

ments. On the Pachitea there are Indians who cut their hair close and who look much like negroes, though their hair is brown. The women wear waist clothes, but their legs and the upper parts of their bodies are bare. In trading with these people it is necessary to carry a stock of goods with you. They do not use money, and all of them have gold to exchange for hatchets, knives and guns. They especially like American hardware. They wash the gold out of the streams and bring it to the traders in nuggets and coarse dust. They will not take coin at all without each piece has a hole in it. They use such pieces to make necklaces. It is seldom that any of these people cultivate the land. There are plenty of fruits, and things grow so easily that all that is necessary to get a crop is to stick in the seeds or plants. They burn over the ground and plant without plowing. Corn ripens at four months and onions, beans and turnips at three. In the valley of the Marañon there are plantations of sugar cane. The cane is cut when nine months old and the same stalks will produce for twelve successive years.

It is estimated that Bolivia now produces 4,000,000 pounds of rubber a year, and that the total annual product of the Amazon forests is over 45,000,000 pounds. There are rubber camps scattered all along the branches of the Amazon, and the most of the product is shipped down that river to Para and thence to the United States or to Europe. Within the past year or so rubber has been coming into La Paz from the forests near here, and I learn that this is one of the few good businesses of Bolivia. I had a chat last night with Mr. Alberto Vierland, an Austrian, who is largely interested in Bolivian rubber and quinine plantations. In speaking of the rubber forests near here he said:

"All of the best lands have been taken up, but they are in the hands of people who have not capital to develop them and are anxious to sell. The gathering of rubber is very costly. The Indians who do the work will insist on being paid in advance. The regions are always unhealthy, as rubber grows only in low, marshy soil, and the best trees are those which have their roots under water for a part of the year. The Indians are afraid of getting sick, and they demand high wages and will stay with you only a limited time."

"Is there much good rubber land in Bolivia?" I asked.

"Yes, there is plenty of soil here that will grow the rubber tree," said Herr Vierland, "but so far the rubber all comes from the forests. I know of only one cultivated rubber plantation in the country, and this has about 100 trees. In the forests you often find as many as 6,000 trees to the square mile. I have seen groves of 10,000. The trees usually grow in the valleys below the eastern slopes of the Andes, your leg to the giant of the forest, 160 feet high, and so large that three men could not, by joining hands, reach around it. The tree which produces the best rubber of commerce is known as the *Symphytona Elastica*. We have plenty of gutta percha trees, but these have not yet been worked."

"Is there much profit in the rubber business here?" I asked.

"Yes, there is a great deal of money to be made out of it, but only by the use of large capital. No man can do much without twenty-five or fifty thousand dollars, and he will make proportionately a great deal more if he has one hundred thousand dollars. With this amount he ought to net from 60 to 70 per cent a year. There is no trouble for capitalists to get rubber forests. The best of the lands upon

which such trees grow are now in the hands of Cholos, or Bolivians with Indian blood in them. They have taken up the lands of the government and have no money to work them."

"How do you get the rubber from the trees?"

"It comes out in the form of a milky white sap," was the reply. "At the beginning of the dry season the trees are gashed with a chisel about an inch broad. A little tin cup is fitted to the tree under each gash and the sap oozes out and drops down into the cup. Several gashes are made in each tree. When the Indian has gashed a number of trees he stops and collects the milky sap from the cups. He pours it into a tin pail and carries it to the headquarters of the camp. He places it somewhere in the shade and then builds a fire to smoke it. This fire is made of wet wood or palm nuts, and it is so arranged as to give a dense smoke. Now the Indian takes a wooden shovel or spoon and covers it with milk. He then thrusts it into the smoke and rapidly turns it about. As the smoke touches the rubber-milk it coagulates and turns from the color of rich cream to a light gray. He coats his shovel again and again and at last has a ball of rubber upon it. This is cut off and laid away to be shipped to the markets. A number of the balls are put into nets. These are slung on the backs of mules or donkeys and are thus taken to Chillaya, on Lake Titicaca or La Paz. We have to watch the Indians that they do not put stones or dirt into their balls of rubber to make them weigh heavier. This is the case when they are paid by the work done rather than by the day."

This is the land of quinine. The bark of the cinchona tree, from which quinine is made, is called Peruvian bark, but it would be more in accord with the facts to call it Bolivian bark. The best quinine of the world is made from the bark of trees grown in the state of La Paz, and Bolivia far exceeds Peru in the number of her quinine trees. There are millions of trees here growing on plantations set out to make money out of the quinine market. These plantations were established when quinine was high and before some of the Bolivian trees had been taken to India and Ceylon to start plantations there. As a result of the Indian plantations the market became overstocked, and quinine fell. The bark which in 1832 brought here in La Paz \$220 in Bolivian money a hundredweight now sells for from \$16 to \$18 a hundredweight, considering the difference in the value of the Bolivian dollar by the fall of silver for about one-thirtieth what it sold for sixteen years ago. The fall of prices ruined a great many of the Bolivian capitalists. More than \$3,000,000 were invested in such estates by people of La Paz, and the foreign houses who had advanced money on them were severely hurt. The bark at one time was so low that it did not pay to cut it and carry it to the markets, and today, while there is somewhat of a revival, the margin of profit in the business is small. I see loads of cinchona bark here every day. They are brought in to the exporters on little donkeys or mules, each of which carries a bundle on each side of his back of about 100 pounds each. The most of this bark comes from wild trees which grow in the head waters of the Beni and Madera rivers. It is carried for many miles through the forests on men's backs, and then loaded on the donkeys which bring it to La Paz. As far as I can learn, there is no money to be made in the quinine business by foreigners. Any number of good plantations can be bought. A rich planter of interior Bolivia told me today that he could buy me 800,000 trees if I

wished them for less than 8 cents of our money a tree. These trees would be from six to ten years of age and in prime condition for cutting down for quinine. This man said that the trees would each produce at least four pounds of bark. Quinine trees are planted nine feet apart, and at five years of age an orchard is ready for the market. The trees are then chopped down and stripped of their bark. Sprouts spring up the following season from the stumps and at the end of five years there is another crop. The cinchona trees grow wild almost everywhere that the rubber tree grows. They are often very tall and have a magnificent crown of foliage, which is of such a color that the quinine hunter can pick it out a long distance in looking over the trees of a forest.

FRANK G. CARPENTER.

AN ADMIRER OF UTAH.

Mr. J. M. Studebaker sends the subjoined letter to the South Bend, Ind., Times:

Salt Lake City, Utah, June 26, 1898.
"Let me give you a brief sketch of my visit to this city and its wonderful valley. Almost a half century ago as a boy I crossed the dreary plains in the first Studebaker wagon, made by my own hands, and how well I remember the first sight of this beautiful valley, and our kind reception by Brigham Young and his small band of followers, who had years before arrived here and endured the trials and hardships and dangers from savages and of starvation incident to pioneer life at that time. No one will ever be able to appreciate the trials and hardships of Brigham Young on reaching this valley, outside of the immediate little band that accompanied him on his mission, in order to establish the Church of his inspiration and belief. Whatever else may be said of Brigham Young, he was a great man and a great leader, and was wise enough to establish an industrial system worthy the admiration of the world. His system thoroughly established home industries and the cultivation of small farms, and fully demonstrated that in unity there is strength. Let any one make the trip the writer has taken the last week by invitation of our Mr. Quigley and President Parkinson of Preston, Idaho, seventy-five miles in a wagon through Cache Valley, he will exclaim, as the great inventor of the telegraph, Prof. Morse, said in sending his first message of the first telegraph line, 'What hath God wrought?' I believe I am justified in saying that this properly applies to what Brigham Young has done in founding the Mormon Church in this marvelously productive and beautiful valley. I have heard it said that there are no people so devout and so loyal to their church as the Catholics. From what I have seen and learned, the Mormon Church can go them one better. I find them not only loyal to their Church, but loyal among themselves. They show this by their system of tithing. When their churches are built and completed they are paid for, and the rich and poor pay in accordance with their income. You see no tramps or beggars among the Mormons, either in the city or country. They care for their own poor. The ladies in the different districts have their relief societies, and the poor, both town and country, are cared for, and as a whole I don't think it can be denied but they are a prosperous Church and a prosperous people, and it seems to be their clear intention to continue, by God's help, the elevation of their people to the highest standard of morality, Christianity and prosperity. As an example of this, you need only to see their agricultural college, one of the best in the country, located in the beau-