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82K/14

OLD GOLD - only small part ours.

SURPRISE - not ours.

These reports help in understanding
the mineralization on our claims.

OPHIR LADE - REDELEPHANT - NOT OURS.

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Old Gold - of interest to us because -

- Production records are obviously not complete.
- Our Silver Leaf #1 covers 2 of the first 4 claims of this group to be crown granted - namely the Silver King and Silver King Fraction, which are the southeast extension which is pretty well slide swept thus destroying many of the old workings that may have produced.
- The main showings on the Old Gold were discovered when the ice receded on the glacier above it according to an old timer who packed ore from there.
- The Black Warrior #1 covers the northwest extension and most of the remains of the glacier which has shrunk considerably in area since the old days - as proven by the field notes of the old claim surveys between the Old Gold and the Black Warrior.
- The Black Warrior and Eva May crown grants are obviously in the same horizon as the Old Gold so there is considerable virgin ground between them where the ice has receded.
- The unnamed creek, flowing N.E. to the Westfall River from the glacier just above the Old Gold, is an obvious fault and therefore

an excellent place to expect an orebody
in this type of formation according to
Walker, Bancroft and Gunning in Memoir 161.

The Surprise - is of interest to
us because the showings on the Glenside
are an obvious extension of the Surprise
and we would therefore expect the same
type of mineralization.

1897-page 1071 - Silver King & Silver Queen Groups

Situated on the West Fork of the Duncan River, comprise in all 12 claims, and are the property of the Old Gold Placer and Quartz Mining Company, of Rossland. The ledge has been pretty thoroughly prospected on the surface, by stripping and small crosscuts at different points. A shaft is sunk on the Silver Queen to a depth of 50 feet, and the lead is found to be about 7 feet wide with 18 inches of ore; the balance of the lead is mostly gray quartz with a little galena. A trial shipment of a few tons has just been forwarded for treatment. A cross-cut on the Silver Queen, the adjoining claim, is now in 150 feet.

1899 - page 684 - The Silver Queen and Silver King mineral claims, on the West Fork of Duncan River, are the property of the Old Gold Quartz and Placer Mining Company, Ltd. of Rossland. The development work for the past year consists of surface prospecting and the driving of two tunnels, aggregating in underground work about 400 feet. No. 1 tunnel, now in nearly 200 feet, is meant to tap the ledge at a depth of about 300 feet. No. 2 tunnel is in over 100 feet, and is being driven alongside the lead, the ledge being cross-cut at intervals of 50 feet. No. 1 crosscut from this tunnel has cut through about 3 feet of concentrating ore and about 8 inches of grey copper on the footwall. Two small test shipments have been made, one to the Tacoma Smelter and the other to the C.P.R. Smelter at Trail. The former gave returns of \$128., the latter \$132.20 (in all values), per ton. Suitable buildings for the accommodation of the 8 men employed have been erected. Three miles of pack trail have also been built, connecting with the main trunk trail,

1901 - page 1031 - On the west Fork of the Duncan River more prospecting has been done than in any other part of the Ainsworth Division. The Old Gold and Primrose Groups have been crown granted.

1901 - page 1227 - L.4694 Silver Queen, L.4695 Silver King, L.4696 Silver King Fraction, L.4706 V.M.W. Crown granted to the Old Gold Quartz and Placer Mining Co. Ltd.

1904- page 198 - On the West Fork of the Duncan River, the Old Gold Company did a considerable amount of development work and employed a small force of men during the summer months. They claim to have 50,000 tons of ore in sight and blocked out, and ready for shipment as soon as transportation facilities can be provided. The work is now closed down, and I have been unable to obtain accurate data of the operations of the company.

1905- page 290 - Report of the Zinc Commission - On the Old Gold situated on the west fork of the Duncan River and on which considerable development work has been done, a large percentage of zinc is said to occur.

1907 - page 96 - Considerable development was done on the Wagner group, the Old Gold and the Guinea Gold properties. The figures for the work have not been supplied and because of lack of transportation facilities no ore was shipped.

1907 - page 214 - J.M. Miller shipped some silver, lead ore from the Old Gold.

1908- page 94 - Some development was done on the Wagner and on the Old Gold and Guinea Gold properties but data has not been supplied. Ore taken out has been stored on the dump until an economical method of transportation can be obtained.

1916- page 201 -Strictly speaking, the greater portion of this property lies over on the Duncan River slope and therefore in the Ainsworth Mining Division but it has always been operated from the Trout Lake side, there being no transportation up the Duncan River valley. A new trail was constructed from the summit (above Circle City) on, keeping on the level fairly well to avoid packing ore up hill from the other side. The property was operated under the personal supervision of Judge Miller, of Bellingham, one of the owners; some 30 tons of the usual high grade steel galena was packed down to Ferguson and shipped, and, as it was impossible to continue work over the divide during the winter, the property was closed down till next spring. The outlook for the future is bright, but the best results from the mine will be available only when transportation is supplied up the Duncan valley.

1917 - facing page 166 - view looking down Marsh Adams Creek.

1917 - facing page 168 - picture of Old Gold Mine, Pack-train.

1917 - page 164 - This property is owned by Conaway and Birch and is being managed by J.M. Miller. For a number of years work has been done on these claims and ore extracted from time to time. The workings are on the Duncan River side of the divide, which separates the Trout Lake from the Ainsworth Mining Division. The natural outlet is by way of the Duncan River valley, but at present the only trail open to this part of the district is from Circle City townsite, over the divide at an altitude of 7200 feet and down the other side for about one mile to the camp, the elevation of which is 5700 feet. The total distance over which the ore has to be packed is 13 miles to Ferguson; thence by wagon to Trout Lake, a distance of 4 miles. Hence in order to ship at a profit, the ore has to be high grade, as the freight charges alone amount to about \$25. per ton. The country surrounding the mine is of an extremely rugged nature, the mountain sides being precipitous and devoid of timber. The present development work principally consists of two cross-cuts to tap the ore body and about 139 feet of drifting along the vein, the total amount of tunnelling being about 300 feet. In the upper workings approximately 3 feet of ore is exposed along the drift for a distance of 40 feet, and at the bottom of the 10 foot winze 3 to 4 feet of ore is exposed. Not much drifting has been done in the lower tunnel, but there is a nice showing of ore about 9 inches wide at the end of the cross-cut and approximately under the ore exposed in the winze in the upper level. The ore is a massive galena carrying high silver values, fairly free from gangue matter, and judging by its appearance it is low in zinc and iron. The formation consists of slates and graphitic schists, with intermittent narrow bands of limestone.

The strata have a dip of 50 degrees and a strike of N. 57 degrees W. The ore apparently occurs along the contact of the schists and limestone, and it would appear to replace the limestone. Eight to ten men were steadily employed during the season. Some 28 tons of ore was packed out last fall.

1919 - page 143 - This property is situated about 13 miles from Ferguson and a short distance over the summit, which forms the dividing line between Trout Lake and Ainsworth Divisions. A small crew of men was working this year, but so far no record of any shipment has come to hand. There is high grade silver-lead, and in spite of extremely adverse conditions a considerable tonnage has been packed out from this property.

1920 - page 121 - Situated at the head of a tributary of the West fork of the Duncan River. This property has been worked in a small way for many years, and some high grade silver-lead ore has been packed over the divide

to Ferguson, a distance of 13 miles, During the present season a few men were employed.

B.C. Minister of Mines Production Tables

Old Gold - 1907-1916 - 28 tons - 2535 ozs. silver, 10,245 lbs. lead

Silver Queen- 1917-26 tons- 1 oz.gold, 1870 ozs. silver, 30,439 lbs. lead

1914 - page 514 -

L.11334 Consolidated and L.11335 Black Warrior (no connection to other Black Warrior) crown granted to P. M. Stearns, D. Bowman and Jas. M. Miller.

SURPRISE GROUP

1899 - page 683:- On the Surprise Group of mineral claims, on the Horne lead, the ledge has been cross-cut at a depth of some 50 feet, cutting a 10 inch vein of solid galena and about 3 feet of concentrating ore. The walls are very regular at this depth, and are of lime and alate. The ledge has been stripped on the surface at several points, and has a very heavy iron capping, which carries small gold values.

1904 - page 117:- On the Surprise, situated on the North Fork of Lardeau Creek, considerable work of a prospecting nature has been done during the year. At present four men are employed.

1905-page 154:- A large amount of surface work was done during the year on the Surprise, situated on the north fork of Lardeau Creek, exposing large bodies of medium grade ore.

1911- page 290:- Adelina Fractional L.8662, Surprise L.8661, Welsh L.8663 were crown granted to Wm. A. Foote and David Morgan.

1914 -page 311:- About two miles up Surprise Creek is the Surprise group of claims, where there is a vein occupying a fissure in the Chlorite-schist, having an east-west strike with a northerly dip of 80 degrees. The schists themselves at this place have a strike of N.60 degrees W. with a N.E. dip of 75 degrees, and are cut by a series of joint planes having a N.30 degrees E. strike and S.E. dip of 80 degrees. The vein filling consists of iron pyrites and galena in a calcareous gangue containing inclusions of the chlorite-schist, together with calcite.

The vein has been prospected by a number of surface cuts and two shallow shafts along its course for a distance of 500 feet, and in the south bank of the creek it has been crosscut for 12 feet, showing it to be well defined, with slickensided walls. An average sample taken across this 12 feet assayed: Gold, a trace; Silver 2.8 oz.; lead 9.6%.

1924-page 210:- This group comprising three claims - Adelina, Surprise, and Welsh, is owned by D. Morgan, of Ferguson. The property is located on Surprise Creek at a distance of about 7 miles from Ferguson. The elevation of the workings is 4,650 feet above sea-level, or about 600 feet above Ferguson creek. A considerable amount of shallow prospecting-work had been done by the owner before the war; since then the property has lain idle and the trail became obliterated, making access somewhat difficult. The work done has only been sufficient to demonstrate that there are possibilities for the development of a large tonnage of low-grade silver-lead ore, but further exploratory work is necessary to enable a definite conclusion to be drawn.

The vein, lying ^{between} steeply tilted greenish schists on the foot-wall and a band of limestone on the hanging-wall, conforms to the strike and dip of the formation, which are respectively N.68 degrees W. and 80 degrees north-east. It is remarkably persistent in strike and can be traced for 1000 feet or more along the creek bottom. The mineral-bearing solutions following the line of fissuring have replaced the limestone to form a low-grade mixture of lead and iron sulphides across an average width of 8 to 10 feet, which might be expected to vary considerably under conditions of folding and cross-fracturing, while it is possible that further work will disclose places in the vein where there has been a greater concentration of values than so far exposed. As the vein was partly under the creek, it was not possible to sample across its entire width, but a sample across 5 feet gave the following values: Gold, trace; silver, 0.8 oz.; lead, 11.4 percent.; zinc, nil. Lower down the creek, where a tunnel has been driven across the vein, the mineralization is confined to a narrow band; a sample taken here across 21 inches assayed: Gold, trace; silver 2.1 oz. to the ton; lead, 16.3 percent; zinc, nil. Other samples indicate similar values.

There is ample water and timber available for mining purposes, and should ore be developed in quantity the transportation problems could no doubt be satisfactorily solved. After the writer's visit Government assistance was given towards reopening the trail, and since then it is reported that R.H. Stewart has taken an option on the property with the intention of doing some exploratory work next spring.

1925 - page 264:- This property described in the Annual Report for 1924, is situated on Surprise creek, 7 miles from Ferguson. Dave Morgan is the owner. During the fall the possibilities of the Surprise as a big low grade silver-lead proposition were being investigated. Trenching was done along the outcrop of the vein, followed by extensive sampling, the work being done under the supervision of Harold Lakes, representing the Victoria Syndicate.

Memoir 161 - page 97:- The Surprise Group of claims owned by Dave Morgan of Ferguson, is situated on Surprise creek, about $1\frac{1}{2}$ miles up from its junction with Ferguson creek near Circle City. A good trail leads to Ferguson, about $7\frac{1}{2}$ miles away.

A good cabin has been built beside the workings and Surprise creek affords an abundance of water. Good timber is plentiful. On the property a band of white to grey crystalline limestone, finely bedded, about 60 feet wide, lies between dark green chlorite schists. The strike is north 50 degrees west and the dip vertical. The limestone is exposed at intervals along the banks of Surprise creek for over 400 feet and has been found by cuts and shafts for an additional 1100 feet to the northwest.

The workings to the northwest have fallen into disrepair, but the material piled on the dumps indicates that the limestone was encountered and that it is mineralized with ankerite, magnetite, pyrite, galena, and some sphalerite. Quartz forms a small part of the gangue. The workings along the creek are in better condition. Numerous cuts and a shallow shaft were visited. These show the limestones to be replaced, always within 10 feet of its southwestern contact, by up to 5 feet of ankerite, quartz, magnetite, pyrite, galena, and sphalerite. Chalcopyrite was found in small quantity and much greenish white mica has been developed in the limestone. The mica has a β index of 1.610, an optic angle of about 30 degrees, and is evidently a variety of phlogopite. In a 12-foot shaft on the south side of the creek, is 4 feet of ankerite and calcite with bunches of galena, sphalerite, and chalcopyrite. Ten inches of unreplaced limestone lies between the ore and the green chlorite schists to the southwest. East of the shaft 150 feet, on the north side of the creek, $2\frac{1}{2}$ feet of heavy sulphides with considerable chalcopyrite have replaced the limestone 5 feet away from its southwestern contact. East of this, on the south side of the stream, the mineralization varies up to 8 feet in width. Here, between the chlorite schist and the ores, is an inch of fine-grained, dark green chlorite (β index about 1.655) and 6 inches of iron-bearing carbonate with disseminated pyrite,

The sulphides are not continuous along the strike, but occur as irregular bunches and bands with the ferruginous carbonates which may be present alone. Emmens (Ann. Rept., Minister of Mines, B.C., 1914) quotes an assay of ore on the south side of the creek; Au, trace; Ag 2.8 ozs.; Pb 9.6 percent. It indicates that the deposit carries only low values in silver, perhaps $\frac{1}{2}$ ounce per unit of lead. The limestone is cut by joints at right angles to its strike which have apparently had practically no effect on the mineralization. A zone about 10 feet wide on the southwest side of the limestone bed is evidently the most favourable one for ore deposition. Some chlorite schists would make decorative roofing slates of light green tint.

The Ophir Lade is not ours but the same horizon crosses our ground (Black Warrior and Silver Leaf) so similar occurrences could be there.

Ophir Lade Group (Memoir 161 - P. 49, 50)

Four claims, the Goldenville, Ophir, Olive Mabel, and Foundation form the group. They lie on the south side of the headwaters of Porcupine creek and range in elevation from below 7,500 to 8,000 feet. A fair trail of steep gradient leads to the property from Gainer creek. Work in the past was spasmodic, but in the summer of 1925, Goldenville Mines, Limited, of Vancouver, B.C., did some development, built a trail from Gainer creek up Bunker Hill creek to the property, and installed a small, portable stamp mill and oil engine. A small but serviceable cabin was erected. In 1926 the property was not worked.

The Ophir Lade is a gold prospect. The claims are located along the strike of a 1,200-foot wide band of green, chlorite schists with some intercalated argillaceous beds, striking north 50 degrees west and dipping steeply southwest. To the northeast is a thick band of grey crystalline limestone. The schists are crossed by numerous, irregular fissures, most of which trend northeast. Many of them have been filled with quartz and ankerite accompanied by more or less pyrite. Numerous, irregular quartz stringers extend from the main fissures and a network of small and large quartz veins has thus been produced. On some of the larger veins, most of which are short, open-cuts, shafts, and an adit have been made. The highest working, at an elevation of 8,000 feet, is an old shaft, sunk on a network of quartz stringers that follow a rather irregular fissure. The shaft was filled with snow at the time it was visited, but ore piled on the dump consisted of quartz, ankerite, pyrite, bismuthinite, free gold, and altered country rock; the latter is a talcose, micaceous schist. Oxidation and leaching of the pyrite have been extreme. Bismuthinite, except for a little pyrite, is the only fresh metallic mineral to be seen. The bismuthinite is associated with some tiny quartz veinlets which in some instances have replaced the carbonates, suggesting that the bismuthinite belongs to a late stage of the mineralization. There is a little green copper stain on some of the ore. Free gold may be seen as specks on some of the oxidized surfaces and particularly near the bismuthinite.

On polished surfaces the gold is seen to be near and in the bismuthinite where the latter is replaced or cut by some earthy gangue mineral of superficial origin (Plate VIII A). The gold appears to have been concentrated by solution and redeposited near the surface. This supposition is supported by the fact that the ferruginous carbonates contain an appreciable quantity of manganese which would favour the solution of the gold. The bismuthinite might well have acted as the reducing agent causing precipitation. If this reasoning be correct it is readily seen why the bismuthinite may be taken as a guide to rich ore. In the primary ore, pyrite probably contains most of the gold. Solid pyrite, collected by and assayed for Newton W. Emmens, who kindly gave his results to the writer, yielded 1.10 ounces of gold per ton. A. G. Langley¹ states that picked samples assayed up to 9.8 ounces in gold and Emmens obtained 9.6 ounces from concentrates, largely pyrite, that had been made by the stamp mill and table. Other samples of mixtures of quartz, ankerite, and pyrite assayed from a fraction of an ounce to 2 or 3 ounces per ton, but similar materials, particularly from the adit, yielded little or no gold.

The ore occurs in irregular, discontinuous quartz fissure veins in schist. The values, although high in some places, are on the whole rather spotty. Enrichment by surface solution has played a part in producing the rich pockets, but it may be that the gold was concentrated in some degree by primary solutions at the time of deposition of the bismuthinite.

Not curs but same horizon may cross N.E. corner of Silver Leaf and Black Warrior

Red Elephant (See Figure 1) (Memoir 161 - P. 48, 49)

This property is at an elevation of 4,800 feet on the north side of Hall creek, above Porcupine flats, and is owned by Hugh McKay and W. J. Power. A small but good cabin stands on the flats beside Hall creek, 800 feet below the workings.

The property lies a short distance east of the so-called Lime dyke. The underlying rocks are a series of dull grey, argillaceous and black carbonaceous schists with interbedded limestones. The sediments are greatly contorted and are sheared in places, but on the average strike about north 20 degrees west and dip steeply west.

The only adit is over 200 feet long and follows an exceedingly tortuous course. It cuts grey and black schists which in many places are heavily pyritized, and a few bands of limestone. Oxidation has been rather complete, so that the walls consist largely of porous material composed of a siliceous skeleton with abundant limonite. The main zone of minerali-

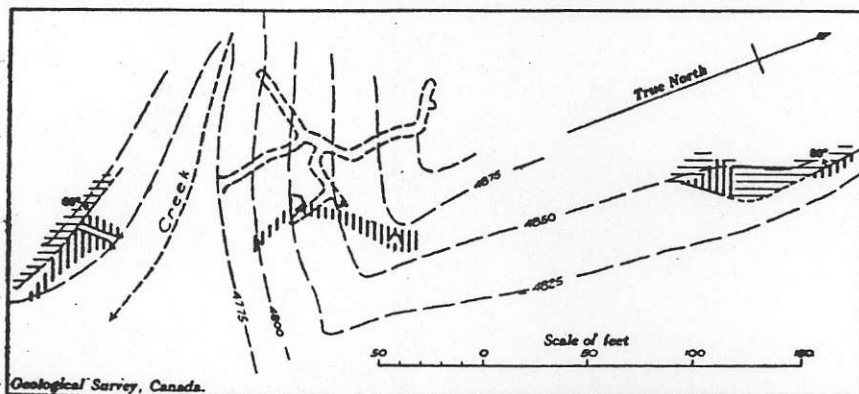


Figure 1. Sketch plan of Red Elephant. Mineralized exposures are indicated by vertical lines; exposures of limestone by horizontal lines; contours approximate only.

zation trends a little east of north, but is very irregular. Numerous quartz stringers are present and much of the rock is more or less silicified. Some silver-grey schists are exposed near the face and have probably been developed from impure limestone by shearing and alteration. A few copper stains were observed.

On the surface at the farthest north open-cut, a large area of brownish grey limestone has been uncovered. The fresh rock is impregnated with cubes of pyrite, up to $\frac{1}{2}$ inch in diameter, and is cut by stringers of siderite. East of a small fault running northeast lie dark grey, carbonaceous schists. Fifty feet north 15 degrees east from this, a small bluff of grey to white crystalline limestone occurs on the edge of a small gully. Black schists and phyllites lie just east of the limestone, the contact striking north 15 degrees west and dipping 85 degrees west. The limestone near the contact contains some pyrite cubes, but the schists, for a width of over 5 feet, have been converted into honeycombed siliceous material with many casts of pyrite cubes, which at the surface is a mass of limonite and siderite. The sulphur has been completely removed by oxidation. The siliceous, ferruginous rock is said to assay about \$20 per ton in gold.

On the steep sidehill just above the portal of the adit, the grey schists are similarly mineralized over widths of from 5 to 20 feet; they are much contorted, and the mineralization follows irregularly the trend of the sediments. Fifty feet south of the portal of the adit, grey schists across a width of 20 feet have been heavily replaced by quartz and pyrite and are now oxidized to porous, siliceous, ferruginous material. The mineralization adjoins the contact of a band of grey limestone. During the summers of 1926 and 1927, J. Morris and associates of Spokane, who have bonded the property, sank a shaft to 70 feet on this showing and it is reported that mineralization persisted to the bottom of the shaft and that leaching by oxidation was still complete.

The ore has formed by replacement, along a zone trending east of north, of the schists by silica and pyrite, with minor amounts of chalcopyrite. The mineralization in part follows the strike of the sediments, particularly where the schists have been sheared against the more massive limestone bands. Subsequent oxidation has almost completely decomposed the pyrite, leaving a honeycombed siliceous mass that carries much limonite and values in free gold. The depth to which oxidation extends is an important question, as it is not known whether gold will occur free in the unoxidized portions of the deposit.