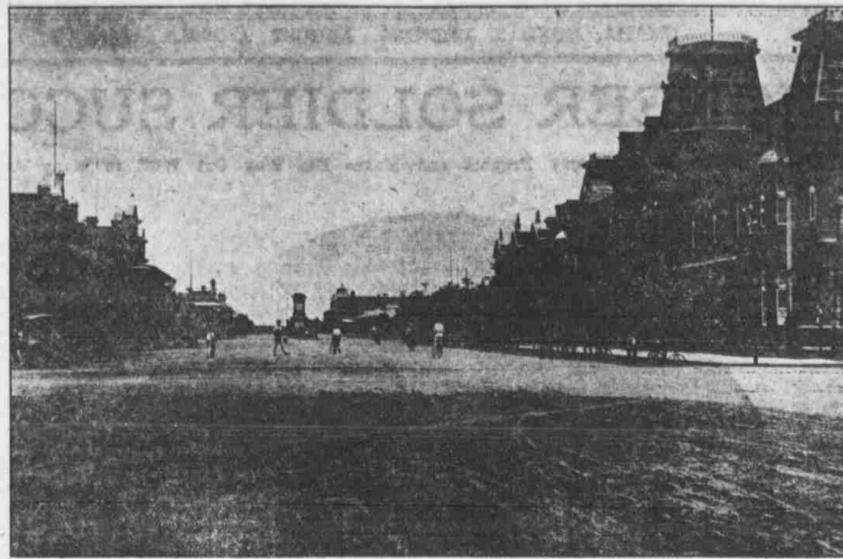


Many Changes Have Taken Place in Africa Since Lobengula's Time



A NATIVE CORNCRIB.



MAIN STREET OF BULAWAYO IN 1908.



A MATABELE WITCH DOCTOR.

(Copyright, 1908, by Frank G. Carpenter.)
BULAWAYO—(Special Correspondence of The Bee.)—Stand with me in the public square of Bulawayo in front of the bronze statue of Cecil Rhodes and take a look at the changes that are going on in Rhodesia. We are in sight of the hill upon which the notorious African tyrant Lobengula had his kraal, and within an hour's walk of the crocodile pool into which he threw, tied hand and foot, any of his subjects who had offended him. The pool was full of man-eating reptiles and the criminals thus executed needed no burial.

All around us lies the Bulawayo of 1908, the chief city of Rhodesia and the biggest South African settlement above the Transvaal. The ground is flat and the wide streets extend out on every side. The place was planned by Jameson, the explorer, and he made every roadway broad enough so that a bullock cart of sixteen span could turn around in it.

of Cecil Rhodes. It is on a hill, and in the grounds is the very tree under which this savage African king sat upon his biscuit-box throne and gave forth his decrees of life and death. Some of his numerous family still live, and I have a photograph before me of his favorite daughter. She measures 5 feet 11 inches from her bare yellow beils to her shaved black crown, and is fully as lusty as the old tyrant was in his prime. There are many men here who knew Lobengula. He was enormous. He stood 6 feet tall and weighed about 300 pounds. He was so fat that when he squatted on his biscuit box his flesh hung down in folds over his hips, and when he walked his elephantine frame rolled from side to side. He had bulging blood-shot eyes, thick lips and was the personification of cruelty. Stanley describes him as one of the bloodthirstiest of African kings, and Frank Thompson of Natal, who negotiated the mining rights of Mashonaland for him for \$500 a month, gives an incident of how he treated a native warrior who had drunk some of his beer. It was at the time of a great dance of Lobengula's women were bringing the beer to him. This man snatched a gourd and took a sip. The offense was reported to the king and the criminal was dragged before him. As he stood there Lobengula looked at him and said: "You drank the king's beer. That nose of yours is guilty. It smelt the beer."

Let it be cut off." And with that the executioner cut off the man's nose. The king then said: "Those eyes of yours saw the beer. They are a temptation to you. They are guilty. They should be put out." And with that the executioner did the gouging. "You have now heard with your ears that it is not allowed to drink the king's beer. Your ears are of no good to you, and they shall be cut off." After this the man was beaten within an inch of his life and he dragged himself away and died.

Stories of Lobengula.
 I understand that Lobengula was fond of beer. He was accustomed to make his white visitors drink with him, and everyone who called was expected to take three cans of beer and to eat three plates of grilled beef. The cans each held a gallon and they were served between the plates. The king would not drink champagne, and he gave all that was presented to him to his wives, of whom he had a large number. Lobengula was supposed to own all the country. He had vast herds of cattle. He had control of the mines, and everyone was subject to him. After his death the natives surrendered, and since then they have been comparatively quiet, except for the revolt of 1896, which was caused by the witch doctors. Lobengula himself claimed to be a witch doctor. He said he could make rain, and he did this by cooking a kind of devil's broth of crocodile livers, snake skins, frog toes and hippopotamus fat. As the steam of this compound went up he petitioned the gods to open the clouds and the rain was supposed to fall. Speaking of rainmaking, shortly after the status of Rhodes was erected in Bulawayo these wretched droids, and the natives believed that the lack of rain came because Rhodes' head was uncovered, saying that the spirits would not offend the great man in that way.

They Believe in Witchcraft.
 All of these South African natives believe in witchcraft and every tribe has its witch doctors. In coming here I traveled for one day with the chief native commissioner of Rhodesia, a man who has charge of all the negroes of Mashonaland. He tells me that the Mashonas have trials by ordeal to detect witches. One of the tests is heating a stone red hot and making the accused lick it with his tongue. If he is guilty his tongue will blister. If not he is innocent. Another test is by certain medicines. If the medicines make the man sick or cause his death he is supposed to be a witch. If not, he is allowed to free. A third test, used especially for thieves, is to drop a stone in a pot of boiling water. The accused must take his out with his bare hand, and if the hand

shows no sign of scalding the man is cleared. If his hand burns he is adjudged a thief and punishment follows. The natives believe in the justice of these tests and submit to them. A white trader of the Zambesi told me that his misery a shirt not long ago and accused his native servant of stealing it. The boy said he was innocent, and the trader believed him. The next day the boy came in with his hand terribly scalded and confessed his guilt. In his cooking he had overturned a pot of hot water upon himself and he superstitiously thought that the burning occurred on account of his theft. One of the punishments decreed by the witch doctors in some regions is that the witch must be eaten by ants. This is done by taking the accused man out into the wilds, smearing him with honey, and tying him to a tree. The honey attracts the ants and they complete their work by biting the flesh from the bones. Another punishment is laying red-hot stones on the bare stomachs of the guilty ones, and among some of the tribes instances are known in which the witches have been roasted over slow fires. I understand that the witch doctors are by far the most important members of the tribes. They are supposed to be divinely appointed and especially authorized to use magic for the good of the tribe. Every witch doctor has to undergo a course of training before he can practice, and he must exhibit certain idiosyncrasies which prove him fitted for his job. He falls into trances and pretends to have seen spirits. He has a special headdress of fur and feathers, and has charms of many kinds about his neck. He must be able to handle poisonous snakes. He must be a sleight-of-hand performer and able to make the people believe he has miraculous powers. As a rule he kills more than he cures, but this does not seem to affect his reputation.

The buildings are comparatively low and the width of the streets makes them look lower. The most of the stores are of one and two stories. They are built of stone and brick. As few are of granite, but the chief building material is a red sandstone from quarries nearby. On one side of us is the Grand Hotel, which covers half an acre. It is lighted by electricity generated by a light plant operated by water falls nearby, and it has all the modern improvements. A little farther over is the Bulawayo club, a bungalow-shaped structure of one story with wide verandas about it. We have friends in the city and they have put us up there for one day free of cost, notifying us that the charge for three days will be \$2.50, and that all we drink will be at club rates.

Towns of Clubs.
 Bulawayo is a town of clubs. It has several social organizations, a cricket club, a tennis club and a race track which is two miles around. The town has now five or six thousand people and its citizens need other exercise than being chased by a native black with a spear in his hand. Over there at the right is a public library which has more than 1,000 volumes, and down the main street is a museum, a large and the windows well dressed. There are three large banking corporations, a chamber of commerce, several newspapers and all the accompaniments of a thriving community.

Wireless Attractions.
THREE wireless stations established in the Alps by the Swiss government catch a great number of long distance messages not intended for them. The stations are on the Right and St. Gothard summits and at Dailly, above St. Maurice. According to an official report just published, the authorities spent £200 during the last year on experiments with wireless telegraphy across the mountains and the results were most satisfactory. One unexpected result was the practical proof that the Alps are a great "attractor" to the wireless messages dispatched from stations in other and distant parts of Europe. For instance, messages from steamers in Cornwall and on the Baltic coast have reached the Right and St. Gothard stations, and were deciphered. Curiously enough, these long distance messages arrive more frequently when the weather is unsettled or stormy, and chiefly in the early hours of the morning. On one or two occasions it has happened that while two wireless stations were unable to establish wireless communication with each other "unsolicited" messages were received from abroad.

Photographing Sounds.
 At a recent sitting of the French Academy of Sciences, some communications of an exceptional interest were made. M. Polonceau read a note from M. Jean Becquerel on the nature of positive electricity and the existence of positive electrons. According to this statement, one charged with positive electricity has been found in a Crookes tube. The importance of this discovery lies in the fact that it constitutes a fresh contribution to the problem of the constitution of matter. Some striking particulars are given in a paper by MM. Georges and Gustave Laude, which has been published in the *Annales de Chimie Physique*. The photographs taken by their process are so clear that the most delicate peculiarities of the voice, such as liping, and even breathing, are produced with the greatest distinctness. The MM. Laude are now studying this subject for nearly three years and have been induced to give the present account of their success owing to the recent communication on the same subject by M. Devaux Charbonnel, notice of which appeared in last week's Scientific News. Unlike M. Devaux Charbonnel's method where recourse is had to electrical reproduction of the sound waves, MM. Laude have employed a purely mechanical and direct means for securing the desired record. The MM. Laude also made the somewhat astounding statement that they are capable of expressing sounds with exceptional fidelity by the discharge of explosives. They anticipate, for instance, that before long they will be able to create a rocket capable of crying "Vive la Republique!" and a danger signal for use on a railway track which will shout "Arretes!"

Tungsten Lamps.
 Tungsten, or Wolfram, is a metal discovered in 1781 and named from the Swedish "tung" (heavy) and "sten" (stone). It is not found native but occurs as tungstate of iron and manganese in the mineral "wolframite," and as the calcium tungstate. The pure metal, which was produced only a few months ago in the electric furnace, is a bright steel gray, a hard and brittle crystalline substance. It is also used to crystallize the temper and tenacity of steel for hard tools. The fusing point of tungsten is higher than any other metal, which enables it to operate at the very high efficiency obtained in the tungsten lamp. Tungsten lamps are made on the same principle as the common incandescent lamps. They look about the same but the filament is longer, looped several times

Canada Using Niagara Power.
 The largest and most complete system for electric transmission ever attempted, says Popular Mechanics, and the only public system in the world which is provincial in size, will soon inaugurate a new era in the history of the province of Ontario. After eight years of struggle, difficulty and agitation the hydro electric commission of that province has at last succeeded in putting through its gigantic project of furnishing government power to all the cities, towns and villages in central Ontario from the marshallable power of Niagara Falls. The first contract with the commission was signed by Toronto, and calls for 10,000 horse-power, the first supply to be delivered to that city in December, 1908. Among other cities that signed contracts are London, Hamilton, St. Thomas, Woodstock, Guelph, Berlin, Stratford, Preston, Galt and Ingersoll. Toronto will pay \$15.10 per horse-power per year, and St. Thomas \$25.50 per year. The price the other cities will pay ranges between these figures, according to distance from source of supply and amount of power contracted for. As soon as the lines feeding these cities are completed a line will be run to Windsor, 247 miles from the falls.

Wives Sold for Cattle.
 The native commissioner tells me that marriage among these negroes is largely a matter of bargain and sale. The groom pays the bride's father a certain sum for his daughter. The usual price for a strong and good-looking girl is four cows, or if she be the daughter of a chief she may bring as much as five or six. It may be that girls were often betrothed and bought when they were babies, the groom paying a part of the purchase price at that time and the rest by installments. This practice has been stopped by the government, as it resulted in many an old man possessing several very young wives; and also as the girls frequently fell in love with young men, and the strifes between their old prospective husbands and the young lovers, when they wanted as husbands, was great. As it is now, a girl must be of a certain age before she can be sold. In some tribes she is married at 12, and in others she must be 17 before she is ready for wedding. I suppose that 14 or 15 might be put as the average age of marriage among the Mashonas.

Rhodesia's Wonderful Progress.
 This gives one some idea of how Rhodesia is progressing. It is charged that the development has been comparatively slow. It is not so when one remembers that this whole territory is only two decades from absolute savagery. Twenty years ago neither life nor property was anywhere safe, and the country was owned by negro tribes which were warring with one another. Today order is everywhere kept, and the natives have been reduced to peaceful subjects. The country has now something like 2,500 miles of railroads, and in southern Rhodesia alone there are more than 3,000 miles of wagon roads. In Mashonaland and Mashonaland something like 75,000 acres have been surveyed by the government, and in addition there is a large amount of land which has been surveyed by private owners. All along the railroad towns have sprung up in which are government offices, banks, churches, hotels, schools and public libraries. There is a fine hospital here at Bulawayo and others at Salisbury, Umtali, Victoria and Gwelo. The postal service has been extended until it now reaches every part of the country, mails being sent by runners to the borders of Lake Tanganyika. In southern Rhodesia there are seventeen money order offices, and during the past year something like 1,500,000 letters and post cards were sent to other parts of South Africa, while \$50,000 went over the sea. The postoffice revenues last year were in the neighborhood of \$200,000. Moreover, southern Rhodesia has now postoffice savings banks, and her deposits in them already exceed \$200,000.

Electric Safety Devices Tested.
 A train on the main line of the Burlington road, near Chicago, going at a speed of fifty miles an hour the other day, ran past a block signal which stood at "danger," and was automatically brought to a full stop 1,500 feet beyond. While the test was being made a score of the foremost operating men of the United States, representing railroads from coast to coast, either rode on the train or watched from the side of the track the operation of the new automatic device for stopping trains when the engine crews have disregarded the warning signal. The experiment was conducted for the benefit of the joint committee of the American Railway association, of which F. C. Rice of the Burlington is chairman. The joint committee is made up of members of the train rules and safety device committee of the association.

Train Orders by Telephone.
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Before the Advent of Electricity.
 The wigwag Indians who came out to Denver from Tammany Hall traveling on five special trains, groused a good deal about the handlings of the journey, but they knew nothing about the meaning of such things as compared with the tribulations of our old pioneers. The modern pilgrim is fat and pudgy from luxurious living, while the old boy was as lean as Cassius, and as hungry as a coyote. In the sixties it cost more for meals between the Missouri river and Denver than is now charged for railroad fare and meals added. The run to Denver is now made in something like fifteen hours, as against six days in the stage coach period. At one time the fare from the river to Denver was \$175, while now it is only \$15. The quickest time ever made by stage between Atchison and Denver was four and a half days. Ben Holliday, owner of the line, once traveled by special coaches from Ft. Placer, Cal., to the Missouri, 2,000 miles, in twelve days and two hours, beating the regular daily schedule by five days. This feat cost Holliday \$20,000, but it was a great advertisement for his line. The stages, when crowded, carried fifteen persons, besides quantities of mail and express. One of the coaches used on the Overland line is now in the Smithsonian institution at Washington and two or three of them still linger in Denver as relics of the splendid past. After leaving this route they were operated on the Deadwood line, and were several times captured by Indians and outlaws. Once, when captured by outlaws, one of the coaches carried \$40,000 in gold. In this attack three guards were killed. Buffalo Bill heard that the old coach had been abandoned and went after it, using it for years in his Wild West show. In London it carried the Prince of Wales, and all the notables of Europe examined it with interest. On the Fourth of July, 1895, this famous old coach was exhibited with the Wild West show at Concord, N. H., where it was made. The owner and employee of the stage coach factory gave the historic old stage a great deal of attention, and in the parade it bore the sign: "1843—Home Again—1895." There were 153 stations on the old Overland line, from the river to California, the longest in existence—1,112 miles. The fare was \$225, or about 12 cents a mile, which was not considered excessive in those days.—Denver Times and Farm.

What is Going On in the Field of Electricity

Calcium Carbide.
 Numerous factories in France are engaged in the production of calcium carbide by hydro-electric agency, some of them being situated in the alpine territory and some of them in the Pyrenees. The Buller patents for the manufacture of this substance have been legally pronounced to be the only ones valid; therefore all these works are compelled to pay royalties to the proprietors of these patents, and the same applies to foreign carbides imported into France. These patents will expire, however, on February 9, 1910, and from thenceforth the French electro-chemical preparations will be no longer protected against foreign products, which can be manufactured at a much lower rate than carbides of the same quality. Hydro-electric energy is, relatively, very cheap. The French industry is thus exposed to serious menace, and Mr. Guillaud, the president of the Union of Electrical Syndicates, recently called the attention of M. Cruppi, the minister of commerce, to the matter. The minister replied that a good case had been made out for affording protection to the native manufacture of calcium carbide by the imposition of a suitable duty on imports. From this statement it may be inferred that the introduction of foreign carbides into France will soon be controlled by an import duty.

Poor Labor Supply.
 The natives are bad farmers and they do not form a good labor supply. In raising their own crops they do no plowing. They merely hoe the ground over and drop the corn. The crop is weeded once or twice and then allowed to ripen. Nothing is known about fertilization, and, as the soil is virgin, this is not necessary as yet. The negroes are largely used to work in the mines of Rhodesia, and there is a demand for them in those of the Transvaal. The whites of this country object to their transportation on the ground that they are needed for the local development and for the building of railroads, both in southern Rhodesia and in the lands farther north. I understand that the natives have been increasing in number under the rule of the white men, and that they are better off than ever before.

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One of the communications of an exceptional interest were made. M. Polonceau read a note from M. Jean Becquerel on the nature of positive electricity and the existence of positive electrons. According to this statement, one charged with positive electricity has been found in a Crookes tube. The importance of this discovery lies in the fact that it constitutes a fresh contribution to the problem of the constitution of matter. Some striking particulars are given in a paper by MM. Georges and Gustave Laude, which has been published in the *Annales de Chimie Physique*. The photographs taken by their process are so clear that the most delicate peculiarities of the voice, such as liping, and even breathing, are produced with the greatest distinctness. The MM. Laude are now studying this subject for nearly three years and have been induced to give the present account of their success owing to the recent communication on the same subject by M. Devaux Charbonnel, notice of which appeared in last week's Scientific News. Unlike M. Devaux Charbonnel's method where recourse is had to electrical reproduction of the sound waves, MM. Laude have employed a purely mechanical and direct means for securing the desired record. The MM. Laude also made the somewhat astounding statement that they are capable of expressing sounds with exceptional fidelity by the discharge of explosives. They anticipate, for instance, that before long they will be able to create a rocket capable of crying "Vive la Republique!" and a danger signal for use on a railway track which will shout "Arretes!"

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