick set spines, making quite
 a formidable appearance, among other
 plants, found the beautiful *Fauschneia*

July 30th Day rather h.A. night pleasant with light clouds, enough to obscure observation

July 31st Nothing worthy of note

Aug 1st Day warm, evening cool.

Aug 2^d Engaged in a reconnaissance on the Southern meridian line for determining the initial point of the boundary - some dispute is likely to arise in reference to the starting point, laid down in the treaty "as the southern point of the bay," the difference between high & low water mark, making a mile's difference in running the southern line, one marine league (18,000 ft) - taking the starting point at high water mark a due south line to the range of hills. w. () and assuming this

at the point the line would run a short
 distance above the line of broken hills
 these rise up quite steep from the
 sandy plain. 150. to 250 ft. their sides
 show a drift deposit of layers of coarse
 sand & pebbles, the higher table shaped
 peaks exhibit an exposure of Sand rock
baseness, is the characteristic feature of
 the scenery. Echinocactus. &c. common
 on the edges of a singular Valley. running
 N & S. notice a singular shrubby species
 of Euphorbia? with dense milky juice
 an leafless, also a scarlet Silene
 on the boundary line running toward
 the sea. find Hocksackia. prostratus, &
 a plant resembling polygonum. On the
 hill sides, the Styphonia. serrata. is
 common. as a spreading green shrub.
 its fruit is coated with a pulpy scarlet
 substance, intensely acid. like the species

of Rhus to which it is allied—

Aug 3^d. Continue the reconnaissance—

Aug 4th Measuring, from the high water point, to the water's edge. N.— The land is a low flat, of bare perfectly even sandy patches covered with saline deposits. — The moister parts covered with *Salsola*, and other saline plants cut up with wending *Ethanasia*, whose transit involved a great loss of patience, & gain of mud, a similar shore bounds the entire southern part of the bay.—

Aug 5th (Sunday) — Day warm: The "California" arrived at San Diego, this afternoon from San Francisco, bringing news of plenty of gold, mobs &c.

Aug 6th Via Lambien today. Arrs.

Aug 7th Complete the survey. - Kill a rattlesnake. plants. *Eurothera pinatapida* a species of Agave. — VC —

Aug 8th ——— " —

Aug 9th ——— " do. —

Aug 10th On this day we have been 4 weeks in California. during which time. we have had uninterrupted fine weather. occasionally cloudy but no rain — The vegetation has become still more parched. and a dead brown is the prevailing colour on the arid hills. The frost plant. is mostly dried up. & the characteristic. *Hemizonia*. gone to seed even the Artemesias. look faded — and the abundant shrub. — is turning its pink blossoms to the prevailing brown.

Aug 11th Start early - this morning with
 Capt Handcastle, on an exploring tour
 to the ridge of mountain on the
 east mounted on mules. with an
 escort of 2 soldiers, we take our course
 up the valley before described. to the
 Rancho of Don Antonio who joined our
 party as pilot - the valley, narrowing
 and winding, among the lower ridges
 in the course of 6 miles brought us
 to the foot of the mountainous
 ridges, the object of our search. -
 Commenced the ascent about 2 P.M.
 Capt H, and Don Antonio, mounted on
 mules, I preferring the aid of my own
 legs - the first swells are of moderate
 height: clothed with a few stunted
 bushes, between these and the steep
 mountainous ridges. is a deep furrowed
 valley, receiving the gutter like trenches

that come down the mountain sides
 in the season of rains, no doubt furnishing
 an impetuous, and variable stream. But
 more entirely dry - at the bottom of the
 valley is a species of live oak, moderate
 size, leaves deeply toothed. like *Q. Emoryi*.
 There is also common, species of scrub
 oak in dense thickets (leaves variable
 entire or toothed) commencing the steep
 ascent of the mountains, a variety of singular
 shrubs make their appearance, including
 a *Ceanothus*. — — —

higher up the progress becomes still more
 impeded by a dense growth of *Arctostaphylos*
 ? in the form of a dense straggling bush
 with smooth bark, peeling off - and locked
 in with dead branches, also a singular shrub
 with remarkable, finely divided leaves
 covered with a sticky resinous substance
 of a balsamic scent, and completely painted
Chamaecyparis

Mamodana

with our arms & legs - It was out of
 flower and its fading leaves, were
 being supplanted with the new, it
 grows like the *Archostaphylos* in dense
 patches, and the ascent was rendered
 still more laborious by its sticky
 character, often fairly gluing us to the
 spot, an alternation of these shrubs
 clothes the mountains to their summit
 the rocks are exposed, on the perpendicular
 ridges in large blocks, similar in
 character throughout, I suppose a kind of
 basalt, reaching the summit of the ridge
 with extreme difficulty, a singular & desolate
 view is presented, on all sides, ridges
 smoothed by the distance, to a uniform brown,
 tint with alternate swell, and depression
 heels & windmills, present the
 extreme picture of desolation, to the Eastward
 the steep sides present a singular mottled

white appearance, due as I am informed
 to a new form of granitic rock - winding
 at the base of these ridges narrow valleys
 occasionally variegated by a line of trees,
 give a little variety to an otherwise uninter-
 rupted scene of desolation. To the west the sea
 is visible covered with a misty haze,
 and before sunset, a beautiful mirage
 was conspicuous, a wide sea smooth as a
 mirror and set off with shining points
 and wooded islands, seemed to lie
 directly at the foot of the mountain, but
 time did not allow us to contemplate
 the beauties of this imaginary scene
 our experience of torn breeches & scratched
 legs taught us that no "facile decensus"
 was before us. - we accordingly, after an hasty
 barometric observation, which gave our
 height. . . commenced our descent by
 a more direct course than our ascent

we however soon became involved
 in the most inextricable thickets
 and our way was a continued struggle
 vainly endeavoring to better our condition
 by choosing the deep choked up gullies on
 the more open precipitous ridges -
 darkness however came on us still
 in our dilemma, groping down a deep
 precipitous gully, the head of the deep
 valley before mentioned, so we stumbled
 along, occasionally falling through a
 nest of dead branches or helping one
 another down. the jumping places of
 the winter Cataracts. during the descent
 my companion a soldier suggested the idea
 of making a night camp. but after a
 little rest, we again plodded on, reaching
 the foot of the valley we look to the ridges
 on our left towards camp, occasionally
 stopping to rest, when we generally slept

crossing over to the valley in which our camp lay, we got above it and bewildered and tired, crawled under the shade of some willows, and waited for the moon to rise after a skimming sleep the moon made its appearance and by her light we made camp $\frac{1}{4}$ mile off about 3 o'clock —

Aug 12th (Sunday) returned to camp Riley stopping to take a lunch at the rancho of Don Antonio, near camp our pack mule ran away scattering packing in every direction including a fine sextant — this with a broken barometer & lost Thermometer completed our fruitless expedition —

Aug 13th A day of rest

Aug 14th. 15th. ~~16th~~. Tambien. —

Aug 16th - Steam en Panama arrived this morning from Panama, bringing dates from the States to 26th June (no letters) The day was remarkable for a drizzly rain, not enough to moisten the parched ground -

Aug 17th A hot day for this climate Thermometer $83^{\circ} F$, rather unwell

Aug 18. Another hot day, but breezy.

Aug 19th ^(Sunday) The hottest day of the season Thermometer $86^{\circ} F$. -

Aug 20th (Monday) - nada. -

Aug 21 - Arrival of quite a body of Emigrants from the States by over-land route in crossing the Colorado. They were robbed and lost 2 men taken prisoners by a large body of Indians, in fulfilment of the report of the new river crossing the desert, by which the longest point from water to water is 24 miles.

Aug 22^d A grand fundango up town to celebrate the erection of the 1st Brick house news of a ship below, from Panama in May last. most of the provisions of the Commission were shipped on board this vessel and are all eaten up. What shall we do? No, no say.

Aug 23^d 24th 25th 26th 27th Nothing of importance. The nights have been generally clear, and observations good, the Latitude of this place is near $32^{\circ}-35'-40''$. Straglers from the ships below continue to arrive. There are now 3 vessels in the same plight & short distance below -

Aug 28th A heavy foggy morning. The first I have seen. -

Aug 29th Hazy. writing home. -

Aug 30th Hear that the Steamer "Oregon" from Panama has passed here being crowded with passengers - "The Panama" is expected to leave San Francisco the 1st ult. -

Aug 31st Studying the Cactaceae about of which there are 5. different species, representing 3 of the genera. Opuntia, Echinocactus, and Pesceus. — There is but one other genus to be found north of the tropics, viz Mammillaria of which several species are to be found on the Gila — The expedition to the mouth of the Gila. is expected to start the 6th of next month —

September 1st Hazy —

Sep. 2^d to 6th Preparing for the Gila. weather hazy — on the 5th the "Panama" arrived from San Francisco with rumoured news of Col. Wallers removal — on the 6th start for town —

Sept. 7th Town of San Diego — visit the remains of the old town. The oldest settlement in this country. its adobe walls still in considerable preservation. on the top of the hill overlooking the town, is a battery

- fort. built in the war with Mexico by
Com - Stockton - A single palm-tree
grows at the foot of the hill -

Sep. 8th Start in the afternoon. for camp
at the mission of San Diego - (just before
starting our cook Lucas. killed an Indian
by knocking in his head by a stone.) -

The Mission lies directly up the valley
of San Diego river 5 miles - The bed of
this river is now only a sandy plain
lying between high sandy bluffs, the
traces of the winter stream are marked
by a bed of deep sand, spangled with minute
scales of mica - good water is obtained by
digging one or 2 feet in this bed, which
thus leeches out its tribute to the bay -
The bluffs on each side about 200 ft high -
exhibit by an occasional break on the side
drift deposits of the same character as
the bed of the river. Proceeding upward

the bottom land swells out into plain susceptible of cultivation - The mission is situated on a promontory extending into this plain, and facing the west.

Sept. 4. 9th [Sunday.] The mission of San Diego is the earliest establishment of the kind in this country - being founded by the Franciscans in 1769. - Its spacious buildings, now falling to decay, and gardens exhibiting the taste, as well as the enterprise of its possessors, - are fast losing these marks of former grandeur, under the ruthless hand of war & military occupation. The spacious courtyard is now a place for mules, and the sacred precincts and chambers are occupied as military barracks - some of the furniture still remains, in the shape of huge Dominican chairs, which are

beginning to undergo the naturalizing process of withering. Some fine paintings and images still remain in the church where unceasing has long ceased to burn. The vaults - wine cellars, and other continuances, show that the old monks were not unmindful of creature comforts. There is also quite a library, which I did not get an opportunity of seeing.

The grounds directly below the mission were enclosed in adobe walls, still in tolerable preservation. There are thickly set out with Olive trees, still in good condition & bearing plentifully. Some of them were 12 to 18 inches in diameter, and from their long lived nature will probably be the last relics of its ancient glory. The tree is quite hardy, branching low down, with thick silvery foliage resembling in aspect some of

the three willows, but better proportioned.
 The fruit is now green - Interspersed
 with these are Pomegranate trees
 showing the effect of want of attention
 but otherwise luxuriant and bearing
 fruit & flowers (not ripe yet) - Another
 portion of the enclosure is devoted to
 the vine which lacking for some
 years the hand of the cultivator, and
 knife of the pruner is straggling
 over the ground. And its rich fruit
 is getting scarce & ill flavoured we
 however made out to regale ourselves
 with a quantum sufficient, despite of
 the government proclamation, and
 blessed the good monks for their
 disinterested (!) generosity to posterity.
 There is besides, a species of cactus
 planted about the walls, for the double
 purpose of fruit, & defence. It grows

very large, and acquires considerable of a trunk, but is not very thorny. It is an *Opuntia* of class *Elliptica*. - joint obovate, 6 by 12. inches - The fruit is sugary but rather flat. - I believe native sugar is made from it -

There are some remains of peach & pear trees, but these are the first to wither from neglect. - And these constitute all the permanent remains of monkish enterprise, which formerly held such unlimited sway over the Indians, making them seek to add to their wealth and splendour, while they secured in return, a limited subsistence and the benedictions of mother church. All the missions in this country lost their influence with the decay of Spanish power and the revolution, of 1836. for independence gave them a finishing blow. A priest is

now not to be seen —

Sept 10th Notes of preparation, hallooing of teamsters, — busmishing of arms, and all the bustle incident, to a start for the morrow —

Sept 11th Strike camp, about 10. A.M. taking a N. East. Course, over the hills the road chosen being, a more direct course to Warner's Ranch than, by San Pasqual — surmounting, several steep ascents the highest of which commands a view of the valley behind us, extending to the ocean, — from this point, a series of descents, with intervening vales & ridges, shuts in our view, to the mountain ranges, which before us rise up in bare rocky ridges, the smaller hills presenting, occasional clumps, of the same granitic formation, — (coarse grained, and easily disintegrating)

thence, by a gully descent, we fall again into the upper part of the valley from which we started, which here furnishes a running stream of pure limpid water, its margin ^{edged} with a variety of trees, of which a small aspen, - the Mexican Sycamore, and a tree-like species of Alder, a foot or more in diameter undergrowth of willows, a climbing species of vine, a straggling Rubus and several of the Compositae order - on the surface of the brook is found floating a filicoid plant. - The valley itself spreads out on one side into a wide plain of tolerably good soil, but requiring irrigation, for the purposes of cultivation. 12 miles from the mission, we come to the ranch of Don Miguel - whose occupant Don Jose Marie, - treated us with melons, whiskey, cheese & tortillas - Pitch camp on the edge of the stream in its vicinity - the bare granite ridges here are directly

in our path, and must be surmounted
tomorrow —

Sep 12th Strike camp about 9 A.M. —
Our course westerly, up the valley on which
we encamped, bare mountain peaks are
on our right — the summits fantastically
crowned with irregular blocky masses
the lower hills on our right exhibiting
the same formation, but mostly covered
with soil & shrubbery — as the valley
becomes more elevated & narrow the
live oak makes its appearance, a fine
spreading tree, with thick deep green
foliage, 30 to 50 ft. — The stream here
vanishes and with it the prevailing
foliage mentioned below — In about 4 miles
we take to the mountains on our right
here losing their bare character & present-
ing a long sloping hill, with a wide
gully, scooping down its side — on the

left side of this the road winds, and here
 was labour for our loaded wagons & mules
 the teams were obliged to be doubled and
 the wagons held up by a dozen men
 by this slow & laborious process most
 of the teams reached the mountain top
 about 1500 feet above the valley
 in the afternoon, from its top the view
 extends over a series of swells & depressions
 marking the course of the mountain range
 nearly N. & S. - some of naked rock, others
 less elevated, spread with soil & a bushy
 vegetation - as (see pg 20. ~~see~~) the ridge
 crossed forming the flank of the range of
 precipitous hills which had been to the
 right of our path in the morning, we
 make a descent into a contracted valley
 & thence by a series of ridges & depressions
 mainly in the direction of our course
 N.E. the day gets pretty well spent and
 we find night overtaking us, in a

circular vale 5 miles from water
 most of the train not having reached
 even this point - Here the mules
 were unhitched, and a cavalcade
 formed. For water, we galloped off
 the top of the next ridge gently
 slopes to an elevated valley thickly
 grown with live-oak, & the road
 tolerably smooth & level, on this
 night overtook us, and we made a
 brook of water after dark, here
 watering our animals we pushed on
 on league to the rancho of Don Santa
 Maria, &c where we put
 up for the night on a mellow supper
 & no bed at all save saddles & horse-
 blankets - There seemed no evident
 change in the geological formation
 a coarse grained granite, easily distinguished
 resembling the formation at Acapulco, Mexico.

Sep 13th Rather a lame day, waiting at the Ranch for the coming up of the teams, & 4 or 5 of them came up in the afternoon, — as we shall be detained a day or more, details are reserved —

Sep 14. — The Rancho of Santa Maria is situated on the main road from San Diego to Warner's, 2 Leagues from San Pasqual, and is the place where Gen Kearney camped 5th Dec. 1846. the night before the battle of San Pasqual. (see May Emory's Report) — by our new road we have shortened the distance, 3 Leagues or so, but the hilly portion of the road has been bad on our loaded teams, probably waggons have never crossed before. — The ranch here situated is ^{on the edge of} a remarkable upland plain, spreading out for several miles and surrounded by mountain ranges

a magnificent spring bursts out ~~at~~ ^{base} the
~~edge~~ ^{base} of a gravelly ridge. That bounds
 the plain to the S. & West, bubbling
 up with a sulphuretted gas. and
 issuing a clear stream sufficiently
 elevated to furnish irrigation to the
 plain below which is of a very fertile
 soil, but totally uncultivated. The
 plain is mostly destitute of trees
 on all sides are outburst of granite
 rocks, in knolls or ridges, and an
 occasional (live-oak.) (*Quercus* ^{-californica?} ~~myrica~~)
 The ridges, observe the general direction
 of the mountain ranges, (or NW. & SE.)
 they exhibit a varying character from
 a coarse, quartzose easily disintegrating
 granite, to close-grained dyenitic, of which
 the purer forms present excellent specimens
 The quartzose however predominates and
 seems to constitute the mass of the

bare mountain peaks, which tower up
 in dislocated peaks, & ridges, to the
 westward, ^{and before} — We are some 15 miles from
 the Rancho San Isabel our next stopping
 place. The loaded waggons have not all
 come in to night but are a short distance
 behind. We get a supply of Mellons. Here
 about 2 seals, a piece — Plants, a species
 of Ranunculus, Pteris, —
 Adiantum? — , Salvia, — is here
 abundant. —

Sep. 15th The last of the teams, came up
 to day, to make another start tomorrow.
 A mean of 4 Barometric observations gives
 28,686 — which gives altitude above the sea

Sep 16th (Sunday). Thermometer at sun rise 50°
 Start about 7. in a north East course to the
 extremity of the plain. here crossing a rocky
 spur we enter on a narrow valley, wooded

with live-oak, and cotton wood along
 the borders of a dried up stream,
 occasionally spreading out into bushy
 prairie, pursuing our course we cross
 the spurs of ranges of hills, crossing our
 course again following up Live oak
 growths, which here seems to grow
 on the sides & top of all the smaller
 hills, - several of the hills crossed
 exhibit a deposit of flesh colored
 feldspar with quartz crystals & black
 crystals of (Tourmaline)? - the principal
 formation does not vary, consisting of
 different varieties of the quartzose
 granite, about 4 P.M. winding round
 the edge of a hill we come in sight
 of the Rancho San Isabel, situated
 in the lap of lofty hills. the valley
 watered by a brisk running stream, the
 Rio Isabel on whose banks we encamp

Sep. 17th Remain in camp at San Isabel.
 observations for Latitude by Lt Whipple make this
 place $33^{\circ}-14$. - a mean of 4 descents
 of the Barometer gives, $27.232\frac{1}{2}$.

This location was formerly a mission
 the buildings still remain, and the cultivos
 grounds yield an abundance of luscious
 grapes. now fully ripe. There is also an
 abundance of peaches, of tolerable quality
 Pears, & even apples, are also here, which
 with melons, fit us out pretty amply in the
 fruit line. To which from long privation
 we did as ample justice, — The Rio Isabel
 comes from the N.E., and crossing our trail
 passing to the W. — it is fine dashing brook
 about a stude across, and 6 or 8 inches deep
 the water of temperature 57° following up
 the stream to its debouché among the hills
 it rolls over its rocky bed, with considerable
 impetus, by diverting it at some point

above abundance of water might be
 procured for irrigation of the plain below
 but on the rocky nature of its margin
 might make it a work of much labour.
 The Mission gardens are situated on
 a narrow plain formed in an elbow
 of the stream, and though small in extent
 is capable of producing an abundance of
 fruit. It is held as sort of common
 property by the Indians, and any endowments
 from sale go into a fund as I am informed.
 - On some of the lower spurs of bare
 rock which jut into the stream, is an
 exposure of rock alternating with the
 common quartzite, but assuming something
 of a talcose appearance, and the grain
 disposed in perpendicular courses, - it is
 probably the gold bearing formation and
 deserves more attentive examination than
 I could give it - I did not observe any

veins, the formation itself being somewhat limited and passing into the common coarse quartzose rock - found in rocky crevices, several species of fern, also the *Cercocarpus parvifolius*, with its spire-plumed seeds -

Sep 18th An early start. Thermometer at sunrise $46^{\circ}F$ - Take our course N.E. up a branch of the San Isabel valley, having bare mountain ridges on our right and lower wooded hills on our left with a narrow valley between in which are large Sycamores, and a thick growth of grass, and bottom weeds. This valley pursuing a pretty uniform course ^{at right angles} emerges by a rocky ~~Can~~ ^{Cañada} into the broader plain of the Agua Caliente. We leave Wamers ranch to the left and turn down the valley, tending to a South East course. The valley is wide and meadow-like, our course on the right side is, mostly along, coarse sandy ridges.

the rough disintegration of the prevailing
 rock. The hills adjoining are bushy, and
 several new shrubs make their appearance.
 There is likewise a different growth of
 plants, along our gravelly path - 2 or 3
 miles from Warner's, we come upon the
 plain beaten road leading to Los Angeles, distant
 about 100 miles. This is the main travelled
 road, from Mexico, & Southern States, via the Gulf
 to California, and we have now a plain road
 before us, on striking the road we continue
 an ascent of some distance, the road
 finely shaded by large live oak, with quite
 a variety of new plants & shrubs. The
 summit of this divide may be the water shed
 between the Pacific & Gulf of California, at
 any rate we must have crossed it to day
 and it lies somewhere between San Mateo
 & San Felipe. The descent leads to an
 open valley & small brook at its base.

showing an eastern water course, we pass
 on our right a high mountain ridge its
 summit & rounded sides covered with a
 pine species, of tapering pyramidal shape
 before us another high ridge, comb up
 with bare & precipitous sides more than
 a thousand feet. at its base the valley
 widens into a ^{grass} plain, and keeping near
 the edge of the ridges to our left we
 encamp surrounded by an amphitheater of
 desolate looking mountains near the Indian
 village of San Telipe. The soil here shows
 a saline character, evidenced by the growth
 of *Sarcobata*, and saline efflorescence. The
 water is also brackish - The distance we
 have hauled to day must be over 20
 miles - A direct route to San Isabel is
 only about 4 hrs ride in a nearly direct
 west course, but is impracticable for
 waggons - but safe enough for Pack animals

Sep 19th Leave San Tellipe - taking a
 South East course over a sandy valley
 with mountains on each side. The
 mountains are entirely destitute of
 trees and almost of vegetation. Their
 general outline of peaks, & ridges
 being plainly marked, the rocks
 mostly of quartz and flaked with mica
 show marks of dislocation in some
 places regularly seams, with white
 quartz veins, having a regular dip
 to the S.E., varying from 16° to 25° .
 The valley itself of coarse gravelly
 sand supports only a growth of arid
 seeking plants & shrubs. Of the latter
 the *Larrea Mexicana*, makes its first
 appearance and is characteristic of our
 whole route. Several cacti appear
 including a *Cereus*, a cylindric *Opuntia*,
 an small elliptic *Opuntia*, and an

Echinocactus, the latter varying from
 globose to trunk form 6 inches in
 diameter & often 3 ft high, spines
 long & curved — There is also a
 singular shrub, with stiff stems rising
 in a bunch, from near the ground
 thickly set with thorns & in the axils
 of each thorn a bunch of ^{myale} leaves, and
 no branches, giving a singular appearance
 (no flower or fruit seen) — ^{of cedar, also appears} a shrub species
 One road crossing several ^{short} ridges, leading
 down into sandy valleys of the same
 character, at length cuts its way
 through the mountain ridges by a
 narrow, & prolonged pass, the road
 in some places closely hemmed in
 by rude rocks on both sides rising
 20 or 30 ft, with barely room for the
 passage of a waggon, in one place
 there is a steep pitch as of a

mountain torrent, which the road
 has to avoid by taking to the right bank
 descending by an almost perpendicular
 curve to the pass again, which in the
 time of rain is doubtless the bed of
 an impetuous stream — The rock on
 each side exhibits a singular character,
 mostly of a talcose slaty character with
 the direction of the layers, strongly
 inclined, ^{sometimes} ~~and~~ ^{ways} varying, from Quartzose
 to talcose slaty. — The Pass emerges to
 another dry valley, encompassed with
 the same high mountains, the path
 inclining more to the East, we encamp
 in an angle, (called, El Puerto,) formed
 by ~~the diverging of the~~ in an ^{entering} ~~oblique~~
 angle of the range of hills to our
 left in the cleft of which is a
 springy pond and a patch of grass
 and so terminates a dry hot ride

of 10 miles, the thermometer at 3 PM
 98°F. meet here an emigrant party
 from The States via the Gila—who
 have come through with waggons
 report a large train in their rear
 some in a destitute condition —

Sep 20 We leave El Puerto, and crossing a
 steep rocky ridge that bounded our camp
 to the East, come down upon a somewhat lower
 valley, of the same character as described
 yesterday and similar vegetation. The singular
 stiff stemmed shrub. mentioned yesterday is
 abundant ~~also~~ I suppose it to be the *Tougea*
spinosa (see Emorys Report) the agave. & Creosote
 bush. with a cylindric *Opuntia* are characteristic.
 The valley pursuing a nearly direct East
 course, in about 3 miles shows a green
 turf / and willows, indicating the presence of
 water. it is the Vallecito, or little valley

and derives its fertility from several springs which drain from the base of the northern range of hills, highly charged with sulphur. The larger spring discharges a good sized stream of water. From this Oasis we have now desert fairly before us. The day has been intensely hot, with the Thermometer in the shade at one time standing $102^{\circ} F$, exposed to sun $140^{\circ} F$. The geological features are similar the surrounding hills mostly of white quartz rock are almost entirely bare & present a singular ashy appearance the height is diminishing in our course and the Barometer on 3 readings indicates a mean of . . . from which the computed height above the sea is . . . feet.

Sep. 21st An intensely hot. thermometer
 106° in the shade, and 125° exposed — we
 tie up for the day, and make a start
 about 5 P.M. for Cariso Creek. 15 miles
 the course S.E. down the valley which
 bounded by barren mountains on each
 side, gradually diminishing in size, the
 bed of the valley is a deep sand and
 on a gradual descent is washed out
 into beds of streams, now dry, but
 showing traces of extensive floods.
 The growth is principally the Agave,
 Fouquieria — Larrea, the common
 chenopodiaceous shrub, and a canescent
 thorny bush, like Chapparral — As night
 closed we continued our course, under
 the light of a young moon, in about
 8 miles we came upon the clump
 of Palm trees, mentioned by Mr. Emory
 on the right left side of the valley

the water at the spring varied in quality that I tasted being distinctly salt & bitter unfit to swallow - Pursuing our way in the darkness by midnight we came to our camp ground on Cariso Creek called "Cariso" here there was no grass or fodder of any kind for the animals and the water though pleasant enough tasted was generally refused by the horses & mules -

Sep 22. The reveille sounded about sun rise, and we made preparations for our day's journey which is to be a severe one, being 25 miles to water over the plain of the desert which now lies distinctly before us Cariso Creek lies within deep ^{low} banks and at the place of our camp is a running stream ~~running~~ flowing over

a shallow and shifting sand-bed running to the ^{or} East, by a tortuous course following down in the direction of its bed, about a mile below it disappears in the sand, and crossing its dry bed several times, we continued for 3 miles in its singular valley surrounded by high and irregular sand buttes, showing distinct stratification and generally topped at a varying distance 30 to 80 ft with rough rounded pebbles. The washing of the sand hills, expose shining flakes of gypsum, sparkling in the distance the hills some of them are of considerable height, and Ann Kate pyramid shape rising above the level plain of the desert, - to which we mount by a steep hill - the mountains on either side are entirely bare and present a lava ~~land~~ like aspect -

by a steep, clayey hill 80 ft +
 mounting then, to the plain of the
 desert - It is at first bedded with
 the pebble deposit mentioned, as capping
 the valley hills, our course is a little
 south of east the plain of various
 elevations and depressions is now before
 us. ~~a little~~ to the south a chain of
 mountains extend, with a large isolated
 peak. (called by Lieut Whipple "Signal Mount"
 nearly directly in our course, to the
 north as far as the eye could reach
~~stretch~~ a regular range of moderate
 sized mountains, skirts the view -
 Desolation in the extreme is the
 prevailing character of the scenery
 The Tongue, gives place to the
 persistent Larrea, of stunted growth
 this with the Chenopodiaceous plant
 almost complete the flora, where the
 soil is of better character as on the

edges of dried up streams the Prosopis,
 and Chapparral are found - the sun
 meanwhile beat down with an intense
 and withering heat, mounting to 109. in
 the shade, while the ^{little} wind that
 occasionally fanned us was of a
 simoon hotness - the poor animals
 could hardly move through the occasion-
 ally deep sand - The diagonals were
 dismounted - and thirst added to the other
 disagreeables, capped the climax of our
 distresses. - in this state of things we
 were obliged to lie by an hour or two
 at mid day. There had been some
 signs of rain, in the sky but the arid
 desert seemed anything but likely as the
 recipient of such bounty - and it was more
 in joke than earnest that the subject
 was talked of - continuing our journey
 about 3 P.M. we noticed a singular light

here in the hills to our north. This
 increased in density and bulk till
 it enveloped the mountains and
 seemed to stand upon the plain to
 the north of us like a wall of smoke.
 At length it became sensibly nearer
 to us stretching at the same time from
 east to west & some light irregular
 clouds stretching to our zenith and
 dropping an occasional pattern rain
 drops - but the singular body of clouds
 to the north soon absorbed all
 attention, it was seen distinctly
 increasing in density and rolling toward
 us with a steady movement. At length
 it closed upon us, accompanied with
 a strong wind from the same quarter
 and obscuring the sky with clouds of
 sand, this was succeeded by rain & hail
 borne on a heavy gust, to which we

were fain to turn our backs at length the rain poured a perfect deluge and continuing 2 hours or so literally made "the desert" "standing pools of water" as the night closed upon us. we were still 4 or 5 miles from camp on the borders of the lake, to which we were now descending a sandy ridge. the road was converted into a perfect sheet of water obliterating our track, and knee deep in water though this our mules splashed for 2 miles. there was a swift current setting to the South, near abreast of "Signal mountain," - missing the track we were put right by a fire kindled by the advance party and, shuffling through bog & holes reached camp about 10 P.M. on the southern side of a fresh water lake and 25 miles from Carrizo Creek

Sep 23^d The Lake on which we were
 encamped is a collection of rain water
 formed in a natural basin, determined
 by the consistent nature of the soil
 as its drainage cannot be very extensive.
 Its existence as a lake must depend on
 the supply from rains, which having
 been uncommonly heavy & prolonged
 this season, have made quite a sizeable
 body of water ^{$\frac{1}{2}$ mile} in its position corresponds
 to the Salt Lake of May Emory, but it
 certainly has no such character now.
 It lies in a direction $S. 11^{\circ} E. N. 15^{\circ} W$
 from the peak of Signal Mountain, ^{about 5 miles distant}
 and $E. 10^{\circ} S$ from Pyramid Hill, in the
 direction of our course. It is bordered
 by Mesquite trees and its borders support
 a thick growth of Amaranth, weed 10 ft
 high and 3 inches through, this is the only
 fodder for animals the Mesquite with

being abundant. — We started in the morning with the teams that had survived the yesterday's labor on a course about the same as previous day. — The country appears revived under the influence of the rain, and the soil, of a more clayey character, supports a growth of Mesquite, and in some places complete thickets of Amaranthus. water stands in puddles along the ground — turning Northward at first we cross the seeming bed of a stream. to be traced along our whole route on the South and finally merging into New River. The heavy growth of Mesquite, bordering often a foot in diameter, shows that it is no new feature, and the slope of the land inclining to it from the North & South necessarily makes it the natural drain. In about 8 miles we come upon a lake in its course, and 7 miles farther extending

over a flat clayey plain, we arrive at
camp on new river, where there is an
abundance of grass —

Sep 24th The position of our camp is
ENE ~~WSE~~ ^{N 60 E} from Signal Mountain, and a range
of mountains, part of the same ridge lie
on our south, extending to SSE, and one
isolated ridge in the distance due SE.
The ridge abreast of our camp is less than
12 miles distant and is bare & ridgy —
the range of mountains to the north is still
distance apparently 30 to 50 miles. — The
New River on the Southern edge of our camp
is of sluggish stagnant water, without current
only at certain narrow points where a current
sets to the west, it is doubtless nothing new
or different from what we might expect
from the natural lie of the country & ^{char-}acter
of soil — it is in fact only a prolonged

lake with different elevations, to account for
 partial currents. Its bottom this season
 at least would be capable of cultivation
 and probably at all seasons would furnish
 water on digging a short depth - There is
 a growth of long grass in the bottom and
 many aquatic plants, a wild ground &c.
 the level plain above is gullied out
 by rains sending their tribute to this
 desert river - The most interesting feature
 however of this camp is the appearance of
 extensive beds of grass (probably *Arthrochloa*)
 It grows in patches thickly carpeting the
 ground with a soft green, growing about 8
 inches - it grows principally in small depressions
 on the level plain the soil a fine loamy
 sand. The *Larrea*, is the only shrub, and
 with its box like green, sets off the dry
 desert like an elegant pleasure ground
 more striking from contrast - The grass

is an excellent fodder, and sets our half-starved animals crazy with eagerness. The grass may be a new species and if so should have the name of Chandrosia desertorum. I noticed isolated specimens on the Eastern slope of the mountains - connected with this grass is frequent a small aromatic plant of the Compositae order - also 2 plants almost precisely similar to 2 plants I noticed growing together in the streets of Panama! there is also here a plant of Malvaceae. -

On the face of the ground at different points 3 or 4 varieties of shells are seen one are (~~abundant~~ *abundant*?) - thin & fragile, found often in beds with both valves closed, seeming a lacustrine deposit, also a Planorbis - and a small univalve. - These no doubt furnish an important key to the geological formation which must be fresh water deposits -

The day has been oppressively hot -

25th Remain at "grain grass Camp" & record our animals. some of the broken down teams are still behind, making observation for Lat + Long. also Magnetic & Barometric. the last indicates a level not far, if at all above the sea —

Sep 26th Walk out to the mountain range South of our Camp — crossing the river whose bottom is thickly covered with Mesquite. — Across thus, aquatic plants on the other side in patches is a species of grass which affords good fodder growing in moist places very rank with a stalk often 6 ft it is easily pulled up and is the principal source of hay collected by the emigrants for their grassless journey — ascending the opposite bank, the plain assumes a similar character to the other side, with patches

of Yucca, growing in the shade of
 Larrea mexicana. — a few Mesquite
 &c — passing this on a gentle rise
 gullied out by the rains tributary
 to this desert river — the soil became
 clayey, and spreads out in a perfectly
 flat plain destitute of all vegetation
 and cracked up into a hard baked
 rough pavement, in one or 2 places
 the water still stands in puddles
 This plain extends to the base
 of the mountains some 9 miles
 from camp — the ridges are perfectly
 bare and of a brown lava-like
 appearance, they are steep, and the
 rain pouring down their gullied sides
 sweep down upon the level plain
 their bases, of pebbles & washed sand
 cut out into wide ravines, or a
 continuous bed, down which the water

has flown - some of the lava like hills lie exposed at the foot of the range and exhibit a varied character of colour & texture - there is also exposed toward the head of ravines a thick deposit of drift; the pebbles of which thickly show the ground many varieties, some micaceous, &c.

A leguminous tree like locust is common, seed large - Touquevia, again makes its appearance, - a cactus with singular red smooth fruit, and other new plants. The sun mean while beat down with blinding heat, and I was forced to lie down in the shade and confine my observations within a limited range to add to my discomfort not water could be got - and after pawing away in all the likely places, gave up. The sun and set my face campward, there was

an haze over the plain & I could see
 nothing but a flat hazy bounded prospect.
 The water mirage was in many places
 very distinct but the deception was
 very apparent, the water seeming to lie
 on the flat plain like a sheet, with
 banks. Still the delusion was so pleasant
 it difficult to disbelieve it sloping
 to rest from the intense heat under
 the slim shade of bushes, about
 sun down I stumbled upon a
 puddle of water & rushing into the
 soft mud knee deep I stood for 5 minutes
 slacking my thirst out of my leather cup
 this refreshed I plodded on towards
 camp, passing to the left of it came
 on the river in the form of a lakey bog
 stumbling through this, I reached the
 road, caught sight of a signal lamp
 hung up for my guidance & reached

camp about 10 P.M. — supposing I had been lost, a rocket had been sent up I did not see it —

Sep 27th Strike Camp, which we have called "Grana Camp" about 5 P.M., pursuing a general East course the mountains coming distinctly to view on N. & S. — pass through patches of Grana for about 2 miles very luxuriant passing this the plain becomes hillocky the sand drifting around the clumps of Larrea, & Mesquite, about 5 miles, we cross the deep ^{dry} bed of a stream, apparent course to the North, thence 3 miles turning aside to our left we come on a ~~fine~~ ^{fine} watering place the water lying stagnant among the bushes at the base of a drift hill of sand rising 15 to 20 ft. In this

vicinity had been a fine growth of Mesquite beans. but the trees had been lopped down by the Emigrants with selfish inconsideration, our animals were left to munch their small bundles of hay from "Grana Camp" desquing to start by 3 o'clock next morning for a long stretch of 27 miles - we were accompanied here by a party of Mexicans bound for Sonora

Sept 28th A starlight start - and we pursue our way on a course North of East - the soil a fine sand, the higher ground generally spread with a drift-deposit of gravel. The principal growth *Larrea* & a species of ~~*Hesperis*~~ ^{*Medusa*} ~~*Hesperis*~~? the young stems resembling an *Equisetum* - We pass numerous (6) deserted waggons, all belonging to ox teams, with a variety of abandoned

property including a blacksmith's establish-
 -ment complete. & then they lie
 deserted & scattered in the middle of
 the desert — as we progress the sand
 becomes the prevailing character and
 in about 18 miles from camp it
 terminates in a bluff — extending
 in a North Eastern direction. descending
 which and skirting along its base
 we pass through extensive growths
 of Mesquite — the sand encroaching
 gradually on this lower plain does not
 afford soil of sufficient tenacity to
 hold water unless at a great depth
 continuing our course about 7 miles
 farther we come upon a clayey basin
 on our right with a few willow trees
 and here are located the 3 wells, formed
 by digging some 10 or 12 ft — The
 mesquite beans near by afford an

excellent fodder for our animals - and we close a fatiguing days march through the hot sandy plain, having now the difficulties of the desert crossed, & 12 miles from the Colorado just as I had lain down to sleep I felt a distinct earthquake which continued $\frac{1}{2}$ a minute - the jar distinctly disturbing a pail of water it was generally felt throughout the camp

Sep. 29th Another starlight start and we continue our course a little N of E - following the base of the sand drift winding among thick growths of Mesquite with the ground thickly strewn with beans rendering it difficult to urge our mules along - the road bedded with fine sand and the bluffs in some places bare showed a beautiful rippled appearance. Our

proximity to the great River, was soon apparent by occurrence of willow and cotton wood and growth of bottom plants - the ordinary emigrant road here turns on to the sand hills by which they reach the ordinary fording we continue directly east to the river passing a large Indian settlement with fields of maize, gourds, melons, figoles, Calabash, &c. leaving this pueblo to the left we passed on, and wending the sandy bottom thickly spread with willows, small aspen, & underbrush, at last standing up in our stirrups, on the full gallop we stood upon the banks of the Mississippi of the Pacific North America. The water of the river is of a clouded redish colour and on standing deposits a clayey subsideum the waters pleasant

and fresh tasting - the current is about 2 miles per hour, and sweeps by sanded banks depositing bars & sand islands, and doubtless of varying character. The water is shallow, and shown with drift snags, not showing much evidence of excessive overflow. The width about 1500 ft. - and course at the point of our camp, N & S, on the opposite side is a thick growth similar to this and to the North river to view rugged mountain peaks we are distant from the mouth of the Gila about 10 miles - Close the day by a general swim in "Rio Colorado"

Sep 30th (Sunday) Remain camped on the river bank 8 miles below the fording place - The Indians flock about our camp, with mutton &c for sale -

Oct. 1st Move up the river, cutting our road through the alluvial bottom ground composed of fine sediment sand growth willow, cotton wood - several shrubs of the *Compositae* order &c - in about 4 miles we come on the regular emigrant road which we had left and which in about a mile conducts to the usual crossing place - here the river runs in a swift current its channel on the west side following its winding course above it is soon lost in a turn to the east. On this side closely abutting on the main bank the chain of drift ridges we have been following on our left rise up into rugged mountain peaks, at their base exhibiting a coarse and varying breccia, crossed out by gentler beds of rain streams. Camp at the base of this -

Oct 2^d Ascending the rugged, knobs adjoining our camp to its highest peak, some 1200 ft - the central formation seems to be a dark colored basalt - the higher ridge chimneyed up into fantastic forms bare of vegetation, and similar aspect to the mountains visited on the Southern edge of the desert, & I should judge from description resembling "Chimney Rock" &c. in the Black hills of the Platte from its summit the view stretches over a vast range of country the Colorado with its windings, is seen making its way S.W. and a low hazy line indicates its vicinity to the Gulf - across the river to the East the eye ranges over a track mostly level, with isolated mountains in the distance - the wooded bottom of the Colorado, with a range of sand hills skirting the horizon -

looking up the river W E. is a thick
 wooded plain with broken points of water
 mountains in the distance and a break
 in the range of drift unrolling is
 showing the junction of the Gila &
 Colorado - to the West sketches the desert
 we have crossed. the view to the north
 intercepted by chains of rugged mountains
 of which a peak almost directly in
 is very singular chimney shaped
 - We move on still up the river
 winding through Mesquite - of which the
Pavlovia Emoryi is more common in about
 10 miles we come suddenly on the range of
 drift and mountains its top see forming
 some 150 ft below is the uniting water
 of the Gila & Colorado. Having here reached
 the terminus of our expedition, I can
 sketch the features of this interesting
 spot more at leisure

Oct 3^d Preparing for observation, & domestic arrangement take up the day —

Oct 4th Visit the Indian settlement about half mile from camp. — consisting of garden patches, at short distances, — in which are cultivated Indian, Corn, beans, pumpkin, melons — the cultivated ground seems like a former bed of the Colorado — the soil a light sediment. The corn looked well considering the careless manner of planting, but the soil is best suited to beans & melons, which latter grow very luxuriantly. — the melons by constant mixing with pumpkins, have acquired a squash character, especially the musk melon — and the Indians are mostly picked green, — I noticed the women grinding, a kind of millet for tortillas, ^{the harvest} & common coarse grass

the grass is not of that description 2 kinds ^{used} are
 like Cockspur? "Panicum — 1

I saw no roots of any kind used which
 for a uncivilized state is strange
 after getting pretty well gorged with
 mellons & satisfying our curiosity we
 returned to camp —

Oct 5th A hot day so that tents are uncomfortable
 - There are some singular things about the
 junction of the two rivers — the course of the
 Gila at its mouth is north westerly and it
 meets a narrow slough of the Colorado coming
 directly in an opposite direction ^{this} by its swifter
 current even encroaching, on its natural
 bed. the main current of the Gila is thus
 forced to make a dodge to its left bank
 and with the mixing waters of the
 Colorado makes an entire doubling on its
 original ^{the united waters} course, sweeping through their
 narrowed and rock bound cañon
 a roughly sketched map will best represent

the real state of the case. — see note Book
 The walls of rock through which the
 rivers burst is an elevation in the general
 chain of drift so often mentioned
 as skirting at varying distances
 the Colorado bottom its tabled summit
 is the desert proper and its drift
 character is seen at the base of all
 the isolated peaks which here tower
 up in every direction except towards
 the mouth of the river, these hills
 which mark the junction are composed
 of a feldspathic granite exposed in blocks
 and bedded in a soft powdery cement
 on the opposite side the irregular
 rock formation is distinguishable from
 the drift into which it runs by a distinct
 shaffification of the latter lying inclined
 to the NE on its rocky irregular jointed
 rock at an angle of 45° or more

The North point of the Gila is the
 alluvial plain common to the 2 rivers,
 covered with ^{giant grass} ~~coarse grass~~. Willow, Cotton
 wood &c - a former bed of the Gila
 more to the south is plainly seen just
 below the highest point of the rocky hills
 on the opposite side - the Colorado also
 had a former bed more up stream &
 avoiding the rocky hill, which as Mr.
 Emory remarks they have now strangely
 chosen. (perhaps for the benefit of
 astronomical observations) doubtless
 changes of bed are frequent in the course
 of this powerful stream, carrying deposited
 in its turbid waters the materials for
 making dams. & Islands, - the water
 since we came, here has fallen a foot
 or more, revealing innumerable sand bars
 above. - high water mark seems about
 20 ft higher from the marks on the

Cañon — and the overflow in high water must be extensive —

Oct 6th Another hot clear day. — An Indian informed me that there was very little cold experienced here, and a little rain during the month of December a fact we are inclined to believe from the weather we have experienced. The Indians also in clothing & shelter seem to make no provision for such a thing, as cold ^{or wet} the houses being, open sheds covered loosely with willow branches. — the clothing in many cases confined to the breech cloth and shoes, are almost unknown — continuing astronomical observations every night —

Oct 7th (Sunday) } A sultry day —

Oct 8th within the last two days a very sensible change has taken place in the mouth of the Gila river, the projecting sand bank which formed its N Western limits has been washing away so that the direction of the stream is now nearly at right angles with the course of the Colorado. Its appearance on the map will be considerably changed and a rod or two gained by the Yankes on the boundary line. — the day has been hot the Umas Indians crowding about our camp with mules + mares all which are in demand, the articles given in exchange are tobacco, beads, calico, and shirts of red flannel. The latter are most highly prized —
 Evening cloudy —

Oct 9th Commence magnetic observing
 — write out a description of a species
 of *Mamillaria*. I have noticed in several
 places on gravelly hills near the base
 of mountains, — it is remarkable for its
 singular fish-hook shaped spines —
 There is also here, on similar places
 but more abundant a slender species
 of *Opuntia*, like a bushy thorn —

Oct 10th Occupied in magnetic observations
 the variation of the needle is here — $12^{\circ} 5'$ East

Oct 11th Tambien —

Oct 12th A war party of Unas, started to day,
 smeared over with vermilion, & black lead,
 and waving with cross feathers on an
 expedition ^{against} the Maicpas. They go all
 mounted and armed with bow & lance
 doubtless more formidable in looks than execution.

- For some days past red flannel or
 "Colorado" as the Indians call it has
 been the only article in demand for
 moccasins & we have been obliged
 to cut our red shirts & blankets
 in strips to supply ourselves

The sand bank that when we came
 here first, gave direction to the main
 of the Gila is now entirely washed
 and it now makes its exit unimpeded
 at the base of its high southern bank
 entering the Colorado at right angles
 probably much in the way as represented
 by May Erving - the amount washed away,
 has been about 100 yds -

Oct. 13th A windy day -

Oct 14th (Sunday) This evening I was surprised
 to fall in with my old comrade of last year
 A Randal - he had come from Ft Leavenworth
 via Santa Fe, from the latter place they

had pursued a new route, leaving the Rio Grande, they struck west for the head waters of Salt River, following this stream down to its junction with the Gila below the Pine Villages. - On route they passed the Indian tribe of Soones living in villages, and cultivating the soil - they are noted for having in their number quite a number of Albinos - They had also a running fight with the Apaches for 5 days - Randol has made Geological & botanical collections on the route

Oct 15th 16th 17th - On the evening of the 16th a serious accident happened on the river by the upsetting of a canoe, 4 men were drowned including Capt. Thorn, an intelligent & energetic officer. Commander of the party of moccasins. Escorting Col Collier's Company.

Oct 18th Randall left this morning on
sunt for San Diego —

Oct 19th to 25th Nothing special has happened
on the 21st we received an express from San Diego,
on the 22^d Mr Forster of Surveying Corps. made
his appearance, in company with Mr Gray the
had. followed a new route, very near in the
course of boundary line. They speak of the
route as very pleasant, and easy for pack
mules, on the western slope fine valleys,
with gentle ascents mount to the sunⁿish
level which overlooks the floor of the
desert, and is only a days journey to
Carrizo Creek, where they pursued the
ordinary trail — The news from San Diego
indicates a ferment in the Commission
in expectation of the new Commissioner
Col Fremont. — some of the party leaving &
others about to follow. — write to Dr Toney —
also to Davenport —

Oct 26 & 27 - Nothing -

Oct 28. (Sunday)

Oct 29th Day as usual - light clouds. -

Oct 30th This morning before day break quite a war panic was got up among our Yumas neighbors. The tramp of hurried steeds & the echoing yell. roused not only rocks but other sleepers. by morning every height on both sides of the river was occupied by a group of plumed warriors. and women with their young ones were seen huddled here & there. The occasional report of a gun, and volumes of dust rolling up in various parts of the bottom ground below us. might have been taken for bonafide combats but as the matter turned out. 2 or three skagging Yumas. were met one half days journey off of a war party of Maricopis. and one of them killed. The others ran to give alarm and reaching their lodges about midnight awoke. at with a sudden panic. women swam the

river - men mounted their horses & galloped here & there in fine considering the damage done it was quite a nice war farce -

The day has been cloudy for a wonder and in the afternoon some rain sprinkled down. -

Crossed the Colorado. To make some measurements found a few new plants near mouth of Gila - its stream just above its mouth is quite narrow. 150 to 200 ft and 3 to 4 ft deep it flows with a swift current. with sediment of a darker colour than the Colorado its borders consist of a soft quaggy mud in which a person sinks up to his middle - the water is still in comfortable swimming order - we have been here now a month during which time the river has fallen about 9 inches -

Oct 31st An express from San Diego & letter from Iowa - a sprinkling of rain at night -

Oct 32nd or Better Nov 1st is ushered in by driving clouds. and a threatening sky

storms in every direction. of which we catch a sprinkling.

Nov 2^d Day comfortably cool - walk out in the direction of Chimney peak, and the line of Drift hills. that skirt the river basin to the N. - passing through the Indian Village. which occupies the old river bed. plainly marked by a line of willow bushes. and consisting of gullied beds with intervening ridges. on the other side. the bottom land corresponds in character to the same in other parts elevated some 15 or 25 ft above water mark and thickly spread with the usual shrubbery. Mesquite. *Chenopodiaceae*, & *Compositaceae* shrubs. *Amaranthus* & Sunflower thickets - this terminates in an irregular line of steep gravelly hills, gullied out by rains into steep ravines - which lead by nearly direct

comes to the table land of the Desert
 the height of this table land, above the
 bottom is somewhere about 60 to 80 ft
 and is thickly strewn with rounded pebbles
 of quartz & agates. - below this a sectional
 view shows it to rest on a cretaceous
 conglomerate. The cementing layers varying
 in strength from a crumbling mortar to
 a close shelly matrix. This formation
 as developed in some of the higher points
 is about 20 ft thick, and is doubtless the
 source of the superincumbent gravel, in
 some places it has resisted the action
 of the atmosphere and stand out to view
 on the sides of hills in isolated blocks
 in other places the formation below has
 withdrawn its support & large masses
 of the conglomerate lie exposed at the
 foot of ravines - the underlying formation
 is a coarse sandy layer 40 ft thick

as seen in some places - it weathers
 in perpendicular walls, seams of a
 more tenacious character often presenting
 distinct marks - & ridges on the general
 outline - Cherty layers are sometimes
 seen & occasional bands of micaceous
 conglomerate - The mountain ridges
 beyond rise up in bold and bare outlines
 one ridge being strikingly marked by
 weathering into high chimneyed peaks
 its character in the distance seems
 similar to Pilot Knob - below is
 I found in flower on the gravelly ridge
Fouquieria spinosa - a species of *Physalis*
 some characteristic Compositaceous plants
 in the wide ravines, marked by a sandy
 bed furrowed by rain streams. a tree
 resembling locust is common. also
 a green barked, Leguminous tree, of
 character (*Acacia* ?). I found in flower

also a shrub approaching a small tree, with silvery, thick terminal branches, ending in spiny points about the leaves. The flower is of the Leguminous order and is of a beautiful deep blue the outer calyx marked with a row of glands. The shrub is common at the western edge of Desert & the bed of Carrizo Creek—below Vallejo. The distance of the ridge from Camp is about 4 miles north—

Nov 3^d Weather comfortable—Lt. Coult has stretched a rope across the Colorado and made a regular pioneer ferry. The distance is ~~200~~¹⁷⁰ yds—The bodies of Capt Thorn & others drowned here 16th ult have been found at the lower crossing—Millons are now in their prime & in great abundance

Nov 4th (Sunday)

Nov 5th Weather fine & comfortably cool. Thermometer at night goes below 50. at midday, 70 to 80: F - Swimming is rather cool. -

Nov 6th D. Coult's Ferry has quite a run of custom to day some mexicans, on this side from the Placers with their pouches of the dust, on which by the order of Col Collier a duty of 5 Percent is levied the party have with them over 100 lbs, but it goes rather tough to fork over the 5 percent - American Emigrants are still flocking in consisting now principally of ex teams -

Nov 7th Spent the greater part of the day in the Indian village. The work of harvesting is going on, and the women seem to be all industriously occupied, more of this elsewhere -

Nov 8th A windy day -

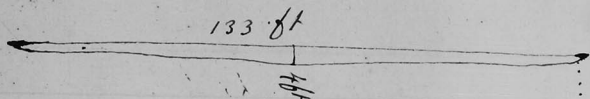
Nov 9th Cross the Colorado to the Eastern shore below junction of Gila - the intervening land between these two rivers for 12 miles from the mouth of Gila is a low bottom some 6 ft above low water mark - in this bottom grown with willow, cotton wood, &c. the Gila winds with a swift current over a shallow sandy bed, 3 to 4 ft 150 wide. Lagoons are common along its course in which the still water deposits a soft soapy mud in which a person will sink up to his middle - The ordinary banks are about 3 ft from water mark and consist of a deposit of muddy sand this is generally covered with an even growth of willow and in spots with the grain grass akadi - The Indians have their cultivated patches not far from the junction, and their crops of Pumpkins, melons &c were very fine.

Their houses were evidently only temporary sheds abandoned in the rainy season when the entire country must be overflowed. The Indians were busy drying their Pumpkins - another mode of preserving them is after removing the inside to subject them to a slow roasting process by which they acquire a pleasant meal taste - saw but little corn, and found a ready trade for mullons for tobacco -

Nov 10th Take an excursion about a mile up the Gila, which makes a semicircular sweep to the South, approaching the high hills of bare rock, called Emorys hill these rise up in rounded peaks, some 1500 ft above the river the rock on the summit is of ~~granite~~^{gneiss} character, and

weathers more uniformly than most other bare rocky peaks - it overlooks a wide stretch of country mostly bounded by mountain ranges, but to the South exhibiting the low level that indicates the vicinity of the ocean, the plain over which it stretches is the elevated table land covered with drift pebbles, whose continuation on the Western side of the Colorado constitutes the desert -

A measurement of the Gila about a mile from its mouth may be represented by the following section. The current is very swift 4 miles an hour - and its course through the bottom grounds, so the mountains very tortuous its course is set off with lagoons, in one part of its course it approaches the Colorado and may have had an outlet with it above its present junction.



Greatest depth in channel 4ft 10 inches
 varying from $2\frac{1}{2}$ to 5ft - deeper holes
 are frequent along its course height of
 the river bank on South side 6ft on
 the opposite side a gradual shelving
 covered with small osier willow growth

~~Nov 11~~ 11th (Sunday) An express from San Diego. no news

~~Nov 12~~ 12th Weather still fine - A post mortem
 examination on a case of dysentery -

~~Nov 13~~ 13th A gusty day - with threatening clouds
 and driving rain - gives us timely warning
 of the approach of the rainy ^{season} - Our observations are
 about completed. having been here 6 weeks today
 The Boundary line from this point west will
 be about 42° S. of W - The Barometer
 today has fallen lower than any time since
 we have been here - heavy rain P.M.

Nov 14th Clear day after the rain which has
rained the Colorado 6 inches —

Nov 15th A clear cool day —

Nov 16th " " —

Nov 17th, A fine comfortable day — the evenings
are getting lengthy. and the blazing camp fires
on the plain below us send up social sounds
in which the song, blended with the profane
oath, sound clearest under the still star lit
vault — a new born moon, hangs her crescent
over the Western hills — and by its full orb'd
light we hope to see our way to winter
quarters, on the Pacific — We have not yet
given up the luxury of bathing though its
getting on the ice-cream order —

Nov 18th (Sunday)

Nov 19th — Clear &c River rising.

Nov 20th Heavy dew, & fog before sun-rise

Nov 21st Still fine, night cloudy

Nov 22^d Strong wind, with rain from West
Express from San Diego -

Nov 23. Clear Windy day -

Nov 24th Cool - The 1st Dec, has been fixed for
our departure -

Nov 25th (Sunday) -

Nov 26th A fine cool day -

Nov 27th, 28, 29, 30 - Continue in camp
weather variable. - on the 30th the Mexican
Commissioners arrived - also an express from
San Diego - by which I receive the appointment
of "Act Asst Surgeon to Boundary Escort -"
we are ordered to make quick tracks for
home -

Dec 1st A foggy morning with heavy
dew. sky clear - becoming warm - Strike
camp. and make a movement. I took
passage on a flat boat. and floated down
in fine style at the rate of about 3
or 4 miles the hour. The river about

uniform width of 200 yds. the channel is of variable depth say 2 to 20+ ft - the river bank, an average height of 12 ft - pass pilot knob. and reach our encampment of Sep 30th

Dec 2^d Left the river and retracing our steps of Sep 30th skirt along the base of the Sand bluffs, which rise to the table land of the desert. the drifting sand obscures the true geological formation, but in one place there is an exposure apparently of the same sand formation, noticed page 90. The course to the wells is S of West arrive in Camp 3 P.M.

Dec 3^d We have now before us the dry stretch of 27 miles. in about 5 miles we mount to the table land of the desert shown with rounded pebbles & agates - the height by Barometric observations will not vary much from Capital

hill. In coming to what is called the second wells there is again a steep descent to a lower bottom level. The bounding bluffs consisting of mud with unbedded shells and gypsum. The bottom land is covered out as by a stream and in this bed are the wells. The water being contained in the clay layer underneath, in the same formation rests the bed of water called by emigrants the Lagoon - the ground is everywhere strewed with shells. *Planorbis*, *Physa*, *Anadonta*, all of which are found unbedded in the muddy cliffs that bound the bottom. Here are also found layers of gypsum - the Barometer indicates a low level. -

Day fair, pleasant & cool -

Dec 4th Take our course to New River about 10 miles passing over the same bottom

the soil varying from a stiff clay to a light sandy marl. on the south we see the little univalve, (*Bulinus*)? covering the ground or blown into scattered drifts the soil appears richer and of a darker colour here the *Gramma* grass first makes its appearance, now yellow & dried up. - It grows as before stated mixed in with the *Lancea* of small but rich verdant growth I noticed it frequently in bloom to day whether its proper flowering season I can't say - reached New river at noon - afternoon leave with the advanced party of Lt Whipple to the Lake. the country to the S containing the whole distance to our sight - in its course are a number of ponds & one large long lake I noticed that the stream before noticed which gives the name of river to this water bench had ceased flowing confirming my opinion of its lakey character.

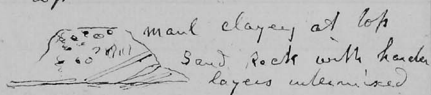
The drainage however is to the West & the lake, which indicates the lowest level on the route by Barometric measurements. We reached camp late, and the waggon behind us did not get in at all so we were obliged to make the best of our condition without supper, bedding, & but a few scraggly bushes for a fire over which we crouched, with a shattering rain all night.

Dec 5 The kams came in and we got our breakfast - the drizzling rain increasing and making the adhesive clay clog up our feet at every step. After breakfast the party went on leaving me solitary ~~alone~~ & cold to wait for the military. Escort to come up - dreary - dreary - dreary - !!!

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Dec 6th The company came up through the mud last night and we move this morning in a heavy fog - passing over the ground memorable by our watery march Sep 22^d. The ground is a stiff clay and evidence of being often overflowed with water. in the rainy season doubtless forming a continuous lake with the one on which we encamped passing on we mount a gravelly ascent on which the rains had made a firm road about 10 miles we come to the bed of a same stream crossing the road to the S we explored down it for some distance in hope of finding water. we found a supply of bunch grass but no water the digging coming to a full stop on a sandy layer - of which there is an interesting exposure showing it identical in character to the sand underlying cretaceous conglomerates at eastern end of the desert and which

by its porosity makes the desert destitute of water in the exposure. The sand stone was dipping a few degrees S W - and was capped by marl, having a clayey consistency at top



failing to find water by digging we crossed to the N side of the road, where in about half a mile we came upon a branch of the same stream, which having its lower stratum on the clayey marl, covered with coarse sand, afforded abundant water, by digging through the sand 2 or 3 ft - probably water may always be found here the sand forming a covering to prevent evaporation, and the clay holding it - digging in the clay did not increase the amount of water which flowed freely only at the intersection of

The strata - found quite a number of new plants. the rains giving an unusual freshness to the vegetation. Camp at "New Water Camp"

Dec 7th A fine day in prospect, and as the clouds clear off we see a ridge of mountain peaks to the West capped with snow leaving camp about 9 A.M. we pass over the regular trail to Carisso Creek. the ascent is considerable and the road passes high bluffs of marl strata frequently dipping but with no uniform direction coming to the edge of the desert we descend into the bed of Carisso Creek here the bluffs exhibit high vertical sections, some bowing up into pyramidal form capped with the pebbly deposits constituting the table of the desert a proper examination of these sections would afford an interesting key to the

geology of the desert. But we were
 obliged to hurry on. We have left the
 waggons and intend to take the new
 pack trail discovered by Mr Gray
 leading more to the South and coming
 out near our Astronomical Camp
 about 2 miles from Carrisal, we
 leave the regular trail on the right
~~and~~ make direct for the Mountains
 on the W. reaching the lower range of
 mountains of rounded ridges covered with
 dislocated rocks - we enter a narrow
 valley leading by a regular smooth
 inclined plane in a Southern direction
 following this about 2 miles. The inclination
 gradually increasing the Cañon makes a
 sudden branch to the right here darkness
 overtook us. and we encamped some half
 mile from the burn on the slope surrounded
 by mountains. without water, tied our

horses to the Fouquieria, and stretched
to a blazing fire of the same material
rolled up in our blankets —

Dec 8th Revellie sounded at day-break
& saddling up we pursued our way. The
air frosty, & bracing. The sloping ascent
continues for some distance and then
abruptly terminates in the steep sides of the
mountain range — dismounting and
huckle in hand we proceeded single file
taking a rocky ravine to the S.W.
leading zigzag up the mountain the way
was choked up with large rocks and the
ascent sometimes steep. Hoping to take breath
on various ridges as we surmounted them
in two places in a protected corner of the
ravine a clump of small palm trees were
growing, and a deliciously cool spring trickled
down — about half way up the mountain

there is a flowing stream, and indication
 of former camps - boiling on from
 one ascent to another in about 2
 hours from the foot we reach the summit
 and look back over a singular &
 striking scene - the plain of the desert
 stretches out before us circled with its
 barren mountains, the bed of Carson
 creek with its irregular nearly bluffs
 is also conspicuous. Signal Mountain
 bears E - a small lake that we
 had not noticed on the west bears
 S E - looking to the West is the
 snowey range we observed of higher
 elevation than ours, the wind blew
 chill from that quarter and inclining to
 the S W we pursued our way passing a
 slightly inclined & undulated plain in
 whose lowest depression is a life
 oak valley, its course occasionally

marked with brown patches of grass the vegetation of the upland plain was which we passed was of the usual character in this region evergreen live oaks *Cercocarpus* & other things all evergreen. by which the otherwise monotonous scene is considerably relieved found some flowers in bloom. The rock is of the usual quartzose character disintegrating into a coarse sand making a fine path - about noon we came upon a beautifully sheltered valley affording a fine growth of grass on which we turned our furnished animals while we were not immediately of our own wants - on taking out my barometer with more than usual interest to determine the height I found it broken.

About one P.M. we continued our course passing fine grass valleys bordered with live

oak, on the highest rise we crossed at
 a low elevation the snowy range, in
 which the snow lay in patches along
 the trail. the descent from this is
 gradual, and leads into a continuous
 valley, well watered, and grassed. we
 keep our main course S of West by
 crossing spurs projecting into the
 same valley, and at 5 pm down
 encamp, on the Western edge of a
 wide valley, at a place called
 "Hole in the wall" - The wind blows
 chilly from the snowy mountains
 and we huddled together in our
 blankets - Distance 20 miles.

Dec 9th We were glad to escape from
 our cheerless, & chilly bed by day break
 the wind still blowing fiercely,
 the trail still pursued in the main

the same valley and we kept an
 uninterrupted march. the mountain
 peaks shrouded by their evergreen
 shrubbery and our trail beautifully
 shaded with live oak - about noon
 we come upon an Indian settlement
 on the other extreme of the valley
 we see a deserted Mexican Ranch
 our gradual descent is bringing
 us to the coast plainly indicated
 by a change in vegetation. the
 mountain shrubbery disappears & in
 its place we have the smooth &
 stunted growth common to the dry
 hills about San Diego. The mountains
 look as if shorn or once properly shaven
 their smooth brown outlines standing
 in bold relief in the ground of the
 western sky. the valleys widen
 out and are by uniform ascents to

the bounding mountains. as night over-
took us we were still travelling, passing
over dry plains, and occasionally
crossing sandy beds of dried up
streams, about 9 P.M. we crossed
the creek, that passes Don Ramon's
ranch, about knee deep, passing
which we at length reached the
Ranch, very tired & hungry & cold
Distance 35 miles —

Dec 10th Made a late start for Camp
Riley following down the valley. The
day was fine and the dry hills we
had left 3 months ago were clothed
with a rich green under the
influence of the rains. The puddles
along the road had a slight skum
of ice, otherwise all was spring like
at length the bay of San Diego and

the distant ocean broke on our
view and with bugles sounding we
halted at our 'old Camp Riley', where
I spent the night

Dec 11 Walk to San Diego, the town about
as when I left save that the plaza
has been turned into a bull ring -
for bull fighting; most of the Comarissios
have dispersed for San Francisco and
we expect soon to have a general break
up -

Dec 12th Day fine & Spring like Lt Whipple
arrived. - witnessed what is called a bull-fight
which consists in a parcel of men ^{on horse back.} ~~having~~ ^{riding}
a bull, and then running away. The only
interesting part of the performance was
in one drunken man being bucked
down, and another un horsed.

Dec 13 Day still fine. -

Dec 14 morning cloudy, and hazy atmosphere.
overcoats comfortable -

Dec 15th 16th Day clear

Dec 17th Day cloudy drizzly at night
windy - the worst specimen of Californian
weather - severe storm & wind from S.E.

Dec 18, Day drizzly. - In the morning
about 10, we witnessed a singular &
interesting sight - The cry was raised
that the river was coming down, on
hastening down to where the river
makes its turn, round the hill point
towards the bay, a foamy current
was seen making its way down the
sandy & hilly dry bed of this
river, it moved on in a body,
curling round the river banks
absorbing the pools and moving
on at the rate of a fast walk filled

Its shallow bed with a running swift current. - by night the stream had worked out a deep channel unfordable. when in the morning there was a sandy plain. - The singularity of it was in its suddenness as it would seem, the draining country having reached a state of saturation, the rains suddenly embodied themselves into a flowing river -

Dec 19th Day fine, & Spring like, the river has risen and is now barely fordable. The vicinity of town is scattered with large pools round which the Indian women are washing clothes. The nights are cool but no ice -

Dec 20th A fine day. a few spring plants are making their appearance. In the dawns near town a species of

gooseberry is in full leaf. - The Castor oil plant is also common in waste places about town. The first snow in fine state, a delicate Cruciferous plant, and a singular Salsifragaceous plant with a tubercous root the size of an acorn grows by the road side.

The hills & house tops are supporting an elegant green carpet -

Dec 21. 22. 23. 24. - Days of remarkably fine clear weather - temperature 60° to 70° - every one is saying, "If a person could live on climate, California would be a paradise" The weather is of that bracing clear character of the best spring weather in Northern states. -

Dec 25th A Christmas in California. the weather has been foggy but not uncomfortable. - This festival has been celebrated by the Californians in a

Characteristic style. First Mass. & a
 Christening, when follows a pantomime
 Mary Andrew performance. Two persons
 dressed in horns. personate the devil
 who is eating his antics. 2 more with
 sheep skin faces act as padres, and a
 number of dark coloured girls dressed
 in silk & gauze. an bearing laced and
 tinsel banners - The devils being rather
 well dressed young men seem to have
 more favour than the padres, who are
 kicked about - the performance is
 enlivened by a Spanish Chant - and in
 the end the devils get kicked out
 and masks pulled off

The Steamer California from Panama
 arrived in the afternoon. -

Dec 29th. Walk to the sea shore off the
 promontory separating the harbor, from False Bay.
 The ground is of the usual character of

hills about here, a drift deposit of sand or marly shata based on a coarse brown sand rock on the ocean side the sand rock is washed into perpendicular hole washed walls the rocks below high tide, are thickly coated with shells & barnacles, and the hollows, thickly set with a variety of sea weed. The sandrock is thickly spattered in places with mineral pitch in physical character not to be distinguished from dry tar - highly inflammable it is found sometimes in patches 3 to 6 inches square — On the hills find *Pitavia dumosa*, in bloom, also an Ericaceous shrub, - day fine

F.D. 1850

Dec 30.th to Jan 12th Laid up by a severe dysentery — Mail arrived with letters from the States

Jan 13, 14 - Two of the remarkable fine days peculiar to this climate, our neighbours have been engaged in gardening and a fine patch of Cabbages + beets are growing lustily - We find occasionally about the Hills Mushrooms, and just about town, a fine species of wild Ores is abundant enough for gathering - pasturage is now excellent in the valleys and wild oats are ankle deep. Their thick patches, of fresh green affording excellent food for cattle.

Jan 15 to 20 - Weather as usual with the mornings & nights chilly on the 18th two Steamers arrived from above and below - bringing late news from San Francisco & the States, a pretty species of Dodecatheon, is now in bloom on the hills about town

Jan 21st A frost this morning. the mountains to the East capped with snow. the weather is fine and bracing.

Jan 22^d to 24th Days fine, but rather coolish for this climate.

Jan 25th Misty rain and wind from S.E. the quarter from which rains come.

Jan 26 to 31. fine days with the exception of 30th in which was rain accompanied with usual unpleasant wind

Feb 1st Fine clear day Vane pointing ESE. Thermometer at Sun rise $44^{\circ} 7$

Feb 2^d to 18th Fine dry and mostly cloudless weather. Thermometer varying from 46° to 69° in the shade vegetation is in full blast including many interesting spring flowers. among others *Viola pedunculata* - a number of *Compositae*

- an *Echinocystis* ——— *Rhamnus* —
Chryseis. ——— *Platystemon*. ?

some lupines, a species of *Phalangium* &c
 the ground is getting dry. snakes are
 getting abundant. — The sheaves falling
 and every thing to indicate the approach
 of the dry season — On the 16th the
 joint Commission adjourned, to meet
 at El Paso, New Mexico, next 1st Nov
 on the 17th I received a leave of absence
 for 3 months which I design spending
 in the upper country — on the 18th I
 went with Mr. Emory and the Mexican
 Surveyor Mr. Gallegos to the initial
 point of the boundary line. Camp
 at the foot of the range of hills, which
 form the natural boundary between
 Upper & Lower California —

Feb 19th Rain last night, dripping
 through our waggon cover, clearing up
 at day.

Feb 20- to 28. - Days of variable weather with some heavy showers with wind often strong, mostly from S.E. the rainy quarter. Thermometer during the month has ranged between 44° & 69° F. - Plants *Microseris heterophylla* &c.

March 1st Resigned my situation of Asst Surgeon to US Army Escort, preparing to go up the country by land -

March 2^d Rain last night, cool wind the San Diego river is quite high and with difficulty forded -

March 3^d Rain again last night cloudy all day wind N.W. Steamers booming and unfordable.

March 4th - Steamer "Oregon" from San Francisco sent home to Dr Torrey my collection of plants. day clear cool wind from N.W.

March 5th Day fine - Leave town for
 Mule camp. in expectation of a start
 this week up the country - Crossing
 San Diego river, about, up to the waggon bed,
 we proceed in a course a little east of north
 passing the head of false bay. - one moderate
 sized stream, empties into its head connected with
 a valley running E & W. - at its north east corner
 is a larger stream ^{puts in} its banks, lined with sycamores
 it leads out of a narrow valley direct in our
 course the hills rise on each side 3 or 4 hundred
 ft. The now swollen stream, winds through
 the bottom so that the road crosses it 9
 times, in the course of 2 miles - towards
 the upper part of the stream Live oak trees
 but stunted, make their appearance, mingled
 with the sycamore, which is rather an
 unusual combination. - The hills in several
 places exhibit sectional views, showing
 a conglomerate, cemented with coarse ferruginous

sand. resting on horizontal and deep sandy layers. The Conglomerate is the probable source of the pebbly deposits so common on hill sides. Showing their beds in unequal beds — About 7 miles from town we turn off the main road, up a branch valley to the East about 1 mile to Mule Camp. where in the bottom ground there is a fine sward of grass & Clover. and on the hill sides, large patches of wild oats mixed with Mustard —

March 6th Cloudy morning. Clear by 9 A.M. - Strolling on the hills about camp, then tabled summits. Present a view of snow patched mountains to the East & North of Camp. The Conglomerate rock makes a exposure on the side hill plants. Ceanothus thyrsiflorus — a species

of Lettyrus. — 3 a Gysimachium

March 7th Ride to town — got pitched off a mule. return to camp — receive orders from Maj Emory to report at San Diego. at the expiration of my leave of absence (17th May) — Day cloudy, but fine

March 8th Day fine — spent at Camp

March 9th A white frost this morning & a thin scum of ice on the pools, this day a year ago I left Davenport —

March 10th (Sunday) Day fine. to start to morrow on our journey up the country

March 11 Strike camp on our journey about 9 A.M. passing down the valley. in which our camp is. striking the main road again we mount over the table land over which our Cavalcade, rushed in a regular stampede. in about 3 miles we

descend by a steep hill into the
 Solidad valley, which we follow
 down & cross near its junction
 with the sea. The road next went
 over many hills cut up with
 water courses. This for the first
 time, the interesting Glendomecon

The next valley (all of them maintaining
 a course crossing our path, with rather abrupt
 windings, is San Diego, here the bottom
 is overflowed, and we waded knee deep
 along the road, crossing the stream
 twice the second time securing our
 animals. we then came on an extensive
 grassy plain, on the southern side of
 the stream, and came at its extreme
 to the Ranch of Don Michada, situated
 on an elevated dry plain. here we
 camped on the willow edged stream
 with grape vines intertwined the

stream which has gathered us so much
 owes its high water to melting snows
 which are conspicuous on the peaks
 of the second ridge beyond us, walk
 out to some drift looking hills west
 of our camp consisting of coarse
 white & yellow sand topped with
 gravel & plants. *Helianthemum* -
Rhamnus, - *Umbelliferos*?

fine wild oats in blossom, almost
 identical with our cultivated oats

Distance 10 miles

March 12 Leave Camp. about 8. A.M. in the midst
 of a drizzly rain. passing out of the valley. to
 table land. similar in character to that yesterday
 occasionally based on the sandy strata. which
 is always accompanied with its peculiar vegetation
 of which a dark foliaged shrub is characteristic
 and is a conspicuous mark in the scenery
 passing into the next valley. we pass on the

left a clump of granite and crossing
 a small stream we enter the main
 road from which we had diverged
 to cross the creek of San Diego.
 following up the road winding through
 narrow valleys by an up & down
 progress we pass a small ranch on
 our right hand. The soil of this
 part of our route is mostly clayey.
 The hillsides clothed with a
 luxuriant growth of wild cotton we
 pass in the winding valleys. Large
 herds of sleek cattle - and horses
 adding a civilized character to the rude
 landscape soon after noon we come
 upon the ranch of Don Juan Maria
 Mason - prettily situated on the
 edge of a small stream bordered
 with sycamores. just blossoming
 the valley beyond this is treeless &

the bounding hills are clothed to their tops with the rich green of wild oats - Camp in an adjoining valley, $\frac{1}{2}$ miles from San Luis Rey, distance 10 miles. (Wild oat Camp).

In 2 places on our road the ocean is visible, over a small bay entering the land —
March 13-

March 13th In the morning, before starting we heard a chime of bells, at San Luis Rey showing that we were nearer than we supposed. on mounting the first rise we come on a view of the wide valley in which the mission is situated, soon the steeple and the pillared front of the mission appeared, neatly whitewashed, and with its outbuildings, making an imposing show the mission ^{fronts the south} the grounds are situated on the southern side of the valley. the buildings occupying a plain sloping to the river. the gardens are

2. distinct. the lower occupied as a vineyard
 the one in front of the mission mostly
 planted with trees - The valley
 is wide & flat with bottom shrubbery
 and Mustard, &c. the river runs high
 in the dry season disappears - delayed
 in crossing the river. spent some time
 in looking over the mission & grounds
 The building is now occupied by an
 Hungarian - Mr Enas ty. from Wisconsin
 who designs farming, but the property
 being a matter of dispute is likely to be
 ousted soon - the main building consists
 a square, enclosing a spacious court
 the outside front, presents a ground
 balcony, with 32 arching & connected
 pillars about 12 ft apart. these are square
 at base, and each connects with the
 adjoining one by a simple arch. the
 whole mostly white washed. The inner

Court is similarly balconied, on each side. $23 \frac{1}{2}$ pillars on the side corresponding with the front & rear by $21 \frac{1}{2}$ deep, allowing 12 ft for each space making an area 276 ft by 252 ft in the center of the court are some ornamental trees. - The Chappel & features join on to the main building on the eastern side increasing the front some 100 ft a single belfry with a chain of bells, overlooks the whole grounds. The church is spacious in the form of a cross with shrines at each extreme of the crossed ends  the interior opens into a variety of rooms, and connects by an alcove with the main building. The inside is mostly stripped of its furniture the bare walls & a few images, only remaining ascending the belfry is a chain of 8

bells. bearing a Mass. mark date 1628.
 The alcove, adjoining the Chapel &
 main building, was an ornamental
 garden & still shows traces of its
 former beauty in the Hollocks
 oranges trees, and other flowers including
 Jurnel - the Rooms are frequently
 dilapidated, and leave hardly a trace
 of their former uses, the separate rooms
 & cells 70 must exceed 100.

The grounds: are in a still more
 dilapidated state. they are surrounded
 by adobe walls with frequent breaches
 one of the gardens is devoted to grapes
 & olives, in tolerable order there
 are some fine specimens of the
 Agave. Century plant, with old flowering
 stalks, 30 ft high and immense tufts
 of leaves at base, 5 ft long & set with
 thorns this species is the one from which

The intoxicating drink pulque is made. The Southern garden, is of broken ground & irregular shape on the swells, are fruit trees, including pear & peach but mostly destroyed. The lower portion is now a marsh ground with willows. I noticed teasel growing in the enclosure. - There is also sparingly a growth of Cactus, - Tuna. of which there is such an abundance at Mission of San Diego - I did not see any pinegraintes. - the olives too were not as flourishing as at San Diego. I was informed that about 20 miles up the valley was situated a branch of this mission called Palo, of which the fruit trees are said to be in better preservation especially pears, peaches, & apples - there is quite a collection of Indians. and a stone Kelt of Marshall -

As soon as we succeeded in getting our wagon across the river by the aid of 2 yoke of oxen. about 100 ft across and belly deep to our knees. with quick sand. in which my mule mired & I was obliged to dismount in the stream & drag him out. we proceeded on. crossing the valley we proceeded up a gorge on to the table land & in about 3 miles descend into the lower part of the San Marguerita Valley, in which is a cluster of ranches owned by Pico - garden spots are fenced off and the soil looked fertile. farther up the valley, is the Ranch San Marguerita in which the ground is said to be superior for cultivation & water for irrigation - it seems true of the upper part of all these valleys

that there is a constant supply of water & better facilities for farming than lower down near the Sea. - we make our camp about 3 P.M. in this valley - here I fall in with Marshall. the one who was in charge of Warner's ranch when Earl Kearney came through (see Envoys report) he lives at Palo & keeps store. we have had a few sprinkles of rain to day & the evening looks threatening. we are camped near enough to the ocean to hear the roar of the Surf as lost right but not in sight -

March 14th We passed in safety the river of San Magarita, and ascending from the bottom. enter a narrow defile winding among the hills. in its ascent to the

table land. the soil here showed a change of character, seemingly based on a micaceous slate, furnishing a hard, road, mounting to the table summit. we have an extensive view of the ocean. towards which we descend crossing over a plain slightly undulating and sloping to the sea. It is thickly beset with Clover, Medicago, & a luxuriant growth of Erodium. - which the animals seem to prefer to all else. - in the distance we approach the old small mission of Flores, which faces the S. on the edge of a small indented valley, with Indian huts & clear to the ocean. the mission is pretty much deserted, and was small in its best days no traces of cultivation. around all dwelling there is a rank growth of Mallows

as high as our mules backs. the plain
 extends abruptly, and grassy by a steep
 edge to the beach. Leaving Flores
 we continued by a good road over
 the same plain, a short distance
 from the beach. & farther on the
 hills. approach nearer the ocean &
 narrow down the plain which ^{the road} winds
 at their base. passing steep ravines,
 about 3 we enter a small valley
 down which the road passes. and
 crossing the branch at its junction
 with the ocean follows the beach.
 we encamp on the high ground
 bluffing over the beach. with a full
 view of the ocean islands in the
 distance. ship in sight. wales &c &c
 There is a fine coral & deserted
 ranch close by Distance 18 miles
 Plants Rhamnus. Peonia -

March 15th Leaving "Coronel Camp" -
 the best road follows the beach, but as
 the tide was up, we were obliged, to take
 to the plain following along the base
 of the hills. the road occasionally cut
 up into steep gullies - about 3 miles
~~now~~ we descend on the beach, and
 follow under the high beetling cliffs
 some 80 ft. of layers of hard clay
 when the tide is down. the beach
 where the waves roll, is hard, and
 affords a smooth waggon road -
 we next follow along the beach 4 miles
 to the mouth of San Juan river, and
 following up the valley 3 miles come
 to the mission of San Juan Capistrano
 The bottom of this river is very
 rich soil, and several ranches with
 fenced fields about them, and peach trees
 in blossom - the road to the mission

passes over some spurs of hills on the south side of the stream. and comes down upon the mission which lies between 2 forks of the stream

The Mission buildings are in the usual style. a facade of 16 arched pillars enclosing a court - and passing into the usual variety of rooms. The out buildings are mostly dilapidated.

The large & spacious Church, built of Sand stone & Cement, was destroyed by an earthquake 1847. its roof fallen in and when I arrived its altar was being used as a pen for cattle. - The Mission grounds are quite extensive. a large fine grove of olives. - The grape vines have been entirely destroyed. There is a fine orchard of pear trees, also peaches, a few apple trees, pomegranates a few scattering palm trees, and the

Tuna Cactus. complete the present
 assortment. The Mission building
 is now occupied and owned by Mr.
 Foster, an Englishman. 20 years resident
 in the country. I partook of a
 sumptuous dinner with his family
 consisting of 5 or 6 courses. of different
 dishes. he apologised for the want
 of meat, on account of its being Lent.
 I thought it was unnecessary. —
 we had Salmon from Upper Sacramento
 and shell fish. — Mr Foster is
 an extensive land holder. his wife
 a Mexican, or Californian — Camp
 in an outside Court attached to the
 Mission. Distance 9 miles —

March 16th Leave San Juan 9 A.M. after a clear
 evening. a sprinkling of rain fell in the
 night and the morning cloudy. clearing

by noon. which has been the usual character of weather for some time —

we pass up the valley of San Juan. the stream beautifully bordered with Platanus Mexicanus & quite sizable trees of Sambucus. the bottom ground bedded with luxuriant pasturage. Continue up the valley following its left branches till it ascends over rolling ground soil continuing of a fine loamy character. about 9 miles come upon the "Ranch Abisno", (Sycamore) on the left bank of a small stream — from there we continue on our course, and soon emerge on a continuous plain stretching as far as the eye can reach shut out from the sea by hills & bounded on the east by the mountain ranges. its entire surface was spotted with herds of cattle & horses

traversing in the rank pasturage
 of *Prostratus*. *Medicago* &c —
 this continues with a slight descent
 about 10 miles, when we come to
 an edge of scattered *Sycamores* &
Elder. passing a small branch of
 Santa Anna river we encamp at
 the Ranch, near the main stream
 High peaks of a snow covered mountain
 are on our right hand, which set
 off with the wooded hills at its base
 and flowery plain make a picturesque
 view Distance 27 miles

March 17th (Sunday) Remain camped. to rest
 & recruit the animals. the ranch is owned
 by Don Jose Yuba. —

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Col. Carasco. comdg Mexican escort
went with a party of soldiers to the mouth
of the Colorado. in Dec. they went down
in a flat boat. He estimates the distance
by the winding of the river as 70 leagues
or 210. miles. and 50 leagues in a direct
line. he represents the river as
unfit for navigation. and the meeting
of the waters of the river and gulf
by the immense mass of debris carried
down. is shallow. At the time of
high tide overflowing a large track
of country. and dangerous on account
of breakers. The Indians were shy
and could not be approached.



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