

GOPHER-HOLE BARITE MINING IN WASHINGTON COUNTY, MISSOURI

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One of the most critical problems of human readjustment in the Ozark Province is that associated with gopher-hole barite mining in Washington County, Missouri. Barite, or "tiff," as the natives call it, is a soft, heavy, white mineral used principally in the manufacture of paint and as a "heavy mud" in the drilling of oil wells. In Washington County the tiff occurs in a thick layer of mantle rock from which it is easily extracted. Most of the mines are small hand operated workings, but stripping operations have expanded considerably since their introduction in 1924. The hand mines, which belong to a type known as gopher-holes because of their small size, consist of shafts approximately five feet in diameter and usually 20 feet or less in depth. As the work proceeds, the lower part of the shaft is enlarged in the shape of a jug, the extent of the excavation being limited by the danger of collapse of the loose mantle rock. Equipment consists of a log windlass, a bucket made from half an oil barrel and a "rattle box," or shaker for separating the barite from clay and other surficial impurities. For more thorough cleaning, a small handmade pick-hatchet called a "pickawee" is used to chip off incrustations of iron oxide. The mine crew consists of two men each of whom may earn, under favorable circumstances, \$2.00 or more per day. However, if the price of barite is low, the worker lazy or the deposit poor, earnings may be as little as \$2.00 per week.

Most of the hand-operated mines are located on old Spanish grants about 60 miles south of St. Louis between the towns of Desoto, Jefferson County, and Potosi, Washington County. From Spanish times is inherited the paternalistic system under which operations are conducted. Land owners build on their property small cabins which are offered, rent free, to miners as an inducement to settle and produce barite. Barite dug on the

land is sold either to the owner or to buyers who pay the miners for the mineral and credit the owner with a royalty based on tonnage. Despite increasing competition of lower cost areas using machinery, hand mining proved satisfactory to both miner and land owner until the Depression. At this time, when business began to slacken, large numbers of men thrown out of other employment in neighboring areas went to Washington County, because barite digging offered an easy means of making a bare living. As a result of this influx of migrant workers, a great increase in barite production occurred. The owners felt morally obligated to buy from the miners on their land, but, in absence of a favorable market, could not also receive tiff from outsiders. Hence, they discontinued purchases of the mineral from land other than their own and labor troubles followed. These disagreements have largely been settled, but the problems of the native barite miner are still unsolved.

The indigenous hand miner is competing with machinery, and the demand for his product has decreased due to expanding production of high grade, low cost barite in Tennessee and elsewhere. Furthermore, because of the practice of mining the richest material available, the deposits are becoming progressively leaner and the output per man lower. At present, much of the land has been worked several times in a rather haphazard manner; hence, it is now difficult to find virgin ground. Ultimately, this condition, together with increased local mechanical mining, will eliminate many of the native hand miners. This constitutes a serious problem, for most of the miners are unable to adapt themselves to new tasks. Unfortunately, these people of the tiff district are almost completely uneducated, and those who are more than 20 or 30 years of age are, as a rule, too fixed in their ways to learn new methods of making a living. A consid-



Fig. 1.—Higher type native miners, shaft head, windlass, and rattle box.

erable part of the group, therefore, is too old to learn, but too young to receive government pensions.

Inbreeding through many generations and diet deficiencies have seriously reduced the ability and aptitude of the tiff miners. Most of them are members of French families who settled in what is now Washington County in the eighteenth century and who have remained in the same neighborhood, rarely marrying outside the group. Diet inadequacies are due partly to poverty, partly to the miners' aversion to agriculture. Only a few barite diggers raise gardens, and, because of steep hills and stony soil, farms are few. As a result, fresh vegetables must be shipped from other areas at prices which place them beyond the reach of the miners. Fresh meat, likewise, is not available in sufficient quantities. Some miners raise a few chickens or perhaps one or two pigs; however, the dangers presented by gopher-holes exclude cows from the area. Consequently, subsistence depends almost entirely upon bacon, dried beans, potatoes, flour and canned goods. Diet deficiency is aggravated also by the ownership of one or more old cars by each family. Money needed for food is spent for transporta-

tion, which, although convenient, is usually not necessary.

For the future, it is essential that plans be made to prevent increasing numbers of unemployed tiff miners from becoming public charges. Improved employment conditions elsewhere will attract most of the migrant tiff diggers, but the native miners will remain to constitute a major local problem. Probably the best solution lies in the education of the young people for new occupations. A few may engage in crop raising, despite unfavorable soil and land slopes, and some may learn stock raising, although this occupation requires considerable capital and employs only a few workers. Larger numbers may learn various handicrafts, and, if electric power were made available, small local factories could be established to utilize the cheap labor. With proper forest management, it is probable also that a few will find employment in lumbering.

Older miners who are incapable of learning new skills can continue hand mining at a fair profit by working small rich deposits in the pits made by mechanical mining. This employment will be available until the barite deposits become exhausted possibly fifty years hence.