

ROUTE FROM FORT SMITH TO SANTA FE.

LETTER

FROM

THE SECRETARY OF WAR,

TRANSMITTING,

In compliance with a resolution of the House of the 6th February, a report and map of Lieutenant Simpson, of the corps of topographical engineers, of the route from Fort Smith, Arkansas, to Santa Fe; also, a report on the same subject from Captain R. B. Marcy, 5th infantry.

FEBRUARY 21, 1850.

Referred to the Committee on Military Affairs, and ordered to be printed.

WAR DEPARTMENT,

Washington, February 18, 1850.

SIR: In compliance with a resolution of the House of Representatives of the 6th instant, requesting to be furnished with "the report and map of Lieutenant Simpson, of the corps of topographical engineers, of the route from Fort Smith, Arkansas, to Santa Fe, in conformity with the survey made in eighteen hundred and forty-nine; together with such other authentic information in connexion with the same subject as may be in possession of the War Department," I have the honor to transmit herewith a communication from the colonel of the corps of topographical engineers, with copies of the report and map designated; and of a report on the subject from Captain R. B. Marcy, 5th infantry.

Very respectfully, your obedient servant,

GEO. W. CRAWFORD *Secretary of War.*

HON. HOWELL COBB,

Speaker of the House of Representatives.

BUREAU OF TOPOGRAPHICAL ENGINEERS,

Washington, February 15, 1850.

SIR: I have the honor of transmitting herewith a copy of the report and maps of Lieutenant J. H. Simpson, corps topographical engineers, of the route from Fort Smith, Arkansas, to Santa Fe, New Mexico, called for by a resolution of the House of Representatives of the 6th instant.

Respectfully, sir, your obedient servant,

J. J. ABERT, *Col. Corps Top. Eng.*

HON. GEO. W. CRAWFORD, *Secretary of War.*

Report of exploration and survey of route from Fort Smith, Arkansas, to Santa Fe, New Mexico, made in 1849, by First Lieutenant James H. Simpson, Corps of Topographical Engineers.

SANTA FE, *New Mexico, August 13, 1849.*

SIR: By a letter of instructions from the bureau, under date of 13th of March last, furnished me at Washington, I was ordered to repair as soon as practicable to Fort Smith, Arkansas, and report for duty to General Arbuckle, as the engineer officer of the expedition to be fitted out at that place. This expedition had in view the escorting of a number of California emigrants, and at the same time the exploration, survey, and construction of a wagon road from that post to Santa Fe, by the way of the south side of the Canadian river. As instructed, I did report to General Arbuckle, and by his direction joined the military escort under the command of Captain R. B. Marcy, 5th infantry, 26 miles from Fort Smith. On the way I received additional instructions from the bureau, informing me that I would continue my exploration all the way through to California, in company with the emigrants and a relief escort to be obtained at Santa Fe. On the 28th of June I reached this city, in part fulfilment of the duties which had been assigned me. Immediately on my arrival I commenced fitting out for a continuation of my explorations, as instructed, to California. A military escort was directed by Colonel Washington, the commanding officer of this department, to be ready for me at Albuquerque, and preparations were commenced by the quartermaster's department to place me and my command in a state fit for so long a journey. On the 2d of July I received counter instructions from the bureau, under date of May 9th, from which I extract as follows: "Your destination has been so far changed that you will stop with your party at Santa Fe, from which place you will without delay send to this bureau a report and plan in reference to the road from Fort Smith to Santa Fe, in which you will include all circumstances bearing upon this route as a good route, military and commercial, particularly reporting upon its facilities in grass, wood, and water.

"From information in this office, there are but two routes deserving of notice from Santa Fe to California, within United States limits. These are—

"1st. The route pursued by General Kearny. Of this route we are well informed from the report of Major Emory.

"2d. The route from Santa Fe, through Cañada and Albiquin, (see Abert's map 2d expedition,) and from thence to St. Joseph's spring, (see Fremont's map 2d expedition.) From St. Joseph's spring to Los Angeles the road is represented as practicable for wheel carriages. The part between St. Joseph's spring and Albiquin is comparatively unknown; but as it is called the caravan route from California to Santa Fe, there is reason to believe it to be a good route. It is, however, represented as a summer route only, being replete with difficulties during winter. It is this route of which the department is anxious to have accurate knowledge, and, with the approbation of General Brooke, you are directed to make an examination of it.

"Should this expedition be made, it may be proper to remark that able guides should be engaged, and that it should be so timed as to enable you to return to Santa Fe before the inclemency of winter. The distance is

about 400 miles, which, at the rate of fifteen miles a day, would occupy, with a large allowance for delays, less than four months in going and returning."

In accordance with the above instructions, I immediately went to work on the map and report of the route from Fort Smith to this city, and herewith enclosed is the result of my labors. The instructions having in view, upon the completion of the map and report, my entering upon a new expedition, which should be concluded before winter, I have been correspondingly hurried in their preparation, and this must be considered in connexion with any defect that may be found to attach to them. The maps, however, I am inclined to believe, will be found *full* and *complete* in relation to every want which the emigrant or traveller might reasonably expect to have gratified.

In regard to the details of latitude and longitude, as well as the minute description of the route from day to day as we travelled it—all of which is necessary for a *full* expression of the country, physical and geographical, and as it affected the emigrants and the troops—this it is in my power to give; but, on account of the short notice at which I have been instructed to furnish the maps and report, they must necessarily be deferred till after I return from the new exploration upon which I am ordered.

The whole distance from Fort Smith to Santa Fe having been measured by a chain, and the bearings taken as far as Topofki creek, by Captain Dent, and under my direction, every mile for the balance of the way the data furnished by these means, in connexion with a knowledge of the magnetic variation which my observations from time to time enabled me to obtain, have, with the occasional interpolation of an astronomical result, afforded me the means of getting up a series of maps which, I trust, will not be without their value to the emigrant and traveller.

The maps, four in number, have been plotted upon the large scale of ten miles to the inch; and as every stream, hill, and other accident of ground along the route, and every item of information needful for the emigrant to know—such as where wood, water, and grass can be found; their respective quantities; the several camping places of the troops; their position, distances apart; how unnecessarily long marches can be avoided; how wood and water can be had every night—are minutely laid down upon the map, it is believed that a chart has been prepared which no person of ordinary intelligence can fail to comprehend and make available for all the purposes of a comfortable and successful journey across the plains.

As regards the style in which the maps have been got up, I think it proper to say, that, starting off as I did from Washington with the idea which my orders then justified, that I was to return to that place to make out my maps and report, I did not take care to provide myself with the drawing paper and other appliances necessary to enable me to plot my observations in the finished form I would be pleased to present them; but being called upon unexpectedly to furnish a map and a report, I have of necessity been obliged to make use of such means as were at hand, (and poor I have found them,) and concentrate within a month the labor which, with more time at command, I would prefer to have extended through several months.

Having made these preliminary remarks, I enter upon the discussion of the route in question.

And first, in regard to its location, politically considered, (see maps;)

the starting point of the route, Fort Smith, being situated directly upon the western boundary-line of the State of Arkansas, which line is also the line of demarcation between said State and the district occupied and governed by the Choctaw tribe of Indians, lying immediately upon its west: said route runs clear through the breadth of this district, south of west, to Gaines's creek; this creek, the east branch of the south fork of the Canadian, and the south fork of the Canadian, limiting the district in that quarter. Thence it runs generally westwardly through the *Chickasaw* district, which is conterminous to the Choctaw district, to its utmost western limit, the one hundredth degree of longitude, or most northern and eastern boundary of Texas; and thence still westwardly, through Texas, at the same time over the ranging ground of the Kioway and Comanche tribes of Indians, and thence across the eastern limits of New Mexico to Santa Fe.

Secondly, the physical characteristics of the country traversed, and route.

FROM FORT SMITH TO DELAWARE MOUNT.

Beginning at Fort Smith, a mixed country, well watered, composed of wooded heights, wooded plains, and wooded ridges, intermingled with prairies—some gently rolling, some more highly; some of small extent, some of large; and all generally elongated in the direction of the route, and lying between encroaching and parallelly disposed secondary mountain heights—characterizes the country as far as Delaware mount, a distance of 146 miles. Numerous streams cross the road within these limits, all of which are useful as fertilizers of the soil, sources of supply to man and beast, and, in connexion with the timber growth which lines them, the green rolling prairies which they traverse, and the wooded heights from which they spring, form assemblages most beautiful to behold. The most important of them, however, on account of their volume, and the consequent necessity of ferrying or fording them at selected points, are the Poteau, Sans Bois, Copper's creek, Gaines's creek, and Coal creek.

The Poteau, at Fort Smith—width between 400 and 500 feet, depth at the time we crossed it about twenty-five, current swift, banks low—is crossed by *ferry*. Forty-seven miles further the Sans Bois is met at its *ford*. This creek, notwithstanding its name, (without wood,) is well timbered, of clay color, about 100 feet wide, two deep, of rapid current, and rock bottom. Five miles further is Cooper's creek, a *fordable* stream, fifty feet wide, three deep, of rapid current, and gravelly and rock bottom. Twenty-two miles further is Gaines's creek, or east branch of the south fork of the Canadian. At the main crossing is a *ferry*; and about one-third of a mile above, a *ford*. At the ferry the creek is about 100 feet wide, eight deep, and of rather rapid current. At the ford we found it two and a half feet deep, of tolerably swift current, and sandy and gravelly bottom. In consequence of an ugly intervening ravine, or affluent of the creek, which made the ford almost inaccessible, we crossed at the ferry. Some of the emigrants, however, passed over at the ford. Eleven miles further brings you to Coal creek, so called on account of the coal which is found upon it. This creek, a west branch of the south fork of the Canadian, is of a clay color, forty feet wide, two and a half deep, of tolerably rapid current, and of high and steep banks, their elevation being respectively twenty

and thirty feet. This creek we *forded*, and so it may be generally; but after heavy rains it becomes swollen, and then the emigrant must either await its subsiding, or—what, on account of its narrow width and the material which he finds at hand, he may readily do—make a raft and waft himself and wagons over.

At all the streams I have mentioned excepting the Poteau—and here there was no necessity—the banks had to be worked by the troops, and in some instances causeways laid to make them practicable. The troops, therefore, had to be detained for a greater or less period at each of these places, but the emigrants who followed us had comparatively but little difficulty.

Intervening all these streams, and beyond them as far as the vicinity of Shawneetown, are a number of hills, several of them quite high, very steep and rocky, and in two or three instances quite long. We also had to traverse, not unfrequently, both upon the prairies and the heights, areas, generally of limited extent, where, on account of the quicksand character of the soil, in connexion with its saturated state, caused by unprecedented rains, the teams bogged excessively. It is believed, however, that under ordinary circumstances of weather, these quicksand places can be conveniently traversed; and as regards the hills, a little time and trouble consumed by a command specially sent out for the purpose, might not only eventuate in the ascertainment of easier grades, but in every case they may be made smoother by the crushing of the friable sandstone rocks with which they are encumbered. A command of this kind—and I throw out the suggestion for what it is worth—could also improve the crossings at the streams generally, and indeed any portion of the route where, on account of the necessity of opening an immediate way for the crowd of emigrants which were pressing behind them, the escort troops, under Captain Marcy, had not the time to perfect their work, might be completed by such a force.

From Shawneetown to Delaware mount the road is very good, there being no quicksand mires and rocky hills to impede your course.

The geological formation of the country between Fort Smith and Delaware mount, being a red, friable argillo-arenaceous, sedimentary rock, the soil resulting therefrom partakes of the same character. This soil, generally tillable along the streams and in the bottoms of some of the prairies, is fertile, and though superior for grazing purposes, has been found good for corn, wheat, sweet potatoes, Irish potatoes, and, in some localities, for rice. Tobacco has also been tried, and, I am informed, has done well. The peach also thrives here; the apple not so well.

The river and creek bottoms, as also those of the rivulets, are generally luxuriantly and variedly timbered—the ridges and the prairies more sparsely; the growth on the prairies being either solitarily or in orchard-like groves, and on the ridges generally of a stinted character. Post oak, red-oak, beech, birch, elm, basswood, ash, and cotton-wood, are found along the water-courses, and post oak and black jack on the prairies and ridges.

Water, wood, and grass abound all along the route.

But what will probably delight the traveller more than anything else along this portion of his route, are the beautiful views which are ever and anon bursting upon him as he progresses. Often will he be constrained to stop to contemplate some sweetly embosomed prairie retreat, which he can

just discern in the distance, or be expanded in heart and mind by the rich profusion of prairie and woodland, of mountain and streamlet, which is spread everywhere around him, and in the most attractive irregularity. He will not fail, in particular, to witness the magnificent prospects which the stand points marked on the map will enable him to identify.

FROM DELAWARE MOUNT TO CROSS-TIMBERS.

Ascending Delaware mount you immediately get on a very high prairie, of an extent only limited by the horizon beyond you. This prairie, grandly rolling, is but seldom dotted with a tree, except upon the water courses and ravines, the latter of which are very frequent. Its formation, of a mixed character, is both calcareous and arenaceous; the sub-rocks of this character occasionally commingling in their outcrop, and furnishing by their disintegration the rich soil with which, as far as within a mile or two of Sandy creek, it is covered. Beyond this limit, and as far as the commencement of the Cross Timbers, just beyond camp No. 26, a distance commensurate with the extent of the prairie, the sub-rock being of an argillo-arenaceous character, the soil partakes of the same characteristics. This sub-rock being of a deep red color, the soil of the prairies and the silt of the ravines and streams necessarily partake of the same hue. Indeed, this red or vermilion color will be found by the traveller to be catching his eye in every direction, in the shape of denuded escarpments of deep ravines or of abutment hills.

The road has continued fine nearly all the way, the only exceptions being in crossing some of the streams, the worst one of which is Sandy creek, which the emigrant would do well either to make more practicable, or, what would probably be better, find a crossing place where the bottom would be less miry. The largest creek, and indeed the only one of any size met with after leaving Delaware mount, is Topotki creek, an affluent of the Canadian. Its bed, which at the time we crossed it was much silted up with clean gravel—a commixture of silicious feldspathic and calcareous particles—is 140 feet wide, and was then but 2 feet deep, its waters having receded to a breadth of but 25 feet. It evidently, however, is a stream which at times must be greatly swollen; but as it doubtlessly, from the indications presented, expends itself very quickly, it will never be any obstacle of any considerable moment to the emigrant's progress.

Buffalo wallows—places where buffaloes have wallowed—appear just west of Mustang creek for the first time along the route. Mustang creek derives its name from its being called the limit, eastward, of the range of the Mustang. Old Fort Holmes, or, as it is more frequently called, Chouteau's trading-house, nearly opposite camp 26, is at this time a locality with a name, but no habitation. The emigrant, therefore, will not depend upon this last vestige of civilization as a source from which to make up any deficiency in his supplies.

Grass, wood, and water were found by us sufficiently abundant along this section. When following the ridge, the water is to be found to the right and left in the ravines. The well defined and insulated grove of trees about five miles to the eastward of Old Fort Holmes, and which is marked on the map, will be found a capital landmark to show the emigrant his whereabouts.

THE CROSS-TIMBERS.

The above section traversed, the emigrant, after getting two or three miles beyond camp No. 26, finds himself in the region of the celebrated Cross Timbers; these timbers skirting the road, which continues on prairie ground on its left, and being seen ranging parallel to his course on the north side of the Canadian to his right. These timbers continue for a distance of about sixty-six miles, as far as within a mile or two of Rock of Mary, which may be looked upon as terminating them in this direction.

An argillo-arenaceous soil, generally of good quality, prevails here; that upon Walnut and Deer creeks, the only considerable ones in this section, being very fertile. Both these affluents of the Canadian, as also Spring creek, are exuberantly timbered—black-walnut, hackberry, chinquopin, elm, cotton wood, and post-oak, being found upon them. As the region of good timber for axle-trees and other portions of the running gear of the wagon terminates with these streams, the emigrant is here cautioned to supply himself with such extra material as, in his providence, he may think necessary. The Cross Timbers being a growth of the black-jack and post-oak, both dwarfish and not unfrequently unsound at the core, it is only the *sy/va* of the streams that can be depended upon for wood suitable for such purposes.

The road continues good through this section—wood and grass abundant, and water amply sufficient. It will be perceived that the route through this section, as it did in the last, chiefly follows the ridge dividing the waters of the Washita from those of the Canadian. The commencement of the gypsum formation in this section, (see map,) will not fail to attract the attention of the traveller.

FROM THE CROSS-TIMBERS TO SANTA FE, GENERALLY.

The Cross Timbers traversed, the country again becomes prairie—this characteristic holding good to within a few miles of the very entrance of the city of Santa Fe, a distance of 550 miles. Throughout this whole extent the prairie is, very frequently, highly rolling; sometimes moderately so; but never a plane surface, except on the *Llano Estacado* or staked plains; and upon this the road runs but for one day, or a distance of twenty-eight miles.

FROM CROSS-TIMBERS TO ANTELOPE, OR BOUNDARY HILLS.

Starting from Rock Mary, the road runs through a series of natural mounds of which Rock Mary is one. These mounds, on account of their novelty and Indian-lodge shape, having already, some miles in rear, engaged the attention of the traveller, I extract from my journal as follows, in relation to these mounds:

“*Camp No. 34, Wednesday, May 23.*—Proceeding on about a mile, some hills of singular shape make their appearance, for the first time, bearing north 70° west; several have very much the appearance of immense Indian lodges. Nearing the first of these singularly formed hills, and it appearing more oddly shaped than any of the others, I started off alone to ascend it—reaching it just in time to scare up a wild turkey; and tying my horse to a black-jack tree at its base, I scrambled up to its summit. The

novel character of the hill; its contorted appearance; its sudden emergence from the plain around it; my having reached its pinnacle; it being an object of interest to beholders in the distance;—all this had its complex influence upon me, and I felt correspondingly elated. Captain Marc, seeing me near the apex, suggested to me to unfurl (what I was about to do) a flag, and give it to the breeze. This I did, and soon I could see one person after another, Lieutenant Harrison and Dr. Rodgers among them, leaving the train to get a look from its summit. A person present suggesting that it be named after an Arkansas young lady, (as much esteemed by the emigrants with whom she is in company, as she is by the officers,) I immediately fell in with the suggestion, and thereupon, with waving flag, proclaimed it to all concerned, that henceforth, in honor of the said lady, the rock should be known as Rock Mary. Rock Mary, then, is the name of this fantastic formation—at least until it can be authenticated that some prior explorer had assumed the prerogative to call it something else. The rock is situated solitarily in a prairie plain; its height some sixty feet; its base some two hundred feet in diameter. In form it is like a poundcake well puffed up and partially broken at its centre. Two turret-like projections are seen protruding from its top. In substance it is an unstratified sandstone, of a red color. In surface it is spirally corrugated, and, in places, somewhat knarled, owing to the degradation caused by atmospheric and aqueous agents. During the latter part of our journey, a number of these hills have been seen. Besides the one just mentioned I ascended two others, one of them being about one hundred feet high. These two last have calcareous rock in association with red sandstone. On one of these, of abutment shape, I noticed amorphous red sandstone to be the basis rock; next in the ascending series, 5 feet of red shale, finely shistose; next 3 feet of arenaceous limestone; and, lastly, crowning the other formations, calcareous rock of massive character, containing crystals of carbonate of lime. I collected specimens of the lime formations.”

The road, though good from the vicinity of Shawnee village, opposite Edwards', now has become *very fine; and so it continues, with some considerable exceptions, all the way to New Mexico.* Indeed, so superior was it that I scarcely ever got on it, from my explorations to the right and left, without involuntarily wishing that I had a fleet horse and a light buggy, that I might skim over it to my satisfaction.

The mounds passed, the road traverses until within twenty miles of the Antelope or Boundary hills—a section of country richly characterized by the gypsum formation; the evidences of which appear in outcrops all around. This mineral can here be found in almost every form—earthy, fibrous, selenitic, and massive; and it is doubtless owing to it that the water of the region coextensive with it is in many places so unpalatable and nauseous.

Coincident with this formation, this section is characterized, physically, by the close approximation of the affluents, ravines, and larger water courses of the Canadian and Washita rivers; they here approaching so closely, as scarcely in one place to admit the passage of a single wagon. In relation to this portion of the country, I extract from my journal as follows:

“*Camp 39, May 29.*—Intervening our road and the river, a confused mass of small reddish-colored hills, scantily covered with grass, have appeared for a large portion of the way. Ravines, unsightly, on account of

their depth and broken character, have been on our right and left; and at the distance of seven and a half miles from our last camp, they approximated so near, as to but just admit the passage of a single wagon at a time."

And again:

"*Camp 40, May 30.*—The road to-day, though hard and tolerably smooth, has passed through a very uninteresting country. Short and long hills have been frequent, and on either side of it and across the Canadian the country has been very much broken—it being a confused assemblage of hills thinly covered with herbage, the red soil peeping through it on every hand. The ravines, both across the Canadian and on this side, are timbered, and, saving a few that are scattered along the main river, not a tree is to be seen anywhere. The soil, as far as the eye could reach, gave indications of sterility."

Wood, water, and grass were found in amply sufficient quantities along this section; the water, however, not in every instance palatable, on account of its Epsom-salt taste. There were but two camps, however, where it approached to intolerability—35th and 37th; and these probably may be avoided.

FROM THE ANTELOPE HILLS, ONWARD.

The gypsum region nearly passed, just after leaving camp 39, you come in sight of the Antelope or boundary hills, the identity of which we could not fail to recognise from Lieutenant Abert's faithful drawing of them, to be found accompanying his report of his expedition of 1845. I again extract from my journal:

"*Camp 41, May 31.*—At half-past one, I ascended, with Lieutenant Buford and dragoons—all riding our horses—the Antelope hills, of which there are six in number. Their height, probably from 120 to 150 feet above the plain below, has caused them to be seen for the past two days—they having constantly appeared as if they were near at hand; and yet, when first seen, their distance off was underestimated by some eight or ten miles. Their form is quite regular, four appearing in the distance of an oblong shape; the two others conical, and each of them capped by a well-defined terrace, or rather table of white vesicular sandstone, eighteen feet thick, and horizontally stratified. The summit giving me a fine view of the surrounding country, I jotted down the following notes: I can see the chocolate-colored bed of the Canadian coming in from the southwest, and, sweeping around in front of me to the north, continue on to the east, where it disappears. Low oblong hills dimly appear to the south and southwest. Along the horizon, and everywhere else, the view is bounded by one continuous and level circular arc. Intervening the horizon and my point of view, nothing but green rolling prairie can be seen on every side, except where, on the opposite side of the Canadian, red escarpments, occasionally marked with white strata, show themselves; patches and fringes of timber point out a ravine or water-course, and where, as in the present instance, a horseman is seen scouring the plain, apparently in pursuit of game. I obtained a specimen of the rock of these hills."

These hills examined, the traveller in proceeding forward will at once get into the region of buffalo grass, prairie dog villages, ponds, singly disposed and far remote from each other, but yet containing a sufficiency of water; beds of streams, some containing running water, some holding it

in pools, but more frequently found dry; some being wooded, occasionally luxuriantly, more frequently sparsely, and occasionally not at all. These features, together with the occasional uprising of a conical or tabular mound, and the appearance, after reaching Dry river, of deep and well-marked ravines, will be found to be the chief characteristics of the country between the Antelope hills and camp No. 52, or to a point of the road where it ascends the staked plains. The attention of the emigrant is particularly called to the details upon the map in respect to wood, water, and encamping places.

The next physical feature of special interest the traveller meets with is Dry river, which, as it has some prominent characteristics, topographical and geological, I quote in detail in relation to it from my journal:

"*Camp 44, June 4.*—The route to-day for 4½ miles has been on the main 'divide,' (a prairie term,) over a gently rolling prairie, the country broken immediately on our right and presenting an expanse of undulating prairie on our left. On reaching this distance we came to the rugged brow of Dry river valley, where it at once became evident that it would only be after a most rigid search that a crossing-place could be found. Deep, rough and rocky ravines were everywhere to be met coursing towards the river, and frequently, in order to their examination, we had to get off our horses and lead them down. After a search of some four hours, a route was discovered by Lieutenant Harrison, which let the wagons down very handsomely to the bed of the river, near which, after crossing, we encamped among some cotton-wood trees. The river bed at this point is ninety yards wide; some two miles further down about 200 yards wide, it being generally perfectly dry; in spots, however, furnishing a sufficiency of wood and wholesome water. The grass on the bottom lands is luxuriant; cotton-wood trees very sparsely fringe its borders.

"The geological character of the valley of this river throws, as I conceive, a volume of light upon the manner in which the isolated hills on the prairies, with tableau tops, of which I have spoken before, have been formed. Here is a valley of some five miles or more in width, and extending, probably, some eight or ten miles in the direction of the Canadian—and as many more, probably, up the affluent, for its limit in this direction was not visible—which has been entirely formed by the degradation of the soil and sub-rock, a friable whitish sandstone, by aqueous and other causes. A rill was in the first instance made: it may have originated from a buffalo trail. This rill, from abrading causes—air, wind, water, and gravity—has gradually increased until it became a ravine. The same degrading causes continuing, this ravine was converted into a creek, and finally into a channel for a river, as we now behold it. The same degrading causes still remaining operative, the hills bordering the river have been gradually trenched upon and undermined, until at length they have been made to present the aspect of retrocession they now do. In some instances the rock, acted upon by the abrading causes, has been of a less yielding character than that surrounding it; and where this has been the case, the original level of the soil or rock still shows itself in the shape of a cone with a pointed apex, or a horizontal tabular crown, this crown sometimes existing in the shape of a mass of stratified rock, with vertical side-walls of several feet in thickness, and sometimes as a mere plateau, with the sides of the conic frustrum running up entirely to its very top.

"Now hills of this character are ever and anon to be seen lifting them-

selves solitarily above the prairie plain surrounding them. What has been their origin? Have they arisen on account of upheaving causes, or have they resulted from the abrasion and consequent degradation of the soil and rocks around them? To my mind, they are attributable to the same causes which have been operating to produce the changes which have been going on about Dry river, but on a scale sufficiently great to produce them. That scale, I conceive, was afforded during the period of the *Noachic* deluge, and to this period do I date back their origin and formation.

"I notice in Dry river a characteristic which the traveller will have frequent occasion to remark, as belonging to the creeks and rivers in this portion of the country. The water, instead of being found below, as is usual in the case of streams, is generally found higher up its bed; and in places where during the day not a particle of water is to be seen, in the mornings it will be, as in the case of Dry river, a running stream. The reason of the first phenomenon I take to be, that the silt accumulating more at the foot of a stream than at its origin, the river becomes lost in it; whereas, towards its origin, it not attaining a depth sufficient in every instance to do this, the fluid continues apparent. The reason of the second, that the evaporation, doubtlessly increased in the daytime by the heated silt, is reduced by the absence of the sun at night to such an extent, that the fluid is more than enough for the silt to absorb, and hence its appearance at that portion of the twenty-four hours."

Dry river—so called by Gregg, and with great appropriateness—crossed, we came to a series of streams which, as they have never been laid down on any map, and have had no name that I can hear of, and as it is all-important to the emigrant or traveller, for the sake of identity, that they should have a fixed appellation, I have conceived myself justified in engraving upon them such names as to me, from the circumstances connected with them, seemed most appropriate. Thus the next stream of any consequence, after leaving Dry river, I have called Valley river, and this because after a long and rather uninterestingly hot, parched, and scenically uncompensating day's march, when both man and beast were almost fagged out from fatigue and want of water, and I was several miles in advance in search of the longed-for element, this river, with its beautifully verdant valley, burst upon my view; and it was the valley, with the rich garniture of trees bordering the river, which formed its most notable characteristic. So, also, in respect to Shady creek, Red Bank creek, Beautiful View creek, Encampment creek, Rocky Dell creek, Emigrant creek, Fossil creek, Tucumcari creek, and Hurrah creek; the last so called because, it being the first affluent of the Pecos we came to, it gave us certain indications that we were approaching the close of our journey.

But to go on noticing the most prominent features of the way. After passing Valley river, you come to Shady creek, and here the traveller will note the unmistakable signs everywhere existing in the shape of numerous and well beaten trails, if not of cart roads, concentrating at this point, to show that the place where we crossed it has, from time immemorial, been a grand encamping ground for Indians and Mexican traders; and possibly it may occur to him, as it did to me, that here probably passed the road which upon some of the old maps is designated the "great Spanish road from Santa Fe to Red river."

It was the same day I left this creek that I saw the beautiful cactus thus described in my journal—a species which we continued afterwards to see

frequently: "The cactus, which has from time to time been seen along the whole route, to-day appeared to us in all its glory. The finest one I saw was symmetrical in shape, five feet high and eighteen in circumference, had some twenty-five main branches, and as many lesser ones branching out from the greater, each of these latter being terminated with a superb pink rose-like flower of large size. It can well be imagined what a rich display so many and rose-like flowers upon a single bush must have made."

But, of necessity neglecting numerous details and incidents which my journal only can supply, I hurry on to camp 52, where a very cold spring awaits the thirsty and way-worn traveller. Refreshed at this spot, he is enabled to ascend the "Llanó Estacado" or staked plains, which, after a travel of twenty eight miles, he again descends, not to get upon them again during the route. Whilst upon the staked plains, he sees *what he has not before seen during his whole route*—an uninterrupted expanse of *dead level prairie*, with not a tree anywhere upon it to vary the scene. Here the tantalizing and shifting *mirage*—the well known characteristic of the arid plains of Mexico—he will see in perfection. Sheets of water will appear to him, reflecting, as it were, the objects beyond them. Antelopes will appear bounding over the plain like buffalo, and men in the distance will look like elongated spectres. Sometimes the mirage will present the appearance of smoke, and sometimes that of distant woods, with an outline of retreating steps.* (For directions in relation to shortening the day's journey whilst traversing these plains, see "Remarks" upon map, opposite camp No. 52, under the head of table.)

The staked plains disposed of, you come, immediately after descending from them, to Rocky Dell creek—the name indicating its character—where, under an overhanging rock not far north of the road, up the creek, the traveller will find some rude hieroglyphics carved into the rock, and some very clumsy attempts at painting. Among the representations of animals the buffalo, the ox, the bear, the elk, the *alligator*, and the dog, appear conspicuous. The human figure is also discernible, and among them one evidently intended to represent a Mexican cavalier in true Spanish attitude—*sombrero* and *serape* on—which, at one point of view, looks as if it had been executed by some master-hand; this, however, is the only figure of any merit in the whole collection. From the confused manner in which they have been put together, as well as from their puerile character, I can look upon them as nothing else than the productions of some idle Indian or Indians, who, for want of something else to do, invited by the locality, (it is near the water and in the shade,) and prompted to it by the fair surface which presents itself, could not let the opportunity escape of showing their cleverness in the *art graphique*.

The next creek in order is Emigrant creek; and as it was upon this affluent where, on account of the position of our camp, we had a good view of that of the emigrants, and I availed myself of the opportunity to put down some notes respecting the same, I here introduce them:

"Camp No. 54, June 15.—The officers' tents having been pitched on a bank of the creek which overlooks the Fort Smith company of emigrants on the other side, I have had a fine opportunity to take a bird's-eye view

* Gregg, in the map accompanying his excellent work, "Commerce of the Prairies," says these plains are "nearly 2,000 feet above the streams." If by streams he means those immediately at the base of the plains, my measurements will not permit me to consider them (the plains) more than 600 feet high; and if he means by them the larger rivers, such as the Canadian, I doubt if the plains are 1,000 feet above its bed.

of their encampment in its formation. The ground having been selected by their leader, Mr. John Dillard, the *corral*, or enclosure to secure the mules and cattle, is first made as follows: The first wagon is driven up to its place and halted; the second is then driven up to the left of the first—the tongues being so near to each other that, after the mules are disengaged, they may be made to cross each other. The third wagon is now driven to the right of the first, and so halted that the left fore-wheel of this third wagon will graze or be very near the right hind-wheel of the first wagon; the fourth wagon is then driven to the left of the second—its fore wheel grazing the left hind-wheel of the second wagon. Then come in succession, to take their places in like manner, the fifth, sixth, seventh, eighth, &c., until the whole train is disposed of—they all, in the mean time, having been so arranged, that when the enclosure is completed, it will be in the form of an ellipse, or circle. The *corral* made, the animals are turned out to graze, and a guard detailed to watch them.

“Now comes the busy scene of pitching tents, collecting wood, preparing food, &c. The sound of the axe, the metallic ring of the blacksmith’s hammer, the merry voice of children, the lowing of cattle, the braying of mules, is heard. Some children are playing near the water, and under a large, shady cotton-wood tree, on the bank of the stream, I see a young lady, who has just alighted from her black palfrey, enjoying the luxury of a camp seat, after a fatiguing day’s ride. Habited in her riding dress, and with bonnet on and veil thrown carelessly aside, she is twirling listlessly a switch, and giving heed to the conversation of a young emigrant, who is sitting contentedly at her feet. The other and older ladies are attending to their domestic concerns, in the preparation of a good meal for their families, or of a comfortable sojourn until the morrow.

“At sunset the signal will be sounded for the driving up of the animals; the animals will be secured in the *corral*; the camp watch established for the night; the sweet sound of the flute, perchance, will come floating on the ear, or the well-accorded voices of a band of happy vocalists, or the merry notes of the violin, accompanied with the tripping sound of feet; all these may be the accompanying circumstances—as they not unfrequently are—of the evening. The gray of morning beginning to appear, the animals are again let out to pasture; breakfast then made ready, and over about sunrise; the signal is again sounded for bringing up the animals; the tents are struck; the baggage restored to the wagons; the teams hitched up, and the command given, ‘forward!’ Such is the daily formation, some of the characteristic scenes; and the breaking up of an emigrant’s camp.”

The next object of interest to the traveller will be *Cerro de Tucumcari*, or Tucumcari hill, which he will begin to see a mile or two after leaving Migrant creek. In relation to this hill, I extract the following from my journal:

“*Camp 55, June 16.*—The route to-day has been interesting, on account of its developing the accuracy of my calculations in regard to our geographical position. Soon after taking up the line of march, a small, flat, cloud-like appearance, of small but growing extent, exhibited itself, bearing, magnetically, nearly west. A few miles further on, this appearance gave way to a well-defined truncated cone. Proceeding still further on, and in proportion as we progressed, a dome-like appearance gradually unfolded itself, till at length, when we had almost reached our present

camp, an assemblage appeared, which did not fail to strike many of us as being a most excellent representation of the dome of the Capitol at Washington. This object, which we have been gazing at nearly all day with the greatest interest, we take to be *Cerro de Tucumcari*; and if so, it very satisfactorily accords with the geographical position which my observations, in connexion with the map of Lieutenant Abert, give. There have been some among the emigrants who have been disposed to be skeptical as to the efficiency of the watch—as they call the chronometer—in determining our position; but, as Captain Marcy remarked to me this afternoon, they must now begin to have more faith in its reliability. The guide we have with us, though acquainted with the country on the north side of the Canadian, (west of the Antelope hills,) has known nothing of it on this side since we left the vicinity of Chouteau's."

And again:

"*Camp 57, June 18.*—This day has been one of interest to us, for two reasons. A number of Comanches—the first we have met—have been into camp, and we have been assured by them that the hill which we have been regarding for the last three days is indeed *Cerro de Tucumcari*: My calculations, then, have proved correct; and where there has been so much to mislead—perpetrated, doubtless unwittingly, by those who have preceded us—in regard to the distance to Santa Fe, it is a gratification to find that the information I have given from time to time, in direct opposition to more flattering statements, has become corroborated."

And again, from my journal of the same day, in reference to my visit to this hill:

"Finding that our road to-day was shunning the hill which we are now assured is the *Cerro de Tucumcari* of Gregg, when seven miles from our last camp I started for it, in company with an escort of three dragoons, to approach and ascend it. Starting on our way some 11 or 12 deer and half a dozen hares, and passing over a poor soil covered with the Mexican soap plant, we reached it after a two hours' or eight miles' ride. Telling one of the dragoons to time his horse around its base, and giving the charge of the other to another dragoon, I took the third with me up the hill. After a most laborious ascent, of which some fifty feet were nearly vertical, we reached at last its summit. On every side was an unobstructed view. To the west and south lay a confused mass of irregular hills, with here and there a well-defined and conical one to characterize the scene. Far behind, to the west, lay a range of mountains or hills; and more conspicuous than the rest a high peak, which I thought might possibly be a first glimpse of the Rocky mountains; [it proved not, however, to be these mountains.] To the south, some 8 miles distant, I could see with my reconnoitring glass the serrated tents of our little command, quietly reposing on a timbered affluent of the Canadian, to which they had resorted since I had left them. To the southeast and east lay the famous '*Llano Estacado*' of the Mexicans. To the northeast and north lay a limitless extent of broken undulating prairie, no signs of the Canadian being apparent. Pacing the top of the mound, I found it to be 230 yards by 370 in area; and by a measurement of the slope of the hill, and roughly reducing it to an angle of 45 degrees, I made its height over 700 feet. The circumference of its base, to our surprise, I found to be nearly six miles, it having taken a horse two hours, less *eight minutes*, to walk around it. It was most refreshing to both the dragoon and myself in

our descent, when we were almost ready to die with thirst, to find a couple of small springs, whence we drank copiously."

My journal of the next day giving some account of the party of Comanches referred to in the above extract, the only Indians, with the exception of four Kioways (seen near camp 42) we have met since we left the vicinity of Chouteau's, I extract further from it :

"*Camp Comanche, (No. 57,) June 19.*—We have lain by to-day primarily for the purpose of recruiting our stock, and secondarily to give the Comanches an opportunity of coming in to trade with us, as they promised yesterday they would do. One after another they came in, till about noon they numbered some 50 or 60. They were all mounted either on full sized American horses, or mustangs, ponies, or mules. These mules and some of the mustangs were well made and serviceable-looking animals. The dress of these Indians generally consisted of leggings and moccasins, with a buffalo robe or a hand-woven blanket about their loins, and very large rings in their ears and on their arms. A bow slung over the shoulder, and a quiver of arrows attached to their saddle, constituted their only weapons. Some of the more foppish of the young men were gorgeously decked out in leggings of bright red strouding and blankets extravagantly worked with beads, and wore a cue made of buffalo hair, hanging from the back of the head to the ground, and garnished consecutively with circular silver plates beaten out from dollars.

"The chief, whose name is Is-sa-kiep, or the Wolf Shoulder, having expressed a desire to be directed to Captain Marcy's tent, he was so directed; and a number of old men accompanying him, they were all received by the captain very courteously, and requested to be seated. A few preliminary remarks having been made, the chief asked the captain to give him a passport which might be of service to him and his people, when other emigrants should pass through their country. The captain having already provided one, it was given to him. Having been informed that the chief had a passport which had been given him by Mr. Fitzpatrick, I asked him to let me see it. He at once took out from his papers the following document, and a very sensible one it is :

‘ BENT'S FORT, *February 26, 1849.*

‘ The bearer of this paper is one of a delegation of Comanche chiefs, who have arrived here to offer the pipe of peace. I have therefore accepted the offer, and they promise on their part that their nation shall never again make war on the Americans. It is the opinion of the Indians of this country that the Comanches are now serious, and it would be well for all white men who may meet with the bearer of this paper to treat him in a civil manner, so long as himself and his nation deserve it. It is well known that the Comanches have been warring on us for a long time, and we have, so far, no surety that they will desist, except their own professions. The name of the chief is Is-sa-kiep, or the Wolf Shoulder.

‘ THOMAS FITZPATRICK,

‘ *Indian Agent, Upper Platte and Arkansas.*’

“ The above paper having been handed to me, Captain Marcy entered into a serious talk with the chief. He told him to tell his young men that when they approached the Americans, they must do so slowly, and under a white flag. That if they dashed upon them as they had been in the

habit of doing, they might be taken for enemies and shot; that so long as they treated the Americans well, they would be treated well by them. He reminded them of the treaty which had been entered into with them by our government through General Arbuckle, some years since, by which they engaged not to molest Americans passing through their country; that General Arbuckle still remembered them with regard, and that as an evidence he had sent them the present which he gave them yesterday; that when he returned, which he would do in two or three moons, he would tell General Arbuckle he had seen Is-sa-kiep, and that he manifested a disposition to abide by the treaty, which would make him very happy; that he hoped he would always hear they had treated the Americans well; that the Great Father of his country had a large country on the big sea towards the setting sun, and that a great many people were going there and would be passing through every year; that his children were so many, there was not room enough for them towards the rising sun, and that, therefore, they must go towards the setting sun; that this Great Father always knew what the Comanches did. When they did well, he knew it; and when they did wrong, he knew it.

“The chief, in reply, said the talk was good; that it was not forked; and looking round upon us all, remarked that he felt kindly towards us all.

“The talk concluded, the captain, to show the good feeling the American people had for them, and to satisfy their expectations, had a beef killed and half of it distributed among them. This done, they all soon left for their camp, some eight miles distant. Since then, the chief, has been in to restore a horse belonging to Mr. Murray, an emigrant, which the latter had been among them, at their camp, to get, but which he felt confident they studiously concealed. Is-sa-kiep hearing of his loss, it appears, immediately set himself to ferret out the horse; and being successful, posted off at once to our camp to give him up. We were all rejoiced to see this evidence of honesty, and I could not but connect it with the generous manner in which we had treated him and his people. We were equally pleased with his remarks in connexion with the act. He said that when he was a friend, he was so indeed; that he never grasped the hand of a friend to let it slip off again, but—suiting the action to the word—held it firmly. Mr. Murray made him a handsome present in testimony of his sense of the chief’s services, and I a small one, to encourage him to a like act of honesty and virtue; for both of which he was very grateful, frequently exclaiming, *bueno! bueno!* (good, good,) in expression of his feelings.

“Their camp, I am told by those who have visited it, contains about one hundred lodges. Their stock consists principally in horses and mules, of which there are from one thousand to fifteen hundred head, and a few goats and sheep. One of their captive Mexican boys—of whom there are several—acted as interpreter in the council to-day, but evidently as one who either was under fear, lest he might say something which might displease his master, the chief, or who had received his cue how to act, and therefore was necessarily under a proportionate degree of restraint. I am also assured by Dr. Bledsoe, an emigrant from Fort Smith, who has seen her, that they have also a very good looking young Mexican woman, a captive, among them.

“I feel confident that the proper way to subdue the wild Indians into a generous return of good feeling and favor, is to act generously towards

them ourselves, and not, as I have heard some—I trust they are but few—inculcate—that in order to self-preservation, we should not wait for an attack, or a demonstration of an attack, but shoot them down to prevent it.”

But to proceed with a description of the route:

Following up Tucumcari creek, a fine view, made up of sugar-loaf hills and tableau mounds and opening vistas, presents itself to your front. The regular stratification of these hills, their party white and red color in horizontal zones, and the whole surface, besprinkled as they are with stunted cedar of a dark green color, will not fail to be noticed by the traveller as giving them a very beautiful and unique character. The formation of these hills, which are from one hundred to three and four hundred feet high, is at the base a red, argillaceous rock, easily frangible; next, proceeding upwards, a zone of sandstone rock, very friable, and of a greenish-white color; last and uppermost, a sandstone rock, of a brownish hue, and rather coarse character. Large fragments of these last mentioned rocks lie scattered on the slope of the hills, and many among them, I noticed, presented evidences of having been subjected to the action of fire. Indeed, I think these evidences of igneous action increase as we proceed towards the Rocky mountains or primary rocks. On all these hills, and in the silt of the streams at their base, are found fossil shells of a species which point to the cretaceous period.*

The road continuing between these tableau heights, the emigrant, when three miles beyond Paxarito creek, may be gladdened, as we were, by the first glimpse of the Rocky mountains. My journal speaks of this incident as follows:

“*Camp 60, June 22.*—When about three miles on our road, quartering to the right, appeared afar off a range of mountains capped either by white cumulous clouds, white strata of rocks, or by snow. Observing it with my glass, I could form no other judgment of it than that the object was veritably snow; and the idea at once took possession of me, ‘these, then, are the Rocky mountains, which in my childhood I had thought so remote that by no possibility would I ever be able to see them. How mysteriously are we led from the cradle to the grave, and how little do we know of the future, even in regard to those circumstances where we may think we have an almost absolute control.’” (These mountains afterwards turned out to be those lying in the vicinity and to the northeast of Santa Fe.)

Hurrah creek, the first affluent of the Rio Pecos, being reached, the emigrant may fall in with great numbers of sheep, as we did. To quote from my journal:

“*Camp 61, June 23.*—Just after starting on our route this morning, when not more than two miles from our last camp, hearing a gradually increasing bleating sound—a commingling of all the notes of the gamut—I lent my ear to catch the expression, when I at once became convinced that I was in the immediate vicinity of a very large flock of sheep. Spurring on my horse, and proceeding in the direction whence the cries came, I soon caught sight of a living mass moving to my right, and not many minutes elapsed before I was in the midst of the largest flock of sheep I

*This species of fossil was also found on the Independence route, some 200 miles from Santa Fe, by Mr. A. Randall, of Minnesota, who classes it among the *inoceramus*, a type of the cretaceous formation.

had ever beheld. A swarthy, copper-colored young Mexican, of eighteen or twenty years of age, most miserably clad, was driving them slowly before him. The morning air was keen and cold, and as he, with brimless straw hat on, a forlorn blanket about his shoulders, and pantaloons which were only an apology for such, hugged his only wrapper, his step slow and measured, I though the looked the very personation of patience and resignation. Beside him was a gruff shepherd dog, a couple of impudent puppies, and a most beautiful pet lamb, milk-white, excepting tips of ear and tail, and these jet black. Moving correspondingly with and among the living mass was a whitish-gray mule, which seemed to have imbibed the spirit of his master in meekness, resignation, and patience. The flock numbered, according to the shepherd's statement, 2,000 head, and including another flock near, said to contain 4,000, the whole aggregated some 6,000. The miserable looking young shepherd having greeted me very cordially, and very civilly answered all my questions, I could not on parting with him but wish for him a more comfortable garb and a cleaner aspect."

Scarcely a day passed after this that we did not see one or more flocks of sheep or of goats.

Jogging on, the traveller, after proceeding sixteen miles from Hurrah creek, comes to the Rio Gallinas, a fine babbling brook of pure water, which he will probably think one of the finest streams he has met. The width of this affluent of the Rio Pecos varies from twelve to fifty feet; its depth at the ford we found to be but two feet; in the pools it is greater. Its bank are low and timberless.

Nine miles further, and you reach a couple of fine springs, where you make your option whether to take the road to Santa Fe *via* Ojo Vernal and San Miguel—the route the great body of the emigrants pursued—of the road by the way of Anton Chico—the first Mexican town we met—Cañon Blanca, and Galisteo. The first road, as far as I can learn, is the shortest and best watered; the latter we found comparatively smooth, but the water at remote points, and not very good.

Five miles from the springs, where the two roads branch, you come to the Rio Pecos, a swift, clear, beautiful stream, width varying from 50 to 100 feet, depth two to four feet, bottom gravelly, banks at ford low; the little town of Anton Chico, containing some 250 or 300 souls, about three-fourths of a mile above, on the other side.

The Pecos river traversed, you immediately ascend to a higher table of land, upon which, after passing through a region of pine and cedar, you thread Cañon Blanca, a sufficiently wide and smooth defile, the enclosing escarpments of which run up on either side in places to at least 1,000 feet. Stopping at the pond where the road branches off to Albuquerque, to refresh yourself and examine the *fish with legs*, which are to be found here, you proceed twenty-two miles further to Galisteo, a small village of some 100 or 150 inhabitants, on Galisteo creek, where, though the volume of water is but a thread, the quality of it is good.

Twenty-five miles further, either by the usually travelled route, or by the way of the *stone corral*—the route we took—a tolerable one, and a passage through a gorge of the Santa Fe mountains, and immediately at the city of Santa Fe, over the green valley of the Rio de Santa Fe, a trifling streamlet, you come to the city of Santa Fe, the capital of New Mexico.

GENERAL CHARACTER OF THE ROUTE.

The route throughout its whole extent, as we found it, may be characterized as follows:

From Fort Smith to Shawneetown, opposite Edwards' trading-house—a distance of 125 miles—on account of difficult hills and quicksand mires, caused by unprecedented rains, it was very bad, but may be and should be made better, as before suggested, as soon as practicable.

From Shawneetown to the termination of the Cross Timbers, or Rock Mary, a distance of 153 miles, the road was good; indeed, with some trifling exceptions, quite good.

From the termination of the Cross Timbers to Santa Fe, a distance of 541 miles, bating some inconsiderable exceptions, the road was *very fine*; indeed, a better road I never saw anywhere.

IN REGARD TO WOOD, WATER, AND GRASS.

From Fort Smith to the Antelope hills we found these essential requisites generally abundant, always ample.

From the Antelope hills to Shady creek, of grass there was no deficiency; of water occasionally an abundance—always a sufficiency, except in two instances, which now, on account of present experience, may be obviated.—(See suggestions on maps.)

From Shady creek to Santa Fe the grass was rather scarce; it generally, however, proved sufficient, and it is believed that an ample supply may, in most cases, be obtained by a search for it along the ravines and streams aside of, and at not impracticable distances from the road. Wood and water were generally sufficient, and where deficient they can now be supplied without inconvenience by following the directions laid down on the maps.

IN REGARD TO THE OTHER KINDS OF SUPPLIES NOT OF A SPONTANEOUS CHARACTER.

The town of Fort Smith, originally called *Bellepointe*, but now—detritementally, as I think—merged into that of Fort Smith, is a place of considerable commercial importance. Situated on the Arkansas river, at the head of steamboat navigation, containing some twenty stores, and carrying on an extensive trade with the great body of the friendly Indians congregated immediately upon its west and northwest, it is abundantly able to furnish all the supplies necessary for the emigrant. In addition to this, there are places lower down on the river from which the emigrant may draw: Van Buren, five miles below, and Little Rock, still farther down. But last spring Fort Smith had made herself abundantly able to supply, at satisfactory prices, the demands of the emigrants, and it is not likely that, in view of a continuation of the emigration, she will be any the less able to do the same thing when it may be again required.

Supplies of corn and fresh beef, and, in some instances, of bacon, may be got along the route at several points: at Ring's Choctaw agency, Sans Bois, Cooper's ferry, Gaines's creek, Coal creek, Shawnee village, Shawneetown, and at Edwards' or Little river settlement, on the other side of the Canadian. Of fresh beef we could purchase any quantity—price from

two to three cents per pound; of corn but a limited quantity, the price having become enhanced on account of the great demand, from 25 cents to \$1 the bushel. Beyond Shawneetown there are no places whence you may draw supplies until you reach the vicinity of the Mexican settlements, say Hurrah creek, where mutton, and the town of Anton Chico or of San Miguel, where, in addition, corn and flour, may be procured.

IN REGARD TO GAME ON THE ROUTE AS A SOURCE OF SUPPLY.

I would advise the emigrant not to rely upon it at all, but to make up his outfit as if not any the least accessions were to be expected from this quarter. Along some portions of the route, turkeys, deer, and antelope were not unfrequently started, but seldom were any brought in except by the very best hunters, and even by them not very often. In regard to the buffalo, there can be no question that they have been in the habit of infesting the route in places, during certain seasons of the year. Indeed, Gregg mentions them as swarming the plains, on his return trip from Santa Fe, in the spring of 1840. During our journey, however, I did not see more than two from the beginning to the end of the trip, and I therefore am not at liberty to hold them up as any certain source upon which to rely for subsistence.

IN REGARD TO THE DIFFERENT BRANCHES OF THIS ROUTE.

Besides the route we followed, there will be found, by an inspection of the maps, several branches of this same route, each and every one of which were followed, and in most instances made by the emigrants.

When we were cutting our road through from the Choctaw agency, where the *new* part commenced, to Shawneetown, many of the emigrants took the lower or river road from the agency, and crossing the Canadian at the mouth of the north fork, followed the route on the north side of the river to Edwards', or Little river settlement. By this route the distance to Edwards' from Fort Smith is by Mr. Edwards estimated at 140 miles. By our route the distance from Fort Smith to Shawneetown, a point opposite Edwards', was, according to measurement, 125 miles. As regards the comparative superiority of these roads, there is considerable question, some being of one opinion and some of another. Having, however, never been over the lower one, it is impossible for me, where the testimony is so equally balanced, to give an opinion one way or another. It is proper for me to remark, however, that the military road has the advantage of not crossing the Canadian at all, whereas the other crosses it twice.

In regard, however, to the relative superiority of the two routes *beyond* Edwards', and until they come together on the south side of the Canadian, at the termination of the Cross Timbers, there can be no question, from our own experience in respect to the military route, collated with that of the emigrants who followed the other, that the military route, or that upon the north side of the Canadian, is incomparably the better of the two.

In regard to all the other branches of the route which the emigrant may meet with *beyond* the Cross Timbers, he will find that the military road, generally pursuing the high dividing ridge between the waters of the Washita and those of the Canadian, is the coolest and most level; though

in case of a season of drought, it might, on account of the probability of finding better grass and water, be expedient to take a lower road.

As regards the character of the route in respect to *salubrity and pleasantness*, I would remark, that but few days occurred in which we had not a cool, refreshing breeze, and that the health of both emigrants and the military was proverbial. Those pests of some localities—mosquitoes and horse flies—we were scarcely annoyed by at all.

In respect to the *safety* with which the emigrants traversed the route, so far as *molestation by the Indians is concerned*, party after party, unescorted, some of them very small—one of them composed of but four Germans—travelled the whole distance from Fort Smith to Santa Fe without meeting, so far as I can learn, with the least obstruction from this quarter.

As respects the *points along the route where military posts should be established*, I remark, that the object of such posts would be twofold: first, to furnish points from which frequent and efficient excursions might be made against the Indians, whenever motives of State policy should make it necessary; and second, to afford protection, and be sources of succor and of refreshment to bodies of emigrants traversing the route.

Now, as these posts must be, if practicable, within supporting distances of each other, and at the same time be so situated as to command the essential requisites—wood, water, and grass—I know no points where all the conditions required can be better satisfied than on or near a stream which I call Fort creek, a branch of Walnut creek, on Valley river, and on Tucumcari creek, at or within the vicinity of the respective crossings of these streams by the road. All these streams I take to be unailing in their character. All are well wooded, with the exception of Tucumcari creek, (and any deficiency here may be supplied from the hills quite near,) and they all furnish grass—the first three abundantly, and the last probably sufficient for all the purposes of a military post. Fort creek is 212 miles distant from Fort Smith, Valley river 272 miles from Fort creek, Tucumcari creek 166 miles from Valley river, and Santa Fe 169½ miles from Tucumcari creek. Or should there not be force enough disposable to garrison so many posts, then I would suggest that the proposed post on Fort creek be pushed farther westward, to be established either on the waters of Walnut creek, upon Deer creek, (so called by me,) or upon Spring creek, the most westerly water-course of the Cross Timbers, all which streams furnish eligible points all along their borders; that the proposed post on Valley river be abandoned, and that that proposed for Tucumcari creek be retained. Or should it be deemed expedient to establish but one post on the route, then, as the position of this post should be such as to make it as grateful as possible to the emigrant, and at the same time influential in its bearing upon the remaining portion of his journey, I would propose that this post be established on Valley river.

Touching the question of the practicability of this route as one of location for a great national railroad, I must confess I enter upon it with reluctance. My want of any other knowledge upon the subject of railroads than that which I have been enabled to derive from books and observation, all of which I feel not to be satisfactory, for the reason that it is deficient;—the element which can alone make any information knowledge—I mean the element of a consciousness of its truth from a practical application of it;—I say, my want of this consciousness of the truth of any information I may have on the subject of railroads, causes me to advance

what I have to bring forward with a great deal of distrust. Situated, however, as I am, I feel bound to give my views upon this great question; and I do so expecting and hoping that they may only be so far operative as, according to their intrinsic character, they may deserve.

The route from Santa Fe on the south side of the Canadian river—I speak now of the general, not the particular route travelled—is, in my opinion, practicable for the location of a railroad; and the line of its location should be, in my judgment, in order to the obtainment of the best grade, generally on the first riparian bend of the river—I mean of the Canadian river.

The advantages to be derived from this route, as one of location for the great national highway, are its comparative freedom from obstructions caused by snow; its passage for 275 miles through a region mostly of prairie and woodland character, this region thus furnishing the timber necessary for the work; its passage through the Indian country adjoining the State of Arkansas, where coal abounds; its passage through a country capable of affording all the requisite stone material and the necessary supply of water; its line of location being entirely between and parallel to, and never crossing, the two only great rivers of the region of country traversed. These are, in the main, the advantages which this great route possesses.

But, to my mind, the time has not yet come when this or any other railroad can be built over this continent.

It is true that in one sense this is a question with which, as an engineer officer, I have no right to meddle; and yet, in another sense, it seems to me, I am perfectly justified in so doing. Viewing it in a political point of view, I do not see that I have any the least right to make any suggestions in relation to it; but on the other hand, looking at it as a mere matter of practicable accomplishment, to be commenced now, and completed within a few recurring years, I conceive that I am under obligations, in connexion with my experience upon the plains, to give my views.

I would remark, that before my present experience upon the plains, like a great many citizens who have insensibly been led to take *mentally a bird's-eye view* of the great breadth of country lying between the United States and the Pacific coast, I had in the same ratio lost the truthful idea which I once possessed of the *vast extent of this breadth*. To the degree that the proper appreciation of this great breadth became lost to consciousness, to the same degree did the practicability and immediate accomplishment of the great railroad become a matter of belief. I have, however, now been over some 800 miles of this intervening area; and though this is but a third portion, or at best but half of the distance, yet I have already seen enough to make me feel conscious that the high ideas I had once entertained have become very considerably reduced. That this work will some day be accomplished, I would not be so presumptuous as to say that it will not; but that it can be commenced now, and be brought to a successful period within ten or twenty years, I do not believe. Why, just look at the time it has taken the whole United States to do what it has done towards making one continuous chain of railroad from Maine to New Orleans—not so great a distance as that under consideration. Contemplate the many centres or points along the route where the work has been simultaneously going on. In connexion with this, have a regard

to the rich and finely-timbered country through which the several links of the road have been made. Think also of the comparatively dense population, and, as a consequence, the immense *resources* in the matter of labor, material, and subsistence; constantly available on account of this population. Now contemplate, on the other side, the immense area of uncultivated and untimbered land lying between the States and the Pacific coast; contemplate also the *absolute poverty of this whole expanse*, in respect to population—I mean now a good, producing population, not a savage one, from whom more harm is to be expected than good—and the resources which such a population naturally develops;—I say, let any one contemplate all this, and then say that I am not justified in entertaining the notion I do, that not only is the period for the commencement of this great work not yet come, but that it is yet far distant.

No, sir; to my mind all that can be done in the present stage of the world in respect to one or other, or both of the great highways over the continent, is to foster them as military roads, and thus make them the objects of legislation and control of the general government. Military posts should be established at every proper point along the route or routes, and privileges accorded to both soldiery and civilians to make these points desirable. These several points would then become flourishing centres of population; they would become places of succor and of supply and refreshment to wayworn emigrants; and, above all, they would furnish points from which the great railway could, if ever, be carried on. In a word, to my mind the order of means in respect to the establishment of this railroad is, first, the creation of centres of population wherever along the route they can be created; second, the development of the resources of these several points by this population; and, third, the taking advantage of these resources to aid in the prosecution of the road.

In what I have advanced, I am perfectly aware that I have been running counter to the cherished notions of many most eminent citizens of our common country, and this to me is far from being a source of satisfaction. But I have felt that I have had a duty to perform; and with a sense of the obligation of this duty, in connexion with the views which a journey across the plains has forced upon me, I do not see that I could well have done otherwise.*

The military force in connexion with this expedition consisted of as follows:

Twenty-five men of 1st dragoons, under command of Second Lieut. John Buford, 2d dragoons.

Fifty men of 5th infantry, from companies B, D, E, K; officers, Second Lieuts. Montgomery, P. Harrison, and Joseph Updegraff, 5th infantry.

Dr. Julian Rogers, of Newcastle, Delaware, acting as assistant surgeon, and Lieut. Harrison as assistant quartermaster.

Guide: Black Beaver, a Delaware Indian; residence, Shawneetown, opposite Edwards' trading-house.

Accompanying this force were one 6-pounder gun, nineteen (six-mule team) wagons, and one blacksmith's travelling forge.

The whole commanded by Captain Randolph B. Marcy, of 5th infantry.

My immediate assistant was Mr. Thomas A. P. Champlin, of Buffalo, New York.

*I am not so sure but that the *steam-car* can be made to run on the smooth, hard roads of the great prairie. This idea certainly impressed itself very strongly upon me when I was travelling over them.

Captain Frederick T. Dent, of the 5th infantry, assisted by Lieut. Updegraff and a small force, preceded the main command out of Fort Smith about a week, in order to cut out and mark the road as far as Chouteau's, or Old Fort Holmes. This they did, as far as within a few miles of Topofki creek, when, the main command reaching them, Captain Dent gave me a brief of the notes of his survey, and returned to Fort Smith; and Lieut. Updegraff, with the small force already referred to, joined the command under Captain Marcy.

The road as pursued by the main command from Fort Smith to Santa Fe was entirely under the control of Captain Marcy, who pointed out its location and directed its construction,

My duties as engineer and exploring officer consisted in surveying the route, furnishing the commanding officer with geographical information when necessary, taking notes of the country, and, in general, in getting up all the data necessary for a full and complete map and report of the route.

To each and all the officers named, I feel indebted for acts of kindness and of assistance rendered me from time to time in the prosecution of my duties; and among the number I would include Second Lieut. William W. Burns, of 5th infantry, the acting assistant quartermaster at Fort Smith, who not less cheerfully than efficiently furnished me with all within his power to make my way prosperous and successful.

I regret to record that the barometer which Brevet Col. Graham, of the corps of topographical engineers, so generously tendered me from his supply of instruments belonging to the survey of the northeast boundary, and which I carried with assiduous care personally from Washington to Fort Smith, was no sooner given to an *employee* to be transported with the usual injunctions of care and caution, than it became broken. I found it broken the very first night I attempted to take an observation with it.

It is also a matter of regret that an extensive *herbarium*, which Dr. Rogers had voluntarily collected for me, were found, on examination of them by him on the route, to have become mildewed, and therefore worthless. The trunk in which he had deposited them had got damp without his knowledge.

The minerals illustrating the geological character of the country traversed, and which I have with me, packed away, are in the main divested of the fossiliferous character which usually stamps specimens of this kind with value. Indeed, fossiliferous rocks, though sought for, were seldom, if at all, met with, and therefore the collections I have are not of that worth which under other circumstances they would be.

All which is respectfully submitted.

I have the honor to be, very respectfully, sir, your obedient servant,
 JAMES H. SIMPSON,

First Lieutenant Corps Topographical Engineers.

Colonel J. J. ABERT,

Chief of Corps of Topographical Engineers, Washington, D. C.

NOTE.—I have this moment been informed by Mr. S. B. Bonner, of Georgia, who, with Colonel P. Hawkins, yesterday got in with a party of forty persons (10 wagons) from Fort Smith, that they left said place on the 21st of June. They thus made the whole distance from Fort Smith to Santa Fe in fifty-five days, only forty-two of them having been *travelling* days.

The troops were from the 5th of April to the 28th of June making the journey; but this is no criterion, as they were obliged to cut and work the road as they went along, and, in addition, laid by a number of days for refreshment and on account of the emigrants.

I would also remark, in this connexion, that the very day (28th of June) we reached Santa Fe, a couple of ox-teams belonging to a small party, of which Messrs. Howard and Sullivan were members, also reached it, having been exactly two months out of Fort Smith, and lain by during this time thirteen days.

SANTA FE, August 15, 1849.

REPORT OF CAPTAIN R. B. MARCY.

FORT SMITH, ARKANSAS,
November 20, 1849.

SIR: On the second day of April, 1849, I had the honor to receive the following orders from the headquarters of the 7th military department:

HEADQUARTERS SEVENTH MILITARY DEPARTMENT,
[ORDERS No. 5.] Fort Smith, April 2, 1849.

1. In compliance with "special orders" No. 6, dated Adjutant General's office, January 23, 1849, an escort consisting of one subaltern and thirty men of the 1st regiment of dragoons, and one captain, two subalterns and fifty men of the 5th regiment of infantry, will leave Fort Smith, Arkansas, on the 5th instant, for Santa Fe, New Mexico, for the purpose of affording protection to our citizens emigrating to our newly acquired territories.

2. The quartermaster's department will, upon the requisition of the commanding officer, furnish ample transportation, funds, and such other facilities as may be necessary for the expedition. The commissary department will furnish the necessary funds and subsistence for five months.

3. The commanding officer of the escort will employ a citizen physician to accompany the troops to Santa Fe and back to Fort Smith; and the medical officer at this post will provide a good supply of medicines, hospital stores, &c., for the command.

Captain R. B. Marcy, the commanding officer, will receive a letter of instructions for his guidance on the march, before his departure from this post.

By command of Brigadier General Arbuckle.

F. F. FLINT,
Acting Assistant Adjutant General.

Captain R. B. MARCY,
Fifth Regiment Infantry, commanding escort.

On the 4th day of April, 1849, the following letter of instructions was received by me:

HEADQUARTERS SEVENTH MILITARY DEPARTMENT,
Fort Smith, April 4, 1849.

CAPTAIN: The commanding general directs that you proceed with your command from this place, in accordance with department orders No. 5, along the valley of the main Canadian, wholly on the south side of the river, by the most direct practicable route, to your destination, Santa Fe, New Mexico. It is expected you will move forward as rapidly as possible, making such improvements, &c., in the road, as you may deem necessary, until you arrive near to Edwards', where you will secure an ample supply of corn and beeves, and, after remaining there a day or two, you will proceed slowly to the vicinity of Chouteau's, where (if not already overtaken by the Fort Smith company and others who intend starting about the 10th instant) you will await their arrival.

The principal objects of this expedition are: to ascertain and establish the best route from this point to New Mexico and California; to extend to such of our citizens as design leaving here in a few days and traversing your route such facilities as circumstances may require, and it is in your power to give, to insure them a safe and unmolested passage across the prairies; and to conciliate as far as possible the different tribes of Indians who inhabit the region of country through which you will pass.

With this view, therefore, you will cause an accurate examination of the country, survey, and measurement of the road travelled to be made, keeping a correct journal of each day's march; noting the distances between good camping places; whether wood and water are to be met with in abundance; and, in short, embracing all subjects worthy of observation, or that may be of interest or service to the future traveller. On reaching the "Grand Prairie," you will most undoubtedly meet with the Comanches; should you do so, you will hold a "talk" with them, and present the principal chiefs with a few pipes and some tobacco, informing them that the present is intended to remind them of the treaty they made with the whites, through General Arbuckle and others, some years ago, at "Camp Holmes," or "Chouteau's Trading-house," near the Canadian, in which they stipulated that our citizens should be permitted to pass through their country in safety and without molestation; and that, as a great number of our people will probably travel over the road which is being established to New Mexico by the President of the United States, it is hoped they will remember their promises, &c. You will also endeavor to create and maintain a good understanding with such other tribes as you may chance to meet with, by presents of pipes and tobacco, kind and friendly intercourse, and by preventing the occurrence of any such acts on the part of your men or others as may tend to diminish their confidence in our citizens, alienate their friendly feelings, or excite in them a spirit of hostility and revenge.

If you should find among the Comanches an intelligent Indian who is acquainted with the country between the "Plains" and the Del Norte, and who knows that there is a good pass through the mountains practicable for wagons, from some point on the Del Norte about one hundred and eighty or two hundred miles below Santa Fe, you are authorized to employ him to accompany you as a guide. And in case you should be fully convinced of the correctness of his statements from information received on your arrival at Santa Fe, and that you can march from that point on the Del Norte to the "Plains," or to your outward trail intersecting it, perhaps somewhere near the mouth of Dry river, in *perfect safety*, and without subjecting your command to the necessity of encountering severe trials or hardships, you will return by that route; but if otherwise, you will furnish the commanding officer at Santa Fe with a copy of your field notes west of Dry river, and, after having sufficiently recruited your animals and refreshed your men, you will return with your command to Fort Smith with as little delay as convenience permits.

You are, doubtless, well aware of the importance and necessity of the strictest vigilance and care, at all times and under all circumstances, upon an expedition of this nature; and much must, from the necessity of the case, be left to the discretion of the commanding officer, who, as circumstances arise, should shape his course and make his arrangements accordingly, having a view to the main objects to be attained.

It is understood that an engineer officer will arrive in the course of a few days to accompany your command. If he should join you on the march, you will, of course, afford him every facility necessary to enable him to properly discharge his duties. You will please avail yourself of favorable opportunities to report your progress, &c.

I am, sir, very respectfully, your obedient servant,

F. F. FLINT,

Acting Assistant Adjutant General.

Captain R. B. MARCY,

*Fifth Regiment Infantry, commanding Santa Fe Expedition,
Fort Smith, Arkansas.*

In obedience to the foregoing orders, I employed Dr. Julian Rogers, of Wilmington, Delaware, to act as physician to the escort, and made requisitions upon the quartermaster's and subsistence departments for such supplies as I thought would be necessary for an expedition of this kind, all of which were furnished promptly. I would remark, however, that many of the mules furnished were those which had been driven from Mexico at the close of the war, and, being poor, were not such as I should have selected. In consequence of this, we were longer upon the road than we otherwise should have been, as we were obliged to make short marches and stop frequently to recruit them.

The detachment, as organized at Fort Smith, consisted of Lieutenant J. Buford and twenty-six non-commissioned officers and privates of F company 1st dragoons, and Lieutenants M. P. Harrison and J. Updegraff, with fifty non-commissioned officers and privates of the 5th infantry.

Twenty men of this detachment, under the command of Lieutenant J. Updegraff, as you are aware, had been previously sent forward upon the route to assist Captain Dent, 5th infantry, in making an examination of the country upon the south side of the Canadian river as far as near Edwards' Trading-house, and to open a road for wagons through the heavily-timbered country between Fort Smith and that point.

The road having been surveyed and measured by Captain Dent as far as the point where I overtook him, and he having made a report of the same, I shall pass briefly over this portion of our route, remarking that my report of this part of the road, so far as relates to courses and distances, is based entirely upon the notes furnished by that officer, and that I have connected his survey with my own upon the accompanying map in such a manner as to give all the information which is necessary for travellers over the road.

The character of the country upon our route for the first hundred and fifty miles from Fort Smith is of such a nature that it becomes extremely soft and boggy in a wet season, and is then almost impassable for loaded wagons, except in the beaten roads. It is generally a soft alluvial soil upon a substratum of quicksand, covered with a heavy growth of timber, mostly post oak; and before the road is packed, it will often be heavy.

Previous to and after my departure from Fort Smith, there had been very frequent rains throughout the whole country over which we passed, and the earth had become perfectly saturated with water; indeed, it was often remarked that there had not been so wet a season for many years. For this reason, our progress in making a new road upon the first part of our route and passing over it with loaded wagons was necessarily very slow,

and caused some of the emigrants to think that a better route could have been selected.

This part of the road; however, is much more directly on our course than the old road to Little river, and will, in addition to being some thirty miles shorter, be as good, when it has been travelled sufficiently to beat down the earth and pack it. Another advantage which this road possesses over the old road is in the fact, that upon the latter there are large streams to cross, which often detain the traveller for several days; whereas, upon the new road there are no large streams, as it continues altogether upon the south side of the Canadian.

Upon the map which accompanies this report I have noted our camps, and in a table laid down the distances between each, and have also noted the best places for encamping: these I have intended as daily stages for travellers with loaded wagons, and they can easily be made with mule or ox teams. Where there is no wood (and there are but few such places) will be seen by a reference to the table: at such places, a supply for cooking should be carried forward from the previous camp. Generally there is an abundance of wood, water, and grass at all the camping places upon the road.

For the first hundred and fifty miles from Fort Smith the road passes over a gently undulating country, mostly timbered, but interspersed with small prairies affording excellent grass, and the numerous small creeks and rivulets give the traveller an opportunity of encamping at almost any place he may desire.

Beyond this we struck the plains, where wood and water are not so abundant, yet there is no place upon the whole road where a very long drive has to be made to get water.

After reaching the prairie, west of the upper Cross Timbers, the ground is then as smooth and firm as the macadamized road almost the entire distance to Santa Fe.

From Fort Smith to Santa Fe, the road was measured with a chain and viameter; the measurement by the chain was a little less than that of the viameter, as the latter, being attached to a wheel, measured all the slight inequalities of ground over which the wheel passed, whereas the chain being held horizontal, was more accurate; I have therefore given the distances as determined therewith.

In returning from the "Rio del Norte," by the southern route, I only used the viameter, and made a deduction of the same *per centage* in the distance determined, as was found between the two measurements in going out.

The bearing, or course of our road, was taken with a compass every mile, and a mean of the observations taken during each day has been assumed as the course for that day's march.

The variation of the needle was determined by Lieutenant Simpson, (the topographical officer who accompanied the escort,) at four different points on our outward route; and by myself at four points, about equal distances from each other, between the Rio del Norte and Fort Smith, in returning. Between these points a mean of the observation, on each side, has been taken as the correct magnetic variation for that portion of the road.

With these data, and personal observations, together with information obtained from guides and others who could be relied upon, I have plotted

my map. As I have thought that a better idea of the country over which we passed could be had by making this report in the form of a journal, I have accordingly adopted that plan, and shall commence it at the point where I overtook Captain Dent, after making a few remarks upon the country we passed over before reaching him.

Our "train," consisting of eighteen wagons, one six-pounder iron gun and a travelling forge, each drawn by six mules, crossed the Poteau river at Fort Smith, on the evening of the 4th of April, 1849. On the morning of the 5th we commenced our march, keeping the old road through the Poteau bottom, to the Choctaw agency. Two miles from here there are three roads; the left is the old road to Fort Washita, the right leads to Edwards' trading-house, and the middle one is our road: keeping this, our course is 20° south of west, passing over a smooth and gently rolling country of timber and small prairies until we reach the "Sansbois," (forty-seven miles from Fort Smith.)

This stream is an affluent of the Canadian, and can be forded at almost any stage of water. It is sixty feet wide, two and a half feet deep at a medium stage, and not rapid.

From the Sans Bois to Cooper's creek the course is $20^{\circ} 30'$ south of west.

Our road lay between two ranges of low mountains, in a beautiful prairie valley, and ascended very gradually until we reached the summit of the ridge dividing the waters of the Sansbois from those of the south fork of the Canadian or Gaines's creek.

From Cooper's creek to where the road touches a bend of the Sans Bois, sixty-one miles from Fort Smith, our course was west; from that point to the summit of the dividing ridge, 30° south of west, and from thence to the south fork of the Canadian, 20° south of west.

The south fork of the Canadian is $76\frac{1}{2}$ miles from Fort Smith; is one hundred feet wide, and twelve feet in depth at the ferry. There is a ford about three hundred yards above the ferry, where the stream can be crossed when the water is not high.

From here our course was 18° south of west, over a rolling prairie, for ten miles, until we struck the bottom of Coal creek, 88 miles from Fort Smith.

The creek is thirty yards wide, has a gravelly bed, with two feet of water in the channel. Although it is sometimes above fording for a few days at a time, yet it can generally be crossed without difficulty. We worked upon the banks and made a good passage for wagons.

Bituminous coal is found upon this creek, and used by the blacksmiths of the country, who pronounce it of an excellent quality.

From here to the Shawnee trail, our road runs 15° south of west; from thence to the second ford of Coal creek, $30^{\circ} 30'$ south of west; thence to little Cedar mountain, 100 miles from Fort Smith, the course is 22° south of west; here the road runs 18° north of west to Stony Point, 5° north of west to the Shawnee village, and 26° south of west to Shawneetown, 125 miles from Fort Smith.

At this place the road forks; the right going to Edwards' trading-house, (eight miles off,) and the left is our trail. Should travellers desire to purchase supplies, this is the last point where they can be obtained, as the road here leaves the settlements. Horses, cattle, corn, and many articles of merchandise, can be had at Edwards' settlement, on the north side of the Canadian.

While here I engaged a Delaware Indian, named "Brack Beaver," to accompany us as guide and interpreter; and he proved to be a most useful man. He has travelled a great deal among many of the western and northern tribes of Indians; is well acquainted with their character and habits, and converses fluently with the Comanches and most of the other prairie tribes.

He has spent five years in Oregon and California—two years among the Crow and Black Feet Indians; has trapped beaver in the Gila, the Columbia, the Rio Grande, and the Pecos; has crossed the Rocky mountains at many different points, and indeed is one of those men that are seldom met with except in the mountains.

While encamped opposite the mouth of Little river, we were visited by some of the Shawnees who live in the vicinity, and I discovered, much to my surprise, that their language was very similar to that of the Chipewas; indeed, many of their words were the same: for instance, they both call fire "*scota*," water "*nepish*," tobacco "*sama*," bear "*mucqua*," and many others are the same. They live principally by agriculture, and have some good farms; they raise corn, wheat, cattle, hogs, and horses, and appear to have an abundance of everything.

On the 1st of May we left our camp, opposite Edwards', taking a course almost south, gradually turning to the west to pass around mountains which border the Canadian, until we reached the Delaware mountain, 146 miles from Fort Smith.

The country is here very beautiful, being a rolling prairie, with numerous small islands or groves of timber, and many streams of pure spring water, skirted with trees of different kinds.

The soil is of a good quality, resting upon a basis of limestone, and in every respect well adapted to cultivation.

From the Delaware mountain, our road passed by a gradual and easy ascent up the ridge dividing the "Boggy" (a tributary of Red river) from the waters of the Canadian. Directly where we passed, there is a high, round mound, and upon the top a pile of rocks, which can be seen for a long distance around, and is a good landmark for the traveller. One mile from this mound we reached a beautifully clear, rapid stream, abounding with fish, and here we found Captain Dent encamped. After he had furnished me with a copy of his field-notes; he turned back for Fort Smith, and I proceeded on, taking Lieutenant Updegraff and the detachment under his command. Seven miles from where we overtook Captain Dent, we crossed another and much larger stream, thirty yards wide and one foot deep, with a very rapid current: this is called by the Indians "To-paf-kees" creek. There is walnut, oak, ash, and other kinds of hard timber, growing upon the creek, but no grass; about a mile from here, however, at the border of the prairie, we found good grass and encamped on the night of the 3d of May.

May 4.—We did not move to-day, as it has rained most violently all day: the earth has become very soft, and the creeks are full.

May 5.—We made an early start this morning and travelled over a beautiful prairie, crossing two small streams (affluents of the Washita) which are called, after they unite, "Mustang creek," from the fact that wild horses are often found upon it.

As Beaver assured me that we should find no more hickory timber after passing this stream, I procured an extra supply of poles, axles, and

hounds for our wagons, to serve us across the "plains," and would advise all persons passing over the road to do the same, as after passing here, there is no suitable timber for such purposes.

I saw to-day, for the first time, the "mezquite" grass, and it is probably this which attracts the wild horses, as they are very fond of and soon fatten upon it.

The hills we passed to-day are of a red sandstone formation, highly ferruginous, and in a state of decomposition. Limestone is also found in places. The country, as we advance, is becoming more destitute of timber.

May 6.—It rained during the whole of last night, and has made our road so heavy that I have concluded to "lie by" until to-morrow. This evening we have another thunder storm, accompanied by the most intensely vivid lightning I have ever seen. The whole artillery of heaven appears to be playing; and, as the sound reverberates in the distance over the vast expanse of prairie, the effect is indeed most awfully sublime. Upon such an occasion one realizes truly the wonderful power and majesty of the Deity, and the total insignificance of man. While I am writing the rain pours down in torrents, and the wind comes whistling over the distant plain with terrific violence. The flies of our tents, soaked with the driving storm, and drawn to their utmost tension by the shrinking of the cords, strike the tents with such force as to produce reports like pistols. The whole surface of the earth is deluged with water.

May 7.—We were so fortunate as to keep our tents in an upright position last night, and the storm ceased after about two hours' duration. Making a start this morning, by hard work on our men and animals we made five miles. The country has been rolling prairie, with several small patches of oak and elm timber. The soil continues highly charged with iron, and of a deep red color; it is, however, becoming thin and poor as we advance. At our camp of this evening we can see the valley of both the Washita and the Canadian, and we are now upon the ridge dividing the waters of these two rivers. As we are now coming into the vicinity of the Comanche "range," I have given orders for cartridges to be issued to the command, and shall take up our line of march from this time in the following order: the dragoons in advance about one mile from the train; the main body of the escort directly in front of the train—the cannon in the centre and the guard in the rear.

May 8.—We marched eleven miles to-day, and struck the dividing ridge after crossing a stream some five miles from our camp of last night. We found many small branches rising near the summit of the ridge, running off into the Washita and Canadian; they are skirted with trees sufficient for fuel, and in many of them there is water near the road; they thus afford good camping places. Our road approached near and in view of the Canadian; a short distance of our camp of to-night we could discover much more timber upon the opposite bank. The grass continues good, but the soil is of a poor quality.

May 9.—We resumed our march this morning, keeping the high prairie divided for seventeen miles, where the ridge turns to the left, nearly opposite "Old Fort Holmes." As the Fort Smith company have not yet reached us, we shall await their arrival here, as ordered. The cause of their delay has been, that they crossed the Canadian at Edwards', and have found the road much worse than on this side. The country we

have passed over to-day has been entirely prairie, with the exception of a few scattering trees upon the borders of the branches heading near the crest of the "Divide." As we are now near the eastern border of the lower "Cross Timbers," I shall start out in the morning and endeavor to find a good road to pass our wagons through.

May 10.—Taking Beaver with me, I started out this morning to examine the country ahead. We found that the Divide turned south into the Cross Timbers, was very circuitous in its course, and extended some fifteen miles before it came out upon the prairie west of the "Timbers." It would have required several days' labor to open a road upon the "Divide," and I determined to make a further examination. On our return to camp, we followed down a creek called "Chouteau's creek," which heads near where we turned, and runs almost a due east course between the "Cross Timbers" and the Canadian; we found a smooth prairie along the bank of the creek and encamped at sundown. As we had taken nothing from camp with us except some hard bread and tea, I began to be fearful towards night that our supper would be but a sorry one, and intimated as much to the Indian, telling him "that a good hunter should certainly kill game enough for two men's supper;" soon after this he discovered a turkey upon the prairie, and, putting spurs to his horse, started after him at full speed. I thought this a novel method of hunting wild turkeys, and looked on the chase with a good deal of interest, particularly as I knew that the quality of our supper depended upon the result. The turkey was about half a mile ahead at the start, and made good running for a short time, but soon found it necessary to resort to flight. The hunter followed on until the turkey alighted and ran into a timbered ravine; he still followed out of sight with his horse, but soon appeared again with a stick driving the exhausted bird before him. I expressed much surprise at the facility with which he run down and caught the turkey; but he informed me that they seldom ever fly more than twice before they become exhausted, and are then easily taken.

May 11.—This morning we continued down the creek upon a narrow strip of prairie lying between the "Cross Timbers" and the creek, which led us back to camp in a direct course.

May 12.—As the Fort Smith company have not arrived, we are burning a small coal-pit, sufficient to serve us across the "plains." This evening I received a note from Captain Dillard, of the Fort Smith company, informing me that he will join us in three days. He has had great difficulty in passing over the road upon the north side of the Canadian, and the company express much regret that they were not governed by his wishes to follow upon our trail; they promise to do so in future.

May 13.—We remained in camp to-day, waiting Captain Dillard's arrival, but shall move forward to-morrow about five miles, for the purpose of bridging two small streams which intersect our route and run into Chouteau's creek.

May 14.—Starting this morning, we marched to the first creek, bridged it, and encamped upon the second; they are spring brooks rising in the "Timbers," and have good water in them at all seasons of the year. Upon the banks of Chouteau's creek there is cotton-wood, elm, hackberry, and a species of oak bearing an acorn about the size of a black walnut, with a very thick bur, and a fringe at the top of it encircling the nut; this is called by the Indians "over-cup." This evening there suddenly

arose one of the most terrific storms I ever witnessed—it was a perfect tornado; the first blast laid nearly every tent in camp flat upon the ground, and sent beds, trunks, and tables whirling and tumbling in every direction. Our camp presented for a few minutes a most perfect scene of confusion. As I looked out from under my tent, (which had fallen upon me and held me fast,) I saw, by the incessant flashes of lightning, officers and men running in all directions through the rain—some trying to find shelter, and others following up a hat, blanket, or tent which the gale had seized upon and was carrying off upon the prairie. Nothing could resist the violence of the storm; it continued about an hour, when the wind abated, and we went to work to put up our tents again. Everything is soaked, and we shall remain to-morrow to dry, when we hope to be joined by the Fort Smith company.

May 15.—This has been a day of general drying throughout camp, and we are now ready to move forward again, as soon as we learn that Captain Dillard is near us. Dr. Rogers was so unfortunate as to have all his botanical specimens ruined by the storm last night; this is to be much regretted, as he had a great variety of plants and flowers which he will not meet with again, being near the Grand Prairie where the character of vegetation is entirely different from what we have passed.

May 16.—Learning that the Fort Smith Company are near us, upon the other side of the creek, I started this morning and moved a few miles up the valley.

The grass in the creek bottom is fine and the soil good.

May 17.—This morning we continued up the creek for about a mile, then turned to the left, and struck the Divide in the "Cross Timbers;" after marching six miles, we reached the large prairie between the two "Cross Timbers" and encamped upon the head of Chouteau's creek, where we found good grass, fine clear spring water, and oak wood.

Through the "Cross Timbers" the wood is black-jack, post-oak, overcup, and hackberry. The soil is gravelly sand, and the rocks a dark, hard sandstone. I found iron ore upon Chouteau's creek, and the soil continues to be ferruginous. We have seen some deer to-day; but game is not abundant.

May 18.—Continuing upon the high and dry dividing ridge, we made eleven miles; the soil is of a good quality, but there is no timber and but little water; we, however, found wood, water, and grass sufficient for camping purposes. We have seen occasionally detached pieces of gypsum to-day, and some limestone, but the rocks have generally been a soft, coarse sandstone. Our road approached within two miles of the Canadian at one point of our march to-day, and directly at this place we were opposite the mouth of "Spring creek," a very beautiful stream of pure spring water; has good grass upon it, and wood sufficient for camping purposes. The Fort Smith company joined us yesterday, and we shall now move on more rapidly.

May 20.—This being Sunday, and a very rainy day, we remained in camp; the rain commenced with one of those thunder showers which are so frequent upon the prairies, and, as usual, it was accompanied by a perfect tempest of wind. We are now near the upper "Cross Timbers," and I find upon examination that we cannot follow the "Divide" through, as it becomes very rough and broken immediately upon entering the timber. I shall, therefore, leave the "Divide," cross Spring creek, and take the high prairie

between that stream and the Canadian. In this way I shall be enabled to pass on the prairie entirely around the upper Cross Timbers.

I met with the wild squash to-day; it has much the appearance of the cultivated varieties, except that the leaves are of a light blue color; they are now in blossom.

May 21.—Our road to-day continued on the "Divide" for three miles, when, coming near the Timbers, we turned to the right and took the prairie valley up "Spring creek," skirting the lower edge of the "Cross Timbers;" here we found a fine road, and moved along with great ease to our animals. We encamped upon one of the numerous spring branches which flow into Spring creek, and found an abundance of good wood, water and grass.

May 22.—This morning we continued up the south side of the creek for three miles further, where we turned to the right and crossed to the dividing ridge lying between the creek and the Canadian; at the point where the road strikes the crest of the ridge we found ourselves only one mile from the river, and continued that distance from it until we reached the head of Spring creek, where we encamped, making our day's march sixteen miles. The valley of Spring creek is beautifully situated for farms; slopes gently to the south, and is a mile in width, abundantly watered, arable soil, and timbered with black walnut, elm, hackberry, and cotton-wood. It is in the immediate vicinity of the upper Cross Timbers, where post-oak timber is abundant, affording a good material for building and fencing purposes. It is also directly opposite the head of the Little Washita river, where there is said to be hickory and sugar-maple timber, within a distance of ten miles from this place.

These advantages, in connexion with the fact that there are no other streams for three hundred miles west of here upon our route, which have good soil, or any other building timber except cotton-wood, (and that in very small quantities,) render this stream a suitable point for the establishment of a military station, should the government determine to place troops upon this road. It is also a place where the Comanches and Kioways frequently resort for the purpose of killing buffaloes. Moreover, no settlements can be made upon our road west of this point, as there is no place where the soil and timber will admit of it.

May 23.—We turned slightly to the left this morning, and, after travelling two miles, struck the main "Divide" of Washita and Canadian. Continuing on this "Divide" for thirteen miles, we passed several high round mounds of a very soft red sandstone, rising up almost perpendicularly out of the open table land, and can be seen for a long distance before reaching them. At the base of the southern mound, following an old Indian trail, it led us down into a deep ravine, where there is a fine spring of cool water, with wood and grass.

Our road from here took a direct course for a point of timber which can be seen from the top of the largest mound, but deviates somewhat from the general bearing. As we found little water to-day, we made this digression for the purpose of seeking a camping-place, and were much delighted, on arriving at the timber, to find a splendid spring of water, rising in a basin of white limestone, as perfectly hollowed out as it could have been done by art, and filled with fine cool water. About five hundred yards below this the stream formed by the water of the spring becomes enlarged, and contains an abundance of sunfish.

The soil upon our route to-day has been gravelly sand, and no timber except upon the borders of ravines. There is wood sufficient for encamping upon this stream, and fine grass.

May 24.—Our road continued on the Divide during the whole day, and was very fine and good. We are now passing through a country where gypsum is found in great quantities; in many places the surface of the earth is covered with a white incrustation of decomposed gypsum, and frequently large blocks were seen, in which there were all varieties, from beautiful transparent selenite to common "plaster of Paris," gradually merging from opaque to pure transparent. The fibrous varieties were also found frequently. The soil upon our road has been very poor, and but little water; at our encampment to-night we have water that is bitter and unpalatable, but will answer for cooking when none other can be obtained.

May 25.—Our road has kept the divide all day, and, as usual, was firm and smooth; passes over a gypsum formation, and many of the hills have been entirely composed of it. At our camp we have good wood and grass, but the water is as usual where gypsum abounds—far from being sweet.

We have seen many antelopes and turkeys during the last few days, but deer are becoming scarce as we advance. Buffalo tracks have been seen frequently, but as yet none of the animals themselves.

May 26.—We continued to follow the dividing ridge to-day, for thirteen miles, when we came to a large lateral ridge, running off from the main Divide, which we followed, and did not discover our mistake until we had gone about three miles, where we encamped on a branch of the Canadian.

We found the wood and grass good, but the water continues slightly saline. There is elm, cotton-wood, hackberry, and wild china upon the creek where we are encamped. As I was riding in advance of the train to-day I saw the first buffalo; there were two bulls, quietly feeding, about three miles from me. I gave them a chase of about ten miles, fired some five or six balls into one of them, but did not succeed in getting him to the ground. I had a most exciting chase, but it was very severe upon my horse, and I have no doubt it injured him more than three weeks' travelling. Poor fellow! he performed his part most nobly, for which I rewarded him with a good feed of corn on my return to camp; and, as he had been living on grass alone for several weeks, I have no doubt he felt well rewarded for his labor—at all events, his countenance assumed a most grateful expression when it was placed before him.

May 27.—To-day, (Sunday,) in accordance with a rule I have adopted, we "lay by," to give the men time to wash, and the animals to graze and recruit.

May 28.—We retraced our steps back to the dividing ridge this morning, and placed a stake, with directions to those following us "to keep the left hand trace." Our road passed from here to our camp upon high rolling prairie, with no water or wood, and we were obliged to turn from the dividing ridge down to the bank of the Canadian. We passed down over a gap in the bluffs; found good wood, water, and grass.

May 29.—The country we have passed over to-day, near the Divide, has been principally a formation of gypsum and blue limestone ledges, in which we discovered petrefactions of oysters and muscles. These are the first fossils we have seen upon our road.

We encamped on a branch of the Little Washita; found wood and

grass abundant. The country between our road and the two rivers is much broken by hills and ravines, which appear to have been thrown up without the slightest reference to finish or utility; and I am convinced that the only place along near our route where a natural wagon road can be found is directly upon the crest of the Divide. From a high ridge near our camp we can see the Antelope, or Boundary mounds, far to the west.

May 30.—Our road was upon the dividing ridge all day, and very firm and smooth, but somewhat circuitous, following the windings of the "Divide;" this has generally been very direct, and, for the two hundred miles we have travelled upon it, I have never seen a better natural road. The country upon each side falling off towards the Canadian and Washita, leaves the crest perfectly dry at all seasons. There are numerous small branches rising near the road which are skirted with timber and grass, thereby giving the traveller an opportunity to encamp at almost any time he feels disposed. The soil is unfit for cultivation, being a hard gravelly sand, and very poor. We left the Divide near our camp, and are upon a branch of the Canadian; the water, wood, and grass are good.

May 31.—This morning we followed down the creek, and travelled for several miles upon the Canadian; finding this part of our road sandy, however, we soon turned back, and came upon the high prairie between two of the Antelope buttes. These hills are about one hundred and fifty feet high, of porous sandstone, and appear to be the result of volcanic action. They rise almost perpendicularly from the smooth prairie, are flat upon the top, and present every indication of having been raised out of the earth by volcanic agency. They are near the 100th degree of longitude, and are sometimes called the Boundary mounds, as being near the line formerly claimed by Texas as her eastern boundary. We encamped this evening without wood at some holes of water in the prairie; we could have found wood by going six miles further, but our mules were wearied, and I concluded to use the "buffalo chips" rather than drive that distance.

June 1.—Taking the "Divide" again this morning, we marched fourteen miles over a very direct and firm road, without a hill or ravine, until we reached our camp, upon a small lake on the high prairie. There is an abundance of never-failing water in the lake, and the buffalo grass grows luxuriantly upon its banks. This grass is very short and thick; but animals are extravagantly fond of it, and it is very nutritious. There are hills about a mile to the east of the lake similar to the "Antelope buttes;" these can be seen for a long distance upon our road, and are good landmarks. As it is half a mile from the lake to the nearest wood, I would recommend to travellers to throw a few sticks for cooking into their wagons before reaching here. We received a visit this evening from four Kioway Indians, dressed in their war costume, and armed with rifles, bows, lances, and shields. They were on their way (as they told us) to Chihuahua, Mexico, where they were going to steal mules and horses, and expected to be absent from here a year or more. I brought them into camp, presented them with some tobacco and pipes, gave them supper, and told them that we were disposed to be friendly and at peace with the Kioways; that it was the desire of their "great father," the President of the United States, to be on terms of peace with all his "red children." This appeared to please them, and they replied

that they would communicate my "talk" to their people, who live forty miles north of here upon the north fork of the Canadian. I was much surprised at the ease and facility with which "Beaver" communicated with them by pantomime. This appears to be a universal language among Indians, and the same signs and gestures are made use of and understood by all tribes. The grace and rapidity with which this mute conversation was carried on upon a variety of topics relative to our road and their own affairs astonished me beyond measure. I had no idea before that the Indians were such adepts at pantomime; and I have no hesitation in saying that they would compare with the most accomplished performers of our operas.

June 2.—We travelled sixteen miles to-day over a very good road, with but little water near it, however, until we reached our present camp; here we have wood and water in a ravine. The country, as we advance, becomes gradually higher, and the soil continues poor, with but little timber. We are yet upon the "Divide" of the Washita and Canadian—about five miles from the latter, and three miles from a large branch of the former. The wife of one of the emigrants encamped near us has been sick for several days, and reported to-night as very low. The fatigue and inconveniences to which she is necessarily exposed in a journey over the prairies, has, no doubt, had a tendency to aggravate her disease. Being a lady of delicate constitution, and having never before been subjected to the privations and hardships of a camp life, she is but poorly fitted to endure in sickness a march of this kind.

June 3.—This being Sunday, we stopped to recruit our men and animals.

June 4.—We made a march of ten miles to-day, and reached Dry river, crossed and encamped on the west bank. We found bluffs about two hundred feet high on the east side, very abrupt, and crowned with ledges of sandstone; but after a short examination, discovered a pass which led us by a very gradual descent to the river bottom. The distance between the top of the bluffs, from one side of the stream to those of the other, is five miles, and the valley where we crossed about two miles in width. There is wood, water, and grass in abundance here; and it is a fine camping place. The bed of the stream is one hundred and fifty feet from bank to bank; but when we arrived in the evening there was no water, except in holes. The next morning, however, there was water running over the quicksand, forming a stream some ten feet wide. I could account for this in no other way than from the fact that the quicksand absorbs a large portion of the water flowing through the stream, and in the daytime the sun evaporates the remainder; but in the night, there being but little evaporation, the water not absorbed passes off over the bed of the river.

On approaching Dry river from the east, our road passed up the ridge dividing the head branches of the Washita from "Dry river;" here the Divide, which our road has followed about two hundred and fifty miles, turns away to the south, and from this place we see it no more. I am informed by Beaver, who is well acquainted with this part of the country, that this stream has its source in an extensive salt plain southwest of here, and that "Red river," which has never been explored to its head, rises in the same plain, and near the same place. It has generally been supposed that Red river extended far west of here, near the Pecos, and

passed through a portion of the "Llano Estacado," but Beaver says it rises east of that plain. The Canadian, for the last two days' travel, has been shut in by high bluffs on each side, and the country between the bluffs and our road much broken by sharp round hills and deep gulleys.

The soil in this vicinity is totally worthless and unproductive; no timber fit for building, and but little water. We have seen many fresh Indian "signs" to-day, but no Indians. I have cautioned the emigrants to be vigilant in guarding their animals, as many of them continue to be very careless.

June 5.—We ascended this morning, through a smooth pass, to the top of the western bluff of Dry river, where we found ourselves upon a very elevated plain which divides the waters of Dry river from the Canadian. Passing along this on our course we made seventeen miles and encamped upon a small tributary of the Canadian, where we found good water, but standing in holes along the bed of the creek. We passed several of these streams to-day, and they were all similar to this. The soil is still poor, and wood scarce. The formation of the bluffs near our camp is sandstone of a very soft and porous character.

June 6.—We made a drive of twenty-two and a half miles to-day, but did not follow the "Divide" far, as it turned too much south. We crossed several dry ravines, where there will generally be water found, as it is but a few days since they became dry. We, however, found no water until we arrived at our present camp. This is upon a very beautiful, clear stream of spring water. The valley through which the stream runs is about five miles wide, and has a great deal of large cotton-wood timber upon it. The grass is of the best quality, (mezquite,) and there is a little arable soil upon the banks of the creek. This is the largest affluent of the Canadian we have passed since leaving Spring creek. Notwithstanding it runs over a very wide bed of quicksand, yet there will always be running water found here, as the stream is fed by numerous large springs. It is one of the best camping places upon the road, and as some of our wagon tires are loose and require resetting, I shall "lie over" to-morrow for that purpose. From the fact of this stream having so much more timber upon its banks than the others we have passed, I have called it Timbered creek upon my map.

June 7.—We remained upon "Timbered creek" and repaired our wagons to-day.

June 8.—At seven miles from our last camp we crossed another stream of pure spring water, where there is wood and grass in abundance; and at our present camp we have another small spring creek, which will always afford sufficient water for the traveller's purposes. We left the Fort Smith company this morning at "Timbered creek." They were detained in consequence of the illness of the wife of an emigrant; and we have learned this evening that the result of the detention has been an addition to the company of two promising boys, (twins,) which the happy father has done Captain Dillard and myself the honor of calling "Dillard" and "Marcy." For my part I feel highly complimented; and if I never see the gold regions myself, I shall have the satisfaction of knowing that my name is represented there. I wish the young gentleman a safe journey to California, and much happiness and gold after he gets there. Our road has continued to approach the Canadian for the last three days, and we are now about four miles from it.

June 9.—After marching three miles this morning, we arrived upon the border of a deep valley, with high rocky bluffs upon each side, which we at once pronounced to be the stream Gregg calls "Bluff creek." Indeed, after we had passed it and ascended to the high plain on the opposite side, we fell into an old wagon trace which confirmed me in the belief.

"Bluff creek" has good wood and grass upon its banks, and water plenty. It is of the same character as Dry river, with quicksand bed and poor soil in its valley. We followed Gregg's trace for several miles, and encamped in a ravine, where we found large pools of water coming from springs, with excellent grass and fuel. One of our gentlemen killed an antelope to-day, which we made our dinner from, and found it equally as good as venison. These animals frequent the highest and most arid plains, where no other animal ever resorts, and I have often found them where there was no water for many miles around. This has induced me to believe that they seldom require that element, without which most other animals perish in a short time. They are exceedingly timid; at the same time have much curiosity; and if the hunter will conceal himself in the grass, he can call them near him by showing his hand, or some other small object, above the grass.

June 10.—We made a late start this morning and travelled three and a half miles, when, ascertaining that there was no water for a long distance ahead, and Captain Dillard having marched about ten miles to overtake us, I determined to encamp at a ravine where we found wood and water. Although there may be times when there is no water here, yet I think it can always be depended upon, except in the very dryest season. This place cannot be mistaken, as it is due south of, and about two miles from, a very prominent round mound, which can be seen for several miles. We have passed over a high rolling prairie for the last three days, destitute of wood, except a narrow fringe of trees upon the borders of the ravines—the soil worthless and utterly unfit for cultivation. We found great quantities of grapes in the ravines near our road, growing on low bushes, very similar to those that are trimmed and cultivated.

June 11.—We started this morning, our road continuing over the elevated plateau, destitute of water, until we reached here, where there is a fine spring creek, with a great abundance of wood and grass. Our march was fourteen and three quarter miles; and this position must be reached, as it is the first camping place after leaving our camp of last night. We are at this point about eight miles from the Canadian. We have several varieties of wild fruit upon the creek near our camp; among others, grapes and gooseberries. There has been but little game seen for the last three days. I killed a turkey this evening, which is the first we have seen for a week. Quails or partridges are found at all places upon our road; this bird and the meadow-lark appear to be common in all latitudes, from the extreme northern States to the most southern.

The streams through this part of the country have but few fish in them. We have, however, seen the sunfish and catfish wherever there is a stream of any magnitude.

June 12.—Our march this morning, for the first four miles, was over a rather heavy and sandy road, after which we had a smooth prairie. The soil for several days past has been of a white, sandy appearance; but to-day, as soon as we struck a red soil, our road became at once as firm as marble, and our mules passed over it with great ease. Should travellers

encamp at this place, they will be obliged to put a few sticks of wood in their wagons for cooking before reaching here, as there is none to be found on this stream. It requires but very little fuel to cook supper and breakfast, if it is properly economized. It should be cut short and split into small pieces; then digging a hole in the ground about twelve inches in depth, and of a size suitable for the wood and cooking utensils, all the heat is preserved, and a very small fire serves to cook a meal. We observed a very beautiful species of cactus along our road to-day, growing upon the high prairie to the height of six or eight feet. It shoots up from the ground in joints of about six inches in length, of an octagonal form, and every joint as it rises making an angle with the one beneath, sometimes branching off horizontally, and all nearly of the same size and length. A plant generally covers an area of ten or twelve feet in diameter, and, filled (as they are at this season) with a multitude of beautiful pink blossoms, they make the desert prairie look like a flower-garden. Our road has run nearly parallel to the course of the Canadian to-day, and the bluffs upon it can be seen nearly the whole distance. We have seen a few mezquite bushes during the past three days.

June 13.—The bluffs bordering the "Llano Estacado" have run parallel to our road, at from one-fourth to one mile distant, during most of the day. They are from 100 to 250 feet high, generally sandstone, covered in places with a growth of dwarf cedar. We marched 17½ miles over a very smooth prairie, and found an abundance of good water at four different places along the road.

As our wagon tires continued to become loose, from the shrinkage consequent upon the extreme dryness of the atmosphere in these elevated plains, I was desirous of finding a place where wood was plenty, in order that we might reset them. We were so fortunate as to find this a most favorable spot for that purpose, and at a convenient day's drive from our last encampment. Our present position is about half a mile from the road, to the left, near the timber. It is directly in a gap or notch, formed by the bluffs of the "Llano Estacado," which here jut in very near the road, and present the appearance of the walls of fortifications, with glacis revetted with turf. There is one near our camp, detached from the main bluff, that can be seen for many miles; and as it is round, very symmetrical, and crowned with a stone cap in the form of a reversed plate, it is a good landmark.

We passed a great deal of the small mezquite and numberless plants of the jointed cactus to-day. The stalk of the latter is, when dried, a hard wood, and makes good fuel.

Our road has for a good portion of the day been passing through a continuous dog-town. One of the animals was brought alive into camp this evening, and having an opportunity to examine it, I was at a loss to conceive why it should ever have been called "prairie dog." It is a very timid animal; but, when irritated, bites severely, as one of our young gentlemen can testify. It is but little larger than the gray squirrel, of a reddish brown color, with head, teeth, and feet, very similar to that animal, and a more appropriate name, in my opinion, would be "prairie squirrel." In passing through one of their towns, early in the morning, they are observed sitting upright at the mouths of their burrows, entertaining each other by a most incessant barking, very similar to that of the gray squirrel. On the approach of an intruder they all disappear in

their holes, but very soon can be seen poking their noses above ground again to see if the stranger is gone; and if so, the concert is resumed.

The rattlesnake and a small species of owl are found in the same holes with the dogs. At first I was doubtful whether this domestic arrangement was in accordance with the wishes of the owner of the premises, but, a short time since, I was satisfied no such friendly relations existed between them, for, on killing a rattlesnake at one of the dog-holes, it was found that he had swallowed a young dog, thereby establishing the fact that the snake is an intruder, and preys upon the dogs.

June 14.—Leaving camp early this morning, we travelled two miles on our course, when we encountered a spur of the plain, running too far east for us to pass around under it; and finding a very easy ascent to the summit, I took the road over the plain. When we were upon the high table land, a view presented itself as boundless as the ocean. Not a tree, shrub, or any other object, either animate or inanimate, relieved the dreary monotony of the prospect; it was a vast, illimitable expanse of desert prairie—the dreaded “Llano Estacado” of New Mexico; or, in other words, the great Zahara of North America. It is a region almost as vast and trackless as the ocean—a land where no man, either savage or civilized, permanently abides; it spreads forth into a treeless, desolate waste of uninhabited solitude, which always has been, and must continue, uninhabited forever; even the savages dare not venture to cross it except at two or three places, where they know water can be found. The only herbage upon these barren plains is a very short buffalo grass, and, on account of the scarcity of water, all animals appear to shun it. Our road was perfectly hard and smooth, and our animals did not suffer much from the effects of the long drive of twenty-eight miles which we made.

There are wood and water at nine miles from where we encamped last night; but from that point to our present camp is $18\frac{1}{2}$ miles, and no water in the intermediate distances. Should travellers not feel disposed to make the long drive of twenty-eight miles, they will find a good camping place at the first point indicated, and will have an easy drive for the following day. Two miles before reaching camp we descended from the plain to a creek with fine water, but little wood.

June 15.—We travelled for ten miles to-day along the foot of the bluffs upon our left, when we reached a stream where the water was standing in large pools, with sufficient wood and grass. I determined to encamp here, the distance to the next water being about ten miles. This has been an old camping place for Mexicans, as the trees in the vicinity are well stripped of their branches, and show marks of the axe; moreover, we are now upon the old Mexican cart-road.

Our friends in the emigrants' camp are enjoying themselves much this evening; they have managed to raise some music, and are dancing around their camp fires most merrily. It certainly looks as if they were determined to keep up their spirits as they go along.

June 16.—In consequence of a shower, which came up about daylight, we made a late start and travelled twenty-two miles, when I ascertained from an advanced party which I had sent out early in the morning that I was still nine miles from the first water; as our teams were too tired to make that distance, I encamped for the first time without that most necessary element. Our mules will suffer, but I shall make an early drive and “lie over” to-morrow at the first water. I passed an ox-team to-day,

owned by some men who had been left three hundred miles from here by a company in advance of us. One of their number had gone out for the purpose of hunting, and was lost. These men, with their team, had stopped back to search for him, and it was about ten days before they succeeded in finding him. They then started forward again, and have made a most extraordinary drive, averaging over thirty miles per day with a loaded wagon; and, notwithstanding they made a drive of thirty-eight miles yesterday, their cattle looked well.

This proves conclusively, I think, that oxen can perform a journey as well as any other animal.

About three miles from our camp of last night we came in sight of the "Cerro Tucumcari." It appeared to be about thirty miles distant, a little to the right of our course, apparently perfectly round and symmetrical, and is a most conspicuous landmark. It presents, when seen at a long distance, very much the appearance of the dome of the Capitol at Washington.

June 17.—We hitched up our mules at 2 o'clock this morning, and pushed ahead over the dry prairie for 13 miles before we found water; and this hardly deserved the appellation, for it had more the appearance of the drainings of a stable-yard than the pure element we were in search of. Notwithstanding this, our half-famished animals plunged in, and swallowed large quantities. It was sulphurous and decidedly disagreeable to the taste, yet we made use of it freely, and experienced no ill effects from it. Had we known the different points upon the road where water could have been obtained, we might have encamped at the last water, 22 miles from here, and easily driven to this place the following day.

Our present camp is nearly opposite the "Cerro Tucumcari," and near the bluffs bordering the plains "Indian signs" have been seen for the last three days, and the emigrants have lost several horses, supposed to have been taken by them. Notwithstanding this, many of them are very careless, and do not guard their animals as they should. It is necessary in the Comanche and Kioway country to be always upon the alert, as these Indians frequently follow a train for days together, only waiting for a favorable opportunity to steal horses.

A section of the vertebra of a buffalo, with several ribs attached, in a petrified state, was found to-day; also, several petrefactions of pieces of wood and muscles.

The slope of the bluffs for the last 25 miles has been covered with a dense growth of small cedar trees upon a white sandstone rock, and Beaver informs me that it is to such places as this that the grizzly bear and mountain sheep resort. We have seen no game for several days. Horned frogs, rattlesnakes, chameleons, and swifts, are abundant, and appear to constitute almost the only indications of animal life upon these desert prairies.

June 18.—We travelled this morning along under the bluffs for three miles, where we crossed an "arroyo," in which there were water and wood in abundance. At about eight miles we were overtaken by a party of 20 or 30 Comanches, who came upon their trim-built ponies to pay us a visit. Their chief was a fine looking old man by the name of Is-saki-ep. He professed much love for Americans, and persisted in testifying it by giving me an embrace "à la Mexicana," which, for the good of the service, I forced myself to submit to. Seizing me in his brawny arms

(we were still mounted on our horses) and laying his greasy head upon my shoulder, he gave me a most bruin-like squeeze; after undergoing which, I flattered myself that the salutation was completed; but in this I was mistaken, and was doomed to suffer another similar torture, with the savage's head upon my other shoulder, at the same time rubbing his greasy face against mine; all of which he gave me to understand was to be regarded as a most distinguished and signal mark of affection for the American people, (whom he loved so much that it almost broke his heart,) and which I, as their representative, had the honor "pour amor patria" to receive. They followed us to our camp, where I told the chief that it was the desire of their Great Father, the President of the United States, to be on terms of friendship and at peace with all his red children, and that he expected emigrants would receive good treatment in passing through the Comanche country. They protested the utmost friendship and good will; after which, I gave them some pipes and tobacco, and they went off well pleased.

Our encampment is upon a small creek directly between two mountains, called by the Comanches the "Big and Little Tucumcari." The larger one is about three miles to the south of our road, and some eight miles in diameter at the base. The small one is about eight miles north of the road, two miles in diameter, and 750 feet high.

June 19.—As our animals have become a little jaded from the long marches we have been making for a few days past, I concluded to stop here and give them a day's rest.

We were visited again this morning by our Indian friend Is-sa-ki-ep and about fifty of his band, with several women and children. The Comanche women are, as in many other wild tribes, the slaves of their lords, and it is a common practice for their husbands to lend or sell them to a visitor for one, two, or three days at a time. There is no alternative for the women but to submit, as their husbands do not hesitate, in case of disobedience, to punish them by cutting off an ear or nose. I should not imagine, however, that they would often be subjected to this degradation; for, if we may judge of them by the specimens before us, they are the most repulsive-looking objects of the female kind on earth—covered with filth and dirt, their hair cut close to the head, and features ugly in the extreme. No one would ever imagine that they belonged to the same species as the Anglo-Saxon women. They have several Mexicans (slaves) among them which they have kidnapped. They make use of the boys to herd their animals, and the women for wives. Those who visited us this morning were armed with the bow, quiver, and shield, and they gave us an opportunity of witnessing the force with which they can throw the arrow. As we were about to slaughter an ox, one of the Indians requested to use his bow for that purpose, and approached to within about twenty yards of the animal, strained his bow to the full extent, and let fly an arrow, which buried itself in the vitals of the ox, passing through and breaking two ribs in its course. It is thus that they kill the buffalo, upon which these Indians (who are called the upper Comanches, or "buffalo eaters") mainly depend for a subsistence.

They renewed their professions of friendship to us and all Americans. I received their assurances with the semblance of confidence—nevertheless, did not on that account exercise any less vigilance in the care of our animals; for these fellows make their living by robbing the Mexicans of

their horses and mules, and disposing of such as they do not require to the traders who come among them.

The wealth of the Comanches consists entirely in these animals. They serve them to ride, carry their burdens, traffic, and for food when no other animals can be found. Many among them own from fifty to two hundred horses and mules; and that man who has only twenty is regarded as a poor man. It is considered a great accomplishment to be able to steal horses successfully, and those who excel in this are the most highly honored in the tribe.

The band near us, consisting of about 300 souls, have 2,500 horses and mules—many of them fine animals; and they generally have the Mexican brand upon them. They require much care and attention, as they are herded upon the open prairies, and never receive any other food than that which the grass furnishes. Their details of herdsmen are made daily, with as much regularity and system as the guard details at a military post. Their animals are divided into separate herds of about 150 each, and are guarded night and day with the strictest vigilance and attention. In the summer, these Indians follow the buffalo as far north as Arkansas river, returning in the autumn to the south as far as the headwaters of the Brazos and Colorado, where they find the grama, mezquite, and buffalo grasses. These, remaining green during the winter, afford pasturage for their animals until the following spring, when they return again to the north. Thus they migrate back and forth. They plant no corn, and their only food is meat and a few wild plants that grow upon the prairies.

One of the gentlemen of the Fort Smith Company lost a horse last night, and, learning he had been seen at the Comanche camp, went for him, but, on his arrival, was told that he had not been there. The chief was in our camp at the time, and knew nothing of the matter until his return home, when he required the horse to be delivered to him by a young man who had taken him, and brought him back to me, ten miles, saying that he was our friend, and would not suffer us to be wronged by any of his band. This evidence of his sincerity went further to convince me of his good faith than all he had said or done before, and I did not suffer him to go away unrewarded. I have now no doubt but the Comanches, seeing such numbers of whites passing through their country, are satisfied that they are not able to cope with us, and that their best policy is to remain at peace.

I had a talk with them to-day, in which I told them that their Great Father, the President, having such a multitude of white children in the country towards the east that there was not room sufficient for all of them, had purchased another country far towards the setting sun, and that he was now sending, and would continue to send, many of his children through their country to occupy the new purchase. He hoped and expected the Comanches would not molest these people in their journey through their country, but would take them by the hand, and treat them as friends and brothers. That General Arbuckle (their father at Fort Smith) remembered well the treaty he had made with Ta ba-guee-na and other chiefs of the Comanches at Fort Holmes, in 1834, wherein they stipulated that our people should be allowed a free and uninterrupted passage through their country. That he hoped they had not forgotten it,

and he had sent them some pipes and tobacco to smoke in remembrance of the same.

The chief replied, that the talk was good: it did not go into one ear and pass out of the other, but sank deep into his heart, and would remain there always. That he was a firm friend to Americans, and should treat them kindly wherever and whenever he met them. He was not one of those who took a friend by the hand and let him go whenever it suited his purposes, but that he held him fast, and remained true and sincere. He also stated that he had recently paid a visit to the Indian agent at Bent's Fort, had held a "talk" with him, and liked all the agent had said, except two things—one of which was, that our government would not suffer the Comanches to commit further depredations upon the inhabitants of the province of Chihuahua, or other parts of Mexico; the other, that they would be required to give up all Mexican prisoners now in their possession. These two things, he said, gave him much pain. After he concluded, I made him a present of tobacco and pipes, and some fresh beef, and they departed well pleased.

June 20.—Our march has been a long one to-day, as we passed no water after leaving the head of the creek upon which we encamped last night. We are here upon the "Laguna Colorado," where the Texans were taken prisoners. Although there is but little water above the surface in the bed of the laguna, yet, by digging about three feet, we found the greatest abundance. Our camp is on the left of the road, near the timber, with a plain trail leading to it. Grass good.

June 21.—After marching seven miles this morning through a grove of cedars, we crossed an arroyo with many large pools of water, about 400 yards to the right of the road, where there is good camping ground, with timber and grass.

At our camp to-night we are seventeen miles from our last encampment upon Pajirato creek, a branch of the Canadian. It is a good camping place; and should travellers pass over this road towards Fort Smith in a very dry season, I would recommend them to encamp here, and the following day at the large pools I have spoken of as seven miles from our last camp, as there is a greater quantity of water at that place than where we encamped upon the Laguna Colorado. They would then be able to drive to the head of the creek, where we met the Comanches, the following day.

June 22.—We travelled over a smooth dry prairie to-day for thirteen miles, and encamped upon "Gallenos creek," an affluent of the Rio Pecos. Here we had good water, with some cotton-wood upon the creek; but the grass is short, the Mexicans having recently made this a pasture ground for large flocks of sheep. We have passed many high sandstone hills on each side of our road to-day, and we have seen far off in the distance the northwest mountains, with their tops covered with snow. The country in this vicinity is a miserably sandy plain, and fit for no other purpose but for grazing sheep.

June 23.—Our road passed for fifteen miles over a very high rolling prairie, with detached rocky hills upon our right, running off towards the Canadian, until we reached the principal branch of the Gallenos creek, a fine running stream, with a rock bed, and fifty yards wide. Nine miles from here there is a spring of cold water; and at this place the road forks, the right leading to San Miguel, the left to Anton Chico. We took the

latter, and reached the Pecos before night, making a drive of thirty-one miles. This was the first settlement we had seen since leaving Edwards' trading house; and we were much delighted to see houses and cultivated fields once more.

Anton Chico is a town of about five hundred inhabitants, situated upon the west bank of the Rio Pecos, built (as all towns in New Mexico are) of "adobes," or unburnt blocks of clay, and looks at a distance like many piles of unburnt bricks. The inhabitants raise corn, wheat, onions, beans, and peas, upon which they subsist.

June 24.—After our long march of yesterday, I determined to remain here to-day, and rest our animals. This is St. John's day, and with the Mexicans a gala day, in which they all congregate, for the purpose of running horses, fighting chickens, dancing, and a variety of other amusements, in which they all participate with real hearty good will. In the evening I visited a fandango for a few minutes, where I saw the Mexicans in their favorite national amusement, the dance; and I was much surprised to see with what ease and grace a "peon," who is degraded to a condition worse than slavery, and is constantly employed in the lowest kind of menial services, would hand his signorita to the floor to engage in a gallopade or waltz. They are really very graceful.

June 25.—From all I could learn at Anton Chico relative to the road to Santa Fe, I inferred that the one passing through Galleno was the shortest and best. I therefore took this in preference to the San Miguel route. After crossing the Pecos, which we here found a very rapid stream of one hundred feet wide and two feet deep, we travelled over a well-beaten wagon road for fifteen miles, when we came opposite a beautiful little town on the Pecos; called "Questa." As the main road does not pass in sight of the town, I took a trail which can be easily travelled with wagons, and rode out until I suddenly and unexpectedly came upon the crest of a bluff terminating the high plain. Here, a most magnificent view presented itself as I stood upon the top of the almost perpendicular cliff bordering the valley of the Pecos, and one thousand feet above it: I could see the valley up and down the river for several miles. It is here about one mile wide, and shut in with immense walls of lime and sandstone. Casting my eyes down from this giddy height, a magnificent carpet of cultivated fields of wheat, corn, and other grains was spread out directly beneath me, with the beautiful little river winding quietly and gracefully through the centre; this, together with the Mexicans in their broad-brimmed sombreros and strangely-shaped costume, plodding quietly along behind their ploughs and "carretas," and the "Sierras Blancos," covered with perpetual snow, and glistening in the distance like burnished silver as the sun shone upon them, formed one of the most beautiful landscapes that it is possible to conceive of. The town of Questa is upon the opposite bank of the river, and has about eight hundred inhabitants. I called at the house of the alcalde, but unfortunately he was absent. "El Signora," however, gave me a dinner, and did the honors of hostess with much hospitality and grace; and I am indebted to her for a most capital repast. I would advise those who pass over this road in future to turn from the main road about two miles before arriving opposite here, and encamp at the place where the road strikes the top of the bluffs. They will here have grass and wood, and can drive

their animals down into the valley for water. Our camp is ten miles from Questa, at a pool where we expected to have found water.

June 26.—This has been the longest day's march we have made since leaving Fort Smith, (33 $\frac{1}{4}$ miles.) Twelve miles from our last camp we passed several lagunas or ponds, where we watered our animals, and gave them two hours' rest. At this place there are two roads—the left goes to Albuquerque, the right to Santa Fe. Taking the latter, it led us over a very hard prairie until we reached Gallestia.

June 27.—This town is situated on a creek which rises in the mountains near by, and runs through a dry plain into the Rio del Norte at San Domingo. We found a large encampment of emigrants here, recruiting their animals, laying in their supplies of provisions, and making preparations for their outward journey to California.

They bring their teams to this place to graze; and it is the nearest point to Santa Fe where they can find grass. They then visit Santa Fe, make their purchases, and return.

From this place to Santa Fe there are two roads. We started out in the evening, and took the right hand after passing the point of the mountain near the town, and travelled nine miles, encamping in a ravine running down from the mountain; found the grass here short, as it is everywhere in the vicinity of Santa Fe.

June 28.—Continuing up the ravine this morning, we struck the Independence road at the top of the mountain, and from here continued in it until we reached Santa Fe, about four o'clock in the evening.

The geological formation of the country changed the moment we entered the Independence road. Up to this time we had seen no primitive rocks, but now our road wound through the "cañons" of the mountains, bordered by cliffs composed of huge masses of granite, until we arrived within five miles of Santa Fe; from here to the town the country is a succession of barren hills, covered in places with a growth of dwarf cedars, destitute of grass and totally unfit for cultivation.

The route we have travelled over from Fort Smith to Santa Fe, as measured with the chain, is 819 $\frac{1}{4}$ miles; and, for so long a distance, I have never passed over a country where wagons could move along with as much ease and facility, without the expenditure of any labor in making a road, as upon this route. Our course being altogether upon the south side of the Canadian, and generally upon the ridges dividing the tributaries of that river from those of Red river and the Washitā, until we reached the grand prairie, we were not obliged to cross any large streams, and but few ravines or gullies. After passing beyond the head of the Washitā, we found the plains approached and continued near the Canadian; consequently all the streams flowing into it were short and small, thereby affording water sufficient for the traveller's purposes, but not presenting any obstacle to his progress.

The general course of the Canadian, along our route, is east and west; and as Santa Fe is almost due west from Fort Smith—the latitude of the former being N. 35° 44' 6", of the latter about N. 35° 20'—this makes our route very direct between the two points. The country lying between the two meridians of Fort Smith and Santa Fe is intersected by a narrow belt of timbered land, running from north of the Canadian to the southern part of Texas, and varying from ten to thirty miles in width. This, bordering the great western plains, forms the boundary line between the

woodlands and prairies. That portion of the country lying east of this is generally a rich and fertile soil, varied by lawns and woodlands, abounding with a multitude of beautiful streams and rivulets, and in every respect well adapted to cultivation; whereas, on the west, it is an ocean of barren prairie, with but here and there a feeble stream and a few solitary trees.

It would seem as if the Creator had designed this as an immense natural barrier, beyond which agriculturists should not pass—leaving the great prairies for the savage to roam over at will.

There are no ranges of mountains to cross over on our road, and but few hills of any magnitude; and these could in most cases be avoided entirely by passing around them, or their slopes made very gradual and easy. Generally, the face of the country is extremely uniform and smooth.

I am, therefore, of the opinion, that but few localities could be found upon the continent which (for as great a distance) would present as few obstacles to the construction of a railway as upon this route. It is true that, upon the western extremity, there is but little timber except cotton-wood; but, in many places destitute of timber, there are large quarries of lime and sandstone, whose divisional structures are so perfectly smooth and uniform that the masses could easily be wrought into shape, and in many cases made use of as substitutes for timber. The surface of the ground is generally so perfectly even and level that but little labor would be required to grade the road; and, as there are but few hills or ravines, there would not be much excavation or embankment.

Table of distances, &c.

Dates.	Places of observation.	Distances by chain.		Remarks.
		From camp to camp.	Total distance from Fort Smith, Ark.	
1849.				
April 5.....	From Fort Smith to Strickland's	15	15	Good camp.
	Camp creek	11	26	Good camp; Indian farm.
	Coon creek	12	38	Good camp; prairie.
	Sans Bois	9	47	Good camp on the west side, near the prairie.
	Bend of Sans Bois	14	61	Good camp; Indian farm.
	South fork Canadian, James' creek	15	76	Do do
	1st ford of Coal creek	12	88	Good camp; house;
	2d ford of Coal creek	8	96	Do do
	Little Cedar mountain	4	100	
	Stony Point	6	106	
	Shawnee village	5	111	Indian houses.
	Shawneetown	14	125	Indian houses, opposite Edwards' T. H.,
	Delaware mountain	21	146	Good camp.
	Branch of Boggy river	5	151	Do
	Clear creek	3	154	Wood and good water.
May 3 to 5.....	Branch of Topofki creek	7	161	Do do
5 to 7.....	Cane creek	9 $\frac{1}{2}$	170 $\frac{1}{2}$	Do do
7 to 8.....	Small branch	5	175 $\frac{1}{2}$	Do do
8 to 9.....	Mustang creek	11 $\frac{1}{2}$	187	Do do
9 to 14.....	Small branch of Chouteau's creek	17 $\frac{1}{2}$	205 $\frac{1}{2}$	Do do
14 to 16.....	do do do	6 $\frac{1}{2}$	211 $\frac{1}{2}$	Do do
16 to 17.....	do do do	5 $\frac{1}{2}$	217 $\frac{1}{2}$	Do do
17 to 18.....	Head of Chouteau's creek	12 $\frac{3}{4}$	230 $\frac{1}{4}$	Do do
18 to 19.....	Branch of Washita	6	236 $\frac{1}{4}$	Good camp.
19 to 21.....	do do do	11 $\frac{1}{4}$	247 $\frac{1}{4}$	Do
21 to 22.....	Branch of Spring creek	5 $\frac{3}{4}$	253 $\frac{1}{4}$	Do
22 to 23.....	Head of Spring creek	16	269 $\frac{1}{4}$	Do
23.....	Road from N. Canadian side	9	278 $\frac{1}{4}$	No water.
	Red Mounds	4	282 $\frac{1}{4}$	Spring, wood, and grass.
23 to 24.....	Branch of Washita	5	287 $\frac{1}{4}$	Do do

	24 to 25.....	Branch of Canadian.....	16	303	Sulphur water,
	25 to 26.....	Branch of Washita.....	17	320 $\frac{1}{2}$	Do
	26 to 28.....	Branch of Canadian.....	18	338 $\frac{1}{2}$	Brackish.
	28 to 29.....	On Canadian.....	19	357	Good water,
	29 to 30.....	Little Washita.....	16	373 $\frac{1}{2}$	Brackish water.
	30 to 31.....	Branch of Canadian.....	18	386 $\frac{1}{2}$	Good water.
	31 to June 1.....	Antelope Buttes.....	17	404	Good water; no wood.
June	1 to 2.....	Rush lake.....	14	418	Near high buttes; no wood; good water,
	2 to 4.....	Branch of Washita.....	16	434	Near large cotton-wood; wood and water.
	4 to 5.....	Dry river.....	10	444 $\frac{1}{2}$	Good water.
	5 to 6.....	Branch of Canadian.....	17	461 $\frac{1}{2}$	Do
	6 to 8.....	Timbered creek.....	22	483 $\frac{1}{2}$	Fine spring.
	8 to 9.....	Spring branch.....	11	495 $\frac{1}{2}$	Good water.
	9 to 10.....	do.....	14	509	Do
	10 to 11.....	Branch of Canadian.....	3	512 $\frac{1}{2}$	Near high mound; good water.
	11 to 12.....	do.....do.....	14	527 $\frac{1}{2}$	Good water.
	12.....	do.....do.....	8	535 $\frac{1}{2}$	Not our camp,
	12 to 13.....	do.....do.....	10	545 $\frac{1}{2}$	No wood; good water.
	13 to 14.....	Spring branch.....	17	563 $\frac{1}{2}$	On the left of the road.
	14.....	Branch of Canadian.....	9	573 $\frac{1}{2}$	Not our camp.
	14 to 15.....	do.....do.....	18	591 $\frac{1}{2}$	
	15 to 16.....	Pools of water.....	10	602	Wood.
	16.....	Large water.....	10	612	Not our camp.
	16 to 17.....	No water.....	12	624	
	17 to 18.....	Pools of water.....	13	637	Wood.
	18 to 20.....	Tributary of Canadian.....	13	650 $\frac{1}{2}$	Near Cerro Tucumcari; wood.
	20.....	Head of creek.....	5	655	Not our camp.
	20 to 21.....	Laguna Colorado.....	19	675 $\frac{1}{2}$	
	21.....	Pools of water.....	7	682 $\frac{1}{2}$	Not our camp; good wood.
	21 to 22.....	Pajarito creek.....	10	692 $\frac{1}{2}$	Wood and water.
	22 to 23.....	Gallenas creek.....	13	706 $\frac{1}{2}$	Wood.
	23.....	2d Gallenas creek.....	15	721 $\frac{1}{2}$	Large wood and water; not our camp.
	23 to 25.....	Rio Pecos (Anton Chico).....	16	737 $\frac{1}{2}$	Wood and water.
	25.....	Rio Pecos (Questa).....	15	752 $\frac{1}{2}$	Camp on the bluffs.
	25 to 26.....	Without water.....	9	761 $\frac{1}{2}$	Good wood and water.
	26.....	Laguna Colorado.....	12	774	Two red ponds on left; not our camp.
	26 to 27.....	Gallestra.....	21	795 $\frac{1}{2}$	Good water.
	27 to 28.....	In cañon.....	9	804 $\frac{1}{2}$	No water.
	28.....	Santa Fe.....	15	819	

NOTE.—From Fort Smith to Clear creek the road has an abundance of wood, water, and grass upon it, and the traveller can encamp any time he chooses.

Immediately after our arrival at Santa Fe I sent our mules to Tocolote, about sixty miles off, to recruit. This was said to be the nearest and best place for grazing in the vicinity of Santa Fe. I made arrangements also to have them fed with corn while they were at the grazing camp, in order that they might be in a condition to travel and make the return march at as early a period as possible. They were, however, in such poor condition when we reached Santa Fe, that it required six weeks' rest before I considered them sufficiently recruited to perform the journey back.

In the mean time, during our stay in New Mexico, Lieutenant Buford, with the dragoons of my command, was ordered to "James," (seventy miles,) upon an expedition against the "Navajoe Indians," who had been committing depredations in that quarter, and was absent about three weeks upon this service. Lieutenant Harrison and Dr. Rogers were also (at their request) assigned to duty with a detachment sent out on an expedition against the Apaches, under Major Steen, and marched about six hundred miles through the country south of Santa Fe, while I remained with the infantry portion of my command as the only garrison of Santa Fe.

I made inquiries relative to the practicability of finding a wagon route from a point south of Santa Fe, upon the Rio del Norte, crossing the Rio Pecos and striking in an easterly course to the headwaters of Red river, or the Brazos, and from thence back to Fort Smith; but, as the country lying east and adjacent to the Rio del Norte is for the most part infested by Apaches and other hostile Indians, I found but few Mexicans who knew anything about the country, and these were unwilling to act as guides and return home alone through the Indian country. I, however, found a Comanche Indian living at San Miguel who was born and raised directly in the country over which we desired to pass, and was perfectly familiar with almost every stream and water-hole upon the prairies. It was his opinion that wagons could pass without difficulty from a point of the Rio Grande called "Joya de Cibaletta," about one hundred and fifty miles below Santa Fe, to the headwaters of the Colorado, crossing the Pecos at a grove of timber called "Bosque Redondo," about seventy-five miles below Anton Chico. Upon this route he stated that he could take the wagon train from Santa Fe to the head of the Colorado in one month, and would insure water for the mules every night. He furthermore stated that there were but three places where the Llano Estacado, or Staked Plain, which extends four hundred miles from north to south on the east side of the Rio Pecos, could be crossed, on account of the scarcity of water; one of them was north of the "Joya de Cibaletta," and another nearly opposite El Paso. As all the California emigrants, after their arrival at Santa Fe, are obliged to turn and go down the Rio Grande (some three hundred miles) to Cook's route, before they can find a wagon road through the mountains west of the river, it occurred to me, that if there was a practicable route from that point to Fort Smith, it would shorten the distance to California very much; and as several parties of emigrants had reached El Paso from Texas, I was satisfied I could go through, and I employed the Comanche guide and determined to return by the southern route. Previous to our departure Lieutenant Sackett had been promoted to the company to which the dragoon portion of the escort belonged, and Lieutenant Buford having been promoted to a company stationed in California, they were transferred by order of the commanding

officer at Santa Fe. These, with the exception of one man left sick at Santa Fe, were the only changes in the command from the time we left Fort Smith.

From Santa Fe we struck the Rio Grande at Algodones, and followed the road down the east bank of the river until we reached Fra Cristobal on the evening of the 25th of August.

At this point the bluffs of the mountains approach near the river, and render it necessary to keep to the left across a large bend, where in a dry season there is no water, until reaching the river again; this is the commencement of the "Journado del Muerto."

Leaving Fra Cristobal at two o'clock on the morning of the 26th, and passing up through a cañon out of the valley of the Rio Grande, we entered the dreary plain of the Journada, and marched to the "Laguna del Muerto," a distance of $25\frac{7}{8}$ miles by the viameter. Although there is sometimes water in the Laguna for several days after a rain, yet when we arrived the bed was perfectly dry. We had, however, filled our water barrels at the river, and the men did not suffer. After resting our animals and giving them time to graze, we again started forward, and marched to Perrillo or "Point of Rocks," $28\frac{1}{2}$ miles. Here we found rain-water standing in pools, and encamped for the night.

On the 28th, after marching $23\frac{1}{2}$ miles, we reached the river again at the southern extremity of the Journado, making the entire distance across the desert $77\frac{1}{2}$ miles. The road passes over a very high and level plain, *is perfectly firm and smooth, and is generally travelled* (when there is no water) *in two nights and one day with loaded wagons.* As this is upon the main and only road from Santa Fe to El Paso, and has been travelled for many years by the inhabitants of New Mexico, I presume there is no way of avoiding it. We found the grass good, and a small growth of scrubby brush, which answered very well to cook with; but there were *no trees or other vegetation, except several varieties of the cactus and palmetto.*

Upon both sides of the road there were detached mountains in sight constantly, and one near which we passed soon after leaving Fra Cristobal was composed entirely of large masses of dark basalt thrown together loosely into an immense hill or mountain of some five hundred feet high.

On the 29th we reached Dona Ana, a town upon the east bank of the Rio Grande, sixty miles above El Paso, of 300 inhabitants, principally Mexicans, who raise corn, wheat, onions, beans, and grapes, and depend for a subsistence almost entirely upon the cultivation of the soil. They are obliged here, as in all places in New Mexico, to irrigate, as without this the soil would produce nothing. The only available land is therefore in the valley, where water can be carried in canals or ditches from the river.

This is a new town, settled by men from El Paso some ten years since, and, until it was garrisoned by a part of a company of United States troops, was frequently visited by those brigands of the mountains "the Apaches," who were in the habit of coming down from their mountain retreats, stampeding and driving off cattle and horses, and before the Mexicans were aware of their proximity, were out of reach again in the mountains.

These Indians are perfectly lawless, savage, and brave, and having been allowed to roam the country at will, and commit depredations upon

the Mexicans for so long a time, it will require a very severe lesson to teach them that we are masters in New Mexico. Being a numerous tribe, and commanded as they are by an ambitious chieftain by the name of "Gomez," who has received a Spanish education in Mexico, and being entirely dependant upon plunder for a subsistence, I am of the opinion that they are destined to give us much annoyance and trouble before they are subdued.

Dona Ana being but fifteen miles below San Diego, (the point upon the Rio Grande where Colonel Cook's road leaves the river,) and the only town within seventy miles, I was anxious to find the shortest practicable wagon road from here to Fort Smith. I therefore made inquiries relative to the country between here and the Rio Picos, but found that this part of the country was almost wholly unknown to the Mexicans, as (although they are great travellers) it is seldom that they can be induced to venture far into the Apache "range." I found one man, however, who stated that he knew the country for fifty miles east of Dona Ana, and, upon condition that I would deposite the amount he was to receive with the commanding officer for the benefit of his family in case he should be killed in returning, he would consent to accompany us that distance. I accordingly engaged him, and on the morning of the 1st of September left Dona Ana, taking a course N. 81° E. towards a gap in the Organ range, called San Augustine Pass. Our road passed to the left of the high Organ peaks by a gradual ascent for fifteen miles until we reached the gap, which was low, and the passage smooth and easy. From here we passed around to the south for four miles under the base of the mountain, where we encamped at a spring, and found fine grama grass. The Organ range of mountains takes its name from the supposed similarity of the high-pointed peaks to the pipes of an organ. They are a trap formation, and somewhat columnar in their structure, with the columns standing vertically, and in some cases rising to the height of a thousand feet, and terminating in sharp points.

Upon the lower part of the mountain there is good pitch-pine timber, but no other wood except a species of small oak. From our present position we can see the Sacramento mountains very distinctly across a level plain to the east. They do not appear to be at a greater distance than eight or ten miles from us, but our guide informs me they are forty miles off; this illusion is often experienced in New Mexico, and I can only account for it by the remarkable purity and transparency of the atmosphere, which enables the eye to penetrate far, and to discern objects distinctly.

September 2.—Continuing along under the base of the Organ mountains, we struck the road from El Paso to the Salt lakes at about three miles from our camp of last night, and followed this for three miles further to a spring which rises in the mountain, and runs down a ravine upon which we are encamped, to the road.

This is called the "Ojode Selado," and has an abundant supply of water at its source, but sometimes it is absorbed by the sand before it reaches the road, and it is then necessary to send to the foot of the mountain for water, as we cannot drive wagons nearer than the road.

The Sacramento mountains are in sight to-night, and the two ranges, "Organ" and "Sacramento," run nearly parallel from north to south, and from thirty to forty miles apart. The intervening valley is flat and

sandy, and has no water upon it. As we had to cross this valley, we provided ourselves with a supply of water for the use of the men, and on the morning of the 3d September left camp, and, following the Salt road for about four miles, struck in a direct line for the "Waco mountains," which can be seen from our last camp, and where we were told by the guide we should find water. As the road was somewhat sandy and we had to make a new track, our progress was necessarily slow. After traveling eighteen miles we halted at 6 o'clock in the evening, giving the men time to sleep, and the animals to graze and rest, when we were again in motion, and reached the Waco mountains at 2 o'clock p. m. on the 4th of September, making the entire distance from the Solado spring to this place $37\frac{1}{2}$ miles; about seven miles greater than the estimate of our guide.

The manner in which the Mexican traders make these long stages without water (and I believe it to be the best) is, before starting, to graze their animals from morning until about 3 p. m., give them all the water they will drink, then harness and start them immediately, and drive until 4 o'clock the next morning, when they stop three hours to graze while the dew is on the grass, and drive until it becomes hot towards the middle of the day; they then make another halt until 5 o'clock in the evening, when they start again and push through to the water. In this way fifty, ~~sixty~~, or seventy miles can be made with loaded mule or ox wagons in the hottest weather of the summer. The Journado del Muerto is 77 miles in length; yet it is travelled during the whole year with heavily loaded teams. After these long drives, animals should be allowed a day or two to rest and recruit.

Our present encampment is but thirty miles from El Paso, and our guide informs me that the road is not so sandy as the one we have passed over; but our route is about thirty miles nearer from this point to Dona Ana, than to go the El Paso road. There is a plain wagon road from here to El Paso. We found a great abundance of good water in an immense tank up a ravine on the South mountain. This is a huge deep basin, scooped out of the solid rock with great symmetry and regularity, and of sufficient capacity to contain several hundred gallons of water. We also found sufficient water for our animals in the ravine. The road passes between the two mountains, which approach within a few rods of each other, leaving a level pass, bordered by immense ledges of rocks, standing out in bold relief directly over the road. The rocks composing the mountains are large masses of dark-gray sandstone, thrown up in the utmost disorder and confusion, leaving numerous holes and caverns, which have often served the Apaches as hiding places.

We remained at this place on the 5th, and on the morning of the 6th, making an early start, crossed a plain in an easterly direction towards the south base of the "Cierra Alto," which is about 1,500 feet high, and can be seen for many miles around. Here we entered a cañon, which brought us by a very easy and gradual slope, of about three miles, to high level mesa or plain, directly at the southeastern base of the mountain.

From this point we could see the Sierra del Alamo, in a direction north 75° east, and to this our road led us over a firm prairie, a distance of $22\frac{1}{2}$ miles.

The Sierra del Alamo is a mountain of gray sandstone, mixed with flint rock, about 1,000 feet high, and stands out alone upon the flat prairie.

On the north side, about 300 yards from the road, is a spring near three cotton-wood trees, with an Indian trail leading to it. The spot cannot be mistaken, as there are no cotton-wood trees anywhere else in the vicinity.

Our road to-day, with the exception of one place in the cañon, was capital, passing over a prairie perfectly hard and smooth.

Along the whole course of the road from Dona Ana here, there has been a most luxuriant growth of grama grass of several different kinds, and we find sufficient fuel for camping purposes at all places.

September 7.—We passed around the north base of the "Cierra" this morning, when we came in sight of the rugged top of the "Comudas," in a direction N. 72° E.; from here our road was over the gravelly mesa, and perfectly good for 8¾ miles, which brought us to the "Comudas." This is another of those immense piles of loose rocks which, rising up almost perpendicularly to the height of 500 feet out of the level gravelly plain, and utterly denuded of vegetation, presents a most strange and picturesque appearance, very different from any scenery we meet with in the settled parts of the United States. Upon the east side of the "Comudas" there is an arched entrance into a large cavern which is lighted from above, and in this we found a well fifteen feet deep, filled to the top with beautifully pure water; besides this we found water sufficient for our animals in tanks on the west side of the hill.

Our guide informed us that this is a favorite place of resort for the Apaches, who come here when travellers are seen approaching, hide themselves in the caverns of the mountains, and rob them of their horses, and cautioned us to be upon our guard on our arrival, as they might be in the midst of our animals before aware of their presence: we have, however, seen none of them.

The geological formation of this mountain is different from any we have passed before, being a dark coarse granite or gneiss, with a small proportion of feldspar, and the mica predominating. All the other rocks we have seen before, between this place and the mountains at Santa Fe, have been secondary.

September 8.—Our road to-day led us around the east side of the Comudas, to the north end, where we turned almost due east, and travelled towards the southern peak of a high range of mountains called the "Sierra Guadalupe." For the first five miles we passed directly at the foot of a low range of hills running northeast and southwest, after leaving which we struck out upon the high prairie, and found the road most excellent the entire distance to the Ojo del Cuerdo, or Crow Spring. The spring is upon the open plain, and contains a large supply of water at all seasons; and, although it is sulphurous, yet animals are very fond of it, and we found it to answer, in the absence of better, for drinking and cooking.

Two miles from here our road crossed the dry bed of the outlet to the Salt lakes some twenty miles south of this; there was a thin, white incrustation of salt over the bed of the stream. Vegetation has been of the same character to-day as heretofore, and the grama grass growing everywhere upon the road. Our march has been 26 miles, but the road so good that our animals did not suffer, and we reached camp early.

September 9.—Our course this morning, after leaving the Ojo del Cuerdo, was south 49° east, bearing directly for the peak of the Guada-

lupe, until we arrived nearly opposite to it on the west side; we then continued past it, gradually turning to the left around the hills at the base until we reached a rocky ravine which led us directly up to the foot of the towering cliff of the peak. We encamped near the head of the ravine, where there is a spring about 200 yards north of the road, and good grass. Animals must be driven up the ravine to the water, as the wagons cannot pass further than the turn of the road.

We had a good road to-day, with the exception of four miles of sand, and made twenty-three and one-twentieth miles.

The Guadalupe range of mountains terminates at this place in an immense perpendicular bluff of light-colored sandstone, which rises to the enormous height of nearly two thousand feet, and runs off to the northeast towards the Pecos. On the south of the peak there is a range of bluffs about two hundred feet high, running from north to south across our course, and over which we have to pass. At about ten or twelve miles south of here this bluff appears to terminate; but as we can pass up without difficulty at this place, we shall not go out of our course to avoid it.

September 10.—We remained in camp to-day until about 3 o'clock p. m., when, getting our wagon train up the hill, we found ourselves upon very high rolling table land, which our guide says descends from here to the Pecos river. As we have been continually ascending from the Rio Grande to this point, we are therefore now upon the summit level of the two streams. As it rained most of the afternoon, we only made a short march of four miles, passing in a northeast direction around under the mountains, and encamped in a ravine which runs down through a large grove of pine timber from a gap of the Guadalupe mountains; there is a fine spring three hundred yards to the west of the road, which affords an abundant supply of water.

The mountains are covered on the eastern side with groves of large pine trees; and as this is the only kind of timber fit for building in the country, it may some day be useful. We have also seen a species of cedar with the bark resembling that of the oak, and very different from any we have ever seen before.

There are many varieties of the cactus and palmettos about the mountains, and we have this evening for the first time seen the maguey plant, which constitutes almost the only vegetable food that the Apaches and southern Comanches get for a great portion of the year. They prepare it by boiling it until it is soft, then mash it into a paste, and I am told that in this form it makes a very palatable; nutritious food.

The Guadalupe is the last of the mountains between the Rio Grande and the Pecos. It appears there are three distinct ranges of mountains traversing the country east of El Paso in a north and south direction: the first the Organ range, twenty miles east of the Rio Grande; thirty miles from this the Sacramento, the continuation of which, about fifty miles north of Dona Ana, is called the "Sierra Blanco," and has perpetual snow upon its summit; from thence it extends on to near Santa Fe. The third is the range of the Guadalupe, fifty miles east of the second.

These wild and rocky mountain ranges are the places where several animals resort that are to be met with nowhere else. The grizzly bear (the most formidable animal of the continent) finds a lurking place in the caverns and thickets, and feeds upon the wild fruit that abounds here. The big-horn, or cimarron, is also seen skipping playfully from rock to rock upon

the narrow overhanging crags, and cropping the short herbage which grows upon them: these, with the black-tailed deer, are almost the only animals found upon these mountains. One of the latter was killed this evening, and we found it very similar to the common fallow deer of the States, but much larger.

There are but few varieties of birds upon the prairies: we have, however, seen quails at all places we have been, and occasionally a few plover and English snipe.

September 11.—As our animals were somewhat jaded from the long marches we have made for a few days past, and as we had a long journey before us, I remained in our camp of last night until after dinner to give them rest, when we moved forward over a good road to Independence spring, five miles.

Here we found two large springs of pure cold water, which boil up from the ground and run off in a stream about the size of a barrel, with a great supply of oak wood and grama grass near, rendering it a most desirable place for encamping.

The country from the base of the mountains to this place is rolling, and the soil good.

The peak of Guadalupe, and the general outline of the chain, can be seen from here, and it appears to be impossible to pass through it with wagons anywhere north of our route; and as the defile is near the peak, which can be seen for many miles around, it is a good landmark.

About twelve miles south of this are several salt lakes, which our guide informed me had been formerly resorted to by the Mexicans for salt; but that since the Indians had become hostile, they did not venture to go there. The salt is deposited in a pure state upon the bed of the lake, about six inches in thickness; and when the water becomes low and recedes from high-water mark, it can be shovelled up in large quantities. The Salt lake north of El Paso is of the same character, and furnishes all the salt that is consumed in New Mexico and several of the States of southern Mexico. From specimens that I saw, I should imagine it to be pure chloride of sodium, with a very strong saline taste, and equal to the best Turk's island salt.

As it rained nearly all day to-day, the 12th September, we did not move.

On the 13th we started forward again, and travelled over a hard rolling prairie, passing many round symmetrical mounds on each side of the road, until we reached the Ojo de San Martin, at the head of the Delaware creek, our average course being south 85° east, and the distance travelled $15\frac{2}{3}$ miles.

The mounds were standing isolated and detached from the other hills around, and were as regularly symmetrical as they could have been made by art, being composed of an alternate strata of lime and sandstone lying horizontally upon each other in thin plates like slate, and receding in terraces from the base to the top, the shape in all cases being conical, and almost as round as if cut out for a monument. We noticed one with a cap upon the top, in the form of an inverted plate, which, from its peculiar shape, the Mexicans call "centirula."

We saw a fresh Apache trail crossing our road to day, and, as they are probably hovering about us for no good purpose, I shall see that our

animals are guarded with great care. Our custom has been to herd them during the day in the immediate vicinity of the camp; at night the mules are driven into a "corral," formed with the wagons arranged in a circle, and the horses picketed together near the tents of the men, with sentinels walking among them constantly. In this way I think we shall baffle Messieurs "Los Apaches," notwithstanding they have the reputation of being the most expert and boldest horse thieves in the west. They have often had the impertinence to enter the Mexican towns in open daylight, drive off animals, and take women and children prisoners, before the faces of the soldiers stationed there; indeed, they are as inveterate freebooters as can be found on earth.

There are several springs at this place, the waters of which unite and form the Delaware creek. One of them, the Oje de San Martin, bursts out of a solid limestone rock in a volume of sufficient magnitude to drive an ordinary saw-mill at the fountain head, and is as pure, sweet water as I ever drank.

Above this there are several others possessing different mineral properties. One is highly charged with sulphuretted hydrogen, and tastes very much like the Kentucky "Blue Lick water." Another is decidedly chalybeate, and a third is strongly sulphurous, leaving a thick incrustation of sulphur upon the rocks for many yards from the source.

These unite in one common outlet, and the amalgamation is far from pleasant to the taste.

Is it not within the scope of probabilities that these springs may be found to possess valuable medicinal properties, and that this place may yet (and at no very distant period) become a place of fashionable resort for the "upper-ten-thousand" of New Mexico? The climate here is delightful, the atmosphere perfectly elastic and pure, and the temperature uniform and delicious; then, may not an invalid derive as much benefit at this place as at Saratoga or any other of our watering places?

There is but little wood near here, except some small mezquite bushes and a species of dwarf live-oak, which answers very well for fuel. I also noticed yesterday a tree which is spoken of by a writer in California as being frequently seen there. It resembles the box-wood in some respects, growing in clusters or bunches, with a similar leaf, but appears to shed its bark (which is very thin and tough) annually. At this season, when the old bark is off, the stock and branches have more the appearance of the limbs of a person, both in color and texture, than of a tree, the exterior being a most beautiful flesh-color. It produces a fruit which is eaten by the Indians.

September 14.—Our course to-day has been north 83° east, down the left bank of the creek, crossing over a tract of poor soil covered in places with white decomposed gypsum. We touched the creek at but one place, until we arrived at our present camp. This is upon a high sandy bluff bordering the creek.

We found the stream at this point literally alive with a multitude of fish, and in a very short time we caught enough to supply the whole command. Among other kinds, we caught a white bass that I have never seen anywhere before, and found it very excellent.

From our last camp to where we struck the creek was $6\frac{2}{10}$ miles, and from there to this place $5\frac{3}{4}$ miles.

September 15.—We continued down the creek to-day in a course north 67° east for $9\frac{1}{2}$ miles, crossed and encamped on the south bank. We have passed over a country similar to that of yesterday, being poor soil, no timber, and covered with decomposed gypsum. The grama grass is very large and abundant along the valley of the stream, and affords excellent pasturage for our animals.

September 16—Leaving the Delaware creek this morning, we struck out upon the prairie in a course south $64^{\circ} 30'$ east; and, after travelling nine miles, came in sight of the valley of the Rio Pecos. Our course led us down the stream six miles further, where we descended from the high lands into a sandy bottom, and encamped upon the river. The stream is here about thirty yards wide, very sinuous, rapid, and deep, with high clay banks. I understand that it receives a very considerable tributary some fifty miles above here, called the "Sacramento river," rising in the chain of mountains of that name; and this is said by the Mexicans to have upon its borders the most beautiful valley of lawns and woodlands of any streams known in New Mexico. They express their admiration of it by the word "linda," which, I believe, signifies super-excellent; yet, as it is in the heart of the Apache "range," it has never been settled.

Our Comanche guide informs me this evening that I cannot, as I desired, go directly from this point to the head of the Colorado or Brazos, as no man (not even an Indian) ever undertakes to cross the "Llano Estacado" opposite here. He states that it is eight days' travel from here to "Bosque Redondo," where the route from the "Joya de Ciballeta" crosses the Pecos, and about sixty miles to where the other route crosses near the southern terminus of the Llano Estacado. We are, therefore, obliged to follow down this stream until we find we can with safety turn east.

September 17.—We continued down the Pecos this morning for four and a half miles, where there is a rapid, with good rock bottom; and here we could have forded the stream, there being but three feet water in the channel. I, however, concluded, as the banks required some digging, to make a good passage for the wagons, that I would continue down the valley and search for a better crossing. After marching six miles further, we encamped again on the west bank of the river. Here we found the finest and most luxuriant grama grass we had seen, with mezquite wood. The water of the Pecos is slightly brackish, but we used it without inconvenience.

September 18.—Keeping down the right bank of the river, we found the valley covered in many places with a growth of small mezquite trees, and in these we saw for the first time since leaving the Rio Grande the white-tailed or common deer of the States. Our course was S. $68^{\circ} 7'$ E.; distance travelled $13\frac{1}{2}$ miles. The soil in the river bottom has been clay, covered with a heavy grama grass, and the stream very crooked, with perpendicular banks from three to twenty feet high. Along its whole course the water is muddy, resembling the water of the Rio Grande. There is a total absence of anything like timber on its banks, and a stranger would not expect to find a water-course in approaching it until he was directly upon it, so much does it appear like other places upon the surrounding prairies. The course of the river runs so much nearer the direction I

wish to travel than I had been led to believe from the maps of the country, that I shall continue down for some days further before turning east.

September 19.—Our road continued in the valley of the river, touching it occasionally, and cutting off the large bends, where it could be done, until we reached a high bank at $13\frac{1}{8}$ miles from our last camp; here we found good wood and grass, and encamped. The soil has been of a clayey nature to-day, but very soft and rich; no timber except small mezquite bushes, which answer very well for fuel. The road through the bottom where we have travelled to-day will be muddy after heavy rains, but at such times travellers can keep back upon the high prairie ridge.

September 20.—Our course to-day was S. 81° E. for $15\frac{1}{10}$ miles along the west bank of the river. We passed a small salt lake upon our road, which was very highly saline; with this exception, the features of the valley were similar to that part which we passed yesterday. As I have not been able to find another ford since leaving the rapids, I have concluded to endeavor to effect a crossing at this place to-morrow. The river from the rapids here is very rapid, deep, and narrow, with high vertical banks of soft clay.

September 21.—I was obliged to resort to one of those expedients which necessity often forces travellers in this wild country to put in practice; and that was, to invent and construct a substitute for a ferry-boat to transport our men and baggage across the river. This I did by taking one of our wagon beds and placing six empty barrels in it, lashing them down firmly with ropes, and tying one on each outside, opposite the centre. I then attached a long stout rope to each end of the bed, and placed it bottom up in the water; a man then swam the river with the end of a small cord in his mouth, and to the end of this was tied one of the ropes of the wagon, which he pulled across and made fast to a stake upon the opposite bank. Some men then took passage upon the inverted wagon boats, and the current carried it to other shore, the rope attached to the stake preventing it from going down the stream further than its length. The boat was then drawn back by men for another load, and in this manner we crossed our men and baggage in a short time. We could transport 2,000 pounds of freight at one load, perfectly dry. Our wagons were then lashed fast to the axles, with ropes tied to each end, when they were pushed into the river and hauled across. There were fifteen feet of water where we crossed. As the current ran rapidly and the banks were muddy and steep, I was fearful that our mules would not make the passage. I therefore tied a rope to the neck of each one and pulled them across.

September 22.—This morning we made a march of nine miles down near the left bank of the river in a direction N. 82° E., where we struck a narrow laguna, or lake, which we followed for about two miles, and encamped near the southern extremity. The soil has been a rich loam, and I have no doubt would prove very productive. There has been a chain of sand hills in sight to-day, running from north to south across our course, about twenty miles to the east of us, (upon the Llano Estacado,) in which our guide informs me that there is water, but that we are obliged to pass over a sandy road for some fifteen miles to get through them. I have, therefore, determined to remain at this place until I can send ahead and ascertain whether I cannot pass to the south of them.

September 23.—I sent out Lieutenant Sackett, with an escort of dragoons, this morning, to explore the country in the vicinity of the sand

hills, and shall remain here until to-morrow evening, by which time I expect to learn the result of his explorations.

September 24.—After filling our water barrels, and giving our animals all they would drink, I made a start this evening at two o'clock, and travelled ten miles in a direction nearly perpendicular to the valley of the river. Shortly after we left the laguna, an express returned from Lieutenant Sackett, informing me that, after making a thorough examination of the range of sand hills for about forty miles south of our course, he was of the opinion that there was no place within that distance where they could be crossed with wagons. The whole surface of the country in that direction seemed to be one continuous succession of white sand hills, from twenty to one hundred feet high, in which his horses sunk to their knees at almost every step, from which I infer that the route indicated by our guide is the only one in the vicinity where this formidable obstacle can be passed. I shall, therefore, take a direct course for the pass in the morning, and expect to reach the hills during the day.

September 25.—We reached the sand hills this afternoon, about two o'clock, over a good level road, except about four miles near here, which is sandy, making the distance from the Pecos twenty-three miles and four-tenths. There is a great abundance of good water at several places in the sand hills, but it is necessary to drive animals to it, as it is half a mile from the road and wagons cannot pass nearer. There is a trail leading to the water from where the road strikes the hills. These hills, or mounds, present a most singular and anomalous feature in the geology of the prairies. They extend (so far as we have explored) at least fifty miles in nearly a north and south direction, and from five to ten miles east and west; they are white drift-sand thrown up with much uniformity into a multitude of conical hills, destitute of soil, trees, or herbage.

In following up the trail from our road into the midst of this ocean of sand, we suddenly came upon several large, deep pools of pure water—the very last place on earth where one would ever think of looking for it. We are told by our guide that water can always be found here in the driest season, and, judging from the rushes and other water plants growing in the ponds, I have no doubt that such is the case.

September 26.—As we have a long march before us still, and as the road through the hills is sandy, I have concluded to double teams to-day, and send on one-half of the wagons to the last watering place, five miles from here, and take up the remainder to-morrow.

September 27.—We moved up to-day with the wagons that were left behind yesterday, and found the water at this place equally as good as at the other. Although there are but two particular points where trails lead from the road to water in the hills, yet it can be found almost anywhere between the two points by going about half a mile to the east of the road, among the highest hills.

September 28.—Eight miles of sandy road which we passed over to-day brought us out upon the hard prairie again. Thus the entire distance from where we first encountered the sand to this place is about seventeen miles; but only about one-half that distance is bad, and this not worse than some parts of the road upon the Rio Grande. There is good grass near the hills, and sufficient wood for fuel.

September 29.—Leaving the sand this morning, we pushed out upon

the high plain of the Llano Estacado, not knowing whether we were to find water before we reached a laguna about sixty-five miles distant. As our guide had passed over this portion of the road but once before, and then in a hurry, he was not very familiar with the localities. I therefore sent a party in advance to search for water, and felt some anxiety as to the result; I was relieved, however, about 11 o'clock, when a messenger returned with the cheering intelligence that the party had found a large pond of good water about sixteen miles from where we left this morning. This good news appeared to inspire our men and animals with renewed vigor. From the cheerless silence of the last two hours, the aspect of everything changed in a moment to humorous jokes and boisterous merriment. The whips were heard cracking from one end of the train to the other, and the mules appeared to move along with more ease than before.

From the sand hills our road followed an old Comanche trail until we turned to the left, two miles from our present camp. The track we make is plain, and travellers will have no difficulty in following it to the water. We are near two ponds in the prairie, where, judging from present appearance, there will always be water found, except in the driest season; the grass is good. Our course from the sand hills is N. 57° E., and the distance fifteen miles and three-tenths.

September 30.—In consequence of the hard work we have given our mules for the last four days, I "lay by" to-day to give them rest and grass, after the long journey of about fifteen hundred miles which they have made from Fort Smith; they require much care and attention, and it causes more delay than is agreeable; but there is no alternative.

October 1.—This has been a most fatiguing day to me, as I have been suffering for the last five days with an attack of dysentery; it has reduced me to such a weak state that I am obliged to be carried in a wagon in a lying posture, and every slight jar of the wagon sends the most acute pain through my whole system.

We marched seventeen miles in a course N. 67° E. over a firm high prairie, and are encamped near a pond on the plain. About halfway between this place and our last camp, we discovered a small lake about one mile to the north of our road, where it is thought there will be water at all seasons; it is about three feet deep, covers several acres of ground, and has rushes growing in it. There are also numerous trails made by mustangs leading to it, showing that it is much frequented by them; and as the horse requires water every day, he would not probably stay at a place where it could not be found at all times. This lake I have called "Mustang pond;" and as it is situated about halfway between the sand hills and the laguna, (which is ahead of us,) I conceive it to be very important for travellers. Nine miles from our last camp, there is another large pond about half a mile to the right of the road, and I have driven a stake in the middle of the road opposite to it, with directions written upon it how to find the pond; this is a mile west of the Mustang pond. By keeping this in mind, and remembering that the trails in the vicinity all concentrate at the water, there will be no difficulty in finding it. As our road does not go directly to the pond, and as there is much sameness in the aspect of the prairies upon the Llano Estacado, persons might pass

this place without finding the water, unless they follow the direction given above.

October 2.—We marched twenty-three miles to-day in a course N. 72° 22' E., which brought us to the Laguna, or Salt lake. The country has been similar to that of yesterday, over the high rolling table lands of the Mésa, with no wood except the small mezquite brush. The water in the Laguna is brackish, but there is a small pond south of the road where we are encamped, which, although it is slightly sulphurous, is not unpalatable.

Should travellers come to this place, on their way to New Mexico, in an extremely dry season of the year, I would recommend them to carry from here in their wagons a supply of drinking water sufficient for two days, as this would last them until they reached the sand hills, if, by any accident, they did not discover the Mustang pond.

October 3.—Leaving the Salt lake this morning, our bearing was N. 71° E. for eight miles, where we reached the border of the high plain, and descended an easy slope of about fifty feet to a bench below; here we could see two low bluffs in the direction we were marching, near which our guide informed us we could find a fine spring of water. Fourteen and a half miles' travel over a beautiful road brought us to the spring, which we found flowing from a deep chasm in the limestone rocks into an immense reservoir of some fifty feet in depth.

This appears to have been a favorite place of resort for the Comanches, as there are remains of lodges in every direction; indeed, our Comanche guide tells me that he has often been here before, and that there was a battle fought here some years since between the Pawnees and Comanches, in which his brother was killed. He also informs me that there is a good wagon route from here to the Rio Pecos, striking it some seventy miles lower down than where we crossed, keeping entirely to the south of the Llano Estacado, and crossing the head branches of the Colorado.

There is a Comanche trail leading over this route, and it would, undoubtedly, be the best between this point and Chihuahua, as it is nearer than the one we have travelled, with no sand upon it and an abundance of water.

I think by taking the trail at this place and keeping the crest of the Llano Estacado on the right, one would have no difficulty in getting through to the plains at the Chihuahua crossing.

The mezquite trees are becoming larger as we descend from the high plain, and the soil better; several fossil shells of the muscle species were found here.

October 4.—We left the "Big Spring" to-day at one o'clock p. m., and travelled 12½ miles in a course N. 43° E. to a spring in a beautiful timbered valley, with excellent grass. The spring is in the limestone rocks to the south of the road, and furnishes a good supply of water. It is a tributary of the Concho. We have passed over a rolling country to-day, covered with mezquite trees.

October 5.—Our course to-day was N. 47° 28' E., over a rolling and rather broken country, of good soil, and covered on each side with large mezquite trees.

After marching 11½ miles we encamped in an extensive bottom or flat, through which there is good water standing in pools along the bed of the stream, and a great abundance of the finest mezquite grass. Manuel,

our Comanche guide, leaves us at this place, and returns alone through a wild Indian country, some six hundred miles, to his home at San Miguel. He strikes directly across the "Llano Estacado" to "Bosque Redondo," on the Rio Pecos, over the route which has been spoken of before as passable for wagons. He expects to make the journey in fourteen days, and has no fear but what he shall reach home in safety. I have found him a man of much more than ordinary judgment and character; and should it ever become necessary to make an examination of the route from here to the Bosque Redondo, and thence to Joya de Cibaletta, I would have no hesitation in recommending him as the best guide that can be found in New Mexico.

October 6.—For about eleven miles after leaving camp this morning, our road passed over a perfectly flat prairie, covered with short buffalo grass, and through a continuous dog town almost the entire distance. We then struck into a creek bottom, crossed and followed down about three miles to its junction with a large stream, which is the main Red Fork of the Colorado, or, according to the Comanche nomenclature, the Pash-a-ho-no. We found this a stream of twenty yards in width, six inches deep, and running rapidly over a rocky bed; the water has a red tinge and is slightly saline. The banks are bold and rocky, and I should imagine this to be the character of it to its source in the "Llano Estacado." This is the first tributary of the north branch of the Colorado that we have crossed. The main Rio Colorado has, near its head, two principal tributaries—the Concho and the Red Fork; all others are affluents of those two.

The country through which we are passing now is becoming much more interesting than it has been; there is some timber and streams of running water. Our camp is in a grove of mezquite and wild china trees upon the bank of a creek running into the Pash-a-ho-no.

We have seen wild turkeys upon this creek—the first since leaving the Rio Grande. Quails and meadow larks are common everywhere upon our route.

October 7.—Lieutenant Harrison started out after dinner to-day to examine a ravine two miles from here, and, as he has not returned, I think he must have wandered further than he intended, and has not been able to reach camp before dark. I have had our cannon fired, and if he is within twenty miles of us he will be likely to hear it, as the atmosphere is perfectly still and clear. Should he not return before to-morrow morning I shall send out parties to search for him; but, as he is a good woodsman, I am in hopes he will find his way to camp alone.

We remained in camp to rest our men and animals, intending to resume our march to-morrow.

October 8.—This has been a most melancholy day to us. As Mr. Harrison did not return during last night, I concluded that he might have become lost upon the prairies, and at daylight this morning I had another gun fired, in order that, if within hearing, he might take the direction and return to camp. I also sent out Lieutenant Updegraff and Beaver to take the track of his horse, follow it to the ravine, and, if possible, find out where he had gone; besides sending several parties of dragoons in different directions in search of him. In the course of two hours Lieutenant Updegraff returned, and stated that he had followed the track about one

mile and a half beyond the ravine, where it appeared Lieutenant Harrison had been met by a party of Indians, and gone off with them in a southern direction. I immediately ordered Lieutenant Sackett to take all our mounted force, get upon the trail of the Indians, and follow them until he overtook them and recovered Lieutenant H.

Lieutenant Sackett followed the track about two miles from where he was met by the Indians, to a small branch of the Colorado, where, to his horror and astonishment, he suddenly came upon the murdered and mangled corpse of poor Lieutenant Harrison, lying down among the rocks, where they had thrown him, scalped, and stripped of all his clothing. The Indians had then struck out upon the prairie, and set off at full speed.

These facts having been reported to me, I despatched a wagon for the body, had it brought to our new camp, (three miles from that of last night,) and am preparing a box, in which I hope to take it to Fort Washita.

As it was late in the day before we got the corpse to camp, and as it was impossible to follow the trail after night, I directed Lieutenant Sackett to postpone his departure until early to-morrow morning. They have already had sufficient time to get a long distance from us, and, as our horses are mostly jaded and poor, I have not much expectation of his overtaking the murderers, unless they have gone to an encampment where there are women and children; but, from the course they have travelled, and their manner of encamping, Beaver thinks it probable that he may be able to form a very correct idea as to the part of the country they are making for, and perhaps tell to what tribe they belong.

There are several circumstances which have led me to believe that the act has been committed by a party of Kioways. There has been a large band of them lurking about the head of the Rio Concho during the whole summer, committing depredations upon the inhabitants of the State of Chihuahua; and it is but a short time since they stole several horses from an emigrating party from Louisiana upon this same stream.

The emigrants followed them, but, on overtaking them and not finding their animals, determined to keep them prisoners until they were returned. This resulted in an encounter, in which several of the Indians were killed, and among them their chief. Besides this, I heard of two other instances where Indians of this same tribe have committed depredations upon emigrants on the northern routes to New Mexico.

It has occurred to me that a remnant of the band upon the Concho may have been following us to get revenge for the loss of their chief. If so, they have taken most ample compensation; for a better young officer, or a more courteous, amiable, and refined gentleman, never lived. He was universally beloved by all who knew him: his kindness of heart and gentleness of disposition were remarked by every one.

When the melancholy news reached us that he had been murdered, there was such an expression of gloom cast over the command as I have never witnessed before. Old soldiers who had often seen their comrades falling by their sides in battle, and whose hearts, it might be supposed, were steeled against the manifestation of what some might consider weakness, were seen to turn away their faces to conceal their tears. They knew that in his death they lost a good friend.

October 9.—After starting Lieutenant Sackett, with all our mounted

force, in pursuit of the murderers, I moved forward, this morning, over a fine rolling country of prairies and timber, with good soil, and in many places well watered. At eleven miles we passed a pond in which there will be good water at all seasons. At nine miles from this we struck the first affluent of the Brazos, (a tributary of Clear Fork,) running north. All the branches of the Colorado upon our route run south.

Our camp is upon the creek, where we have good grass and mezquite wood.

Lieutenant Sackett, with his command, returned about 10 o'clock this evening, and reports that he took the trail of the Indians, and followed it for a few miles, when he came to a spot where they had made a fire, cooked meat, and departed in great haste, after night, leaving a pair of new moccasins, a lariat, and a saddle, from which we infer that they did not know we were so near, were alarmed at hearing our gun, and left immediately. Their course from here was almost due north for fifteen miles, (the distance he followed them.)

Finding that some of his horses were failing, one giving out entirely, and the Indians far ahead upon fresh animals, he reluctantly abandoned the pursuit, and returned to camp.

Beaver pronounces the saddle and moccasins the same kind as those used by the Kioways; and, as their permanent abiding place is nearly opposite the Antelope buttes between the Canadian and Arkansas, the bearing of the trail would lead there. These are additional evidences of the correctness of my first suspicions.

It is well known, furthermore, that these Indians are a most deceitful and treacherous race: even the Comanches will not trust them. Lieutenant Harrison has always, in the goodness of his heart, had great confidence in the effect of kind and hospitable treatment towards the Indians, in order to secure their good will; and has often been heard to remark that, should he meet with a party of Indians when alone on the prairies, he would approach and greet them cordially. He was well armed and mounted; and it is thought that, if he had made the attempt, he might possibly have reached camp unharmed.

October 10.—Our road to-day passed over a very level plain, mostly covered with mezquite wood, until we reached this place. Our course has been N. 62° 28' E., and the distance travelled thirteen miles.

We are encamped upon the same stream that we left this morning, and have good water standing in large pools where our road crosses. About four hundred yards below, however, there are salt springs running into the creek, which renders it nauseous and unfit for use.

We passed over some gypsum rock to-day, near a small creek, and here we found the water bitter and unpalatable, as it has always been when we have met with that mineral.

October 11.—Leaving camp early this morning, we marched about two miles, when we struck a piece of sandy road three miles in extent; but we passed over it without difficulty, and had a most capital road from there to our camp.

There have been two low bald mountains in sight, about ten miles to the north, nearly all day, which are good landmarks. They are upon the head of the Double Mountain fork of the Brazos, and give it its name.

We have been travelling through groves of mezquite timber, with a beautiful carpet of rich grama grass underneath, nearly all day.

There has not been so much water upon our road as usual to-day. We, however, passed one pond, where we obtained sufficient to water our animals. At our camp, we are upon the head of a creek which is slightly brackish, but is drinkable, and our animals appear to be more fond of it than of sweet water. We have seen several fresh Indian trails to day, and they have been telegraphing with their signal-fires in several different directions. One was about twenty-five miles to the northeast of us, in the mountains opposite the main Brazos, and another in our rear. This is a method by which they communicate to each other intelligence of the approach of strangers, and various other facts known to themselves.

October 12.—Our course to-day has been north 55° east, and our road passing over a rolling prairie, with but little timber for the first seven miles, when we came upon the high banks of the Double Mountain fork of the Brazos, or "Tock-an-ho-no," as the Comanches call it. Where we struck the stream it was fifty yards wide, twelve in depth, and very rapid, with a rocky bed at one place, but generally quicksand. We did not cross, but continued to the south, crossing a spring branch, and passing over as beautiful a country for eight miles as I ever beheld. It was a perfectly level grassy glade, and covered with a growth of large mezquite trees at uniform distances, standing with great regularity, and presenting more the appearance of an immense peach orchard than a wilderness. The grass was of the short buffalo variety, and as uniform and even as new mown meadow; and the soil equally as rich, and very similar to that in the Red river bottoms. This, together with the fact of its being well watered with small spring brooks, give it all the requisites for making beautiful plantations that the most fastidious amateur in agriculture could desire. We encamped on a creek to the south of the road.

October 13.—It has been threatening rain for the last four days; and this morning, as we had everything in readiness for marching, it commenced, and continued all day, accompanied by a cold north wind. We made nine miles over a very beautiful country, covered with mezquite trees, and intersected with numerous small spring rivulets, tributaries of the Double Mountain fork of the Brazos.

We encamped on one of these, and had much difficulty in making a fire, as everything had been saturated with water. Our road has been heavy, and the cold "norther" has had an effect upon our animals which I did not anticipate; many of them failed before we reached camp, five gave out entirely, could not be got in, and died during the day. Three more have already died since we reached camp, and I very much fear, if the storm does not abate, we shall lose many more before morning. They are principally Mexican mules, raised in a warm climate, and could not (in the low state of flesh they are now in) stand cold rains.

October 14.—We have had during last night one of the most terrific storms I have ever witnessed in the whole course of my life. The wind blew a perfect tempest from the north, and it appeared as if the whole flood-gates of the heavens were suddenly opened, and the accumulated rains of a year poured out in torrents for fifteen consecutive hours upon us. The whole surface of the earth was deluged; even upon the tops of the hills there were three inches of water, and it filled every ravine and hole about

us. The creek upon which we are encamped had but very little water in it last night: it is now full to the top of its banks, and would float a steamboat.

Our poor mules have suffered severely from the effects of the storm, and twenty five have perished. I trust, however, that the violence of the storm has passed, and that we shall be enabled, with care, to preserve the remainder. I have had several of our wagon covers cut up, and made blankets to cover the weakest of them. We cannot move from here until the creeks run down, and our animals recover some strength, as at present many of them are but barely able to walk.

We have now remaining twenty days' rations, which would have been more than sufficient to serve us to Fort Washita; but the storm has placed me in a situation which could not have been anticipated, and I have reduced the allowance of flour one-third, to provide against any further contingencies.

Previous to the storm, we were moving along finely at the rate of about sixteen miles per day, and our mules were doing as well as could be expected; but the loss of thirty three in one night has placed a very serious obstacle upon our movements, and I am obliged to leave a part of our wagons, reduce the amount of our baggage as much as possible, and endeavor to get on with what we cannot dispense with, after the ground becomes a little settled.

I have felt the most lively anxiety for our mules from the commencement of the journey, knowing that our progress depended entirely upon them, and have therefore required the teamsters to pay the most unremitting attention to them; but it appears that they cannot endure one of these bleak northers upon the prairies.

Our oxen did not suffer in the least from the storm, and some of them belonging to our sutler, that were very lean when we left Dona Ana, and have hauled very heavy loads the entire journey around from Fort Smith, have been improving for the last month, while our mules, with lighter work, have been falling off. I am decidedly of the opinion, after the experience I have had with different kinds of cattle, that oxen make better teams for prairie travelling than either mules or horses. In the very warmest weather of summer, over sandy roads where there is but little water, mules are preferable, but under any other circumstances I should prefer oxen. They will travel from 20 to 25 miles from day to day over good roads with perfect ease; and there is no danger of their being stolen by the Indians. In hot weather they should be driven morning and evening, and allowed to stop during the middle of the day.

October 15.—We remained in camp to-day awaiting the termination of the storm, and giving our animals time to recover a little from the effects of it. As we lost no more last night, we hope to be able to preserve those that we have left. The cold wind continues to blow from the north, with intervals of rain, but I think the storm is nearly over; and as soon as the creeks (which are now swimming) run down, I shall endeavor to go on. I reduced the flour part of the ration one-third yesterday, and as the men see the necessity of it, they submit to it cheerfully. Indeed, they have upon all occasions performed their arduous duties with the utmost alacrity and good will, and upon the whole of our long march of some seventeen hundred miles I have seldom had occasion to reprove one of them.

October 16.—This has been a day of general drying, and clearing our wagons of all articles that could conveniently be dispensed with upon our march. I have taken five of our oldest wagons to pieces, and placed them in a low place near the creek on the south side of the road. I have also had other surplus articles boxed up and buried about fifty yards from the road, and a large fire made over the spot, with directions written upon a tree to the right where these articles may be found.

The storm has passed, and we have a bright, warm day, with a south wind. If this continues I shall move ahead to-morrow to the next creek, about four miles from here.

October 17.—We made a start this morning, and marched four miles to another small creek, which we found too high to cross, and encamped upon the west bank. This creek unites with the one we left this morning, and runs into the Clear Fork of the "Brazos."

The country continues of the same character as before, gently undulating, smooth, and well situated for farms. We pass from one creek to another every three or four miles over high and dry mezquite openings, which slope very gently towards the creek bottoms on each side, and the soil cannot be surpassed. There is no part of it that cannot be made available for cultivation. We find upon this creek mulberry, elm, hackberry, wild china, and oak.

October 18.—We crossed the creek this morning, and after travelling two miles in an east course, struck another, which we found still too high to cross, and were obliged to encamp on the west side to await the fall of the water. We have seen signal-fires at several points to-day, showing that Indians are about us.

October 19.—Last night was one of the coldest I have ever known at this season of the year. About dark the wind turned to the north, bringing clouds and rain, and this morning the surface of the ground is covered with snow. Our mules fortunately found cover in the timber on the creek, and did not suffer so much as we were fearful they would. Much to our surprise and delight we found the creek had fallen six feet during the night, and was now fordable. We crossed after digging down the banks, and marched four and a half miles in a course $1^{\circ} 30'$ south of east, when we reached another creek tributary to the "Qua-qua-ho-no," or Clear Fork of Brazos; we crossed it, and encamped on the east bank. There are several kinds of hard timber upon this creek, with fine grass. All these small streams have buffalo, cat, and several other kinds of fish in them. We have seen fresh Indian signs to-day, but as yet none have shown themselves.

October 20.—We travelled to-day over a very beautiful succession of ridges and valleys between clear running brooks, skirted with a variety of different kinds of timber for ten miles, in a direction N. $70^{\circ} 20'$ E., when we came to the hills which border the valley of the Qua-qua ho-no, a branch of the Clear Fork of Brazos.

I was about three miles in advance of the train, with Beaver and three others, when we discovered five Indians coming towards us, driving pack-horses. As soon as they saw us they changed their course, and appeared afraid to come near. I sent Beaver out alone to meet them, and to invite them to approach. Instead of going directly where they were, he went to an eminence to the right, where they could see him distinctly,

and beckoned to them with his left hand to come to him, at the same time placing his right hand in token of friendship. After repeating this pantomime several times, with great formality and precision, one of the Indians galloped towards him until he reached within two hundred yards, when he halted and went through the same gestures as Beaver had done; after this they approached and embraced, when questions were asked by each as to who the other was, where they were going, &c., &c. They were a party of Comanches, and stated that their village was but a short distance off, on the bank of the "Qua-qua-ho-no." After remaining but a few minutes with us, they rode off again at full speed towards their camp, and in a short time parties were seen coming towards us from all directions. As our train had reached us I made a halt, and we soon had several hundred men, women, and children around us. I permitted them to approach, as I knew they would commit no depredations while their families were with them.

They had been with us but a short time, when we saw another large party approaching, which Beaver instantly pronounced to be his friends the Kickapoos—and this proved correct. They numbered one hundred warriors—fine, dashing looking young fellows—all well mounted, and armed with good rifles, upon some of which we saw the familiar names of "Darranger" and "Tryon," "Philadelphia, makers." They had their families with them, and were going to pass the winter in hunting upon the Colorado, where they expected to find game abundant. They had a very large number of horses and mules, to transport their provisions and baggage, and were in every respect well fitted out for their hunt. The name of their chief was "Pa-pe-qua-na," a good-looking old man, who said he had always been a friend to the whites.

Among the Comanches were several chiefs and captains; who, after the usual prelude of expressing their entire devotion to the American people, showed me letters from various persons who had passed through their country, requesting the whites to treat the bearers kindly. Among them I remember the names Se-na-co, Pe-a te-quash, and Was-se-na-ha. Se-na-co was a dignified, fine-looking old man, and showed me numerous testimonials of his friendship and good will towards the whites. Among others, he had letters from Major Neighbours, the Comanche agent, Colonel Montgomery and Major Gatés, of the army, all giving him a good character. He kept these with great care, and appeared to regard them as of much importance. He is principal "war chief" of the southern Comanches, and appears to be sincere in his professions of friendship for us.

While the Kickapoos remained with us, I inquired of them if they had heard anything said among the Comanches relative to the murder of Lieutenant Harrison. They had not, but were of the opinion that the act was committed by the Kioways; and the chief promised to make diligent search, among all the Indians he met, for the horse and other articles that were taken at the time. These were minutely described to him, and he felt confident he should be able to learn everything connected with it before his return home to the Creek nation, in the spring, and promised to report his discoveries to the commanding officer at Fort Washita.

These Indians are brave warriors, good shots, and prepared to meet any of the prairie tribes, either in peace or war. They carry out goods on

their hunts, which they exchange for mules, and drive them to the settlements in the spring; thus they form a commercial communicating medium between the white traders and the wild Indians, and drive a profitable trade, while they indulge in their favorite amusement, the chase.

After I had made the chiefs a present of some tobacco, I invited Se-na-co and his suite, eight in all, to our camp for the night. He appeared much gratified with his reception, and, when he parted from us, shook me warmly by the hand, saying that "he was not a Comanche, but an American;" and, as I could not be outdone in politeness by a wild Indian, I returned the compliment by telling him that I was soul and body a Comanche, and that there was not a drop of Anglo-Saxon blood in my veins; all of which was no doubt duly understood and appreciated.

The Qua-qua-ho-no, upon which we are encamped, unites with the Clear Fork of the Brazos about two miles below here. It is forty yards wide, two feet deep, and runs rapidly over a gravelly bottom. It is shut in on both sides by ranges of hills about two hundred feet high, between which the creek flows through a most beautiful and picturesque valley two miles wide, of fine rich soil, intersected at every few hundred yards by rapid spring rivulets, affluents of the main stream. This is and has been for many years a favorite place of resort for the Comanches.

The valley being covered with several kinds of grass that remains green during the winter, they come here in autumn, graze and fatten their horses, and are ready for the buffalo, on their winter migration to this region. We found the first pecan timber here that we have seen since we left the Creek nation.

October 21.—We crossed the creek this morning and passed out of the valley of the Qua-qua-ho-no through a ravine which winds by a very gentle and almost imperceptible grade to the top of the plain, crossing several small branches before we reached our present camp, seven miles from the last.

We are upon a clear spring branch fifteen feet wide, abounding with fish. Our poor mules are so much reduced that I am obliged to husband their strength with great care in order to get along at all. I therefore make short marches, to give them ample time to rest and eat. The mezquite wood and grass continue very abundant, and we occasionally see the grama grass.

The principal rocks for the last four days have been sandstone of different kinds, some dark and highly impregnated with iron, and having the appearance of volcanic productions; others in very thin slabs or plates and of an exceedingly fine texture, the fracture resembling that of a bone. I observed this evening a variety of the thistle which is new to me; it has a stock of about three feet in height, with a most gorgeous and beautiful blossom of a deep royal-purple color. It has something the shape and appearance of the passion flower.

October 22.—At three miles from our last camp we crossed a large spring branch twenty feet wide, which runs into the Clear Fork of Brazos. Our road from there was over a smooth, undulating country, abounding with small streams and covered with mezquite timber; after travelling nine miles and three fourths, we encamped upon another small tributary of the Clear Fork of Brazos. The weather begins to be warm and clear, and our mules are improving.

October 23.—Our course to-day has been N. 68° 8' E., over beautiful fertile ridges and valleys, covered with live-oak, post-oak, and mezquite timber for nine miles, when we struck a rapid stream of clear water about twenty feet wide and eight inches in depth, with high banks skirted with a variety of large timber, such as live-oak, wild china, elm, hackberry, and cotton-wood. The valley, which is a mile wide, has a most luxuriant grass and other vegetation, indicating the best quality of soil. There are bluffs about fifty feet high bordering the valley, and these are covered with groves of post-oak. The stream runs to the east of the Clear Fork into the main Brazos. About thirty miles north of our camp there is a sharp mound visible from the hills about here, and Beaver tells me that directly at the foot of this mound runs the Big Wichita, one of the principal tributaries to Red river, and that thirty miles in a northwest course from that mound the Red river forks: one branch, coming in from the west, is called Ke che-a-qua-hò-no, or "Prairie-dog Town river," from the circumstance of there being a round mound upon the stream which has a prairie-dog town on the top of it. This branch rises in the Llano Estacado. The other or northern branch is the principal stream, which rises in the Salt plains near the head of Dry river.

October 24.—After marching 6 7-10th miles this morning, we came upon the bluffs which border the valley of the main branch of the Rio Brazos; we descended about fifty feet by an easy slope into the valley, and struck the river at a place where it was fordable. It was a much larger stream than I had anticipated, being 200 yards from bank to bank, with a current of about four miles an hour, and three feet deep in the channel at this time, (when the water is at a medium stage.) Judging from the "drift," it does not appear to be subject to a rise of more than five feet above its present depth, and does not overflow its banks. The bed is red sand, which becomes soft quicksand during a rise or fall, and is then difficult to ford. It was falling rapidly when we reached it, and we were obliged to take off our mules, drive them across, and pull over the wagons with ropes, the men taking the water for each wagon. This stream rises in the salt plains of the Llano Estacado, some hundred and fifty miles west of here, and I am told runs through a rough, broken country for a great portion of the distance; indeed the mountains along its borders were frequently pointed out to me by our guide along our route west of here. The water is brackish and unfit for use; there are, however, small streams running into the river so frequently that fresh water can be found at almost every place where it is required. The valley of the Brazos is (where we crossed) three miles wide, elevated about eight feet above the water in the river, and skirted on each side with a range of hills, from fifty to two hundred feet high, covered with timber. The soil in the valley upon the west side is rather sandy, but on the east side it is good. The adjacent country upon both sides is very fertile. Should our government at any future time decide upon establishing a military post as far west of the frontier settlements of Texas as this, I am of the opinion that near this place would be the best that could be selected, for the following reasons: The Rio Brazos runs through a country much frequented by all southern prairie tribes of Indians east of the Pecos. Upon the south and west side range that numerous and powerful tribe the Comanches; also the Kioways, Lepans, and Tonkeways

Upon the north and east side are found the Wichitas, Caddos, Wacos, and those other small tribes which inhabit the country between the Washita and Red river. The Brazos forms the boundary between the Comanches and the tribes living east of it; and the latter are not suffered by the Comanches to hunt upon the west side of this river. A military post established here would therefore be in close proximity to all of these tribes, and would unquestionably have the effect in a great measure to put a stop to the depredations which they commit upon the frontier settlements of Texas. From all I can learn, there is a very superior tract of country between here and the extreme western settlements in Texas. This would be occupied in a short time, if farmers could have the protection which a garrison at this place would afford. As this is nearly on a continuation of the line dividing the waters of Red river from those that run south into the Brazos, Trinity, and Sabine, and as the geography of the country would point out this ridge as being the most favorable location for a road, it would strike the Brazos at this place. There is oak building-timber and stone in abundance in this vicinity. The grass remains green during the entire winter, and animals thrive and fatten without any other food. The climate is mild and salubrious, the atmosphere dry and pure, and cannot prove otherwise than healthy. These, with other local advantages, such as pure water, rich soil, good fuel, &c., make this the most favorable point for a military post that I have seen. We encamped to-night upon a small branch running through the Brazos valley, about two miles east of where we crossed.

October 25.—We passed up a ravine by a very gradual and easy ascent to the plain on the east side of the Brazos, and taking a course N. 65° 50' E., travelled over rolling mezquite and post-oak openings, with occasional prairies, for twelve and a half miles, where we encamped on a small affluent of the Brazos.

The soil on this side of the river is different from that on the west side, being a mixture of reddish clay and sandy loam; it is, however, equally as fertile, and produces a luxuriant vegetation. We have passed several ledges of dark hard sandstone to-day, which would make good building material.

October 26.—Leaving the creek this morning, we passed up through a grove of heavy post-oak and black-jack (the latter a species of oak) of about four miles in width. This is upon a ridge which divides the Brazos from the west fork of the Trinity river. Continuing on in a direction north 45° 28' east, over smooth ground, we made 13 $\frac{1}{4}$ miles, and encamped on a small running stream (ten feet wide) which our guide calls the head of the main west fork of Trinity. It is fringed with a narrow strip of large oaks and other hard timber, suitable for buildings and rails, and flows through a valley about a mile in width, of good soil, (a rich sandy loam,) which is in every respect well adapted for farming.

There is grass in this valley which grows to the height of six or eight feet, with a round jointed stock, and a head upon the top filled with seed which our animals eat eagerly, and I think must be very nutritious.

The timber increases in size and quantity as we advance. We are now passing through groves of oak, and do not find so much mezquite timber as we did on the other side of the Brazos. The grass has also changed from the grama to the mezquite variety. Upon the last hundred miles of our route we have seen but little game, as we have been in the

vicinity of Indians who are constantly hunting and drive it off; but now we are coming where the Indians seldom hunt, and the game is more abundant. Two deer and three turkeys were brought into camp this evening, and we have seen the first grouse to-day since leaving the vicinity of Chouteau's trading-house, on the Canadian. These birds appear to stay near the settlements, as we have seen none upon our whole march at any other place.

October 27.—We passed out of the valley this morning; and, after travelling three miles, struck upon the ridge dividing the Red river from the Trinity. Here we found a fine smooth road, and travelled $14\frac{1}{2}$ miles in a direction north $65^{\circ} 15'$ east, encamping upon a small branch of the west fork of the Trinity.

The road upon the "Divide" crosses the heads of numerous creeks, running into the Trinity on the south and the little Wichita on the north, and upon nearly all of them there is a great abundance of timber and good soils. Between the tributaries of the Trinity (which occur every two or three miles) there are ridges of rolling prairie, covered with luxuriant grass. The western border of the upper Cross Timbers has been in sight to the south all day.

October 28.—Our road has continued near the crest of the Divide all day, sometimes crossing the head of an affluent of the little Wichita, and at others a branch of the Trinity. Our average course has been north $74^{\circ} 32'$ east, and we travelled $13\frac{1}{4}$ miles. We are encamped in a rich bottom between two small spring brooks, and have fine grass and wood.

We passed through a dense grove of oak to-day of four miles in width, and have seen many more on both sides of our road.

When we arrived, we found there had been a large number of Indians encamped here about five days since, and Beaver, with his usual sagacity, immediately pronounced it a Kickapoo camp. Having a curiosity to learn how he arrived at this conclusion, I asked him what he had seen to indicate that this was an encampment of that particular tribe? This led to a conversation, in which he instructed me how, on seeing an old Indian camp, to determine at once what particular tribe had occupied it.

The Comanches make their lodges by placing poles on the ground in a circle, and tying the tops together, thus forming a frame work of a conical shape, which they cover with buffalo hides.

The Wichitas make their lodges in the same manner, but do not unite the poles at the top, leaving an opening at the top for the smoke to pass out. This, when covered, forms the frustrum of a cone.

The Kickapoos place the poles in a circle like the Comanches; but, instead of bringing them to a point at the top, they bend them so as to unite in an arch with those of the opposite side: the lodge is thus round upon the top.

The Delawares and Shawnees carry tents, and leave the poles standing wherever they encamp.

The Cherokees have tents also, but make their fires different from the Delawares: they place the wood in the fire with the sticks parallel, and burn from one end, pushing it into the fire as it burns away; whereas the others place each stick pointing to the centre of the fire, like the spokes of a wheel.

These facts, although simple and apparently of little importance in themselves, might be of great service to a traveller upon the prairies, as it would enable him, should he find a camp that had been recently deserted, to tell whether it had been occupied by friendly or hostile Indians; and, if they should be enemies, by observing the trail they had made on leaving, he would know what direction to take to avoid them.

October 29.—Our road continued upon the Divide in a course N. 82° E., until we encamped upon a small creek running into Red river, twelve and a half miles from our last camp. Our present position is nearly due south from the junction of the Little Wichita with Red river. We have been passing near the borders of the "Upper Cross Timbers" all day, and gradually approaching them until we are within a mile. We have seen but little mezquite timber to-day, and the mezquite and grama grasses have almost entirely disappeared; but we find the other kinds of prairie grass in abundance.

October 30.—We entered the "Cross Timbers" this morning, and passed on the north side of the "Divide," crossing the heads of the Red river affluents every mile or two to our camp. We are upon a clear creek about fifteen feet wide, running rapidly towards Red river through beautiful bottom of prairie and timber interspersed. The "Cross Timbers" have thus far been principally post-oak and black-jack, with many small glades or prairies through them, and abundantly watered with clear streams. A mile from our last camp we struck a fresh wagon trail which followed the Divide, and was upon our course; we have therefore continued in it. This is the first indication of civilization that we have seen upon our route since we left Dona Ana; and it looks as if we were approaching near the settlement. Game is becoming more abundant as we advance east. Beaver and myself have seen several fresh bear tracks to-day, and each killed a deer; we have as yet, however, seen no bears.

October 31.—We passed through the "Upper Cross Timbers" to-day and encamped upon an affluent of the Trinity, eleven miles from our last camp. We found the Divide somewhat circuitous, but were obliged to follow it in consequence of the numerous creeks running off on each side. The soil through the Timbers is more sandy than it has been further west, but there are many small glades where the soil is good and well adapted to agriculture. The formation is (upon the Trinity waters) principally limestone. The game continues abundant, and Beaver and myself have each killed another deer to-day. Our camp is on the prairie, about two miles from the Timbers, to the south of the road.

November 1.—Still keeping the Divide, we marched thirteen miles and three-quarters to-day, and encamped to the right of the road upon a branch of the Middle or Elm fork of the Trinity. After we had travelled four miles this morning, we found that the wagon we had been following for several days turned down off the Divide towards the settlements on the west side of Elm fork; but as this course was too much south for us, I kept the high prairie Divide, and two miles from our camp it approached in sight of and very near the valley of Red river.

November 2.—Our road along the Divide has been of a similar character to-day to that of yesterday, and runs nearly parallel to the Elm fork, until it comes opposite Fitzhugh's Station; here it bears more to the east. The extreme frontier settlement is upon the creek opposite our camp. It is a most charming stream, about forty yards wide, and one foot deep of

pure spring water, and a great abundance of the best timber of various descriptions upon its banks, such as white oak, bur oak, hickory, ash, pecan, &c. Outside of the Timber upon the creek the prairie is rich and produces abundant crops. I think it one of the most beautiful locations for farmers that can be found; and as the productiveness of the land has been thoroughly tested, there can be no doubt on that score. It is very thinly settled at present, but offers great inducements for others to come. Our position is seven miles and two-tenths from our last camp.

November 3.—We marched sixteen miles to-day upon the Divide, and encamped upon a tributary of the "Elm Fork," in the "Lower Cross Timbers."

November 4.—We continued upon the dividing ridge through the "Lower Cross Timbers" to-day, until we intersected a road from Fitzhugh's Station; here we reluctantly left this splendid natural road which we have travelled on from the Brazos, and turned to the left towards Preston, where I determined to cross Red river. After making our day's march, (twelve and a half miles,) I encamped near a plantation, owned by Mr. McCarty, upon the head of the "Big Sandy," an affluent of Red river.

November 5.—We continued on the Preston road for twelve miles and three-fifths, encamping at a small branch of Red river. On the 6th of November we reached Preston, crossed the river in a flat-boat, and encamped in the Chickasaw nation, eight miles from our last camp. On the 7th, after travelling seventeen miles and three-tenths in a direction N. 3° 20' E., we reached Fort Washita; here we remained until the 10th of November. I then ordered the portion of the escort belonging to the Fort Towson command (thirty-seven men) to proceed direct to that post, while Lieutenant Sackett, with the remainder of the escort, was directed to proceed with the train to Fort Smith, intersecting our outward road at the crossing of Gaines's creek, on the south fork of the Canadian.

As we had succeeded in bringing the corps of Lieutenant Harrison without inconvenience, it was considered desirable that it should be taken on to Fort Smith. I therefore gave directions accordingly, and proceeded in advance of the train to report in person to the general commanding the 7th military department. The road from Fort Washita to Fort Smith was surveyed and measured, in the same manner and with the same instruments as the other part of our road, under the supervision of Lieutenant Sackett, and the bearings and distances from day to day accurately plotted upon the accompanying map. The command with the train left Fort Washita on the 10th of November; arrived at the south fork of the Canadian on the 15th; left here on the morning of the 16th, and reached Fort Smith on the 20th November. The distance from Fort Washita to the south fork of the Canadian is eighty-one miles, and from thence to Fort Smith seventy-six miles. The distance from Dona Ana to Fort Smith, according to our measurement, is 894 miles—only about eighty miles greater than the distance to Santa Fe on our outward route. By a glance at the map it will be seen that our road at a point near the Brazos passes to the south of a direct line to Fort Smith, and at Preston turns to the north again, forming an angle of about 50°. Our guide is of opinion that a good wagon road can be found from the Brazos in very nearly a direct line to Fort Smith, leaving Preston and Fort Washita to the right,

and intersecting the Canadian route near the Delaware mountain. If such is the case, it would shorten the road some thirty or forty miles; but as I am obliged to pass Fort Washita to get supplies, I could not examine that route.

The entire distance that the escort has marched since it left Fort Smith is 2,023 miles. The command has generally been very healthy, and no deaths among the enlisted men. With the exception of one man left sick, and three desertions in New Mexico, the strength is the same as when placed under my command.

I shall now close my report with a few general remarks in reference to the country we have passed over, the relative merits of the two routes, and the probability of finding other better lines of communication between the Mississippi river, New Mexico, and California.

In the first place, I beg leave to remark, that before leaving Fort Smith for Santa Fe I had been led into very erroneous notions in regard to the geography of the country lying between the Rio Grande and the heads of the rivers running into the United States and Gulf of Mexico. From the best maps I could find, I was induced to believe that there were extensive ranges of lofty mountains running across the route from El Paso to Fort Smith, which could not be avoided, and that there were large streams in some places, where upon examination none are found; that in other places there were no streams, where indeed there are many. For instance, upon many of the modern and most approved maps, the Rio Pecos, or, as it is improperly termed by some, the Rio Puerco, is laid down as running from north to south nearly parallel to the Rio del Norte, and at a distance of about forty or fifty miles from it, when its course for nearly a hundred miles that we have followed it is but about 25° south of east; and instead of being fifty miles from the Rio del Norte, it is two hundred and four in nearly a direct line. This opinion has been so general, that several parties of emigrants on their way to New Mexico left the Rio Pecos in the morning, expecting to reach the Rio Grande the same night; and some of them falling into a route where there was no water, travelled several days in a westerly direction, suffering greatly, and in some instances perishing before they reached the river. The inhabitants at El Paso in one instance sent out water to the relief of emigrants who were too much exhausted to get it, and who would otherwise have probably died upon the plains.

Disturnell's map of Mexico, &c., upon which the boundary between the United States and Mexico is by the treaty defined, is one of the most inaccurate of all those I have seen, so far as relates to the country over which I have passed. He makes a greater error than most others in laying down the Pecos, and has the Colorado, Brazos, and Red river all inaccurately placed. Upon the Red river he has a very large branch coming from far west, near El Paso, which he calls "Ensenado Choctaw." This is altogether an imaginary stream, as no one who has been in the country ever heard of it; neither does any branch of Red river extend to within three hundred miles of the Rio del Norte. There are but three principal tributaries to Red river above Fort Washita; these are the Big and the Little Wichita and the Ke-che-a-quah-no, but neither flows far from towards El Paso. These, with the main branch of Red river and the Brazos, all have their sources in extensive salt plains far east of the Rio

Pecos. Their waters are strongly saline and unpalatable, and for a long distance run through a country poorly watered, and bordered by rugged cliffs and deep ravines. Hence it appears to me impracticable to find a road to the Rio Grande which shall follow up the course of either of these streams. Even if the road could be made to the head of one of them, it would terminate at the eastern border of the Llano Estacado; for no man, as I have remarked before, attempts to cross that desert, except at certain points.

It therefore appears to me, that if a route could be found in nearly a direct line from a desirable point in the United States, which would skirt the border of the plain, and at the same time have sufficient water and wood upon it at all seasons of the year for the traveller's use, that would be the best location for a road, as, in this case, the road would cross the head branches of streams where there would be an abundance of water, and no heavy hills or large rivers to pass. Fortunately, on our return from New Mexico we fell into a route of this description, and had no difficulty in finding an abundant supply of wood, water, and grass upon nearly the whole route.

On leaving the valley of the Rio del Norte, our road passed through a gap or pass in the first chain of mountains in a direction which would have taken me near Fort Smith; but I was obliged here to change our course to avoid the Sacramento chain of mountains lying across our route, as our guide told me there was no practicable pass for wagons through there. I therefore bore south, and crossed the level plain dividing the two ranges to the "Sierra Waco." Our road thus far is but little more elevated than the table lands adjacent to the valley of the Rio Grande. From this point we ascended about two hundred feet through a sinuous valley or cañon of gentle grade to the second bench, at the southern extremity of the Sierra Alto. We then crossed another extensive plain of about eighty miles in width, which brought us to the Sierra Guadalupe: here we encountered the margin of another high plain, which forms the third and highest bench between the Rio Grande and the Rio Pecos, the difference between the summit level at this point and Dona Ana not being over five hundred feet. From this chain of mountains the road descends to the valley of the Pecos, about two hundred feet. Thus, from the Rio Grande to the Pecos, a distance of two hundred and four miles, there are but three hills of any magnitude to ascend in coming east, and those with a little expense could be made as good as any road in our country. From the valley of the Pecos to the sand hills the road ascends probably two hundred feet, but the slope is so uniform that it is hardly perceptible. These hills are near the southern extremity of the great desert of the Llano Estacado, and stand upon the summit of the plain dividing the waters of the Rio Pecos from those that run east and south into the United States.

Our road from here runs across the "Llano Estacado" for seventy-eight miles upon a perfectly level prairie as firm and smooth as marble. It then descends from the high table land about fifty feet into a rolling prairie country, where the Colorado of Texas has its source. Thus far there is but little timber or water upon our route, except at certain points noted upon the map; but these points can be made from day to day with loaded teams. As if, however, in compensation for the absence of other

favors, nature, in her wise economy, has adorned the entire face of the country with a luxuriant verdure of different kinds of grama grass, affording the most nutritious sustenance for animals, and rendering it one of the best countries for grazing large flocks and herds that can be conceived of.

Immediately after we descended from the high table lands, we struck upon an entirely different country from the one we had been passing over before. By a reference to the map it will be seen that we kept near the plain upon the head branches of the Colorado and the Clear Fork of the Brazos. Here we found a smooth road over a gently undulating country of prairies and timber, and abounding with numerous clear spring branches for two hundred miles, and in many places covered with large groves of mezquite timber, which makes the very best of fuel. The soil cannot be surpassed for fertility. The grass remains green during the entire winter, and the climate is salubrious and healthy; indeed, it possesses all the requisites that can be desired for making a fine agricultural country, and I venture to predict that at no very distant period it will contain a very dense population. It is only necessary for our practical farmers to see it, and have protection from the incursions of the Indians, to settle it at once.

Soon after crossing the Rio Brazos, our road strikes out upon the high ridge lying between the waters of the Trinity and Red river; and it appears as if nature had formed this expressly for a road, as it runs for a hundred miles through a country which is frequently much broken up upon each side with hills and deep ravines; and the only place where wagons can pass, is directly upon the crest of this natural defile. It is as firm and smooth as a turnpike, with no streams of magnitude or other obstructions through the entire distance to near Preston, where we left it and crossed Red river. From Preston to Fort Washita, and thence to our outward route upon Gaines's creek, the road passes through the Chickasaw country, which is rolling, and in many places covered with a great variety of large timber, and well watered, with no mountains or high hills to pass over. Hence you will perceive that from Dona Ana to Fort Smith, a distance of 994 miles, our road passes over smooth and very uniformly level ground, crossing no mountains or deep valleys, and for five hundred miles upon the eastern extremity runs through the heart of a country possessing great natural advantages. I conceive this to be decidedly the best overland wagon route to California for several reasons, among which are the following:

1. I was assured by several of the best guides in New Mexico—among others Messrs. Lereux, Kit Carson, Hatcher, and Thomas—that there was no point upon the Rio Grande north of San Diego from which wagons could pass through the extensive ranges of mountains lying west of that river, and that it would be necessary to take Colonel Cook's route to the head of the Gila. Should emigrants go to Santa Fe, therefore, they have to travel three hundred miles down the river to reach this point, whereas our return route leaves this road almost directly at the place.

2. The roads from Fort Smith and Independence to Santa Fe being over eight hundred miles, and the distance down the Rio Grande three hundred more over a very sandy road, makes these routes longer than the southern route from Fort Smith by two hundred miles.

3. As there is grass upon this route at all seasons of the year, it can be

travelled at any time. It is true that the old grama grass dries up early in the spring, but appears to cure like hay, and does not lose its nutritious properties.

4. As San Diego on the Rio Grande, the mouth of the Gila river, and San Diego on the Pacific, are all very nearly upon the same parallel of latitude, ($32^{\circ} 45' 54''$), our southern route would form a direct line of communication with Cooke's road from the United States through to the Pacific, and probably shorter by several hundred miles than any other.

There is a difference of thirteen degrees longitude between Fort Smith and Dona Ana, and ten degrees difference between Dona Ana and San Diego, in California. The probable distance, therefore, from Fort Smith through to the Pacific would not be more than about seventeen hundred miles. Emigrants with good cattle, and well supplied with the proper "outfit" for the journey, should go through in four months with ease.

As I have remarked before, I consider oxen to be the best description of cattle for the prairies; and emigrants, before leaving for California, should provide themselves with one or two extra pairs to be ready to supply the places of any which may fail or die upon the road. They should take light, strong wagons, and transport nothing but provisions, and such other articles as are absolutely required upon the journey. Their provisions should be secured in small packages, and not suffered to become wet. Each wagon should have a double cover, a water-cask, and extra axle pole and pair of hounds, before going out into the plains, as after this no timber is to be found suitable for such purposes. They should form parties or companies of from seventy-five to a hundred men each, which would be sufficient for protection, guarding animals, &c. While travelling through the Indian country they should herd their animals, night and day, with the utmost vigilance and care, and never allow them to move from camp without an armed guard.

The best season for emigrants to leave the United States for California, upon the southern road, is about the first of June. There would then be good grass and water to the Rio Grande, and they would reach there about the last of July. This would give them time to stop two or three weeks to graze and recruit their animals, and lay in additional supplies, should they require any, for the remainder of their journey. Flour, corn, vegetables, and beef cattle, as also many articles of merchandise that travellers require—such as clothing, shoes, &c.—can be obtained for moderate prices at Dona Ana or El Paso.

Leaving the Rio Grande about the 1st of August, they would reach the Colorado of California after the annual flood, which occurs in July and August, overflows the banks for several miles on each side, and renders it utterly impassable for wagons; and in this way they would arrive at San Diego during the healthy season.

From all I can learn of the other routes to California, I am induced to believe that, should our government, at any future time, determine upon making a national road of any description across the continent, the southern route we have travelled is eminently worthy of consideration. We find upon none of the northern routes as much water, timber, or rich, fertile soil, as upon this. There are many more mountains to pass over, and during a part of the year they are buried in deep snows.

I have been kindly allowed the perusal of a letter written by an officer

of the army (an attentive and experienced observer of nature) who has recently passed over that portion of the northern route between Fort Kearny and Fort Laramie, in which he speaks of the country in the following language: "The country between Fort Kearny and Fort Laramie is a vast undulating sandy desert—but little wood or water—totally destitute of interest, and utterly worthless, and must remain so forever: it never can be inhabited to any extent, as there is no soil, and the seasons are too short."

The distance between these two places is three hundred and sixty-four miles. In one place, wood for cooking has to be carried for three consecutive days in wagons, and in several places it is necessary to carry water.

The road from Independence, after passing through a country of poor soil, and very destitute of wood, for a great distance, passes over lofty and rugged mountains, near Santa Fe.

Lieutenant Colonel Emory states that the arable soil upon this road extends to the 99th degree of longitude. Therefore, if a road could be made from the Missouri river to California, it would pass through a very barren country, which could not be settled or improved; whereas one constructed through the country we have passed over from Dona Ana to Fort Smith, with the protection which a chain of military posts along the route would afford, would open a vast tract of beautiful country to the notice of agriculturists, and would be settled in a very short time.

The advantages which this route possesses over others adapt it in a pre-eminent degree to the construction of a railroad. For the reasons I have mentioned, and from all the examination and consideration which I have been able to give the subject, I cannot resist the strength of my own convictions that any experienced and impartial engineer, after a thorough and careful reconnoissance of all the different routes, would at once give this the preference over any other.

From Dona Ana or El Paso to near where we crossed Red river—a distance of 700 miles—there are probably as few difficulties to encounter as upon any other road that can be found in our country. Throughout this entire distance it would not be necessary to make a single tunnel, or to use a stationary engine. There would be but few heavy excavations or embankments; and, for a great portion of the distance, the surface of the earth is so perfectly firm and smooth that it would appear to have been designed by the Great Architect of the Universe for a railroad, and adapted and fitted by nature's handiwork for the reception of the superstructure. There is an abundance of building stone, and an inexhaustible amount of mezquite timber, which, for its durability, is admirably adapted for use as sleepers, and for fuel.

From Red river it could be carried to Fort Smith without difficulty, or to any other point that might be selected. This, united with a railroad from the Rio Grande to the San Diego, would give us a great national highway across our continent from the Atlantic to the Pacific, in a very direct line, and would enable the traveller to pass safely and comfortably over a distance in a week which before required four months of toil, hardship, and danger. It would afford our government a cheap and rapid transit for troops and munitions of war, and would enable us to communicate with our far-distant territories in a few hours.

These considerations, in connexion with the vast and incalculable com-

mercials benefits that the whole civilized world would receive, would render it a monument to the genius, enterprise, and philanthropy of the American people.

I am, very respectfully, your obedient servant,

R. B. MARCY,

Captain 5th Infantry, commanding escort.

Lieut. F. F. FLINT,

Acting Assistant Adjutant General,

7th Military Department, U. S. Army.

Table of distances,

Date.	Place of observation.	Distances by chain in miles.		Average bearing from camp to camp.
		From camp to camp.	Total distance from Dona Ana.	
1849. September 1	Organ mountains	19	19	N. 81° E.
2	Camp No. 2...	6 $\frac{3}{10}$	25 $\frac{3}{10}$	S. 53° E.
3	....do.....3...	18	43 $\frac{3}{10}$	S. 47° 10' E..
4—6	....do.....4...	19 $\frac{1}{4}$	63 $\frac{1}{10}$	S. 47° E.
6	....do.....5...	22 $\frac{1}{4}$	85 $\frac{1}{10}$	N. 81° 5' E...
7	....do.....6...	8 $\frac{3}{4}$	94 $\frac{1}{10}$	N. 72° E.
8	....do.....7...	25 $\frac{1}{2}$ $\frac{3}{10}$	120	S. 83° E.
9	....do.....8...	23 $\frac{1}{2}$ $\frac{1}{10}$	143 $\frac{1}{10}$	S. 49° E.
10	....do.....9...	4 $\frac{1}{4}$	147 $\frac{6}{10}$	N. 45° E.
11—13	....do.....10...	5 $\frac{1}{10}$	152 $\frac{4}{10}$	N. 87° E.
13	....do.....11...	15 $\frac{3}{10}$	167 $\frac{7}{10}$	S. 85° E.
14	....do.....12...	11 $\frac{2}{4}$ $\frac{7}{10}$	179 $\frac{1}{10}$ $\frac{6}{10}$	N. 83° E.
15	....do.....13...	9 $\frac{1}{8}$	188 $\frac{1}{8}$	N. 67° E.
16	....do.....14...	15 $\frac{3}{10}$	204 $\frac{3}{10}$	S. 64° 30' E..
17	....do.....15...	11 $\frac{1}{8}$	215 $\frac{1}{2}$ $\frac{7}{10}$	S. 59° 30' E..
18	....do.....16...	13 $\frac{1}{8}$	228 $\frac{1}{2}$ $\frac{1}{10}$	S. 68° 7' E...
19	....do.....17...	13 $\frac{5}{8}$	242 $\frac{7}{10}$ $\frac{7}{10}$	S. 40° 40' E..
20—22	....do.....18...	15 $\frac{3}{10}$	257 $\frac{1}{2}$ $\frac{3}{10}$	S. 81° E.
22—24	....do.....19...	9 $\frac{9}{10}$	267 $\frac{3}{8}$	N. 82° E.
24	....do.....20...	10	277 $\frac{3}{8}$	N. 25° E.
25—27	....do.....21...	13 $\frac{7}{10}$	290 $\frac{1}{2}$ $\frac{1}{10}$	N. 25° E.
27	....do.....22...	4 $\frac{3}{4}$	295 $\frac{3}{10}$	N. 87° E.
28	....do.....23...	8 $\frac{3}{10}$	303 $\frac{3}{10}$	N. 49° 4' E...
29	....do.....24...	15 $\frac{3}{10}$	318 $\frac{9}{10}$	N. 57° E.
October 1	....do.....25...	17	335 $\frac{9}{10}$	N. 67° E.
2	....do.....26...	23	358 $\frac{9}{10}$	N. 72° 22' E..
3	....do.....27...	22 $\frac{9}{10}$	381 $\frac{1}{2}$	N. 71° E.
4	....do.....28...	12 $\frac{1}{10}$	393 $\frac{9}{10}$	N. 43° E.
5	....do.....29...	11 $\frac{1}{2}$	405 $\frac{7}{10}$	N. 47° 28' E..

Bearings, &c.

Meteorological observations.		Variations of compass.	Camping places.
Wind.	Weather.		
West.....	Clear and calm..	12° 28'	At springs four miles south of Pass.
West.....	Clear.....		Solado Spring, near Organ mountains.
Southwest..	Cloudy and warm.....		On prairie; no water.
South.....	.....do.....		At Waco mountains, (tanks.)
East.....	Clear, cool, and strong wind.		Sierra del Alama, (spring.)
East.....	Rain; cold wind.....		Comudas, (deep wells.)
Southwest..	Mild and clear.....		Ojo del Cuerdo, (springs.)
South.....	Warm showers.....		Peak of Guadalupe, (spring up ravine.)
South.....	Morning clear; evening rain.		Ojo del Camins, (spring in the pine timber.)
North.....	Cool wind; clear.....		Independence spring, near road
East.....	Cool; rain last night.		Ojo de San Martín (spring.)
Southeast..	Mild and clear.....		On Delaware creek.
South.....	Cloudy and mild.....		
Southeast..	Clear; warm and strong wind.		At Rio Pecos, (brackish water.)
Southeast..	Cool; cloudy.....		Do do
East.....	Cold rain and windy.		Do do
Northeast..	Cloudy and warm.....		Do do
North.....	.....do.....	11° 8'	Crossing.
Southeast..	Warm; rain.....		Laguna, (brackish water.)
East.....	Rain; mild.....		On prairie, (no water.)
North.....	Cold; rain.....		Sand hills; water to the east, in the hills.)
North.....	.....do.....		Do do
West.....	Clear and cold.....		Pond.
West.....	Cloudy and cool.....		Pond on Llano Estacado.
Northeast..	Clear and cool; windy.		Do do
East.....	Clear; moderately warm.		Laguna Colorado; water in pond.
North east ..	.....do.....do.....		On "Big Spring," to the south.
West.....	Clear; warm.....		Spring on the road.
Northwest	Very windy and cold.		Laguna on the road.

Table of distances,

Date.	Place of observation.	Distances by chain in miles.		Average bearing from camp to camp.
		From camp to camp.	Total distance from Dona Ana.	
1849.				
Oct. 6—8	Camp No. 30...	$18\frac{2}{10}$	$423\frac{2}{15}$	N. 56° 12' E..
8	....do.....31...	3	$426\frac{2}{15}$	E.....
9	....do.....32...	$20\frac{3}{8}$	$446\frac{1\frac{2}{8}}{8}$	N. 67° E.
10	....do.....33...	13	$459\frac{1\frac{2}{8}}{8}$	N. 62° 28' E..
11	....do.....34...	$18\frac{1}{2}$	$478\frac{1\frac{2}{8}}{8}$	N. 52° 40' E..
12	....do.....35...	$17\frac{1}{10}$	$495\frac{5}{4}$	N. 55° E.
13—17	....do.....36...	$8\frac{1}{2}$	$503\frac{1\frac{1}{2}}{2}$	N. 78° 20' E..
17	....do.....37...	4	$507\frac{1\frac{1}{2}}{2}$	S. 86° E.....
18	....do.....38...	2	$509\frac{1\frac{1}{2}}{2}$	S. 88° E.....
19	....do.....39...	$4\frac{1}{2}$	$514\frac{5}{4}$	S. 88° 30' E..
20	....do.....40...	$12\frac{1}{4}$	$526\frac{1\frac{1}{4}}{4}$	N. 70° 20' E..
21	....do.....41...	7	$533\frac{1\frac{1}{4}}{4}$	N. 68° E.
22	....do.....42...	$9\frac{3}{4}$	$543\frac{5}{4}$	N. 80° 20' E..
23	....do.....43...	$11\frac{3}{4}$	$554\frac{2\frac{3}{4}}{4}$	N. 68° 8' E..
24	....do.....44...	$6\frac{2}{1\frac{1}{2}}$	$561\frac{2}{1\frac{1}{2}}$	N. 69° E.....
25	....do.....45...	$12\frac{1}{4}$	$573\frac{6\frac{0}{1\frac{1}{2}}}{1\frac{1}{2}}$	N. 65° 50' E..
26	....do.....46...	$13\frac{1}{10}$	$586\frac{7\frac{3}{10}}{10}$	N. 45° 28' E..
27	....do.....47...	$14\frac{1}{10}$	$601\frac{1}{10}$	N. 65° 15' E..
28	....do.....48...	$13\frac{1}{10}$	$614\frac{2\frac{7}{10}}{10}$	N. 74° 32' E..
29	....do.....49...	$12\frac{1}{2}$	$626\frac{2\frac{7}{2}}{2}$	N. 82° E.....
30	....do.....50...	13	$639\frac{2\frac{7}{2}}{2}$	N. 48° 31' E..
31	....do.....51...	11	$650\frac{2\frac{7}{2}}{2}$	S. 79° E.....
November 1	....do.....52...	$13\frac{3}{4}$	$664\frac{6\frac{7}{4}}{4}$	N. 83° 10' E..
2	....do.....53...	$7\frac{2}{10}$	$671\frac{2}{10}$	S. 83° E.....
3	....do.....54...	$14\frac{2}{5}$	$686\frac{1\frac{2}{5}}{5}$	N. 75° 10' E..
4	....do.....55...	$12\frac{1}{2}$	$698\frac{7\frac{2}{2}}{2}$	N. 81° E.....
5	....do.....56...	$12\frac{2}{5}$	$711\frac{2}{5}$	N. 60° 45' E..
6	....do.....57...	8	$719\frac{2\frac{1}{10}}{10}$	N. 55° E.....
7—10	....do.....58...	$17\frac{7}{10}$	$736\frac{2\frac{7}{10}}{10}$	N. 3° 20' E..
10	....do.....59...	$8\frac{1}{2}$	$745\frac{1\frac{1}{2}}{2}$	N. 20° E.....
11	....do.....60...	$12\frac{2}{5}$	$758\frac{7}{10}$	N. 53° E.....
12	....do.....61...	$15\frac{1}{5}$	$773\frac{2\frac{1}{5}}{5}$	N. 41° 40' E..
13	....do.....62...	13	$786\frac{2\frac{1}{10}}{10}$	N. 19° 25' E..

bearings, &c.—Continued.

Meteorological observations.		Variations of compass.	Camping places.
Wind.	Weather.		
Northwest.	Cold and cloudy.	.....	Affluent of Pash-a-ho-no.
West .....	...do.....do .....	.....	Do do
Southwest.	Warm and clear..	.....	Affluent of Brazos.
Northeast ..	Cold and cloudy.	.....	Pash-a-ho-no.
Southwest.	Clear and warm;	.....	Spring, (sulphurous.)
	windy.		
North.	Cold, cloudy, &	10° 40'	Affluent Brazos.
	windy.		
North.....	Cold "norther"	.....	Do
	48 hours.		
South	Clear and mild..	.....	Do
South .....	...do.....do ...	.....	Do
North.	Cold rain and	.....	Do
	snow storm.		
North.....	Clear and cold ..	.....	Qua-gua-he-no (Pecan timber.)
West	Clear; frost dur-	.....	Spring Brook (tributary Clear
	ing the night.		Fork.)
North.	Clear and warm.	.....	Do do do
West .....	...do.....do ...	.....	Do do do
West .....	...do.....do ...	10° 20'	Rio Brazos.
Southeast ..	...do.....do ...	.....	Affluent of Brazos.
Southeast ..	...do.....do ...	.....	Affluent of Trinity.
Southwest.	Warm and clear.	.....	Affluent of Trinity.
Southwest.	.....do.....	.....	Do do
South. ....	.....do.....	.....	Affluent of Little Washita.
Southwest.	Clear and mild..	.....	Do do
South. ....	.....do.....	.....	Affluent of Trinity.
South.	Clear with strong	.....	Affluent of Elm fork of Trinity.
	wind.		
Southwest.	Warm, with do..	.....	Do do do
South .....	...do....do.....	.....	Do do do
South	Warm and cloudy	.....	Affluent of Red river.
Southwest.	Cloudy and show-	.....	Do do
	ers.		
West.....	Clear and mild..	.....	Do do
Southeast..	.....do.....	.....	Fort Washita.
.....	Cloudy.....	.....	"Blue" (tributary to Red river.)
.....	Cold rain all day.	.....	Boggy depot.
.....	Clear .....	.....	Little Boggy (affluent of Red
			river.)
.....	..do.....	.....	Do do do

Table of distances.

Date.	Place of observation.	Distances by chain in miles.		Average bearing from camp to camp.
		From camp to camp.	Total distance from Donna Ana.	
1849. Nov. 14	Camp No..63...	17½	803 $\frac{91}{120}$	N. 18° 20' E..
15	....do....64...	15	818 $\frac{91}{120}$	N. 30° 40' E..
16	....do....65...	24	842 $\frac{91}{120}$	N. 83° 30' E..
17	....do....66...	15	857 $\frac{91}{120}$	N. 80° 20' E..
18	....do....67...	23	880 $\frac{91}{120}$	N. 81° E.....
19	....do....68...	14	894 $\frac{91}{120}$	N. 34° 30' E..

bearings, &c.—Continued.

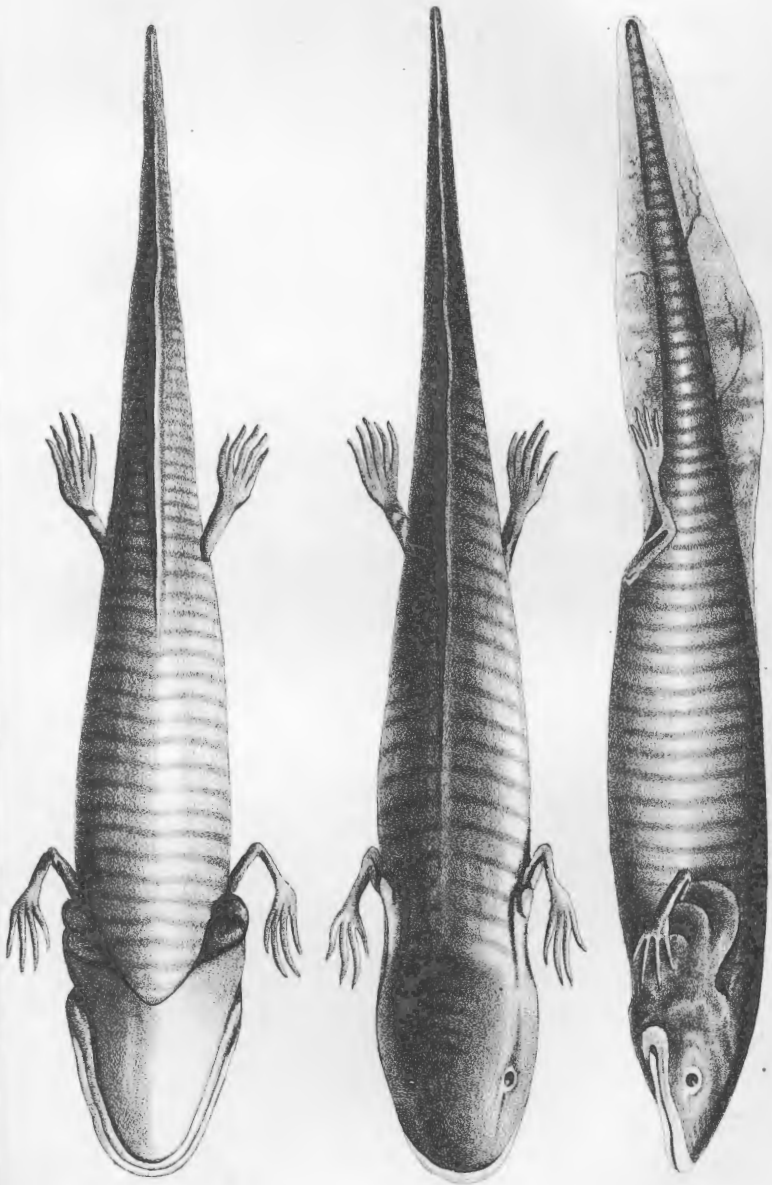
Meteorological observations.		Variations of compass.	Camping places.
Wind.	Weather.		
.....	Clear.....	.....	Prior's (affluent of Gaines's creek.)
.....	..do.....	.....	South Fork of Canadian.
.....	Rain.....	.....	Cooper's creek.
.....	Clear .....	.....	Coon creek.
.....	..do.....	.....	Agency.
.....	..do.....	.....	Fort Smith.



Drawn to accompany L. Stephens's report of the Alvarado route by J. H. Kern. Copied in the Topographical Bureau.

P. S. Duval's Steam Lick Press Phila.

VIEW OF SANTA FE AND VICINITY FROM THE EAST.



R. H. Xerox del. Copy J. R. Baker.

The material of which the above were full size drawings, was found by Lewis. Spinosaurus is a good name for the animal, as it is on the head from the head of the fish. The head of the animal is a good name for the animal. The head of the animal is a good name for the animal. The head of the animal is a good name for the animal.

P. S. Dismont. France. 1868. Plate 1.