

SOME "LOST" TENNESSEE MINERAL LOCALITIES

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Every field geologist who has worked in the Southern Appalachians or the Ozarks is familiar with the legend of "Grandpappy's lost lead mine." According to this often-told tale, the teller's grandfather (or other ancestor) had a secret lead mine, somewhere on his own land, known only to him and an old Indian (or, sometimes, an old slave) who showed it to Grandpappy in the first place. He would disappear over the hill, and would return several hours later with a supply of pure lead—not galena—which he had whittled off the vein with his pocket knife. The secret died with him, and his descendants never were able to locate the spot. There is probably not a county from Pennsylvania to Arkansas where one cannot find persons sincerely convinced that somewhere on their land there is such a deposit which would make them wealthy if only they could find it.

The antiquity of the legend is attested to by the following excerpt from Dr. Elisha Mitchell's diary for 1828 (Mitchell, 1905, p. 43):

Tommy Triplett is an unbeliever who cannot read and an

honest kind man as Mr. Kenzie tells me. From him I had another edition of the story about lead found at the north of Stoney Fork within a mile of him, 12 miles from Wilkesboro. An old hunter parted from his company was scouring about and fell upon a place where the Indians had cut lead from the bottom of the branch and a bag of their bullets was hanging from the tree, but he was never able (as he neglected to mark the spot) to find it again. Such in substance is the account that I have received in so many different places and from so many different persons that I am ready to knock down the man who shall tell the tale again.

Of course, there is some basis of truth in this old legend. Galena, in small quantities, is widespread and is easily smelted at a relatively low temperature. A few pounds of lead would last a long time when used only for bullets in muzzle-loading rifles, for sinkers, and other similar domestic uses. Safford (1869, p. 224) has described this in Claiborne County, Tennessee: "At points where the masses [of galena] are more abundant than usual the hunters have been in the habit of digging in the soil near the rock, or in the clay filling crevices, for pieces of ore which, in time, have become detached. Frequently their labor is rewarded

by the discovery of several pounds of ore, supplying them well with the lead they need."

However, in addition to these legendary "lost mines," there are many reports in the scientific literature of deposits that are unknown today and for which present-day geologists have looked unsuccessfully, but which cannot be ignored because they originally were reported by geologists of undoubted competence and integrity. The purpose of this paper is to report four of the most interesting of these "lost" localities in Tennessee (Fig. 1). Although none is likely to be of commercial importance, each would be of considerable scientific interest and would deserve further study if the location could be determined.

1. *Fluorite, west of Harriman.*—This was first reported in 1927 (Southern Railway, 1927, p. 8) as follows: "An excellent deposit [of fluorspar] has been discovered about 20 miles west of Harriman, Tennessee. This fluorspar, which is the best undeveloped deposit known, is exceptionally pure and high grade."

Apparently this item was noted by the U. S. Geological Survey in compiling the Map of Mineral Resources of the Tennessee River Basin (U. S. Geological Survey, 1933) as a symbol for fluorite is shown on that map, just east of the town of Crab Orchard, and 18 miles west of Harriman. A search of the files of the Geological Survey and the U.S. Bureau of Mines failed to produce any information on this deposit (R. E. Van Alstine, written communication, September 22, 1955).

In response to my inquiry, T. E. Shufflebarger, Jr., Industrial Geologist, Southern Railway System, wrote (July 28, 1955) that the information originally was supplied by Charles A. Weller, a consulting geologist with the Southern during the period 1916-1928, but that there is no report in the railroad's files. Mr. Shufflebarger suggested that the deposit may be in Mississippian limestone along the Tennessee Central Railway east of Crab Orchard.

The Crab Orchard Mountains area was mapped by R. G. Stearns but his report (Stearns, 1954) does not mention fluorspar. He stated (oral communication, 1955) that during the course of the mapping he saw no fluorite and heard no reports from local residents about the mineral or any prospects. Similarly, there is no mention of this deposit in the mineral resources report by the Tennessee Valley Authority on the area which includes Harriman and Crab Orchard (Gildersleeve, 1946).

A well-known fluorspar prospect (the Alcorn) is in Ordovician limestone, farther west along the Tennessee Central Railway (Jewell, 1947, pp. 69-74), but this is 70 miles west of Harriman.

2. *Tetrahedrite, Monroe (Polk ?) County.*—The latest reference I have seen to this occurrence is in the report "Useful Minerals of the United States" which contains this note: "Tetrahedrite (gray copper ore), Monroe County, Buck Miller mine, mouth of Coco Creek, on Hiwassee River; argentiferous." (Schrader, Stone and Sanford, 1917, p. 288). This same state-

ment appears in an earlier edition of this report (Sanford and Stone, 1914, p. 178) but is not in the first two compilations (Smock, 1883; Williams, 1888).

There is additional uncertainty about this locality, as the mouth of Coker Creek is in Polk County, not Monroe. Although the occurrence is not mentioned in the older compilations, the source of information probably was an early report, as the old spelling "Coco" Creek is used.

A search of the bibliographies failed to produce any reference to either tetrahedrite or the Buck Miller mine, and none of the reports on the Coker Creek district (Troost, 1837; Safford, 1869; Ashley, 1911; Rove, 1926) mentions either one. The name Buck Miller mine is not in the files of Tennessee Copper Company (Owen Kingman, oral communication, 1963), nor is this occurrence. However, as pointed out to me by Stuart W. Maher (oral communication, 1963), a tributary of Tellico River is named Miller Mine Branch, and a short distance downstream is another tributary named Buck Branch (see USGS 15-minute Haw Knob, Tenn.-N. C. quadrangle, 1937, and USGS-TVA 7½-minute Bald River Falls quadrangle, 1957). This area, in Monroe County 15 miles northeast of the mouth of Coker Creek, is directly in the strike projection of the Whippoorwill Vein (Ashley, 1911, fig. 3).

If this occurrence can be verified, it will be the first known occurrence of an antimony mineral in Tennessee.

3. *Beryl, Greene County.*—A chemical analysis of "green beryl from near Home post office in Eastern Tennessee" was published in 1910 (Clarke, 1910, p. 267) and repeated in 1915 (Clarke, 1915, p. 209). I have seen no other reference, published or unpublished, to such an occurrence. The former post office of Home is now known as Afton, and is 6 miles northeast of Greeneville. It is in an area of Cambrian and Ordovician sedimentary rocks and is 15 miles from the nearest known outcrop area of the basement crystalline complex, which does not extend into Greene County (Rodgers, 1953, plate 4), and about 20 miles from the western part of the Spruce Pine pegmatite district of North Carolina. Beryl is not an uncommon mineral in the Spruce Pine pegmatites, though few of the pegmatites contain significant amounts of it.

A search of the U. S. Geological Survey's records failed to produce any additional information on this occurrence. It seems probable that someone mailed the specimen from Home post office without giving details of the locality or the occurrence. There are extensive alluvial deposits, of the present and earlier cycles, along Nolichucky River near Afton, derived from a large area of western North Carolina, including the Spruce Pine district. In recent years, a considerable amount of scrap mica was recovered from alluvium in Davy Crockett Lake on Nolichucky River near Afton. For these reasons, it is probable that the beryl specimen was an alluvial pebble, of North Carolina origin.

4. *Lead deposit, Campbell County.*—On the Economic Geology sheet of the Briceville folio (Keith,

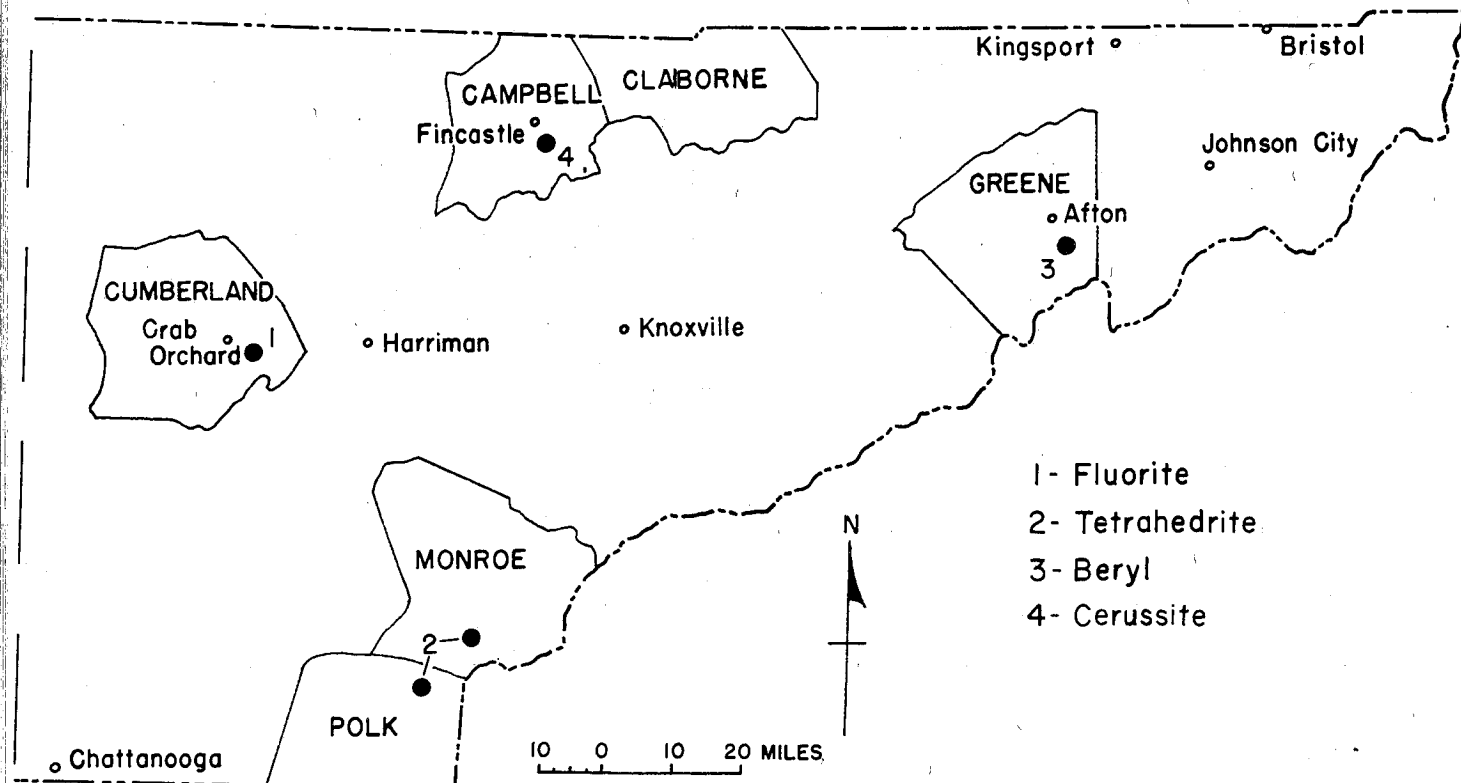


Figure 1. Map of East Tennessee, showing probable locations of "lost" mineral deposits.

1896), there are three patches of color indicating lead deposits that extend 1 mile along the regional strike, westward from the community of Primroy. In the text, Keith (1896, p. 4) states, "Lead ore is found in the broad area of Knox dolomite lying south of Fin-castle. The ore outcrops at several points in a narrow belt running northeast and southwest for nearly a mile. It occurs in the form of cerussite lining cavities and occupying portions of the body of the rock, which is a gray, coarsely crystalline limestone. No developments of this ore have been made, and its quality is therefore doubtful."

It is difficult to transfer localities from the old 30-minute topographic quadrangles to the modern 7½-minute sheets, but it appears that these deposits would be in Sutton Hollow, in the north-central portion of the Demory quadrangle (TVA-USGS No. 136-SE). Two of them probably would be submerged beneath Norris Reservoir when it is full, as is the former site of Primroy, but they should be exposed during the winter season when the reservoir is 20 to 60 feet below normal pool level.

Beginning in 1934, and at several other times, I have searched for this occurrence. Inquiries among local residents have been fruitless; no one seems to have heard of any lead prospecting. Even more surprising, when TVA bought the land that apparently included two of the deposits, no request for appraisal of mineral values or claim for damages was made by the landowners, although about 600 such claims were made for other parcels of Norris Reservoir land, many based on small showings of galena and sphalerite or just on proximity to Lead Mine Bend, 12 miles east of the Primroy area.

This area is underlain by Copper Ridge Dolomite, the host formation of the galena-bearing bed described by Safford and cited earlier in this paper. This suggests that the Primroy occurrence may be similar to the Claiborne County bed; if so, the widespread occurrence of cerussite without galena is unusual and may account for the failure of the early hunters to recognize and exploit it. In fact, this may be the only case on record of an authentic lead deposit that "Grandpappy" did not find.

NEWS OF TENNESSEE SCIENCE

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Proceedings of the special Conference on Progress in Nuclear Education, held last year in Gatlinburg, are now available. Some 20 technical addresses and panel discussions during the meeting were devoted to present and future problems and programs in the fields of nuclear science and engineering, from the secondary school to university graduate and post-graduate levels. The publication, "Proceedings of the Conference on Progress in Nuclear Education", TID-7638, is available from the Office of Technical Information, Department of Commerce, Washington 25, D. C.

LITERATURE CITED

- Ashley, G. H. 1911. The gold fields of Coker Creek, Monroe County, Tennessee. *Resources of Tenn.* 1:78-107.
- Clarke, F. W. 1910. Analyses of rocks and minerals from the laboratory of the United States Geological Survey, 1880 to 1908. *U. S. Geol. Survey Bull.* 419. 323 pp.
- . 1915. Analyses of rocks and minerals from the laboratory of the United States Geological Survey, 1880 to 1914. *U. S. Geol. Survey Bull.* 591. 376 pp.
- Gildersleeve, Benjamin. 1946. Minerals and structural materials of the Watts Bar and Fort Loudoun Reservoir areas. *Tennessee Valley Authority, Commerce Dept., Regional Products Research Div., Report no. 5.* 26 pp.
- Jewell, W. B. 1947. Barite, fluorite, galena, sphalerite veins of Middle Tennessee. *Tenn. Div. Geology Bull.* 51. 114 pp.
- Keith, Arthur. 1896. Description of the Briceville quadrangle (Tennessee). *U. S. Geol. Survey Geol. Atlas.* Folio 33.
- Mitchell, Elisha. 1905. Diary of a geological tour by Dr. Elisha Mitchell in 1827 and 1828, with introduction and notes by Dr. Kemp P. Battle. *Univ. of North Carolina, James Sprunt Historical Monograph no. 6.* 73 pp.
- Rodgers, John. 1953. Geologic map of East Tennessee with explanatory text. *Tenn. Div. Geology Bull.* 58, pt. 2. 168 pp.
- Rove, O. N. 1926. Gold deposits of Eastern Tennessee. *Tenn. Div. Geology open-file report.*
- Safford, J. M. 1869. *Geology of Tennessee.* Nashville. 550 pp.
- Sanford, Samuel, and R. W. Stone. 1914. Useful minerals of the United States. *U. S. Geol. Survey Bull.* 585. 250 pp.
- Schrader, F. C., R. W. Stone, and Samuel Sanford. 1917. Useful minerals of the United States. *U. S. Geol. Survey Bull.* 624. 412 pp.
- Smock, J. C. 1883. The useful minerals of the United States; eastern division. *U. S. Geol. Survey Mineral Resources U. S., 1882, pt. m.* 664-747.
- Southern Railway. 1927. *Southern Field*, new series, no. 15. 16 pp.
- Stearns, R. G. 1954. The Cumberland Plateau overthrust and geology of the Crab Orchard Mountains area, Tennessee. *Tenn. Div. Geology Bull.* 60. 47 pp.
- Troost, Gerard. 1837. Fourth geological report to the Twenty-second General Assembly of the State of Tennessee. Nashville. 37 pp.
- U. S. Geological Survey. 1933. Map of mineral resources of the Tennessee River Basin, scale 1:500,000.
- Williams, Albert, Jr. 1888. Useful minerals of the United States. *U. S. Geol. Survey Mineral Resources U. S., 1887, pt. e.* 688-812.

Dr. Alvin H. Nielson has assumed his duties as Dean of the UT College of Liberal Arts. He will continue also as Head of the Physics Department.

The American Museum of Atomic Energy in Oak Ridge set an all-time attendance record between July 1, 1962, and June 30, 1963, with a total of 122,346 visitors compared with a previous high of 103,056 set in the fiscal year ending June 30, 1962.

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