

Bulletin No. 328

Series { A, Economic Geology, 106  
B, Descriptive Geology, 130

DEPARTMENT OF THE INTERIOR  
UNITED STATES GEOLOGICAL SURVEY  
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# THE GOLD PLACERS OF PARTS OF SEWARD PENINSULA, ALASKA

INCLUDING THE

NOME, COUNCIL, KOUGAROK, PORT CLARENCE,  
AND GOODHOPE PRECINCTS

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GOVERNMENT PRINTING OFFICE

1908

line of holes, are said to have reached gravels that yielded fair returns.

There is an area of not less than 10 acres on this divide below which the bed rock seems to be approximately level, and through this area there is a bed-rock channel running north and south. The gravels carry gold on bed rock over the whole area, but the richest pay streak is along the incised channel. The unfrozen condition of the deposit is accounted for by the fact that the gravels and sands are porous and well drained throughout.

In working the deposit, shafts were sunk to bed rock at intervals of about 100 feet and were cribbed and timbered sufficiently to make them stand for a few months. From these shafts the gold-bearing gravel was mined out in all directions. Very little timber was used underground and the roof was supported by pillars of pay gravel, which were removed before the workings were abandoned. These claims were worked both in winter and summer, as owing to their unfrozen condition the gravels stood as well in one season as the other. Sluicing was done early in spring with water obtained from melting snow. In the underground workings no cars were used. The buckets were dragged to the foot of the shaft, where they were hoisted to the surface by a windlass. Usually two men worked underground and a third operated the windlass at the surface.

#### GENERAL CONCLUSIONS.

The occurrence of these high-bench gravels is difficult of explanation. The most plausible theory as to their general origin is that they are stream-channel deposits formed during an earlier epoch of erosion. When these channels were formed, the land probably stood considerably lower and their beds were not far above sea level. The overburden was contributed mainly by slides from the hills. After most of the overburden was deposited subsidence occurred and the granite and other foreign boulders were floated over the surface by icebergs or ice floes.

#### CRIPPLE RIVER BASIN.

##### GENERAL DESCRIPTION.

Cripple River, which is about 25 miles long, flows nearly southward into Bering Sea 12 miles west of Nome. (See topographic map, Pl. VIII, in pocket.) It drains an area of about 90 square miles and has an average fall of 20 feet to the mile. Where it traverses the coastal plain, here 3 miles wide, the river takes a meandering course, with banks 30 feet or more high. About 4 miles from the coast the valley becomes very narrow for a mile and the hills rise abruptly on either

side. The source of the stream lies in a broad basin, with gentle slopes and a wide flood plain. The upper end of the valley is separated by a low, flat divide from the flood plain of Stewart River, a tributary of the Sinuk. The upland surrounding the valley is characterized by flat ridges and hilltops having an average elevation of about 800 feet, and the higher hills rise above this level as dome-shaped buttes. In a few places broad gravel-covered gaps interrupt the continuity of the ridges. Though these gravels are attributed to old drainage channels, none of them as yet have been found rich enough in placer gold to justify mining. On some of the valley slopes there are broad gravel-covered benches, in the main less than 400 feet above the sea, some of which contain placers of economic value. Erratic granite boulders strewn over the surface occur up to elevations of 800 feet. These have already been described (p. 95), and are attributed to the action of floating ice during a comparatively recent period of submergence. In several of the tributary stream beds along Cripple River these boulders are so plentiful as to interfere seriously with the working of the placers.

The rocks of the region are mainly interbedded limestones and schists belonging to the Nome group. (See Pl. X, in pocket.) They include some massive crystalline limestones, which are differentiated on the geologic map and are provisionally correlated with the Port Clarence, though none of them have yielded fossils. Along the channel of Cripple River granite boulders from the Kigluak Mountains are mixed with gravels of local origin.

On Cripple River itself almost no successful mining has been done, though colors are found in many places, and some areas which will probably pay if worked by economical methods have been located in the bed and low terraces of the river. A ditch  $4\frac{1}{2}$  miles long was built in 1903 to bring water from Willow Creek for hydraulicking at a point just below the mouth of Elizabeth Creek. The capacity of this ditch is 3,000 miner's inches and the head for hydraulicking 157 feet, but its maintenance has been almost impossible, as in many places it runs over beds of ground ice, which melts away under the water. To avoid the ground ice, a new ditch is proposed to run at a level 100 feet higher. This will necessitate an extension of about 11 miles to the head of Cripple River, where, it is claimed, about 3,000 miner's inches of water can be obtained.

At the mouth of Stella Creek some sluicing, yielding not more than wages, has been done in gravels that contain many granite and gneiss boulders. The deposit lies in an old channel cut in a bed rock of quartz-chlorite schist about 10 feet above and parallel to the present river bed. A small ditch to bring water from the head of Stella Creek has been constructed, but as it was built across ground ice the

bottom soon gave way and no mining was done at this place during the season of 1903.

#### OREGON CREEK.

Oregon Creek, the most important tributary of Cripple River, is between 5 and 6 miles long and drains about 15 square miles of territory. It joins Cripple River 10 miles from the coast. The valley is broad, flat, and gravel floored for the lower 2 miles, above which it gradually narrows to its head.

Gold was discovered on Oregon Creek in the winter of 1898-99, but it was not worked systematically until 1900. In the latter year Collier made a hasty examination of the placers of this region,<sup>a</sup> and in 1903 it was visited by Hess. Eight creek claims and two or three bench claims were in operation on the creek and its tributaries during the season of 1903. The production up to the end of 1903 had probably not exceeded \$100,000. Supplies are hauled from Nome by a wagon road along the beach to Penny River, thence up Penny River to Willow Creek, and across the hills to Oregon Creek.

Along the lower 2 miles of the creek's course bed rock is not exposed. One-half mile below Nugget Creek decomposed chlorite schist is reached at a depth of 2 to 5 feet. From Nugget Creek to Mountain Creek the bed rock is heavy limestone, dipping down-steam and jointed and broken into irregular fragments. Frequently at stages of low water the creek is nearly lost in underground channels through this bed rock. At Mountain Creek there is a narrow belt of chloritic schist, but above that point the creek runs through massive limestone which seems to form an anticline.

The placers of the creek are said to be "spotted" and on some claims small portions pay well, while the remainder will not yield expenses. This is probably due partly to the varying character of the bed rock, rich spots being found on that which affords good natural riffles, and partly to local origin of the gold. All the paying claims of the main creek lie in its middle part in a belt about 2 miles long. In the lower 2 miles the creek is spread over wide gravels and a number of claims that have been worked by primitive methods have failed to pay. Half a mile below the mouth of Nugget Creek there is some ground that has been fairly productive.

The gravel is from 1½ to 6 feet thick and is composed of schist, limestone, and granite pebbles. Most of the pay lies upon a tough yellow clay immediately over the bed rock, but some gold is found in the crevices of the limestone to a considerable depth and is difficult to obtain. The gold is bright, coarse, and slightly worn; the

<sup>a</sup> Brooks, A. H., Richardson, G. B., and Collier, A. J., Reconnaissances in the Cape Nome and Norton Bay regions, Alaska, in 1900, a special publication of the U. S. Geol. Survey, 1901, p. 92.