

# Riches in Placer

## VAST AREAS OF PLACER AND QUARTZ WHICH WILL PRODUCE MILLIONS

By FRANK G. CARPENTER.



Rocking out Gold.

**N**OME, Alaska.—The gold resources of Alaska are beyond computation. The territory has produced so much of that precious metal that if it were divided equally among the people of the United States there would be \$13 for every family living under the American flag. The product already amounts to more than \$260,000,000 and that notwithstanding nine-tenths of the country has never been prospected. The greater part of Alaska is covered with moss and other vegetation that hide the rocks and earth, and the most of the gold so far won has been extracted from ice, sand and rock that were frozen solid for thousands of years before the miners thawed the ice and recovered the gold.

It is easy to prospect a country where the metals lie loose in the earth and where every great rain washes some of the float to the surface. It is different where the metal is held tight in the hands of Jack Frost, until his fingers are burned by the fires of the miners. Almost all of the \$260,000,000 worth of gold that has been taken from the basin of the Klondike was thawed out by fire and steam. The same is true of the \$30,000,000 from Fairbanks and also of the gold now being mined in the Iditarod, and at Ruby and Nome.

What Alaska needs is more prospectors and modern machinery and cheap fuel to get the gold out of the earth. The prospectors will come with the completion of the railroad and when we will have cheap coal for the camps. As to machinery, it is being dragged in by horse power and man power, and the railroads will put in hundreds of places where it cannot go now.

The gold mining of today is far different from the primitive work which was done by a gambler to a manufacturing proposition; from a speculation to an industry. By good manufacturing methods the cost of gold has been reduced to such a low cost that it is an industrial proposition. The bulk of the gold of our forefathers came from the pick, shovel and rocker of the individual miner. The bulk of the gold of today is gotten out by companies which have capital, and whose profits come from ore so poor that our forefathers could not have mined them at a profit. This is so of

the Transvaal, which has produced more than \$2,000,000,000 worth of gold since the first discoveries were made about a generation ago, and it is true also of the greater part of the gold mined in the United States today.

Coming north from Seattle I saw my first great gold properties on Douglas Island, just opposite Juneau. These were the Treadwell mines, which have been manufacturing gold, as it were, for more than thirty-five years. They have taken out something like 30,000,000 tons of ore, and from it have extracted more than \$60,000,000. The gold so far taken out has averaged only \$2.42 a ton, and that low average has paid an enormous profit for thirty-five years.

Just across the Gastineau channel, a stream of salt water a thousand feet wide, are several mountains of gold which some of the great capitalists are just beginning to work. They have already spent millions of dollars in prospecting and developing, and they will make fortunes out of ore whose average gold contents are almost \$1 less in value than those of the Treadwell. The Alaska Gastineau properties from which the owners expect to be mining gold for a century to come are handling ore worth on an average only \$1.80 a ton, and the same is true of the Alaska Juneau, the Eber and other large mines nearby.

Indeed, there is a strip of territory in Southeastern Alaska 200 miles long which carries quantities of low-grade gold, and to that strip the Treadwell and these other mines belong. While at Juneau I had a talk as to the extent of this gold belt with Mr. E. L. Thane, manager of the Alaska Gastineau. Mr. Thane says that Juneau is about in the middle of the belt, and that it runs north and south, much of it being so close to the water that the ore can be handled by gravity. Mr. Thane was then mining gold which averaged only \$1.50 a ton, and he expects to raise this to \$1 per ton, and to increase the output to 10,000 tons every day. Sunday and week days, year in and year out, the Alaska Juneau is preparing to work on an equally large scale, and its machinery is as fine or finer than that of the Gastineau. If the figures given me are correct, this would mean an output of 20,000 tons a day from these two mines alone, and that at a profit of a dollar per ton would

equal \$20,000 a day throughout the year.

In my talk with Mr. Thane he spoke of the efforts made to reduce the cost of every possible item. Said he: "We will gladly pay \$50,000 to any inventor who can show us how to save one cent a ton in getting out gold. One cent per ton would mean a saving of \$100 a day on one 10,000-ton producing mine, and that would be a great saving of \$1000 a day. So you see we can afford to pay for the best of machinery."

In speaking of the power used, Mr. Thane said that the hydraulic electric plant erected for the mine had cost more than a million dollars to build, but that it gave them 6000 horsepower and reduced their power cost to 20 cents per ton less than that of the Treadwell mines. In other words, that reduction on a 10,000-ton daily output meant a saving of \$2000 per day.

Coming across the mountains into the Klondike I investigated other methods of gold manufacture. The first mining in the Klondike was of the speculative kind of our forefathers. Men dug holes in the ground and dragged out fortunes in gold dust and nuggets. The only difference was that in the Klondike the frozen ground had to be thawed down 20, 30 or 40 feet to where the gold lay. That sort of mining could not be done unless the output was 20 to 40 cents a ton, and from such small sums of millions of dollars' worth of gold have been extracted. The Yukon Gold Company has the richer properties, but Joseph W. Boyle's expenses of mining are by far the less, and he makes a profit out of gold that averages from 25 to 30 cents a ton. The Treadwell quartz mines spend \$1.35 to get the gold out of the ore. The Alaska Gastineau spends 60 cents a ton, but Joseph W. Boyle, whose proposition is a placer ore, thaws the gravel and gets out the gold for about 8 cents a ton.

We are now getting more than \$10,000,000 a year from the gold placers of Alaska, and we have already taken out about \$100,000,000 of that kind of gold out of the territory. The geologists have estimated that there is something

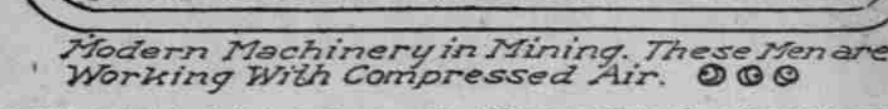
like \$200,000,000 worth of placer gold in the Seward peninsula and there may be other great deposits of a similar nature in the unexplored parts of Alaska. As to the lode mines where the gold lies in veins in the rock, we have so far taken out \$75,000,000 or \$80,000,000 worth of gold, and 23 lode mines are now being operated. Their output has increased more than \$2,000,000 last year and the reports of our geological survey indicate that there will be a great increase in the gold lode output in the future. All of this is dependent upon machinery, and it belongs to the low-grade mining era of the present.

Many people think that the only mining done in Alaska is during the summer. This is a mistake. The mines of Southeastern Alaska work all the year round, and those about Juneau and on Douglas Island are kept busy day and night throughout the year. Many of the placer mines of Fairbanks get out the entire winter. The Treadwell quartz mines produce \$200,000 worth of gold there are 22 mines which are operated in the winter, and in the Klondike the mining season has been so extended that the dredges work seven or eight months of the year. In the Innoko mine, Nome are kept busy in the heart of midwinter. There were 38 working dredges on the Koyukuk, not far from the Arctic circle, in the heart of midwinter. A large part of the output of that region comes from mines far under the surface. In the Innoko mine has been so extended that the dredges work seven or eight months of the year. The walls were shelves containing melting pots of one kind or another and under them were bins of soda and other materials such as are mixed in with the gold in the melting. When the lid of the stove was lifted the melting was about \$2,000,000 per annum. He had a big job on hand at the time of my visit, and with his permission I watched the process. He first took the soda and other materials and poured them into the pots. He handled the gold dust as if it was so much corn-

meal, and indeed it looked not unlike cornmeal. The next to go into the pots up with pincers and laid them on the blazing bed of the furnace. He then covered the whole and sent in a draft, and raised the temperature to something like 2500 degrees Fahrenheit. It takes only 1800 degrees to melt gold, and the heat soon transformed the dust and flux into a liquid mass which boiled and bubbled. When he opened the furnace the contents of the pots were of a golden red color, and the pots themselves were red-hot. He lifted them out with the pincers and poured the liquid from each into a steel mold the shape of a brick. As the gold struck the cold metal it cooled, and a little later the impurities in the top of the brick, in the form of slag, which crumbled off, leaving a brick of pure gold. This brick was worth thousands of dollars. The assayer dumped it into a wooden tub, like a washtub, filled with water. This cooled the brick and a few moments later the assayer took the brick, and scrubbed it off with a small brush such as you can buy any day in the 10-cent store. He then wiped it with a 15-cent towel and showed me as bright and shining as a new wedding ring.

After melting, the gold brick is weighed and the difference between the weight of the dust and the weight of the brick represents the impurities. The average loss in the case of clean, bright dust is about 2 per cent. The next process is assaying the brick. Chips are cut from the former with chisels, or borings taken from the top and bottom in different parts of the brick. These are then weighed and their content of pure gold is known. Their weight is then compared with that of the brick. The result shows the fineness of the metal in the brick and its value.

During my stay here I have seen much of what is going on. I have seen John Brynteson and Erik Lindbloom, who were the last to be sent out of the great gold fields of Nome. Neither of the three men had had much experience in gold mining. Brynteson had come from Sweden to San Francisco, where he had worked as a tailor. He came to Alaska upon hearing of the gold discoveries at Kotzebue Sound. Lindbloom had come from Norway, where he had worked as a miner, and had heard that gold had been discovered in the Klondike. He had worked in the north to St. Michael. He was prospecting near there, along the Fish River. The three men, Brynteson, Lindbloom, and the three decided to go westward and test the country about the Snake River, at the mouth of which



Modern Machinery in Mining. These Men are Working With Compressed Air.

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# Modern Poultry Culture

According to the writings of Aristotle and Pliny the ancient Egyptians hatched eggs in vessels which they buried in the ground and covered with manure. For the last 2000 years the Egyptians have succeeded in incubating eggs in immense baked-clay hatcheries which are heated by burning piles of straw and dried manure.

The hatchery has a capacity of 86,000 eggs, 6000 of which are ready three days. The eggs rest on two inches of cut straw, and are turned three times daily, and about 85,000,000 eggs placed in the hatchery, 73,250,000 chicks were returned to the Egyptian husbandmen.

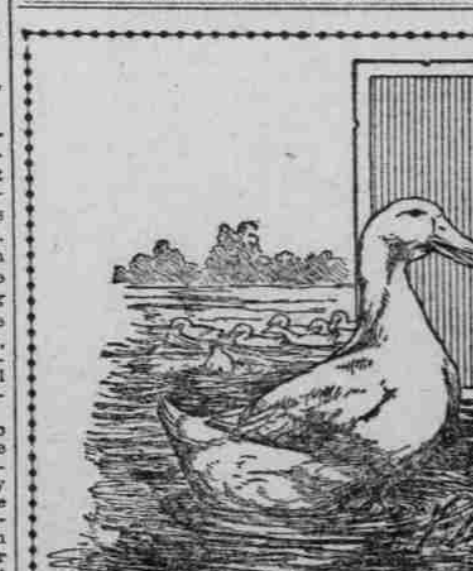
rest is 104.6 degrees. The air at the upper portion of the middle row of eggs in the hatchery is 103.4 degrees, while that circulating around the outside row of eggs just inside the sitters' wing has a temperature of 99.4 degrees. In taking these temperatures the thermometer was placed at the breast of the hen, or held near the upper portion of the eggs, with the inner end of the thermometer under the hen correspond with the readings of the same thermometer in the egg chamber. The hens used in the experiment hatched practically every fertile egg, and, for that reason, can be considered authentic. Therefore, that the highest temperature to which eggs should be subjected in an incubator is 104.6 degrees, any higher temperature is unnatural. The lowest temperature to which eggs should be held

best results will be obtained when a temperature of about 102 1/2 degrees is maintained throughout the entire hatching period, including the time when the chicks are emerging from the shells. It is not necessary to keep the temperature at the 102 1/2 degrees, but this should be the object aimed at, and at least the average temperature for each day or week and the hatch.

Of course the sitters cannot maintain an invariable heat of 102 1/2 degrees for every hour of the hatching period, but it is believed that each egg averages this temperature each day. It can be conservatively stated that a sitting hen turns her eggs at least 10 times a day, rolling the outside eggs to her breast and changing the position of each egg in the nest. This rolling takes place the first day the hen sits on the eggs.

Fill the incubator in the morning and turn the chicks that evening, and continue turning them morning and evening until the first chick pips the nest. However, these experiments have been conducted to decide this question of additional turnings.

The egg chamber of the incubator is usually at the center, near the door, and to overcome this variation, the center eggs are frequently lower or farther from the heating compartment. However, this uneven heat is not injurious when the eggs are moved around the egg chamber of the machine similarly to their movement under a hen. If the incubator tray has no divisions, place the center eggs at the front and back of the tray and roll the eggs toward the center. If the eggs are in rows on the tray, keep moving the outside eggs of each row to the center. When there are



PEKIN DUCKS

lakes incubators, after which the ducklings are placed in a brooder and moved from pen to pen as they develop. They are heavily fed for 10 weeks, when they are again dried and dressed as 'green ducks'. The best specimens are reserved for breeding purposes. The feathers are dried and sorted for use in pillows, beds, and no other purposes.

The Pekin is large, males weighing from 7 1/2 to 9 pounds and females from 6 to 7 1/2 pounds. It is canary white in color, with an orange-yellow bill, legs and feet. It walks with a semi-upright carriage, which distinguishes it from the Ayresbury, the great English duck, which is whiter in color and carries its body more horizontally.

two trays, shift them from side to side of the egg chamber and turn them end for end alternately, thereby equalizing as much as possible the incubation of each egg.

Leave the eggs out to cool and air at each turning until they are almost dry, and hold about a half a gallon, and poured into them some soda and other chemicals. He then held the tray of water under the tray of gold dust and nuggets, and poured them into the pots. He handled the gold dust as if it was so much corn-

**Temperature, Turning and Cooling.**  
As a result of this and other experimental work with sitting hens and incubators it has been shown that the

**Temperature and Ventilation.**  
In a dry room, thoroughly sprinkle the eggs on the 10th, 14th and 18th days of incubation with warm water (102 degrees), removing the tray, scatter the water over the eggs and tray with a whisk broom. Open the ventilators throughout the hatch. Do not allow a tray of water under the eggs, as it is an ideal medium for the development of mold, the spores of which fungus cause one form of white diarrhea in baby chicks.

The egg chamber must be filled with moist air when the chicks are pipping the shells. The 19th and 20th days of incubation, otherwise the shell membranes (skins inside the shell) become dry and tough and many chicks are drowned. Pure air is also necessary at this critical time. The sitting hen exposes the pipped eggs constantly to the cool outside air, and the desire to assist with her beak the chicks emerging from the shell. The limited ventilation of the egg chamber is inadequate for a number of live chicks.

**Instructions for the Last Days.**  
When the chirp of the first chick is heard, about the 19th day, if the glass of the door of the egg chamber is not dripping with moisture, withdraw the tray partly and sprinkle the eggs with warm water as previously described. Close the door until the early chicks are hatched. Then withdraw the trays and place the dry chicks that have not fallen below into the chick compartment under the tray, roll the eggs around and examine them for moisture. If the eggs are not moist, sprinkle the eggs and newly hatched chicks with warm water. Wet the front of the trays and the inside of the egg chamber also. The whole operation should not require more than 20 minutes.

The withdrawal of trays and sprinkling of the eggs should be repeated as often as necessary to maintain pure, moist air in the egg chamber. When the 20th day is reached, the chicks, "swasting" showing excessive moisture, and the interior temperature rises to the desired degree (102 1/2). Every chick has pure air to breathe, and by following this practice the percentage of embryos which die in the shell will be materially reduced, and the chicks that hatch early will not be weakened and subject to white diarrhea and other diseases.

**Wife Would See Town.**  
**IOWA CITY, Ia., Feb. 17.**—Anna Zastockekey has filed suit for divorce from John, asserting her husband has not taken her to town for more than two and one-half years.

# WASHINGTON SNUBBED WHEN HE ADDRESSED SENATE IN PERSON

Precedent Set by Father of His Country Permitted to Fall Into Disuse for 127 Years Until Revived by Wilson—First Experience Not Encouraging.

**RECORDING CLERK'S BUREAU.**—Washington, Feb. 17. News President Wilson's recent appearance before the United States Senate to discuss international peace broke a practice of more than 127 years' standing. Only once before in American history has an American President in person addressed the Senate, and that when he appeared before the Senate on August 22, 1789, to discuss an Indian treaty, and he became so outraged at what he regarded as the scant courtesy shown him by the Senate, that he refused to repeat the experience. Since that time, Presidents, save Mr. Wilson, have transmitted their messages to Congress in writing.

Washington's Letter Brief.  
There is in the files of the Secretary of the Senate the letter which George Washington sent to the Senate under the date of August 21, 1789, expressing his intention to address them the day following. The letter was dated in New York and was a very long one, and it was a presidential policy metropolis.

Speaking of the President's entrance Senator Maclay says:  
"He rose and told us bluntly that he had come on us for our advice and consent to some proposition respecting a treaty to be negotiated with the Southern Indians. He had had brought General Knox with him, who was well acquainted with the business."  
When President Washington had outlined his views Senator Gunn, of Georgia, moved that action be postponed until Monday. Senator Morris moved that the papers be referred to a committee of five to report "as soon as might be" on them.

"Savannah has stumbled some objections," writes Maclay. "I rose and supported the mode of doing business by committee. I spoke through the whole of a low tone of voice. My own stronger child, better able to fight off cheek dishes. Conkley's Poultry Tonic should be in every poultry house where chicks are hatched. Is sold, \$1.25 per doz. 25c. 50c. At Your Dealer.