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THE ARCADIA ZINC AREA, SCOTT COUNTY, VIRGINIA

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The Arcadia zinc area is in the southeastern part of Scott County, Va., about 1½ miles north of the village of Arcadia, Tenn., and in the eastern part of the Indian Springs topographic map area. According to Secrist[1] prospects were opened in 1906 by Mr. Frank Bowman and were worked sporadically until the fall of 1917. A small Joplin-type mill was erected in 1918 and 25 tons of concentrates was produced.

The three prospects in the area are in Middle Cambrian Honaker dolomite, here 1,200 feet thick, about 650 feet above the top of the Nolichucky shale. The main rock type is dolomite, though some limestone crops out in the eastern part of the area. Much of the dolomite has been formed by the alteration of limestone, as indicated by good outcrops in the small gully southeast of Cut 1, where a sharp contact between dolomite and limestone cuts across the bedding. Chert beds in the Honaker are indicated by a moderate quantity of weathered fragments. One of these beds, oolitic in character and from 2 to 4 feet thick, is a good marker, and was traceable for 1,200 feet along the strike. The bedding strikes N. 70° to 85° W. and dips at very steep angles, most of which are between 75° and 85°, to the southwest. Some vertical dips and even dips to the northeast were observed, but these may be due to slumping.

Minor flexures in the bedding are indicated by changes in strike. The most pronounced of these is just west of the 4000E coordinate line (see map), where the trend of the oolitic chert bed bends sharply. No major faults were found in the area, although 700 feet to the north of it Pennington shale of Mississippian age has been thrust over the Honaker dolomite along the Saltville thrust fault. Minor discontinuous faults having displacements of from 2 to 25 feet are numerous.

The present workings consist of three main openings, numbered from 1 to 3 on the map. Cut 1 exposes a nearly vertical compound fissure vein of sphalerite and white barite in a coarsely crystalline dolomite. This dolomite is probably hydrothermal although proof of its origin is not definite. The vein, including the dolomite, is 10 feet wide at the eastern end of the cut and narrows to 5 feet at the western end. A water-filled shaft in the center of the cut is reported to be 87 feet deep. In this shaft the vein has 48 inches of solid, very dark brown sphalerite. However, the average measured width of the sphalerite is a little over 2 feet. A thin shale bed several inches in thickness defines the edge of the vein at the east end of the cut.

1/ Secrist, M. H., Zinc deposits of East Tennessee: Tennessee Div. Geol. Bull. 31, p. 34, 1924.

Cut 2, reported to be 20 feet deep, is also filled with water. A vein 27 inches wide where seen above the water level consists entirely of coarsely crystalline dolomite on the outside with barite and some dolomite in the central part. No sphalerite was seen but it is common in dump material, indicating its presence at a lower level. Many joints and minor faults en echelon at the south edge of the pit might have influenced local control of the mineralization at depth.

A vein, 6 feet in width, of coarsely crystalline dark gray dolomite with barite and small masses of sphalerite is exposed in the third cut. Parts of the vein are highly pitted, suggesting that much sulfide has been leached. The dump material has relatively less barite and more sphalerite. The cut has a caved shaft in the center reported to be 125 feet deep. Secrist[2/] reports that 25 tons of concentrates was produced from ore taken from this shaft.

It is possible that all three openings are on the same vein but this cannot be definitely established from surface work because of poor outcrops. Cuts 2 and 3 seem to be on the same strike. The richness of the vein where exposed in the cuts gives some promise to the property, but it would be well to unwater the cuts and study the ore conditions at depth before any extensive exploration program is considered.

2/ Secrist, M. H., op. cit., p. 34, 1924.

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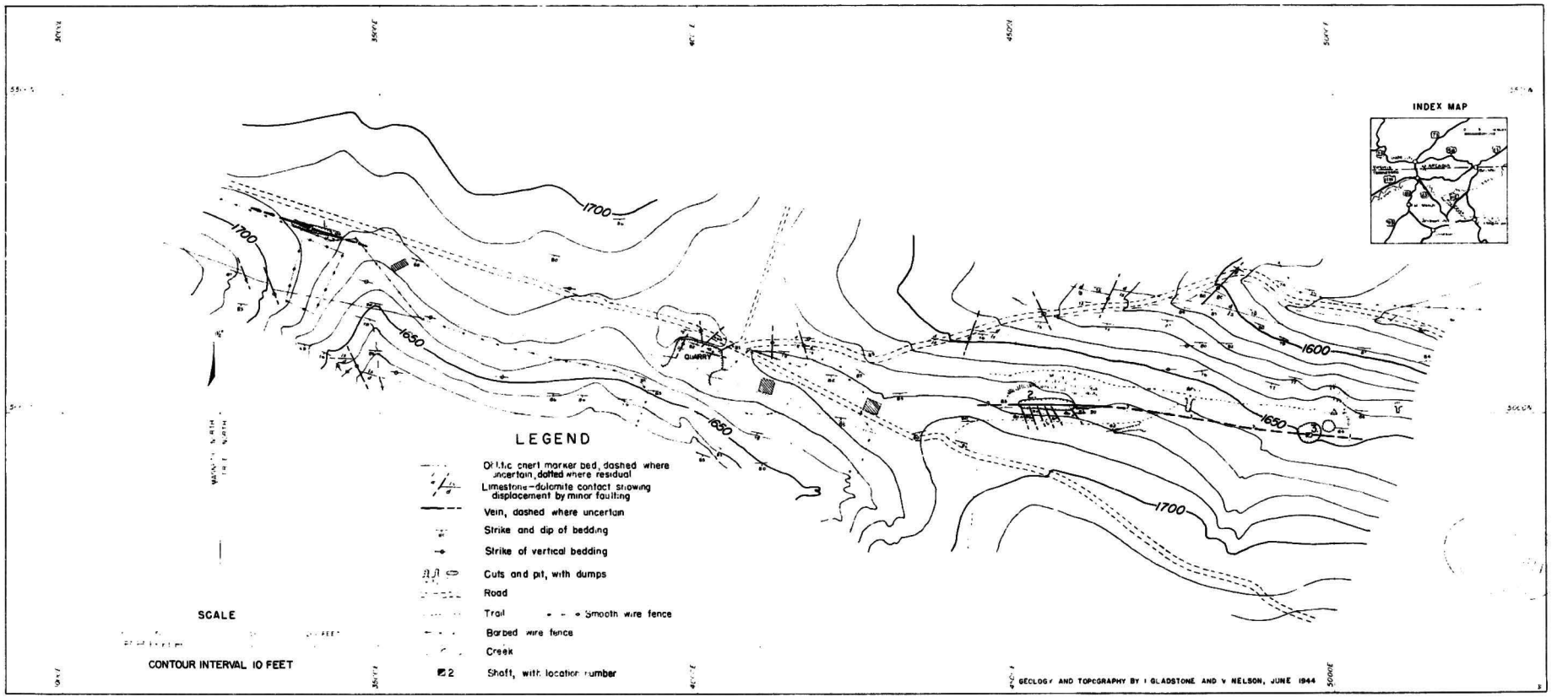

MAP OF THE ARCADIA ZINC AREA, SCOTT CO., VIRGINIA

Virginia (Arcadia area). Zinc. 1:1,220. 1944.
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