## FIELDS OF DIAMONDS

HOW ELEVEN THOUSAND ACRES NEAR KIM-BERLEY ARE PLOWED AND HARROWED FOR PRECIOUS STONES.

IMBERLY .--- Eleven thousand acres of diamonds!

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Hundreds of fields of blue clay sprinkled with jewels! A mighty farm where the brilliants lie out under the sun and the diamondiferous earth is worked with steam harrows!

These are some of the things you may see any day here at Kimberly. Last year the crop from this vast diamond farm amounted to \$32,000,-000. It is equal to more than \$100,-000 for every working day the whole year through. It was more than \$70 for every tick of the watch through all the minutes of all the hours of all the days of that year.

MINING THE BLUE. All the soil of this mighty farm has

er is dry it is sprinkled, and as a re-sult it so melts or softens that the diamonds can be washed out of it. Every one of these great mines has its own fields for such rock-weathering. There are at least 5,000 acres in all. Of these, in the neighborhood of 1,000 acres belong to each pipe, and all are now covered with this rock, containing dia-monds. There are about 10,000,000 car-loads lying out under the sun, and I am told that there is something like \$25,000,000 worth of diamonds in them.

GUARDING THE FIELDS. GUARDING THE FIGHDS. In looking over these fields one sel-dom sees diamonds, but the brilliants are there and they must be carefully guarded. Think of \$25,000,000 Meing scattered over the earth within easy reach of any town of 30,000 in the Unit-ed States, and you have the situation at Kimberley. You would imagine that the fields would be raided and the stuff carried of the protection. The fields are

carried off. It is not. The fields are

With Axle Grease—Among the Sorters and Buyers—Ten Thousand Native Miners Who Dig Diamonds—Their Queer Smuggling Methods—How Thieves are Gaught. that way years ago is now being sorted again and at a great profit. Today the diamonds are saved by ta-Today the diamonds are saved by ta-bles covered with a grease just like axle grease. The gravel is run through what is known as a pulsator, consist-ing of a series of iron tables corrugated like a washboard. These tables lie at a slight angle, and the machinery shakes them, so that they are always moving

pebbles in shape. Others appeared ready for stting, and some were broken and chipped from other stones. Many of the diamonds contained flaws, but there were many which were absolutely per-fect. The diamonds were of different colors. Some were as yellow as to-pazes, others a light blue tint and others pure white.

The Diamond Pipes and Their Blue Grounds-Millions of Dollars Lying

Out in the Open-How the Rock is Washed-Catching Diamonds

BUYING DIAMONDS.

All the diamonds of the De Beers company now go to the diamond syndicate. This is a sort of a trust which contracts to take the whole prowhich contracts to take the whole pro-Guts of the mines up to a certain point for five years at a time. It agrees to take so many million dollars' worth of diamonds every year at a fixed price, and more if the demand justifies it The syndicate cannot take less than if agrees, but it may buy more at the same price if the demand increases. One provision is that the De Beers company shall sell to no one else dur-ing the term of the contract. This ryndicate is independent of the De Beers company, although many men-belonging to that company are mem-bers of the syndicate On account of this arrangement it is not an easy thing for a stranger to buy

bers of the syndicate On account of this arrangement it is not an easy thing for a stranger to buy a diamond in Kimberley and any one who might purchase a rough stone of a native would be in danger of prison. The laws here provide that he who buys diamonds must first take out a license and that all diamonds bought and sold must be shown to the gov-ernment officials in order that they may be valued for customs. In fact, every man who takes a diamond out of South Africa must have a certifi-cate showing where he got that dia-mond and that he has a right to it. During my stay I have bought a rough stone of a few carts at a cost of about \$75 a carat. I have been able to get it through a special introducor about \$15 a carat. I have been able to get it through a special introduc-tion to the officers of the diamond syndicate, and it was sold to me at about the same price that the diamond would have cost at wholesale in Lon-don. I had to go to a half dozen dif-ferent officials to secure the papers don. I had to go to a half dozen dif-ferent officials to secure the papers showing that I owned it and I have paid the customs duty necessary to en-able me to get it out of Cape Colony.

TEN THOUSAND NEGRO MINERS.

TEN THOUSAND NEGRO MINERS. During the year 1907, the mines of the De Beers company here kept some-thing like 20,000 negroes regularly employed getting out the blue and working the floors and washing ma-chines. They had there, all told, more than 3,000 whites. On account of the hard times in America, which has seri-ously cut the demand for diamonds, about 10,000 of the native miners have been recently discharged and al-so over 1,000 whites. There are still 10,000 native miners at work, and this number will be increased as the markey improves. I have had a good chance to see the miners during my trips about

rocks. Each gang has a white over-seer but the laws prevent any mis-treatment of the blacks and they have a right to lay their complaints before a "protector of labor" appointed by the government. The natives are never hired for less than four months although the company is glad to keep them as long as they will work.

to prevent them stealing the diamonds and smugging them to their fellows. Take for instance, the Dutoitspan Compound, which I visited today. It contains about seven acres and looks for all the world like a great racing park walled with stables. Right in the center of it is a platform which might be compared to the grand stand, and all around the walls are rooms about 20 feet wide and 30 feet deep which

room. While at rest, or loafing about in the court, they take off their clothes and frequently have nothing but blan-kets about them. The men buy their own provisions and do their own cooking. There are storehouses inside the compound which furnish groceries, and butcher shops where meat is sold lower than any-where else in South Africa. Connected with the buildings are the offices of the managers of the compound, a hospital for the sick and rooms for the guards. TO CATCH DIAMOND THIEVES.

hair are examined, and if he has any sores on his body they are probed. While the examining goes on the natives have mittens of sole leather upon their hands. These are so stiff that they could not plek up a diamond if one lay on the floor before them.
At he same time the miners are paid for being honest. Every man receives \$1.25 per earnt for the diamonds he discovers and hands over to the overseer. The other day a negro dug out a gem as big as a walnut. It weighed more than 100 carats, and he received a premium of \$150 for it.
It used to be that many diamonds were swallowed. About 10 years ago one as big as a chestnut was thus dispose of, and the negro kept it for more than a week. In 1895 about \$4,000 worth of stones were lost in a miner's stomach and afterward discovered, and the same practise would go on today were it not for the imprisonment in a naked state and the medical and dietary treatment which all must, go through before they are allowed to depart. As

fore they are allowed to depart. As



## HARROWING THE BLUE GROUND FOR DIAMONDS. Photographed for the "News" by Frank G. Carpenter.

The greatest care is taken by the De deers company to prevent diamond muggling. No man is allowed to leave bottoms. The miners frequently make gashes in their persons and try to car-ry away the brillants under the skin. They put them in their hollow teeth, under their toes and in every concelv-able place. The guard grows more rigid from year to year, and the detectives have become so expert that they know just exactly which places to search, FRANK G. CARPENTER,

1450 degrees F., a bar originally one-inch square and 14.8 inches long, was found to have grown to 1½ inches square and 16½ inches long. This efthe trouble given by cast-fron fittings for superheated steam, which produces the same alternate heating and cooling.



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DIAMOND WASHING MACHINES.

Photographed for the "News" by Frank G. Carpenter.

heen taken out of the diamond pipes, which I have described in a previous letter. There are five such pipes at Kimberly, and each contains a pudding of this blue clay, sprinkled with white currants of diamonds. The pipes range from 800 feet to several times that in diameter. Two of them, the Kimberley and the De Beers, have already been excavated to a depth of more than 2,000 feet, and the three others, the Wesselton, the Builfontein and the Dutoitspan, are now be-ing mined at 500 or more feet from the surface. In every pipe the blue rock has been found continuous, and everywhere it is peppered with dia-monds. How far down the deposits go no one knows. In the Kimberley they have been probed to a depth more than a half-mile, so that it is no exaggeration to say that there are hundreds of millions of dollars worth of diamonds in sight. As to the origin of the gems, they are supposed to be volcanic, and Mr. Gardiner Williams, who managed the mines for 20 years believes that they were shot up by mud volcanoes. There is no doubt the pipes were formed by some convulsion of nature, and that it was about the same time that the jewels appeared. The mining, as I have described ronsists of blasting out and raising to the surface the blue clay contain-ing the diamonds. been taken out of the diamond pipes, which I have described in a previous letter. There are five such pipes at Kimberly, and each contains a pudding of this blue clay, sprinkled with while currants of diamonds. The pipes range from 800 feet to several times that in diameter. Two of them, the Kimberley and the De Beers, have already been excavated to a depth

ing the diamonds.

ON THE DIAMOND FLOORS.

are two of these fences around every field. They are about 20 or 30 feet apart, and the guards march between them. If a thief could crawl over the first fence he would be sure to be shot before he got to the second, and so the diamonds are comparatively safe

## WASHING OUT DIAMONDS.

This blue ground is brought to the fields in steel cars. There are 150 miles of railroad track which run from the mines to the floors, and from them to the crushing and washing muchines, which handle the earth, after its melt-ing. Over every car track is a stoel ca-ble, and the thousands of cars are

moved by the steam engines of the five central plants. I saw the process of washing out diamonds at the De Beers mine. The eight miles by the cable. In reducing it, it was divided into two classes, one soft and one hard. The hard rock was that which had not been affected by the weather; and it had to be crushed s a powder before the diamonds could was done in m be taken out. This was done in mighty steel crushers which are so made that they will grind up the rock, and at the same time not injure the still harder diamonds within. After crush-ing, the coarser pieces are crushed again, and at the end it is all reduced again, and at the end it is an isduced to about the consistency of soft ground, made so by the weather. Both the soft and the crushed ground are then washed to get rid of the waste, and, as a result, out of every hundred loads of the mixture comes one load of gravel, containing the diamonds.

as the gravel goes over them. They are covered with this grease, and by the shaking almost every stone at one time or another comes in contact with the rrease.

Now, it is a curious thing that dia-monds will stick in this grease, and that all the other stones will flow off with-out catching. Every few hours the ta-bles are stopped, and the grease is scraped off. It is found to contain all the diamonds and also small bits of iron pyrites, garnets and pieces of metal from the miners' boots and the copper fuses used in the blasting. It is now put in a steel bucket which is perforat-ed with holes, and this is sunk into boiling water. As the water touches the grease it melts and goes to the top and may be poured off, leaving only the scraps of metal and the diamonds. The diamonds are piecked out and cleaned Now, it is a curious thing that dia-

SORTING DIAMONDS.

I spent some time watching the diamond sorters pick out the precious stones after the grease was poured off Each man had on a table before him o

diamonds are picked out and cleaned and sorted, after which they are ready to be valued for the market.

Each man had on a table before him a handful of diamonds of all shapes and sizes, and he was picking them up one by one with a pair of tweezers and dropping them into a tin cup, which cost, I venture less than 5 cents. As I watched one of these men he lifted up a little white stone, saying: "This is worth \$500." and then showed me another, not much larger, worth double that sum The wareares of the worth pour

improves. I have had a good chance to see the miners during my trips about Kimberley. They are Kafirs coming from the various tribes of South Af-rica, the company preferring to have its men from as many different local-ities as possible in order to prevent strikes. The men work well and are more efficient than the ordinary African laborer. They are big fellows, strong and muscular. In the mines they are bare to the waist although most of them wear trousers and have shoes to protect their feet from the rocks. Each gang has a white over-

correspond to the stalls in which th correspond to the stalls in which the race horses are kept. The grand stand is the public bath where the black boys come, when fresh from the mines, and wash themselves right out in the open. They stand in the sunlight as naked as Adam before Eve gave him that ap-ple, and the water sparkles like dia-monds as it pours down in a shower over them. I took a look at the rooms where the

I took a look at the rooms where the men live. They are walled with bunks and about 30 natives sleep in each

## ROCKEFELLER MAKES JOKES.

The following letter from John D Rockefeller was read at the convention of American press humorists, held in Denver recently:

Forest Hill, Cleveland, O.

Beers company to prevent diamond smuggling. No man is allowed to leave the mine until several days after the completion of his contract. During this time he is stripped naked and put into a room so warm that he will not catch cold. He is kept there for several days and watched all the time. Every bit of his person is then gone over by the diamond detectives to see that he has no precious stones concealed anywhere in it. His toes, ears, teeth, gums and

T have spent a part of this week in going with the diamond ore to the fields or floors where it is left to weather, and in following it to the washing machines where the jewels are finally won. As the rock comes to the surface it bears no sign of them, I have looked over several thousand cars of ft, but have not seen a single brilliant imbedded in the blue, and I am told that the precious stones are seldom discovered, except when they rome out in the washing. come out in the washing.

rome out in the washing. This blue ground is as hard as rock. I can just scratch it with my knife. It is so hard that you could drive a nail with a chunk of it, and it takes a heavy hammer to break it. The ground is carried from the mines to the floors and spread out there to a depth of one foot, all over the surface. It lies out for about a year, being plowed and har-nowed from time to time. If the weath-

DIAMONDS SAVED BY GREASE.

It used to be that all the gravel obtained in this way was sorted over by men. Both natives and whites were employed, but the chances for stealing were great, and it was found that many small stones were lost. Indeed some of the gravel which was sorted over in

another, not much larger, worth double that sum. The manager afterward pour-ed out a pint of diamonds on the ta-ble, showing me some that were worth \$60 a carat and others much cheaper. He took up a little scoop shovel and with it threw the diamonds back into the cup, handling them as though they were reas. were peas.

Later on I visited the company's of-Later on I visited the company's of-fices in Kimberley itself, and was shown quarts of diamonds from the various mines. The sorters can tell by its shape and color from just which pipe each diamond comes, and I was shown specimens from every mine. I had is my hand a little bundle which contained a pint of small stones, the value of which approximated \$500,000, and I was shown other bundles contain-ing brilliants as big as the end of my finger. Some of these rough stones had smooth edges and they were almost

IN THE COMPOUNDS. These 10,000 miners are practically

These 10,000 miners are practically in prison from the time they begin their job until the end of it. They have to contract that they will stay inside the compounds or great walled inclosures which constitute the native quarters of each mine, and the company sees that they keep this part of their agreement. They do not go outside even when they enter the mines, for every com-pound has a tunnel from it into the works, and they march down under guards to where they dig and blast out the blue clay far below the surface. Those who work above ground are not allowed to mix with the men who work

allowed to mix with the men who work smooth edges and they were almost underground; and every effort is made

Denver recently: Forest Hill, Cleveland, O, Gentlemen-With the pleasant memor-ies of an official call by the American Press humorists, I send you my best wishes for a successful convention. The echoes at Forest Hill still laugh now and then over the quips sprinkled through our quiet atmosphere by your members. My own success in appreci-ating these jokes of yours and in pass-ing them off as my own has made me feel that I am almost entitled to a union card in your order. May you always be able - to collect for your wittleism on the union scale. Speaking seriously, as one should to professional humorists, the rest of the world owes you real gratitude and the best of good wishes, gentlemen. You are the true specialists in dyspepsia, Chari-ty is born of a good, hearly, honest laugh. It spreads a kindlier feeling among mankind. I wish you collectively and individually all success. I am sorry that I cannot attend your ses-sions. I hope to receive you again some day at my home. Fraternally yours. JOHN D. ROCKEFELLER. The convention of American press humorists elected J. Edmund Vance Cooke of Cleveland secretary-treasurer and new for the secretary-treasurer and re-elected Frank J. Seabright of Los Angeles president. The increase of yolume from the heat-

The increase of volume from the heating and cooling of cast-iron has been the subject of many tests, and it has been shown that the swelling may amount to as much as 40 per cent. After heating in a gas furnace 27 times, the highest temperature reached being

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