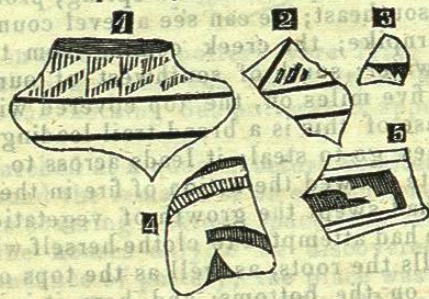


the salt kind; several Indian trails crossing our path showed the presence of the Apaches. The Gila is getting to be much larger—still not deep fording. Distance, 21 miles.

October 29.—Marched at 10 minutes of 8; kept on the south side of the Gila all day; about eight miles out, we passed the mouth of a stream seen on our left yesterday; it was dry, but at times it contains a good deal of water; its course is marked by cotton-woods; at only two or three places could a camp have been found; all salt grass; about twelve miles, there is a level plot of salt grass running down to the river—enough for thousands of animals. All the country seemed to be perishing for want of rain. About five miles from camp, we fell upon the great stealing road of the Apaches; it was hard beaten, and in places many yards wide, filled with horses' mules' and cattle tracks, the latter all going one way—from Sonora; the bottom on the south side of the river is about two miles wide; along here, for 40 miles, it could all be irrigated. There is a large quantity of cotton-wood along the Gila; the mountain peaks stand along the river on each side, with long intervals of comparatively low land between them; looking back to the southeast, a vast plain is seen south of the turnpike, through which we might have evaded that horrible journey. A wild mule paid the column a transient visit, but eluded pursuit, and fled to the hills with the swiftness of the deer. We have had the best road to-day of any since we left Santa Fé. Pottery in abundance; but all the houses were gone; probably they used no stones in the foundations. Distance, 21½ miles.

October 30.—Marched at a quarter before 8, and continued on the Kiataro trail down the Gila; at 10 miles, we halted to noon on the south side (left bank) of the Gila, at a good grass plat. On a hill of the usual diluvion, of 50 feet above the level of the river, with a steep ascent, was the ruins of an ancient dwelling; the rooms marked by the foundation stones of round volcanic rocks, from one to two feet in diameter. I found a shell in the ruins, which had been perforated, and worn as an ornament, besides many pieces of pottery; the rooms were square, of the usual size of 12 or 15 feet; near the house, a stone was found, about two inches by an inch and a half, which had been painted red; it may have been used as the foot of an idol. The pottery was marked. We continued our



March, after our usual halt of an hour; and after crossing the Gila five or six miles, we came suddenly upon two Indians, old fellows,

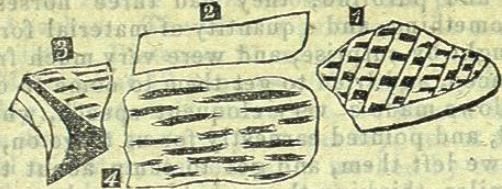
shrivelled up and purblind; they had three horses pretty well packed with something, and a quantity of material for arrows; they were fairly caught by surprise, and were very much frightened; we gave them tobacco, and tried to get them to come to camp with us, but the old fellows made a very eloquent speech, which we could not understand, and pointed earnestly for us to go on, and let them go their way; we left them, and got to camp about three o'clock; distance, 22½ miles, thinking they would pass along our column to the rear; but they marched themselves instantly; they are of the Hilend's Gila Indians, or Kiataws, (prairie wolves,) as they are nicknamed; from them the river takes its name. The valley is narrower to-day, but no doubt once supported a large population; camp good on the left bank; signs of rain in the dry creek.

October 31.—Marched at a quarter to 8, having sent Carson off at 7, with four dragoons, to explore ahead the route. As he, on his route from California, made 60 miles to a point 8 miles up the San Francisco without water, we take an Indian road nearer the Gila, and hope to shorten the distance without water. After marching 10 miles, we halted on the San Francisco, right bank, where we finally encamped. Carson reports that we can make seven miles more on the river, and must then bear off, to avoid the cañon No. 4; after we had concluded to camp, some Gila Indians made their appearance on a distant hill, and made signals; we called them, and sent messengers to them; waived a white flag; our messengers, Captain Moore and Carson, shook hands with them, but they would not be induced to come to camp; they have been dealt with by Americans in the employment of Chihuahua, who have hunted them at \$50 a scalp, as we would hunt wolves; and one American decoyed a large number of their brethren in rear of a wagon to trade, and fired a field-piece among them; it is no wonder, then, that two parties of God's creatures, who never knew each other before, should meet in a desert, and not approach near enough to shake hands. It would be well for us to get them to us, as we might buy some mules; ours are flagging; and we might get water-guides in the 60 miles in front of us. Remains of pottery at camp; beaver dams in great numbers in the San Francisco; flags and willows along the borders very thick; some larger cotton-wood; the

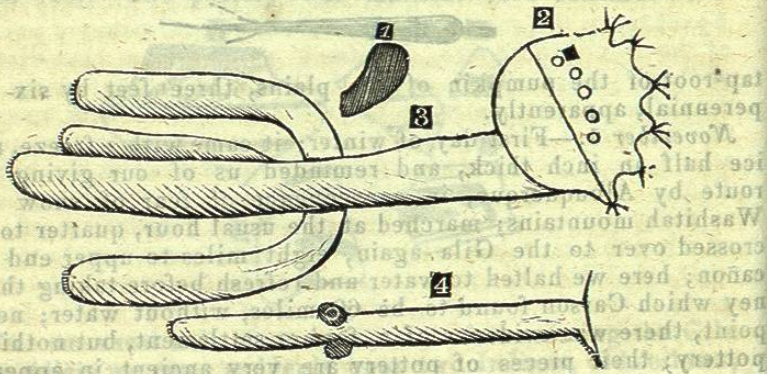


tap-root of the pumpkin of the plains, three feet by six inches; perennial, apparently.

November 1.—First day of winter; it came with a freeze, making ice half an inch thick, and reminded us of our giving up the route by Albuquerque, in consequence of fear of snow on the Washitah mountains; marched at the usual hour, quarter to 8, and crossed over to the Gila again, eight miles to upper end of the cañon; here we halted to water and refresh before taking the journey which Carson found to be 60 miles, without water; near this point, there was evidence of a former settlement, but nothing but pottery; their pieces of pottery are very ancient in appearance;



from the camp to the upper end of the cañon, the grass was very fine grama, and will furnish at any time fine camps for any number of animals; the grass along the edge of the water on the river grows in a thin stripe very luxuriantly; there is usually a thicket of willows, about 10 yards deep, along the borders of the stream; then in the bottom, which is subject to overflow, cotton-woods grow of two and three feet in diameter; this strip is usually 200 or 300 yards wide. We commenced at a quarter to 11 our passage of the hills on the north side of the cañon. Our ascent was rapid, and by an Indian trail; the road very rough. After marching ten miles, we found a spring high up the mountains, where we watered; and going three-quarters of a mile further, we encamped. One of the howitzers got broken on the road, and three mules gave out in them. Lieutenant Davidson and party came in some time after dark, and reported that he had been obliged to leave them four miles behind him. A party of six men was sent out to guard them until to-morrow, and measures taken to have them brought up. The formations near the mouth of the San Francisco, and to the upper end of the cañon, are diluvion, fast turning to stone, overlying sandstone and limestone of late formation; below this, the black basalt appears in seams and caps among the hills, also, to the northwest, we came upon granite, (mostly feldspathic,) seamed with basalt in dykes, and intermixed occasionally with other igneous rocks, some indicating the presence of iron in large quantities; near our camp an outcrop of dark-colored slate, capped with pudding stone, which changed to a silicious state—the same substance which forms the cement of the pudding-stone; this pudding-stone would probably make a fine millstone; the dip of the strata is very deep to the west. The vegetation to-day was novel: the cactus



(pitahaya) made its appearance; it bears a fine fruit, and is sometimes 30 feet high, has 15 flutes or more, is $2\frac{1}{2}$ feet in diameter, and has an interior structure of hard wood—one for each flute. The agave Americana made its appearance; it bears a fine fruit in the season. The muscal of the Mexicans had bloomed in many cases this year, and died, having fulfilled its century of probation; it was the emblem of 100 years in the Aztec picture-writing. The snow was visible on a mountain 35° east—probably a mountain at the head of Salt river. Southwest from Zuni, a route is said to be open from near this point to Zuni and Cibolletta. A view from the hill-top south shows a plain probably beyond the San Pedro, which probably unites with the low divide between Mount Dallas and Mount Barbe.

November 2.—Some Apaches (Pinoleros) showed themselves on a hill-top early this morning, and made signals of a desire to hold council; after a good many efforts, one was got into camp, and given some presents; then came another, then another, then another, and another, each of whom, in turn, got confidence that we did not design hurting them; they promised to bring a number of mules to trade with us, and furnished a guide to bring us to water six miles further on our journey, where we agreed to move to, and meet them to-morrow. They seemed to be poor in worldly gear, but are fat enough; they are small men, but finely knit and well muscled, especially in the legs. Our camp has been one of their hiding-places, and they find a secure asylum in these rugged mountains. The high peaks afford fine points for look-outs, upon one of which is always seated one of their number, like the sentinel-crow on the highest limb of the adjacent tree, watching over the safety of his thieving fraternity; their wigwams scarce peep above the low brush-wood of the country, being not more than four feet high, slightly dug out in the centre, and the dirt thrown around the twigs which are rudely woven into an oven shape, as a canopy to the house; a tenement of a few hours' work is the home of a family for years or a day; like the wolves, they are ever wandering. The costume of our guide consists of a small cap of buckskin, tied under his chin, covering only the top of his head; a cotton shirt, with no sleeves, upon the back of which he had plastered some yellow paint; then the dressed skin of a black-tailed deer, thrown over his shoulders; his breech-cloth of buckskin, leather leggings from his knee down, connected with his moccasins, forming a sort of boot; a powder-horn over his shoulder, and a pouch belted around his shirt, a fine dun horse and Spanish saddle and bridle, and a gun in a leather case; his hair was long, and had a knot behind like a woman's; his moccasins, as usual, square-toed and turned up; his thighs, which were bare, bore many a scar from the thorny bushes of the country. We broke up camp, and followed our guide about six and a half miles NNW., and found a good camp in a grove of sycamore, with a little water which rises and sinks again within 100 yards. We passed a new species of cactus to-day, a sort of bush with slender stems, similar to one seen on the Del Norte. As usual, when we found one, we found others, a single specimen being not yet met

with. In travelling over this region, as well as all prairie countries, the most casual observer is struck with the gradations in the classes of plants, and will instinctively, almost, find himself making inquiries of a botanical sort of his own; the cacti stand alone; but they, in one extreme, approach a shrub; the other, a fungus. The agave stands at the head of its species, but follow it down, and it will be found of different sorts, until one appears scarce distinguishable from grass. The acacia, from the thorny bush and mesquite, to the sensitive plant, exhibits the same general characteristics. Step a little further, and the infinite variety of the bean and pea stripe show analagous characteristics. All the plants and grasses of this country appear to have a thorny defence. Why they are so protected, I cannot yet discover. No doubt the wisdom of Providence is shown therein. White and blue limestone* dip W. Distance, six miles.

November 3.—The sun rose as usual upon a clear morning quite cool; after breakfast the Pinoleros came in with a few mules, which we bought, at the rate of a blanket, three yards of domestic, a knife, and looking-glass, for a mule. Animals are cheap to people who steal all they have; and they have very little use for them, except to eat, as their country is too rocky to need their animals much to travel about. They brought with them a handsome Spanish boy, taken from his home several years ago; he seemed contented; his master said he liked him too well to sell him, upon the general's offering to buy him. They brought some of the cooked muscal to the general; it tasted something like sweet pumpkin baked, and looked very much like it. Our camp is situated in a deep ravine, with a narrow bottom on the creek; the hills steep on each side, composed of the diluvion of one hundred feet thick, which is composed of the boulders of the rocks which form the adjacent mountains, cemented by silicious sand and lime. The blue and white limestone are specimens of what we found yesterday, containing enimity and other fossils. A squaw had some crystals of metal of yellowish color, but rated them too high for purchase. There is a fine silver mine, it is said, on the San Pedro. The old squaw came into camp arrayed in a light gingham dress, trimmed with lace, no doubt the spoil of some Sonora damsel, who had put all her industry upon this, her fandango dress. The old woman had no pins to fasten it behind, so she soon stripped her arms and breast of the encumbrance, and rode out of camp in a red flannel shirt, which she had got in trade from one of the soldiers. Our howitzers got up this evening perfectly dismantled. Captain Moore set to work and contrived a new coupling, so that we hope to get along better; they have been a complete drag upon us so far. The small wheels are good to prevent upsetting as far as may be, but the smaller the wheels the greater the friction, and a small stone

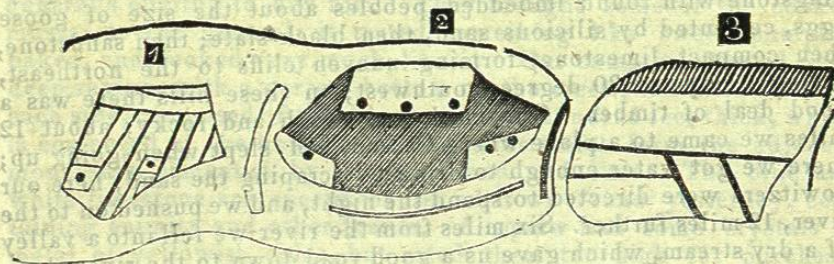
*Part of this limestone is a busira, containing small fragments of slate and other rocks in small pieces, which would make a beautiful marble. The whole of the stone is very compact. In a boulder of the sandstone lying loose, I saw a central stone, which appeared to have accumulated silicious sand around it before becoming incorporated in the bed of sand. Opposite to the points, the layers of accumulation were thrust.

is a great obstacle. The road we had to come is perhaps worse in some places than they were expected to have been taken over; they have several times rolled off a steep place, carrying the mules with them down the hill.

November 4.—Marched at 8, and took a southwest course, gradually ascending until we could see far over the country to the northeast; the snow-capped mountain was thus to be seen, and at its base it is said there is a route from this place by which the Kiateros go to Zuni. I have been informed that the expresses of the president of Lucson once were in the habit of going to the lower settlements of New Mexico in ten days, probably to Zuni or Cibolleta; the route would probably be northeast from this position: Lucson is about ninety miles southwest of the mouth of San Pedro. We, in our course, within a few miles, passed green hollows between the hills, containing a scattered growth of sycamore, oak, willow, cherry, musquit, senna, cacti, agave, hackberry, ash, walnut, zala, cedar, pine, a dwarf black gum, grape vines, various kinds of grass, lambsquarter, (the seed of which the Indians eat,) squash, and sundry familiar weeds, all showing the signs of autumn, except the live oak and evergreens; scarce any flowers to be seen, all being gone to seed. About six miles from camp we found the rocks outcropping, dip 30 degrees southwest, granite below, with large grains, and entirely disintegrated, and one part of it containing small morsels of other rocks imbedded, then the puddingstone with round imbedded pebbles about the size of goose eggs, cemented by silicious sand, then black slate; then sandstone, then compact limestone, forming uneven cliffs to the northeast, giving a slope of 30 degrees southwest; on these hills there was a good deal of timber. Our road was rough and rocky; about 12 miles we came to a place where Carson had slept when going up; there we got water enough to drink by scraping the sand; here our howitzers were directed to spend the night, and we pushed on to the river, 12 miles further. Six miles from the river we fell into a valley of a dry stream, which gave us a good road down to the river; here we fell into another Indian trail, larger than that we were upon; both were fresh signs of cattle lately driven from Sonora. These Indians have now been 17 years living by the plunder of Sonora; when they are required to stop, it will require either money or powder to make them obey. Along the road side we observed in many places that the grass had been burned in little patches; this occurred all along the road: why the cause of it is unknown, probably signals. As we approached the river again, several new species of plants showed themselves; a new cactus, a new variety of the Spanish bayonet, and others of nondescript character. On the Gila we found a few sprigs of the cane. The diluvial beds we first came to as we left camp occur again on the river in their usual thickness in places surmounted by trap, which here again makes its appearance. Where we strike the river is still in the cañon, but below us it is practicable for the wheels; we went up stream half a mile here and found a camp of scanty grass.

November 5.—Move at 9, and conclude to seek a better camp lower down; our road was still the Indian stealing trail, which we

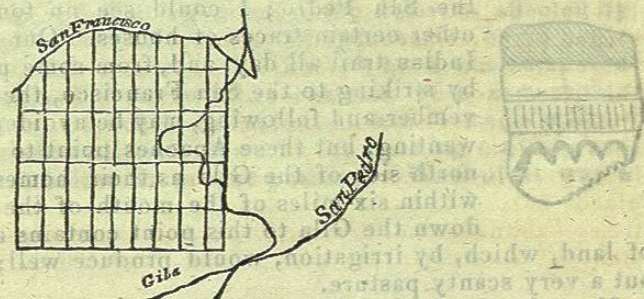
followed down the Gila through the cañon for four miles, crossing the river repeatedly; the high water mark was frequently above our heads on the rocks. There was very little grass in the cañon, a little cane. The road left the Gila on the left bank, and led up a dry ravine east of south for five miles further, it then brought us by the Saddle mountain, in sight of the San Pedro; course northwest. We then marched on and encamped on the left bank, about one mile above its mouth, on the border of the low hills, where we found plenty of grass; four miles further, the rocks on the Gila were diluvial as we started, thence blue, grey, and various colored basalt; in one place coarse amygdaloid, all with an apparent vertical seam; the rocks generally very compact, with many cracks and rugged surface; a few of them soft and pulverized. On the hill four miles from the San Pedro was a bed of greyish white limestone, then commenced the diluvion again. On the top of this ridge stood the Saddle mountain, capped with some rock—probably the limestone—but it may be the basalt. The bottom of the San Pedro is one mile broad, and of the character of those on the Gila above, dusty dry soil, grown in places with cotton-woods and willow, in others with grass, and again mesquite, chapparal, other places bare. It bears the usual signs of habitations of former times—abundance of fragments of pottery; I also found the fragment of a cerulian sea-shell. The vegetation of to-day was the



same, much as yesterday; saw some deer, abundance of quail, some ducks, and a pole-cat, and a number of geese and grey rabbits, like those of the United States, but apparently small, and the large grey hare, with black tail and ears.

November 6.—Remained in camp, awaiting the arrival of the howitzers; obtained some seed of the pitahaya, which were contained in a dried fruit pod two inches large; the hills of diluvion are cut into an infinite number of hollows, on them the cactus and the various kinds of acacia grow in a scattered way, covering one-tenth, perhaps, of the surface, the rest is bare gravel, except one-tenth more, which is taken up with the scattered bunches of grama grass; under the base of these hills the mesquite grows thick for a hundred yards, some of it being trees of two feet in diameter, but low in altitude. Then comes the bottom of the river covered with coarse grass, which abounds on the bottoms of the Del Norte; then comes the willows a few yards, which stand thick along the

water in many places, but not more than 12 feet high; the cotton-woods are generally a foot or more in diameter, in irregular groves, not more than 100 yards wide along down the river; the higher hills in the back ground on each side look half green with the bushes of the creosote plant, and the mountains here are apparently almost bare; the peaks visible from here are not very high. Our route for the last few days has been very crooked, so that had we a straight route, we could have come through the cañon in two days, or one and a half instead of four. The chain of mountains continue along on the right bank of the Pedro, so that there would be rough hills to cross from this point to the gap between the Mount Dallas and Mount Dick.



November 7.—Marched at 8; kept down the left bank of the San Pedro, and crossed the Gila three miles from camp; near the mouth of the San Pedro is a good patch of grass. We kept down the right bank of the Gila until we entered the fifth cañon, where we crossed it frequently, and encamped on its right bank, with scanty grass. About six miles below the San Pedro we passed a good camp under some diluvial cliff; here, we are told, is about our last grass from this to California. The river is slightly larger here than where we first saw it, although we were told otherwise; it has about 18 inches water on the shoals here, and canoes might pass down it very readily, and good sized boats, if it was not for the round rocks in its bed. The San Pedro, an active man could jump across. Our course was a little north of west; distance 18 miles. The mountains in peaks, composed mostly of basalt, came near to the river; the diluvial beds, indurated into rocks, are torn and broken in every direction, indicating great violence and irregularity in their displacement. There appears to be a subsequent bed of diluvion along here not yet displaced; the bottoms of the river are composed of the usual clay, in a state of powder or dust, and which is undermined in every direction by animals of the rat kind, so that it is unpleasant to man or mule to ride off the beaten track. Along the very edge of the water of the river the grass and other verdure grew luxuriantly; on all else the vegetation was as usual, the mesquite and its kindred plants, and the creosote covering the mountains to their tops; no trees visible on the mountains. Signs of the wild hog, and the deer, and the turkey were numerous; the

wild goose and the raven, (our constant companion,) the red bird, the quail, and a small bird resembling the ortolan, the butterfly and the grasshopper were about all the animate objects we saw. Some Apaches from the neighboring mountains came to a tall top and hailed the column, and Captain Moore succeeded in getting them to camp; they could talk but little Spanish, and appear to have a vernacular different from those we have seen before; they dress partly in Spanish costume. One of them told me the hole in the point of the toe of their moccasins was to let out water; they encamped with us, not forgetting to beg tobacco. Our road to-day was strewn with pottery as usual, wherever the ground looked as if it could be irrigated. The pottery was mostly plain red earth; occasionally a piece was seen black and white, similar to those on

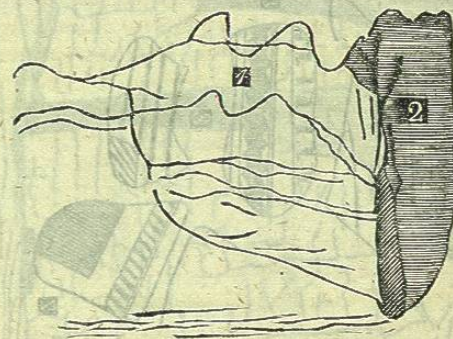


the San Pedro; I could see no foundations or any other certain traces of houses. Our road was an old Indian trail all day, and, from some point along here, by striking to the San Francisco, the hills of 2d November and following, may be avoided; water may be wanting; but these Apaches point to the hills on the north side of the Gila as their homes. The country within six miles of the mouth of the San Pedro and down the Gila to this point contains about 16 sections of land, which, by irrigation, would produce well; the hills afford but a very scanty pasture.

November 8.—It rained quite hard upon us last night; the general gave orders to start an hour later to-day, that the men might have time to dry their blankets; as they are without tents, of course they were very wet. Marched about 9, taking leave of our Apache friends, who promise to bring mules to our camp to-night, to trade for blankets, &c. Our route to-day led down the cañon—a road impassable, of course, in high water, as we had to ford the Gila some dozen times. The most of the way, the hills or mountains on each side of the river were composed of a beautiful granite, seamed with basalt, (or trap dykes,) and seams of quartz; in places, too, the granite contained layers of foreign matter, either caused by a different aggregation of particles, or actually a foreign stone, imbedded. Our direction was pretty near west; as we progressed, we came to the diluvion again, composed, as usual, of fragments of the adjacent rocks; in places, it was much upheaved; in others, it had not hardened into stone, and rested as it was deposited; the caps of the hills near the west end of the cañon, are of basalt, in some places apparently resting upon beds of diluvion. We marched only about 14 miles, and encamped at the last grass on the road from this to California. They tell us there is none; this is very scant, and could not well be worse. We passed several places to-day, where we could get as much for our animals as here; and there is an old trail down the cañon. Near our camp, we found broken pottery, but none ornamented—all red. There is but little ground in the cañon capable of producing any grain by cultivation. Our camp is on the right bank. Before, as westward, is a high and peculiar hill, capped with basalt and with precipices; on the north

and south side, sheer perpendicularly many hundred feet. The mountains, in every direction, are shapeless ravines of igneous rocks, with scanty growth of low bushes covering their sides, and grass apparently wanting. The badger, the raven, the duck, the goose, the deer, the rabbit, show their signs. We met a terrapin to-day, which is probably the terrapin gopher of the south of the United States. In our camp is the remains of some habitation, pottery, &c, and the ruins of an elliptical wall, 72 by 48 feet, nothing remaining but the round boulders, one and two feet in diameter, which formed the base, probably, of the wall. Distance, 14 miles.

November 9.—Marched about 8, and passed the end of the cañon through an opening in the rocky hills truly grand. On the right and left, the cliffs overhung us hundreds of feet, composed of basalt on one side, and amygdaloid; apparently, the diluvion affected by combining with some other substance, and appeared to be an angle of 45° dipping east; the mountain on the left bank was composed of this, and the seams in it showed the exertion of a remarkable force. In one place, a crack in the mountain had formed a wedge-shaped mass, which had slipped down in the opening crevice, and was perhaps 50 feet below its proper position. West of it was a



peak of basalt, and on the right bank of the river granite made its appearance, but in low hills. After coming out of the cañon, the signs of former occupation increased; an extensive plain country opened upon us, which extends, probably, to Salt river, which is about 15 miles north of here. About 12 miles from camp, we came upon a fine spot of grass, one mile from the river, where we nooned; all the rest of the plain was naked, except the mesquite, creosote, and other bushes, which covered perhaps one-third of the land. About our nooning place, the vast remains of a settlement commenced, which reached to our camp, three miles; the ground was