

## CORRESPONDENCE.

## DOWN THE ANDES ON A HAND CAR

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Lima, Peru, April 16, 1898.

Down the Andes on a hand car.

Coasting over the steepest railroad of the world.

Dashing through clouds to find clouds below you.

Hanging to precipices, flying on bridges over frightful chasms, whirling about curves now in the midnight darkness of winding tunnels and now where the light of day makes you shudder at the depths below you.

This will give you a faint idea of the last part of a trip from which I have just returned. During it I have ascended to the very top of the mountains and have come back again to this point, which is just six miles from the sea. My trip was over the famous Oroya railroad, the most wonderful piece of railroad engineering ever constructed or planned. The road is all told only 138 miles long, but it climbs up the steepest mountains of the globe. In less than 100 miles it ascends more than three miles, and at its highest point it is 15,665 feet above where it starts at the port of Callao, on the Pacific ocean. At the top it is still 2,000 feet below the summit of Mount Meiggs. It cuts right through this peak by a tunnel which carries it to the other side of the Andes. It then descends to the valley of the Jauja, through the rich silver mining region of Yauli, and finally ends at Oroya, an Indian market town 12,178 feet above the sea. It is one of the most expensive roads ever built. It was dear in both money and men. Seven thousand lives were, it is said, lost during its construction, and the first eighty-six miles of it cost \$27,000,000, or over \$300,000 per mile. Between the coast and the summit there is not an inch of down grade, and the speed of our hand car in my journey over it was only regulated by the pressure on the brake in the hands of the Indian who acted as conductor. On many parts of the road the grade is over 4 per cent, and at such grades the track winds about and up the Andes, passing through cuts in the solid rock and through sixty-three tunnels, some of which are of the shape of a letter S. It is of the standard gauge, its track is well laid and is in excellent condition.

This road was built by an American, though it was suggested by a Peruvian. The man who constructed it was Henry Meiggs. Meiggs laid out the road, acted as its engineer-in-chief, raised the money to build it, and, in fact, is entitled to all the credit of its construction. The road was originally intended to reach the Cerro de Pasco silver mines, but the \$27,000,000 gave out when about eighty-six miles were built and the extension is still some forty-odd miles away from these famous mountains of copper and silver. The portion of the road above where Meiggs left off was constructed by the Peruvian corporation under what is known as the Grace contract. The ultimate intention is to extend it farther on into the Perene, a rich coffee-raising district, and to the head of the steam navigation of the Amazon at Chanchacayo. The preliminary surveys for this have already been made. The total distance from the sea to the navigable Amazon is, I am told, not more than 210 miles but there is at present no sign of the road being soon completed. It is doubtful whether the railroad now pays much more than its operating expenses, and it will be long before it will give dividends in propor-

tion to its enormous cost. Only two passenger trains are run over it a week, and the chief freight down the mountains is ore.

The usual trip over this road is taken on the regular passenger train, which carries the traveler up the mountains one day and brings him back the next. Though the kindness of the influential American firm of Grace & Co., I was taken up on a little engine and had my ride down on the hand car. I thus had a wonderful opportunity for studying both the railroad construction and the mighty mountains up which it climbs. Our special engine was called "La Favorita." It was composed of the engine proper and a cab walled with glass and fitted up with comfortable seats. This observation compartment was a part of the engine itself, taking the place that the ordinary engine uses for coal. Our little engine burned coal oil, and it was Peruvian petroleum that pulled us up the Andes. The party consisted of the American minister, Mr. Dudley; the secretary of our legation, Mr. Neal; Mr. Sherman, the manager of the house of Grace at Lima; a Frenchman named Piper, and Mr. Pierson, an electric street railway man from Ohio, who is out here to see whether the Lima tramways are worth buying. The engineer and his helper were Peruvians. We left at seven in the morning and spent the whole day on the road, stopping to take photographs at the most interesting points, and going on as fast or as slow as we wished. Lima, you know, is situated in the valley of the Rimac river. It is right at the foot of the Andes, and our trip was up the mountains along the course of this river to its very source on the summit. At Lima the Rimac is what in America would be called a good-sized creek. It is nowhere navigable, and is, in fact, a stream of foaming white water from the top of the Andes to the sea. The descent is so steep that quiet pools are nowhere to be found, and the river is a succession of waterfalls, foaming churns and rushing rapids. During the ride we could often see the river above and below us at the same time, and we went up, up, climbing the sides of the mountains, cheered on our way by the rushing of the waters.

We first passed through the sugar and cotton plantations which filled the valley above Lima. The fields look like gardens gotten up for show. They are surrounded by mud walls, and the crops are as green as those of the United States in June. Now we pass a sugar hacienda, in which on one side of the track two steam engines are pulling a cable plow through the field, while on the other side men are plowing with oxen and wooden plows, urging their beasts onward with goads fifteen feet long. In the cotton fields gangs of Indian workmen are working under overseers on horseback. The cotton plants are in blossom, and the fields look like vast gardens of pink and yellow roses. The men weed the plants and they are as clean as any rose garden at home. There is a cotton mill, and farther on we pass a sugar factory which grinds out thousands of pounds of sugar a day. There is no better sugar land anywhere than this, and we learn in passing that it produces from two to six tons of sugar per acre, and after once started will keep on producing for as long as six years. We notice that all of the land is used. The water is taken from the

Now we are in the foot hills of the Andes. How bleak and bare and gray they look in the early morning. There is not a green spot anywhere to be seen on these vast walls, which here face

the sea. We shall find it different as we rise to the mountains behind. Here they are of soft silver gray velvet where the sun casts its shadows and of dazzling white where it strikes full in their faces. The only green is the little strip along the Rimac. Further on we notice a thin fuzz of green cropping out of the gray. It is as though the velvet was sprinkled with a dust of ground emeralds. Here there is a little cactus and there a small bunch of weeds. As we rise higher the mountains grow greener until at the level of Mount Washington we find them covered with a thin coat of vegetation. As we near the altitude of Leadville there is plenty of grass and at one point we count forty different kinds of flowers at a stopping of our engine. There are buttercups without number, silver gray mosses and flowers of all colors the names of which I do not know. As I remark upon the vegetation, saying that it is still very scanty. Mr. Sherman tells me that the fact that there is any green at all to be seen is due to the rainy season, and that at other times of the year this whole western side of the Andes is bleak, dry and almost absolutely sterile. The foot hills which, in fact, are mountains in themselves, looked as though they were of dirt and gravel.

Further up you come into a region of rocks, where only bits of soil are to be seen here and there. In such places every inch of ground is cultivated. The mountains are terraced clear to their tops, and some of them are covered with steps of green built up with rocks, and so graduated that a man can stand on one of the lower steps or ledges and plant the seed or weed the crops of the next ledge without stooping over. Some of the fields are not as big as a bedspread, and some on the opposite side of the mountain do not look as big as a pocket handkerchief. Some patches of corn seem almost inaccessible and remind me of the farmers of West Virginia who are said to have to plant their crops with a rifle, as the hills are so steep that they are unable to stand long enough on the sides to drop the corn in the rows. We see Indians planting and working in the fields and pass numerous little villages of one-story houses made of sundried bricks, and roofed with thatch or sheets of corrugated iron. In most cases the iron plates are not nailed to the huts. They are merely laid on the rafters and kept there by covering them with stones. Many of the houses are not larger than dog kennels and quite as squalid as an American pigsty, and their inhabitants, who gather around us at the stations, are of the Peon variety, dark-faced Indian men, women and children. I frightened some of the children very much by posing them for my camera. They had evidently never heard of photographs, and one little fellow howled like a Cherokee Indian when I pointed the instrument at him.

I have been over every scenic route in the United States. I have traveled over the railroads of Mexico, and have visited those parts of Europe which the world calls grand. I have climbed the Himalayas and have watched the sun set on the mountains of north China, but nowhere have I seen anything like the scenery of the Andes. I will not say that it is more beautiful or more impressive than the Alps, the Rockies or the Himalayas, but it surpasses them in some respects, and its wonders are its own. Here the mountains rise almost abruptly upward. You ride for miles between walls of rock, which kiss the sky thousands of feet above you. Some of the rocks take the shapes of gigantic cathedrals, very temples of the gods, their spires hidden in the clouds. Others look like vast fortifications, walls of rock to shut the nations of the west away from the