

GENERAL REPORT OF MINING AND PROSPECTING ACTIVITIES,

GOODNEWS BAY DISTRICT, ALASKA,

1937

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Introduction:

The newly developed platinum industry of Alaska has led the field of mining interest during the season. This has been due to the rapid development, the increased production of platinum, and the general prospecting and staking activities. The industry has attracted world attention, not by the publicity or promotion, but by the amount of platinum that has found its way into the world markets. The total production of crude platinum from Alaska as given by U. S. Bureau of Mines "Minerals Year Book, 1936" for 1935 was 8,685 ounces. For the year 1936 the total was 8,825 ounces, showing an increase of 140 ounces. Of this total it is estimated that nearly 95% came from the Goodnews Bay district. This season the total production is not definitely given, however, an increase of nearly 50 per cent is estimated. Factors that brought this about have been the continued activity through the season of the three draglines. Lower grade ground has been worked by the Goodnews Bay Mining Company this season. However, this is offset by richer ground worked by the Clara Creek Mining Company. Further, the new Yuba 8-cubic foot dredge of the Goodnews Bay Mining Company was constructed and operated a total of 40 days. This dredge operation handling 7,000 cubic yards daily has in itself, according to customs reports of platinum shipments, been an important factor, along with the increase from draglines, in increasing the 1937 production from this district. The 1938 production, with the dredge operating a possible seven or eight months, continued dragline operations, should more than double 1937 production. Thus the total production of platinum from this district since the beginning in 1928 to the end of this season, 1937, and using the average price of platinum of \$50 for the year (1937) for the season's production, shows a total value in excess of one million dollars. The average price of platinum for the first three months of 1938 has been \$36 an ounce. A large amount of the 1937 platinum will not, however, figure in the 1937 price, since it was not shipped until the first part of 1938. Thus it is possible the actual value may fall slightly short of a million dollar production. This lower price is the factor that leaves considerable uncertainty as to the value of the 1938 production.

This season several thousand claims were staked in this district. This was the result of increased interest, a false drill report of a drill hole along the beach north of Red Mountain, new beach discoveries of gold and platinum in the Slug River area, and the renewed interest in the old gold discoveries in the Arolic and upper Goodnews River areas. Several new drills were introduced during the season. A small dredge is to be constructed on Wattamus Creek this following season.

The natural advantages of this district for placer mining, with extensive gravel deposits and favorable gold intrusives, warrants this type of prospecting. These advantages compared to other Alaskan districts are: Thawed ground, ten to twelve months dredge operation, salt water transportation, and transportation overland without the necessity of road building.

The needs for future expansion are: More initial capital for prospecting and development followed by RFC. Government loans, better salt water transportation with development of harbor and docking facilities, more aviation fields, and last, aerial and geological mapping. With the aid of the above, the district should develop more rapidly. Gold placer mining is now in line for extensive development. Most of the activities are Alaskan-owned and operated by honest and capable Alaskans backed by years of experience. In regard to the future, much may be said, however, only with a degree of uncertainty. The known platinum ground is limited and much depends upon the future market price and cost of production. The placer gold activity depends upon the present fixed price of gold and costs. Thus both industries have much the same problems and their future depends largely upon a rate of taxation that is not too excessive as to be harmful, general world economic conditions and the maintenance of world peace.

Publications Pertaining to District:

The following publications describe conditions as to geology, geography, climate, discoveries, and a detailed description of the platinum industry in its infancy:

U. S. G. S. Bull. 714, "Mineral Resources of the Goodnews Bay Region," by George L. Harrington, pp. 207-228.

"Mining Investigations and Mine Inspection in Alaska, 1933," by B. D. Stewart, pp. 103-128.

A detailed geological report is now in preparation by the U. S. G. S. by J. B. Mertie, Jr. on the area, containing and surrounding the platinum area of Red Mountain.

Goodnews Bay Mining Company:

This season the Goodnews Bay Mining Company has been engaged in mining with two draglines on Platinum Creek. The new Yuba 8-cubic foot dredge was landed in August and construction begun. November 11 the dredge was put into operation and operated a period of forty days. A daily capacity of 7,000 yards was maintained.



Looking up Salmon River from the air from the mouth
of Platinum, showing camp of Goodnews Bay
Mining Company and dredge pit.

This company has 60 claims under lease on Salmon River, Medicine, Quartz, Squirrel, Dowery, Clara, Platinum, and Fox Creeks. The camp is located on Squirrel Creek near its junction with Platinum Creek. The dredge pit is located at the mouth of Platinum on Salmon River. This location is two and a half miles south of the camp of the Clara Creek Mining Company. A total of 29 men were employed on the date of visit. The minimum wage paid was \$7 a day and board. Dragline and Caterpillar operators receive a dollar an hour and board. Two ten-hour shifts are worked. Mr. Ed Olson is manager for the company and Mr. W. W. Spencer is engineer. The camp buildings consist of cook house, office building, radio station, and several small bunk houses.



Camp of Goodnews Bay Mining Company,
Squirrel Creek--condemned aviation field in front.

Operation:

Prior to this season this company mined with draglines. Squirrel Creek has been mined to its head where numerous large boulders made this operation impractical. This season the two draglines were working together on upper Platinum Creek. This enables the operators to take a strip from 150 to 175 feet in width.



Two draglines stripping on Platinum Creek,
Goodnews Bay Mining Company.



Type of bucket and hook-up on dragline,
Goodnews Bay Mining Company.

After stripping, during which bedrock is cleaned by bulldozer, testing, etc., the draglines start dumping into elevated boxes, one on each side. Every 20,000 yards the boxes are cleaned, bedrock scraped, and meanwhile stripping is continued by the draglines.



Elevated boxes showing washing nozzle, grizzly
dump, and undercurrents on lower end,
Goodnews Bay Mining Company.

Native crude platinum with all members of the platinum family present in variable amounts and gold are recovered. The black sands are reconcentrated over a small Wilfley concentrating table and from which more platinum is recovered. The remaining black sands are assayed and held for shipment or further treatment.

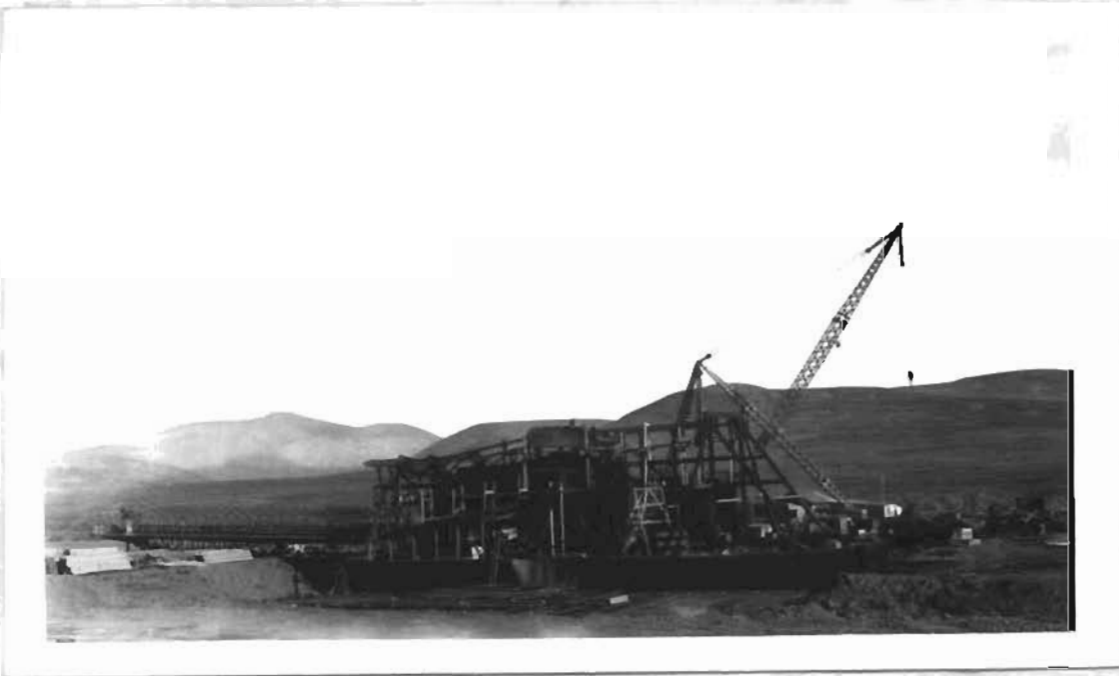
The pay gravels on Platinum Creek average from 4 to 8 feet thick. These are covered with tundra and black clayish muck that averages 3 to 4 feet in thickness. This latter is stripped off to the red gravel below. Two to four feet of bedrock is also taken up, which consists of metamorphosed greenish sediments. The pay gravels are mainly angular rocks of medium size mixed with clay, finer gravel, and unconsolidated material. They show very little wear and consist mainly of the various formations in the district. A few large boulders, well worn, and containing glacial striations were noted. Other glacial evidence appears lacking. The amount of clayish fine material contained makes recovery of the fine rough platinum difficult. These gravels appear more like the residual gravitational type than any other.



Platinum Creek gravels.

A total of 700 holes have been drilled this year on the holdings and the greater portion were on the Salmon River claims from No. 4 below Discovery to No. 10 below. Good platinum values were reported by Mr. Spencer over a good width from claim No. 4 below to No. 9 below.

The RFC loan was given on the results of drilling on claim No. 1 above Discovery, Discovery, Nos. 1, 2, and 3 below Discovery on Salmon River opposite the mouth of Platinum Creek. Bedrock was reported averaging 30 to 35 feet deep. The width of Salmon River valley at the mouth of Platinum Creek is approximately 1,000 feet. The average width of the valley ranges from 750 to 1,000 feet. Just how much of this width was found to contain pay was not divulged. Values also were not given, however, below claim No. 9 below they were reported as very low. In the vicinity of the dredge pond, on claim No. 4 below, Mr. W. Culver reported that while drilling prior to option to Olsen Bros. that some holes ran as high as \$4 a yard.



8-Cubic-foot Yuba dredge under construction,
Goodnews Bay Mining Company.

Production for Season:

Production figures were not given out by the company. The reason for this is the factor of price. Reports of production influence the price. However, Customs reports for 1937 show only a total of 2,377 ounces of platinum, and for January, 1938, a shipment of over 7,000 ounces from Alaska. Thus, the actual production for the year for all of Alaska totals nearly 10,000 ounces. This estimate is believed to be considerably under the total production. The Clara Creek Mining Company is believed, according to reports, to have produced in excess of 3,000 ounces. A somewhat similar amount was no doubt produced by the draglines of the Goodnews

Bay Mining Company. This latter company used two draglines, however, they were reported as working lower grade ground than Clara Creek; and part of the season one dragline was engaged in pit digging and dredge construction. Thus it is assumed that the dredge production is in the vicinity of 4,500 to 5,000 ounces. Thus, for the total yardage of 280,000 yards dug gives an average of .0164 to .0178 ounces of platinum per yard. These figures are only approximate and there is much chance of the ground being of higher tenor.

Representatives of the company have since stated that for the coming year plans are being made to increase the daily capacity of the dredge and to plan for a possible ten to twelve months operation. For detailed report of machinery, dredge, etc. refer to placer card report of the Goodnews Bay Mining Company now on file.

Clara Creek Mining Company:

The Clara Creek Mining Company is the only other platinum mining operation in this district. This operation has been very successful due to richness of the ground and favorable mining conditions. This operation is located nearly 7 miles south and east of Platinum. A Caterpillar road leads to the property around the northeast end of Red Mountain. This road is under construction into a permanent road by the Alaska Road Commission, and it will extend upon completion to the camp of the Goodnews Bay Mining Company. The Clara Creek Mining Company has eight claims under option on Clara Creek; namely, Discovery, No. 1 below, Nos. 1, 2, 3, 4 above, and two bench claims. Clara Creek is a small tributary of Salmon River, and runs in a straight southeast course over its entire length of one and three-quarters miles. It is contained in a wide gentle sloping valley, and is itself a very small stream.



Looking down Clara Creek southeast over its entire length from near top of Red Mountain showing extent of dragline operations.

Operation:

This season makes the third season of dragline operation by this company. A cut that varies in width from 150 to 200 feet has been mined from claims No. 1 below to No. 3 above. Dragline operation started on June 20 this year and will continue until October. This Northwest dragline has a capacity of 65 (rated 115 per hour) one and a quarter yard buckets per hour. This bucket dumps into the washer and the material is washed over the sluice boxes. Twelve feet of undercurrents are used with coco matting. These boxes are elevated and occasionally tailings are bulldozed.



Dragline, elevated boxes, washing plant,
and bulldozer, Clara Creek Mining Co.

Top stripping is done with dragline in the early part of the season and during clean-up periods. Water for the washing plant is pumped from a pond by Diesel power. The present operation is located nearly at the head of Clara Creek. Another season at this rate of operation will exhaust the ground on the creek bed and future operation will depend upon the benches.

The Gravels:

The gravels are covered with one to two feet of tundra muck and fine material. The average depth of gravels is from 8 to 10 feet with the pay material 5 to 6 feet thick. The upper portion is stripped with drag-line. Generally, these gravels are fine and show very little stream wear. The largest percentage of the material is less than one inch in diameter. Most of the boulders are small, rough and angular. The common size is two to three inches in diameter. The material shows some stratification. The boulders consist of mainly existing bedrock and surrounding varieties, with an occasional foreign boulder. Mainly, they consist of greenstone, basalt, hornblendite or pyroxenite, peridotite, quartz, red jasper and felsite. The bedrock consists of greenstone schist, felsite, quartz stringers, veins of jasper and contact intrusive phases. Generally, the creek follows near the contact of the ultra basic intrusives, greenstone sediments and acid intrusives.



Clara Creek pay gravels.

Production:

Last season, 1936, a total of 320,000 bedrock feet were reported cleaned and a total production of \$130,000 made. Considerable of the platinum was sold for \$67 an ounce and the other associated metals varied in price.

The following assay of one shipment of bullion shows an average content of the various platinum metals and gold:

Shipment October 5, 1936 of Clara Creek Mining Company - total ounces bullion 611.845.

Gold	6.179 oz.
Iridium	36.098 "
Platinum	448.421 "
Osmium	4.221 "
Ruthenium	.795 "
Rhodium	2.569 "

Total value of shipment sold at market price of above metals - \$36,638.48. Thus the actual value of ground mined in 1936 was nearly 41 cents a bed-rock foot. This season the production in ounces or dollars is not known. Approximately the same amount of bedrock feet were expected to be mined. Reports that the later ground worked was decidedly richer than formerly were heard. This greater amount of platinum recovered will, however, be offset by a lower price of platinum as compared to last year. Thus it is estimated that the actual value in dollars in total production of this season will be slightly less with platinum valued at its present market price of \$36 per ounce. Shipments were made, however, in July of this season and some may have been sold at a higher market value. Other factors that will enter into this season's production are: A small ball mill has been added to the equipment and the black sands of former seasons are to be reground and concentrated. These will add to this season's production. It is estimated by the management that only 70 per cent of the values are recovered with the present washing plant. The factors which account for the loss are:

1. Stickiness of the gravels, clay, etc.
2. Abundance of black sands.
3. Fineness of platinum.
4. Roughness of platinum.

An occasional small nugget of platinum is found. These are usually covered with a black oxide.

This company operates three eight-hour shifts with a total of 23 men and the average wage is \$8 per day and board. For detailed information as to machinery, recovery, etc. refer to placer operation card report of the Clara Creek Mining Company.



Camp of Clara Creek Mining Company.



Looking up Clara Creek showing dragline cut -
tailings in center.

Beach Drilling Campaign: KX 123-11

Last season (1936) considerable ground was staked on the beach side of Red Mountain. In the fall a hand drill hole was sunk to a depth of 38 feet (Hole No. 9 on accompanying sketch) on a group of 18 claims owned by Haraldsen, Wicklund, Brevick and Burness. From this hole a total of 152 milligrams of platinum was reported recovered. This amount of platinum was actually seen by the owners, cleaned and weighed at the camp of the Goodnews Bay Mining Company. This discovery led to considerable more staking. Further, as a result, the owners purchased a power drill and several other interests obtained drills. This spring an extensive drilling campaign begun. The result of this drilling proved to date that no commercial platinum deposits existed. Results were traces to a few milligrams of both gold and platinum. A hole located (Hole No. 10 on sketch) six feet away from the original hand drilled hole, was drilled to a depth of 76 feet without hitting bedrock, and only traces of platinum were recovered. Thus, it is the opinion of the owners and the general public that this hand drilled hole was salted by one of the owners engaged in the drilling. The following is an account of the drilling as shown in numerical order on accompanying sketch:

Hole No. 1 was drilled by Shonbeck and Beaton on the Gibraltar Association claim. Its total depth was 120 feet. This hole is approximately 100 feet below high tide or driftwood level. No bedrock was encountered and only glacial outwash gravels were reported. Traces of gold and platinum only were reported.

Hole No. 2, located near the mouth of Seattle Creek, was drilled by Haraldsen and Wicklund on a claim staked by themselves. This hole was drilled 76 feet, encountering no bedrock or values.

Holes Nos. 3, 4, 5 and 6 were drilled by Walter Culver for the W. W. Johnson interests on the Hillside group owned by Ed Harwood and associates.

Hole No. 3 was drilled to a depth of 73 feet or 19 feet below driftwood level. No bedrock was encountered and the last few feet were in clay. Small amounts of black sands, gold and possibly a little platinum were recovered.

Hole No. 4 is located 900 feet east of No. 3 and was drilled to a depth of 68 feet or to driftwood level. The last 12 feet encountered clay. A few particles of black sand with traces of gold and platinum were recovered. No bedrock was encountered.

No. 5 hole encountered all gravel to a depth of 106 feet 8 inches. This hole is 28 feet below driftwood level. Black sand with small amounts of gold and platinum were recovered.

No. 6 hole was drilled to driftwood level and has a total length of 105 feet. Again only small amounts of gold and platinum and no bedrock were found.

No. 7 hole was being drilled on the date of visit and the prospects of this hole were encouraging. This hole was being drilled by Martin Roslund on a group of eight claims staked by himself. This hole was down 60 feet. Between depths of 30 to 40 feet, 16 milligrams of platinum and a little gold was obtained from the 4-inch hole. From 40 to 60 feet 72 milligrams of gold was obtained with a little platinum. This is the best returns from any hole drilled in this section, northwest of Red Mountain, thus far this season. Later reports of this hole were not received.

Hole No. 8 was drilled by Ståndberg and Sons, Inc. on the Swede Association. This was the first hole to hit bedrock in this section, and this was at a depth of 110 feet. This bedrock is 60 feet below driftwood level. Only a small amount of black sand was found and no gold or platinum, according to the panner and verified by Wm. Strandberg. A sample of bedrock is on display in the office of this department, and it consists of greenish to black peridotite.

Holes Nos. 9 - 14, inclusive, were drilled by Haraldsen and Wicklund on a group of 18 claims staked and owned by themselves and associates.

Hole No. 9 was the original hole drilled in the fall of 1936 by hand and the one from which the supposed 152 milligrams of platinum were reported. This hole was reported drilled to a depth of 38 feet. Bedrock was supposedly hit at the time, but hole No. 10, six feet away, proved it did not exist at that depth.

Hole No. 10, nearly alongside hole No. 9, was drilled to a depth of 76 feet, which was 4 feet below driftwood level. Only a few specks of platinum and gold were recovered and a few black sands. No bedrock was encountered.

Hole No. 11 was also drilled to 76 feet, the limit of the drill, alongside Last Chance Creek, with negative results.

Holes Nos. 12, 13 and 14 were likewise drilled to 76 feet without obtaining any bedrock or any values. Later a larger drill was obtained and a hole near the vicinity of No. 14 was drilled to bedrock with negative results.

The A. D. McRae interests were drilling on the beach side of Red Mountain within 300 feet of the beach directly east and over the summit from the head of Platinum Creek. Two holes had been drilled on date of visit. No. 1 hole hit bedrock at 75 feet and the No. 2 hole did likewise at $75\frac{1}{2}$ feet. Two feet of clay was reported on top of bedrock. These holes were 200 feet apart and results were mainly traces. Other holes were drilled later with reported nil results. Later this drill was moved to Rouse Creek, where reported platinum discoveries had been made in test pits. The results of this drilling was reported to indicate no commercial values.

Shonbeck and Beaton drilled four holes on lower Salmon River south of the junction of Happy Creek. The results were nil and the bedrock which consisted of serpentine and quartzite was found to be dipping at a low angle inland. The two following sketches show approximate locations and a plot of the holes, showing the dip of bedrock. The following sheet shows the drilling logs of holes Nos. 3 and 4.

The Goodnews Bay Mining Company last year drilled three holes $1\frac{1}{2}$ miles south of Tundra Creek on the northeast side of Red Mountain. Bedrock was reported at 70 feet and results were not commercial.

LOG OF DRILL HOLES
Taken from Drillers' Field Log.

Hole No. 3 - start 7/3/37 - finish 7/8/37.

<u>Pipe</u>		<u>Volume</u>	<u>Number</u>	<u>Color of</u>	<u>Formation</u>
<u>Ft.</u>	<u>In.</u>		<u>Colors</u>	<u>Sludge</u>	
7		0.075	None		Soil and muck
10		0.050	"	Brown	Gr., sand, clay & soil
12 - 22			"	"	" " & st. clay
22 - 26			"	Gray	Gr., sand & clay
26 - 30			"	"	Fine gr., sand & clay
30 - 50			1 gold	"	Gravel, sand & clay
50 - 54			None	"	Gr., sand & st. blue clay
54 - 58			"	"	Gr., sand & st. clay
58 - 60			"	"	Gr., sand & clay.
60 - 62			"	"	Gr., sand, water & sm. clay
62 - 66			"	"	Gr., sand & sm. clay.
66 - 84			"	"	Coarse gr., sand & clay
84 - 96			"	"	Gr., sand & clay
96 - 98			"	"	Rising core. Gr., sand & clay
98 - 100			"	"	99' top of bedrock - hard quartzite, broken
100-104					Hard quartzite bedrock - top bedrock slightly decomposed.

Hole No. 4 - 7/9/37

3		None		Thick muck
6 - 18		"	Brown	Gr., sand & clay, V. L.
18 - 32		"	"	Gr., sand & clay
32 - 48		"	Gray	Gr., sand & clay
48 - 50		"	"	Fine sand, sm. clay & water
50 - 52		"	"	Fine sand, gr. & sm. clay
52 - 56		"	"	Gr., sand & clay
56 - 64		"	"	Hard blue clay, gr., & sand
64 - 68		"	"	Gr., sand & clay
68 - 76		"	"	Rising core - drove to 78' before drilling
76 - 78		"	"	Loose gr., sand & sm. clay
78 - 80		"	"	Gr., sand & clay
80 - 106		"	Brown	St. clay, sand & gr.
106-112		"	"	St. clay, sand & gr.
112-120				Top of bedrock 112' of decomposed soft serpentine, Br.

Slug River Area: K+123-12-

This season the Slug River area held the major interest of this district in regard to new discoveries of reported gold and platinum. Considerable staking was the result, followed by some test pitting and the operation of one drill on Slug River. A small amount of gold, approximately \$1,000, with a small amount of platinum was recovered by hand methods working on the beach deposits.

The Slug River area, also commonly called lower Togiak, comprises a small area approximately 20 miles square. It extends south from Chagvan Bay to Hagemeister Strait, with Cape Pierce the southern extremity. It is bounded on the west by Kuskokwim Bay and southwest by Bristol Bay. On the north it adjoins the southern section of the Salmon River area. The precinct boundary passes east-west nearly through the center of this area, to the north is Bethel precinct and to the south is Bristol Bay precinct.

Topography and Drainage:

This area is drained mainly by Slug River and its tributaries. This river has a length of over 12 miles and its head is made up of several tributaries. The upper portion flows west and thence turns and flows directly south into a long slough north of Cape Pierce. Houston and Wildcat creeks drain a small area in the southern section east of Cape Pierce. Granite and Pilgrim creeks are short creeks that drain into Kuskokwim Bay in the western portion. The northern section east from Chagvan Bay is a wide glacial valley that extends inland for several miles. This valley is very low, contains mainly marsh lands and numerous swampy lakes. Kiniehamute River drains the northern section of the valley and northern portion, while Nickelson Creek and another short creek drain the south portion of the valley. The valley itself is near sea level and is poorly drained. The present drainage is in itself very young, although in appearance, with the flat low topography, it looks old. The present creek and river beds are entrenched mainly in gravels, deposited as outwash plain at the time of glacial recession. They were superimposed upon a comparatively level topography and have been since their beginning heavily loaded and without steep gradient. As a result they have been given to meandering and entrenching in the gravels. Prior to glacial times the area was no doubt a well worn topography. This shows in the numerous low scattered mountains that exist in the area. These mountains range in elevation from 800 to 2,000 feet. Thus the outwash gravels were laid down upon this worn topography, making an effect today that appears as a decidedly worn topography. Bedrock is only occasionally found in the beds of the larger rivers. The accompanying sketch shows the drainage of the area.

Geology:

Other than the isolated mountains, very few rock outcrops were observed. No intrusive rocks were noted, however, some were reported on the peninsula toward Cape Newenham. This westward section was not visited. In the remaining section the mountains consist of greenstones, basaltic lavas, and metamorphosed sediments of fine texture. In the valleys the few scattered outcrops consisted of clay shales and argillites. These latter formations have been subject to intense folding. In places a small amount of mineralization was noted in them. In some of the mountain sections the greenstone formation has been altered by metamorphism, which appears to be of a regional origin, into a serpentine. The oxidization of the small amount of mineralization in these serpentines gives sections a red color somewhat of the appearance of Red Mountain. Some of these sections were mistaken for Red Mountain formation and considerable staking was done in these vicinities. An extensive area of these greenstones is the mountain mass northeast of Cape Pierce. Discoveries of both platinum and gold were reported in several places along the beach south of this mountain mass. These mountains were believed to have been the source of these black sands containing the gold-platinum colors. No ultra-basic intrusion was noted in a trip through this section. Patches of alders were noted growing on these mountain slopes, which if any were of ultra-basic composition, these could not exist. The products of disintegration from ultra-basic rocks do not contain sufficient elements for plant life other than grasses and special kinds of flowers, which survive from other elements transported by dust. The bedrock in the lower section, mainly the entire Slug River basin, consists of the slate-argillitic series. These have variable dip and strike due to both minor and major folding. A bluff approximately a mile in length extends east-west directly north of the long spit that extends southeastward toward Hagemester Island. This bluff is 50 to 100 feet in height, and it is composed of greenstone lavas, slates, and argillites. An occasional stringer of quartz was noted in the folded argillites. On the west end of this bluff two lode claims were staked. The discovery consisted of a small quartz showing. This showing consisted of a small folded quartz lense in altered argillites exposed only a few feet. One pan of the rusty material from the walls contained no gold colors. One claim was named the Carbon claim and was staked by M. Lewis and Geo. Ramonds. This claim is located 3,000 feet east of the sod house, the latter being shown on the sketch. From this bluff west extensive gravel banks occur to Cape Pierce. These banks range from 30 to 50 feet in height. Serpentine rocks were reported as occurring mainly on the peninsula toward Cape Newenham. Inland from Security Cove a band of white talc material exists. This was reported as a form of asbestos. The natives use this material for cement on their kayaks.

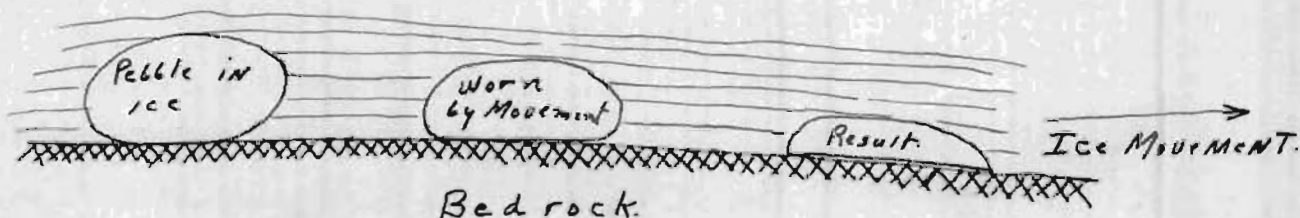


Looking west from Sod House along beach toward
Cape Pierce. Shows extensive gravel banks.

The main feature throughout this area is the extensive gravel deposits. The above photo shows the flat nature of this deposit along the beach line. Approximately 70 per cent of this area is covered with these deposits. These gravels are stratified and show definite proof of being laid down from running water. The area is too extensive to have been the action of large streams. Nevertheless, the medium to small boulders show both stream and ice action. The greater portion of the boulders are foreign in comparison to the kinds of bedrock that occur in the region. The gravels are deepest in the larger valleys and gradually thin out up the slopes. The greater portion of the gravels are fine. The average boulders have a diameter 2 to 3 inches, with a few scattered larger angular boulders. The smaller ones are more rounded and worn than the larger. Small peculiar shaped pebbles, egg-shaped, with flat bases occur.



Pebbles of this shape are formed by ice action as follows:



These, along with striations of the larger boulders, and occasional thin strata of blue clay interbedded in the gravels, gives definite proof that these gravels are outwash plain in origin. This accounts for their extensiveness and water laid characteristics. They are possibly the resultant material which formed into the outwash plain from the huge ice tongue that extended and formed the valley inland from Chagvan Bay. The number of glaciation periods of this district is not known. These gravels may be an accumulation of more than one period. One factor that has contributed considerably to this type of glacial deposit has been the effect of the coast climate. This warmer climate no doubt affected the end portions of the ice, causing it to melt, and releasing its load of material, which was poorly stratified by the run-off water of the milling ice. This has been one of the factors that has caused a minor concentration of gold near the surface. This minor concentration along with the present stream concentration, the later entrenching themselves from a few feet to fifty feet and making a concentration that varies from 1 to 50 feet, explains the one type of placer discovery found in the streams. The other type of discovery, which is somewhat richer and represents more extensive concentration, is the beach black sand deposits. Here again the



Gravel bank west of Sod House cut down by wave action.
Shows the general stratification deposition
of the gravel in this region.

gravels during their deposition represent a certain degree of concentration. This is followed by wave action that cuts down the gravel bank, and washes away the light material leaving the black sands. This also is helped by wind action which helps in carrying away the lighter material. These concentrations occur at tide level and none were seen on bedrock. Thus better prospects of gold are found in the present stream beds and beach lines than below on bedrock where the effects of concentration have not reached.



Gravels showing the wave action and concentration - beach below Sod House on sketch.

Discoveries:

The earliest discoveries were those made along the beach below the Sod House shown on the accompanying sketch. This beach gold was discovered prior to 1914 as reported in U. S. G. S. Bull. 622, "Mineral Resources of Alaska, 1914," p. 358. No details were learned concerning this early discovery which reports one man rocking on the beach. This was rediscovered by a party occupying this old Sod House during bad weather early this season. This reported discovery led others into the vicinity and the discoveries near the mouth of Houston and Wildcat creeks were made. These discoveries led several prospectors inland following the creeks looking for creek deposits. As a result the basin of Slug River was prospected and gold was found on the upper tributaries.

Beach Discoveries, Sod House, etc.:

The black sand discoveries located on the beach below the Sod House, note sketch, are located at the base of a long spit that extends southeastward. Here the black sands are readily visible to the eye at the very grass roots of the vegetation. Very thin layers of this sand occur bedded in with the fine wash gravels. By skimming the black sands off the top, ten cent pans may be obtained. A pit down $3\frac{1}{2}$ feet showed three thin layers of this sand in the first two feet and nothing in the remainder. The extent of these sands were noted over a distance of 450 feet and over a width of 20 to 30 feet. The best portion of the black sands was in the first inch of sand on top. No bedrock was noted for some distance from this location. Later reports were to the effect that another such area was discovered further out on the spit.

The discoveries located near the mouths of Houston and Wildcat creeks were not visited, but were reported by several prospectors to be of the same type. The black sands were more extensive and some colors believed to be platinum were obtained. The latter part of the season Charles Bertel and Waino Kaskinem worked these beach discoveries and obtained \$1,000 in gold and a little definitely known platinum, according to reports.

Creek Discoveries:

The first inland discoveries of gold were made in May on Dome Creek. An airplane landing field was made on top of Dome Mountain. Dome Creek has a length of two miles and is a very small creek heading on the south side of Dome Mountain. Gold was found in the creek bed a short distance above its junction with Case Creek. A shaft was sunk to a depth of 21 feet alongside the creek 300 feet above its junction with the north fork of Slug River. Two pans taken from the center of this dump showed only a few ~~black~~ grains of black sand. A pan taken from the creek bottom gave six coarse gold colors and several fine ones with black sand. No bedrock was reached in the pit.

The next discovery was on Clara Bow Creek, the next creek below on the north fork. Here again good prospects were found in the creek bed, but only traces from the pit which was sunk 19 feet. The writer found bedrock in two places below these discoveries on the north fork. Pans off bedrock of folded shale gave only an occasional color.

On Jean Creek O. B. Van Sickle and Arthur Deleray found prospects on July 2 of this year in the creek bed near its head. This creek has a length of 6 miles and flows through gravels over its entire length. It occupies a small valley parallel to the north fork of Slug River and a stream gradient from 80 to 50. No bedrock was seen over its entire length. Two test pits were being put down on date of visit. Prospects to the extent of a few colors were found to a depth of 5 feet after which only traces. Pans taken on lower Jean Creek showed an occasional color. Prospects were reported on Margerite Creek. Investigation found no pits and no favorable prospects were found from pannings. Margerite Creek flows south and joins Jean Creek a few hundred feet above the latter's junction with Slug River.

At the head of Harpoon Creek, the next tributary of Slug River below Jean Creek, numerous quartz boulders were reported. Investigation of these showed them to be barite boulders. These boulders are scattered and mainly on top of the ground over an area 600 feet square. The boulders are comparatively large in size, some 18" thick and two feet long. Some are rounded and others rather irregular. The bedrock in this vicinity consists of greenstone schists and shaly slate outcrops. These boulders appear to be residual products of a younger formation that have worn away by erosion.

As a result of the few discoveries on these tributaries considerable staking was done. The discoveries inland from Security Cove were not visited. These were reported as located in the bed of the small creek, the latter flowing across extensive gravel deposits between the mountains. Later reports were to the effect that a drill was taken to lower Slug River and no bedrock was reached nor were encouraging results obtained.

Conclusions Regarding Slug River Area:



A group of Slug River prospectors.

A summary of existing conditions point unfavorably to this area as a placer region. The extensive outwash plain gravels are in themselves not favorable for extensive concentration of gold. The gold discoveries thus far found have been concentrated from these gravels, and this latter concentration has not been of great enough duration for profitable placers. The beach placers are definitely the result of wave and wind concentration from these gravels. These deposits are not extensive nor are they on bedrock. However, small amounts of gold may possibly be mined at a narrow profit. The chance for buried placers on bedrock are rare due to unfavorable geology. As both highly acid rocks and ultra-basic rocks were found lacking over the area covered. Values appear to be greater on the surface than below. There is a possible chance of mining these surface values by skimming off the tops of the river beds, however, this appears very doubtful. Reports to the effect that further drilling is to be done this coming season were received.

K-1101-6
Upper Goodnews River:

The most important development in this district other than the platinum operations has been the operations on Wattamus Creek. This has consisted of extensive drilling and test pitting. Next season a small dredge is to be constructed on this creek as favorable returns were obtained. A detailed report of the early discovery of gold on Wattamus followed by a description of the creek is given in Bull. 714, "Mineral Resources of Alaska, 1919," by A. H. Brooks, et al., pp. 222-226. Gold was discovered on this creek during the summer of 1917 by a native reindeer herder by the name of Wattamus. Hand mining followed and a total production of \$250,000 is reported. The creek bed was rapidly worked over and due to lack of water and equipment the benches and lower deeper ground was not worked. Last year this property, which is held by Joe Jean and associates, was leased to the Walter Johnson interests. Mr. A. Deleray, in charge for the above, began drilling on lower Discovery last year, 1936. This creek was drilled by the New York Alaska Gold Dredging Corp. in 1934 from Discovery claim to Slate Creek and for some distance up Slate. Good values were reported on Wattamus, but nothing was found on Slate above Wattamus and very low values below the mouth of Wattamus. Thus the pay gravels were not considered of sufficient volume to warrant a dredge.

Several benches were drilled by Deleray above Discovery claim and values in excess of a dollar a yard were reported in spots. These benches cannot be dredged and may possibly be worked by dragline after the lower portion of the creek is dredged. Below Discovery claim the drilling has been very systematic with drill lines across the valley at 600 foot intervals and drill holes on the line at 50-foot intervals. This is followed by a pit down on each line to check drill values.

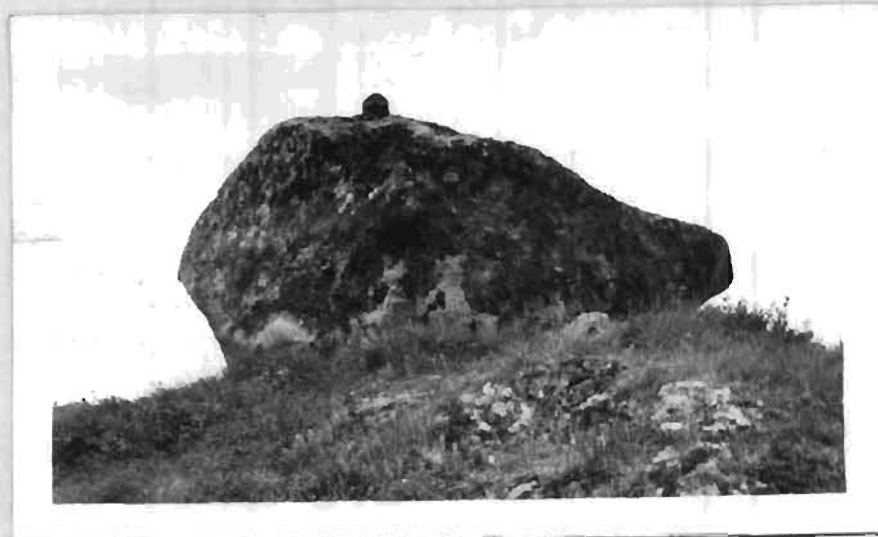
K-1101-6
Wattamus Creek:

Eleven claims consisting of Discovery, Nos. 1 & 2 above, No. 1, Dixie Fraction and Nos. 2-4 below, with three Betty bench claims, were the original number in the lease. Several more claims have been staked since. Discovery claim is located at the mouth of Cascade, a tributary that joins Wattamus about midway of its length. Wattamus is a small tributary of Slate Creek, and heads in the range of low mountains that forms the divide between Goodnews River and the Arolic drainage. It has a length of 4 miles and flows southeast, joining Slate Creek 2 miles above the latter's junction with the Goodnews River. The valley above Discovery claim is narrow, ranging from 300 to 400 feet in width and less than 200 feet wide above No. 3 claim above. Here the banks are high and the creek has a steep grade. Below Discovery claim the valley floor widens fast, ranging from 1,000 to 2,000 feet at its mouth. The banks are less steep,



Wattamus Creek, looking down from Claim No. 3
Above Discovery--Goodnews River in distance.

however, the creek shows a very decided entrenchment. The creek cuts the various strata of slate argillites, sandstones and basalt nearly at right angles. These types of bedrock with a developed schistosity have been one of the important factors that has caught and held the gold during a period of glaciation. These formations strike N. 45° E. Definite evidence that this creek was overridden with ice is shown by the scattered striated boulders found in the creek and along the banks. The ice sheet or glacier no doubt overrode this creek, and the movement must have been at right angles to the latter's course. Water from the melting ice flowing in this entrenchment appears to have been a contributing agency in the concentration.



A granite boulder resting on basalt - top of bank,
right limit of Wattamus Creek, Claim No. 3
Above - placed in present position by ice.

KX 101-17
Cascade Creek:

Cascade Creek, which joins Wattamus Creek on Discovery claim, contains a volume of water nearly equal to Wattamus. It is in comparison very similar to Wattamus. Four claims have been staked above its mouth. A line of drill holes across its mouth gave very poor results, according to Mr. Deleray. The gravels are shallow and in appearance much the same as those of Wattamus Creek.

The Gravels:

Generally, the gravels may be classed as medium in size, poorly sorted on the benches, and containing thin strata of fine material, showing periods of slow current and accumulations. The gravels on lower Wattamus are much smaller and they gradually increase in size toward the source. Most of the larger boulders are above Discovery claim. The small sized boulders consist of sandstone, slate, argillite and occasional granite boulders. The largest percentage are angular, however, the larger ones of granite are well rounded. The gravels below discovery average 10 to 12 feet in depth. Above discovery 5 to 6 feet is the average depth.



Gravels alongside creek bed, Discovery claim,
Wattamus Creek.

Values:

Recent reported values from the old cuts along the bank range from one to over two dollars a yard. This ground is limited to narrow strips left along the banks. The bench values were reported lower, however, values over one dollar a yard were reported. The ground below Discovery to the junction with Slate was reported averaging 75 cents a yard.

The nature of the gold is medium to fine. Nuggets are rather rare. The gold has a very bright appearance and is rather rough. It is associated with considerable black sand which may hinder recovery.

Slate Creek: K-101-8

The W. W. Johnson interests have a total of 33 claims staked on Slate Creek. Discovery claim is located at the mouth of Wattamus. Eighteen claims extend below discovery and fourteen above. Slate Creek has a length of 8 miles and flows southwestward, emptying into the Goodnews River two miles below the mouth of Wattamus. The best prospects found on this creek were at the mouth of Evon Pup. Here a native by the name of Evon was shoveling in to boxes from a very small pup that joins Slate Creek 3 miles above the mouth of Wattamus. Here in a cut into the bank a few ounces of rough gold was recovered. This gold contains considerable wire gold and small nuggets with attached pieces of molybdenite. Also pieces with attached quartz were common. Considerable drilling is to be done on this creek this season. In 1934 some drilling was done by the New York Alaska on Slate Creek above the mouth of Wattamus. This gave very poor returns and was discontinued.

Fox Creek: K-101-19

Fox Creek joins Slate Creek 5 miles above the mouth of Wattamus. This creek has a length of nearly 5 miles and flows in a south to southeasterly direction. Two miles up Fox Creek from its junction with Slate on the left limit, coarse placer gold was found in 1935 by Messrs. Culver and Saylor on a small bench a few feet above the present creek bed. Shonbeck and Beaton of Anchorage leased the property and drilled with an airplane drill. Poor results were obtained other than near discovery, and bedrock was not reached in the creek bed. This season the claim group was leased to the W. W. Johnson interests, who constructed a 2,400-foot ditch and started mining this bench with a small hydraulic outfit. The pay was found to be confined to an area 100 by 200 feet and the gravels ranged from 5 to 7 feet deep. Only a few ounces were recovered this season up until date of visit. The bedrock

noted was folded argillites. Eight men were employed this season. Further drilling is to be done on this creek.

The gold is comparatively fine with an occasional nugget. It is very smooth and bright and mainly on bedrock. The fineness runs \$31 per ounce.

Arolic River Area:

The Arolic River area was not visited. According to reports several men were engaged prospecting and testing ground, but no actual mining was in progress. Last year considerable staking was done. This consisted mainly of a restaking of the ground surrounding the old placer workings described in U. S. G. S. Bull. 714, p. 227.

The Goodnews Bay Mining Company has 41 claims under lease on the Arolic River between Keno and Boulder creeks. This area is to be drilled and may develop into a large dredging undertaking, providing sufficient values are found. Strandberg & Sons have leased 51 claims on Snow Gulch, lower Faro, Keno and Fox creeks. Considerable drilling was reported done this season on Snow Gulch by Strandberg & Sons, who took a drill overland from the north side of Goodnews Bay. Later reports were to the effect that this drilling was unfavorable. Clendon Company has 45 claims on Trail, Faro, Deer and Kow Kow creeks. This company has been engaged in testing this ground with an airplane drill. Later reports were to the effect that a dragline is to be operated on Kow Kow Creek next season. Messrs. Huff & Kendrick have 34 claims on the east and south forks of the Arolic River, and Huff has 5 claims on Butte Creek. They are engaged in prospecting. Mr. Petellon (Missionary at Bethel) has 21 claims on the Arolic River, Minnesota and Faro Creeks. R. Peterson has 5 claims on Canyon Creek, a tributary of Faro Creek.

Towns:

The new town of Platinum is located on the east side of the south spit, the latter located between Goodnews Bay and Kuskokwim Bay. The location is at the mouth of Smalls River where it empties into Goodnews Bay. A small sand dune has built up at this point giving the town a few more feet of elevation than the remainder of the spit, which is only a few feet above high tide level. The current of Smalls River keeps a shallow channel open out into Goodnews Bay, making possible the landing of scows along the bank with the aid of tides. The summer population consisted of 70 whites and 50 Eskimo natives. The level gravel floor of the spit affords a good landing field for airplane with wheels and Goodnews Bay affords a good landing for pontoon ships except during storms. Three trading posts; namely, Alaska Traders, Felder & Gale and Hansen & Strandberg, carry complete stocks of food, hardware and clothing. The Standard Oil Company has a warehouse and furnishes nearly all oils. One boarding house has accommodations for 50 persons. A laundry, cafe, several privately owned cabins, and native shacks and tents comprise the total buildings.



Town of Platinum.

The town of Goodnews, also called Mumtrak, is located on the east end of Goodnews Bay at the mouth of the Goodnews River. The population of this town is made up of natives with one trading post owned by Felder and Gale and operated by Joe Jean. Here again landings have to be made from scows and small boats.



Goodnews, east end of Goodnews Bay.

Transportation Rates:

The airline route from Anchorage to Platinum via Bristol Bay is 434 miles, and via Kuskokwim the route is over 500 miles. The passenger fare from Anchorage to Platinum is \$96 one way, with 30 pounds of baggage. Excess baggage and material freighted by air over this distance costs 48 cents per pound. The regular freight rate via boat from Seattle to Platinum is \$22.50 per ton and \$8 lighterage. Felder and Gale, Inc. announced special rates of \$16.50 per ton from Seattle. In comparison to other placer areas of Alaska these freight rates are decidedly low. Thus this low rate of transportation is an important factor in the development of this area.



The modern prospector, Goodnews Bay District.