

OZARK AND OUACHITA MOUNTAINS OF ARKANSAS CONTAIN NUMEROUS PRECIOUS, SEMI-PRECIOUS GEMS

zette Mar. 3, 1938.

Gazette Pike Co.

County.

By TOM SHIRAS.

Diamonds and pearls, amethysts and turquoise, garnets and topaz, sunstone and wavelite.

Sounds like a king's ransom, but it isn't. Just the jewel stones in Arkansas's treasure chest; precious and semi-precious stones buried deep in the low-lying ranges of the Ouachitas and Ozarks.

Arkansas probably has more varieties of precious and semi-precious stones than any other state in the Union, and Pike county is the only place on the North American continent where diamonds occur in place in a peridotite pipe.

For nearly a century, settlers traveled a trail that led across this pipe, and cursed it in wet weather, because it was slick and hard to drive a loaded wagon over. They called it soap-stone. In 1889, John C. Branner, state geologist, pronounced it peridotite, but because no one had ever found a diamond in it, refrained from classifying it as diamond bearing.

"Discovered" in 1906.

In August, 1906, 17 years later, John Wesley Huddleston picked up the first stone, and a few hours later another. The banker at Murfreesboro, offered him 50 cents for the pair. John loved "that if they warn't with more than that he would throw them away." He finally cashed in on his discovery for \$39,000.

Like many other prospectors, he bet his all that the land on which the pipe was discovered would make him rich. But John wasn't betting on diamonds. His theory was that this peculiar looking formation was gold bearing. He panned it and didn't find a color, then he found diamonds.

Before he bought the land on which he found the stones, he was a hill farmer, owning a small farm near Murfreesboro. He sold his farm for a few hundred dollars, under the protest of his wife, and made the first payment on the land on which the diamond pipe is located.

Little Rock financiers paid him a handsome profit on his investment. But a few years ago in an interview, he said: "If I knewed as much about diamonds then as I do now I'd made a million."

Processing Diamonds.

Diamonds have been mined in Arkansas since 1906. Operations have been spasmodic, not continuous. Much the same methods are used as are used in South Africa, which is a process of elimination. The diamond bearing formation slacks like shale when exposed to the air. For this reason the surface of the pipe is disintegrated to a depth of about 12 feet.

The first process it passes through is washing. One hundred loads, or tons of peridotite produces approximately one ton of solids. These solids are composed of small pieces of iron ore of several kinds, quartzite, jasper pebbles and the diamonds.

The diamonds are separated from these solids by two methods. The first is hand picking. The mass is dumped on a zinc-top table and carefully looked over, for the gems. The other method is known as the grease-board method. A simple grease-board is nothing more or less than a shallow trough about 16 feet long and three feet wide. The bottom is smeared to a depth of a quarter of an inch with heavy grease. It is set at an angle of 30 degrees and the solids flushed over it with water. The diamonds adhere to the grease, the rest of the material is carried on over into the waste dump. Why do the diamonds adhere to the grease? A rough diamond is naturally greasy like a duck's back. For that reason it presents a dry face to the grease, and the grease presents a dry face to the diamond and they cling together. The rest of the material being wet all over, is flushed on over the board, by a film of water between it and the grease.

Types of Diamonds.

Over several years, test washing in the earlier days of the field, one company got an average of 18 carats of diamonds to every 100 loads of dirt washed. Most of the stones are distorted octohedrons. They run in whites, blues, canaries and blacks, the latter called borts. Only a small percentage of the stones found are gem stones, the rest being classified as commercial stones.



View of a small diamond washing plant in the Arkansas diamond field in Pike county in its early days.

This is true of all diamond fields. The commercial stones are utilized for phonograph needles, settings for drill bits, diamond dust, etc. They bring a very small price, compared to the price paid for gem stones. The largest stone that has ever been found that has been reported weighed 40 carats. Those who are familiar with the industry figure that some 20,000 stones have been found since operations began.

Other Arkansas Stones.

Among the semi-precious stones found in Arkansas, the quartz crystal resembles the genuine diamond most. They cut nicely and remain brilliant until the facets get scarred. They are found in the vicinity of Hot Springs, and many of them are sold under the name of Hot Springs diamonds. They are also found in most of the other mountain counties of the state.

Amethysts are rare, but are found occasionally in Yell and Montgomery counties. They are beautiful stones, the best ones comparing favorably with any place in the world.

Turkey-fat, a yellow zinc carbonate, highly crystallized is one of the rarer semi-precious stones. It gets its color from cadmium and is very beautiful when cut and polished. It is found principally in the Rush Creek mining camp, at Rush.

Garnets are found in Magnet Cove. Sunstone and wavelite are found in the same place. The latter make very beautiful settings when cut and polished.

Onyx of all kinds and colors is found in the limestone caves in the Ozarks. One jewel cutter at Eureka Springs, fashions this stone into brooches and other kinds of jewelry.

Opal is found around the ancient hot springs in Saline and Hot Spring counties, and jasper and agate are found in both Montgomery and Polk counties.

PIKE'S MINERAL SURVEY ABOUT READY TO BEGIN

Pike Co. Courier,
Mar. 4, 1938—

A state-wide mineral survey, employing 450 workers, was initiated in 31 counties Tuesday by the state Works Progress Administration under sponsorship of the Arkansan Geological Survey. Headquarters are at 117 Victory street, with Robt. C. Beckstrom as supervisor.

Work will be extended to embrace 55 counties to give 600 workers with approximately 15 in each county as one of the largest white-collar projects yet undertaken in the state, state WPA Administrator Floyd Sharp announces. Purpose of the project is to "locate, measure, estimate, describe, test and map the accessible resources of the state for determining economic uses of construction materials, minerals and water tables."

Arlington Waggner, a resident of Amity, has been selected as chief of investigation of the survey in Pike county and is selecting staff of assistants for the work here. He hopes to begin work on this project the last of this week or the first of next week. His office will be at Murfreesboro.

MINERAL SURVEY OF PIKE COUNTY IS UNDER WAY

"Pike Co. Courier"
Pike Co. 3-11-38

Thirteen men are training to make the survey in Pike County. The workers are all certified from the WPA rolls. All the men are manifesting great interest in their work. These expressions are heard many times each day, "I like this work" "This is interesting," "I am learning interesting things."

The object of the survey is to locate and map the mineral resources, the water supplies and structural materials of Pike county. This is of much value to land owners and business interests of Pike county.

All the information the State Mineral Survey obtains will be made available through regular official channels to land owners and the public in general in the near future.

The County and WPA officials are cooperating.

Pike County Has Asphalt

Pike County 1938
Abandoned Mine Found
and Other Minerals
as Result Survey.

Hot Springs (AP)—Rex E. Mhoon, district supervisor of a state geological survey being conducted as a WPA project, said today that an abandoned mine in Pike county had been found to contain sufficient asphalt to pave many miles of road.

Mhoon is in charge of a survey which was started last April. It has been extended into nine counties in this section of the state and, he said, he will have a report ready in the next several weeks on 11 counties.

Found in Polk county, he said, were great outcroppings of manganese and red, black and green slate, probably in the quantity of a million tons. He said the product is valuable for roofing, panel boards and other uses.

"In Garland county we discovered new outcroppings of Novalucite," he said. "This is commercial whetstone and has been produced in commercial quantities."

P
I
K
E

Pike County Has Gypsum Deposits, Factor in Cement

WPA Reviews Results of
One of Its County Mineral
Surveys

PIKE IS EXAMINED

Plastic Clay, Slate, Cinnabar Among Resources
of Pike

(WPA Press Release)

The Mineral Survey which was begun in Pike County in March, 1938, is a part of the State Mineral Survey which extends into 52 counties. The entire area of Pike County, comprising 601 square miles will be surveyed. Up to the present time approximately 300 square miles have been investigated.

The discovery, mapping and sampling of new minerals or of deposits of those already known is only a part of the survey program. Under the direction of Arlington Waggoner, County Supervisor, the men in the field also record the position of streams, lakes and springs and their present or potential uses. Walking over the county, section by section, the men also make note of the buildings, dams, bridges, railroads, highways, electric power lines, and gas lines. All information thus gathered is used in making county maps and in correcting those now in use.

The Pike County Survey was begun in the southwestern part of the county near Highland and Murfreesboro. Road materials are of major importance in that part of the county. Gypsum outcrops have also been mapped for several miles. Other minerals located are kaolin, slate, and cinnabar. A comprehensive study of the waters of the county is also being made.

At four miles east of Murfreesboro and one and one-half miles off of State Highway No. 26 is a 30-acre deposit of fine grade clay gravel. One mile south is a bed of red clay gravel covering 140 acres, from which material is being used for road making. In the extreme southwest corner of the county within four miles of Highland are hundreds of acres of excellent road making materials not being used.

Gypsum Outcroppings

Outcrops of Gypsum at Plaster Bluff, three miles southwest of Murfreesboro show a thickness ranging between 4 feet and 9 feet. It is estimated that three-fourths of this is suitable for cement, the balance being useful as fertilizer and is known as "land plaster." It has been found that Gypsum underlies more than one-half of one section near Plaster Bluff, at a depth varying from 40 feet to 80 feet. About three miles northwest of Highland another deposit of gypsum has been located within a mile of State Highway No. 26, having a thickness of 30 inches. In Section 17, Township 8 S, Range 26 W (About 2 miles northwest of Highland) there are approximately 150 acres of gypsum, part of which can be strip mined; the balance can be mined by tunnel. Midway between Murfreesboro and Highland is the gypsum mine of D. V. Lewis where the gypsum is mined for use as Portland cement retarder.

Plastic Clays

The Plastic Clays in the Delight area are of potential value. They are found in abundance where the overburden, in many places, is gravel, which could be used as road material. The clay is suitable for "drilling mud" in the oil industry and for a base in the manufacture of certain grades of paint. The most important kaolin deposits found so far in Pike county by the survey are located about 5 miles east of Murfreesboro. The color varies from pale blue—which bleaches white—to red. The thickness of this stratum varies from 7 feet to 11 feet. About three miles southeast of Murfreesboro, a deposit of approximately 25,000 tons of kaolin in white, pink and yellow has been located.

Slate valuable for roofing of slate granite production has been located in shades of red, green and black in Pike county; the amount is estimated at 500,000 tons.

The well known Cinnabar or quicksilver ore district of northern Pike county is being surveyed and new finds may result.

The importance of conserving the artesian water supply of Pike county and of the present waste of unchecked flow at maximum capacity are pointed out by Mr. Waggoner. The effect of wasteful exhaustion of this valuable water supply is already apparent. Many wells are no longer flowing while others show a marked decrease in flow. This would indicate that this water supply is not inexhaustible and a plan of conservation would perhaps be of advantage to the residents of the county.

The Mineral Survey is a State WPA Project sponsored by the State Geological Survey under the direction of George C. Branner, State Geologist. Robert C. Beckstrom who completed a similar survey for Oklahoma is State Supervisor; R. E. Vandruff is Technical Supervisor. On the completion of the work, all samples, field sheets and records taken by the men in the field in Pike county will become the property of State Geological Survey. From these, information will be assembled and published in bulletin form by the State Geologist.