LOCATION:

Ten miles southwest of Breckenridge, on north slope of North Star Mountain, at the head of the Blue River, Pollock Mining District, Summit County, Colorado. Elevation of mine workings 11,800 and higher.

EXCEPT:

Arctic, Polaris, Western Star (all 6632A) lode claims and Arctic mill site (6632B). Also part of Champion No. 2 claim (unpatented) upon which mill is built. The lode claims are 150 x 1500 ft.

TITLE AND OWNERSHIP:

The patented and unpatented claims are indicated above. The owner is J. L. Morran, White Plains, New York. E. P. Jones, Breckenridge, is agent. Jones claims ownership of remainder of Champion No. 2 claim not covered by mill and power plant.

GEOLOGY AND ORE OCCURRENCE:

The upper portion of North Star Mountain on which the Arctic group is located, is all gneiss. The claims, extending from beyond the crest of the hill to the south and down over the north slope, are located along the apparent strike of a quartz vein, this strike being almost north and south. On the surface, the vein can be traced for a short distance only where it is exposed in the steep cliffs near the top of the mountain. Below this exposure the vein is completely covered by slide rock.

The vein is narrow, not over 18 inches at any point exposed on the surface or underground, the average width being about 18 in. It consists of white quartz, grading into a slightly pinkish color in places, and in places stained by iron oxide. Throughout this quartz are streaks and scattered bunches of iron pyrite. Small bunches of a grayish black mineral, resembling gray copper were found, which upon blowpiping proved to be telluride of bismuth. Jones displayed specimens of quartz containing native gold. These he stated came from the Arctic and Patrick Henry veins, and probably did, although no free gold was observed when the ground was inspected.

Only one tunnel was open. This was driven south on the vein for about 20 ft. with an open cut of the same length in front of it. Here the vein shows continuously from the tunnel breast to the end of the cut, being irregularly spotted with pyrite and averaging about 12 in. wide. Below this tunnel, about 50 ft, a longer tunnel is driven on the vein, but was not open to inspection being full of ice.

Three samples were taken from the Arctic vein, as follows:
The Arctic Group—2.

<table>
<thead>
<tr>
<th>No.</th>
<th>Width</th>
<th>Description</th>
<th>Gold</th>
<th>Silver</th>
</tr>
</thead>
<tbody>
<tr>
<td>A1</td>
<td>13</td>
<td>Outcrop above tunnel, quartz vein containing some pyrite in gneiss</td>
<td>Trace</td>
<td>2.40</td>
</tr>
<tr>
<td>A2</td>
<td>8</td>
<td>Breast 20-ft. tunnel, white and pinkish quartz containing considerable pyrite</td>
<td>0.79</td>
<td>3.70</td>
</tr>
<tr>
<td>A3</td>
<td>12</td>
<td>At north of cut in front of tunnel 40 ft. north of A2. Quartz with much pyrite</td>
<td>2.08</td>
<td>4.40</td>
</tr>
</tbody>
</table>

These results indicate that the ore is spotty and that close sampling on all exposures would be necessary to determine the true value of the ore.

EQUIPMENT:--

A cabin near the tunnel. A two-bucket tramway from the lower tunnel to a loading station on the road at the foot of the mountain. A 10-stamp mill and power plant one-quarter mile from lower tram terminal.

In this mill is the following equipment:-

1. 7x10-in. Blake crusher
2. Crebin below crusher
3. 1000-lb. stamps
4. 10 1000-lb. stamps
5. 30-H. P. motor to run crusher and stamps
6. 8-ft. Amalgamating plates
7. 3-compartment cone classifier
8. Card concentrating table
9. Monnell slime table
10. 5-H. P. motor to run tables.

All machinery is practically new and in good condition. The same may be said of the building, which is of frame construction.

The power plant equipment is as follows:--

1. Montgomery water wheel (1½ in. nozzle)
2. Ft. Wayne Electric Co. Generator (12.5 Amp., 2300 V.)
3. Exciter for same.
4. 50-H. P. steam engine, Ames Iron Works
5. 65-H. P. boiler
6. Feed-water pump
7. 10-H. P. engine to run saw.

The building is well constructed of hewed logs with a corrugated iron roof.

Water is brought to the plant under a head of 229 ft. The pipe line is 2 ft. in diameter at the intake and 9 inches at the plant. The water right, according to Jones, is the oldest on the upper Blue River and is entitled to the entire flow of the river from the intake to the discharge at the plant; no one above on the river may stop the normal flow of the stream.

OTHER CLAIMS:--

E. P. Jones controls the Patrick Henry, Independent, Independent No. 2 and Surprise claims, all 150x1500 ft., and one other claim, 300 x 1500 ft. located recently. These claims lie south of the
The Arctic Group—3.

Arctic group and approximately parallel to it. Two or more veins parallel and similar to the Arctic vein are covered by these claims. The chief work has been done on the Patrick Henry claim where four tunnels have been driven, opening the vein for a vertical distance of 200 or 300 ft. Only one of these was open at the time the property was inspected, the other three being blocked by ice.

A sample across the tunnel breast over a width of 40 inches assayed nothing in gold and 2.28 cts. silver. This was a softer quartz than that of the Arctic and somewhat mixed with gangue and a little pyrite. A grab sample of cobbings at No. 3 tunnel, said to be from ore shipped, assayed a trace gold and 2.40 cts. silver. These assays are not encouraging, but considering the spotted nature of the ore, as shown in the Arctic tunnel, a thorough sampling of all the workings would be necessary to determine the true value of the ore.

**WORKING CONDITIONS:**

While the veins are narrow they break well from the wall-rock and as the veins are steeply sloping, overhand stoping, stripping the ore and filling the stopes with waste would be the most economic method of mining.

The north slope of North Star Mountain is very steep, making it possible to economically open the veins by tunnels. According to Jones, slides rarely occur on this slope, as the wind blows off the snow, and those which do run are small.

Treatment of the ore would have to be determined by tests. While some of the gold is free, part of it may be held in the pyrite or combined with the tellurium.

A tram from the lowest tunnel level direct to the mill would be the only method of ore transportation economically possible.

There is practically no timber on the claims, but plenty within a radius of a mile or two.

Water, according to Jones, flows in the Blue River the year around in sufficient quantity to run a small milling plant.

**TERMS:**

For the Arctic group $60,000 is asked; of this $15,000 in cash and the remainder in payments spread over three years.

For the claims controlled by Jones, a large interest will be given to anyone who will advance sufficient money to install compressor and drills and do continuous development work. Jones would make no definite statement of his terms at this time.

**CONCLUSION:**

Samples from the Arctic vein show that gold ore of good-grade exists and that the whole vein may average high enough in gold and silver to make it of milling grade. The vein is narrow; but should be easily stripped from the country rock. The outcrop of the vein cannot be traced far on account of slide rock, but as the whole upper portion of the mountain, to a depth of several hundred feet from its apex, is of the same gneiss in which the vein now exposed lies, the possibility for a continuation of the vein both laterally and vertically appears favorable.
The Arctic Group—4.

The above statements, except in regard to grade, which has yet to be determined, apply to the Patrick Henry and Independence veins.

If a thorough sampling of the veins, which I think should be made when the tunnels are opened, shows that it is possible to work them profitably, all the claims should be included in any deal. I furthermore believe that different terms could be arranged on the Arctic if a counter proposition were made by this Company after examination.

Albert G. Wolf.