

## LETTERS FROM THE SOUTHWEST.

The Colorado Desert.

By H. G. HUBBARD.

SAN DIEGO, CALA., *February 1, 1879.*

I must not close this letter without describing my journey across the State of California from the Colorado river of Arizona to the sea. On leaving Yuma we turn down stream and run for seven miles in the bottom lands back from the river. At El Rio, the old stage line crossing of the river, there is now but a sign-post rising in solitary loneliness from the untrodden sands of the desert, but the distant river bank is marked by a line of old grey cottonwood trees, which, doubtless, still rear underneath their bark *Eleusis fasciata* and the numerous other Coleoptera of Dr. LeConte's collecting in 1850.

At this point the railroad climbs up from the river bottom onto the desolate sandy plain and heads westward towards the sea. A great isolated dome of barren rocks marks this point around which the river turns away southward in its course to the gulf. Here begins a broad and level avenue between two lines of hills which rise gradually into snow-clad mountains, and on this course the iron rails of the Southern Pacific stretch west by north, with hardly a perceptible curve to right or left, and with not a single cut through sand hill or rock, across the rolls of the continent to the summit of the pass over the Sierra Nevada Mountains.

At first we rise over a wave of sand 50 miles in width. The vegetation consists of scanty and stunted shrubs; on the north, extending to the foot of absolutely barren and sunbaked rocks, and on the south, disappearing altogether in an endless succession of white sand hills, drifted like the waves of the sea. More and more desolate becomes the country as we descend into the region beneath the level of the sea. At Mammoth Tanks the train stops a moment to drop a cake of ice before the door of a solitary cottage, neat and trim in a fresh coat of brown paint, but resting on the bare sands besides the track, with not a green leaf in sight for miles around. A little garden ground, laid out with white stones instead of plants, has the cynical notice to "keep off the grass!" The sun of an August noon beats down upon the unshaded soil, but underneath the shadow of the veranda of the dwelling stands a young girl, fresh and cool in her white muslin dress, like a summer girl at Newport. Against the wall of the building by her side rests a bicycle resplendent in polished metal, and near at hand a wonderful figure of a slim athletic man in knickerbockers and red shirt, decorated with many medals and with a huge revolver slung in a leather bolster at his hip. We did not delay to

inquire the meaning of this apparition in the midst of the burning desert sands, but plunged onward and downward into the frying pan of the continent, 263 feet beneath the ocean level.

Away to the south, a glimmering line of water begins to appear, which keeps even pace with us, mile on mile, but grows ever broader and more distinct, until, finally, there stand out, upon its surface, rocky islets and promontories, and the white sandbanks of the distant shore are reflected from it as in a mirror. At Volcano Springs, a railroad section station, with two or three rambling buildings, built mostly of railroad ties, the plain slopes away to the south, a bald sheet of dead clay, like the dried-up bottom of a horsepond in midsummer. Its surface is seamed and streaked with trickling channels of some long forgotten flood, all winding down to meet the line of glistening water.

It was here the passengers, crowding out onto the platform of the cars, inquired of one of the inhabitants the name of this long and narrow lake which had accompanied us so many miles, and were told, although not one of us believed the tale, there was no water there, but only a mirage of the trembling air on the sun-dried mud. It could not be credited, for looking backward with our own eyes we saw the rippling waves break upon the shores, and the shallow waters growing ever broader as they receded, opening at last between bold rocky headlands into an estuary of a limitless sea, blue as the bay of Naples. But whether a phantom sea or lake of brine, we rolled along its shores some miles further, getting deeper into summer and longing for panama hats, and the brown mud becoming at first heavy and then white as snow, until, at Salton, everything seemed floating in the air, and huge buildings, emitting puffs of steam from every pore, stood resting lightly on the surface of the water, and locomotives with trains of loaded cars came floating inwards bringing salt to add to the snowy piles that lined our track.

On getting underway again we soon crossed over the valley, heading the lake or mirage, whichever it may be, and sped along over plains white with salt and under the shadow of lofty mountains crowned with black storm clouds and dusted with snow. Soon we rolled into the cool shade of the palms that cluster about the hotel at Indio, where water, brought down in pipes from the San Bernardino Mountains, makes a green oasis of grass and verdure. Here we had a dinner long to be remembered. Afterwards we began the long climb up the slope of the sierra. Sand dunes, with half-buried thickets of desert vegetation, gradually gave way to rocks and cacti with clumps of Yuccas. At last a little station, marked Palm Springs upon its front, was reached, and here a narrow iron track led northwards into some hollow of the mountain, where they say lies hidden an oasis of hotels and palm trees. Soon after leaving this point, the storm in the mountains

burst upon us in the valley, and rain with blasts of wind obscured the scenery.

I went to sleep for awhile, and when I awoke, behold the earth had grown green with grass. A refreshing coolness succeeded the hot breath of the desert. The mountains came closer and the valley rose between them, and cultivated fields of alfalfa began to appear. Finally, groves of red-limbed fruit trees, with shining threads of irrigation waters, lined our way, and at sunset the cows came trooping home to the farm yards wading knee deep in clover. This was the end of the desert and the summit of the divide at Beaumont. Thence we whirled downwards in the darkness, passing towns innumerable, with junctions to Pasadena, Redlands, Pomona, and many others, well remembered names. At last we saw the twinkling lights of a great city, and the various stations of Los Angeles were called.

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Salton Lake in the Colorado Desert and Its Insect Fauna.

By H. G. HUBBARD.

YUMA, ARIZ., *March 30, 1897.*

In regard to what you say of the insects collected by me in the desert washes at Palm Springs, that the California desert was once an arm of the California gulf, you are surely mistaken. The shells found in all this region are all fresh-water remains; and the marine shells are found only to the south of the divide which bounds the Salton Sea. The desert sands bordering this depression are white with small shells, but they are all of the usual fresh-water forms. I have preserved a few of the smaller and most abundant forms. I believe even from my short visit to Salton that I have got the essential character of the fauna. It contains absolutely no marine forms and none at all modified by the peculiar environment, except, perhaps, the brine fly (*Ephydra*), which is quite different from the species inhabiting the Great Salt Lake of Utah. There is no Brine Shrimp (*Artemia*) in any of the saline springs, and it is very evident that the origin of the saline deposit is quite recent and even now in process of formation from the numerous saline springs which surround the basin both on the north and south. At the surface these springs contain only from 1 to 6 per cent. of solid saline matter, but at a depth of one or two feet the brine has a density or 27 per cent., consisting of both chloride of sodium and sulphate of soda (Glauber's salt). At no very remote period this basin was filled with fresh water, but neither this nor any other part of the Colorado desert north of the San Jacinto range was ever marine.