

## FAMOUS MINERAL LOCALITIES. 4. THE JOPLIN DISTRICT

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JOPLIN, Missouri, is so famous as a source of fine mineral specimens that practically all introduction may be dispensed with. This article will be devoted to telling something about the writers' experiences during brief visits in 1917, for the benefit of other collectors who may be planning a trip to that district. It may be stated at the outset that unless at least two full days can be spent there the trip is likely to be a disappointment, and, indeed, a week would not be too much to allow if any extensive collecting is anticipated.

The city of Joplin lies in the southwest corner of the state of Missouri, and can be reached by an overnight trip from St. Louis, the best route (in 1917) being the Frisco, altho the M. K. & T. R. R. also has thru service, and branches of several other railroads run there. Another route is that from Kansas City, which requires about 7 hours. From Joplin the various groups of mines can be reached by trolley, local train, or auto.<sup>1</sup>

In many mining districts the dumps of old workings yield a rich harvest to the specimen hunter, but in this region the old dumps are in general about as prolific in minerals as a sand dune. Most of them, first made in the days when low-grade ore did not repay working, have been since dug up bodily, run thru the mills, and made to yield up their metal content; and then the chats or tailings, consisting of finely crushed chert and calcite, have been piled up where the old dump stood. In many mines in other regions there are picking tables or something corresponding, where with the kind permission of the superintendent the mineralogist can hope to rescue a crystal or two, but here practically everything that comes out of the ground is dumped at once into the crusher and lost to science forever.

A number of the mines just to the west of the city, however, have only begun their attack upon the original dumps, and here, in a section readily accessible by trolley or even on foot, via Gray Avenue, on which the crystal cave described below is located, are many thousands of cubic yards of cherty rock in huge irregular masses; much of this is brecciated and filled locally with good ore and crystallized calcite, affording fair specimens, especially for those interested in samples which show geologic phenomena and principles of ore deposition. One dump was found to consist largely of crystallized calcite, much of it in the form of bruised and battered crystals a foot or two in diameter;

<sup>1</sup> Information as to location of mines, geology, etc., may be obtained from the *Joplin Folio* (No. 148) and from *Bulletin* No. 606, both issued by the U. S. Geological Survey.

these afforded some very fine nearly transparent cleavages of an amber color, with purple phantoms inside them.

It is advisable, in the Joplin district, to do one's collecting largely underground, down in the mines themselves. Permission can usually be readily obtained from the superintendent or other official, and the mineralogist can then make friends with the shift boss or foreman, and will soon see more crystallized specimens of sphalerite, galenite, calcite, etc., than he probably ever dreamed existed. Most of the ore occurs as a replacement of a shattered stratum of white chert, which lies practically horizontal, so that there is usually but one level, the whole bed being mined out, leaving a few pillars here and there. The ore-bearing stratum is very porous, with openings of all sizes up to many feet in diameter, and the walls of these caverns are studded with crystals of the various minerals for which Joplin is famous. Many are of course ruined by the blasts, but in protected places they may be untouched, and by the use of a hammer and chisel almost any sort of specimen desired can be obtained. Paper and packing boxes should be procured before going down the mines, as the minerals are comparatively soft and easily damaged if dumped without wrapping into a collecting bag. The miners have peculiar terms for the various minerals—tiff for calcite (or anything else, such as dolomite and barite, showing light color and cleavage); mundic for pyrite or marcasite; jack for sphalerite; etc.

After exhausting the possibilities of the mines in the vicinity of Joplin, visits may well be paid to Cartersville and Webb City, Missouri; Galena and Baxter, Kansas; and Miami and Picher, Oklahoma, all of which places are within an hour's ride of Joplin itself. It will be well to inquire on arrival in the city as to any new regions being developed, for new workings often yield fine specimens.

Finally, the remarkable "crystal cave" in the outskirts of Joplin, near the western end of Gray Avenue, deserves mention. It is a cavern some 200 feet wide, 800 feet long and 20 feet high, with walls thickly studded with enormous calcite crystals. The crystals are rhombohedrons modified by flat scalenohedral faces, and are mostly dull yellow in color. They are flattened in growth in a plane parallel to the rock wall to which they are attached. Many of them are 2 feet long and a foot in thickness, and show phantom growths within them outlined by layers of tiny bright marcasite crystals or zones of a rich purple color. Unfortunately their softness has led to some disfigurement of those within reach of the initial-carving public, but a considerable number are undefiled. Mr. A. C. Roach, who owns the cave, has fitted it with stairways and electric lights, and the mineralogist should certainly allow an hour or two for a visit to this unique occurrence.