

PLACER MINING IN THE KLONDIKE.

A Full Description of the Way the Precious Dust is Taken Out of the Earth.

So far all the mining that has been done in the Klondike country has been what is known as placer mining. This is the simplest and oldest form of mining, and is usually adopted in new gold fields. In its crudest form, placer mining is simply the picking up of a handful of dirt from the bed of a stream where gold is supposed to exist, the washing away of the dirt and pebbles and the gathering of the gold, which, because of its weight, sinks to the bottom of the pan.

For example, let us follow a prospector on some stream in our Western gold fields, where the complication of eternally frozen ground does not enter into the question. After traveling perhaps many weary days he comes on a stream coming down some mountain gorge that looks "likely," as he says, to his practiced eye. He stops and examines the pebbles on the bottom, and finds a good many of them are of quartz.

This, although not in itself an indication of gold, is a good sign, so the prospector scrapes away the earth and stones at the bottom of the stream to the depth of a foot or so, and then

to shorten it where it was to be carried on to any extent.

The first step in advance in placer mining is the use of the "rocker." The rocker looks like one of the old cradles we find once in a while in the attic of some old house up in the country. It is a box about three feet long and two feet wide, placed on rockers just like a cradle. A part of the box is covered with a piece of heavy sheet iron, placed a few inches below the top and punched full of holes about a quarter of an inch in diameter. The bottom of the rest of the box slants towards the lower end and is covered with a piece of woolen blanket. Towards the end of the box slats are placed across, with mercury behind them, to catch what gold gets by above.

The miner sets up his rocker near the stream and piles his gravel on the sheet iron, keeping it wet all the while and keeping the rocker in motion. The fine gold and sand sift through to the blanket, while nuggets of any size remain on the iron. The finer gold settles on the blanket and the dust is caught by the mercury behind the slats. The blanket is frequently rinsed in a barrel of water with mercury at the bottom, and this mercury, together with that behind the slats, is "roasted" as in the other method.

But even this method is not used when "sluicing" is possible, as it is when the stream has sufficient fall. In sluicing a number of long boxes are made which fit into each other like a stovepipe. Across these boxes slats are placed with mercury behind them, or sometimes the bottoms are bored full of holes and mercury placed underneath. A long line of these boxes is placed at a considerable slant and the miner shovels his gravel in at the upper end, lets the water run down the sluice and the gold, if in nuggets, sinks and is held by the slats, or, if fine, is caught by the mercury. Three times as much gold can be washed out in this way as by a rocker, because three times as much dirt can be washed. And after the boxes are all done with they are burned and the ashes washed for the gold held by the wood.

These are the various methods of placer mining and thus they are practiced in the Klondike region, hampered only by the natural conditions of the country. Let us now look for a moment at what these conditions compel the Klondike miner to do.

Let us suppose the gold-hunter has passed through the difficult journey and arrived at the gold fields. He first goes out and prospects until he finds a claim where the "colors" in his pan encourage him to locate. If he should happen to be early on a new field he would probably stake out a claim next to one that was already paying in the hope that his would pay, too. A Klondike claim is supposed to be laid out 500 feet long parallel with the general direction of the creek, and 666 feet crosswise, the idea being to give each location the width of the gravel from rim rock to rim rock. Most of the creeks up there have a slight fall with wide bottoms. Bedrock is anywhere from four to twenty feet below the surface and pay dirt is apt to extend clear down to bedrock.

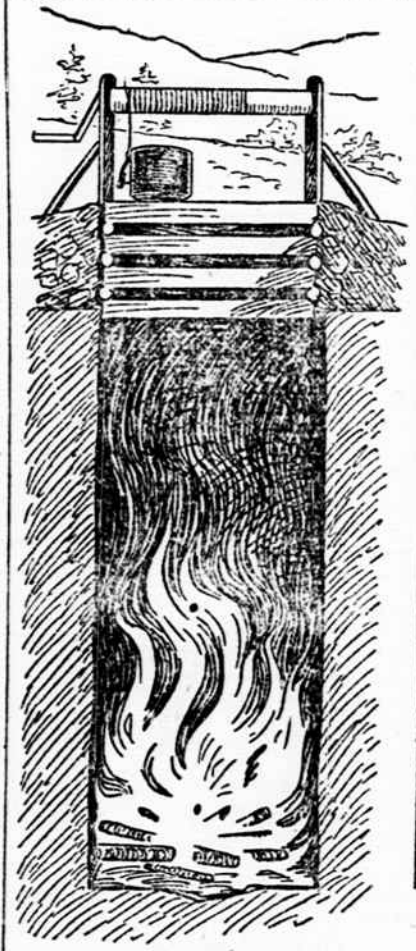
Of course, the great difficulty that the miner has to contend with is the fact that the ground is frozen solid about all the year, and even in summer

outside until the stream opens in the spring. Then the sluice boxes are set up and the winter's diggings washed out. Thus a miner is enabled to keep busy about all the year.

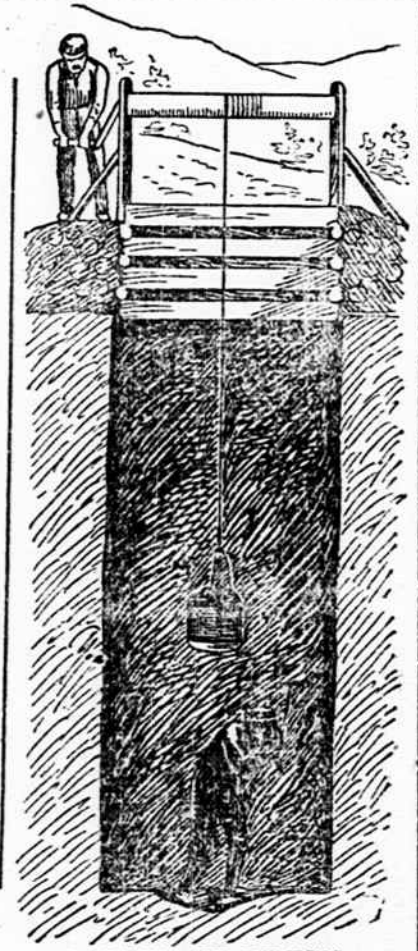
This method of burning out a shaft and tunnels is by no means new, for it has been carried on for many years in the basins of the Amoor and Lena Rivers in Siberia, where the conditions are very similar to those in the Klondike region.

risburg. Later it was changed to Rockwell and then to Juneau, which name it still holds. This last christening took place in 1881.

The next year both placer and quartz mines were discovered on Douglas Island, about four miles from Juneau. These are now the famous Treadwell mines, having been bought by John Treadwell in 1884, and, says Mr. Coolidge, "from these enough ore has been taken out to pay the purchase



1. THAWING OUT THE DIRT.



2. DIGGING AND DUMPING.

Placer mining in Alaska differs from placer mining in warmer climates only in that the dirt has to be thawed out, and that water for washing can be obtained there only a month or two in each year.

And even when bedrock is reached it is in many cases filled with cracks and seams which are rich in gold and well worth the digging out. As to the value of explosives in this frozen soil authorities differ. The Mining and Scientific Press said recently that they can be used effectively, while the Mining and Engineering Journal, in speaking of the Siberian mines, where the conditions are similar, says their effect is simply to mat the ground together harder. For this same reason, says the latter journal, the ground cannot be dug with a pick and shovel until thawed out.

Lumber, by the way, in the Klondike country, fit for sluice boxes, costs from \$130 to \$150 a thousand feet.

So far most of the gold found in placer mining in the Klondike region

money of Alaska and more." The ore of these mines average only from \$2.50 to \$3 a ton, but owing to the enormous scale on which they are worked and the low cost of extracting the ore there is a large profit in working them. All around Juneau and, for that matter, all along the Alaskan coast, gold-



MINER TESTING GRAVEL.

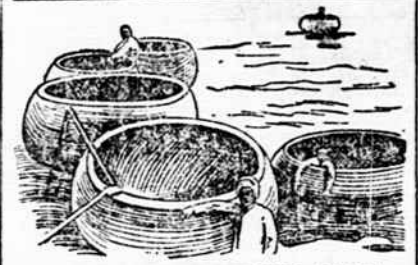
bearing quartz is found, and in many places is being profitably worked.

There seems to be little doubt among mining experts that extensive quartz mines will be located in this Yukon country before long. This will mean the introduction into that country of all sorts of improved mining machinery, rock drills, stamp mills and so on. Just what method will be employed to extract the ore from the rock will depend on what kind of ore is found. It may only have to be crushed, and separated by mercury. It may be refractory ore and have to go through some one of the various processes now in use for separating such ore.

As soon as the mines are found means of transporting the machinery will be provided and the mines will be started. Mines in rock, of course, will not be delayed by the weather conditions which make placer mining so difficult in that country. Rock doesn't freeze and the deeper down the mines go the warmer it will get, so perhaps this kind of mining will be the pleasanter of the two.

Boats Like Big Baskets.

Curious boats which look like big baskets are used in Busrab, the Venice of Turkish Arabia. As a matter of fact, they are practically baskets, being made of wickerwork, plastered to keep out the water. They are known as gophers, and the European who boards them feels himself to be much like the three men of Gotham who went to sea in a bowl. Until comparatively recent times a boat something similar in shape and made with the same material, called coracles, were used by fishermen on many of the turbulent streams in Wales. No other form of a boat could hope to survive the navigation of those streams, and



WICKER BOATS OF TURKISH ARABIA.

bumping against boulders and dropping over small cataracts in them did them no material damage.

In China certain literary degrees can be purchased of the Government for about \$75. Taking advantage of that fact, some unprincipled person has lately hoaxed the Celestials by selling them what purported to be diplomas which would bring the holders under the jurisdiction of foreign consular offices.

THE REALM OF FASHION.

PROMINENT FEATURES IN CARMENTS FOR WOMEN.

Jaunty Little Eton Jacket With Vest Front-Ladies' Blouse, With Added Basque of All-Wool Plaid and Sleeves and Vest of Plain Matching Material.

For shopping, traveling, yachting, cycling and general utility wear nothing has as yet met with such universal favor as the jaunty little Eton jacket.



AN ETON JACKET WITH VEST FRONT.

Its popularity, says May Manton, is fully established. The model here shown is developed in heavy black diagonal, tastefully decorated with

blouse itself is composed of back and under-arm gores. It is effected by means of these last shoulder seams. The basque portion is cut in a separate piece and seamed at the waist line; over the seam is worn a belt of ribbon finished with a bow at the left side. The fitted lining closes at the centre-front by means of hooks and eyes. The vest is attached to left side and hooked over onto to the right. The blouse meets at neck and again at the waist line, but between these two points are sewed to the lining at the left and fastened invisibly at the right side. The fanciful collar is cut in sections, lined throughout with silk and having an interlining of crinoline. The sleeves are two-seamed, slightly flaring at the band, close fitting well above the elbow and terminating in a small puff at the shoulder. Narrow braid finishes all the free edges, and at the neck there is a collar of satin ribbon with an upstanding frill of lace at the back. The skirt, which is five-gored, fits with perfect smoothness over the hips and is laid in deep underlying plaits to form the fan back. As shown the material is cut bias, but the lining of taffeta or percaline must be straight. It is faced to a depth of eight inches, with material like the lining, and has an inter-facing of hair-cloth for the same depth. The braid, which is all narrow, is arranged in groups.

Dainty Dress for a Child.

Figured blue and white challis and white surah are here daintily combined and decorated with narrow Valenciennes lace and insertion. A smooth short body lining shaped with shoulder and under-arm seams is the foundation over which the full portion of white surah is arranged in round yoke shape. The full straight skirt is deeply hemmed and has a single band of insertion above. The top is gathered and joined to the lower edge of the full yoke, a band of insertion concealing the joining. The neck finishes with a band and frill of lace. The



LADIES' BLOUSE BASQUE WITH FAN BACK SKIRT.

braid in two widths. The hat accompanying is of mottled felt, trimmed with wide taffeta ribbon, that encircles the crown and is stylishly bowed at the left side.

The vest front, which is of white serge, is included in the shoulder and underarm seams, and has single bust-darts, the closing being effected at the centre-front with buttons and button-holes. The jacket fronts are also trimly adjusted by deep single bust-darts. They close at the neck only, gradually sloping away to show the vest beneath. The wide backs have a centre-back seam and are separated from the fronts by underarm gores. The neck finishes with a close standing band that is neatly rounded at the front. The sleeves are two-seamed, with the fulness at the arm's eye laid in box plaits.

Ladies' Blouse Basque.

The two distinct and prominent features of the season, writes May Manton, are undoubtedly the blouse with added basque and the use of plaid stuffs, a combination of which is shown in the large illustration. The model from which the drawing was made is of a late style of all-wool plaid, with sleeves and vest of plain material matching the darkest color, but it can be made with the sleeves of the plaid, if preferred. The trimming is fine mohair braid which also matches the darkest tone found in the plaid. The waist has a fitted lining composed of the usual number of pieces and fitted with the usual number of seams. The

two-seamed sleeves are of elbow length and are decorated by deep ruffles and bands of insertion. Pretty frill epaulettes extend over the sleeves, finishing with shoulder straps of insertion and lace.

The pattern provides for a shallow square yoke, to be used when the gar-



CHILD'S DRESS OF CHALLIS AND SURAH.

ment is to be worn with a guimpe, as shown in back view of illustration.



TWO TYPICAL KLONDIKERS IN FULL DRESS

takes out a handful of dirt. The pan, by the way, is nothing but a broad, shallow dish of strong sheet iron.

Having done this, he puts in enough water to make the painful semi-liquid, and then gives it a rapid, twirling motion. This causes the gold, if there is any, to sink to the bottom of the pan. Then the gravel and sand are carefully washed out until only the heavy residue remains in the pan. This residue is carefully examined to see how many "colors" there are in it. "Colors" is the term miners give to the particles or nuggets, if there are any, of gold that can be seen at the bottom of the pan.

But gold is not the only thing that sinks to the bottom of the pan. Almost always there is found with gold a fine black sand, which is magnetic iron ore, and from this the gold has to be separated. Of course, if the gold is in nuggets of any size this is a simple process, but if it is in fine dust, as is generally the case, the mercury process is employed.

In this the residue in the pan is placed in a barrel, with some water and

thaws only a few inches. This makes it necessary to thaw the ground artificially, and this is done by "burning."

Fires are built on the surface and the ground thawed a little ways. This is then dug out; another fire is built in the hole, and this process is continued until bedrock is reached. Then fires are built against the side of the shaft, and drifts and tunnels are thawed out.

All the dirt thus taken out is piled

has been coarse, and many of the nuggets have been found attached to quartz. This, according to experts, indicates that the veins from which it originates are not far distant from the alluvial deposits. Placer gold is liberated by the erosive agencies of ice, rocks and water from the rock matrix in which it is held. It is tougher than the rock which holds it and resists abrasion better. Drawing an inference from other regions where placer gold has been found in large quantities, it is reasonable to expect that in the Yukon country rich gold lodes will be found.

And this brings us to the subject of quartz mining in Alaska, for the gold-bearing region up there is by no means confined to the Klondike country. According to the recently published hand-book on "Klondike," written by L. A. Coolidge, of Washington, there are in southeastern Alaska gold mines which have been worked for the past twelve years, and which in 1895 added over \$2,000,000 to the gold surplus of the world. Of this mining region Juneau is the centre, and its discovery is shared by Richard Harris and Joseph Juneau. In 1880 these two men started out from Sitka—it was in the summer—and in August discovered gold in a stream which they named Gold Creek. Later they explored this stream to its source in a mountain valley, which they named Silver Bow Basin. Then a town site was established at the mouth of Gold Creek, which was at first named Har-



SLUICING AT A RICH CLAIM IN THE KLONDIKE.

(From this mine \$8000 was taken from a piece of ground 24 by 14 feet in plane dimensions. It is officially designated as "No. 2, Below," Bonanza.)

mercury. The gold, when it touches the mercury, forms an amalgam. After a quantity of gold has been put in the barrel the mercury is taken out, squeezed through a buckskin bag, and what remains in the bag is heated, either in a retort or in some other way, until what mercury is left is vaporized, and the gold remains, nearly pure.

This is placer mining in its most primitive form, but it is slow work, and long ago various methods were devised