

# The Central Zeballos Mine

By C. C. STARR

**T**HE property of the Central Zeballos Gold Mines Ltd. consists of a block of ten claims situated about six miles northeast of the town of Zeballos, beginning immediately south of the forks of the Zeballos River, and extending well up toward the summit of the mountain.

The town of Zeballos, situated at the head of Zeballos Arm on the west coast of Vancouver Island, is the point of entry for the district and has tri-monthly freight and passenger service by C.P.R. boat from Vancouver and Victoria, and almost daily airplane service. The town was started in 1936 after rich strikes of gold ore had been made on the Privateer and other claims, and has progressed rapidly. At the present time it is the largest town on the west coast of the Island north of the Alberni Canal, and has comfortable hotels, stores, post office, radio-phone, etc., and a hospital and church are nearing completion.

From the town, a gravelled road extends up the east side of the river for about four miles and thence up Spud Valley a further two miles, past the Privateer and other mines, to the Spud Valley Mines (Trites). At the lower end of Spud Valley, the Central Zeballos trail branches off from the road and extends to the mines, a distance of slightly more than two miles. This is a good pack-trail for horses and could be made into a light tractor road without great expense.

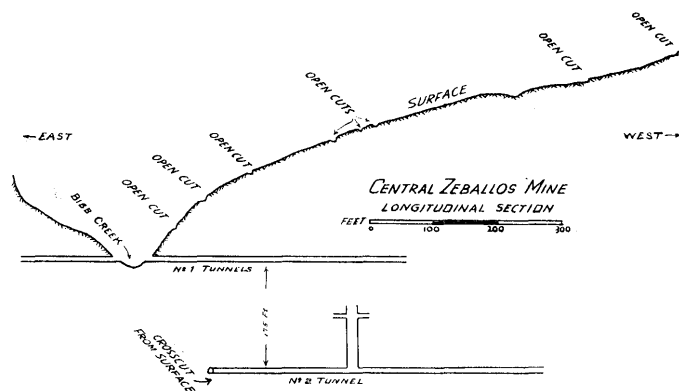
The Central Zeballos camp is situated on Bibb Creek about a half mile below the mine workings and can comfortably house about thirty men; the altitude is 700 feet. Below the camp the topography is comparatively smooth but, above, the slopes are steep and rugged and Bibb Creek flows through a steep walled gorge.

Air is compressed at the camp site by a Broom-Wade compressor of about 300 cu. ft. capacity, driven by a Ruston-Hornsby Diesel engine of 70 h.p., and is conveyed to the mine by 2700 feet of 4-inch pipe. An aerial tramway connects the camp and the lower tunnel. This is designed to be of the two-bucket, jig-back type, but at present is rigged as a single track, single bucket tram, operated by a hoist powered by an 85-h.p. Ford engine. This is used to take supplies up to the mine, and to take ore down—both high-grade for shipping and mill-grade ore for storage. This is necessary as the tunnels are driven into the steep wall of Bibb Creek where there is no place to store ore in safety from the torrential floods that occasionally fill the creek.

## Geology and Veins

The claims of the Central Zeballos Company lie near the northeastern margin of the granodiorite batholith with which the ores of the district are generally associated, and which is intrusive into the volcanics and sediments of the Vancouver Group which are of Triassic age. They have been subdivided by H. C. Gunning of the Geological Survey into the Karmutsen Volcanics, which are overlain by the Quatsino Limestones, and they, in turn, by the Bonanza Volcanics.

The northern, or lower, part of the property is covered by the Quatsino Limestones and a small area of the underlying Karmutsen Volcanics. The southern, or upper, two thirds of the property covers an area of granodiorite, except for a tongue of limestone which projects from the eastward approximately to the centre of the property. Between the main body



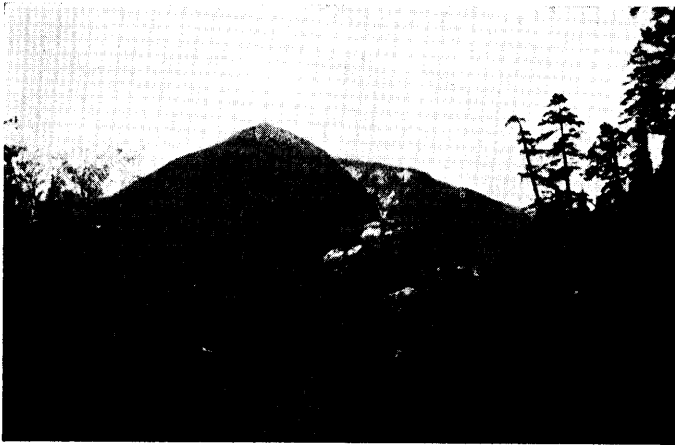
of the limestone and the tongue there is a large "bay" of granodiorite extending a couple of thousand feet to the eastward. The granodiorite is rather fine grained, hard, and massive. It shows frequent joints and narrow shears, the most prominent ones striking in a northeasterly direction, and is cut by a number of dikes of varying strike.

Most of the dikes belong to two types, an andesitic type in which prominent feldspar phenocrysts occur in a finely granular ground-mass, and an aplitic type which is light colored and fine-grained. The former is the older and appears to have approximately the composition of the granodiorite, while the latter appears to be chiefly feldspar with a little quartz and no ferro-magnesian minerals. Both series of dikes are older than the veins.

Some of the granodiorite contains numerous large inclusions of basic rock which are probably engulfed fragments of the originally overlying volcanics; these are more noticeable along the vein than elsewhere, though possibly only on account of better exposures there.



A portion of the Central Zeballos camp. The power-house, new cook-house, and terminal of the aerial tramway are not shown in the picture.



*Looking Across the Central Zeballos Property*

The tongue, or very likely roof-pendant, of limestone which is two or three hundred feet in width has been highly altered by the emanations from the granodiorite intrusion, and now consists of marble, garnet, epidote, and other metamorphic minerals, together with varying amounts of metallic sulphides.

The gold vein, on which all the work on the property has been done, was discovered by Mr. O. T. Bibb in the bluffs along Bibb Creek; it has been traced west on the surface for about 700 feet by open-cuts, and has been found at one or two points to the eastward. The vein lies in granodiorite near the centre of the "bay," strikes east and west, and dips 75 degrees south. It more or less closely follows an irregular aplite dike which varies from a few inches to several feet in thickness. This dike has been traced on the surface considerably further to the west than the vein has, but has not been opened up sufficiently to show whether the vein still continues near it.

#### Development Operations and Results

Underground development on the vein is through three tunnels. Tunnels No. 1 East and No. 1 West are driven east and west from Bibb Creek at 1550 feet elevation for 125 feet and 408 feet respectively; the East tunnel apparently leaves the vein near the portal, but the West tunnel follows it continuously to the face. No. 2 tunnel is a crosscut from the west bank of Bibb Creek at 1375 feet elevation, which intersects the vein at 300 feet from the portal; from the point of intersection the vein has been followed westward for 528 feet, and a raise started at 220 feet from the crosscut.

In the No. 1 West and the No. 2 tunnel the vein proper varies from four inches to a foot and a half in width, and consists of from two to twelve inches of gouge, sometimes black with fine sulphides, zero to eight inches of crystalline quartz often showing comb structure, and containing pyrite,



*Head of Zeballos Arm, West Coast of Vancouver Island*

arsenopyrite, and sphalerite, often partially banded. Where greater width than one and a half feet of ore occur, the extra width is usually made up of stringers in highly altered granodiorite, or more commonly through partial replacement of shattered aplite with gold-bearing sulphides.

In the No. 1 tunnel the vein follows the aplite dike quite closely for most of the length opened, being sometimes in the dike, and sometimes on either wall. In the No. 2 tunnel the vein where first cut is ten feet south of the dike, but intersects it at fifty feet, and after following it for a short distance, crosses to the north side of the dike and thereafter parallels it about the drift width away. There is a little highly decomposed aplite in the vein west of the intersection, but whether it is the remains of a narrow offshoot from the dike, or fragments dragged into the vein fissure by faulting along the plane of the vein is not clear.

Alteration and bleaching of the granodiorite along the walls of the vein is very limited and seldom extends more than an inch or two from the fissure. There are several shears, or sheeted zones, in the granite, appearing both on the surface and in the tunnels, which strike northeast but do not offset the vein, nor are they themselves offset appreciably by the vein. They do not affect the value of the ore, but do tend to increase the width of pay-ore where they meet the vein. At a number of places in the drifts there are irregular bodies of somewhat altered, fine grained, black rocks which are probably included fragments of the volcanics into which the granodiorite was intruded. They do not appear to have any influence on the size and value of the vein.

To date, two shoots of commercial ore have been partially developed, one 35 feet long by 26 inches wide, and the other 205 feet long by 14 inches wide. From these, a few tons of ore have been shipped, but on account of the friable and gummy character of the ore it does not lend itself to efficient sorting, and, as transportation costs are high, no large shipments have been made. The average grade of the ore-shoots is, however, sufficiently good to make excellent mill ore, even after allowing for dilution by barren wall-rock in stoping. As an example of the grade of ore encountered, take the last few rounds of current work in the raise, which shows an average assay of 3.8 oz. gold per ton over a width of 14 inches. This is somewhat higher than the average of the mine, but is not an unusual occurrence.

Besides the vein on which the work has been done, a number of small veins two inches and less in width are known on other parts of the property, and especially to the westward of the known outcrop of the main vein, where there are several parallel veins striking northeasterly. It is not known that these veins carry important values, but they are worth prospecting.

A thousand feet south of the main vein at about 2300 feet elevation there is a contact-metamorphic deposit around the borders of the limestone tongue, and especially strong mineralization along the north border. No work has been done on this deposit, but it is imperfectly exposed at several points where disseminated chalcopyrite, bornite, pyrite, and magnetite in considerable amounts occur in a gangue of garnetized limestone; it is also said to carry small amounts of gold. Neither the dimensions of this deposit nor the values in gold and copper are known, but the showing warrants exploration.

General geological conditions and the character of the mineralization at the Central are similar to those at most of the other mines of the district, although there are minor differences such as the occurrence of the vein at the Central along the aplite dike.

While not yet out of the prospect class, there is reason to expect that with further development the Central may become a substantial producer.

[Editor's Note: Reno Gold Mines Ltd. has now acquired control of the Central Zeballos mine and since March 16th has directed and financed operations.]